

Workshop manual

K970 III



English

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1 Introduction

1.1 Document description

This manual gives a full description of how to do maintenance and repair on the product. It also gives safety instructions that the personnel must obey.

1.2 Target group

This manual is for personnel with a general knowledge of how to do repair and do servicing. All personnel that do repair or do servicing on the product must read and understand the manual.

1.3 Revisions

Changes to the product can cause changes to the maintenance work and spare parts. Separate information is sent out for each change.

Read the manual together with all received information about changes to maintenance and spare parts for the product.

1.4 Safety



WARNING: All personnel that repair or do servicing on the product must read and understand the safety instructions in this workshop manual.

1.5 Servicing tools

The manual gives information about necessary servicing tools. Always use original tools from Husqvarna.

2 Safety

2.1 Safety definitions

Warnings, cautions and notes are used to point out specially important parts of the manual.



WARNING: Used if there is a risk of injury or death for the operator or bystanders if the instructions in the manual are not obeyed.



CAUTION: Used if there is a risk of damage to the product, other materials or the adjacent area if the instructions in the manual are not obeyed.

Note: Used to give more information that is necessary in a given situation.

2.2 General safety instructions

- Do not repair the product unless you have read and understood this workshop manual.
- The service center where the product is repaired must have safety equipment approved by local bylaws.
- The product is examined and approved only with the equipment given or recommended by the manufacturer.
- Prevent health and safety risks. All personnel must obey laws and requirements when they do the procedures given in this manual.
- Obey the local waste regulations.
- Always make sure that all nuts and bolts are correctly tightened.
- Use protective gloves and eye protection. Goggles must obey the ANSI Z87.1 for US or EN166 for EU countries.
- When using compressed air, do not point it to your body. Air can go into the bloodstream.
- Use hearing protection when the engine is started.
- The product can make sparks and cause ignition of flammable materials.
- Replace all damaged or missing warning symbol decals.
- Gasoline and its fumes are poisonous.
- Gasoline can cause damage to the eyes and the skin.
- Gasoline can cause breathing problems.
- Gasoline is flammable.

2.3 Symbols on the product



WARNING: Careless or incorrect use can result in injury or death to the operator or others.



Read the manual carefully and make sure you understand the instructions before using the product.



Always put on personal protective equipment:

- Hearing protection
- Protective goggles or a visor
- Breathing mask.



This product in compliance with applicable EC directives.



WARNING! Dust from cutting can cause breathing problems. Use breathing protection. Do not breathe exhaust fumes. Always make sure there is good airflow.



WARNING! Sparks from the cutting blade can cause a fire in materials such as, gasoline, wood, fabric and dry grass.



WARNING! Kickbacks can be sudden, fast and can cause injuries. Read and understand the instructions in the manual before using the product.



Make sure the cutting disc is not damaged.



WARNING! Do not use circular saw blades.

Note: Other symbols/decals on the product refer to special certification requirements for some markets.

