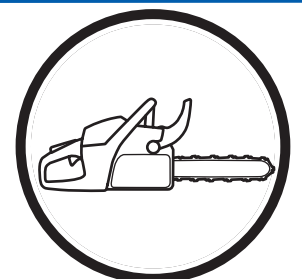


Workshop manual
570, 576 XP/G
570 AT, 576 XP/G AT



English

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INTRODUCTION

General

This Workshop Manual provides a comprehensive description of how to trouble shoot, repair and test the chainsaw. A description of different safety measures that should be taken during repair work is also given.

Safety

Note! The section dealing with safety should be read and understood by all who carry out repair and service work on the chainsaw.

Warning symbols can be found in this Workshop Manual and on the chainsaw. See page 5. A new warning symbol must be applied as soon as possible if a warning symbol on the chainsaw has been damaged or is missing to ensure the greatest possible safety when using the chainsaw.

Target Group

When producing this Workshop Manual the assumption has been made that personnel who use it have general knowledge in the repair and service of small engines.

The Workshop Manual must be read and understood by personnel who are to carry out repair work and service on the chainsaw. The Manual is also suitable for use when training new employees.

Modifications

Modifications will be successively introduced on the chainsaw during production. When these modifications affect servicing and/or spare parts, separate service information will be sent out on each occasion. This means that in time this Workshop manual will become out of date. In order to prevent this, the Manual should be read together with all service information issued concerning the chainsaw in question.

Tools

Special tools must be used during specific steps. All service tools are listed in the Workshop Manual. Usage is evident from respective sections.

Always use Husqvarna original parts:

- Spare parts
- Service tools
- Accessories

Layout

This Workshop Manual can be used in two different ways:

- For the repair of a particular system on the chainsaw.
- Dismantling and Assembly of the entire chainsaw.

Repair of a particular system

When a particular system on the chainsaw is to be repaired, proceed as follows:

1. Look up the page for the system in question.
2. Carry out the sections: Dismantling
Cleaning and inspection
Assembly

Dismantling and Assembly of the entire chainsaw

Proceed as follows when the entire chainsaw is to be dismantled and assembled:

1. Look up page 18, which deals with the **Starter** and carry out the instructions under the heading **Dismantling**.
2. Leaf forward in the book and carry out **Dismantling** in the order given in the sections.
3. Go back to **Starter** on page 18 and carry out the instructions under **Cleaning and inspection**.
4. Leaf forward in the book and carry out **Cleaning and inspection** in the order given in the sections.
5. Order or take out all requisite spare parts from the stores.
6. Look up page 51 which deals with the **Crankcase** and carry out the instructions under **Assembly**.
7. Leaf forward in the book and carry out **Assembly** in the order given in the sections.

To improve understanding some sections provide a **Description** first of the actual unit.

Numbering

Position references to components inside the figures are designated A, and B, etc.

The figures are number 1, 2 etc.

The position references figure numbers restart in each new section.

SAFETY REGULATIONS

General instructions

The workshop where chainsaw repairs are to be done must be equipped with safety equipment as set out in local regulations.

No one may repair the chainsaw unless they have read and understood the contents of this Workshop Manual.

This Workshop Manual contains the following warning texts in relevant places. Warning texts are positioned before the procedures they refer to.



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

NOTE!
This text warns of material damage if the instructions are not followed.

Special instructions

The fuel used in the chainsaw has the following hazardous properties:

1. The fluid and its fumes are poisonous.
2. Can cause skin irritation.
3. Is highly inflammable.

The bar, chain and clutch cover (chain brake) must be fitted before the saw is started otherwise the clutch can work loose and cause personal injury.

Wear ear-muffs when test running.

Do not use the saw until it has been adjusted so that the chain remains still when idling.

After test running, do not touch the muffler until it has cooled. Risk of burn injuries.

Insufficient lubrication of the chain can result in the chain breaking, which can cause serious or even life-threatening injury.

Ensure that the spring in the starter does not fly out and cause personal injury.

If the spring tension is activated on the starter pulley when it is to be taken up, the spring can fly out and cause personal injury.

Check that the brake is applied when removing the pressure spring on the chain brake. Otherwise the pressure spring can fly out and cause personal injury.

After repair, the chain brake must be checked in accordance with the instructions on page 16.

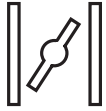
When replacing the crankshaft bearings note that the crankcase halves are hot. Wear protective gloves

Do not direct the compressed air jet towards the body when using compressed air. Air can penetrate into the blood circulation, which means mortal danger.

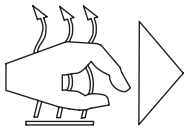
SYMBOLS

Symbols on the chainsaw

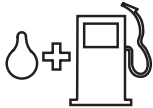
The following symbols are moulded into the chainsaw casing.



Choke



Switch for hand grip heater



Fuel filler



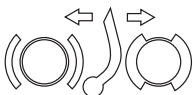
Stop button



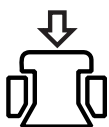
Screw to adjust chain lubrication



Saw chain oil filler



Chain brake

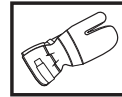


Decompression valve

Symbols in this Workshop Manual



This symbol indicates a risk of personal injury if instructions are not followed.



Use protective gloves.



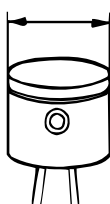
Use protective goggles.

TECHNICAL DATA



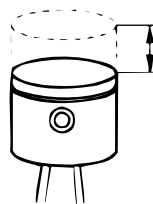
Displacement
cm³/ cubic inch

570	67,9/4.1
576 XP/G	73,5/4.5



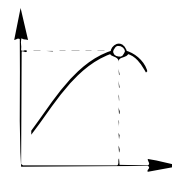
Bore
Ømm/Øinch

49/1,9
51/2,0



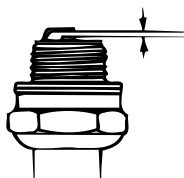
Stroke
mm/inch

36/1,4
36/1,4



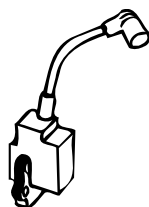
Max. power/rpm
kW/hp / rpm

3,6/4,9 / 9 600
4,2/5,7 / 9 600



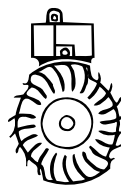
Spark plug gap
mm/inch

570	0,5/0,02
576 XP/G	0,5/0,02
570 AT	0,5/0,02
576 XPG AT	0,5/0,02



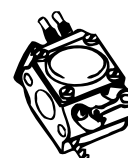
Ignition system

SEM/CD/COT
SEM/CD/COT
SEM/CD/COT
SEM/CD/COT



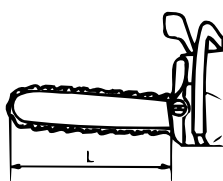
Air gap
mm/inch

0,30/0,012
0,30/0,012
0,30/0,012
0,30/0,012



Carburettor type

Zama C1M-EL28/EL50
Zama C1M-EL28/EL50
Zama C1M-EL40
Zama C1M-EL40



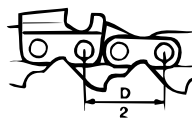
Guide bar length
cm/inch

570	15-28/38-71
576 XP/G	15-28/38-71



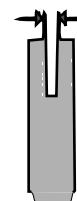
Maximum chain speed
m/s

28,5
28,5



Chain pitch
mm/inch

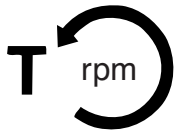
9,52/3,8
9,52/3,8



Drive link
mm/inch

1,5/0,058
1,5/0,058

TECHNICAL DATA



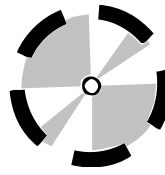
Idling speed
rpm

570	2 700
576 XP/G	2 700



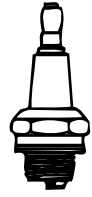
Engage speed
rpm

3 600
3 600



Max. speed
rpm

13 300
13 300



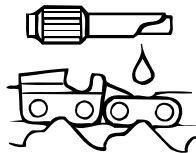
Spark plug

NGK BPMR7A
Champion RCJ 7Y
NGK BPMR7A
Champion RCJ 7Y



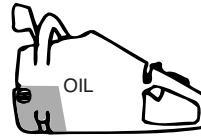
Fuel tank volume
Litres/US pint

570	0,70/1,5
576 XP/G	0,70/1,5



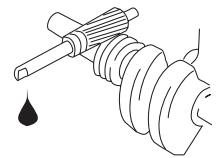
Oil pump capacity
cm³/min

5-22
5-22



Oil tank volume
Litres/US pint

0,40/0,8
0,40/0,8



Automatic oil pump

Yes
Yes



Weight without
bar and chain
kg/lbs

570	6,6/14,6
576 XP	6,6/14,6
576 XPG	6,8/15,0



Weight with
bar and chain
kg/lbs

18" 8,1/17,8
18" 8,2/18,0
18" 8,4/18,4



Hand grip heater

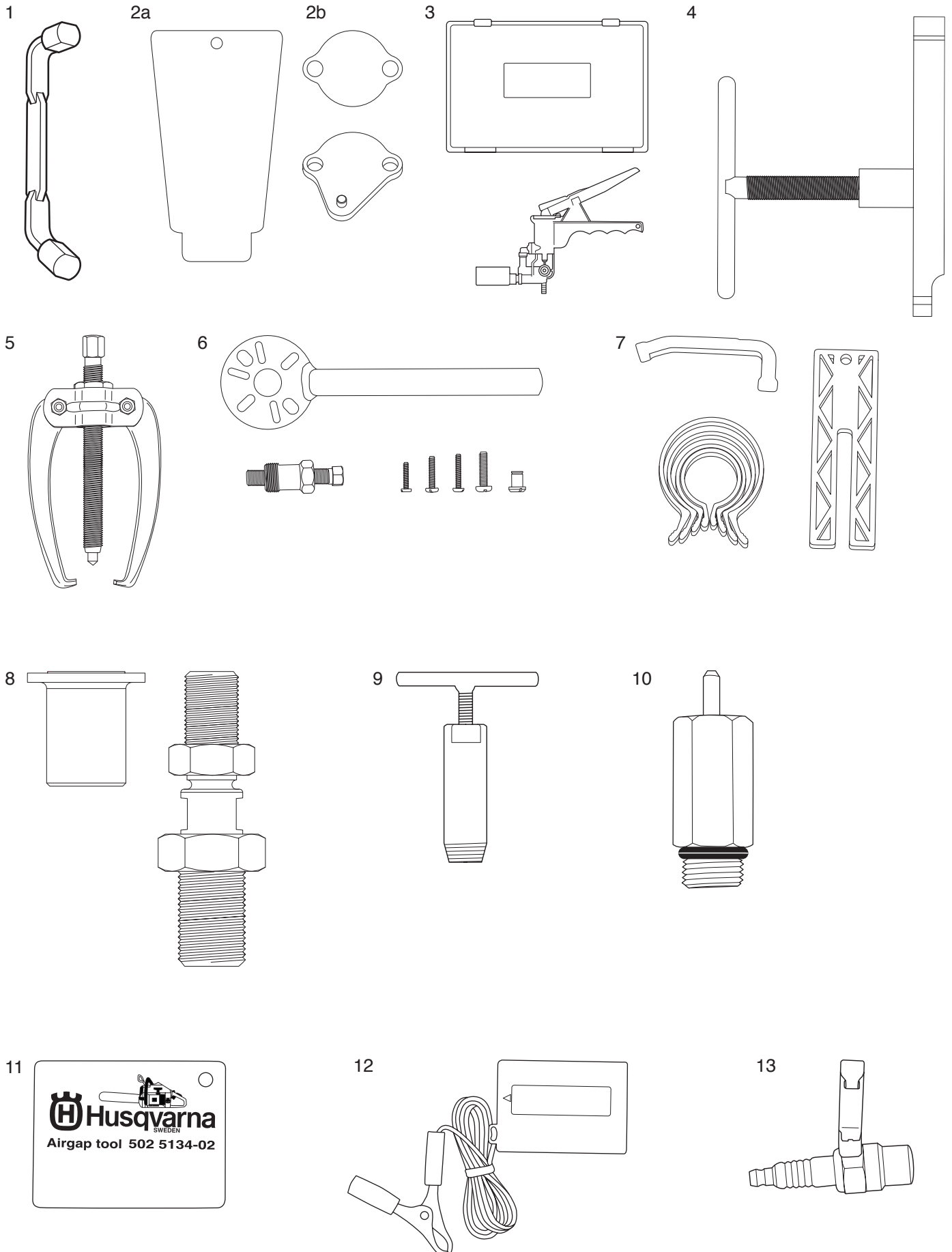
-
-
Yes



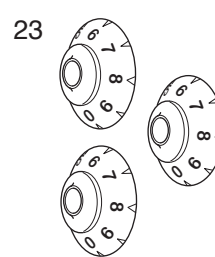
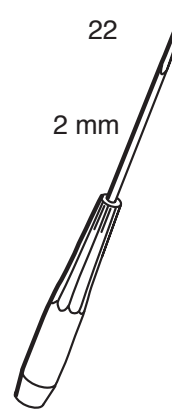
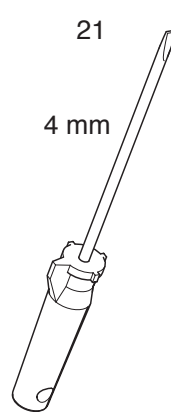
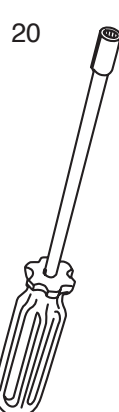
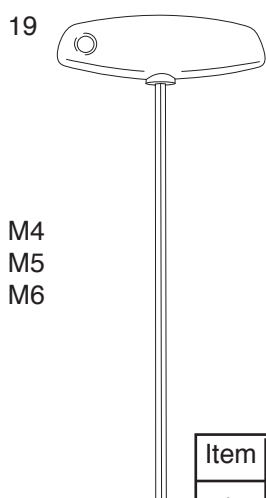
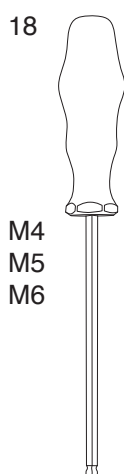
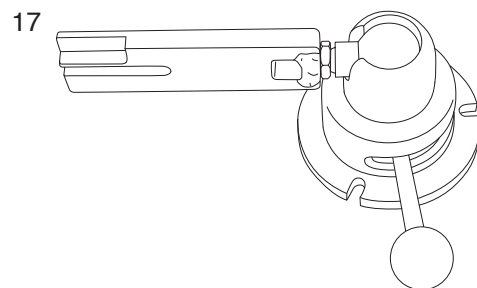
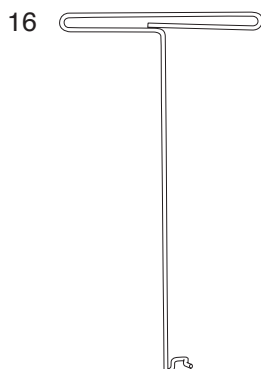
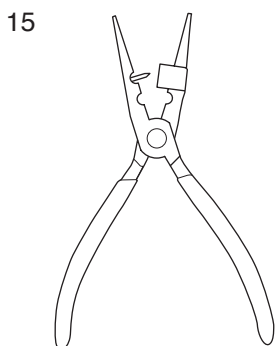
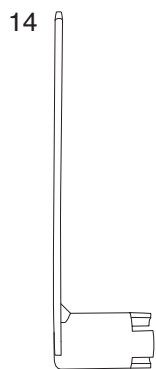
Electric carburettor
heater

-
-
Yes

SERVICE TOOLS



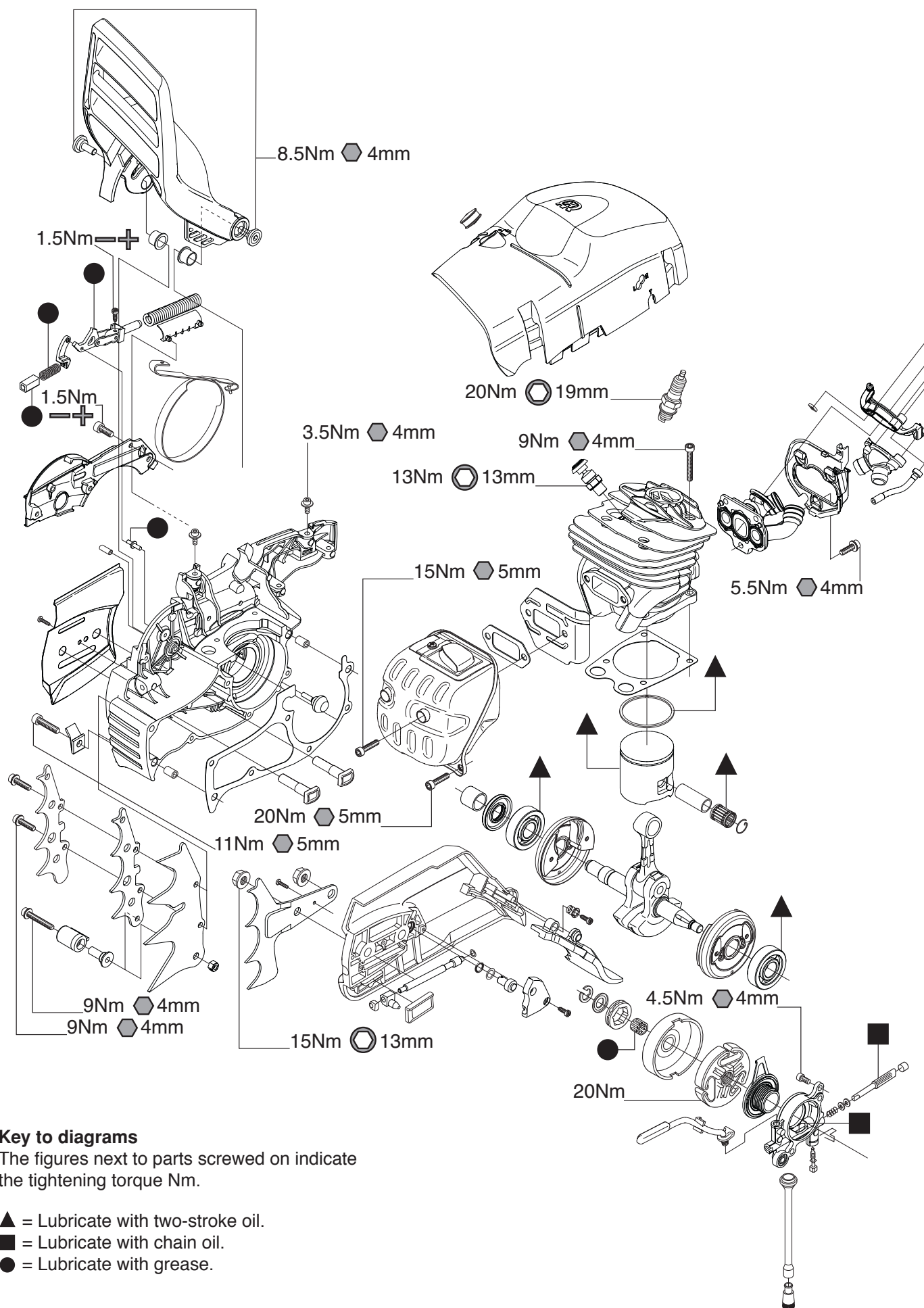
SERVICE TOOLS



The tools listed here are service tools intended for use on the chainsaw in question. In addition to these tools, a standard set of hand tools is required.

Item	Description	Used for	Order No.
1	Piston stop	Locking the crankshaft	504 91 06-05
2a	Cover plate, exhaust	Sealing the exhaust port	502 54 11-02
2b	Cover plates, inlet kit	Sealing the intake system	502 52 48-01
3	Pressure testing device	Produce pressure when leakage testing	531 03 06-23
4	Crankcase splitting tool	Dismantling the crankshaft	502 52 49-01
5	Puller	Pulling bearing of crankshaft	504 90 90-01
6	Flywheel puller kit	Dismantling of the flywheel	502 51 49-02
7	Piston assembly kit	Assembling the piston	502 50 70-01
8	Crankshaft assembly tool	Assembling the crankshaft	502 50 30-20
9	Seal ring extractor	Pulling of seal ring	504 91 40-01
10	Pressure test adapter	Pressure testing cylinder	503 84 40-02
11	Feeler gauges ignition gap	Air gap tool	502 51 34-02
12	Tachometer	Checking engine rpm	502 71 14-01
13	Test spark plug	Checking the ignition module	502 71 13-01
14	Clutch tool	Dismantling of clutch	502 52 22-01
15	Assembly pliers	Assembly of spark plug cap	502 50 06-01
16	Hook for fuel filter	Removing fuel filter	502 50 83-01
17	Assembly fixture	Assembling chain saw	502 51 02-01
18	Hexagonal screwdriver	For M4 screws	502 50 86-01
18	Hexagonal screwdriver	For M5 screws	502 50 87-01
18	Hexagonal screwdriver	For M6 screws	502 50 88-01
19	Allen key	For M4 screws	502 50 19-01
19	Allen key	For M5 screws	502 50 18-01
19	Allen key	For M6 screws	502 50 64-01
20	Adjustment screwdriver	Adjustment of the carburettor	530 03 55-60
21	Adjustment screwdriver	Adjustment of the carburettor	501 60 02-03
22	Adjustment screwdriver	Adjustment of the carburettor	531 00 48-63
23	Adjuster kit, 3 pcs.	Adjustment of the carburettor	585 07 17-01

SERVICE DATA



Key to diagrams

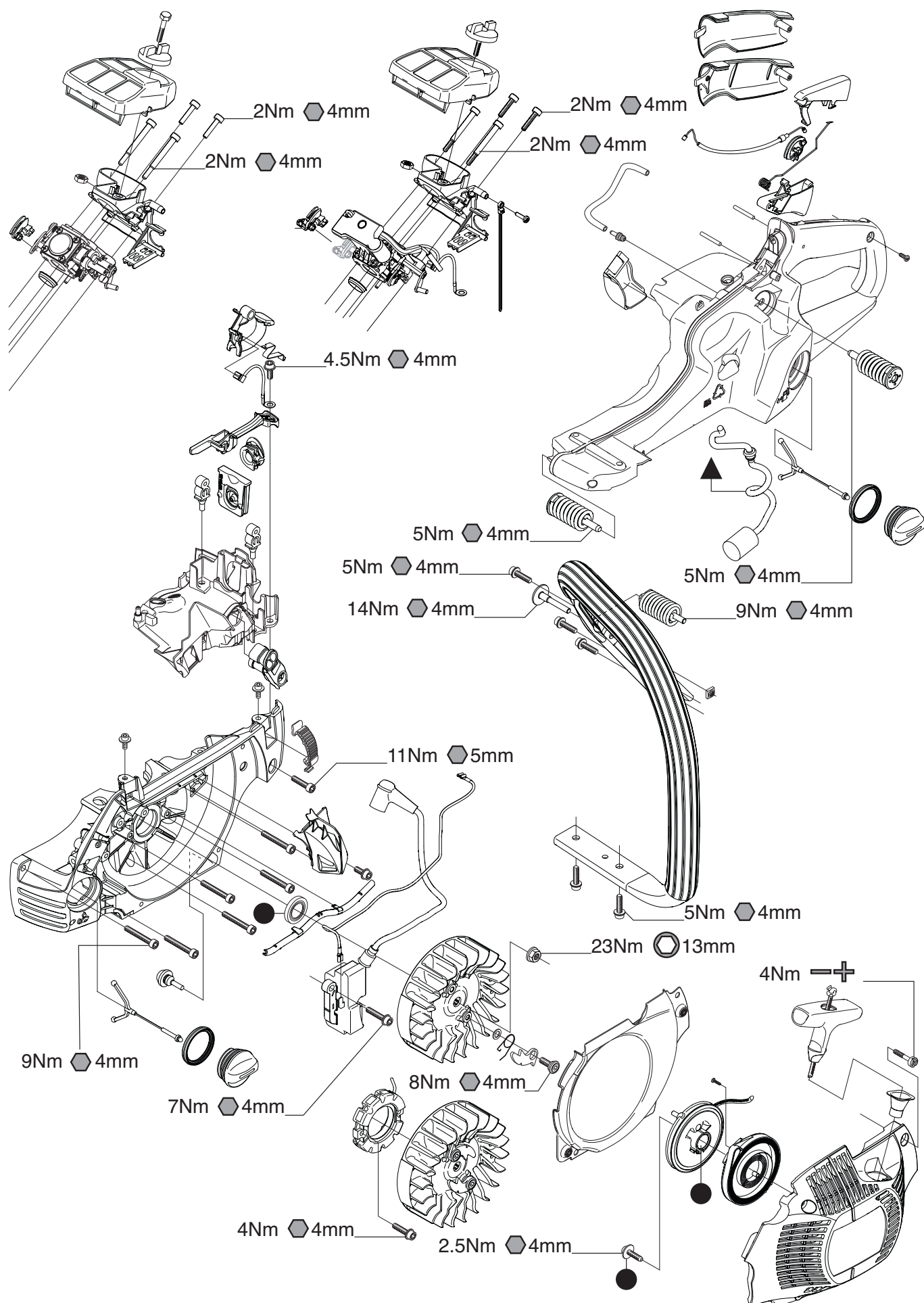
The figures next to parts screwed on indicate the tightening torque Nm.

▲ = Lubricate with two-stroke oil.

■ = Lubricate with chain oil.

● = Lubricate with grease.

SERVICE DATA



SAFETY EQUIPMENT

Chain brake

Dismantling

1. Dismantle the following parts first:
 - Chain and bar. See the Operator's Manual.
2. Push the hand guard forward so that the chain brake is on. See fig. 1.
3. Remove the chain guide-plate (A). See fig. 1.
4. Remove the four screws (B) and the cover over the chain brake mechanism. See fig. 1.



WARNING!
Check that the brake is on. Otherwise the pressure spring can fly out and cause personal injury.

5. Remove the pressure spring by freeing the back end with a screw driver. See fig. 2.
6. Remove the locking ring (A) with washer (B) and lift up the clutch drum (E) with needle bearing (D) and chaindrive sprocket (C). See fig. 3.

7. Remove the hand guard, two screws (A). Note the sleeve on the starter side. See fig. 4.

8. Remove the toggle joint (E) with attached brake band. See fig. 5.

Inspection

Clean and inspect all parts.
The thickness of the brake band must nowhere be less than 0,8 mm. See fig. 5.