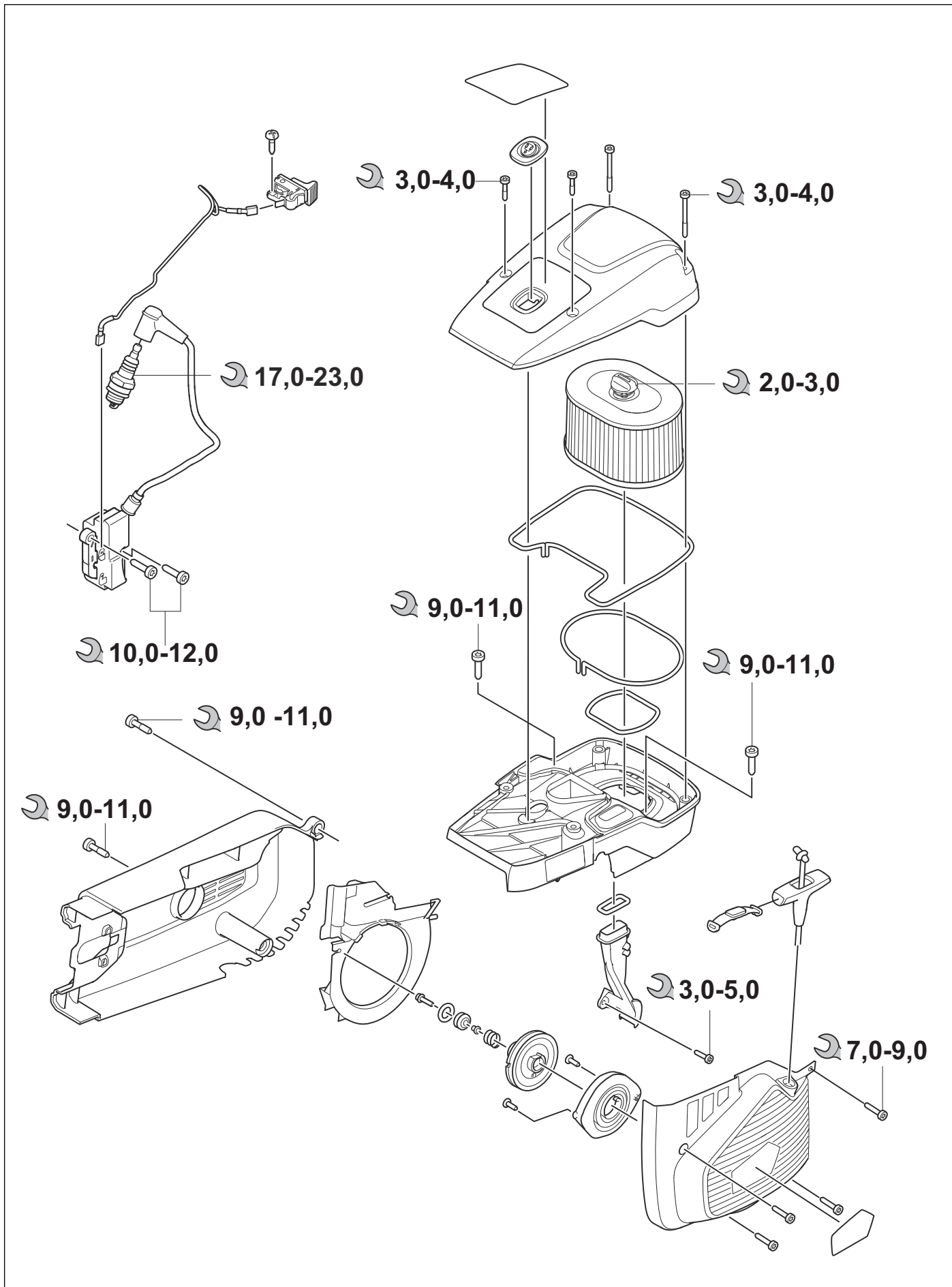
3 Servicing data

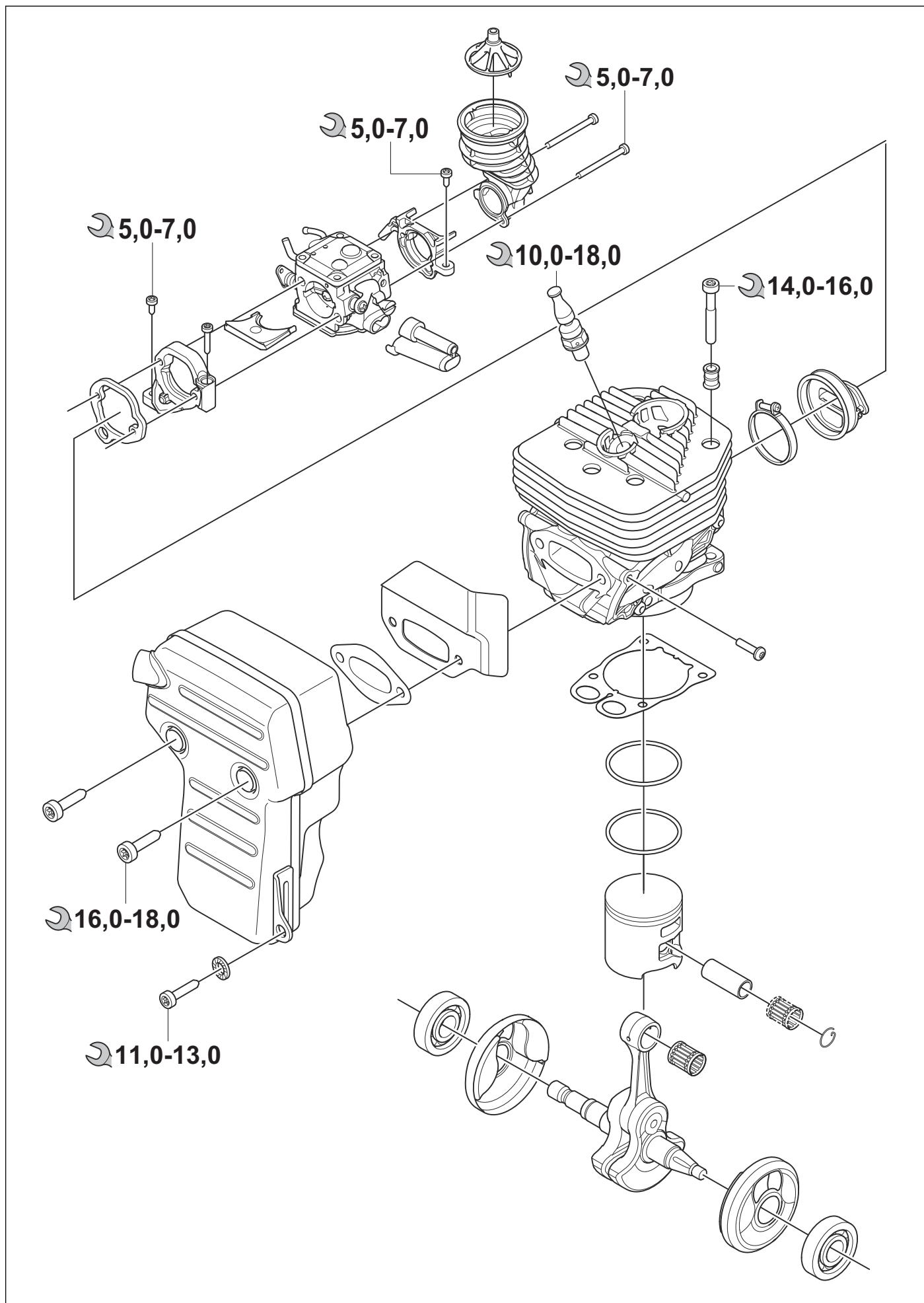
3.1 Symbols in the diagrams

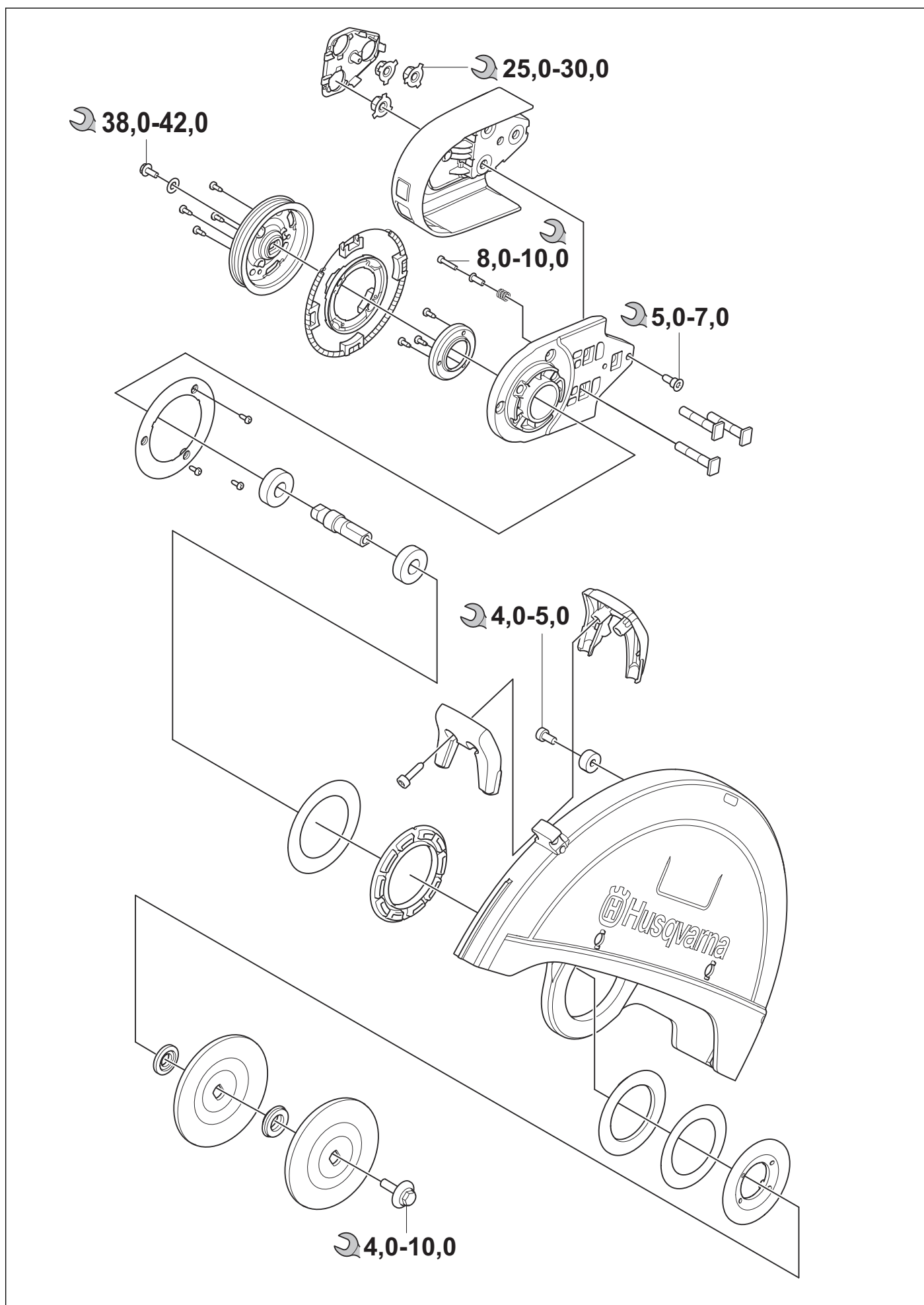


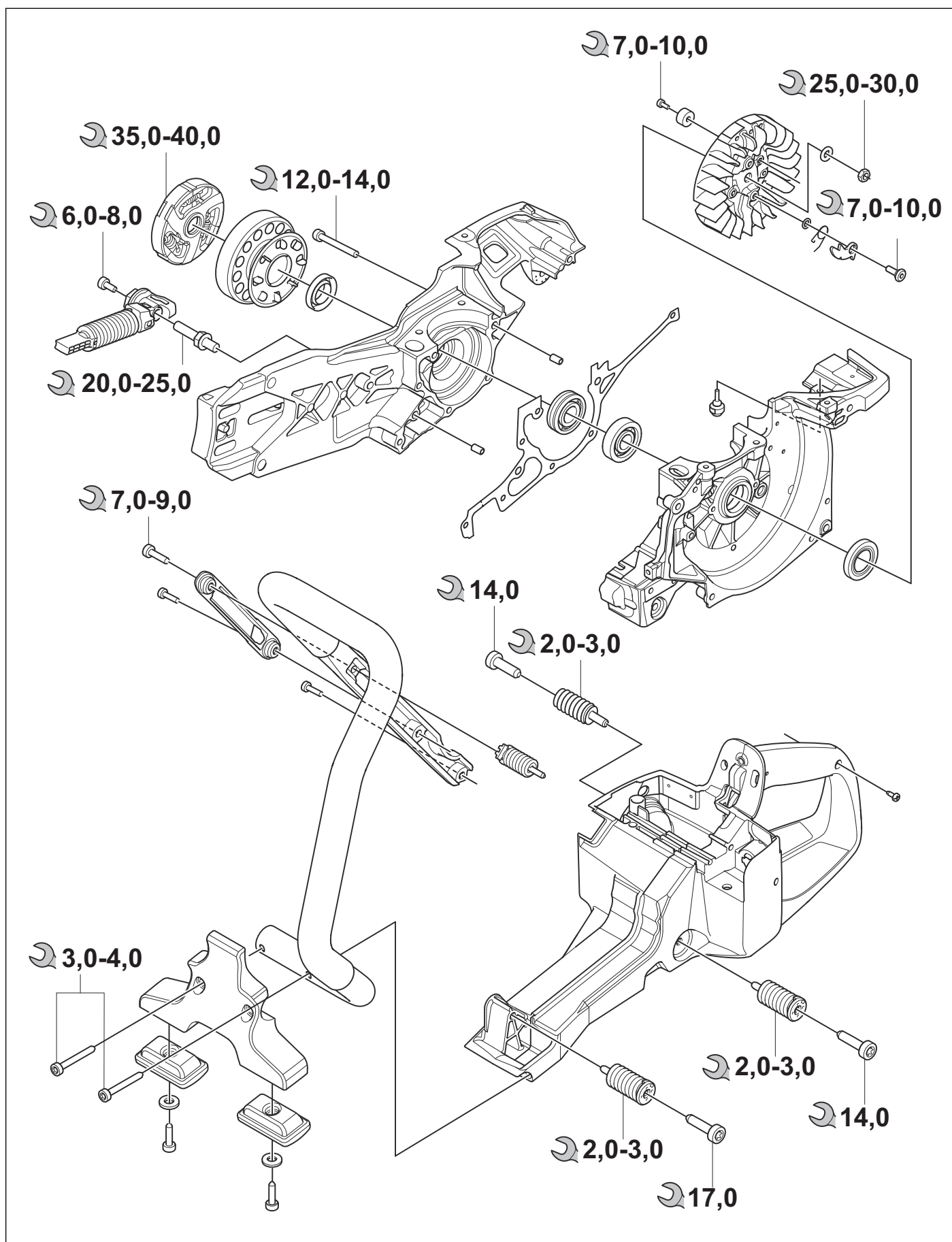
Tightening torque, Nm

3.2 Tightening torques



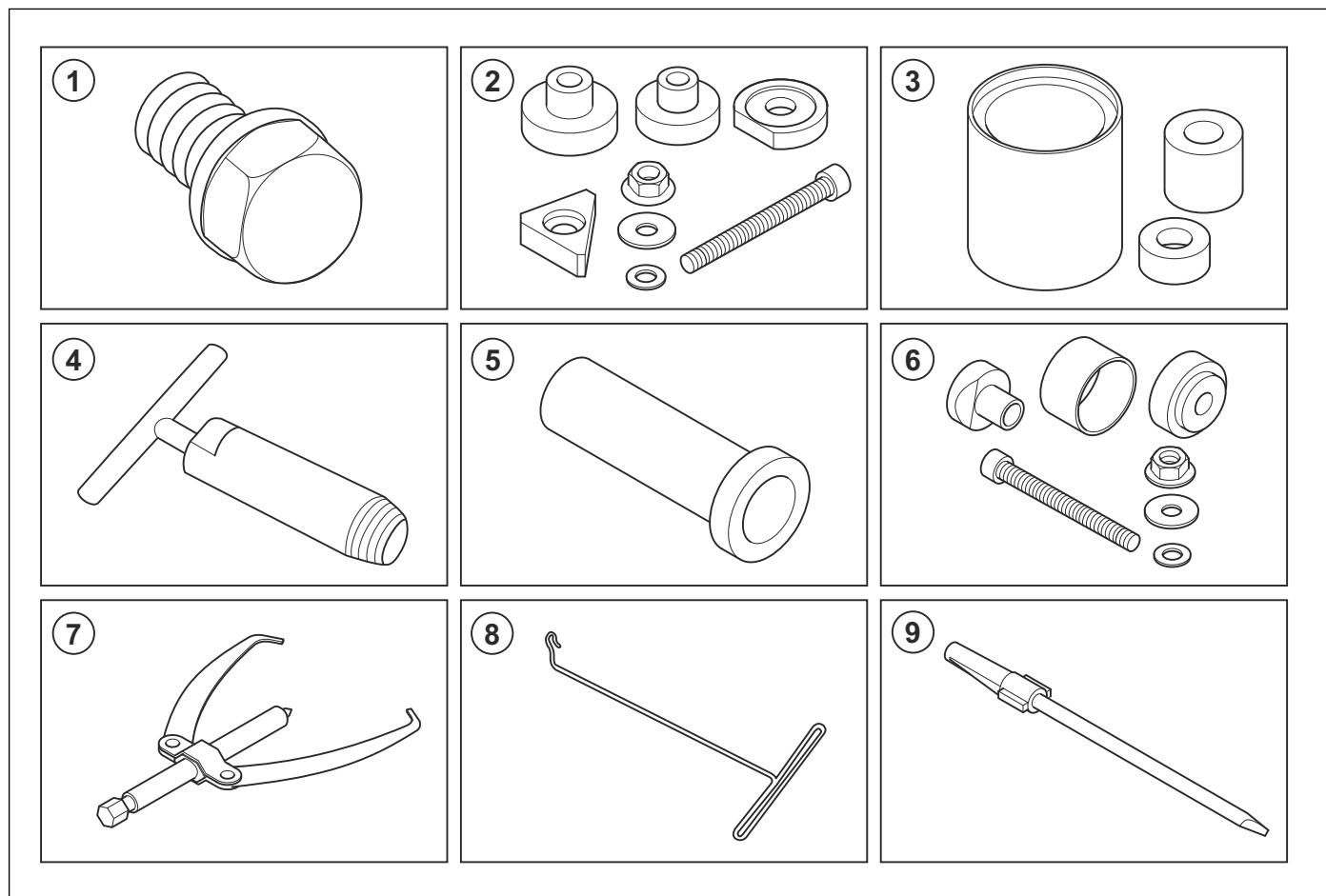






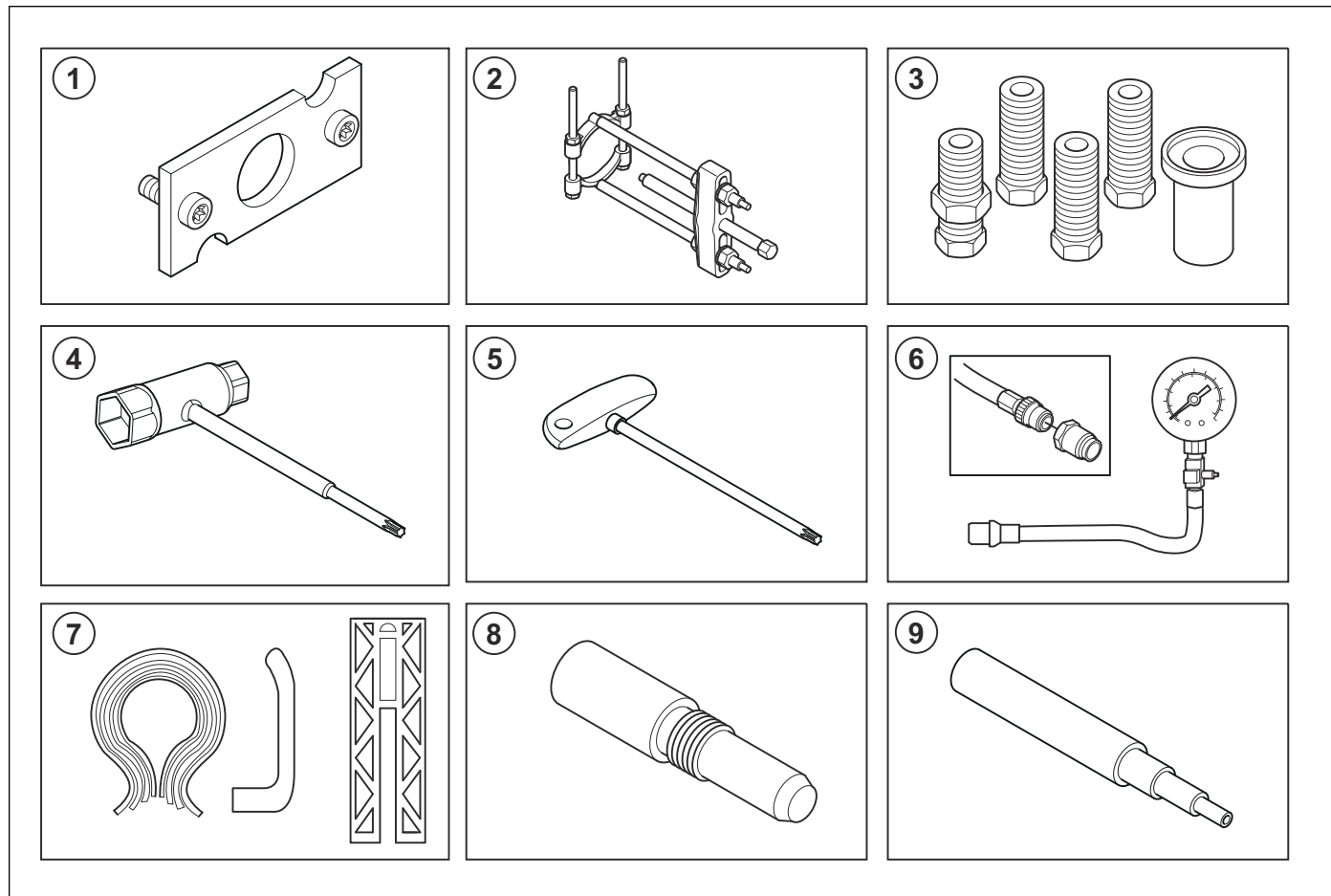
4 Servicing tools

4.1 Servicing tools overview



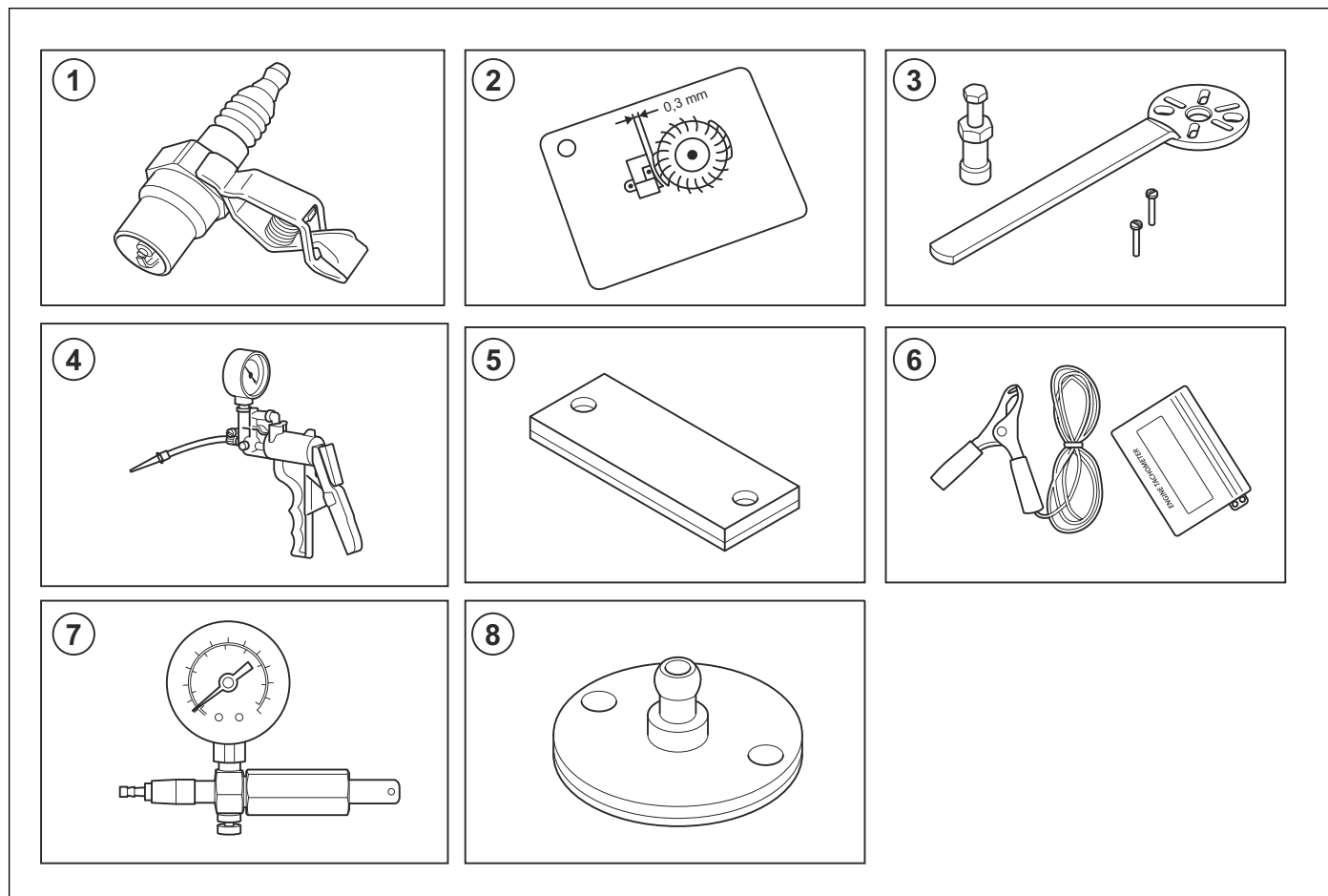
Position	Designation	Used for	Order No./Source
1	Sealing plug	To examine the crankcase for leaks.	503 55 22-01
2	Bearing press	To assemble the primary bearing.	506 37 61-02
3	Press tool	To disassemble and assemble the blade shaft bearings and axle.	575 96 20-01
4	Puller	To disassemble the sealing rings of the crankcase in the crankcase.	504 91 40-01
5	Assembly punch	To assemble the sealing rings of the crankshaft in the crankcase.	502 50 82-01
6	Bearing press	To disassemble and assemble the clutch drum ball bearing and blade shaft bearing.	504 56 79-01
7	Universal puller	To disassemble the support washer of the clutch on the crankshaft. To divide the crankcase.	504 90 90-02
8	Fuel filter hook	To catch the fuel filter in the tank.	502 50 83-01
9	Special screwdriver	To adjust the idle speed.	501 60 02-03

4.2 Servicing tools overview



Position	Designation	Used for	Order No./Source
1	Grip plate	To divide the crankcase.	544 06 00-02
2	Bearing puller	Remove the primary bearing from the crankshaft.	531 00 48-67
3	Bearing press	To disassemble the primary bearing and assemble the crankshaft.	544 10 36-02
4	Combination wrench	General.	506 38 26-01
5	Key Torx T27	General.	502 71 27-03
6	Compression tester	To examine the compression in the cylinder.	531 03 16-86
7	Kit for piston servicing	To do servicing on the piston.	502 50 70-01
8	Piston stop	To disassemble the clutch.	504 91 06-05
9	Wrist pin	To disassemble and assemble the wrist pin.	505 38 17-05

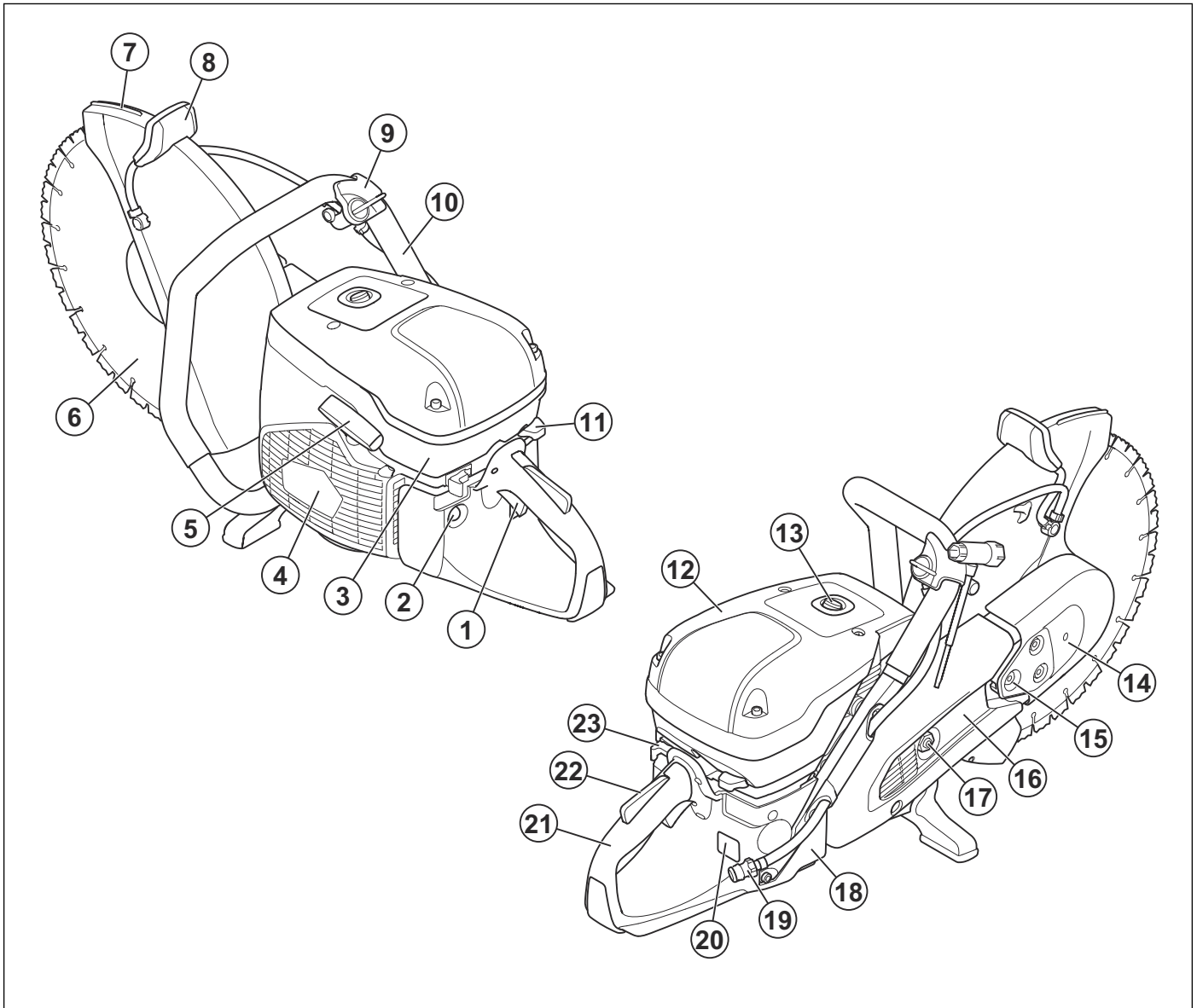
4.3 Servicing tools overview



Position	Designation	Used for	Order No./ Source
1	Test spark plug	To do servicing on the ignition unit.	502 71 13-01
2	Air clearance gauge	To adjust the air clearance between the ignition module and the flywheel.	502 51 34-02
3	Flywheel puller	To disassemble the flywheel.	502 51 49-02
4	Pressure tester	To examine the crankcase for leaks.	531 03 06-23
5	Cylinder seal	To do a test for crankcase leakages.	502 71 39-01
6	Tachometer	To adjust the idle and maximum speed.	502 71 14-01
7	Pressure tester	To examine the carburetor, fuel lines and check valve.	501 56 27-01
8	Cylinder seal	To do a test for crankcase leakages.	506 34 45-01

5 Product overview for repair and servicing

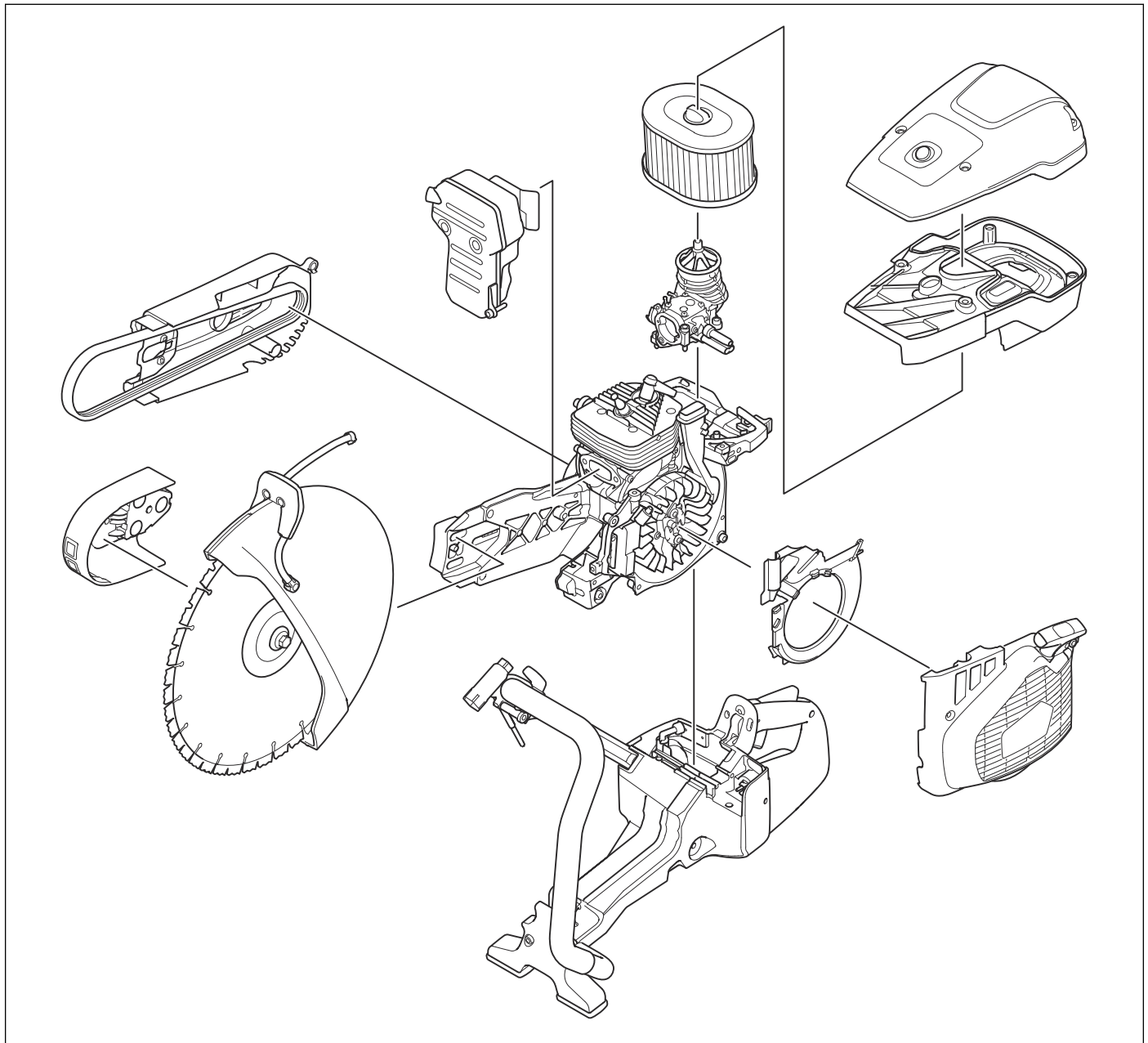
5.1 Product overview



- | | |
|---------------------------|-------------------------------------|
| 1. Throttle control | 14. Front belt guard |
| 2. Air purge bulb | 15. Lock screws for belt adjustment |
| 3. Cylinder cover | 16. Rear belt guard |
| 4. Starter | 17. Belt adjustment screw |
| 5. Starter rope handle | 18. Fuel tank |
| 6. Cutting blade | 19. Water connector |
| 7. Blade guard | 20. Sight glass for fuel |
| 8. Handle for blade guard | 21. Rear handle |
| 9. Water valve | 22. Throttle trigger lockout |
| 10. Front handle | 23. Stop switch |
| 11. Choke lever | |
| 12. Air filter cover | |
| 13. Decompression valve | |

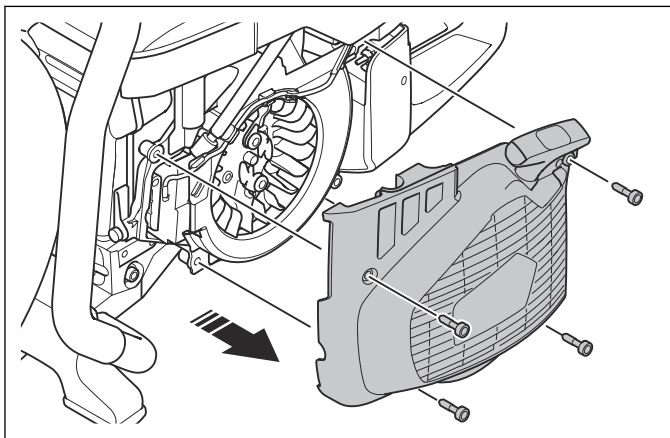
5.2 Basic modules of the product

This chapter shows how to disassemble the product into basic modules.