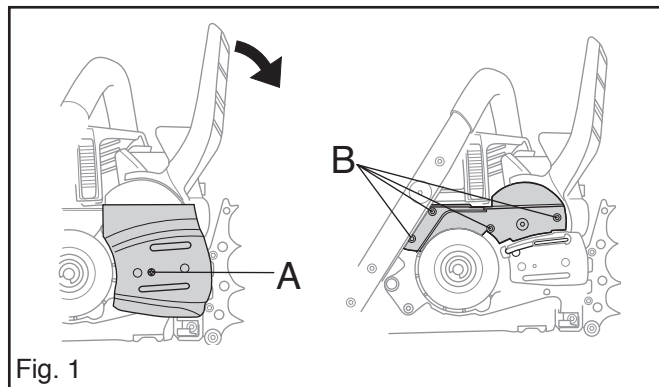


Fig. 1

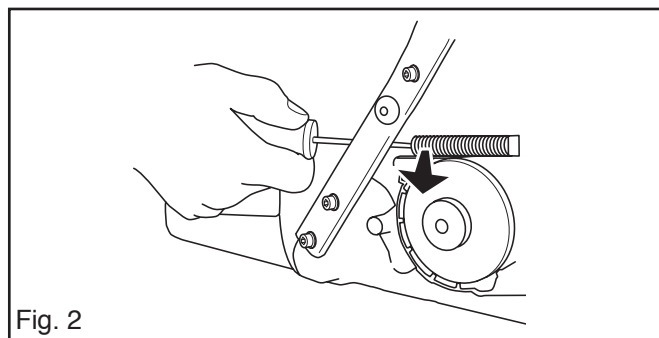


Fig. 2

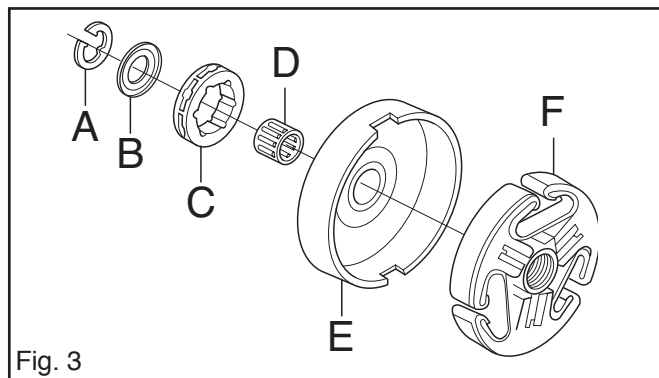


Fig. 3

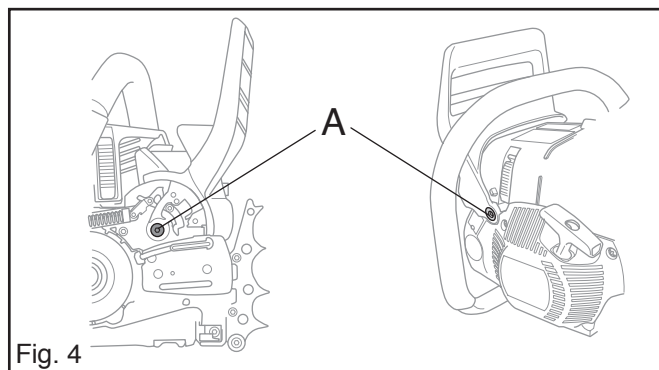


Fig. 4

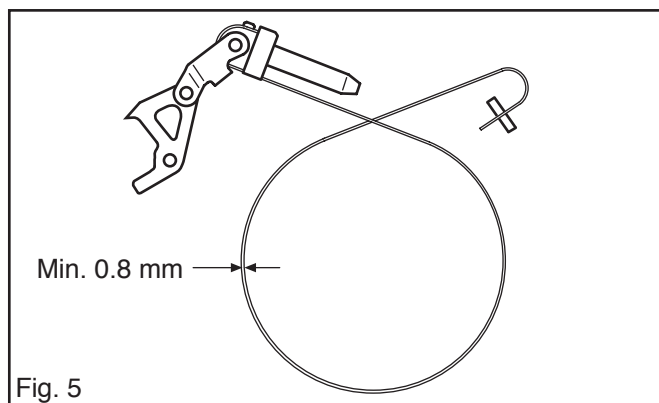


Fig. 5

SAFETY EQUIPMENT

Assembly

Assemble the chain brake as follows:

1. Fit the toggle joint and brake band.
2. Grease the moving parts of the toggle joint (D) and fit the unit on the chain saw. See fig. 6.



WARNING!
Ensure that the spring does not fly out and cause personal injury. Wear protective glasses.

3. Compress the spring using a conical screwdriver 6.5 mm wide and press it down with your thumb. See fig. 7.
4. Grease and fit the lever (A). See fig. 6.
5. Grease and fit the retaining bush (B) with spring (C). See fig. 5.
6. Fit the cover over the chain brake mechanism. Four bolts (B). Tighten the bolts to 4 Nm. See fig. 1.
7. Fit the chain guide-plate with bolt (A). See fig. 1.
8. Fit the hand guard with the sleeve on the starter side. See fig. 8.
9. Push back the hand guard so that the chain brake is in the off position.
10. Check that the brake strap is correctly positioned in the recess in the crankcase. See fig. 9.
11. Grease in the needle bearing before fitting. Fit the clutch drum (E) with needle bearing (D) and chain drive sprocket (C). See fig. 3.
12. Fit the washer (B) and locking ring (A). See fig. 3.
13. Fit the cylinder cover, chain and bar. See Operator's Manual.

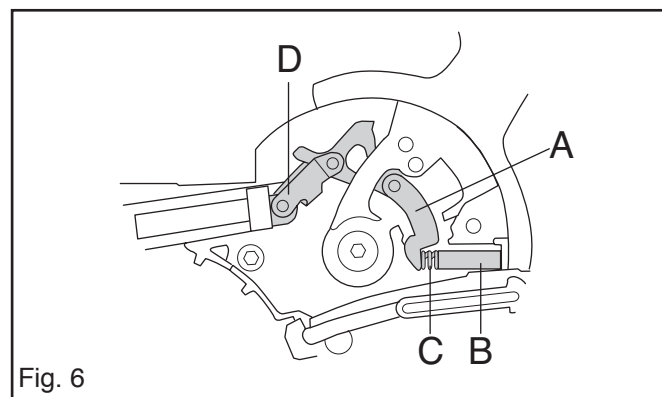


Fig. 6

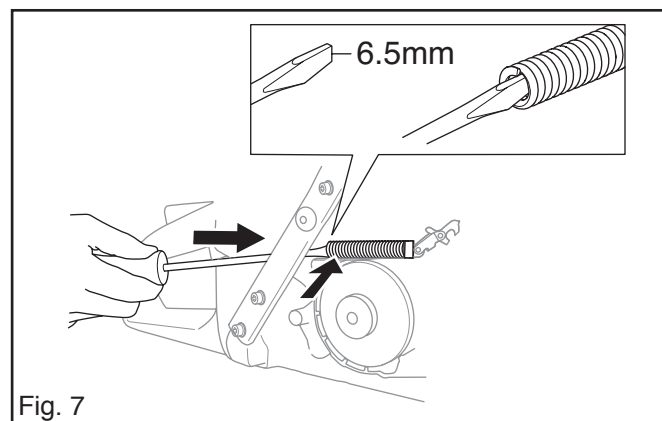


Fig. 7

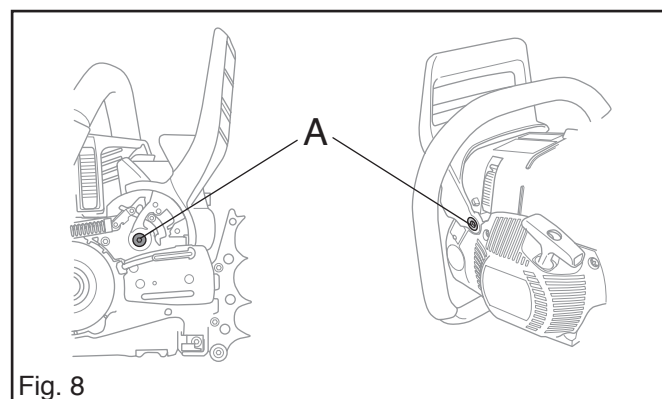


Fig. 8

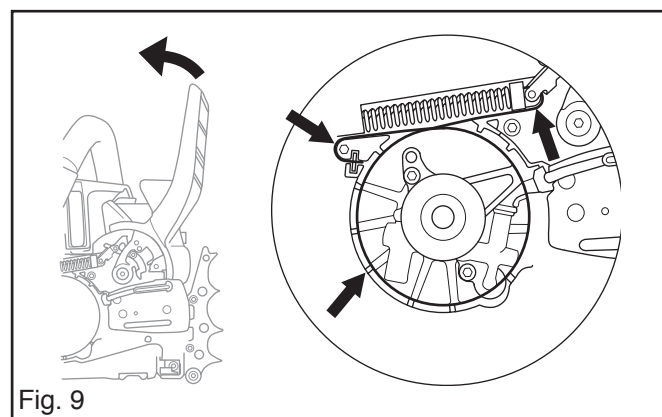


Fig. 9

SAFETY EQUIPMENT

Function check



WARNING!
After repair, the chain brake must be checked according to the following instructions.

For this test, the engine must **not** be running.
Check that the chain brake cuts in as follows:

1. Hold the chain saw over a stable surface as shown in fig. 10.
The distance between the bar and surface is given in the table below.

Bar length, L	Height, H
15-28 cm	35 cm

2. Let go of the front hand grip and let the chainsaw pivot round on the rear hand grip.
3. When the bar hits the surface the chain brake should cut in.

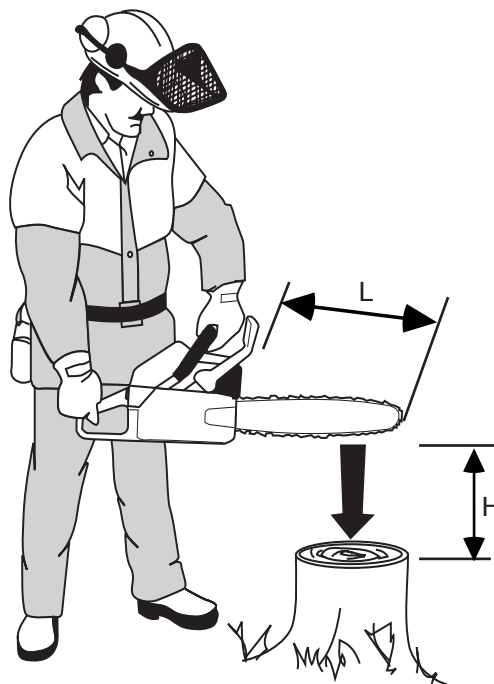


Fig. 10

Chain catcher

There are two types of types of mountings for the chain catcher fitted on the spike bumper or the crankcase.

Dismantle the chain and bar. See Operator's Manual.

Inspect the chain catcher and replace it if it is damaged.
The bolts should be tightened to 6 Nm. See fig. 11.

Fit the chain and bar. See Operator's Manual.

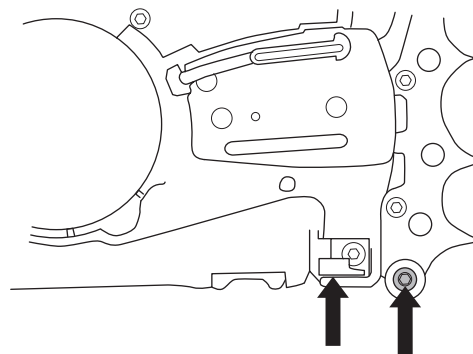


Fig. 11

SAFETY EQUIPMENT

Muffler



WARNING!
Do not touch the muffler until it has cooled. Risk of burn injuries.

Dismantling

1. Remove the two lower M5 bolts and the muffler's two M6 bolts. See fig. 12.
2. Remove the gasket and cooling plate. See fig. 12.
3. If the saw is fitted with a spark-arrester, remove it. See fig. 12.

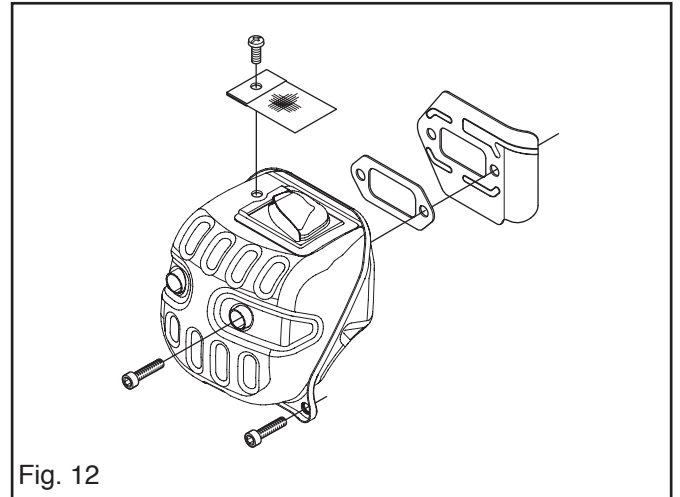


Fig. 12

Inspection

Clean all components and check the following:

1. That the spark-arrester is intact.
2. That the muffler and muffler mounting are not cracked or otherwise defect.
3. That the gasket is undamaged.

Assembly

1. Clean the contact surfaces to the gasket, cooling plate and cylinder.
2. If the saw is fitted with a spark-arrester, refit it. See fig. 12.
3. Fit the cooling plate, gasket and muffler to the cylinder.
Tighten the two M6 bolts to the cylinder to 14 Nm.
Tighten the four M5 bolts to 10 Nm.

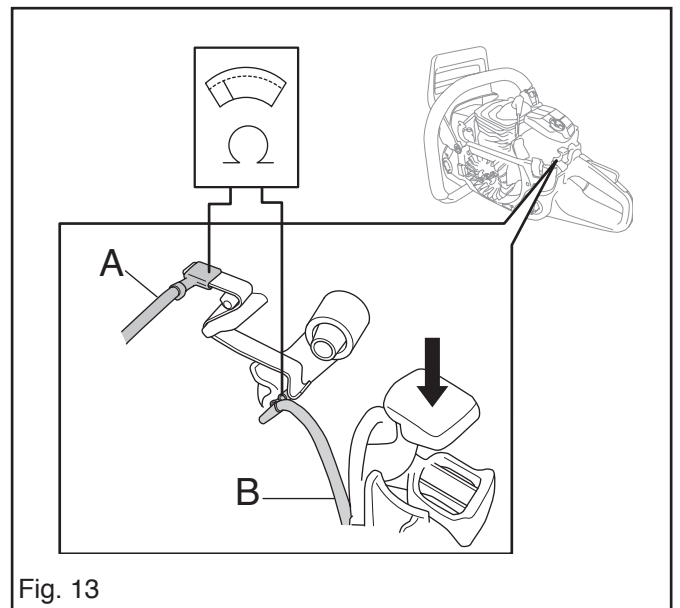


Fig. 13

Stop switch

Dismantling

The stop switch is in the off position when the switch is pressed down and in the on position when the switch is pressed upwards.

Inspection

Measure the resistance by connecting an ohmmeter to the stop switch. See fig. 13. The resistance should be as follows:

"0" pressed down - less than 0.1 ohm.

"1" pressed up - more than 1000 ohm.

Assembly

The earth lead is fitted in the upper or lower connection. See fig. 14.

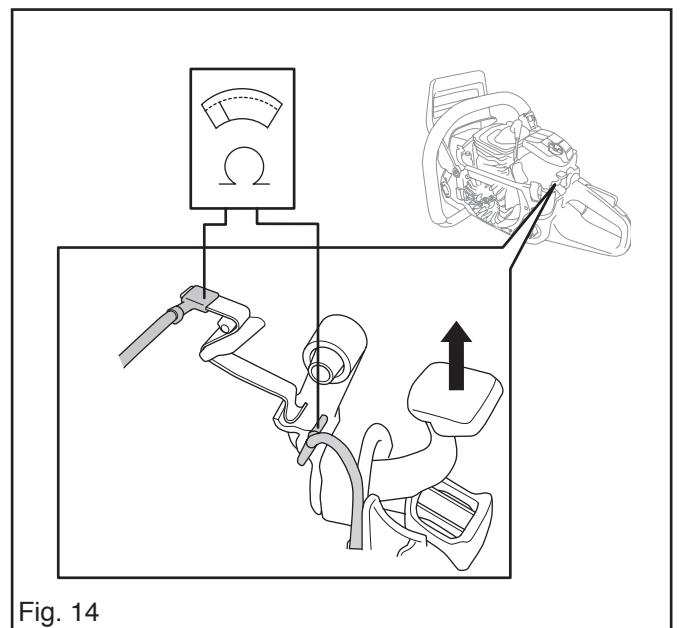
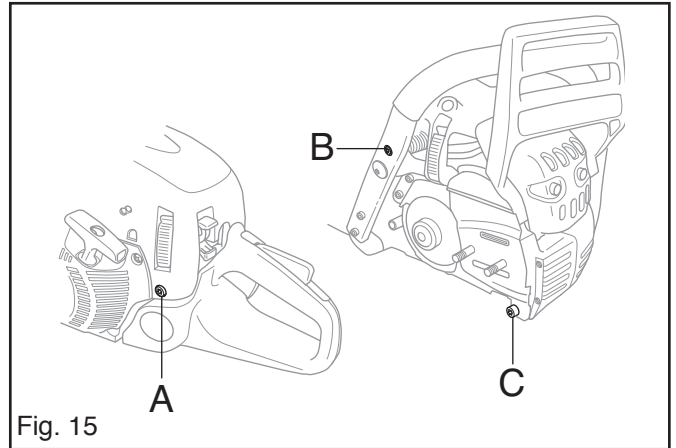


Fig. 14

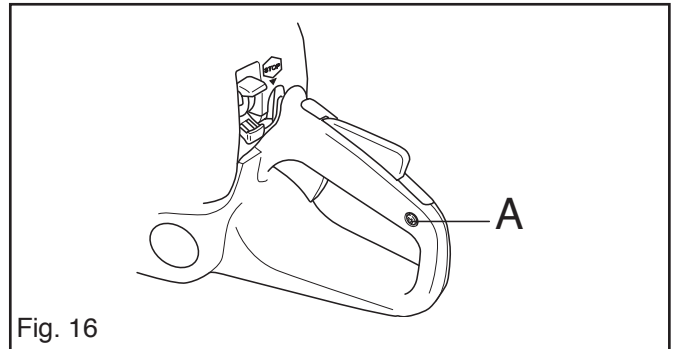
SAFETY EQUIPMENT

Throttle lock

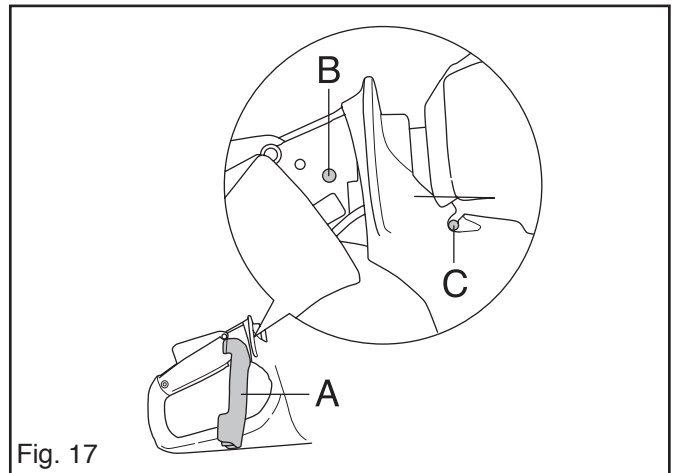
Lower the rear of the tank by removing the screws A, B and C. See fig. 15.



Remove the screw A on hand grip insert. See fig. 16.

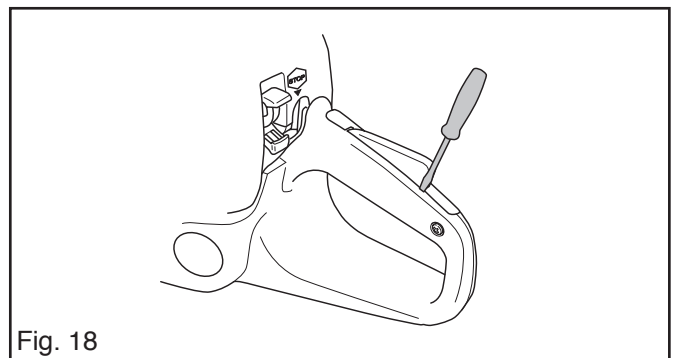


Remove the handle insert (A). Remove the guide pin for the throttle (B) and throttle lock (C) using a punch. See fig. 17.



Press apart with a screwdriver or the like, the throttle lock/control and take out the throttle lock from the recess in the hand grip. See fig. 18.

Now remove the spring.



SAFETY EQUIPMENT

Remove the throttle cable and lever. See fig. 19

Inspection

Clean all components and check the following:

1. That the throttle cable and lever are undamaged and run easily.
2. That the lock activation mechanism is not worn.
See fig. 19.

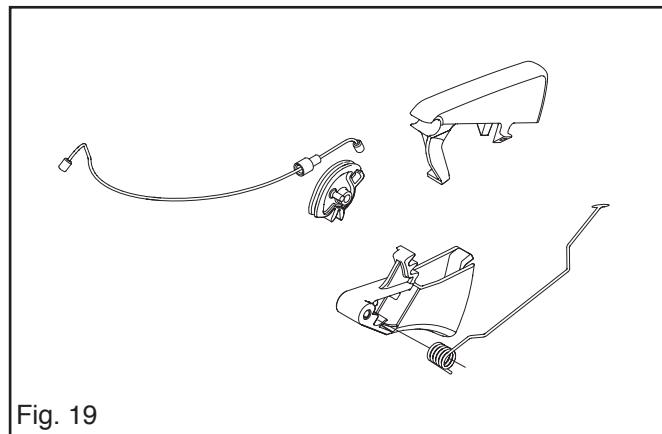


Fig. 19

Assembly

1. Lubricate all guide pins and joint surfaces using light oil.
2. Fit the throttle cable and lever (A). Fit the throttle lever (C) with pivot (B). See fig. 20.
3. Fit the spring in the recess in the throttle lock (D). Hold the spring in place and locate the throttle lock in the recess in the hand grip.
4. Fit the throttle lock pivot (B) with the help of a driver. See fig. 20.

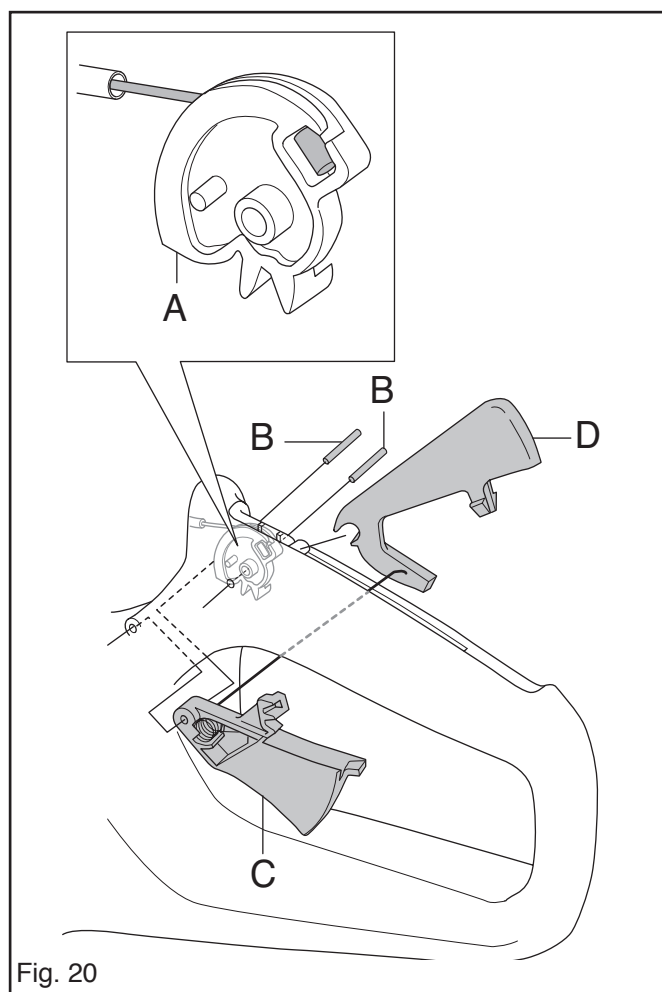


Fig. 20

5. Fit the hand grip insert with a screw, when the throttle, lever, throttle cable and throttle lock with spring are correctly fitted. See fig. 21.

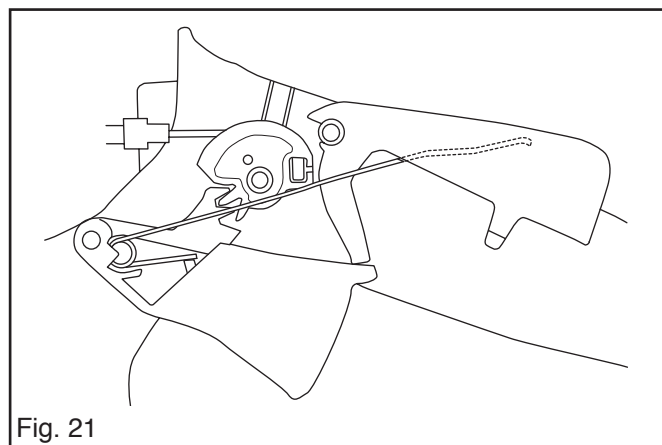


Fig. 21

STARTER

Starter

Dismantling



WARNING!
If the spring is tensioned on the starter pulley it can fly up and cause personal injury.
Wear protective glasses.

1. Remove the four bolts holding the starter to the crankcase and remove the starter. See fig. 1.

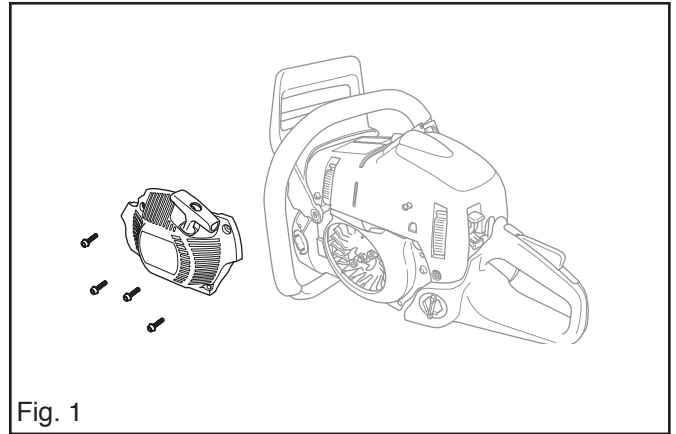


Fig. 1

2. Pull out the handle 20-30 cm and take out the cord from the slot in the starter pulley. See fig. 2.
3. Rotate the starter pulley anticlockwise until the tension on the pulley is released.

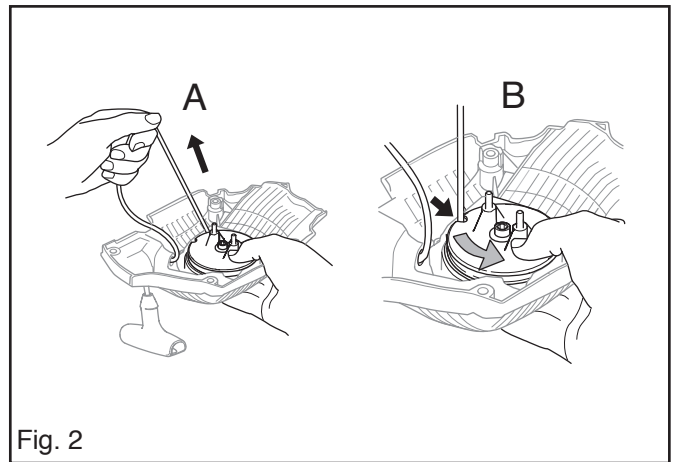


Fig. 2

4. Remove the central bolt (C) and take out the washer and starter pulley (D). See fig. 3.
5. If the starter cord is to be replaced, cut it off pull out the ends from the handle and starter pulley with pointed pliers.



WARNING!
If the spring is tensioned on the starter pulley it can fly up and cause personal injury.
Wear protective glasses.

6. If the spring is to be replaced, remove the screws (E) and the spring cassette (F).

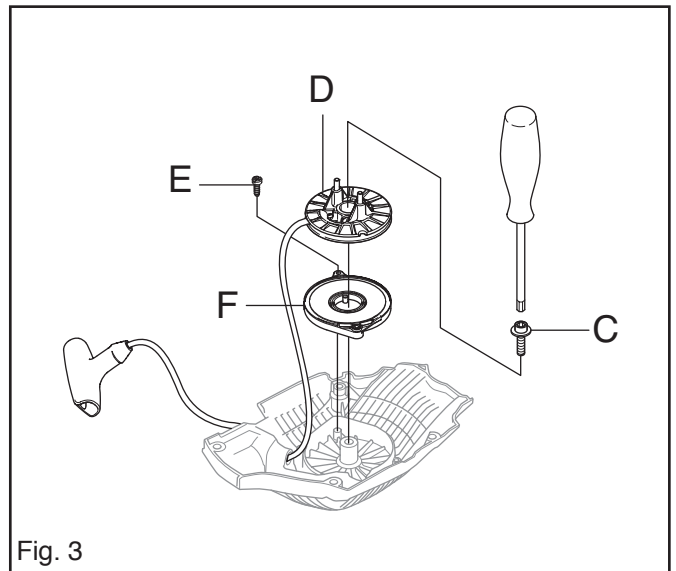


Fig. 3

Cleaning and inspection

Clean all components and check the following:

1. Starter cord.
2. The dogs on the starter pulley.
3. That the pawls on the flywheel are intact, spring back towards the centre and move freely.

STARTER

Assembly



WARNING!
If the spring is tensioned on the starter pulley it can fly up and cause personal injury.
Wear protective glasses.

1. If a new spring is to fitted, place the new spring with cassette so that the end loop comes over the peg.
2. Fit the spring cassette's 2 screws.
3. If a new cord is to be fitted, push the free end in the hole in the starter pulley. Take hold of the end with pointed pliers inside the pulley and pull up the cord. See fig. 5.
4. Grease the starter pulley bearing and spring, and fit the pulley on the spindle. Turn gently backwards and forwards until the spring catches on the stop in the housing.
5. Fit the washer and bolt (C). See fig. 3. Tighten the bolt to 4 Nm.
6. Pull out the cord through its hole in the housing and fit the handle and secure it with a double knot. See fig. 5.
7. Wind the cord onto the starter pulley and rotate the pulley clockwise until the cord is correctly tensioned. See below and fig. 6.

Checking the cord tension:

- A. Pull out the cord completely.
 - B. In this position it should be possible to turn the pulley by hand an additional 1/2 - 3/4 turn.
8. Fit the starter on the crankcase. Tighten the bolts to 4 Nm. See fig. 1.

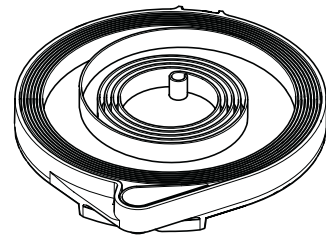


Fig. 4

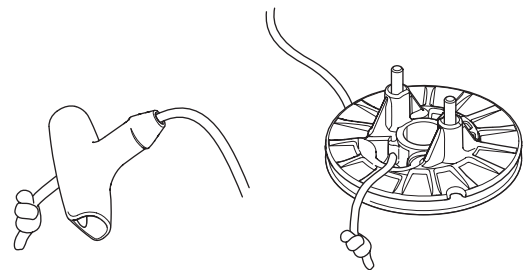


Fig. 5

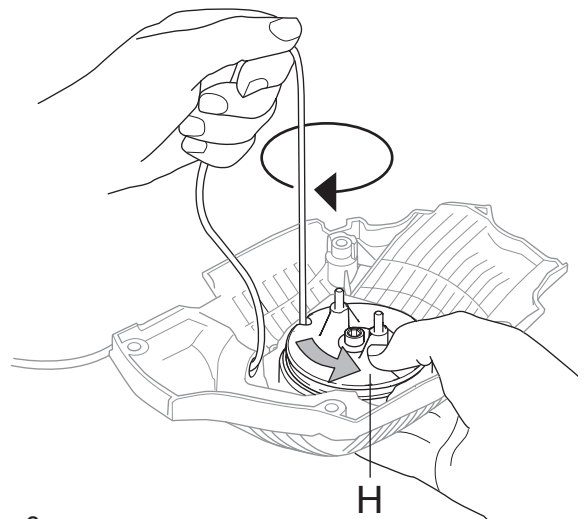


Fig. 6

ELECTRICAL SYSTEM

Ignition system

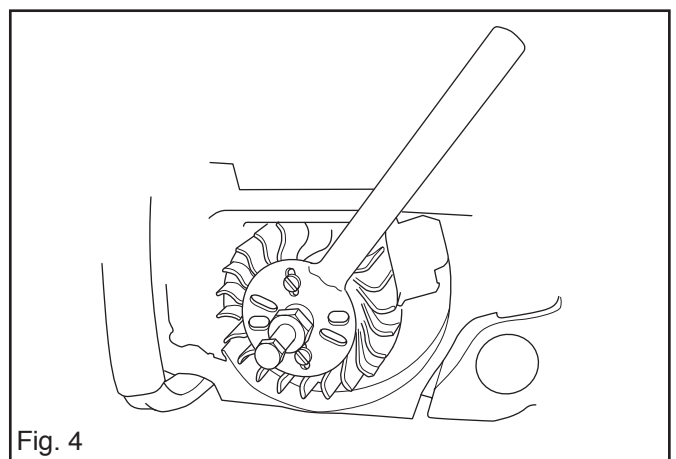
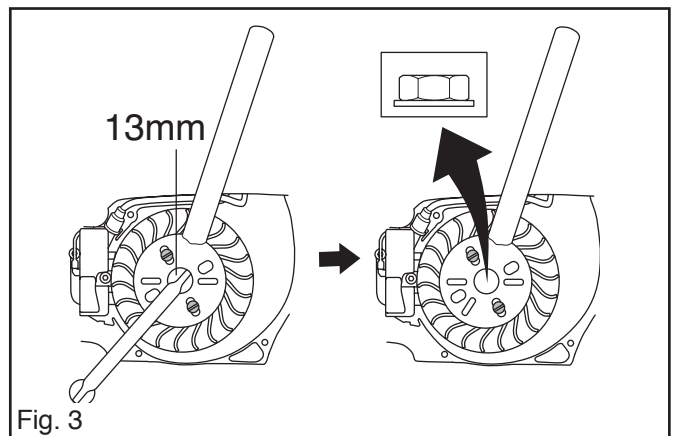
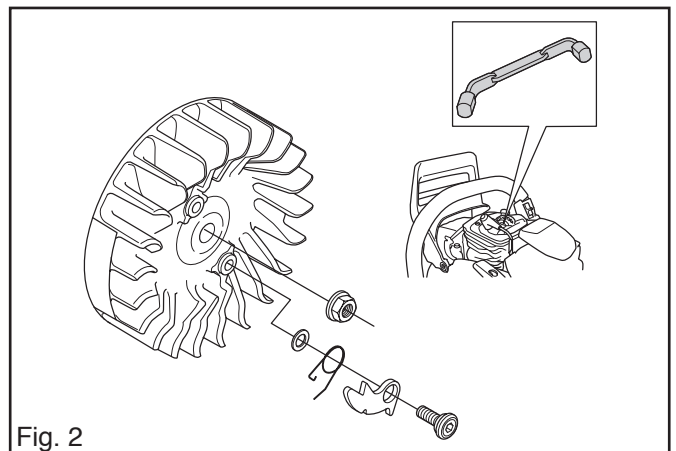
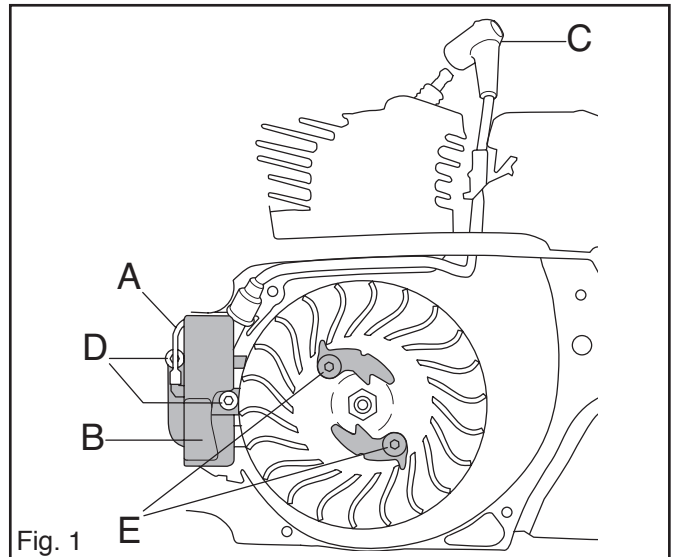
Dismantling

1. Remove the cylinder cover and starter unit. See page 18.
2. Release the lead (A) (which connects to the stop button) from the ignition module (B). See fig. 1.
3. Remove the ignition cable (C) from the spark plug and release both cables from the cable guide, and lift off the cable guide. See fig. 1.
4. Remove the two M5 bolts (D) and lift off the ignition module (B). See fig. 1.
5. Remove the two pawls (E) for the starter. See fig. 1.
6. Remove the spark plug and fit the piston stop in spark plug hole. See fig. 2.
7. Release the flywheel nut. Unscrew the nut until it comes level with the outer end of the shaft thread. See fig. 3.
8. Fit the flywheel puller. Tighten down the two M5x25 bolts approx. 10 turns. Exercise care on saws with generators, which can be damaged if the screws are tightened too deep. Tighten the centre bolt, while preventing rotation with the holding tool until the flywheel releases. See fig. 4.
9. Remove the puller, nut, washer and flywheel.

Cleaning and inspection

Clean all parts, especially the tapers on the flywheel and shaft.

Check the flywheel for cracks or any other signs of damage.

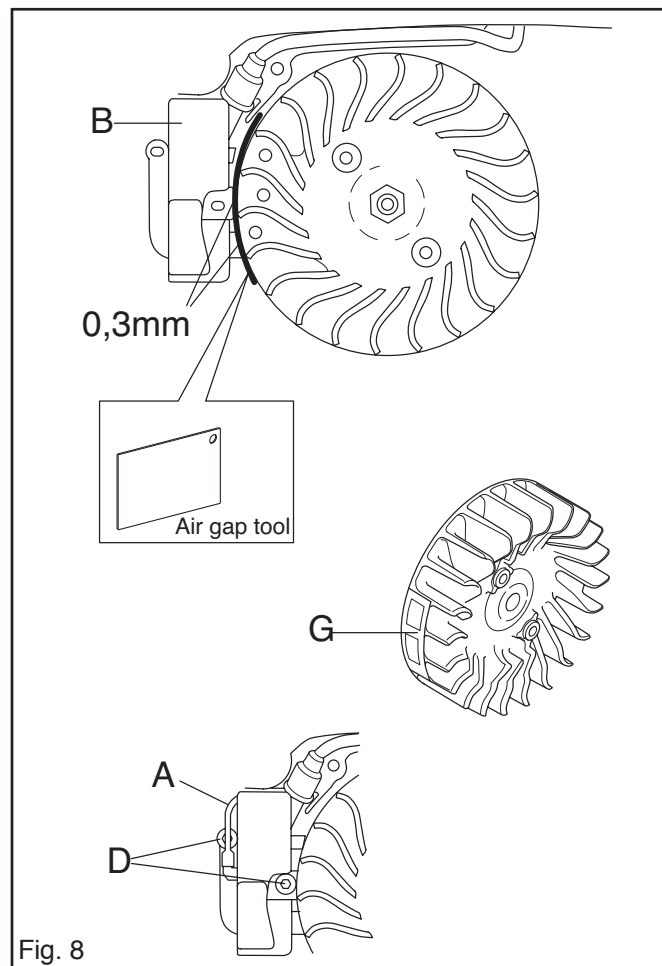
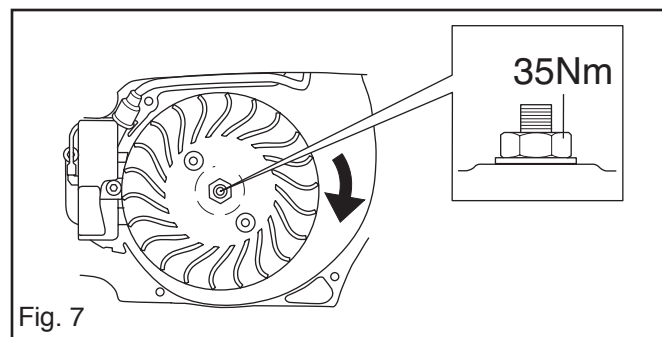
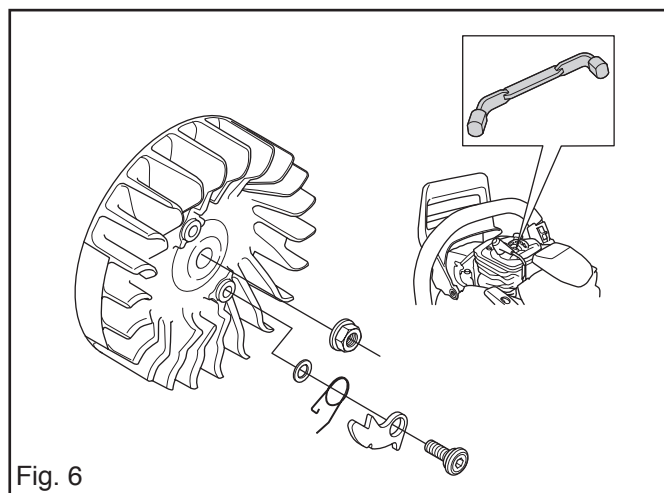
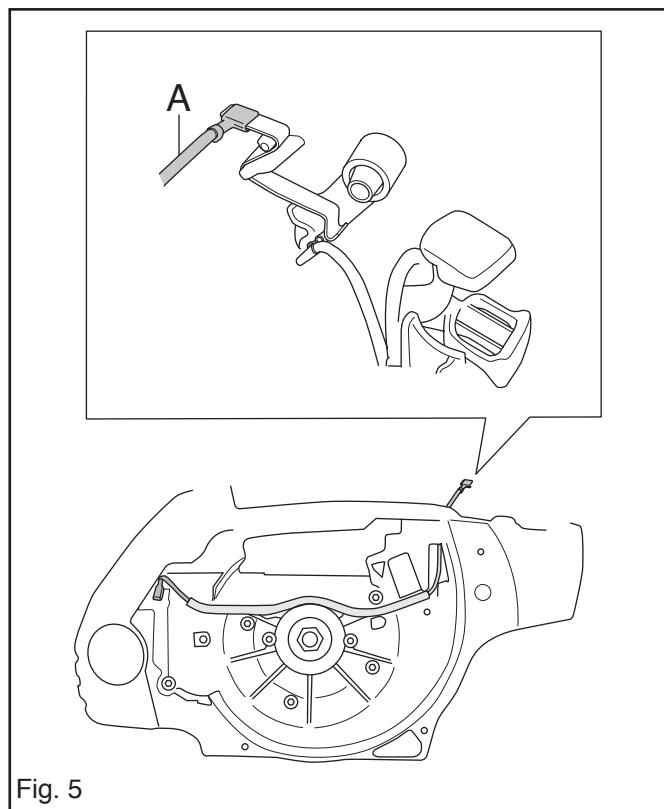


ELECTRICAL SYSTEM

Assembly

Assemble the ignition system as follows:

1. Fit the flywheel on the spindle. Turn it gently until the key on the flywheel mates with the recess in the shaft.
2. Fit the flywheel washer and nut. Tighten the nut to 35 Nm. See fig. 7.
3. Fit the two pawls on the flywheel. See fig. 6.
4. Remove the piston stop.
5. Fit the ignition module (B) without tightening its bolts. See fig. 8.
6. Turn the flywheel so that its magnet (G) comes opposite the ignition module. See fig. 8.
7. Insert the feeler gauge "Air Gap Tool" (0.3 mm) between the ignition module and the flywheel magnet. The clearance only applies to the two lower pegs on the ignition module. See fig. 8.
8. Push the ignition module against the flywheel and tighten the bolts (D) to 4 Nm. See fig. 8.
9. Fit the cable guide and press on the ignition cable. Connect the short-circuit cable to the switch. See fig. 5.
10. Pull out the cable and press home the cable clip (A) on the ignition module. See fig. 8.
11. Fit the remaining parts on the saw. See respective chapters.



ELECTRICAL SYSTEM

Hand grips and carburettor heater, 576 XPG

Some chainsaws are fitted with hand grip heaters and carburettor heaters, and consist of the following parts:

- Generator.
- Switch.
- Heating element in rear hand grip.
- Front hand grip with heating element.
- Carburettor heating element.
- Thermostat.

Trouble shooting

Trouble shooting can be carried out with most components fitted on the saw. Trouble shooting requires:

- ammeter
- ohmmeter
- cooling spray.

The most common fault is oxidisation of the heating element contacts in the rear hand grip and the switch contact.

Carry out trouble shooting as follows:

Heating element in rear hand grip.

Separate the cable connection at C. See fig. 9.

Clean the contacts C and D. See fig. 9.

Measure the resistance between point C and D.

The resistance for heating elements should be 0,8-1,0 ohms.

Replace the element if the values deviate.

Front hand grip with heating element

Measure the resistance in the front hand grip element between points C and B. See fig. 9. The ohmmeter should show 3-4 ohms.

If the value is higher, replace the hand grip.

Generator

Measure the resistance in the generator between the points A and E. See fig. 9.

The ohmmeter should show 0,5 ohms.

If the value is higher, replace the generator.

Switch

Release one of the connections to the switch and connect the ohmmeter between the points A and B. See fig. 9.

The ohmmeter should show more than 1000 ohms with the switch in position "0".

The ohmmeter should show at least 0,1 ohms with the switch in position "1".

Replace the switch if the values deviate.

Carburettor heating element and thermostat

The heating element and thermostat are in a single unit and must be replaced together.

Release the earth cable G. Measure with the ohmmeter between G and F.

The ohmmeter should show 0 at an air temperature of 15 C or higher. Cool the thermostat with a cooling spray or the like.

The ohmmeter should show 8 A.

Replace the two elements if the values deviate.

Refit the relevant components.

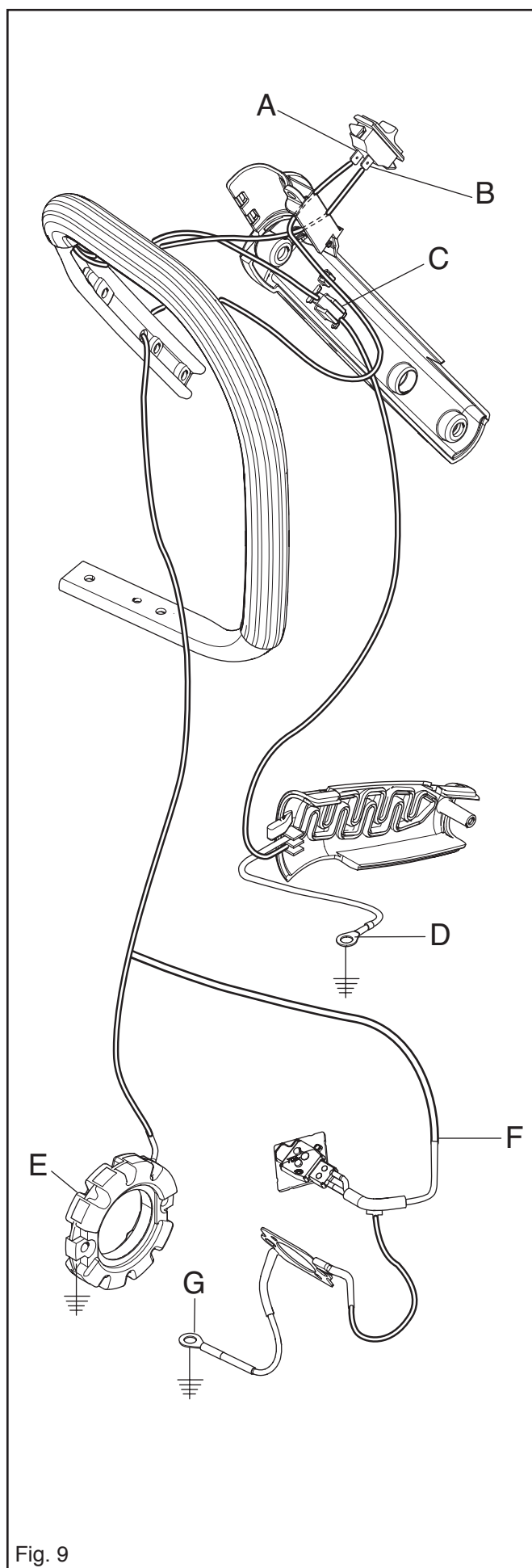


Fig. 9

ELECTRICAL SYSTEM

576 XPG AutoTune

The electrical system for models with AutoTune differ from models without AutoTune.

The yellow short-circuit wire (A) from the ignition module is connected to the stop switch. The red wire (A) from the generator is connected to the carburettor (AutoTune). See figure 9b.

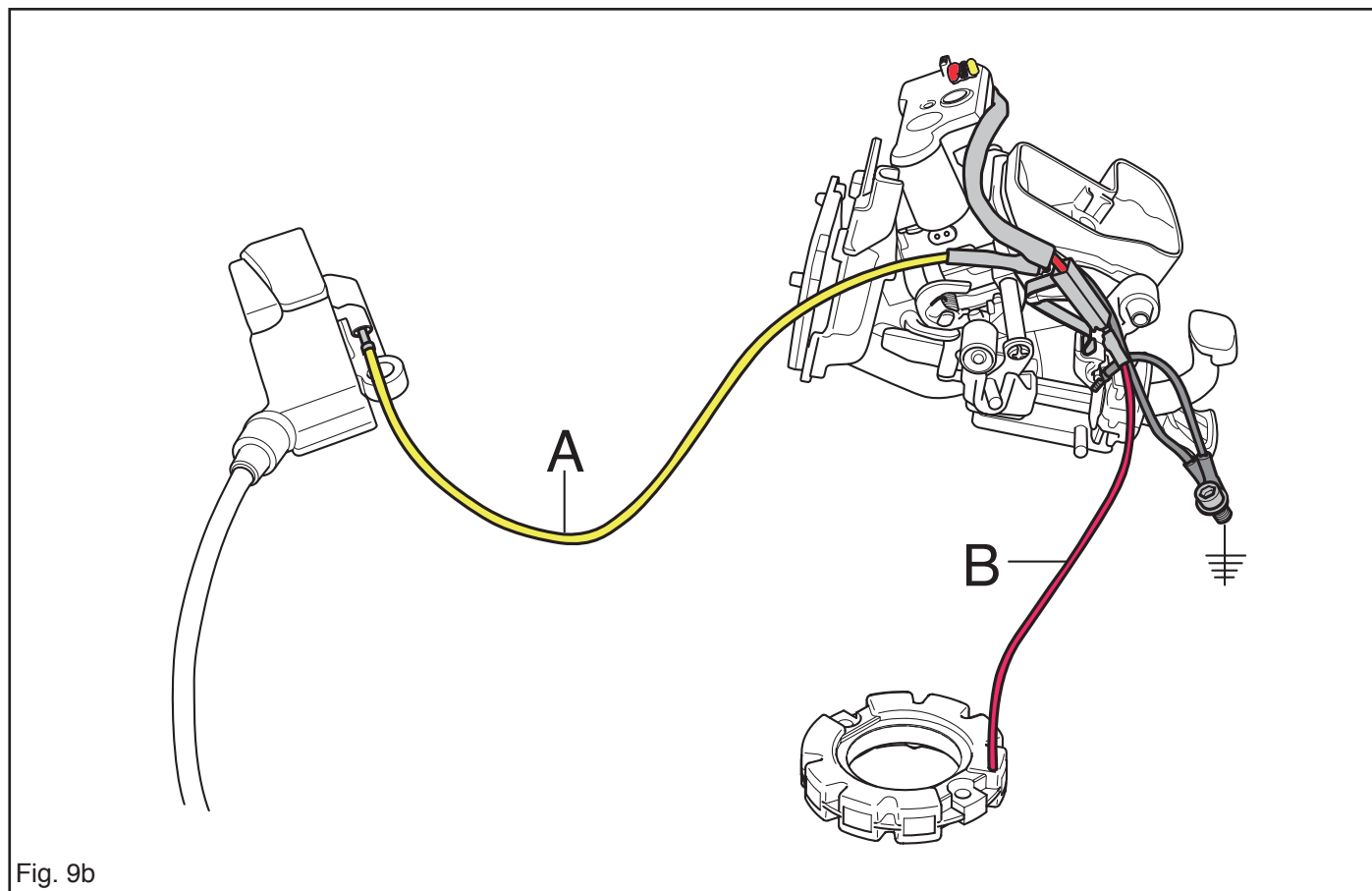
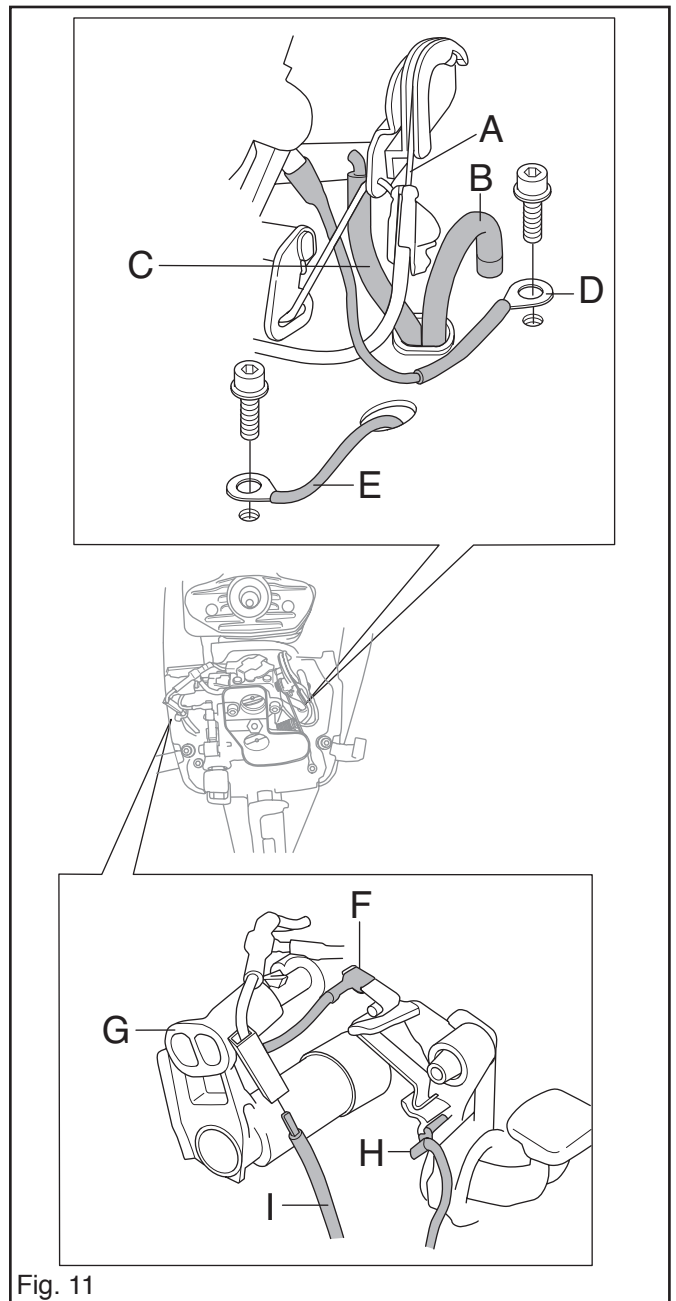
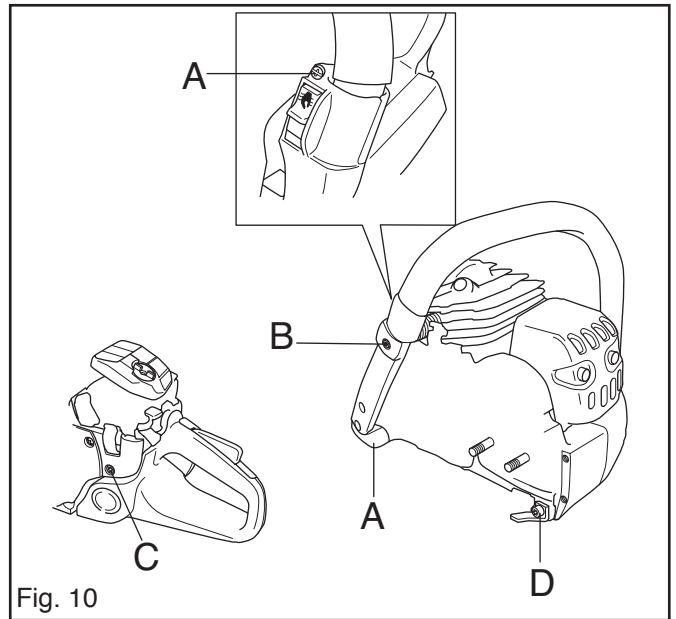


Fig. 9b

ELECTRICAL SYSTEM

Replacing the generator

1. The following components must be removed before the generator can be replaced:
A. Starter. See page 18.
B. Flywheel. See page 20.
2. Remove the bolt for the rear damper element (D) and upper AV spring (B). Remove the bolt on the front AV element (C). See fig. 10.
3. Dismantle the screw on the heater switch (A). See fig. 10.
4. Dismantle the throttle cable (A), impulse hose (B), fuel hose (C), earth cable (D) and (E). See fig. 11.
5. Dismantle the sleeve on the carburettor adjustment, short-circuit cables (F) and (H). Loosen the cable (I) on the carburettor heater. See fig. 11.