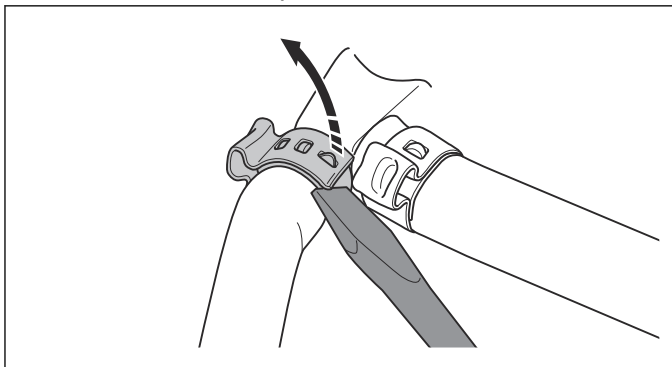
5.2.1 To remove the starter

1. Remove the 4 screws on the guard.
2. Remove the starter.

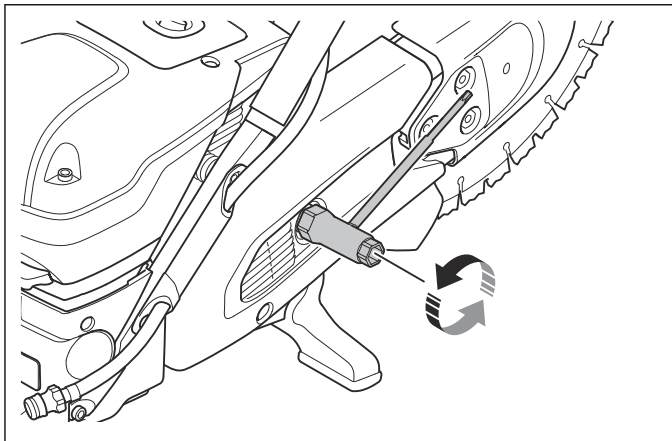


5.2.2 To remove the cutting head

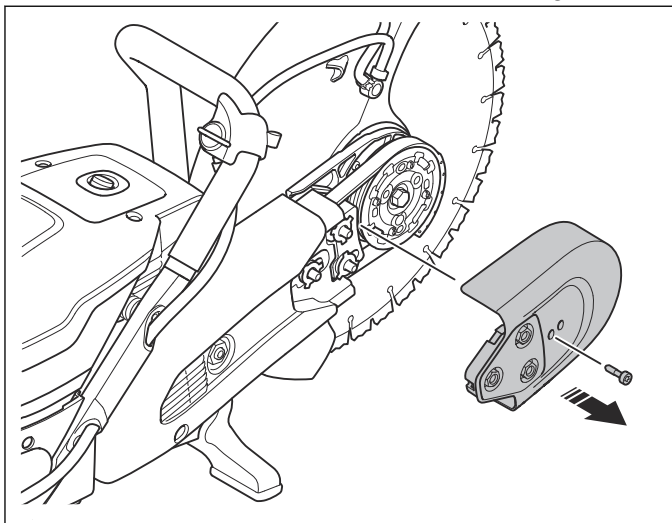
1. Loosen the hose clip with a screwdriver.



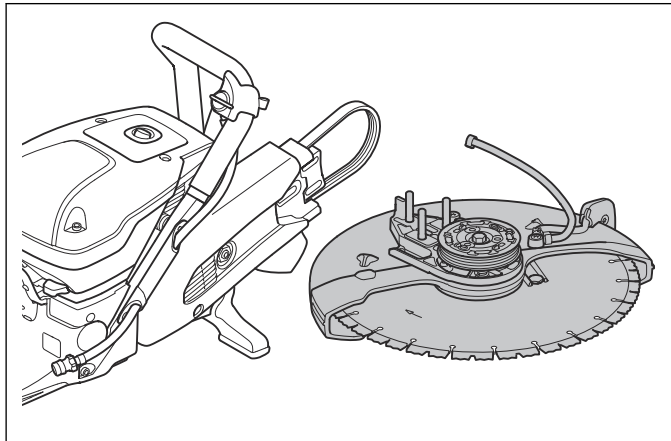
2. Loosen the 3 nuts on the cutting head. Loosen the belt tension with the adjuster screw.



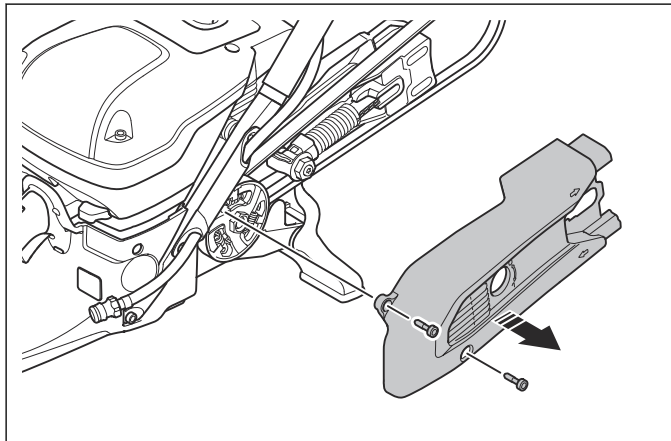
3. Loosen the nuts and remove the front belt guard.



4. Remove the belt from the pulley and remove the cutting head.



5. Remove the 2 screws on the rear belt guard. Remove the rear belt guard.



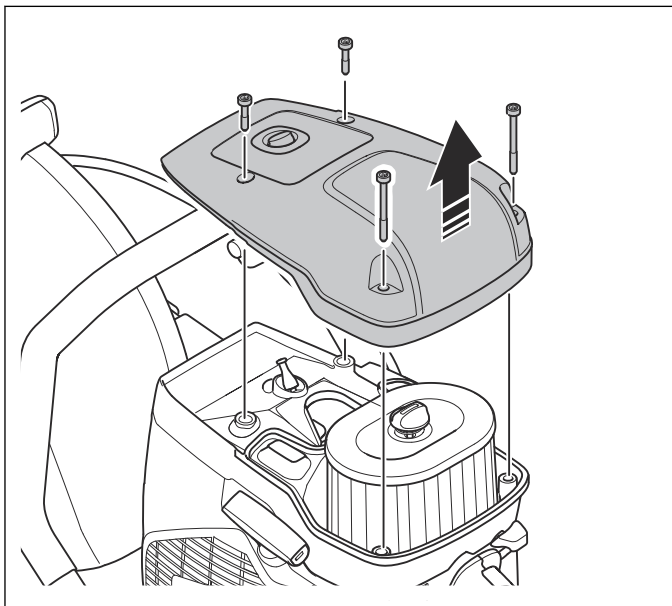
5.2.3 To remove the air filter



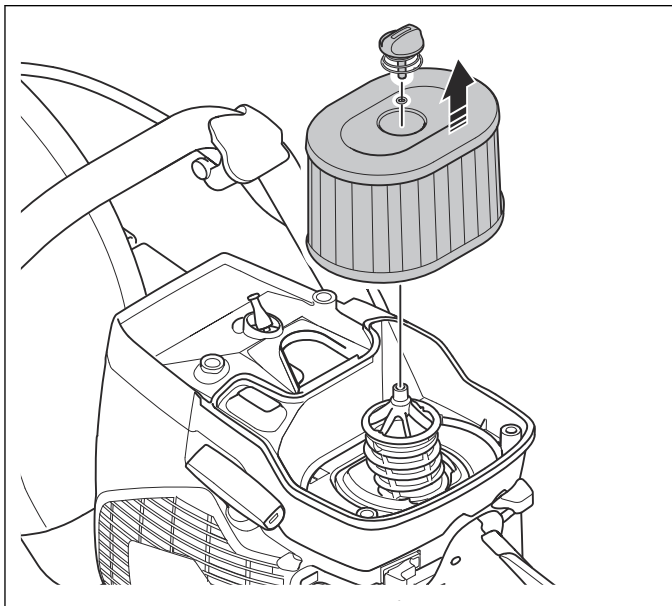
CAUTION: Be careful when the air filter is removed. Dust particles must not fall down in

the carburetor inlet. Removal of waste is best done with a vacuum cleaner.

1. Remove the 4 screws and remove the air filter cover.



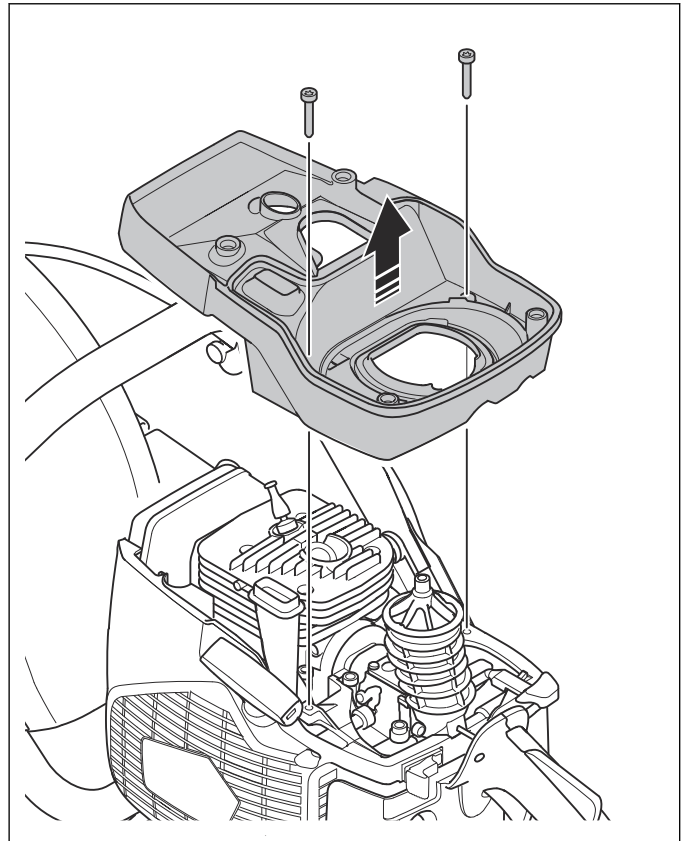
2. Clean around the area with a vacuum cleaner.
3. Loosen the center screw. Remove the air filter.



CAUTION: Make sure that dust does not fall into the carburetor inlet.

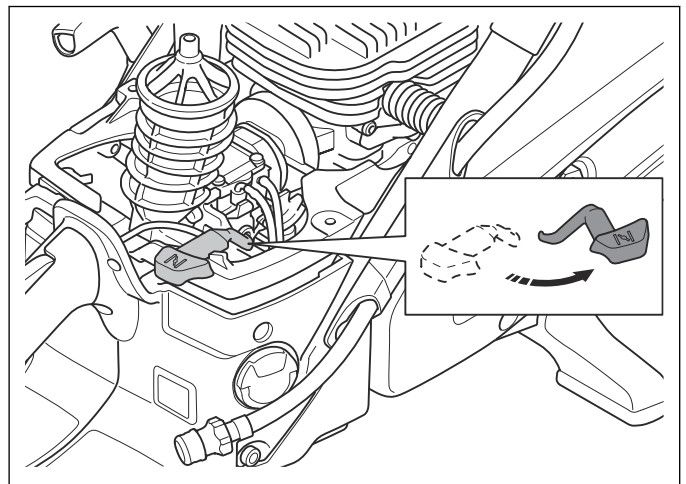
5.2.4 To remove the cylinder cover

1. Remove the air filter. Refer to *To remove the air filter on page 15*.
2. Remove the 2 screws and the cylinder cover.

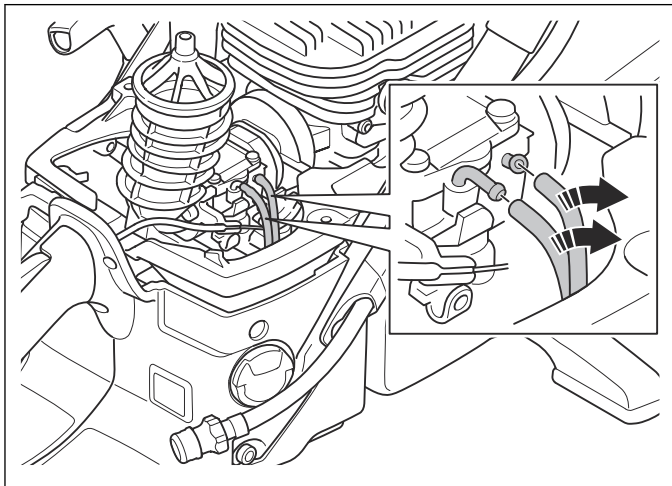


5.2.5 To remove the carburetor

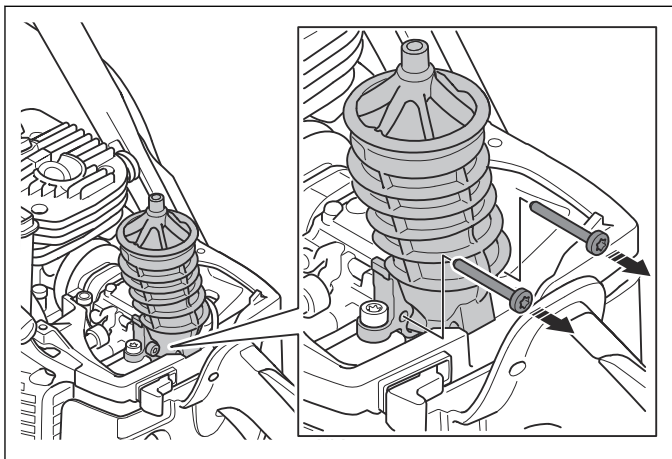
1. Remove the cylinder cover. Refer to *To remove the cylinder cover on page 16*.
2. Remove the choke handle.



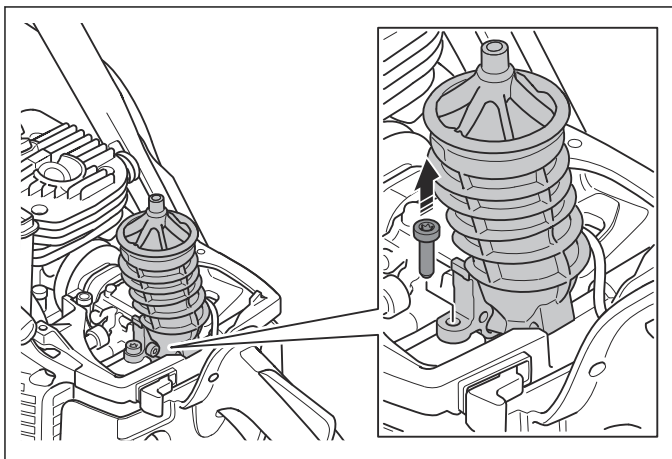
3. Remove the fuel hoses



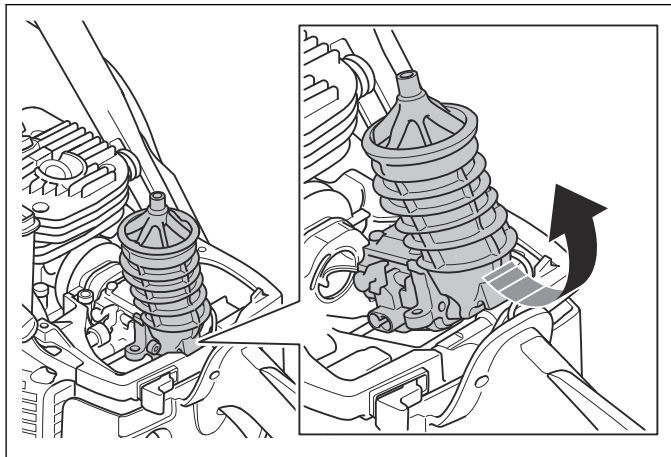
4. Remove the 2 screws for the inlet hose and carburetor.



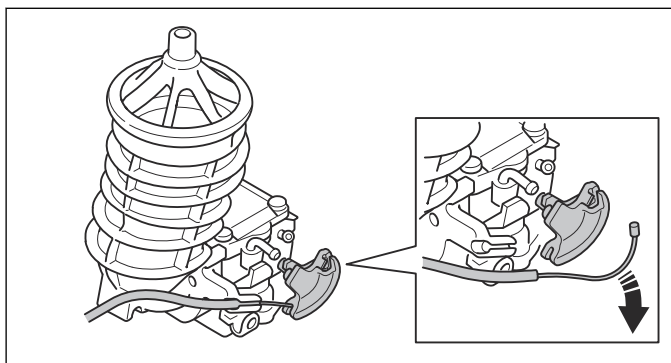
5. Remove screw for the inlet hose.



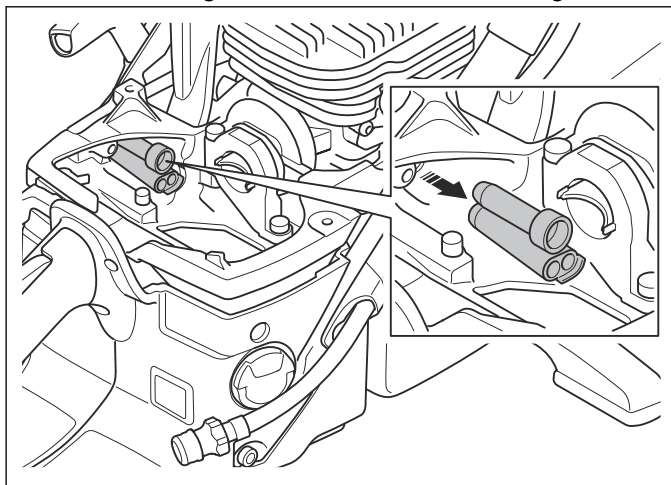
6. Loosen the carburetor.