ELECTRICAL SYSTEM

6. Dismantle the cables (A) and (B) on the heater switch. Loosen connection (C). See fig. 12.

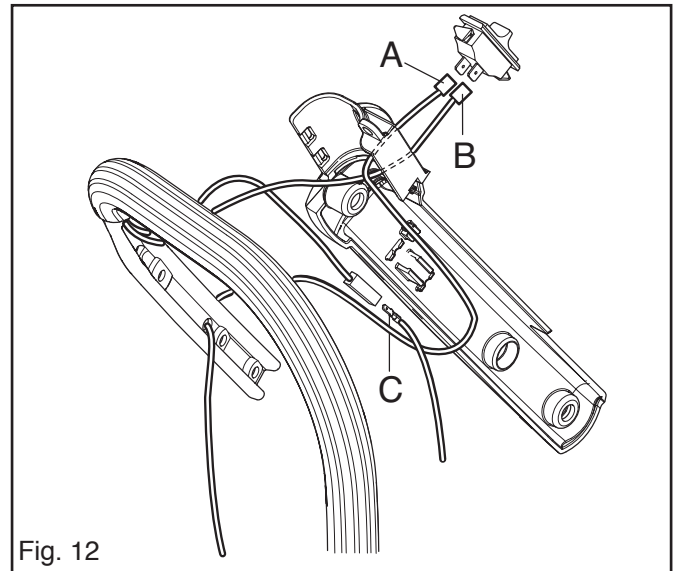


Fig. 12

7. Loosen the cable fastening on the tank. See fig. 13.

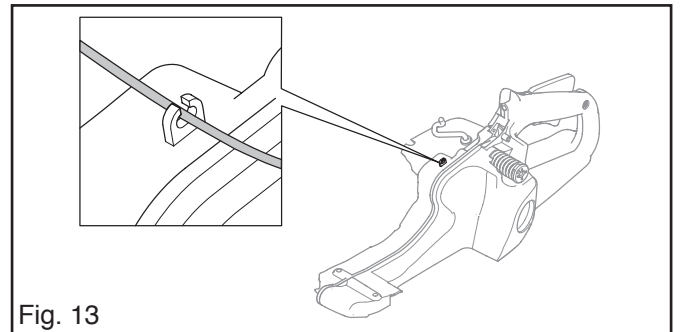


Fig. 13

8. Dismantle the screws (A) on the generator. See fig. 14.

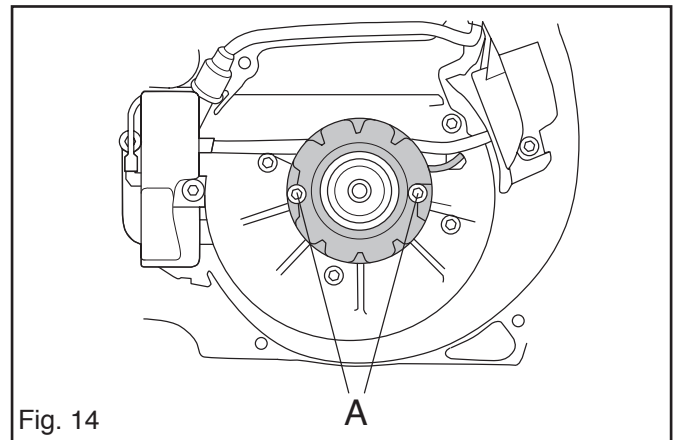


Fig. 14

Replacing the switch

1. Remove the switch and disconnect the cables. See fig. 12.
2. Fit the cables on the new switch and press in the switch.

Replacing the heating element in the tank unit

1. Remove the rear hand grip insert (A). See fig. 15.
2. Remove the cable connections (C and B). See fig. 15.
3. Fit the heating element and cable connections.

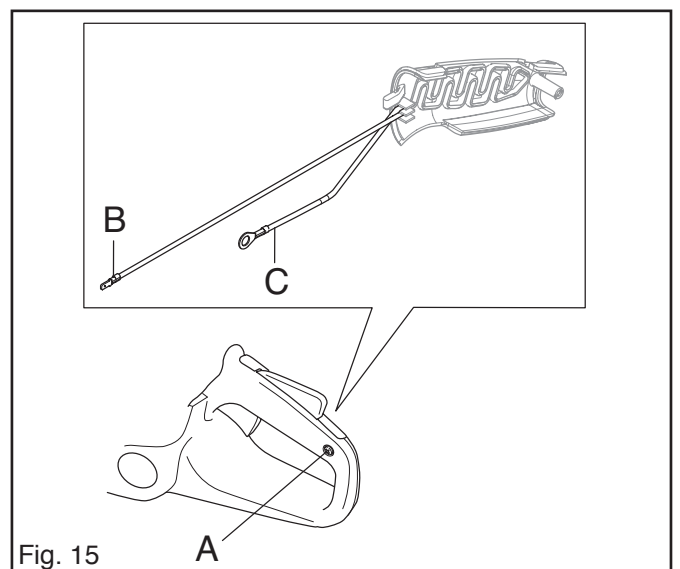
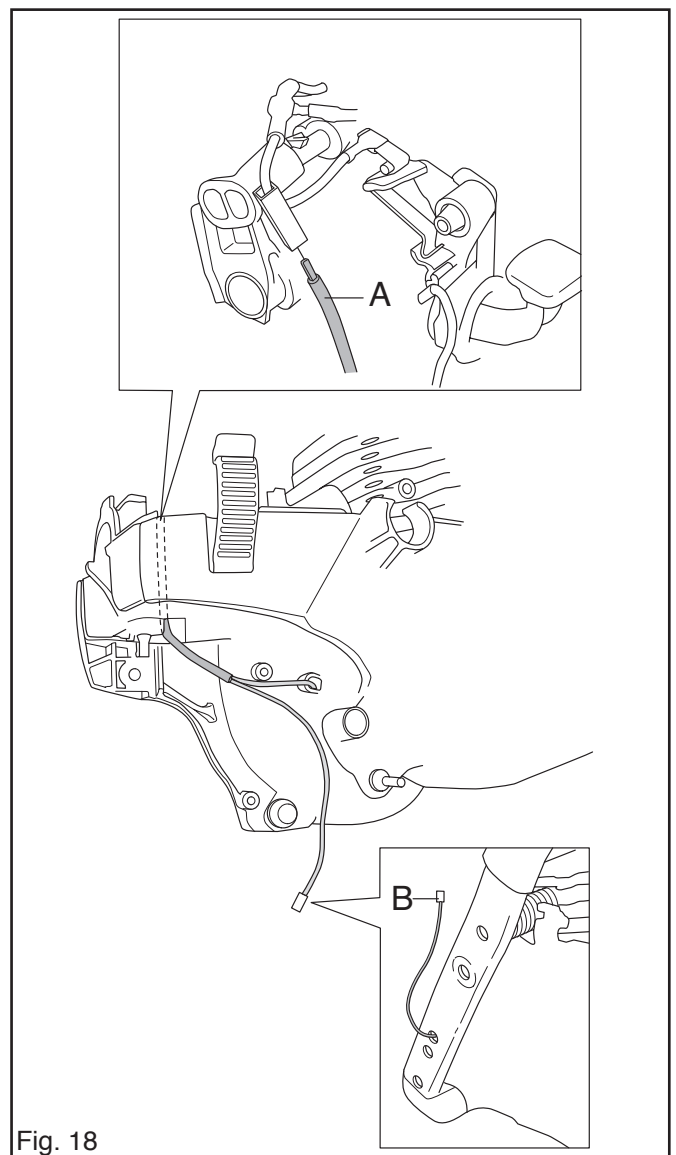
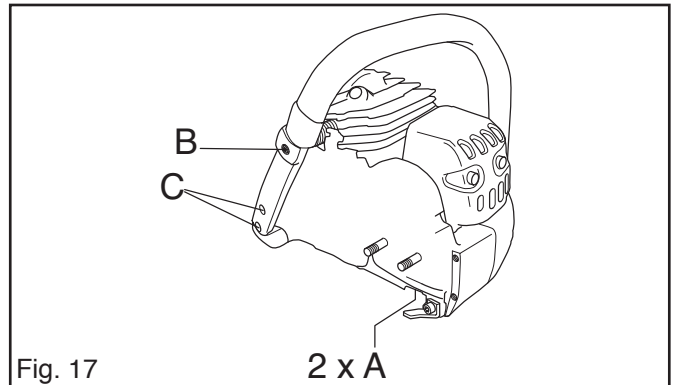
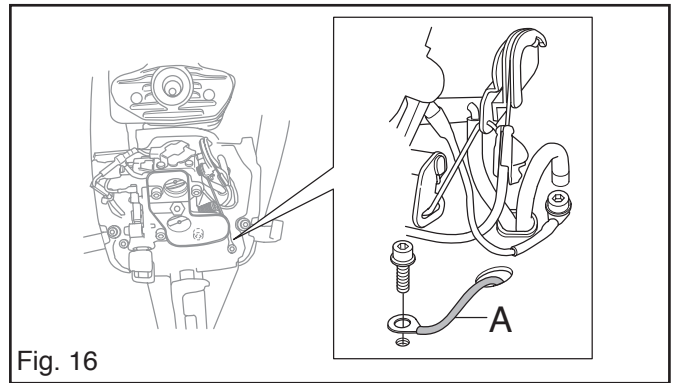


Fig. 15

ELECTRICAL SYSTEM

Replacing the front hand grip

1. Dismantle the earth cable. See fig. 16.
2. Remove the five bolts (A, B and C) which hold the front hand grip. See fig. 17.
3. Fit the new front hand grip by screwing in the five bolts (A, B and C). Tighten the bolts to 4 Nm. See fig. 17.
4. Connect the two cables (A and B). See fig. 18.
5. Fit the earth cable (A). See fig. 16.



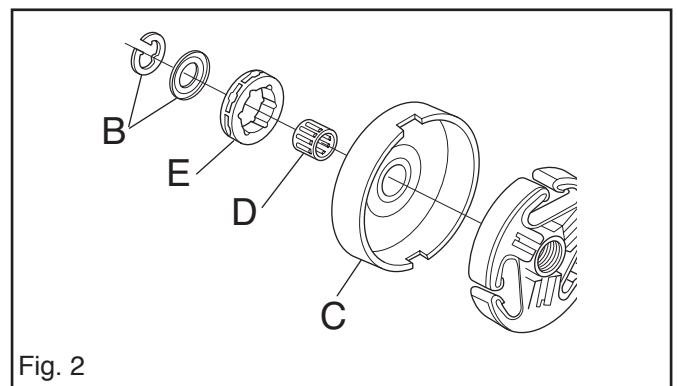
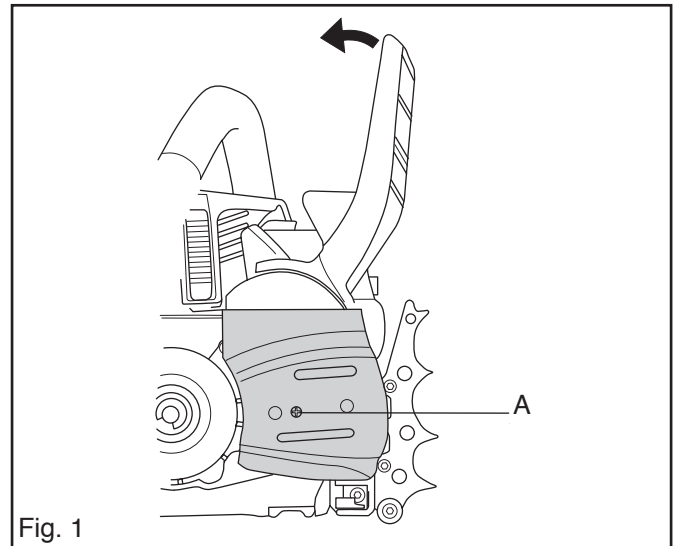
CENTRIFUGAL CLUTCH

Centrifugal clutch

Dismantling

When dismantling the centrifugal clutch the chain brake must be in the off position.

1. Remove the cylinder cover, chain and bar. See Operator's Manual.
2. Remove the chain guide plate by unscrewing the bolt (A). See fig. 1.
3. Remove the locking ring (B) with washer and lift up the clutch drum (C) with needle bearing (D) and chain drive sprocket (E). See fig. 2.

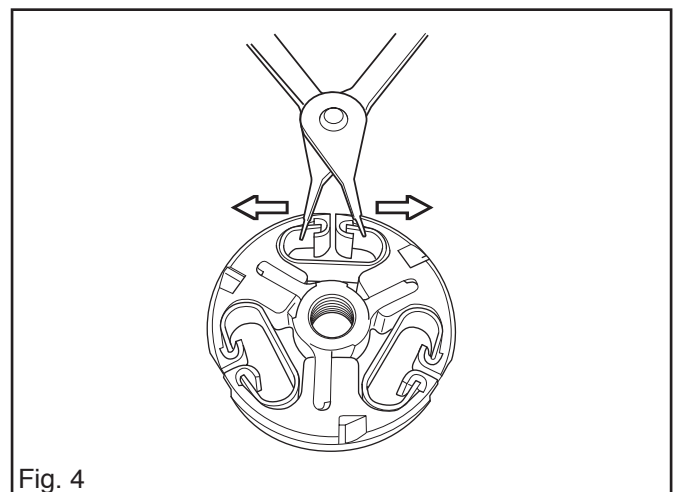
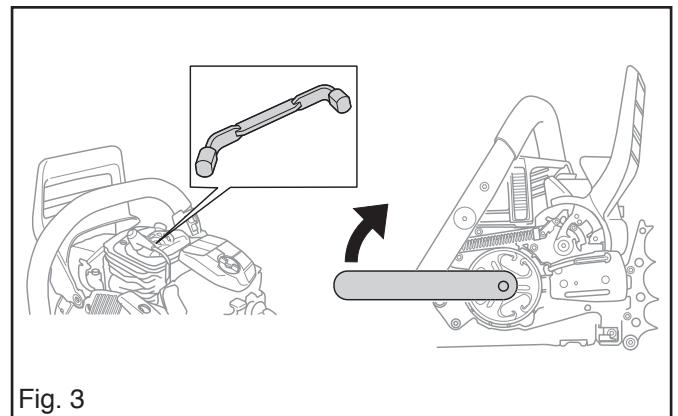


4. Remove the spark plug and fit the piston stop. Remove the clutch with the clutch tool. Note! Left-hand thread. Screw in the direction of the arrow as shown in fig. 3.

NOTE!
The clutch springs must not opened more than is necessary. Risk of deformation.

The following steps (5-6) describe the dismantling of clutch.

5. Stretch out the springs with circlip pliers and press them out from the clutch hub.
6. A complete clutch or springs are available as spare parts.

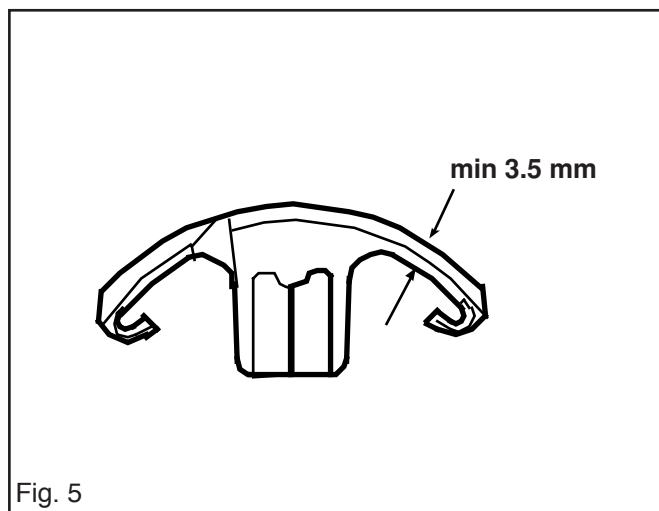


CENTRIFUGAL CLUTCH

Cleaning and inspection

Clean all components and check the following:

1. The lining thickness on the clutch shoes must not be less than 3.5 mm at the most worn point. See fig. 5.
2. There should be no play between the clutch shoes and the clutch hub.
3. Wear on the chain drive sprocket.
4. The needle bearing should be in good condition and the journal surface on the crankshaft undamaged.
5. The friction surface on the clutch drum should be intact and the bearing surface undamaged.



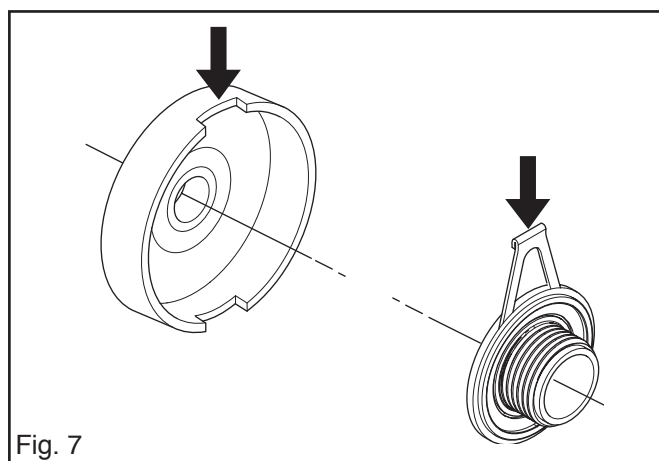
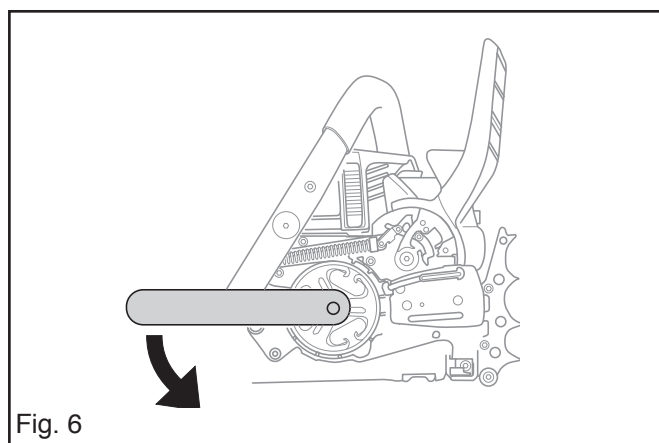
Assembly

When assembling the centrifugal clutch the chain brake must be in the off position.

1. Fit the clutch shoes on the hub and fit the springs with circlip pliers. See fig. 4.

NOTE!
The clutch springs must not be opened more than is necessary. Risk of deformation.

2. Fit the clutch hub on the crankshaft and tighten with the clutch tool. Note – left-hand thread! See fig. 6.
3. Remove the piston stop and fit the spark plug and put on the ignition cable.
4. Grease in the needle bearing before fitting. Fit the clutch drum (C) with needle bearing (D) and chain drive sprocket (E). See fig. 2 page 26.
5. Exercise care to ensure that the clutch drum and oil pump gear fit in the drum's cut-out. See fig. 7.
6. Fit the washer and locking ring (B). See fig. 2.
7. Fit the cylinder cover, chain and bar. See Operator's Manual.



LUBRICATION SYSTEM

Lubrication system



WARNING!
Insufficient lubrication of the chain can result in the chain breaking, which can cause serious or even life-threatening injury.

The lubrication system consists of the following parts:

- Oil pump.
- Suction pipe with filter.
- Oil pipe with seals.

All the above parts are described in sequence under the headings that follow.

Dismantling

1. Empty and clean the oil tank.
2. Dismantle the following parts:
 - Chain and bar. See the Operator's Manual.
 - Bar guide plate, clutch drum and the centrifugal clutch. See page 26, fig. 1 and 2.
3. Dismantle the oil pump gear (A). See fig. 1.
4. Remove the two bolts (B) and lift up the oil pump from the crankcase. See fig. 2.
5. Use a screwdriver to push up the oil hose at C. Lift up the hose and pull it out of the oil pump. See fig. 2.
6. Use pointed pliers and pull up the suction pipe (D) with filter. See fig. 2.
7. Remove the clip (E) and unscrew the adjuster screw (F). See fig. 3.
8. Use a pair of pliers and push on the pump piston at G so that the cover plug (H) and pump piston (I) can be removed. See fig. 3.
9. Use a pair of pliers and pull out the spring (K) and 2 washers (J). See fig. 3.

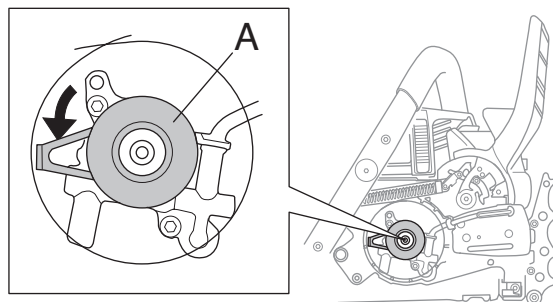


Fig. 1

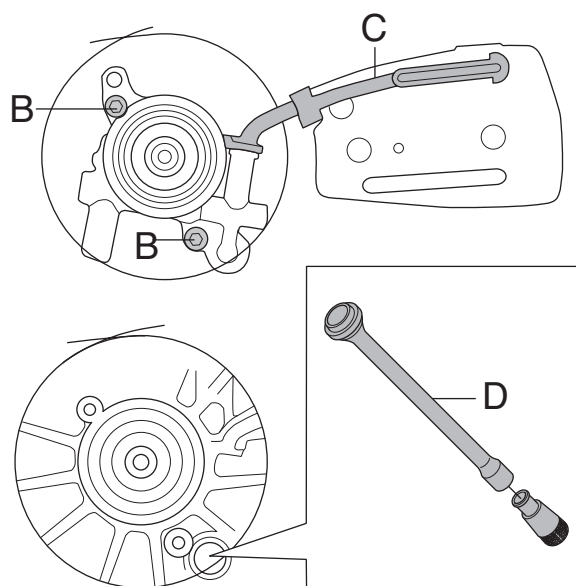


Fig. 2

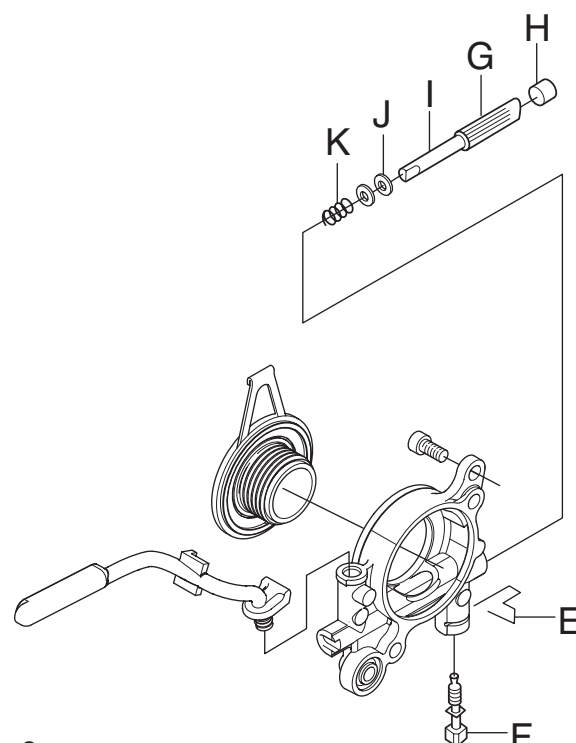


Fig. 3

LUBRICATION SYSTEM

Cleaning and inspection

Clean all parts, including the pump and oil pipe mounts in the crankcase, and check the following:

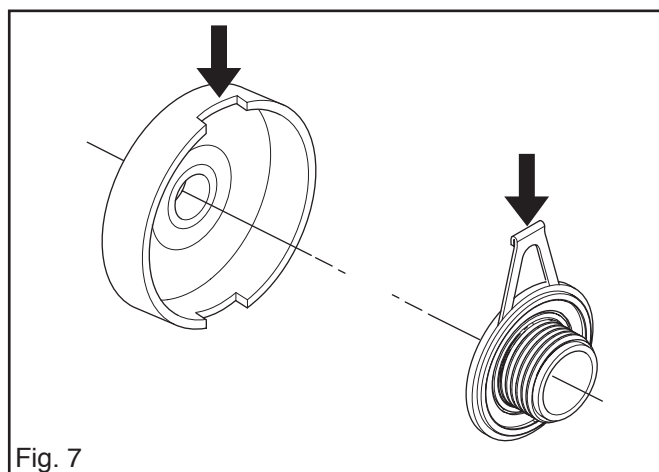
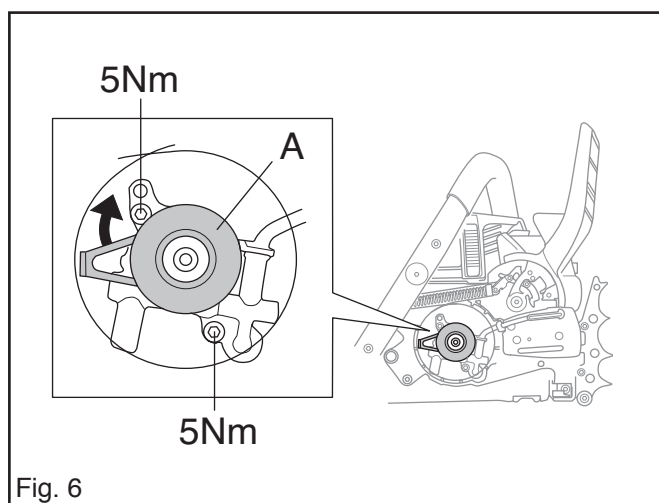
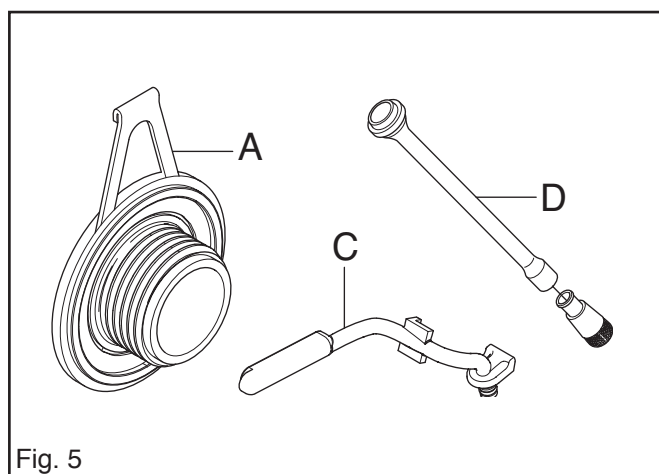
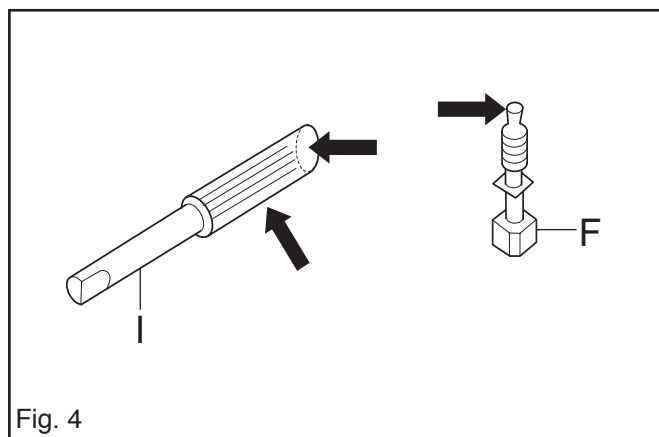
1. The taper on the adjuster screw (F) should not have any wear marks. See fig. 4.
2. The eccentric face on the pump piston (I) should not have any wear marks. See fig. 4.
3. The gear on the pump piston (I) should be undamaged. See fig. 4.
4. The oil pump drive's worm gear (A) should be undamaged. See fig. 5.
5. The oil pipe (D) should be free from impurities and the filter clean.
6. The oil hose should be free from impurities and its seals undamaged.

Assembly

1. Insert the suction pipe (D) in the hole in the crankcase. See fig. 2.
2. Put the spring (K), 2 washers (J) on pump piston (I) and fit in the pump housing. Oil in all parts with chain oil. See fig. 3.
3. Use a screwdriver to press in the pump piston and screw home the adjuster screw (F). See fig. 3.
4. Fit the cover plug (H). See fig. 3.
5. Fit the clip (E). See fig. 3.
6. Fit the oil pump in the crankcase. Fit the oil hose with seals. See fig. 2.
7. Tighten the bolts to 5 Nm. See fig. 6.
8. Fit the oil pump gear. See fig. 6.
9. Assemble the following parts:
 - The centrifugal clutch.
 - The other parts of the saw. See the Operator's Manual.
10. Exercise care to ensure that the clutch drum and oil pump gear fit in the drum's cut-out. See fig. 7.
11. Adjust the pump feed rate as described below.
12. Refill with chain oil and check the lubrication. See the Operator's Manual.

Adjusting the pump feed rate

See Operator's Manual.



CARBURETTOR

Carburettor



WARNING!

The fuel used in the chainsaw has the following hazardous properties:

1. The fluid and its fumes are poisonous.
2. Can cause skin irritation.
3. Is highly inflammable.

Description

The drawings accompanying this description do not correspond with the carburettor on the chainsaw. They only show the principle for the design and function.

Design

The carburettor is based on three sub-systems:

- The metering unit, A in fig. 1.
- The mixing venturi, B in fig. 2.
- The pump unit, C in fig. 3.

The jets and the fuel's control functions are located in the metering unit (A). Here the correct quantity of fuel is adjusted for the actual speed and power output.

The mixing venturi (B) houses the choke, throttle valve and diffuser jets. Here air is mixed with the fuel to give a fuel/air mixture that can be ignited by the ignition spark.

In the pump unit (C), fuel is pumped from the fuel tank to the metering unit. One side of the pump diaphragm is connected to the crankcase and pulses in time with the pressure changes in the crankcase. The other side of the diaphragm pumps the fuel.

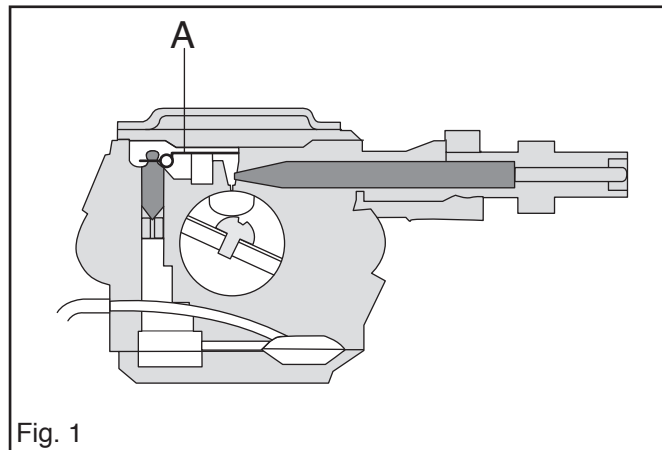


Fig. 1

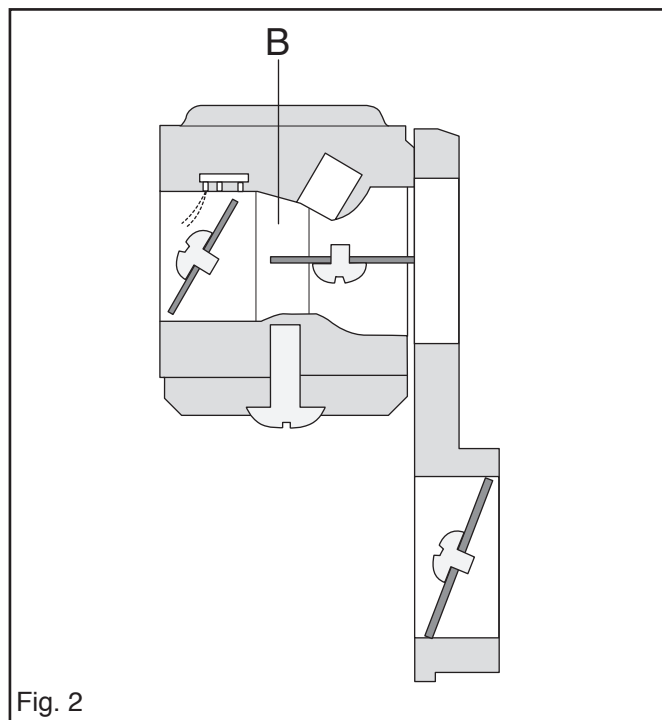


Fig. 2

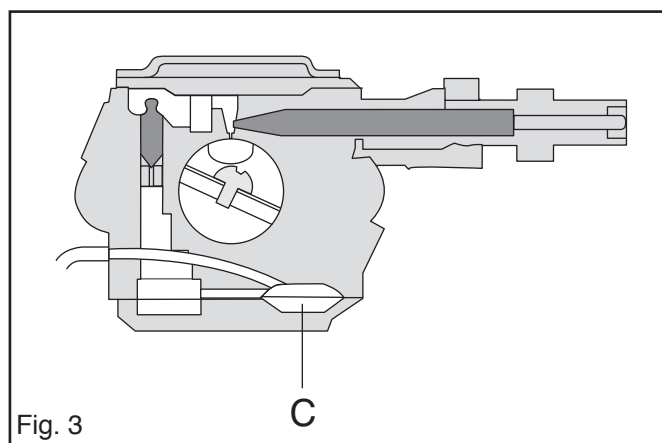


Fig. 3

CARBURETTOR

Function

The carburettor operates differently in the following modes:

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

In the cold start mode (fig. 4) the choke valve (H) is fully closed. This increases the vacuum in the carburettor so that fuel is sucked more easily from all the diffuser jets (D, E and F). The throttle valve (I) is partly open. Extra air inlet (J) is closed.

In the idling mode (fig. 5) the throttle valve (I and J) is closed.

Air is sucked in through an aperture in the throttle valve and a small amount of fuel is supplied through the diffuser jet (D).

In the part throttle mode (fig. 6) the throttle valve (I) is partially open. Fuel is supplied through the diffuser jets (D and E).

In full throttle mode (fig. 7) all valves are open and fuel is supplied through all diffuser jets (D, E, F and G). Extra air inlet (J) is also fully opened.

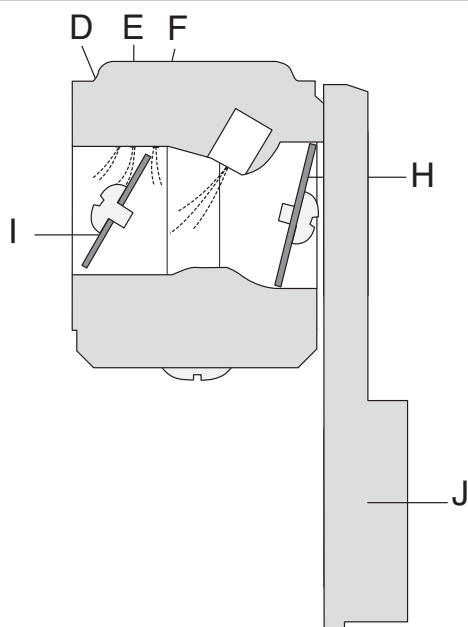


Fig. 4

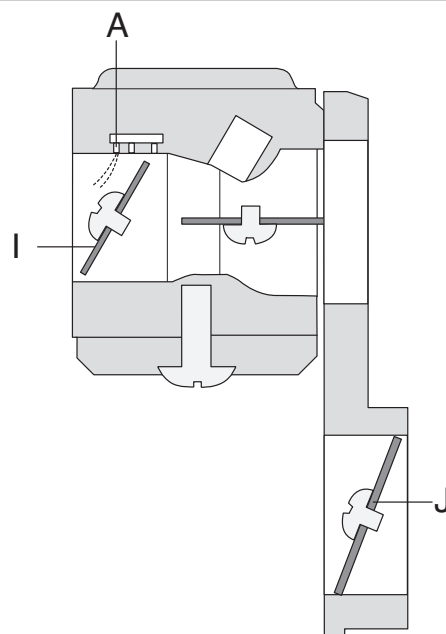


Fig. 5

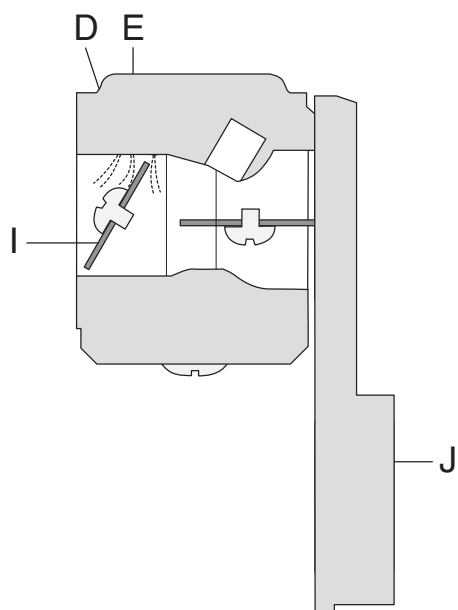


Fig. 6

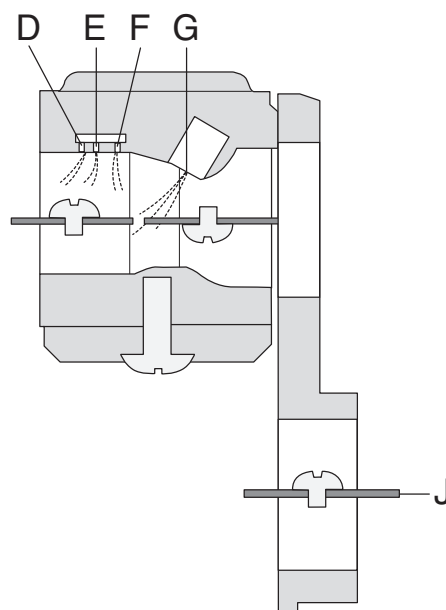


Fig. 7

CARBURETTOR

Dismantling



WARNING!

The fuel used in the chainsaw has the following hazardous properties:

1. The fluid and its fumes are poisonous.
2. Can cause skin irritation.
3. Is highly inflammable.

1. Remove the cylinder cover and air filter.
2. Remove the carburettor control (D) by pulling. Disconnect switch wires (E and F). See fig. 8.
3. Unhook the throttle cable (A). See fig. 8.
4. Remove the fuel pipe (B).

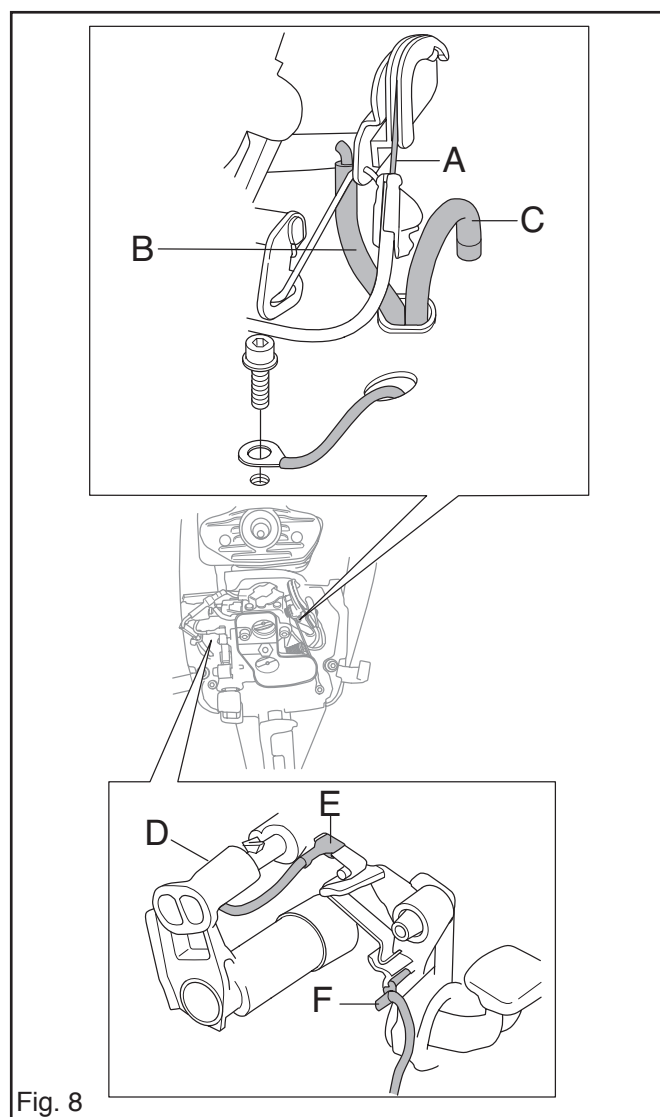


Fig. 8

5. Remove 4 bolts (G) which secure the filter holder, carburettor and choke system.
6. Loosen the filter holder and disconnect the rear rubber mounts (H). See fig. 9.
7. Remove the filterholder with carburettor and choke system. See fig. 9.

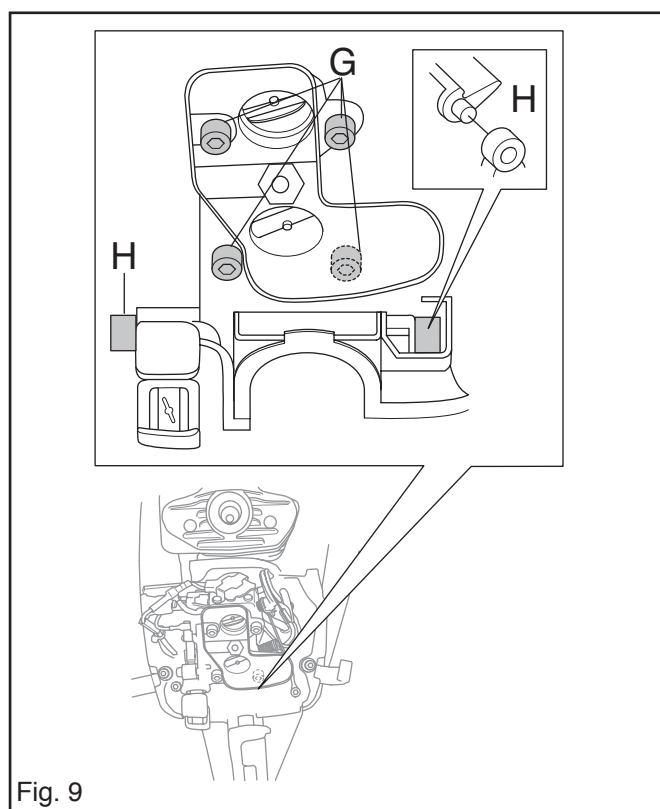
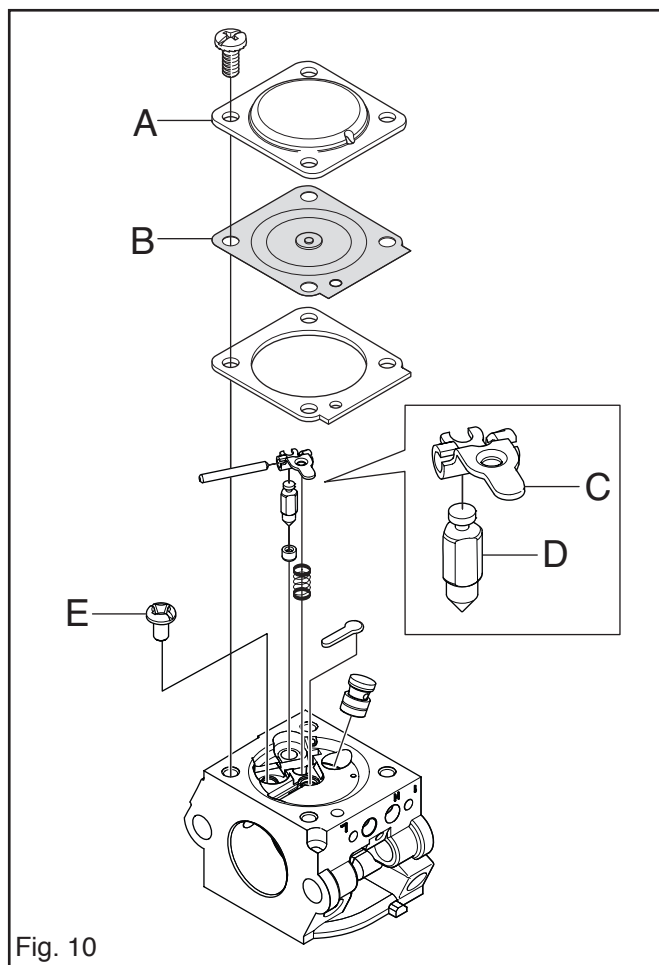


Fig. 9

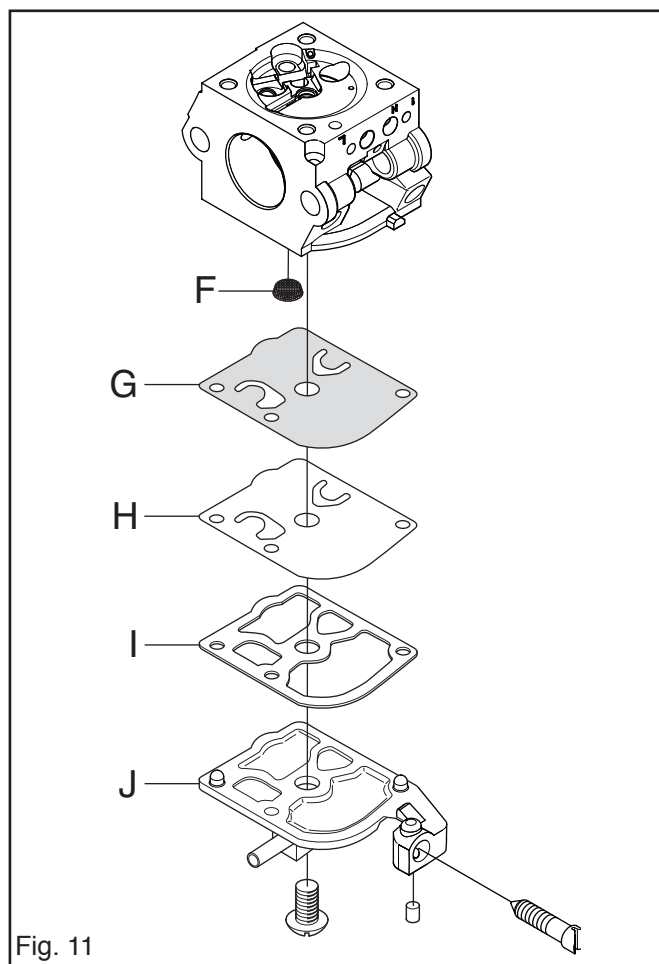
CARBURETTOR

Carburettor

8. Remove the cover (A) over the metering unit and carefully remove the metering diaphragm (B) and gasket. See fig. 10.
9. Remove the screw (E) and take out the needle valve (D) with lever (C) and spindle and spring. See fig. 10.



10. Remove the cover (J) over the pump unit and carefully remove the gasket (I) and pump diaphragm (H and G). NOTE! The carburettor has two diaphragms. One pump diaphragm (G) and one backup diaphragm (H). See fig. 11.
11. Use a needle or the like to carefully remove the fuel filter (F). See fig. 11.
12. Remove caps with the high and low speed screws. NOTE! Both needles are fitted with O-rings. See fig. 13.
13. If necessary, remove the throttle and choke valves and remove the spindles together with levers and springs. See fig. 12.



CARBURETTOR

Cleaning and inspection



WARNING!

Fuel has the following hazardous properties:

1. The fluid and its fumes are poisonous.
2. Can cause skin irritation.
3. Is highly inflammable.

Clean all units in clean petrol.



WARNING!

Never direct the compressed air jet towards the body. Air can penetrate into the blood circulation, which means mortal danger.

Use compressed air to dry the petrol on the components. Direct the air through all channels in the carburettor housing and make sure that they are not blocked.

See fig. 10, 11 and 12 and check the following:

1. That gaskets, pump and control diaphragms are undamaged.
2. That there is no play on the throttle and choke valve shafts.
3. The needle valves and lever are not worn at C and D in fig. 10.
4. The fuel filter is undamaged. See L in fig. 11.

5. The tips of the high and low speed screws are not damaged.
6. The intake manifold is undamaged. See page 44.
7. The carburettor has an extra air shutter connected in parallel with the ordinary throttle valve. The valve housing with axle is secured in the carburettor using two screws. The gasket between the carburettor and the valve housing is, if the saw has the designation XPG, replaced by a carburettor heater.

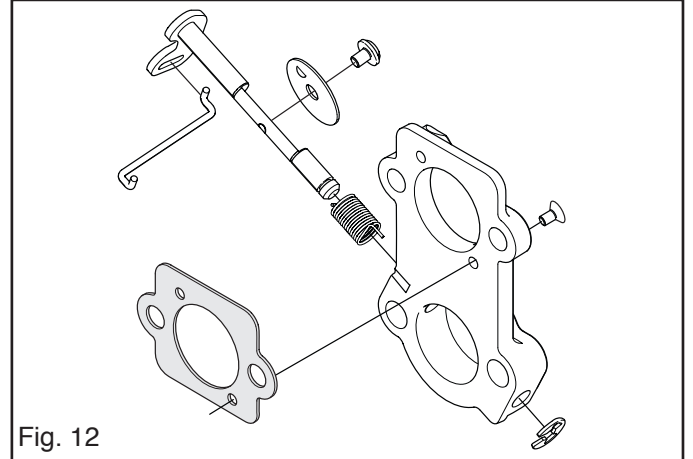


Fig. 12

Zama C1M-EL28

Zama C1M-EL40

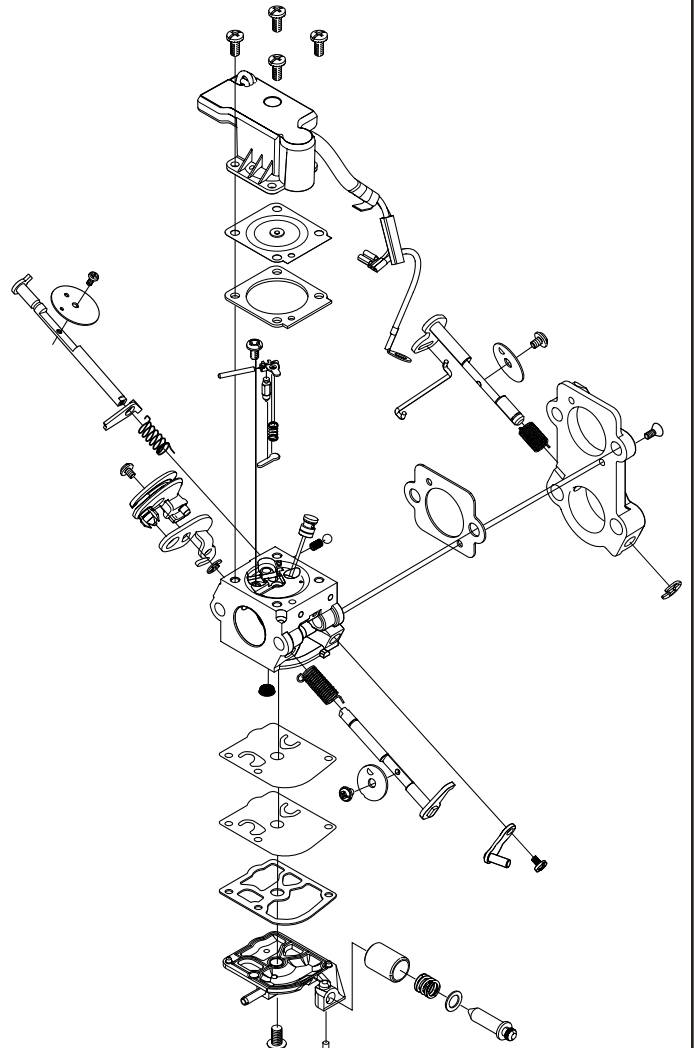
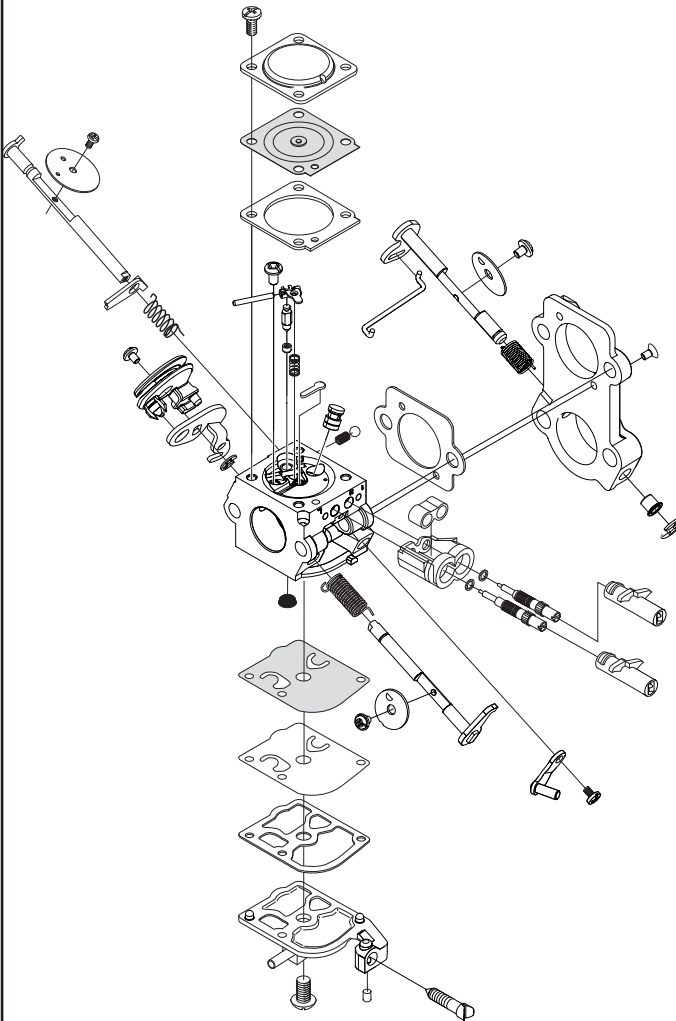


Fig. 13

CARBURETTOR

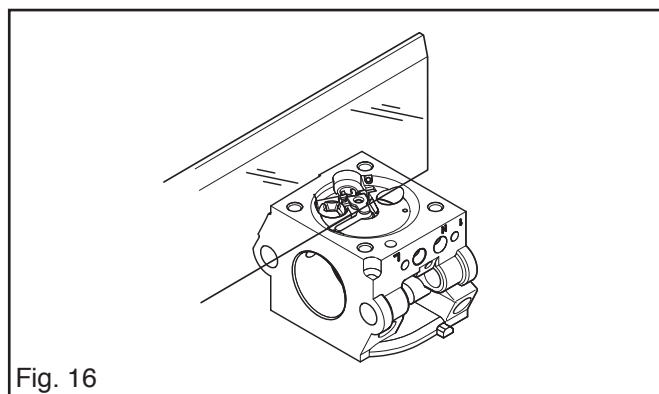
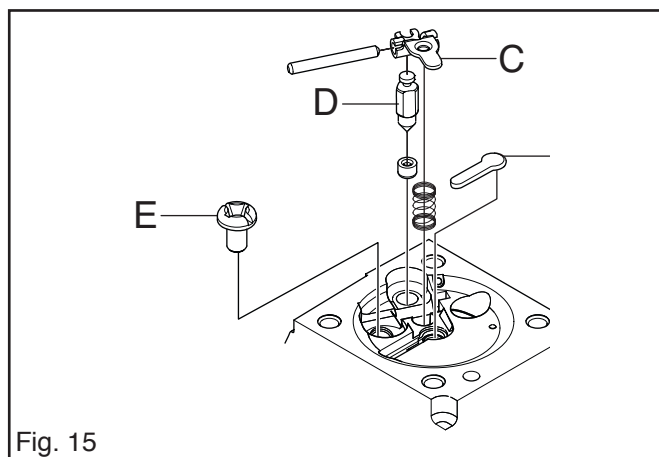
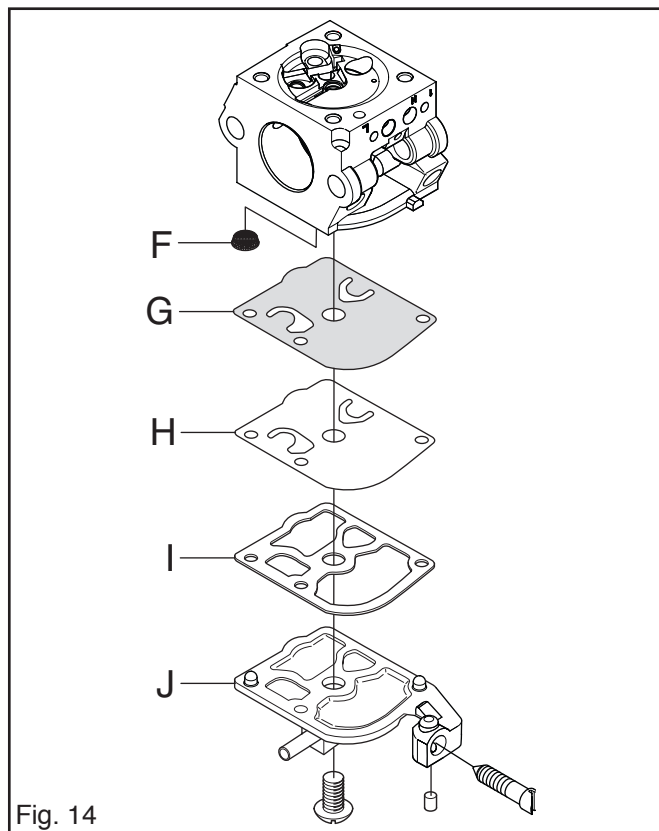
Assembly

Where no figure is referred to, see fig. 12 on the previous page.