7. Remove the throttle cable.

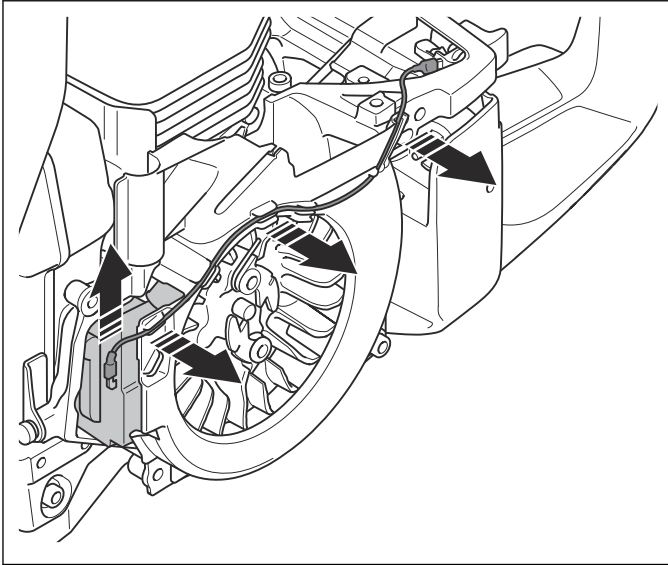


8. Remove the guide for the carburetor settings.

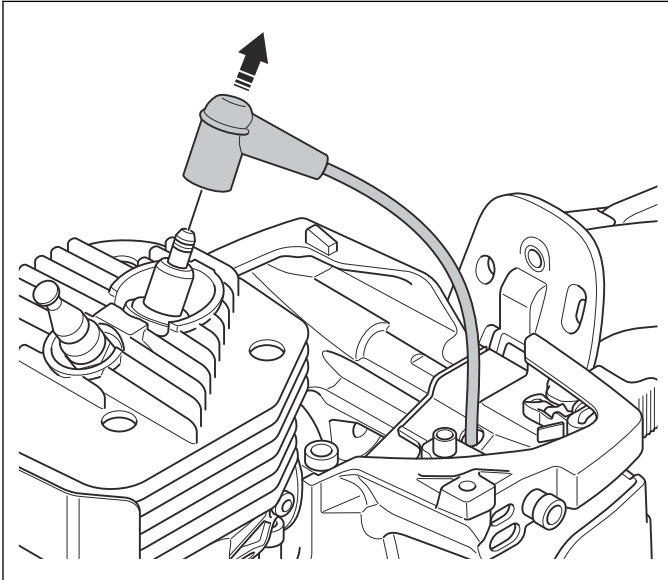


5.2.6 To remove the air duct

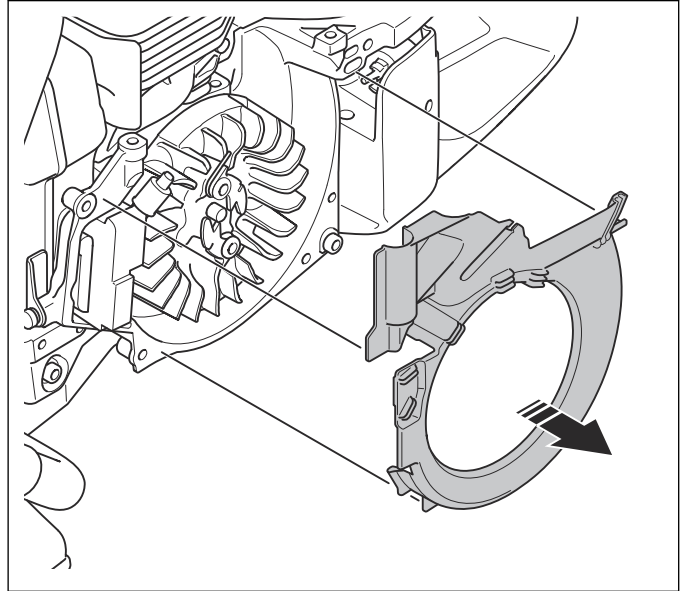
1. Remove the starter. Refer to *To remove the starter on page 14*.
2. Remove the cable lug for the stop switch cable.



3. Remove the ignition cable from the spark plug.

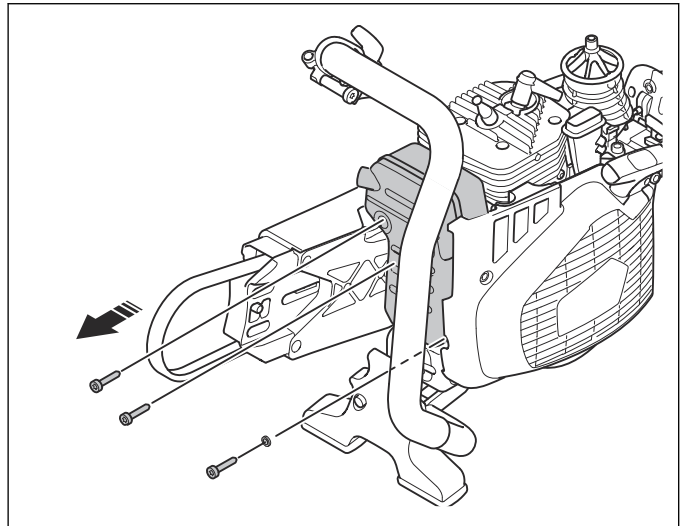


4. Remove the air duct.

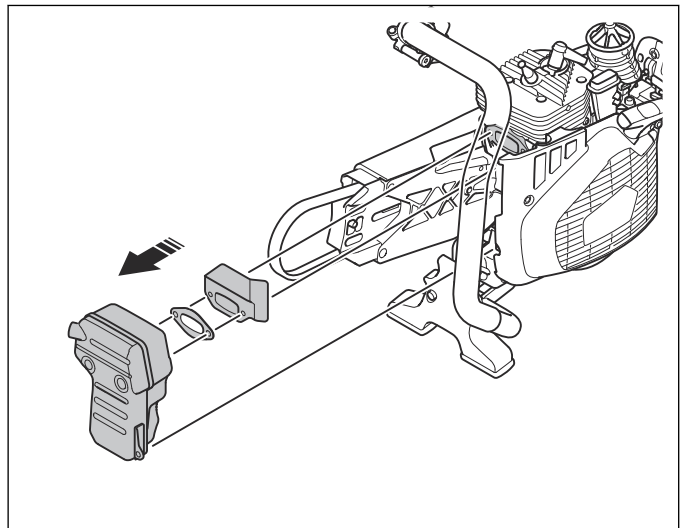


5.2.7 To remove the muffler

1. Remove the cutting head. Refer to *To remove the cutting head on page 15*.
2. Remove the 3 screws that hold the muffler.

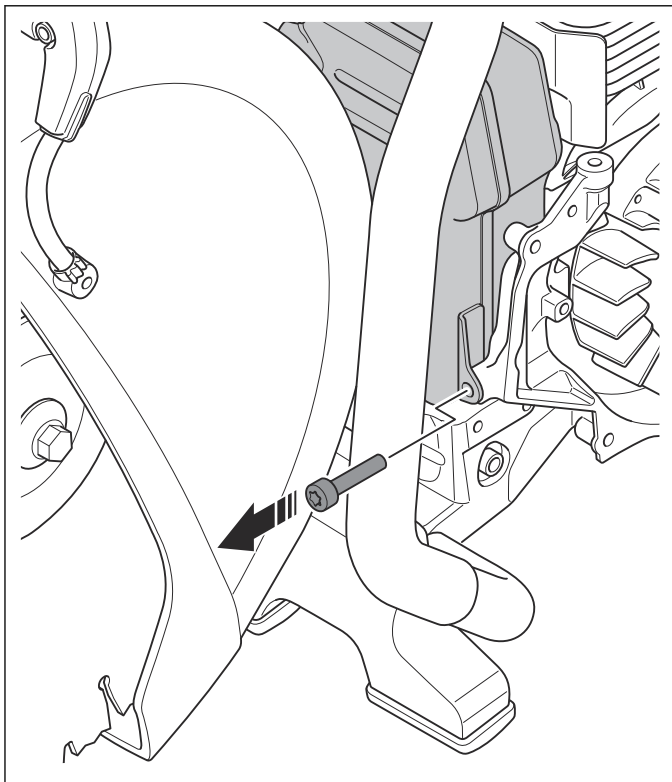


3. Remove the muffler.

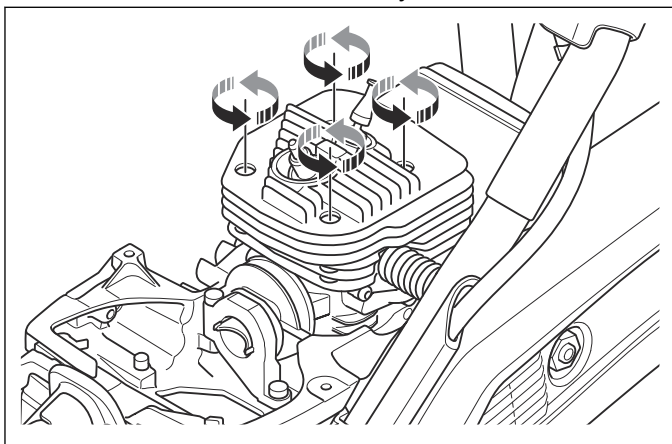


5.2.8 To remove and install the inlet manifold

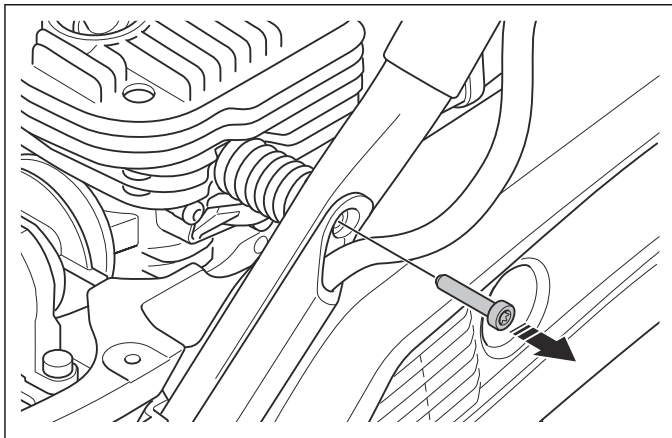
1. Remove the carburetor. Refer to *To remove the carburetor on page 16*.
2. Remove the screw that hold the muffler to the crankcase.



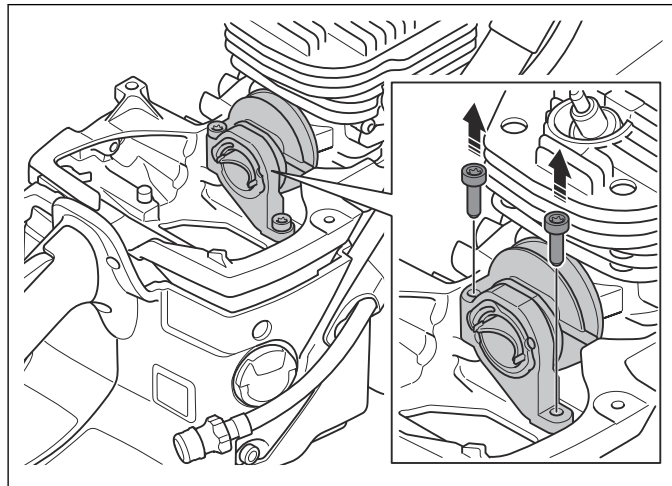
3. Loosen the 4 screws for the cylinder.



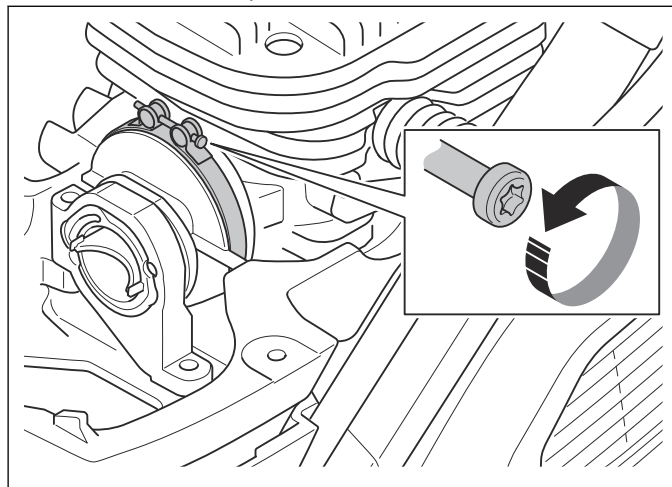
4. Remove the screw for the vibration damping unit.



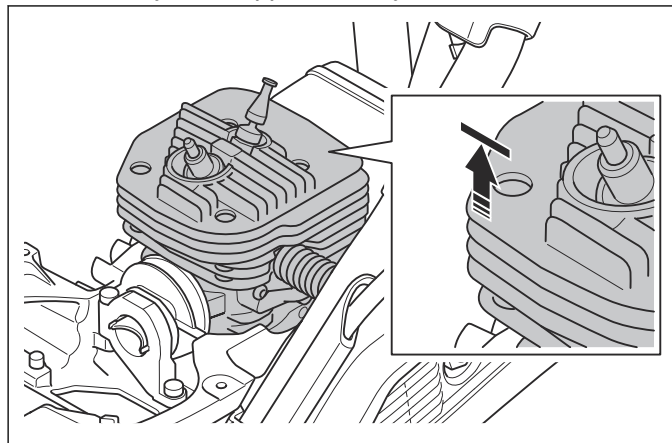
5. Remove the 2 screws for the inlet manifold.



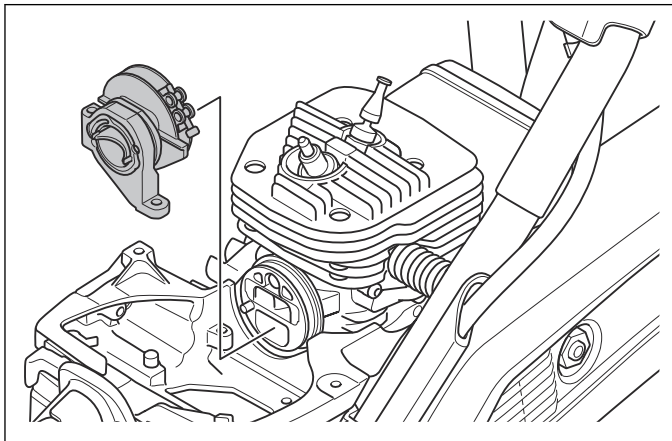
6. Loosen the clamp.



7. Lift the cylinder approximately 1 cm.

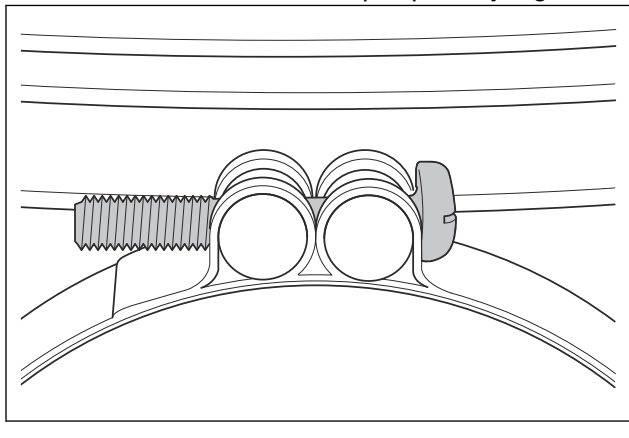


8. Remove the inlet manifold.



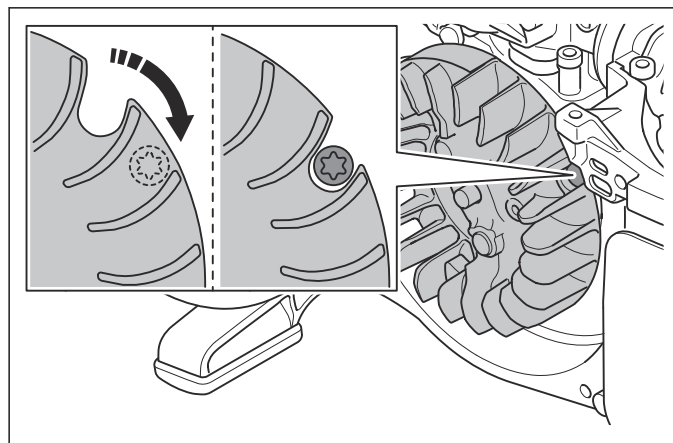
9. Install in the inlet manifold in the opposite sequence.

Note: Make sure that the clamp is put fully together.

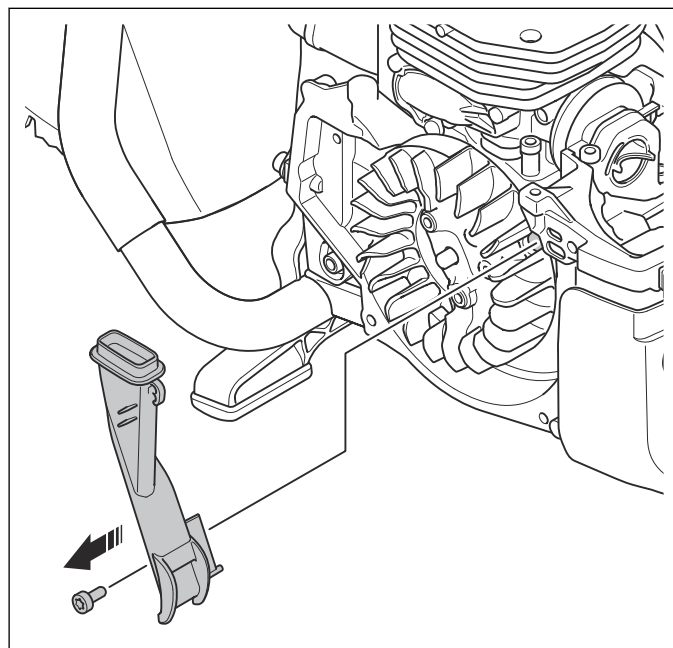


5.2.9 To remove the inlet nozzle

1. Remove the screw for the inlet nozzle.



2. Remove the the inlet nozzle.

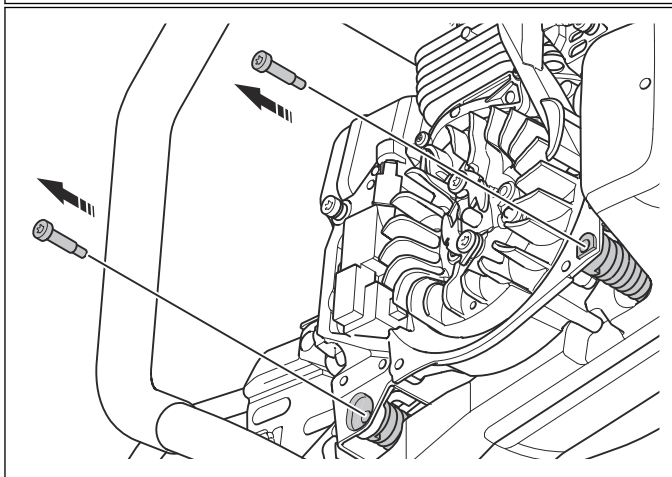
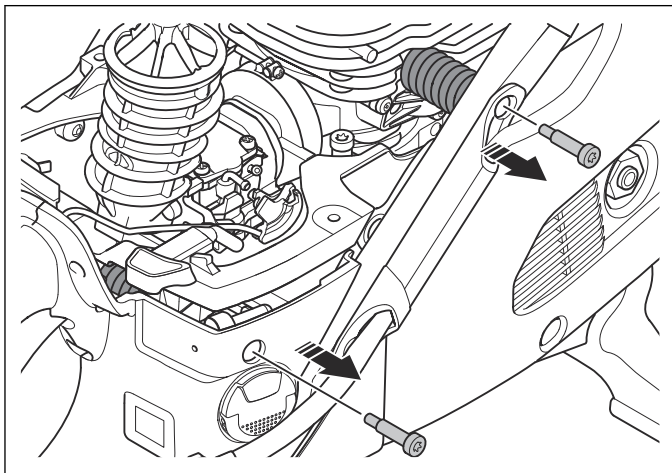


3. Install in opposite sequence.

5.2.10 To remove the vibration damping units

1. Remove the air filter and the cylinder cover. Refer to *To remove the air filter on page 15*.
2. Remove the starter. Refer to *To remove the starter on page 14*.
3. Loosen the cable lug on the ignition module and on the stop button. Remove the air line. Refer to *To remove the air duct on page 18*.
4. Disconnect the water hose from the valve. Refer to *To remove the cutting head on page 15*.
5. Remove the fuel hose. Refer to *To remove the carburetor on page 16*.
6. Remove the throttle wire from the carburetor. Refer to *To remove the carburetor on page 16*.
7. Remove the choke. Refer to *To remove the carburetor on page 16*.