Maintain a high level of cleanliness when assembling the carburettor. The slightest contamination can result in running problems.

1. If the throttle and choke valves, together with levers and springs were removed, they should be refitted. Lubricate the spindle bearings with light oil.
2. Fit the high and low speed screws and springs. Note! Do not fully tighten the screws. This will damage the seats and needle tips.
3. Fit the fuel filter (F) by using the handle of a small screwdriver. See fig. 14.
4. Fit the pump diaphragms (G and H), gasket (I) and cover (J) on the pump unit. See fig. 14.
5. Fit the needle valve (D) with lever (C), spindle and spring and tighten the screw (E). See fig. 15.

6. Check with a ruler or the like that the lever is level with the cover face. See fig. 16. If necessary, the lever can be bent slightly.

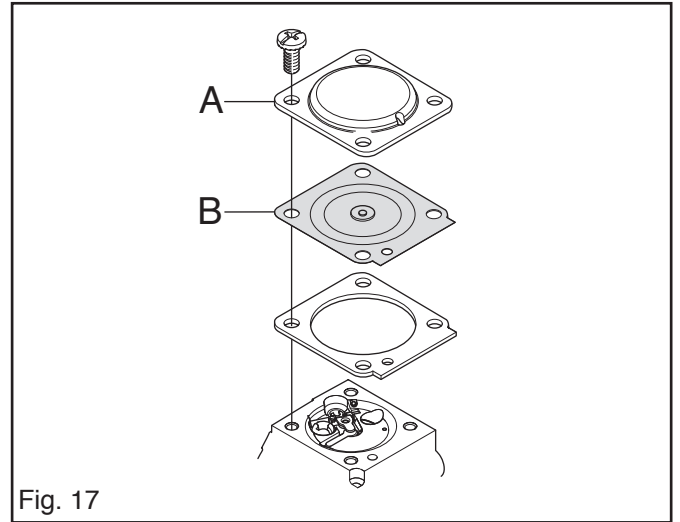


CARBURETTOR

7. Fit the control diaphragm (B) with gasket and cover (A) on the metering unit. See fig. 17.
8. Fit the axle (L) on the air shutter and connect the throttle actuator rod (N) in parallel with the ordinary throttle valve. The valve housing (P) is secured in the carburettor using two screws.

The gasket between the carburettor and the valve housing is, if the saw has the designation XPG, replaced by a carburettor heater.

9. Carry out a pressure test.

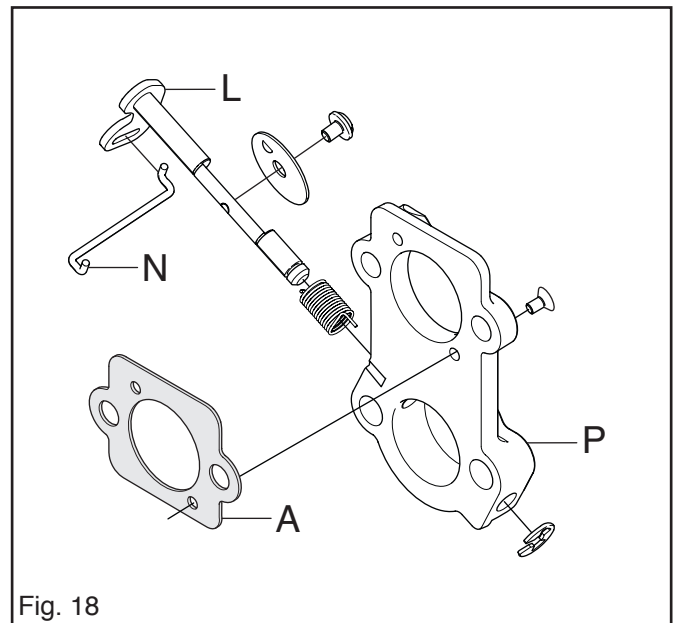


Pressure testing

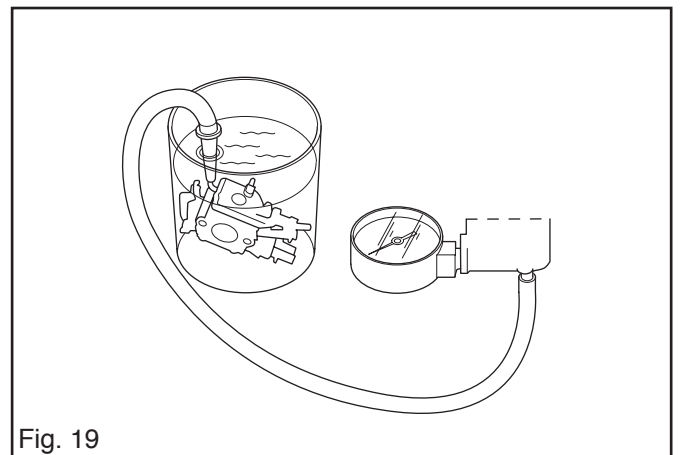
Pressure testing should be carried out with the carburettor fully assembled. Testing should always be carried out after the carburettor has been repaired, but it can also be carried out as trouble shooting before dismantling the carburettor.

See fig. 19 and carry out the test as follows:

1. Unscrew the high and low speed screws one turn from closed position.
2. Connect pressure tester to the carburettor's fuel intake.
3. Lower the carburettor into a beaker of water.
4. Pump up the pressure to 50 kPa (0.5 bar).
5. No leakage is permitted. If a leakage occurs refer to the table below.



Leakage at	Fault with
Diffuser jets	Needle valve
Leakage in impulse tube	Pump diaphragm
Ventilation hole on metering unit.	Control diaphragm

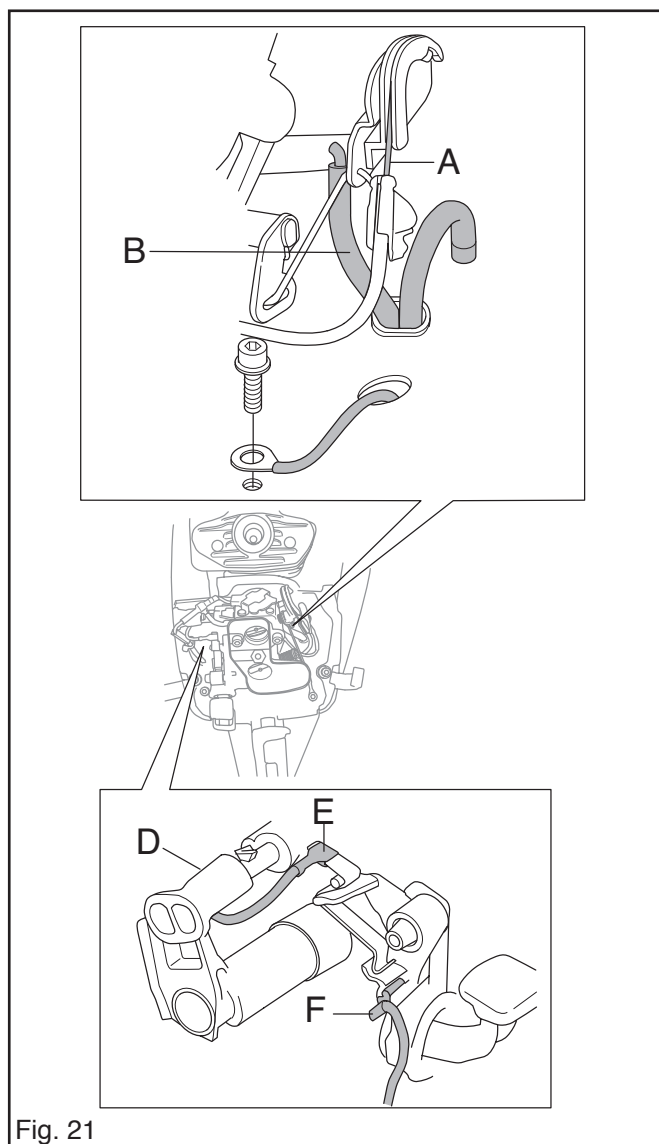
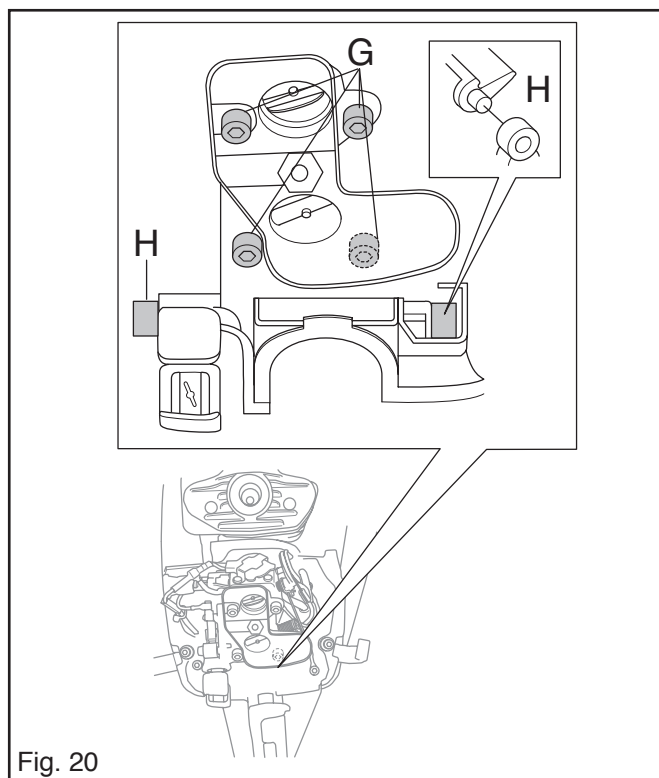


CARBURETTOR

Refitting to the chainsaw

See fig. 20 and 21.

1. Mount the filterholder with carburettor and choke system. Connect the rear rubber mounts (H).
Check that the choke is fitted in the right position in the partition. See page 47, fig. 15.
2. Mount 4 bolts (G) which secure the filter holder, carburettor and choke system.
3. Mount the fuel pipe (B).
4. Connect the throttle cable (A).
5. Connect the switch wires (E and F).
6. Mount the carburettor control (D).
7. Fit the cylinder cover and air filter. See the Operator's Manual.



CARBURETTOR

Basic adjustment for EPA II saws with speed limited ignition systems and capped carburetors

The models 576XP/G and 570 are equipped with speed limited ignition systems and capped carburetors. A slightly different adjustment procedure is necessary when replacing the carburettor or needles on these models.

Tachometer

Due to the integrated speed limitation in the ignition system most tachometers will not indicate a speed above the value that the speed limitation is set to.

Speed limitation regulates at:

570	13,300 rpm
576XP/G	13,300 rpm

Capped carburettor

This means that this chain saw is equipped with movement limiters on the carburettor's adjuster screws. These limit the adjustment range to a maximum of 1/2 turn.

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 EPA certified products only.

On EPA carburetors 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 from the factory over the caps to lock them in maximum allowed settings.

When correctly set the caps must be fixed on the needles. The adjustment sleeve then can be removed. Over the caps on complete sparepart carburettor, there is a plastic sleeve which is intended to lock the caps at the richest position (anticlockwise towards stop) during the time that the needles are adjusted. When the adjustment is complete and the caps have been fixed on the needles, the sleeve is no longer of any function and can be removed.

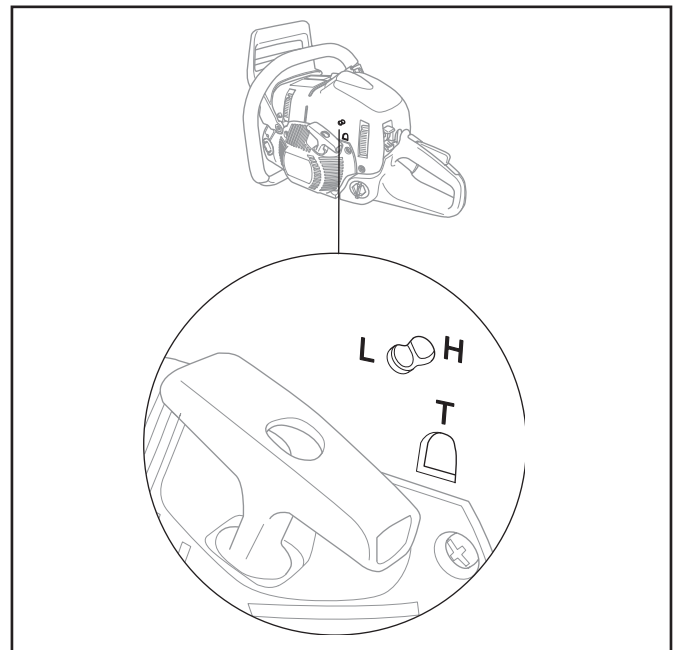
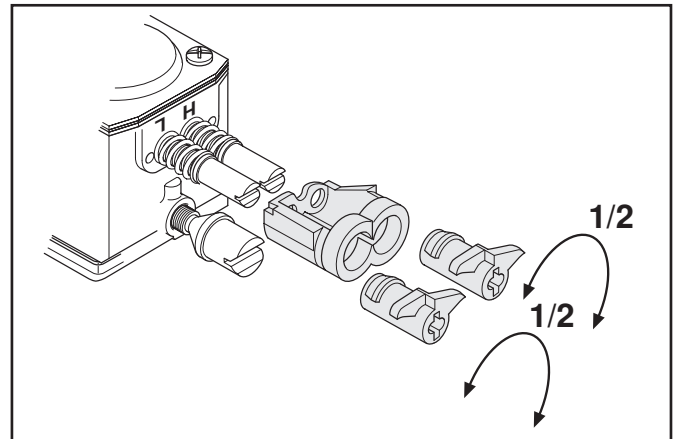
Conditions

- The air filter should be clean and the cylinder cover fitted when adjustments are made. Adjusting the carburettor with a dirty air filter will give a too lean fuel mixture the next time the air filter is cleaned. This can result in serious damage to the engine.
- Mount, for this model, approved bar and chain combination (see Technical data in the Operator's Manual).

Model

570	18"
576XP/G	20"

- The chain should not be tensioned more than that it remains ~ 0,2 inches to the bar.



Replacement of the H-needle or complete carburettor

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

Model

570	A = 2
576XP/G	A = 3

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 "B" rpm. Use a tachometer.

Model

570	B = 13 000
576XP/G	B = 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).

CARBURETTOR

- Let the engine run at "B" rpm ~ 1 minute, until warm.
- Close the H-needle further "C" turn on a scale to get correct setting.

Model

570	C = 1/4
576XP/G	C = 3/4

Tachometer

Due to the integrated speed limitation in the ignition system most tachometers will not indicate a speed above the value that the speed limitation is set to.

Speed limitation regulates at:

570	13 600 rpm
576XP/G	13 600 rpm

- Check that the H-cap is still adjusted to its richest setting (turned counterclockwise to stop). Note! The H-needle must not rotate!
- Gently knock the H-cap into position. Use a 5 mm/0,2 inch mandrel (for example 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

- Take off the cap from the L-needle using a pair of cutting pliers and unscrew the needle.
- Screw the new L-needle to the bottom and then turn it counterclockwise "D" turns.

Model

570	D = 1,5
576XP/G	D = 1,5

- 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.
- Adjust the L-cap to the richest position (turned counterclockwise to stop) without turning the needle.
- Let the engine run at ~ "E" app. 1 minute until warm and then let it run on idle.

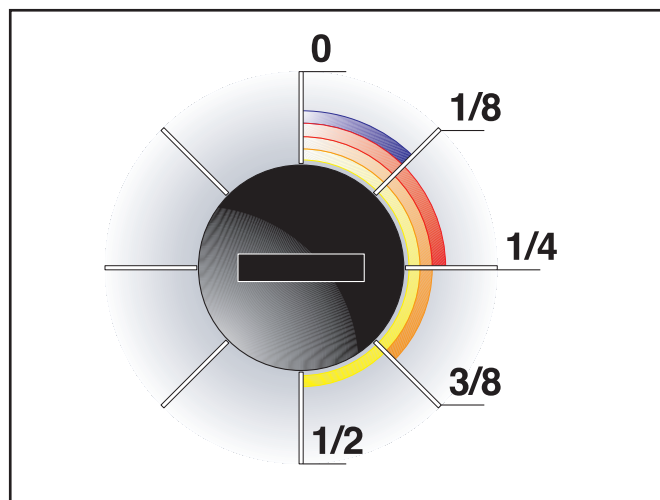
Model

570	E = 13 000
576XP/G	E = 13 000

- Adjust the idle speed to "F" rpm.

Model

570	C = 2700
576XP/G	C = 2700



- Adjust the L-needle until the highest possible idling speed is achieved and then turn the L-needle 1/2 turn counterclockwise. Use a narrow blade screwdriver (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.
- Check that the L-cap is still adjusted to its richest position (turned counterclockwise to stop). Note! The L-needle must not rotate!
- Gently knock the L-cap into position. Use a 5 mm/0,2 inch mandrel (for example 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.

CARBURETTOR

Adjustment of the air screw (570 AT, 576 XP/G AT)

1. Warm up the motor. Assess any hesitation in acceleration. Adjustment is not necessary if motor acceleration is good. Continue with step 2 if there is any hesitation in acceleration.
2. Turn off the motor and remove the cylinder cover.
3. Screw the air screw $\frac{1}{4}$ turn clockwise with screwdriver 530 03 55-60 (Fig. 1). Make sure the rotation angle of the throttle axle changes by looking at the movement of the lever arm (Fig. 2). Then replace the cylinder cover, warm up the motor and test the product again.
4. Repeat steps 2 and 3 a maximum of 4 times (1 turn) until the motor accelerates well.
5. Check that the idle speed is $2,700 \text{ rpm} \pm 100 \text{ rpm}$.

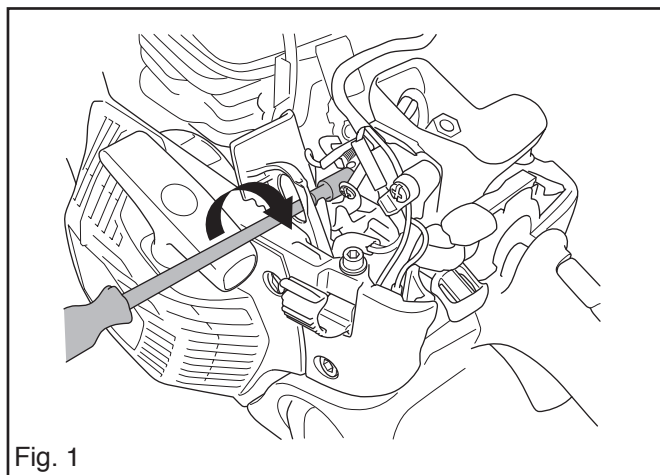


Fig. 1

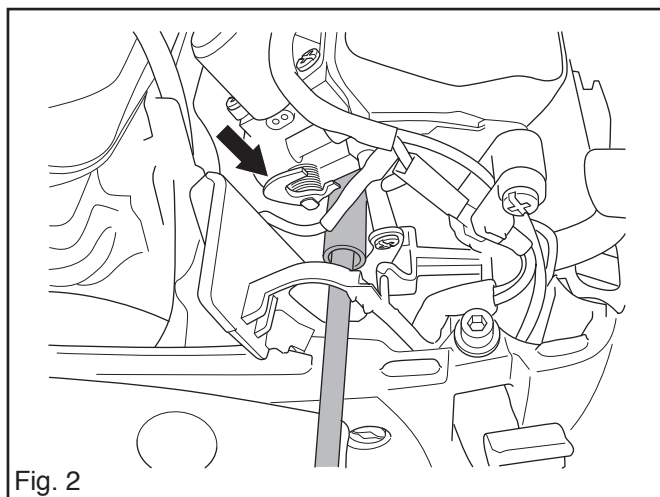


Fig. 2

TANK UNIT

Tank unit



WARNING!

The fuel used in the chainsaw has the following hazardous properties:

1. The fluid and its fumes are poisonous.
2. Can cause skin irritation.
3. Is highly inflammable.

Dismantling

1. Drain off the fuel from the tank.
2. Remove the cylinder cover, chain and bar.
See the Operator's Manual.
3. Unhook the throttle cable (A) from the carburettor.
See fig. 1.
4. Remove the fuel pipe (B) from the carburettor and tankvent hose (C).
5. Remove the bolts (D, F and G). Remove front handle. See fig. 2.
6. Remove the bolts (E and H). Remove fuel tank. See fig. 2.

NOTE!

Take care not to damage the fuel pipe and throttle cable.

7. If necessary, lift out the fuel pipe and pull off the fuel filter (D).

Changing the fuel hose

Use a pair of pliers with smooth jaws and pull up the hose's bushing (E). See fig.3.

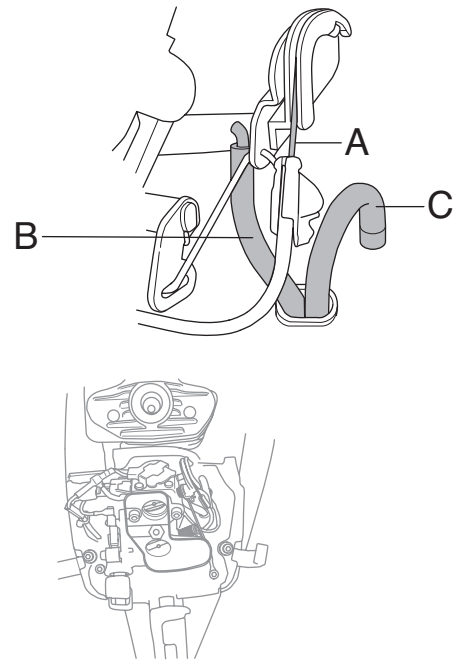


Fig. 1

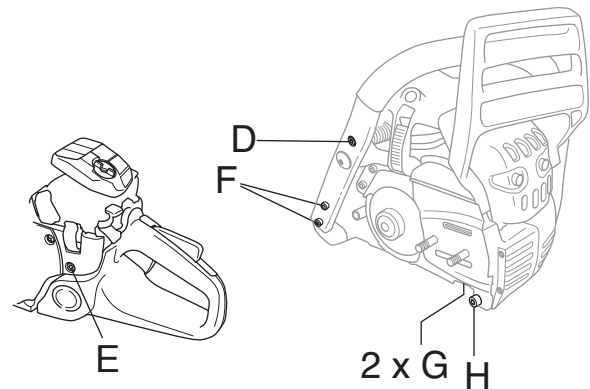


Fig. 2

Tank valve

The tank valve (C) is a two-way valve and has the following features:

- Controlled opening pressure in both directions, which prevents excess of pressure or vacuum developing in the fuel tank and impairing engine operation.
- Resistant to clogging with dirt.
- Resistant to icing up during winter operation.
Venting pressure 150-400 mbar. Opening pressure under vacuum, max. 115 mbar.

Note! Compressed air must not be used for cleaning or pressure testing as this will damage the valve components.

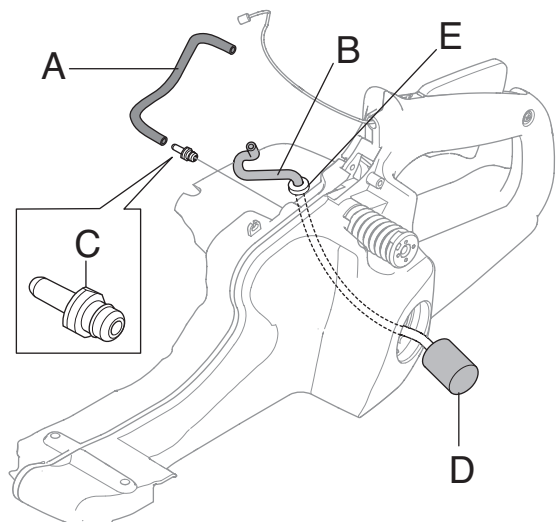


Fig. 3

TANK UNIT

Cleaning and inspection

Clean all parts and check that the fuel pipe is intact.

Assembly

1. If the chainsaw is fitted with hand grip heating, fit the heating element if it has been removed.
See page 22 and 24.

NOTE!

Take care not to damage the fuel pipe and throttle cable.

2. If the throttle lock has been removed, it should be refitted before the tank unit and engine unit are assembled. See page 17.
3. Lift the engine unit over the tank unit and push the fuel, tankvent pipe and throttle cable into their holes in the bottom of the carburettor space.
4. Fit the bolts (E and H). See fig. 2. Tighten the bolts to the torque in the service data, page 10 and 11.
5. Fit front handle with the bolts (D, F and G). See fig. 2. Tighten the bolts to the torque in the service data, page 10 and 11.
6. Fit the fuel pipe (B) on the carburettor and tankvent pipe (C). See fig. 1.
7. Insert the throttle cable casing in the attachment and hook on the throttle cable (A) on the carburettor.
See fig. 1.
8. Fit the cylinder cover, guide chain and bar.
See the Operator's Manual.

ANTI-VIBRATION SYSTEM

Anti-vibration system



WARNING!

The fuel used in the chainsaw has the following hazardous properties:

1. The fluid and its fumes are poisonous.
2. Can cause skin irritation.
3. Is highly inflammable.

Dismantling

1. Dismantle the following parts:
 - Chain and bar. See the Operator's Manual.
 - Cylinder cover. See the Operator's Manual.
 - Tank unit and front handle.
2. Remove the spring on the cylinder with a 4 mm Allen key. See fig. 1.
3. Remove the springs on the tank unit with a 4 mm Allen key. See fig. 2.

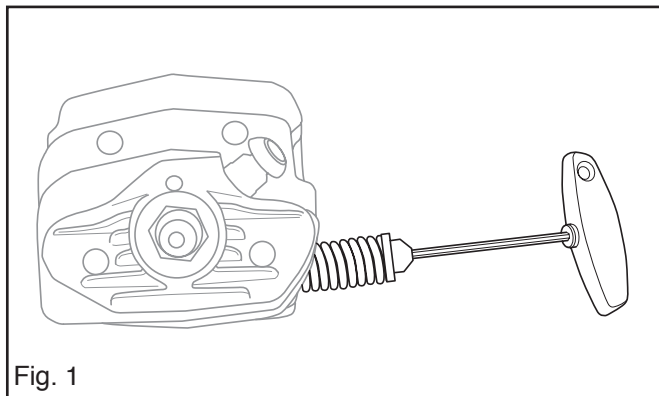


Fig. 1

Cleaning and inspection

Clean and inspect all parts.

Assembly

1. Fit the springs on the cylinder and tank with a 4 mm Allen key. See fig. 1 and fig. 2.

Note! Harder springs are available. Should only be used together with longer guide bars. See IPL for part number.

2. Assemble the following parts:
 - Tank unit and front handle. See page 41.
 - Cylinder cover. See the Operator's Manual.
 - Chain and bar. See the Operator's Manual.

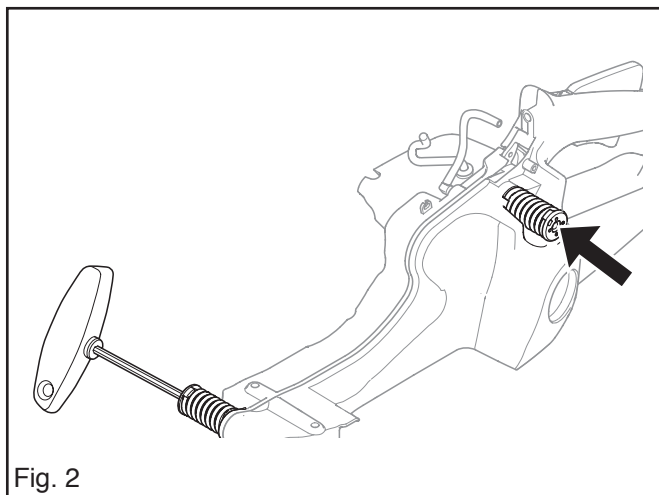


Fig. 2

PISTON and CYLINDER

Piston and Cylinder

Dismantling

1. Dismantle the following parts:
 - Cylinder cover.
 - Spark plug.
 - Carburettor. See page 32.
 - Muffler. See page 15.
2. Unscrew the anti-vibration spring (C) from the cylinder. See fig. 1.
3. Unscrew the cylinder's four bolts (A). See fig. 1.
4. Carefully lift up the cylinder.

NOTE!

Exercise care so that dirt and foreign particles do not get into the crankcase.

5. Cover the crankcase opening immediately with a sheet of paper or a cloth. See fig. 2.
6. Remove one of the piston's circlips, press out the gudgeon pin, and remove the piston. See fig. 2.
7. Remove the needle bearing from the connecting rod's little-end.
8. Unscrew the decompression valve (B). See fig. 1.
9. Disconnect impuls hose (A) and unscrew the intake manifold. See fig. 3 and fig. 4.

Cleaning and inspection

Clean all parts, scrape off all the remains of any gasket material and scrape off carbon deposits from the following surfaces:

1. The piston crown.
2. Top of the cylinder bore (inside).
3. The cylinder exhaust port.
4. The decompression valve.

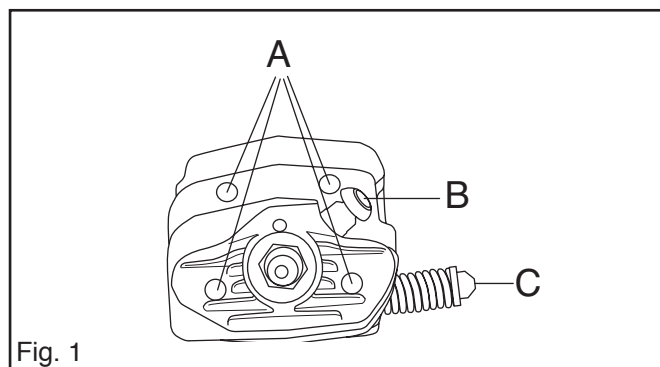


Fig. 1

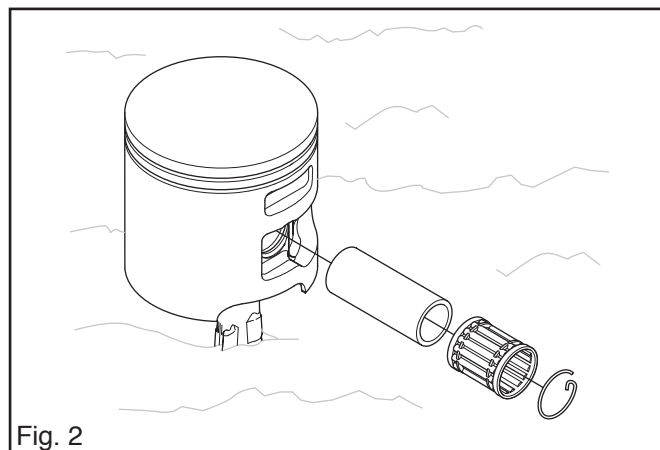


Fig. 2

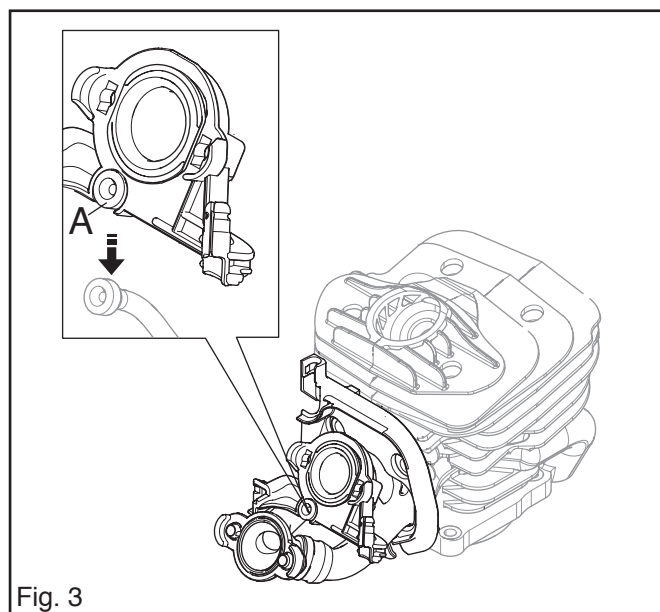


Fig. 3

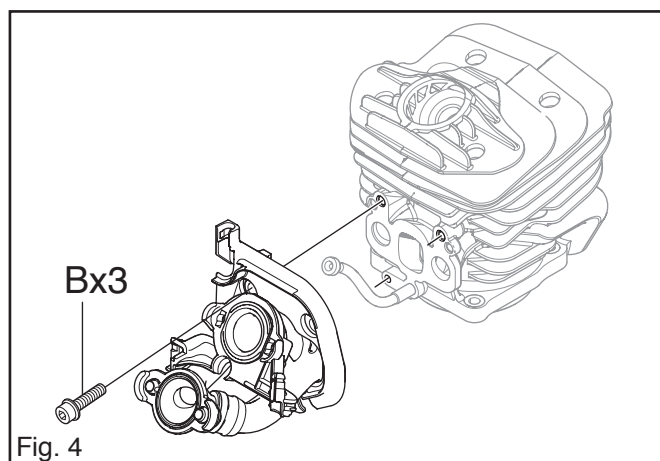


Fig. 4

PISTON and CYLINDER

Check the following:

1. That the cylinder's surface coating is not worn. Especially in the upper part of the cylinder.
2. That the cylinder is free of score marks. See fig. 5.
3. That the piston is free of score marks. Minor scratches can be polished off with fine emery paper.
4. That the piston ring is not burnt into its groove.

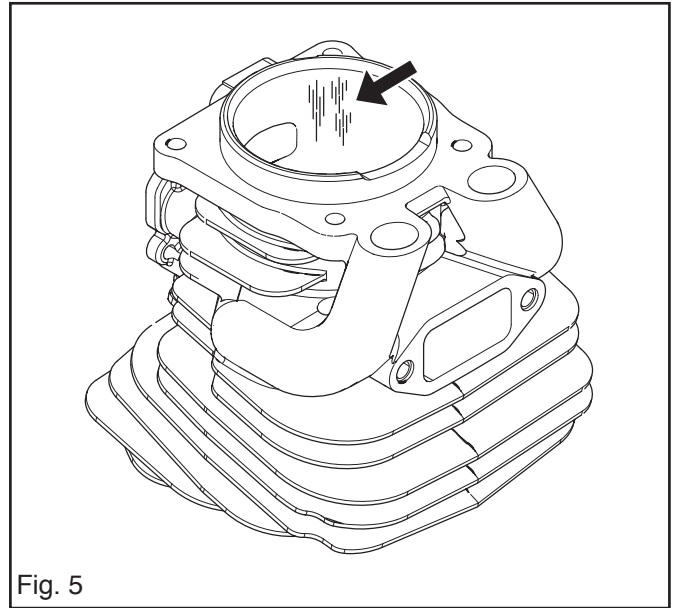


Fig. 5

5. Measure the wear on the piston ring by placing it at the bottom of the cylinder and measuring the gap. See fig. 6. The clearance must not exceed 1 mm.
6. That the needle bearing is undamaged.

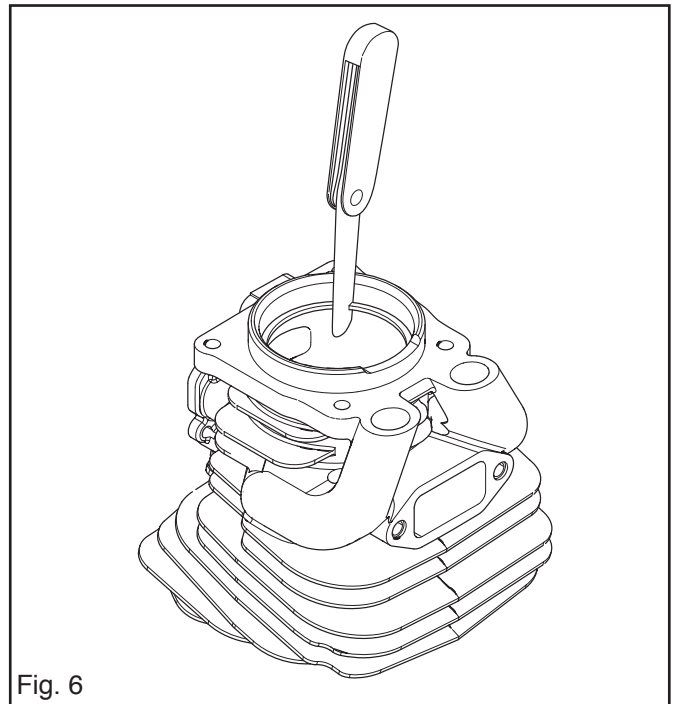


Fig. 6

7. That the intake manifold and its rubber seals are undamaged. See fig. 7.

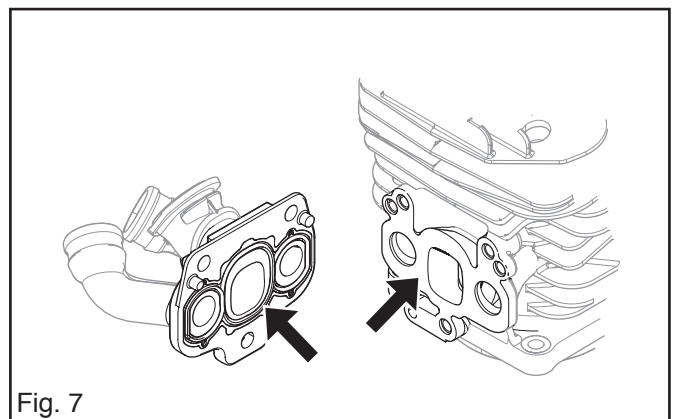


Fig. 7

PISTON and CYLINDER

Faults and causes

Score marks in the piston, fig. 8 (A)

1. Incorrect carburettor setting. Too high maxspeed.
2. Too low octane fuel.
3. Too little, or incorrect oil in the fuel.

Carbon build-up, fig. 8 (B)

1. Incorrect carburettor setting. Too low maxspeed.
2. Too much, or incorrect oil in the fuel.

Piston ring breakage

1. Excessive engine speed.
2. Piston ring worn out.
3. Oversized piston ring groove.

Assembly

Assembly of the piston and cylinder is carried out as follows:

NOTE!

Exercise care so that dirt and foreign particles do not get into the crankcase.

1. Lubricate the needle bearing and fit it in the connecting rod's little-end.
2. Replace the piston with the arrow facing the exhaust port. See fig. 9. Slide in the gudgeon pin and fit the circlips.
3. Fit the intake manifold on the cylinder before fitting cylinder to crank case. Apply grease to the sealing surface. Tighten the 3 screws. The square nuts (B) can be changed if damaged. Connect impuls hose and fit into position. See fig. 10.
4. Fit the decompression valve (B). See fig. 12. Tighten it to 15 Nm.
5. Fit the gasket on the cylinder base. Press it up so that it fastens on the sleeve of the cylinder.
6. Oil in the piston ring and sides of the piston with two stroke oil.
7. Compress the piston ring, either by hand or with tool 502 50 70-01. See fig. 11. Carefully fit on the cylinder.

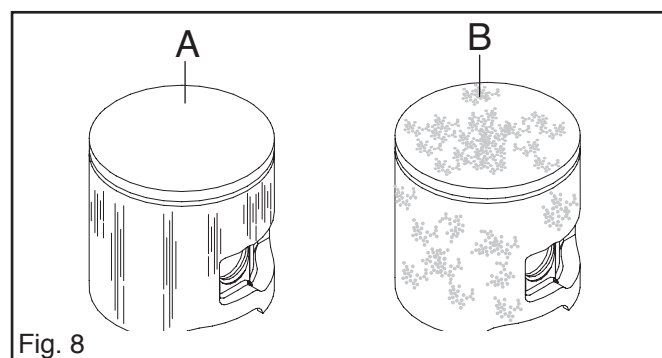


Fig. 8

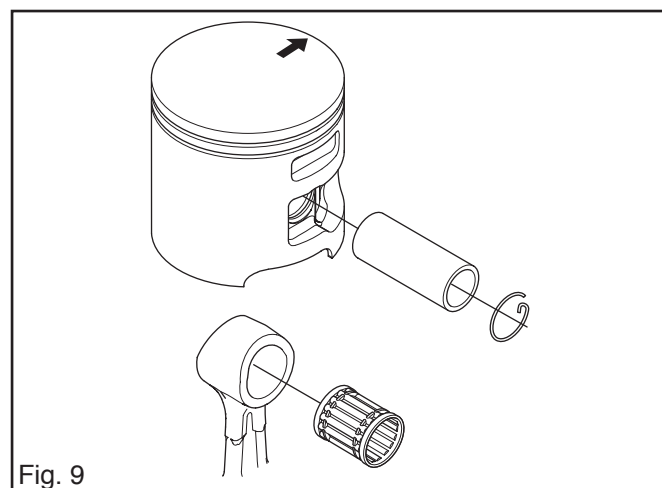


Fig. 9

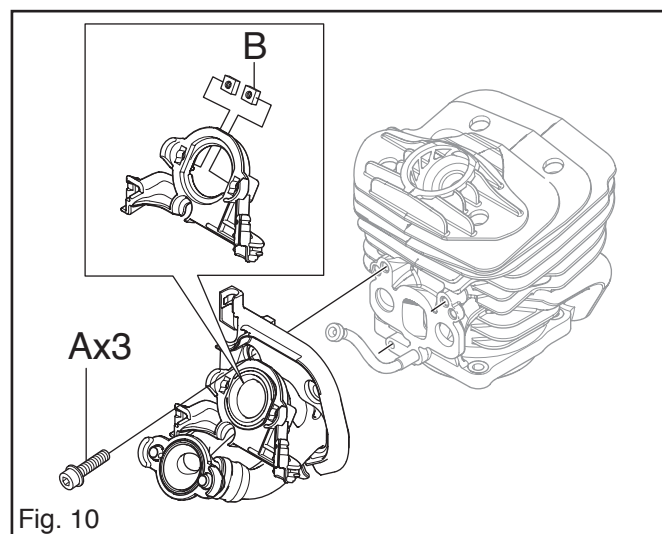


Fig. 10

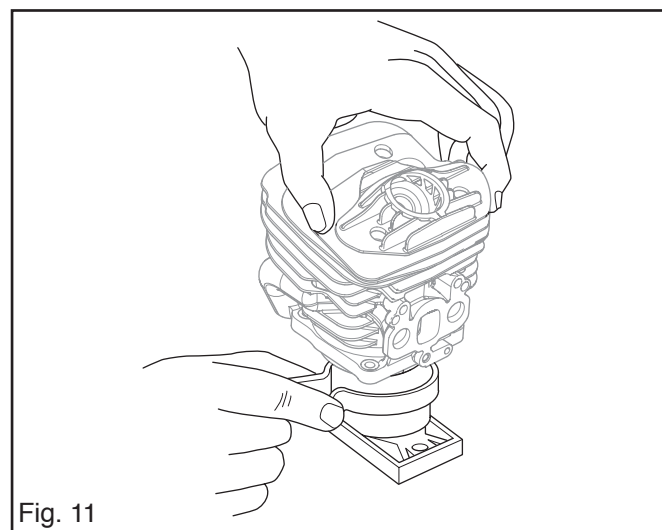


Fig. 11

PISTON and CYLINDER

8. Guide up the cylinder base gasket with the four bolts (A) and tighten them alternately. Tighten them finally to 10 Nm. See fig. 12.
9. Fit the anti-vibration spring (C) on the cylinder. See fig. 12. Tighten the bolt to 10 Nm.
10. Pressure test as shown in page 36.

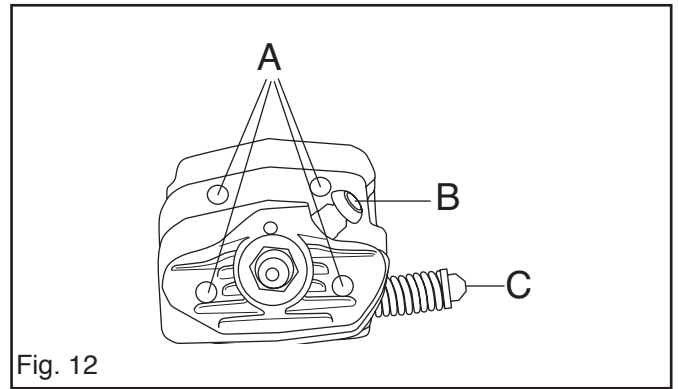


Fig. 12

Manifold

The intake system has two inlets.

1. The upper intake (I and E) lets fuel and air mixture from carburettor into the cylinder (D).
2. The lower intake (K and F) lets air into the cylinder.
3. The impuls hose (J) is separately connected to the cylinder.
4. Note! The insert ring should have the notch pointing up.

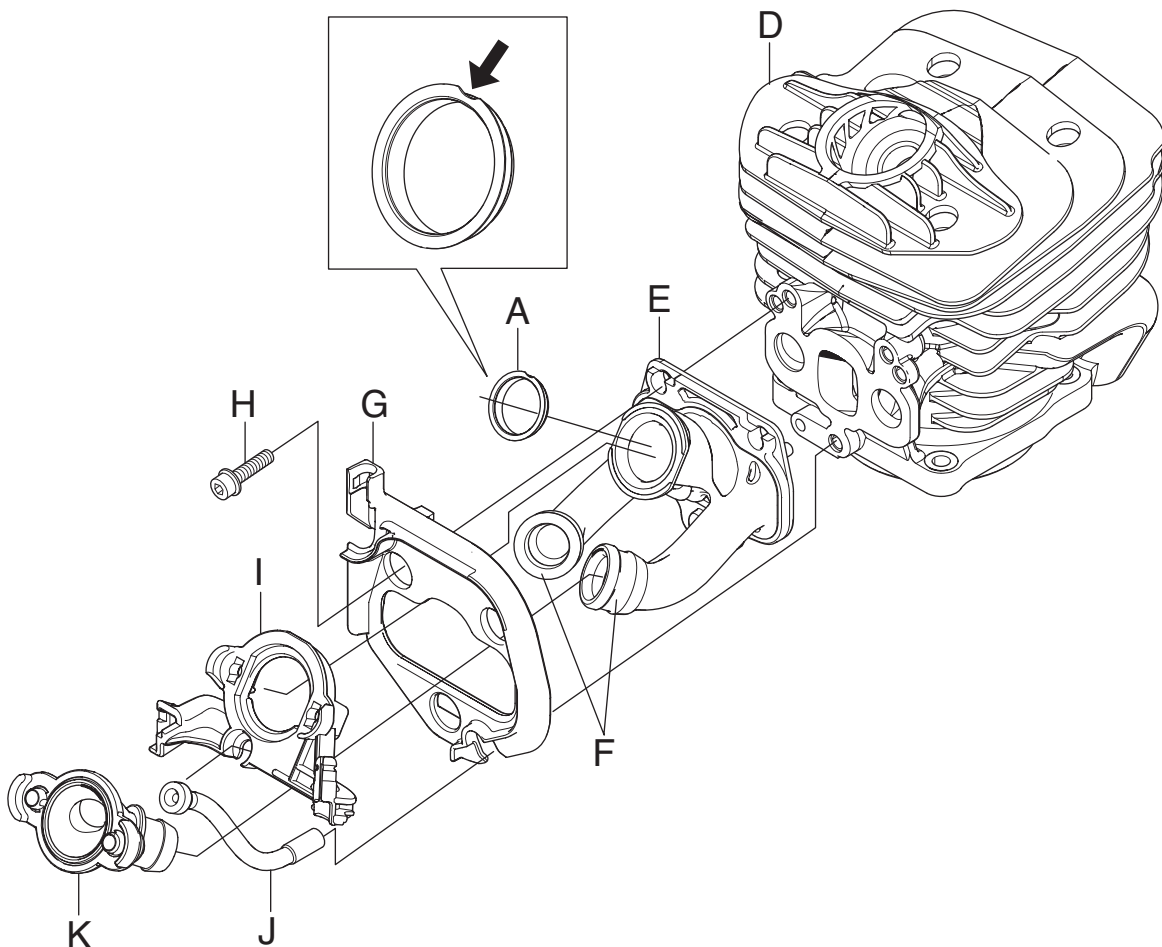


Fig. 13

PISTON and CYLINDER

11. Fit the filterholder with choke on carburettor. Use long screws (L) on the upper part and short screws (M) on lower part. See fig. 14.

12. Fit carburettor with filter holder on manifold.

- Fit choke shaft (P) in notch.
- Slide choke rod (N) in guide (O).
- Push in the choke rod (Q).
- The impuls nipple should meet the impuls hose (R).
- Tighten the screws 2 Nm.
- Connect the rear rubber mount (S). See fig. 15.

13. Assemble the following parts:

- Muffler. See page 15.
- Cylinder cover. See the Operator's Manual.
- Chain and bar. See the Operator's Manual.

14. If a new piston and/or cylinder is fitted the chainsaw should be run-in for 3-4 hours. See carburettor settings on pages 39 and 40.

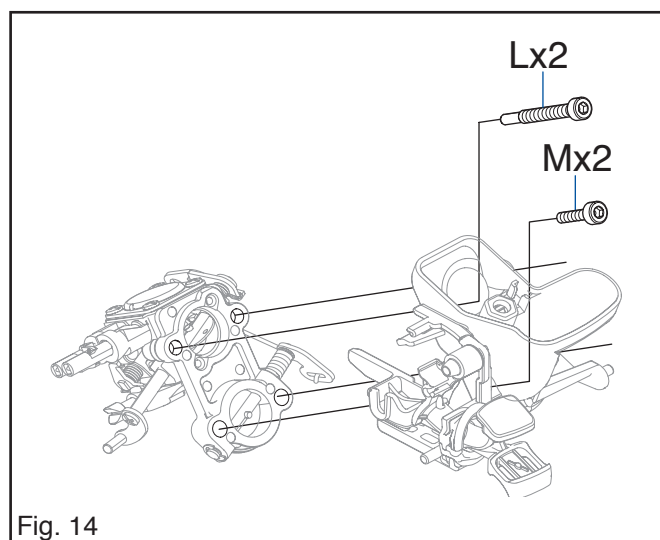


Fig. 14

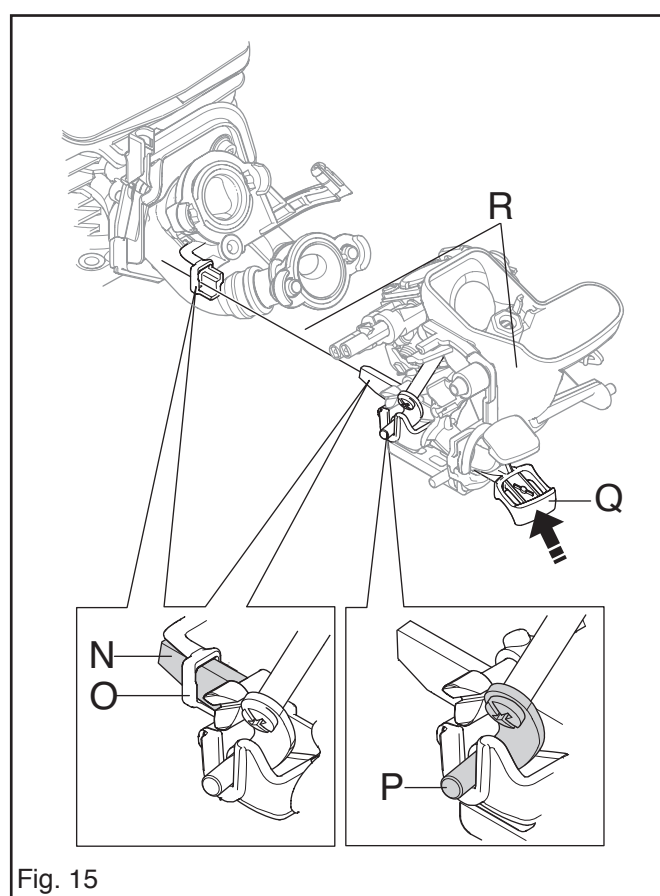


Fig. 15

PISTON and CYLINDER

Pressure testing

The following parts must be removed to pressure test the crankcase and cylinder:

- Air filter and carburettor. See page 32.

Carry out pressure testing as follows:

1. Fit both cover plate 502 52 48-01 with bolt on the intake manifold. See fig. 16.

Fit rubber plate 502 54 22-02 between cylinder and muffler. Cover the exhaust port. See fig. 17.

2. Connect pressure test tool 531 03 06-23 to tool 502 84 40-02 fitted instead of spark plug. See fig. 18. The decompression valve should be closed.

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

4. Wait 30 seconds.

5. The pressure must not fall below 60 kPa (0.6 bar).

6. Leakage can occur in the decompression valve and crankshaft seals.

7. Pressure test the decompression valve as follows. See also fig. 19.

- A. Connect pressure test tool 531 03 06-23 to the decompression valve.
- B. Pump up the pressure to 80 kPa (0.8 bar).
- C. Wait 30 seconds.
- D. The pressure must not fall below 60 kPa (0.6 bar).

8. Assemble the following parts:

- Carburettor.
- Cylinder cover. See the Operator's Manual.
- Chain and bar. See the Operator's Manual.

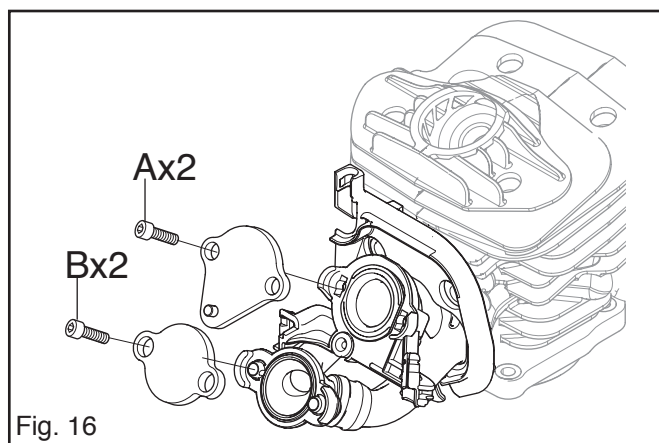


Fig. 16

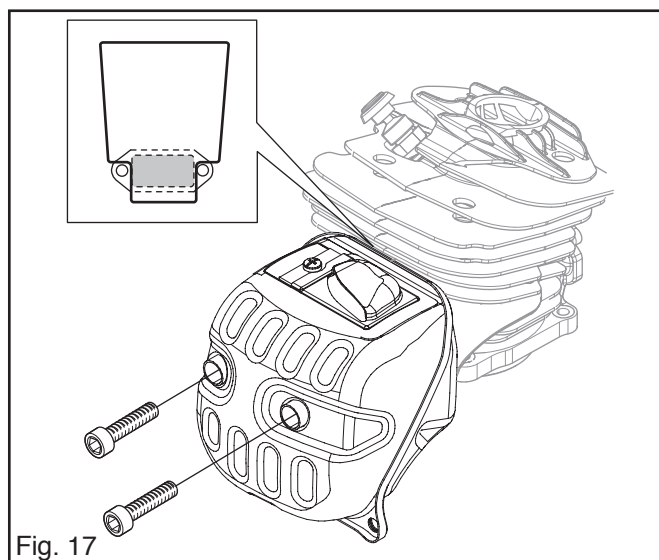


Fig. 17

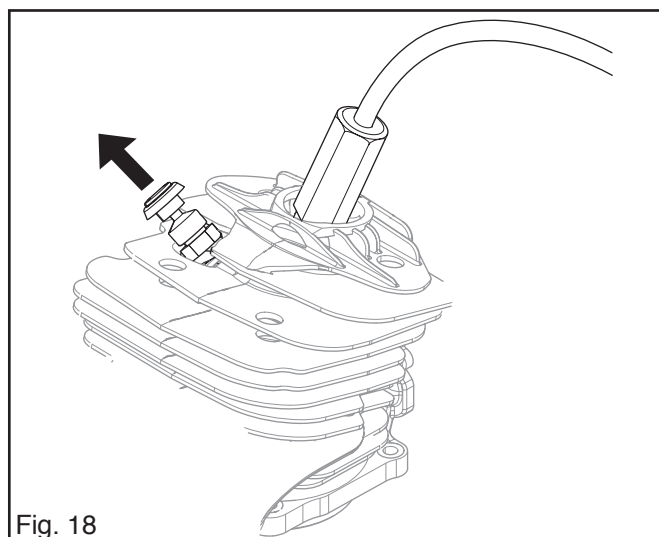


Fig. 18

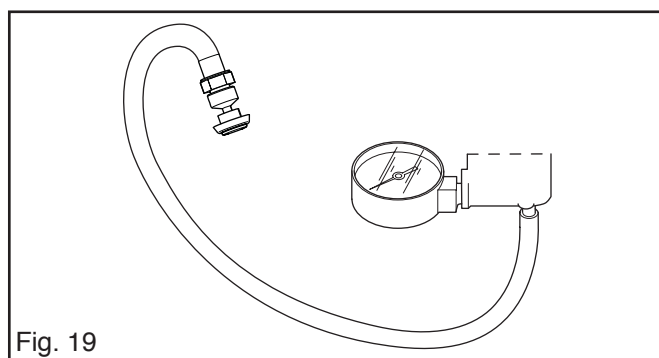


Fig. 19

CRANKCASE and CRANKSHAFT

This section deals with the following:

- Crankcase and crankshaft (describes how the whole assembly is dismantled and reassembled)
- Seals (describes only replacement of seals)
- Bar bolts (describes only replacement of bar bolts)

Crankcase and crankshaft

Dismantling

1. Before the crankcase can be separated the following parts must be dismantled:
 - A Chain and bar. See the Operator's Manual.
 - B Starter.
 - C Electrical system.
 - D Centrifugal clutch.
 - E Lubrication system.
 - F Carburettor.
 - G Muffler.
 - H Piston and cylinder.
 - I Tank unit.