8. Remove the 4 screws for the vibration damping units.

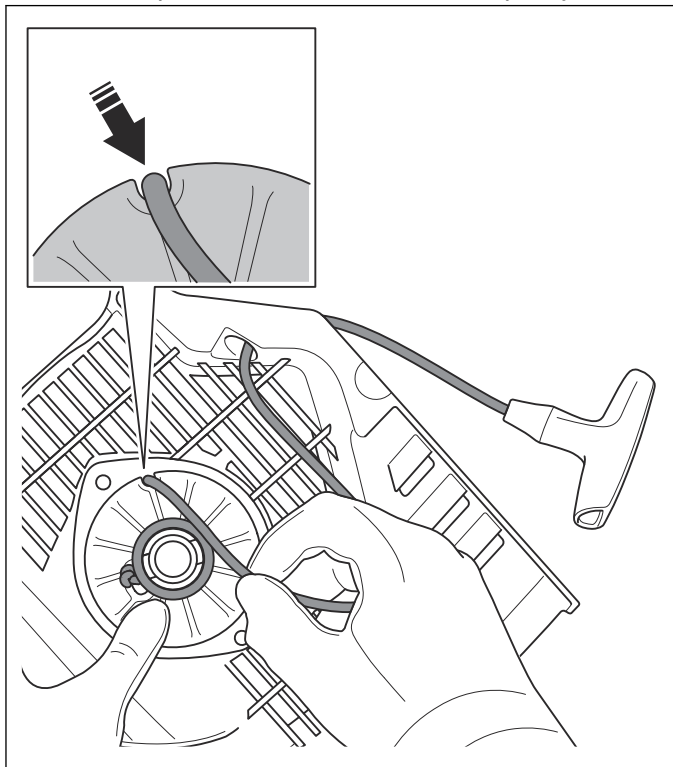


6 Repair and servicing

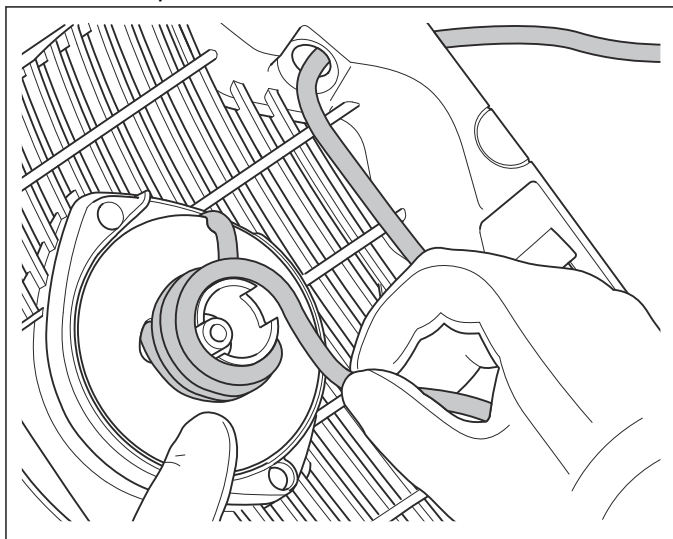
6.1 Starter

6.1.1 To remove the starter rope

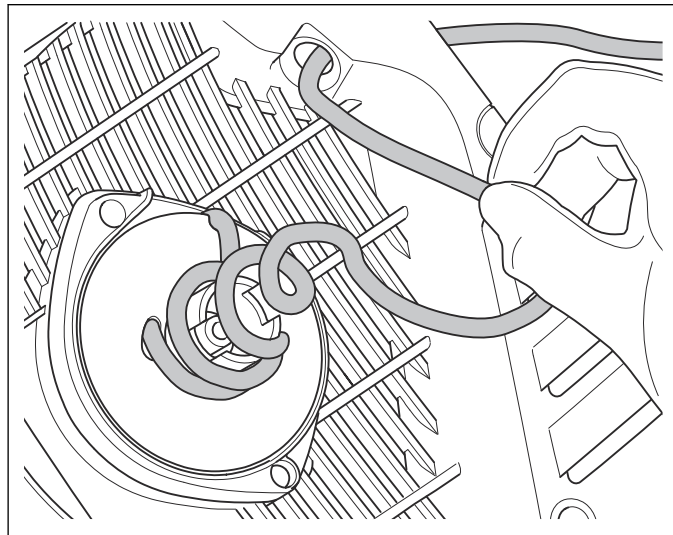
1. To remove the spring force from the return spring, pull out the starter rope approximately 12 in/30 cm. Hold the starter pulley with your thumb and put the starter rope in the notch on the starter pulley.



2. Let the starter pulley rotate slowly and wind up the starter rope on the metal sleeve.

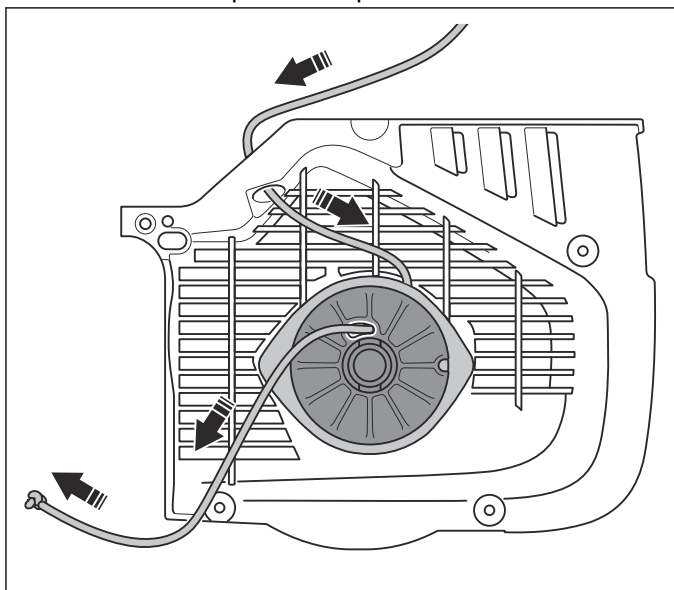


3. Remove the starter rope from the starter pulley.

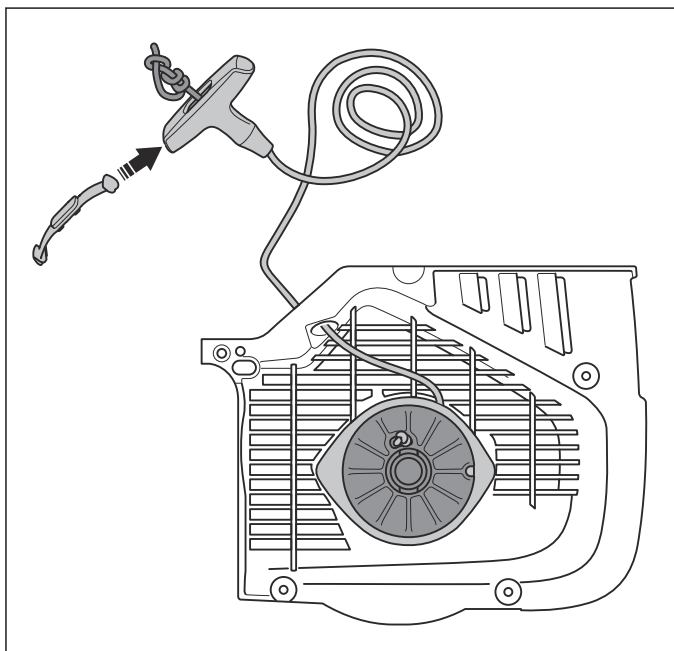


6.1.2 To attach the new starter rope

1. Put one end of the new starter rope from the top through the hole in the starter pulley. Then pull it out through the notch for the starter rope. Pull out most of the starter rope but keep some to make a knot.

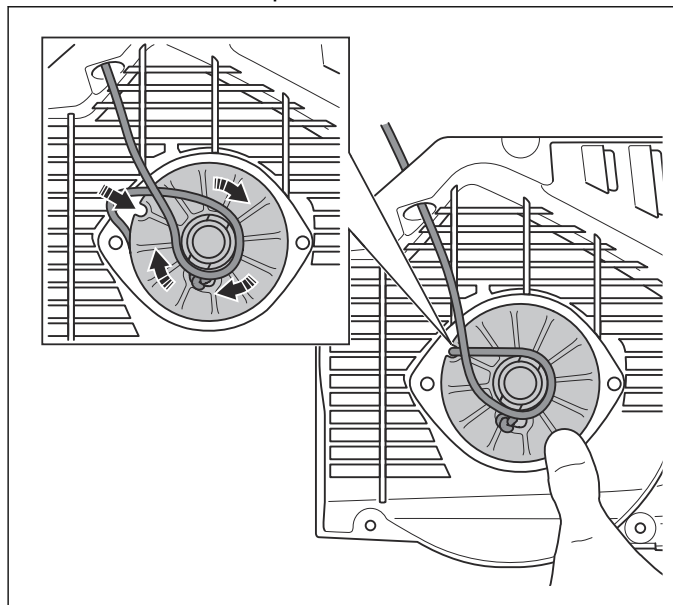


2. Put the other end through the cover and on through the handle. Make two knots as in the illustration.

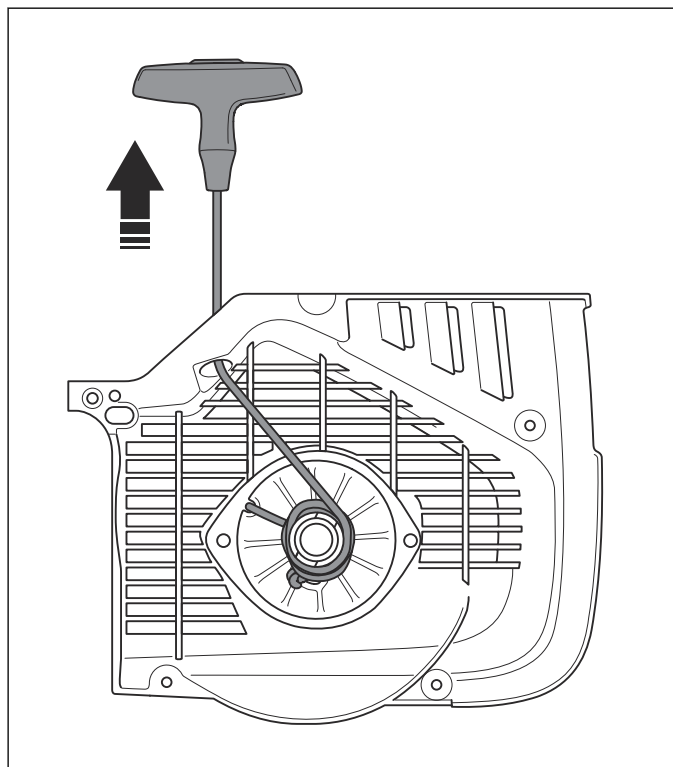


6.1.3 To apply tension to the return spring

1. Put the starter rope in the notch.
2. Wind the starter rope 4 turns around the hub.



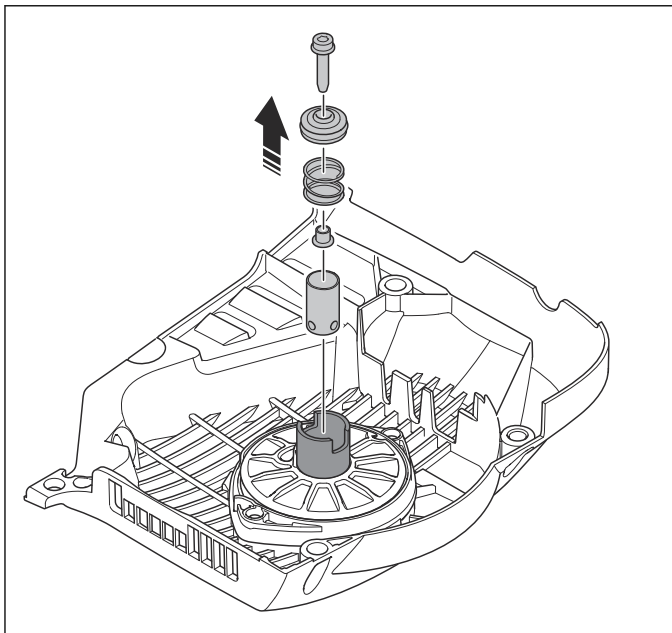
3. Pull out the starter rope to make the rope come off the hub.



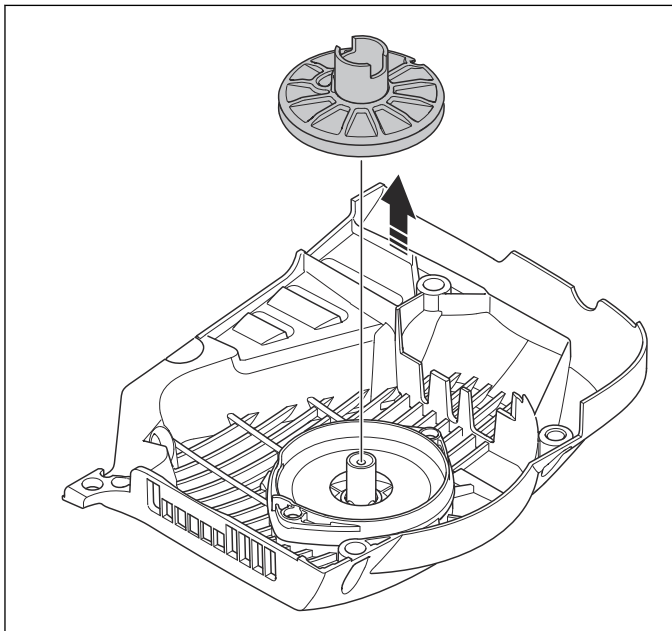
4. Release the starter rope. Let it wind up on the starter pulley. Do the procedure again with 3 turns of rope around the hub.
5. Extend the starter rope fully to make sure that the return spring is not an end stop. It must be possible to turn the starter pulley $\frac{1}{2}$ a turn or more before the return spring stops the movement.

6.1.4 To remove the starter pulley

1. Decrease the tension in the return spring. Refer to *To remove the starter rope on page 22.*
2. Remove the screw.



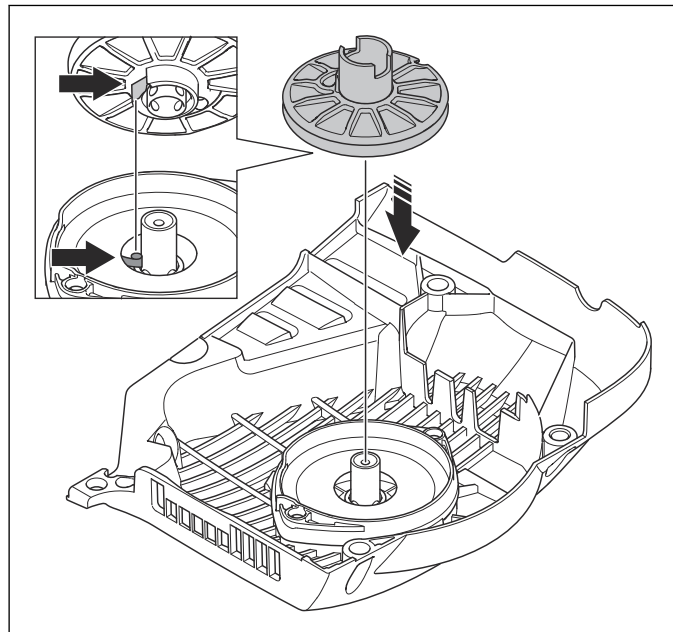
3. Remove the starter pulley.



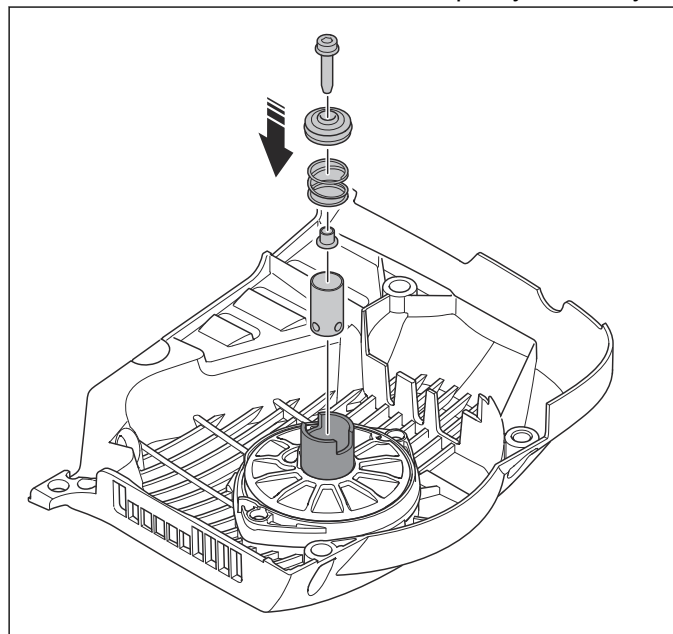
6.1.5 To install the starter pulley

Note: Make sure that the spacer sleeve does not fall off.

1. Align the starter pulley notch with the end of the return spring.



2. Put the center bolt into the starter pulley assembly.

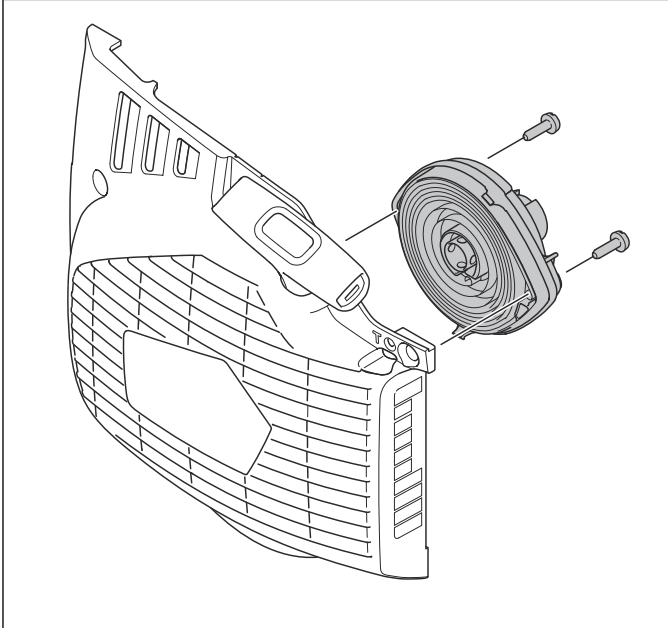


6.1.6 To remove the spring assembly



WARNING: Always use protective glasses when you disassemble the spring unit. Risk for eye injuries, especially if a spring is broken.