NOTE!

Exercise care so that dirt and foreign particles do not get into the bearing.

2. Remove the carburettor space bottom by unscrewing the four bolts. See fig. 1.
3. If necessary, remove the seal on the flywheel side. Use tool 504 91 40-01. See page 53, fig. 14.
4. Remove the six bolts on the flywheel side. See fig. 2.
5. Fit tool 502 52 49-01 as shown in fig. 3 and remove the crankcase half on the flywheel side.
6. Remove the crankcase half on the clutch side in the same way as item 5 above.
7. If necessary, remove the crankshaft bearing from the crankcase.
Do as follows:
 - A Remove the oil filler cap.
 - B Heat the relevant crankcase half to 200°C.
 - C Use protective gloves and press the bearing out from the crankcase half.



WARNING!

The crankcase halves are hot and can cause burn injuries. Wear protective gloves.

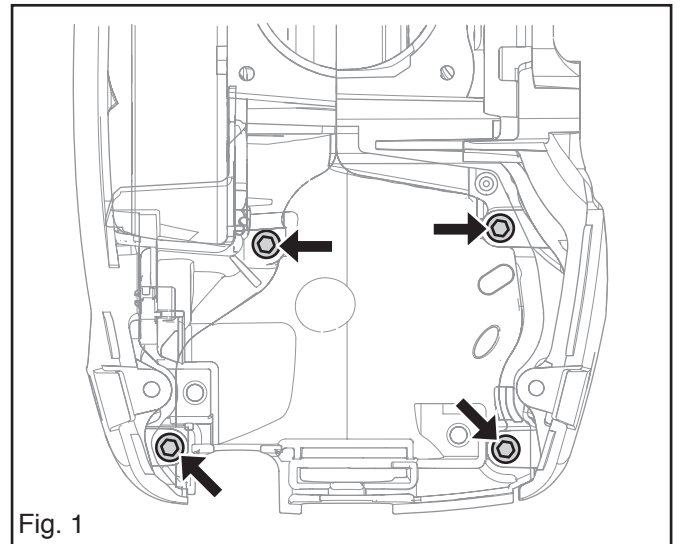


Fig. 1

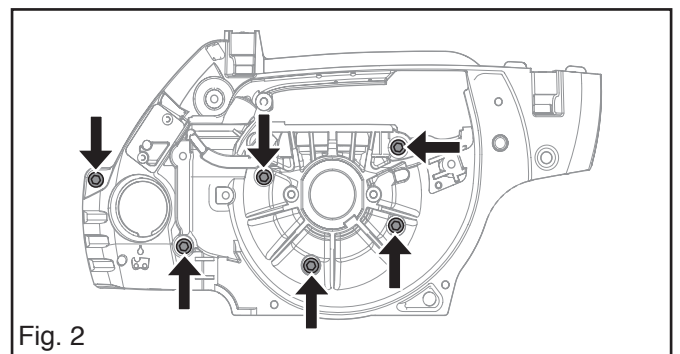


Fig. 2

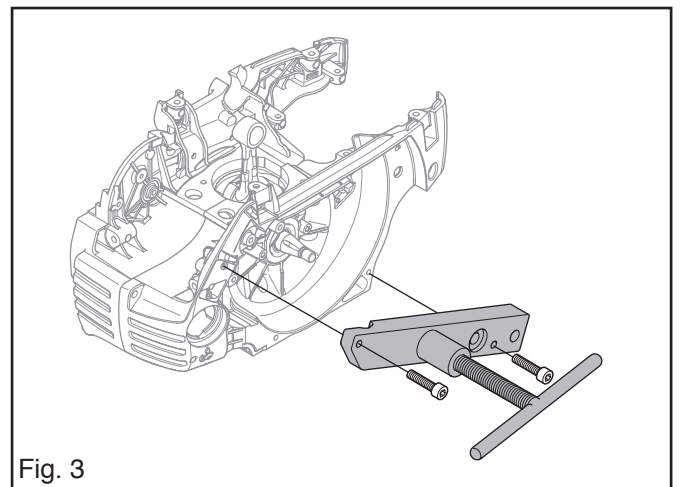


Fig. 3

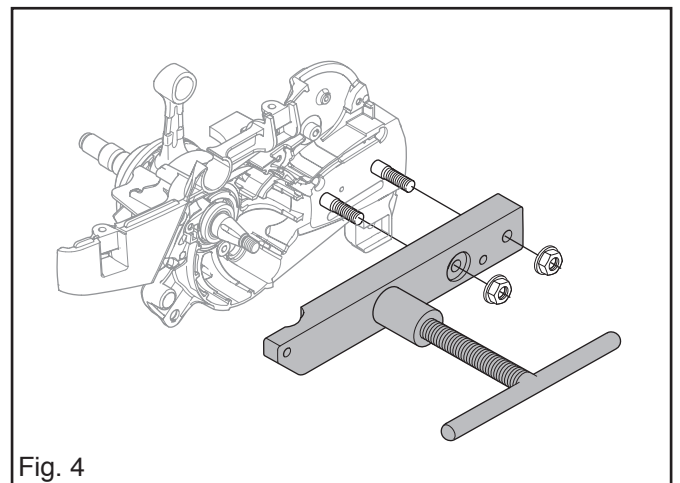


Fig. 4

CRANKCASE and CRANKSHAFT

8. If the crankshaft bearing should remain on the crankshaft remove it with puller 504 90 90-01. See fig. 6.

9. If necessary, remove the following parts:

- A Spike bumper.
- B. Rubber stop (A). See fig. 5.

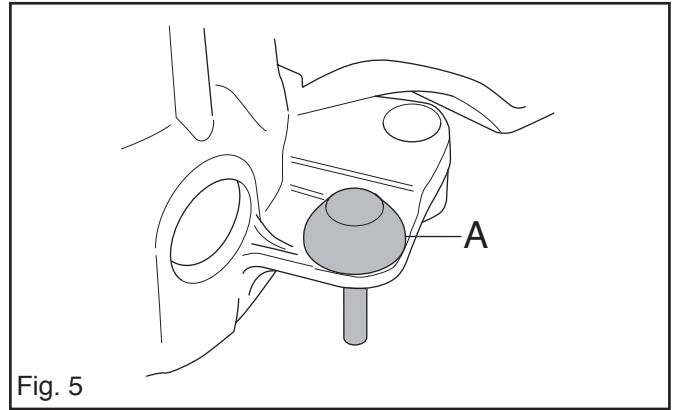


Fig. 5

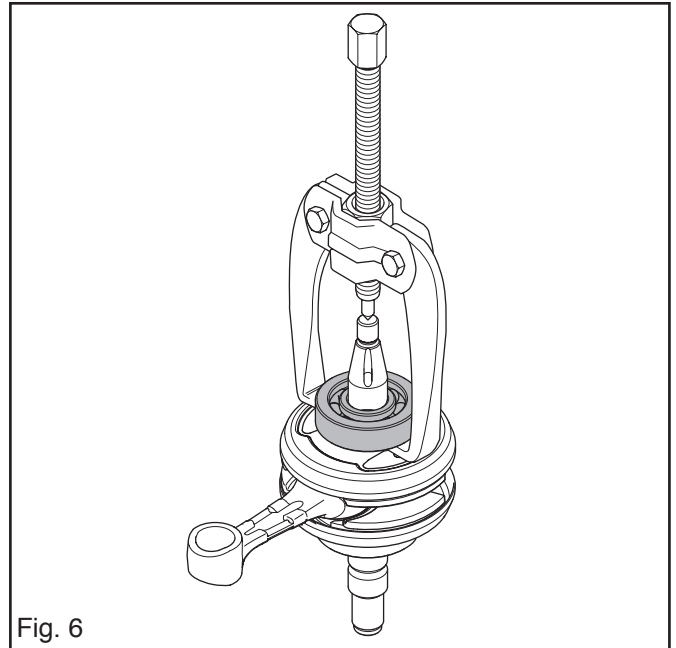


Fig. 6

Cleaning and inspection

NOTE!

If the bearings are mounted in the crankcase, exercise care to avoid dirt and foreign particles getting in.

Clean all parts and scrape of the remains of gasket material from the mating surfaces of the crankcase halves.

Check the following:

1. That the big-end bearing does not have any radial play. Axial play is acceptable.
2. That the big-end bearing does not have any score marks or is discoloured on the sides. See fig. 7.
3. That the bearing surfaces for the little-end do not have any score marks or are discoloured. See fig. 8.
4. That the crankshaft main bearings do not have any play or dissonance.
5. That the surfaces of the seals to the crankshaft are not worn and that the rubber has not hardened.
6. That the crankcase has no cracks.

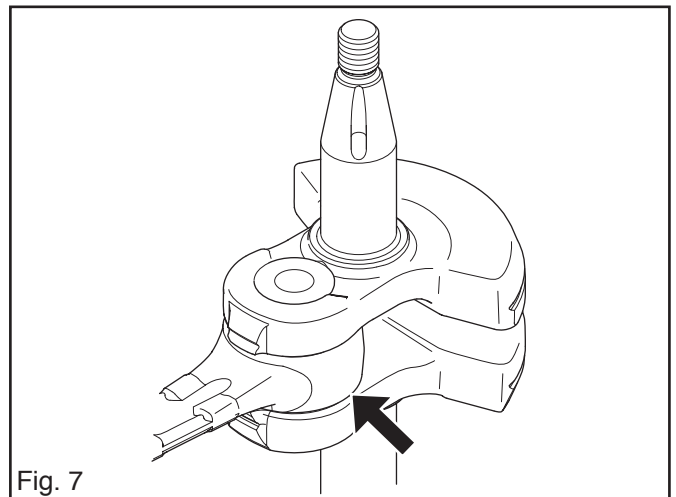


Fig. 7

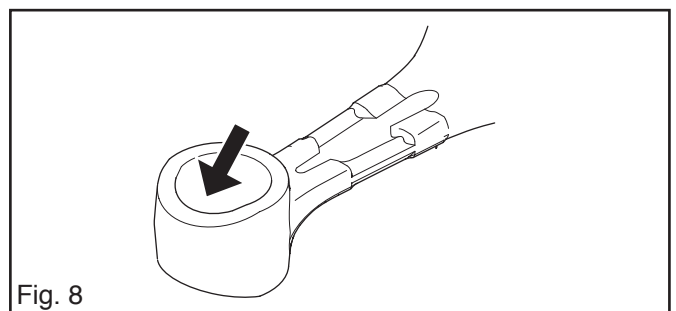


Fig. 8

CRANKCASE and CRANKSHAFT

Assembly

Fit the crankcase and crankshaft as follows:



WARNING!
The crankcase halves are hot and can cause burn injuries. Wear protective gloves.

1. If bearings are to be fitted, do as follows:
 - A. Heat the relevant crankcase half to 200°C.
 - B. Use protective gloves and fit the bearing in the crankcase side on the flywheel side. When fitting the bearing in clutch side's crankcase half the bearing should be fitted flush with the inside of the crankcase (A). See fig. 9.
 - C. Allow the crankcase half to cool before continuing work.

NOTE!
Exercise care so that dirt and foreign particles do not get into the bearing.

- D. Fit the rubber stop (A). See fig. 5.
 - E. Fit the oil filler cap.

2. When fitting new seals the sealing surfaces should be greased in. When fitting the seal on the flywheels side use tool 502 50 30-20. The seal on the clutch side is fitted in the ball bearing. The seals can also be fitted when the crankshaft is in place.

NOTE!
Make sure that the connecting rod does not jam against the crankcase when the crankcase and crankshaft are reassembled.

3. Use tool 502 50 30-20. Use back side of sleeve (B) and pull the crankshaft into the clutch side's crankcase half. See fig. 10. Pull until the crankcase shoulder mates with the bearing.
4. Place the guide pegs in the clutch side's crankcase half, and grease in and insert the gasket (C). See fig. 11.

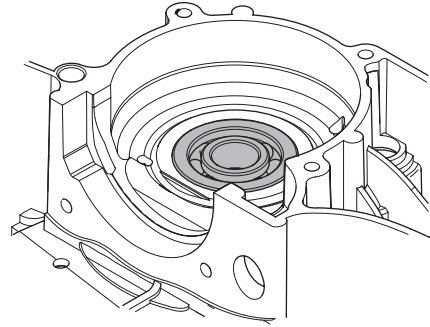


Fig. 9

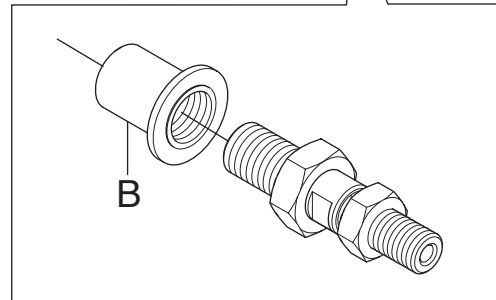
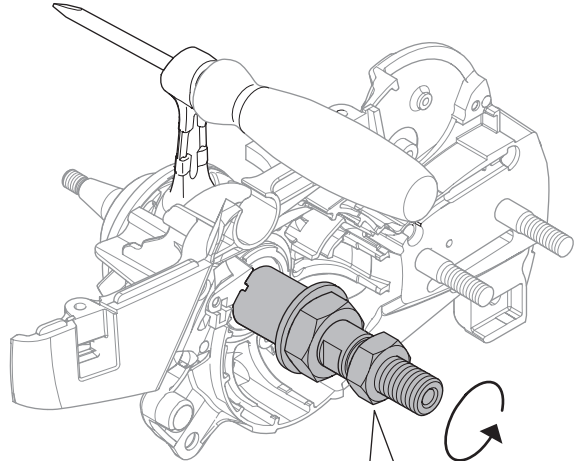


Fig. 10

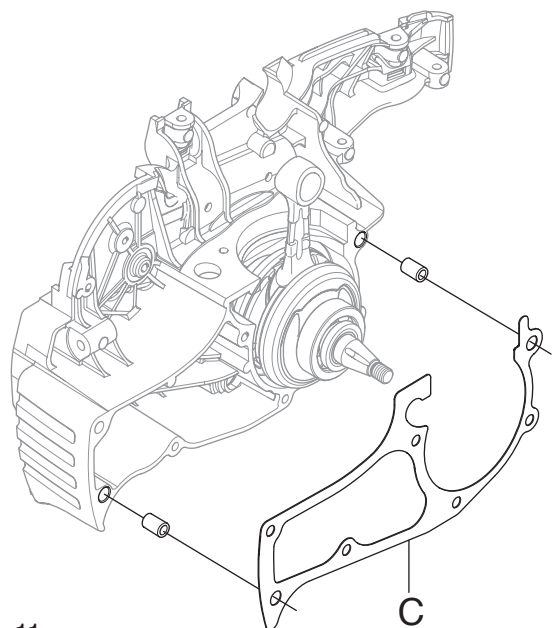


Fig. 11

CRANKCASE and CRANKSHAFT

5. Use tool 502 50 30-20. Turn around the sleeve (B) and pull on the flywheel side's crankcase half. Pull until the gasket is clamped between the crankcase halves. See fig. 12.

6. Fit the six bolts. Tighten them alternately. Tighten them finally to 8 Nm. See fig. 13.

NOTE!
Make sure that excess gasket material does not fall into the crankcase.

7. Cut off the gasket at the level of the cylinder base.

8. Fit the carburettor space bottom with the four bolts. Tighten the bolts to 5 Nm.

9. Assemble the following parts:

- A. Tank unit.
- B. Piston and cylinder.
- C. Muffler.
- D. Carburettor.
- E. Lubrication system.
- F. Centrifugal clutch.
- G. Electrical system.
- H. Starter. .
- I. Chain and bar. See the Operator's Manual.

10. If a new crankshaft is fitted the chainsaw should be run-in for 3-4 hours. See adjustment of the carburettor on page 39 and 40.

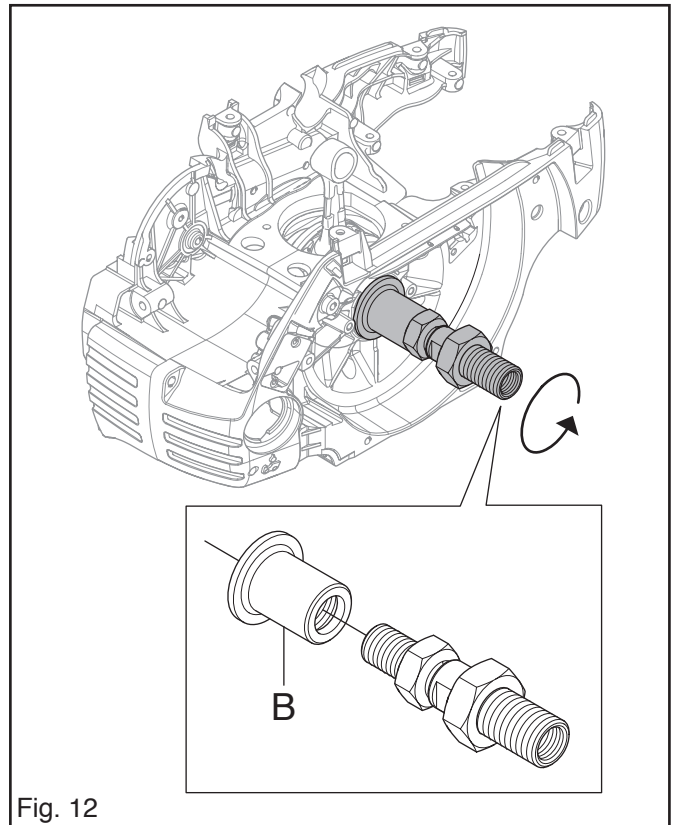


Fig. 12

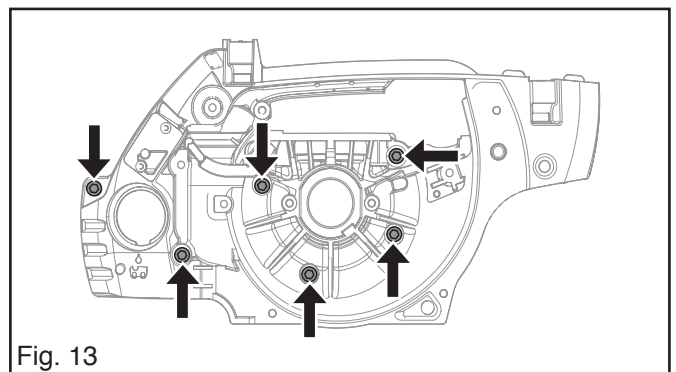


Fig. 13

CRANKCASE and CRANKSHAFT

Seals

1. To replace the seals on the crank shaft, remove the following parts first:

On the flywheel side:

- Starter.
- Flywheel.
- Generator, where appropriate.

On the clutch side:

- Chain and bar. See Operator's Manual.
- Chain guide plate.
- Centrifugal clutch.
- Oil pump.

2. Screw the relevant dismantling tool 504 91 40-01 into the seal and pull it out. See fig. 14.
3. Tap in the new seal with the sleeve from tool 502 50 30-20. See fig. 15.
4. Fit the parts in accordance with pos. 1 above.

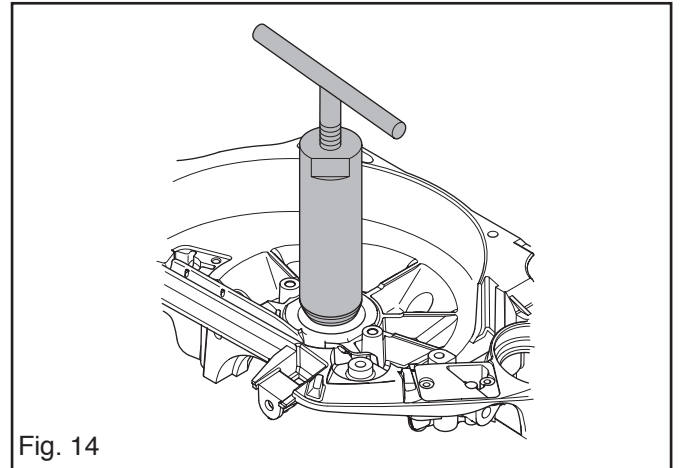


Fig. 14

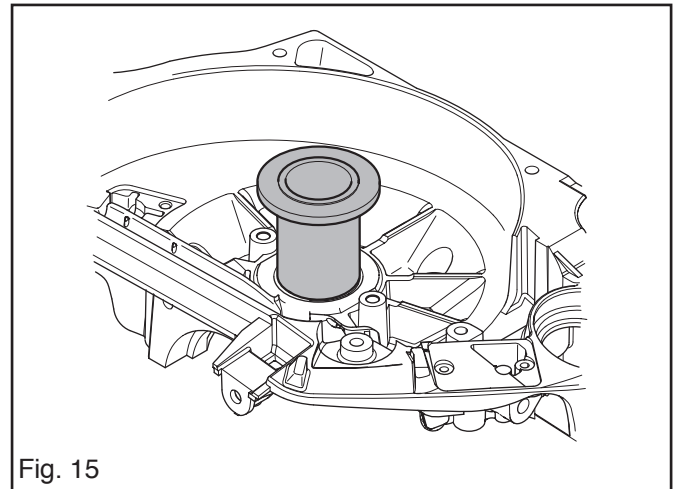


Fig. 15

Bar bolts

1. Drain off the chain oil.
2. Tap in the old bar bolt from outside so that it drops in the oil tank.
3. Remove the bolt from the oil tank.
4. Fix a piece of steel wire on the end of the new bolt, and pull it through the oil tank and out through the bolt hole in the crankcase. See fig. 16.
5. Pull the steel wire so that the bolt comes into its hole.
6. Pull out the bolt with its nut and shim between the nut and crankcase. See fig. 17.
7. Check that the square head of the bolt comes in its recess in the crankcase. Where appropriate, turn the bolt.
8. Refill with chain oil.

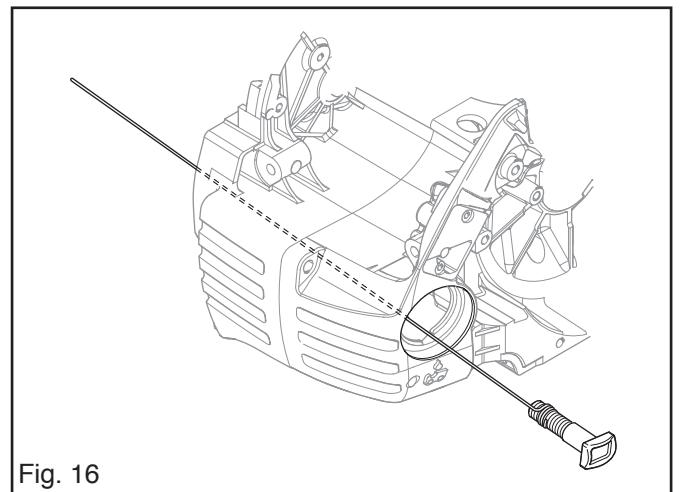


Fig. 16

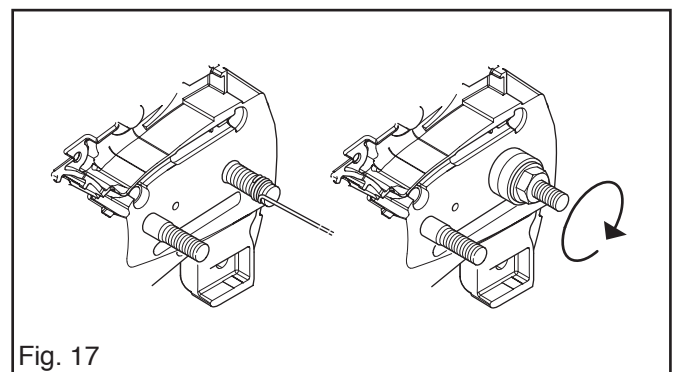


Fig. 17

TROUBLESHOOTING

Troubleshooting

The different faults which may occur on the chain saw are divided into four groups. Within each group possible operating faults are listed to the left while the probable fault alternatives are listed to the right. The most likely fault is listed first, etc.

Starting

Starting difficulties	Clogged air filter Choke does not work Worn choke shaft Worn choke valve The fuel filter is clogged The fuel line is clogged Piston ring is stuck Blocked impulse channel
The carburettor leaks fuel	Loose or defective fuel hose Hole in the membrane Control system is jamming Control system set too high Leaking control system (air or fuel) The cover on the carburettor pump side is loose
Floods when the engine is not running	Control system set too high Control system is jamming

Idling (low speed) (cont.)

Irregular idling	The fuel filter is clogged The fuel line is clogged Leaking inlet hose (rubber) Loose clamping screws carburettor Worn throttle valve shaft The throttle valve screw is loose The throttle valve is worn Leaking control system (air or fuel) The control system's centre knob is worn Hole in the membrane Leaking control diaphragm/cover plate Crankcase leak
Too much fuel on idling	Leaking control diaphragm/cover plate

Idling (low speed)

Does not run when idling	Leaking inlet hose (rubber) Loose clamping screws carburettor Loose or defective fuel hose The fuel filter is clogged The fuel line is clogged Tank venting clogged The throttle valve shaft is sluggish Throttle stay is jamming Defective throttle return spring Bent valve shaft stop Faulty diffuser jet
Too high idling speed	Worn lever arm in the control system Leaking control diaphragm/cover plate

TROUBLESHOOTING

High speed

Does not run at full throttle	Blocked air filter Tank venting clogged The fuel filter is clogged The fuel line is clogged Loose or defective fuel hose Impulse channel leaking Blocked impulse channel The cover on the carburettor pump side is loose Faulty pump diaphragm Leaking inlet hose (rubber) Loose clamping screws carburettor Control system set too low Control system damaged Control system incorrectly assembled Leak in control diaphragm/cover plate Control system is jamming Blocked muffler
Low on power	Tank venting clogged The fuel filter is clogged Impulse channel leaking Blocked impulse channel The cover on the carburettor pump side is loose Faulty pump diaphragm Blocked air filter Control system is jamming Leaking control system (air or fuel) Control system incorrectly assembled Loose diaphragm rivet Hole in the membrane Leak in control diaphragm/cover plate
Too lean	Tank venting clogged The fuel filter is clogged The fuel line is clogged Loose or defective fuel hose Impulse channel leaking Blocked impulse channel The cover on the carburettor pump side is loose Faulty pump diaphragm Leaking inlet hose (rubber) Loose clamping screws carburettor Control system set too low Leaking control system (air or fuel) Control system incorrectly assembled Loose diaphragm rivet Hole in the membrane Leak in control diaphragm/cover plate

Acceleration and retardation

Does not accelerate	Blocked air filter Tank venting clogged The fuel filter is clogged The fuel line is clogged Loose or defective fuel hose Blocked impulse channel The cover on the carburettor pump side is loose Faulty pump diaphragm Leaking inlet hose (rubber) Loose clamping screws carburettor Control system set too low Control system incorrectly assembled Control system is jamming Faulty diffuser jet Blocked muffler
The engine stops when releasing the throttle	Faulty pump diaphragm Control system set too high Control system is jamming Faulty diffuser jet
Too rich acceleration	Blocked air filter Faulty pump diaphragm Faulty diffuser jet

Troubleshooting techniques

In addition to faults given in the above schematic, troubleshooting can be carried out on a specific component or specific chain saw system. The different procedures are described in respective sections, see the list of contents, and are as follows:

- Resistance testing the stop plate
- Pressure testing the carburettor
- Pressure testing the decompression valve
- Pressure testing the cylinder



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