1. Remove the 2 screws on the spring assembly.



2. Push out the 2 hooks from the snap locks with a screwdriver.

6.1.7 To clean the spring assembly

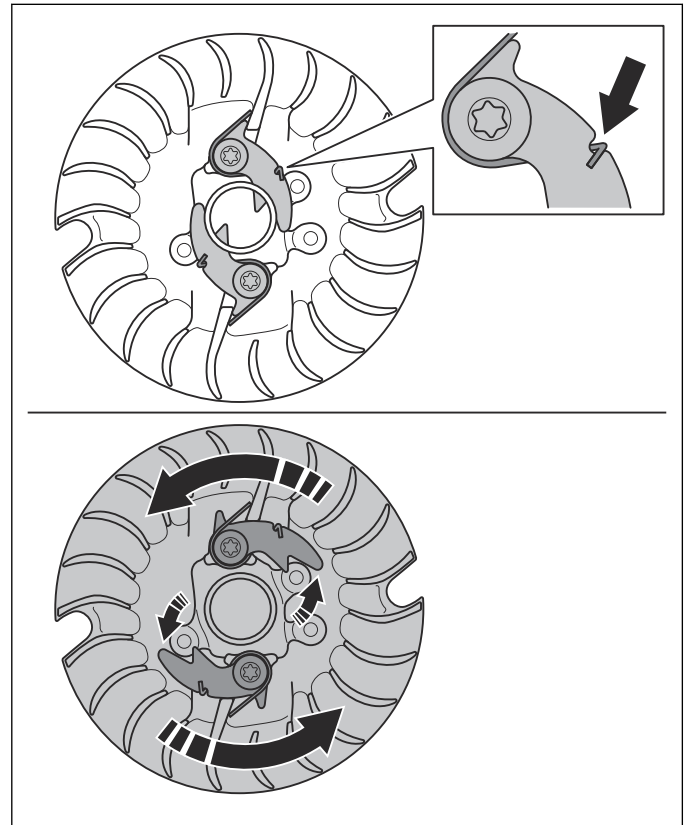
Note: Do not remove the spring from the spring assembly.

1. If the spring is dirty, blow clean with compressed air.
2. Apply a light oil on the spring.

6.1.8 Starter pawls

When the flywheel does not move, the starter pawls are pushed in the direction of the center by springs. When

the flywheel rotates, the turning force pushes out the center pawls.



6.1.9 To examine the starter pawls

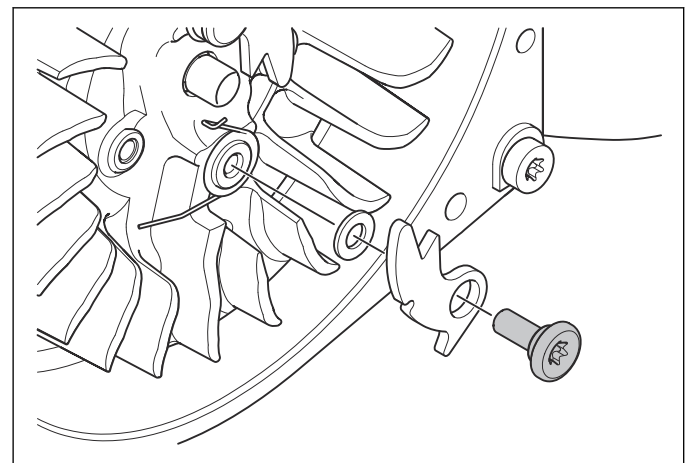
Note: Do not lubricate the starter pawls.

1. Make sure that the springs operate correctly and the starter pawls move freely.
2. If it is necessary, disassemble and clean the starter pawls.

6.1.10 To disassemble the starter pawls

Note: The position of the washer is below the starter pawls against the flywheel. Make a note of the position of the springs in relation to the flanges on the flywheel.

- Remove the shoulder screws.

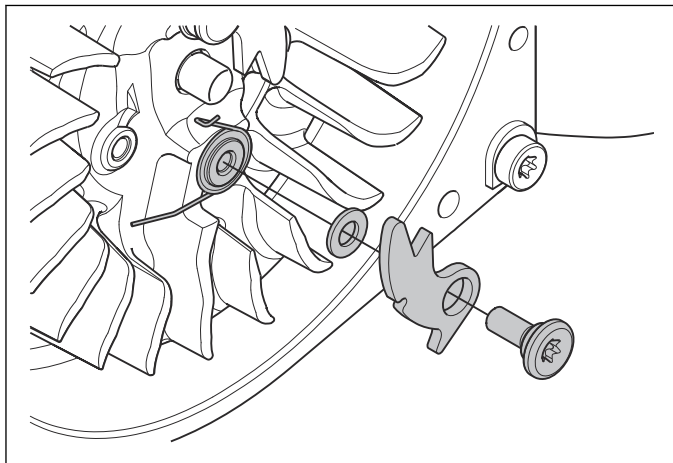


6.1.11 To assemble the starter pawls

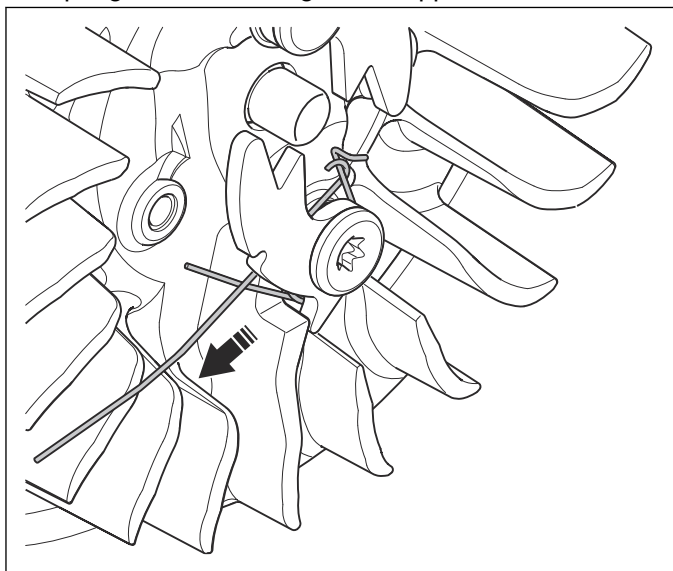


CAUTION: The spring must not get caught between the starter pawl and the flywheel.

1. Push the spring into position in the flywheel.



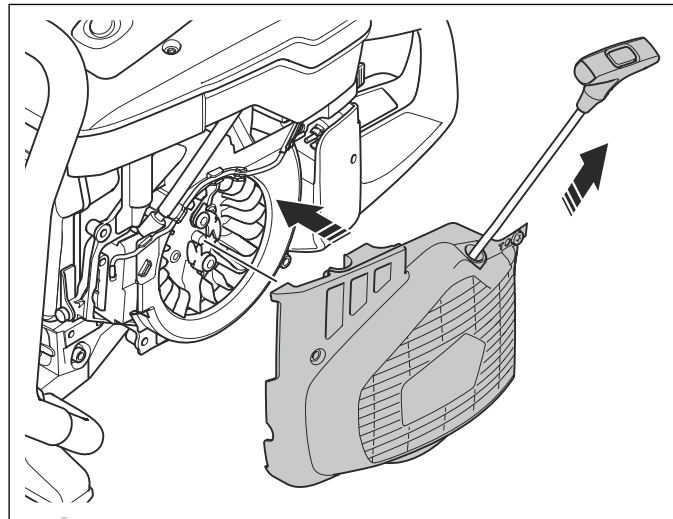
2. Install the washer, the starter pawl and the shoulder screw.
3. Bend the end of a thin steel wire. Use it to pull the spring to the mounting on the opposite side.



6.1.12 To install the starter

The starter pawls must come into the correct position against the starter pulley sleeve.

1. Pull out the rope approximately 0.5 m.



2. Keep this position and set the starter against the product.
3. Slowly release the rope until the starter pawls come into the correct position.
4. Tighten the 4 screws on the starter to a torque of 7–9 Nm.

6.2 Ignition system

6.2.1 Function

The ignition system has no moving parts and it is not sensitive to moisture and dirt.

It is not necessary to adjust the ignition point.

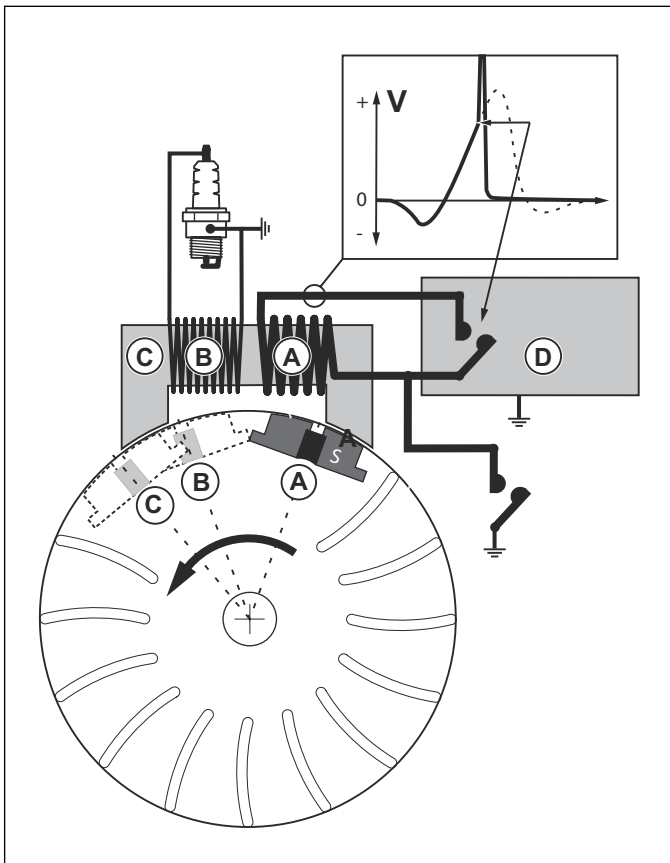
The product has an overspeed protection rev limiter. The limit is 9300 rpm.

The ignition system has a primary coil (A) and a secondary coil (B). They are wound around an iron core (C). An electronic digital unit (D) controls the switch function.

The voltage sequence is in the diagram in the illustration. The dotted line shows the voltage if the current is not broken.

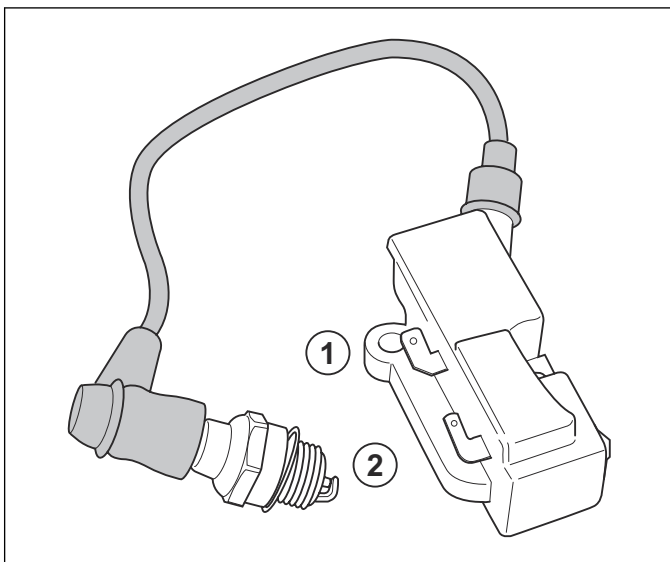
Current moves through the coil by the permanent magnet on the flywheel. The electronic digital unit senses the voltage in the primary coil. It breaks the current before the piston is at the high turning point. Until this point, the primary coil is in a closed circuit. With an open circuit the current stops to flow and voltage increases from 5V (Volt) to approximately 200V. The primary and secondary coil work as a step-up

transformer. The secondary coil increases the voltage to 20 000V. This causes a spark.



6.2.2 Ignition unit

The ignition unit is sealed and cannot be repaired. The spark plug cable, the connection unit to the spark plug and the seal on the ignition unit can be replaced.



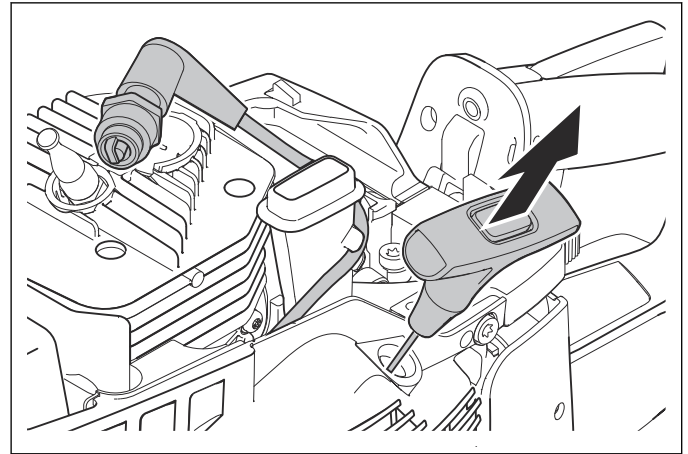
1. Stop switch
2. OilGuard

6.2.3 Troubleshooting ignition system

Examine the ignition system first if the engine does not start.

6.2.4 To examine the ignition spark

1. Ground the spark plug to the cylinder.



2. Move the stop switch to the operation position.
3. Pull the starter rope handle.

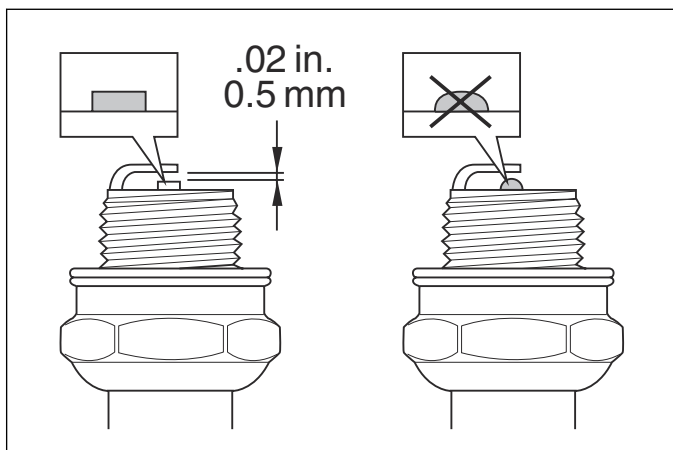
If there is no spark, the problem can be a defective spark plug, defective ignition cable or a damaged short circuit cable. Examine the spark plug.

6.2.5 To examine the spark plug

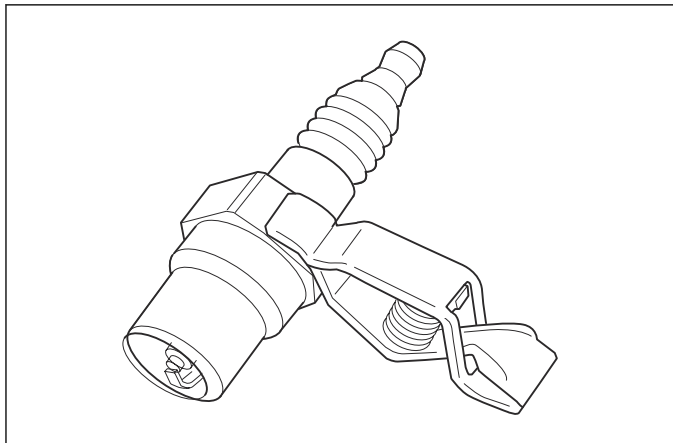
The electrode gap must be .02 in/0.5 mm.

The electrodes must be free of dirt and oil. Clean with a wire brush.

Note: An electrode with soft edges and damaged ceramic around it can cause pre-ignition. You must replace a spark plug with soft edges.



1. Replace the spark plug with the test spark plug. Refer to *Servicing tools overview on page 12*.

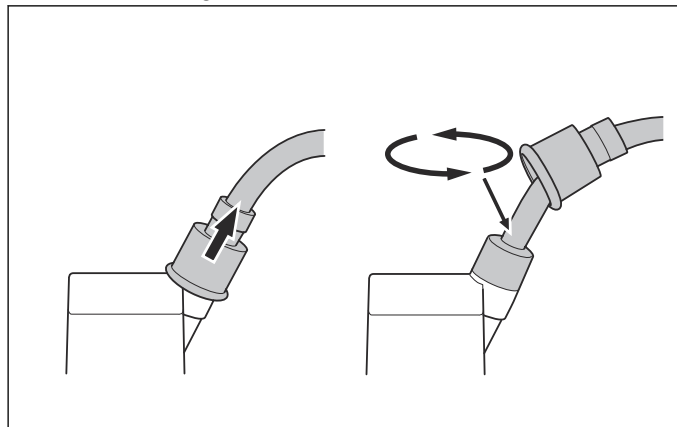


2. Move the stop button to the run position.
3. Ground the test spark plug.
4. Pull the starter rope handle as if you start the product.

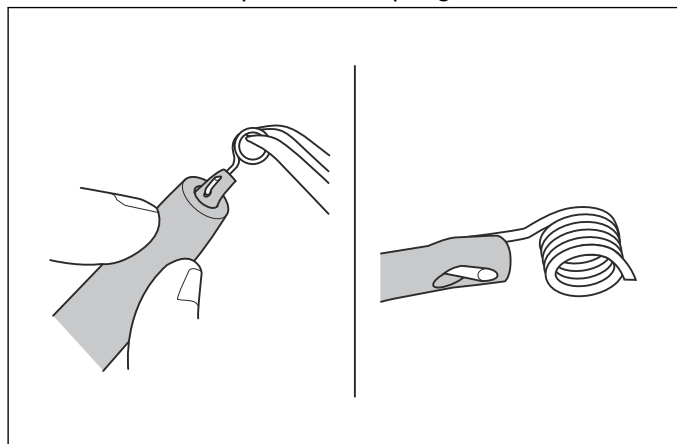
If there is a spark, the spark plug is defective. Replace the spark plug. If there is no spark, examine the ignition cable and the short circuit cable.

6.2.6 To examine the ignition cable

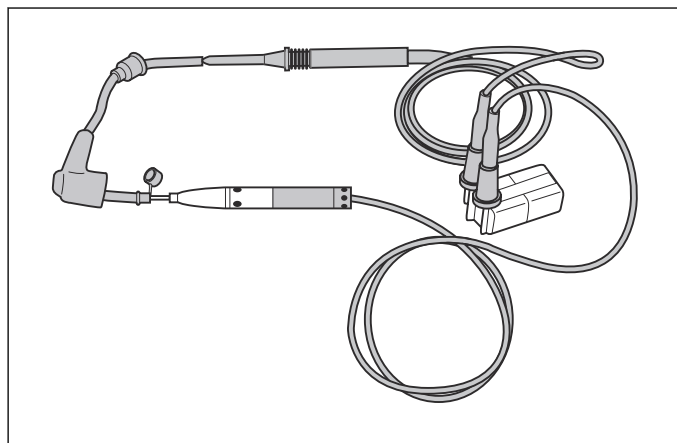
1. Pull up the rubber seal by the ignition unit and remove the ignition cable.



2. Put a pair of pointed pliers in the spark plug connection and pull out the spring and cable end.



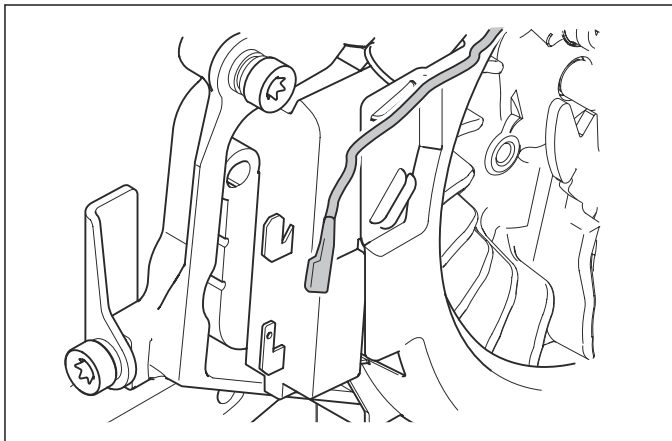
3. If the connection is defective, the ignition cable can be made shorter. Make a new hole in the cable and attach the connection spring.
4. The connection in the illustration can be used to make sure that the ignition cable is not broken. The battery is connected in series with a test lamp. A resistance control can also be made with a multimeter.



If there is no spark after this test, examine the short circuit cable.

6.2.7 To examine the short circuit cable and the stop switch

1. Remove the starter. Refer to *To remove the starter on page 14*.
2. Remove the short circuit cable on the ignition unit.



3. Put back the starter and make sure that the spark plug makes a spark.
4. Examine the short circuit cable.
 - a) Use a battery in series with a test lamp or a multimeter.
 - b) Connect to the short circuit cable and the engine body.

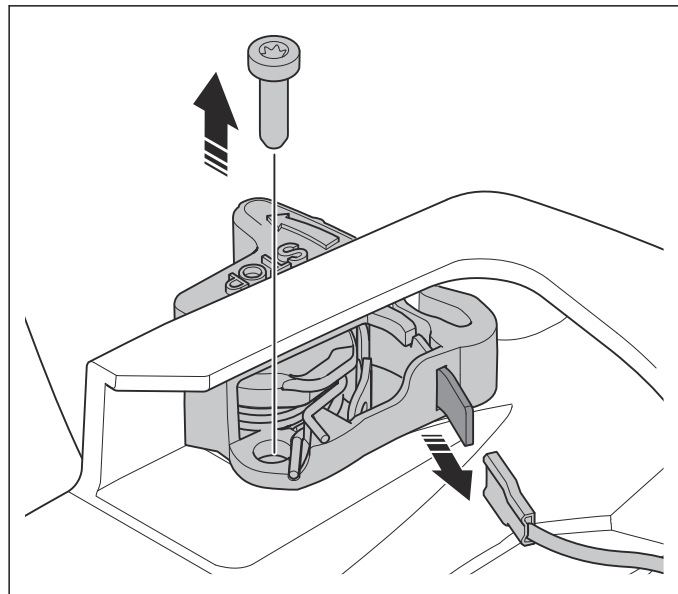
The lamp must not come on when the stop switch is in operation mode.

If the lamp comes on, examine the insulation on the short circuit cable.

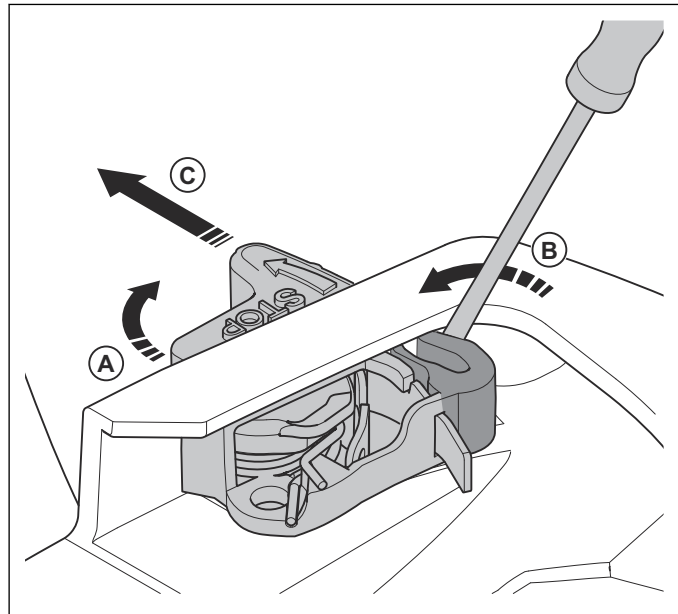
If the short circuit cable is not damaged, examine the stop switch. If the short circuit cable and the stop switch operate correctly, replace the ignition unit.

6.2.8 To remove the stop switch

1. Remove the screw and the cable.



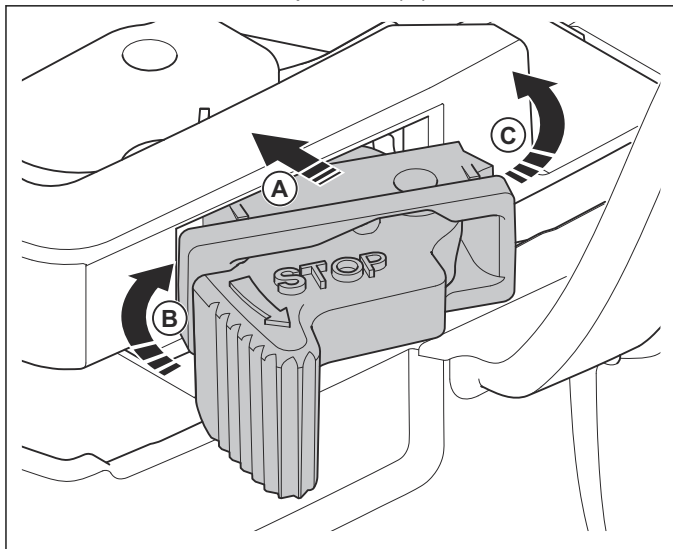
2. Pull out the the switch approximately 10 mm (A).



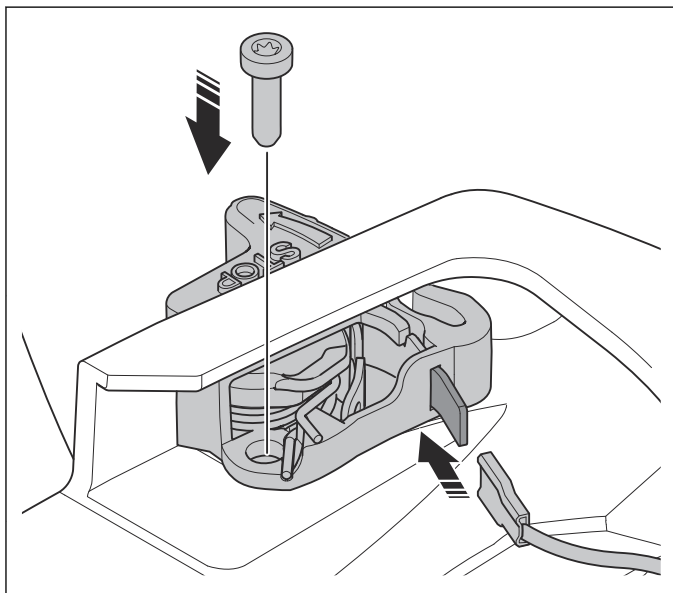
3. Push the clip with a screwdriver (B).
4. Remove the switch (C).

6.2.9 To install the stop switch

1. Push the switch into position (A).

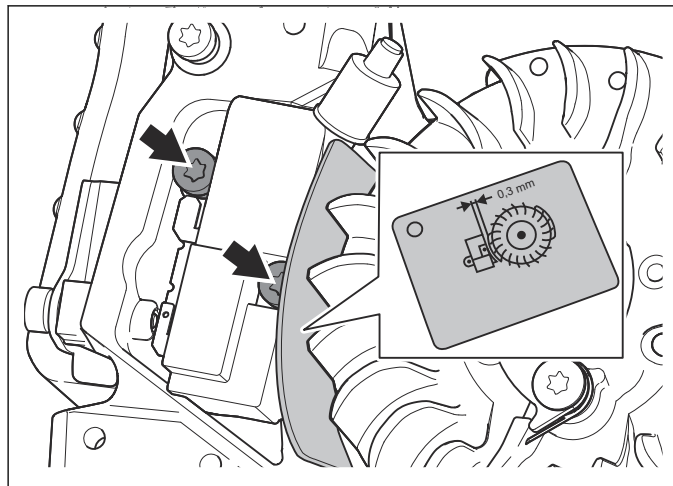


2. Push the side until it locks (B).
3. Push the side until it locks (C).
4. Tighten the screw. Connect the cable to the stop switch.



6.2.10 To assemble the ignition unit

1. Align the magnet on the flywheel with the ignition unit.



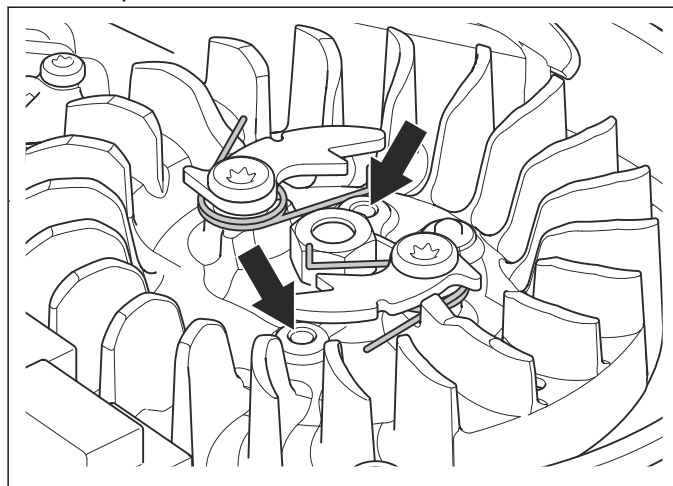
2. Put the air clearance gauge (0.01 in./0.3 mm) against the magnets. Refer to *Servicing tools overview on page 12*.
3. Put the new ignition unit in position. Push it against the air clearance gauge while you tighten the screws. Tighten the screws with a torque of 10–12 Nm.

6.3 Flywheel

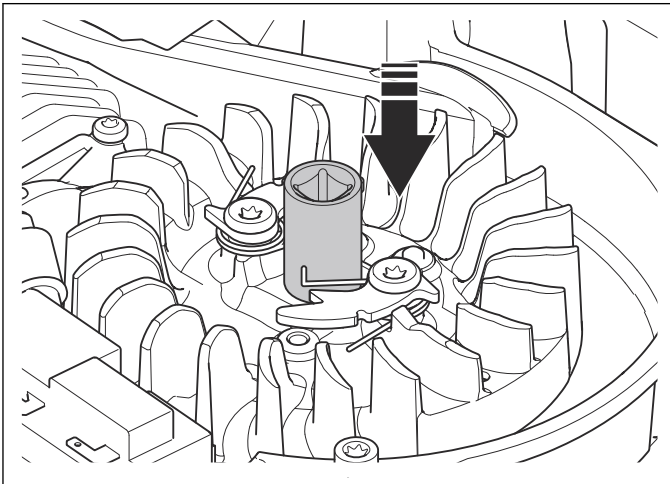
6.3.1 To remove the flywheel

Use a Husqvarna flywheel puller. Refer to *Servicing tools overview on page 12*.

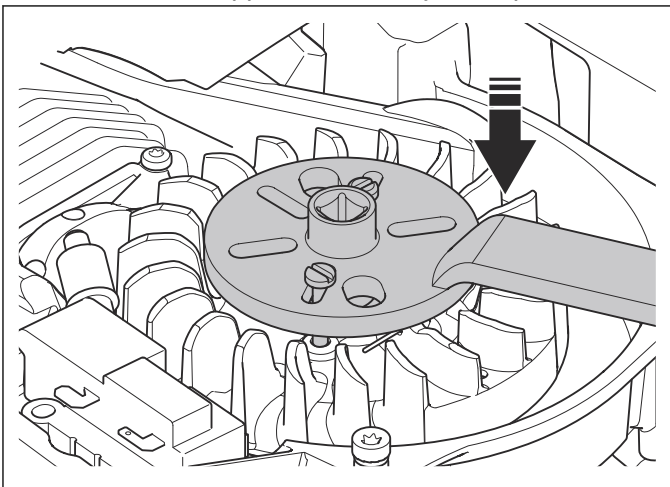
1. Remove the starter, refer to *To remove the starter on page 14*.
2. Remove the lower air duct, refer to *To remove the air duct on page 18*.
3. Loosen the springs and put the starter pawls in their outer positions.



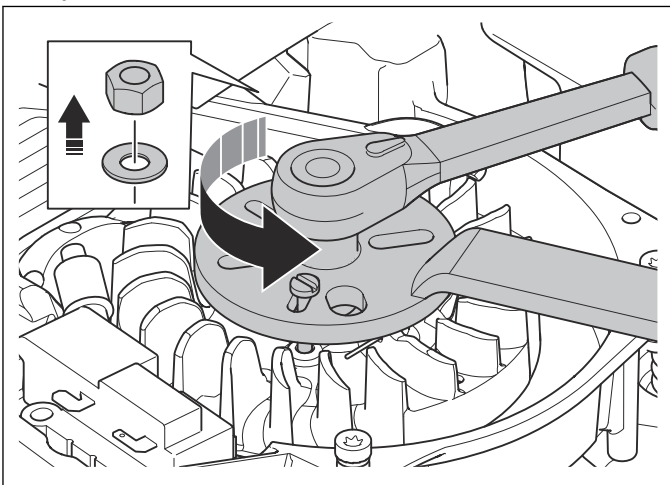
4. Put a 13 mm socket on the center screw of the flywheel.



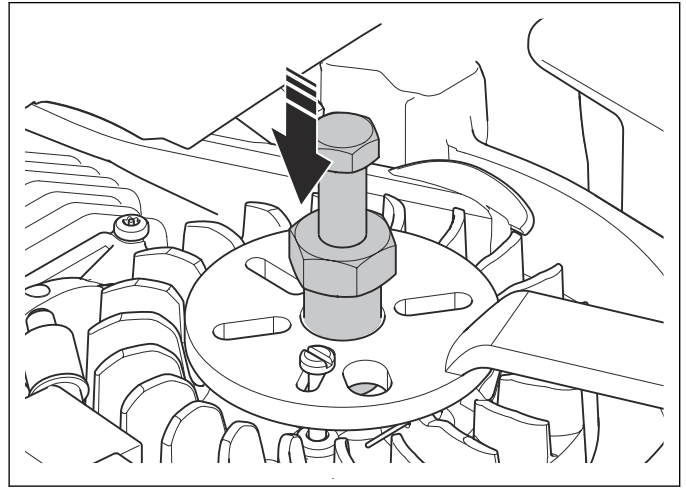
5. Attach the flywheel puller on the socket with the screw that is supplied with the flywheel puller.



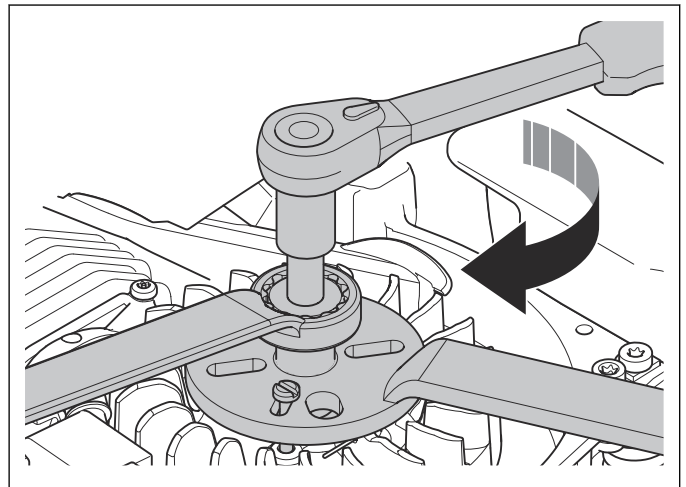
6. Hold the handle of the flywheel puller to lock the flywheel. Remove the nut and the washer.



7. Attach the screw press in the center.



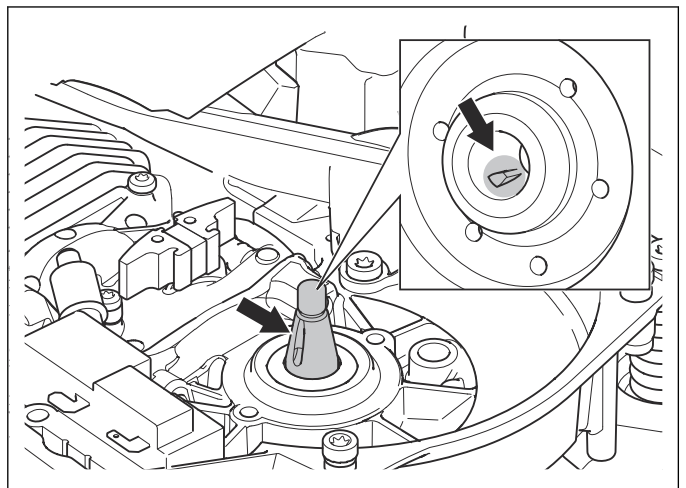
8. Lock the outer socket with a wrench and tighten the center screw until the flywheel releases.



Note: If the flywheel is not easy to remove, hit the center screw with a hammer. At the same time, lift the product with the handle of the flywheel puller.

6.3.2 To examine the seat and key

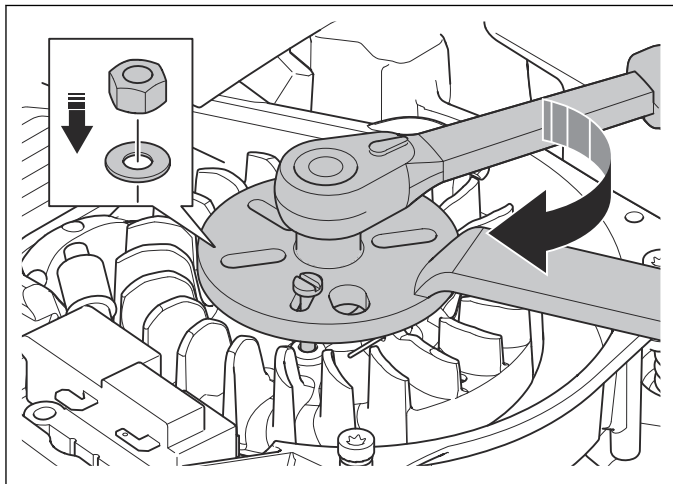
The key in the flywheel can not be replaced. If the key is damaged, the flywheel must be replaced. For a correct ignition point, the position of the flywheel must align with the position of the crankshaft. The force of the center nut is not sufficient to hold the flywheel in the right position.



6.3.3 To install the flywheel

The crankshaft and the center of the flywheel must be free from grease. Tightening torque 18 – 22 lbf-ft / 25 – 30 Nm. Use a torque wrench to tighten the nut.

1. Align the key in the flywheel with the keyway on the crankshaft. Install the washer and nut.

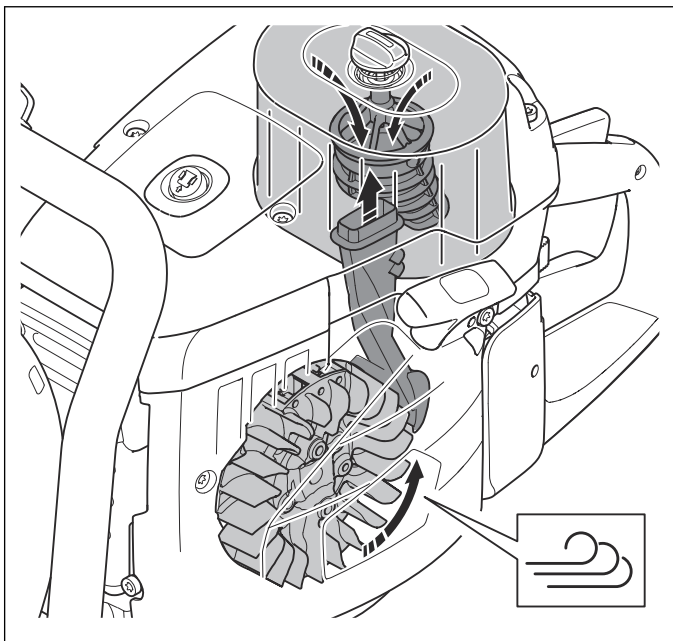


2. Remove the tool and put the springs on the starter pawls.

6.4 Air filter

6.4.1 Function of the air filter

The centrifugal cleaning is the first step in the process to clean the inlet air. The blades on the flywheel supply the cylinder with cool air. This is shown in the illustration. The blades are also the part in operation on the centrifugal cleaning of the inlet air of the engine. An inlet tube is installed near the blades on the flywheel. The centrifugal force prevents large particles in the inlet tube. The centrifugal force pushes the large particles out before they can go into the tube. Only small dust particles go with the air to the inlet.



6.4.2 To replace the air filter

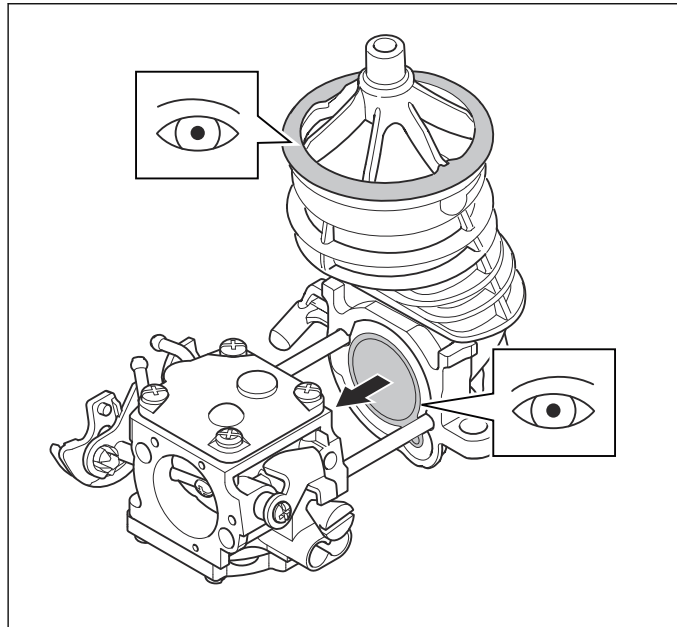
The air filter cannot be cleaned. When the power starts to decrease, replace the air filter.

1. Remove the air filter, refer to *To remove the air filter on page 15*.



CAUTION: Make sure that dust does not fall into the carburetor inlet.

2. Clean and examine the inlet duct.

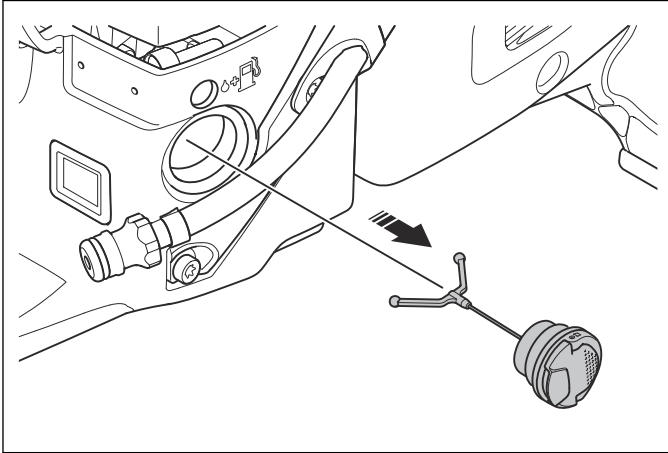


- a) Make sure that there is no dust on the inner surface of the inlet duct. If there is dust, the inlet duct is damaged and must be replaced.
 - b) Clean dry dust from the outer surface of the inlet duct with compressed air or a vacuum cleaner.
 - c) Clean material from wet cutting mechanically.
3. Install a new air filter.

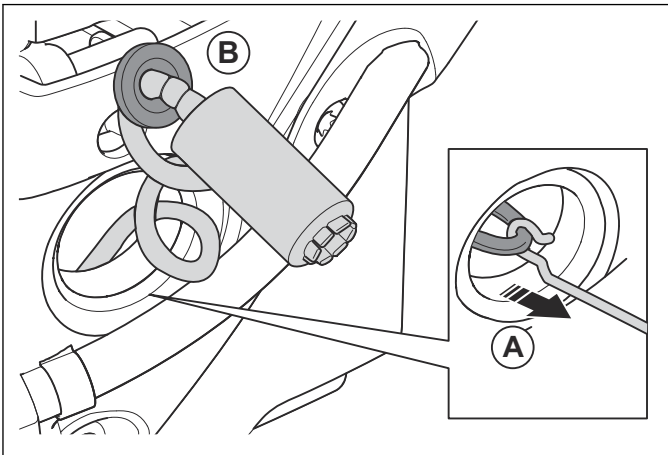
6.5 Fuel system

6.5.1 To remove the fuel filter

1. Remove the fuel tank cap.



2. Catch the fuel hose with a Husqvarna fuel filter hook (A).



3. Pull out the fuel filter.
4. Move back the metal weight (B) and pull off the hose.

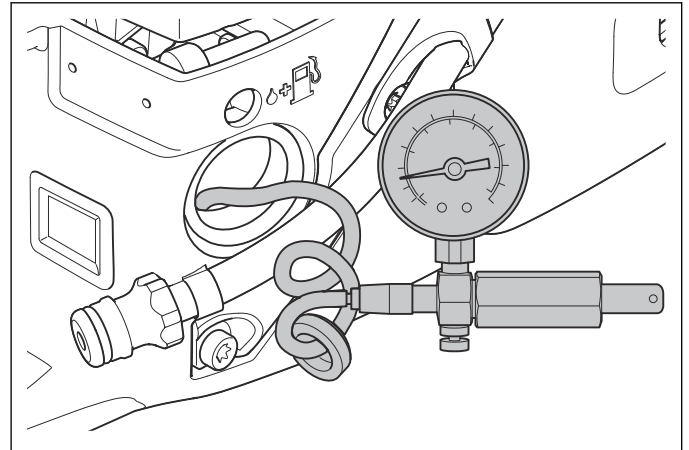
6.5.2 To examine the fuel filter

1. Examine the filter, make sure it is not damaged.
2. If the filter is very dirty, it can be because of dirty fuel. If necessary, drain the fuel and filter it before using it in the product.

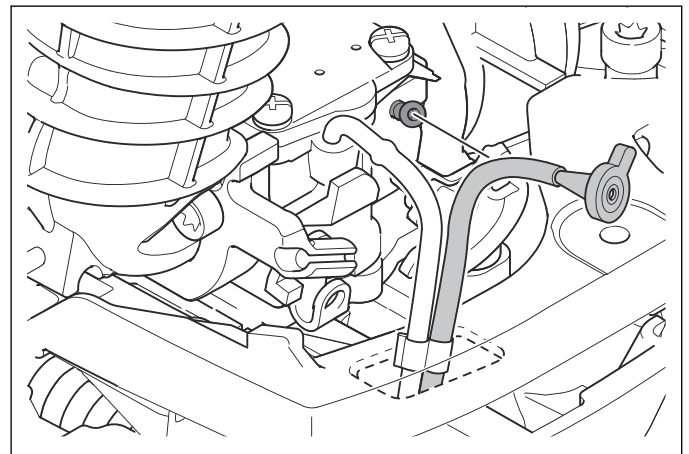
Note: Dirty filters must not be cleaned but replaced with a new one.

6.5.3 To examine the fuel system for leakages

1. Connect the adapter to a pressure test tool. Refer to *Servicing tools overview on page 12*.
2. Increase the pressure to approximately 7 psi/0.5 bar. If the pressure is constant, the fuel system has no leakage. If the pressure drops, go to the next step.

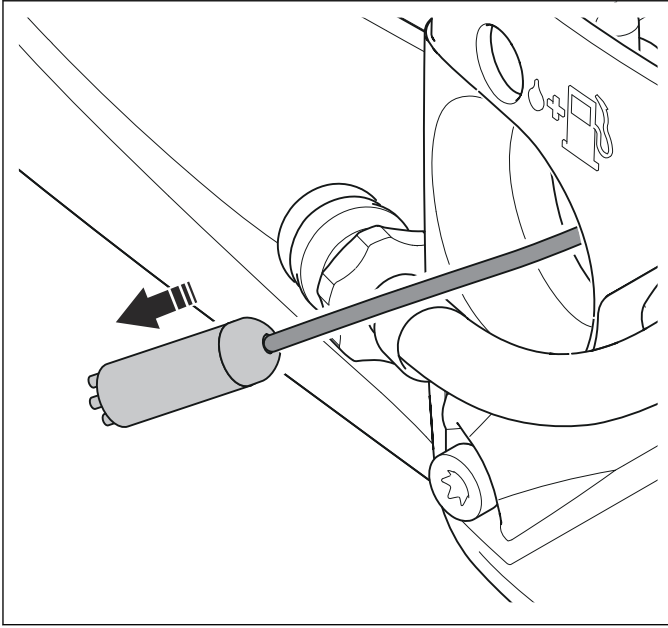


3. To make sure that the fuel hose does not cause the leakage, remove the carburetor unit. Seal the fuel hose by the carburetor and do the pressure test again. If the fuel hose is not damaged, the carburetor must be examined.

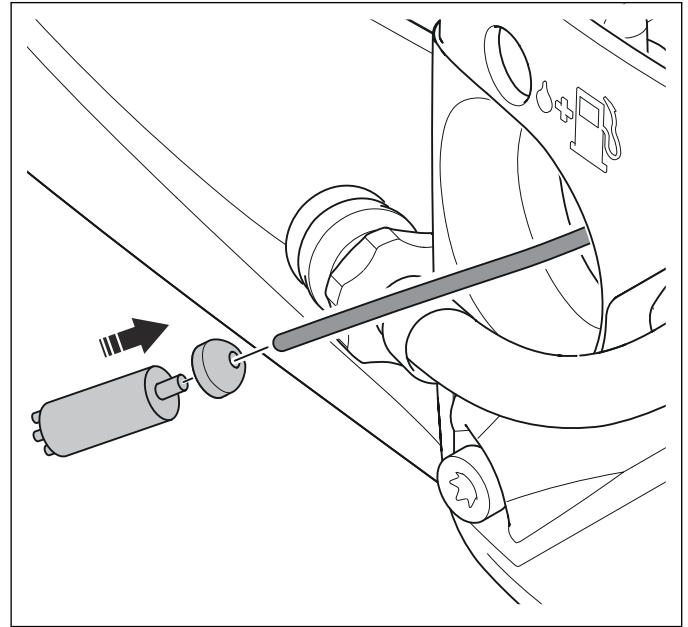


6.5.4 To remove the fuel hose

1. Remove the fuel hose from the carburetor. Refer to *To remove the carburetor on page 16*.
2. Pull out the fuel hose from the fuel tank.

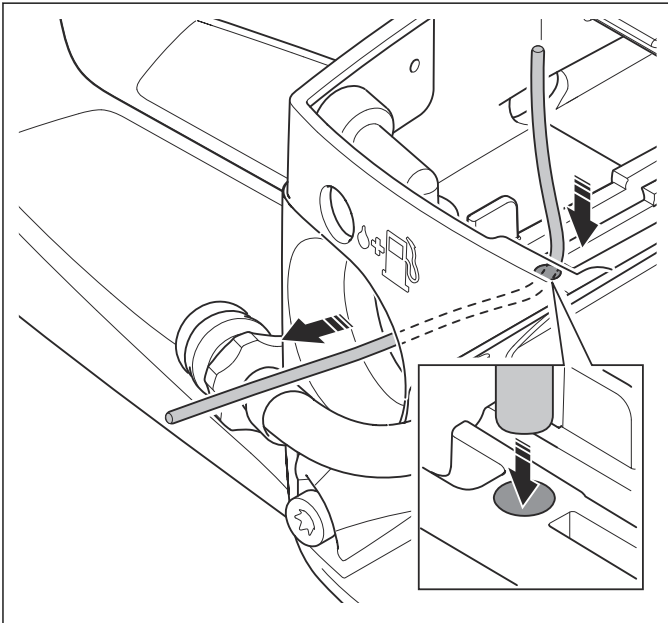


3. Attach the weight and the fuel filter.



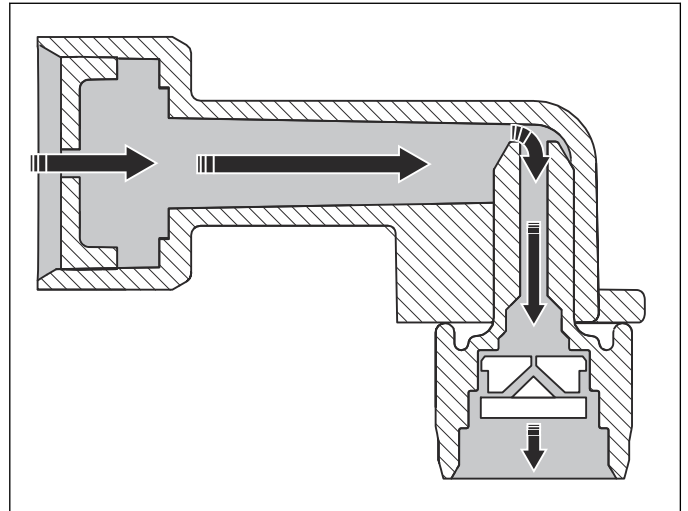
6.5.5 To install the fuel hose

1. Remove the vibration damping units. Refer to *To remove the vibration damping units on page 20*.
2. Push the fuel hose down in the tank. At the same time, pull the fuel hose out from the hole for the fuel tank cap.



6.5.6 Function of the tank venting

The fuel tank has a check valve that lets air enter the tank, but prevents fuel from leakage.

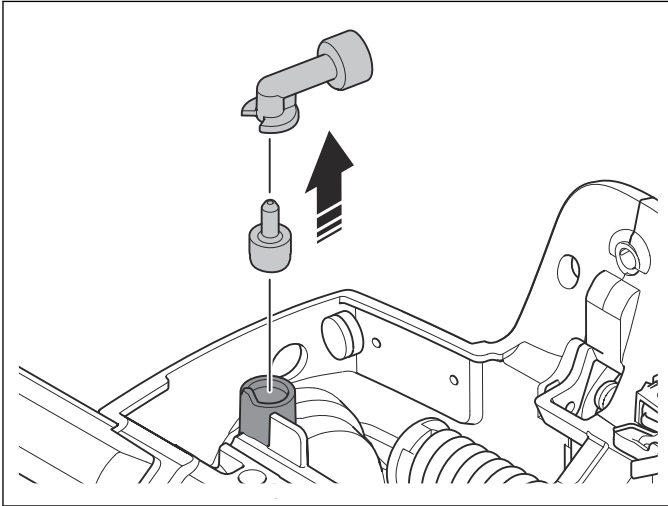


6.5.7 Tank air flow fault indication

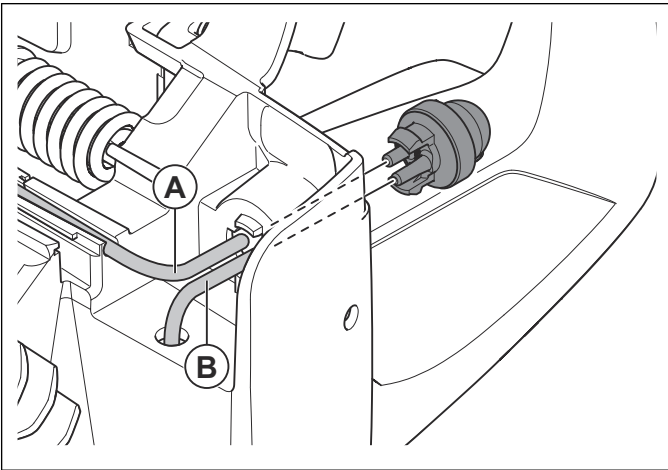
If the tank air flow is blocked and the engine operates, the tank will have low pressure. This decreases fuel supply and the power. When you open the fuel tank cap you will hear the sound of air suction. Replace a clogged filter.

6.5.8 To remove the filter for the fuel tank venting

- Remove the check valve and then the filter for the fuel tank venting with a pair of pliers.



6.5.9 Function of the air purge bulb



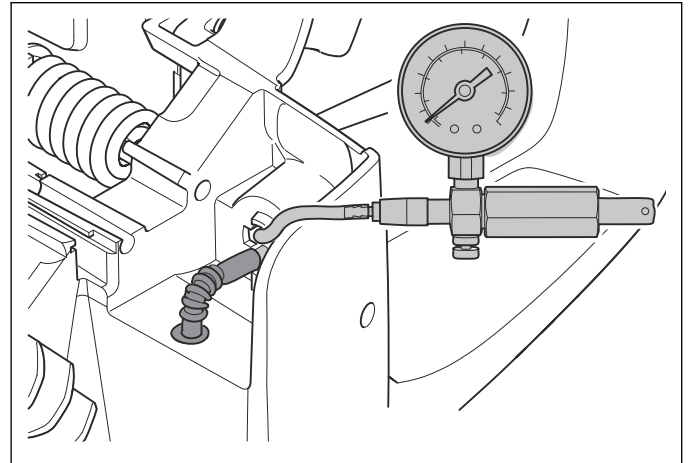
Hose (A) is connected to the carburetor. When you push the air purge bulb, a vacuum is caused and fuel fills the fuel chamber. When the fuel chamber is fully filled, unwanted fuel is pushed to the tank through return hose (B). This means that the fuel level in the carburetor does not become too high.

6.5.10 To do a test of the air purge bulb

Use the pressure test tool. Refer to *Servicing tools overview on page 12*.

If the air purge bulb does not fill with fuel when you push it, do this procedure.

1. Connect the pressure test tool to the hose from the air purge bulb.

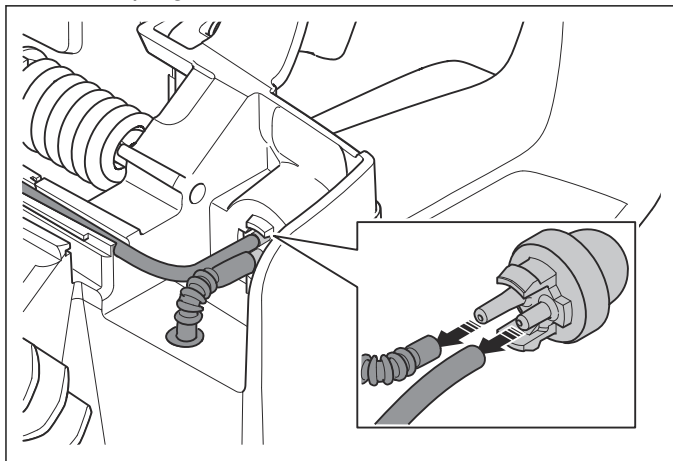


2. Set the pressure test tool for vacuum test.
3. Push the air purge bulb to increase the pressure to 0.3–0.5 bar.

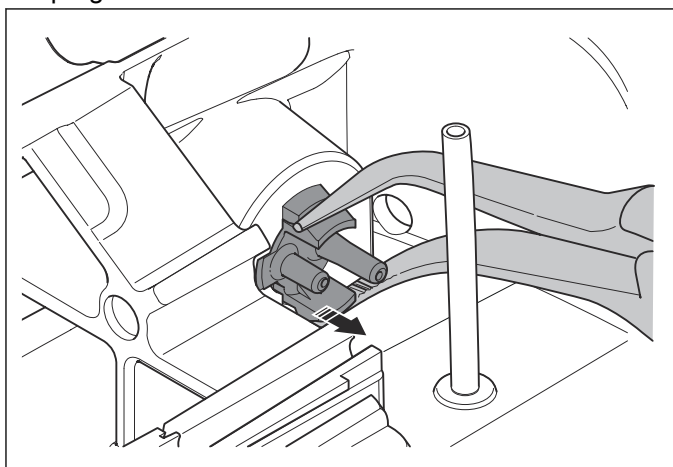
If the pressure can be increased to 0.3–0.5 bar, the air purge bulb and hose connection are not damaged. Then it is necessary to look for faults in the other components of the fuel system.

6.5.11 To remove the air purge bulb

1. Remove the return hose and carburetor hose from the air purge bulb.

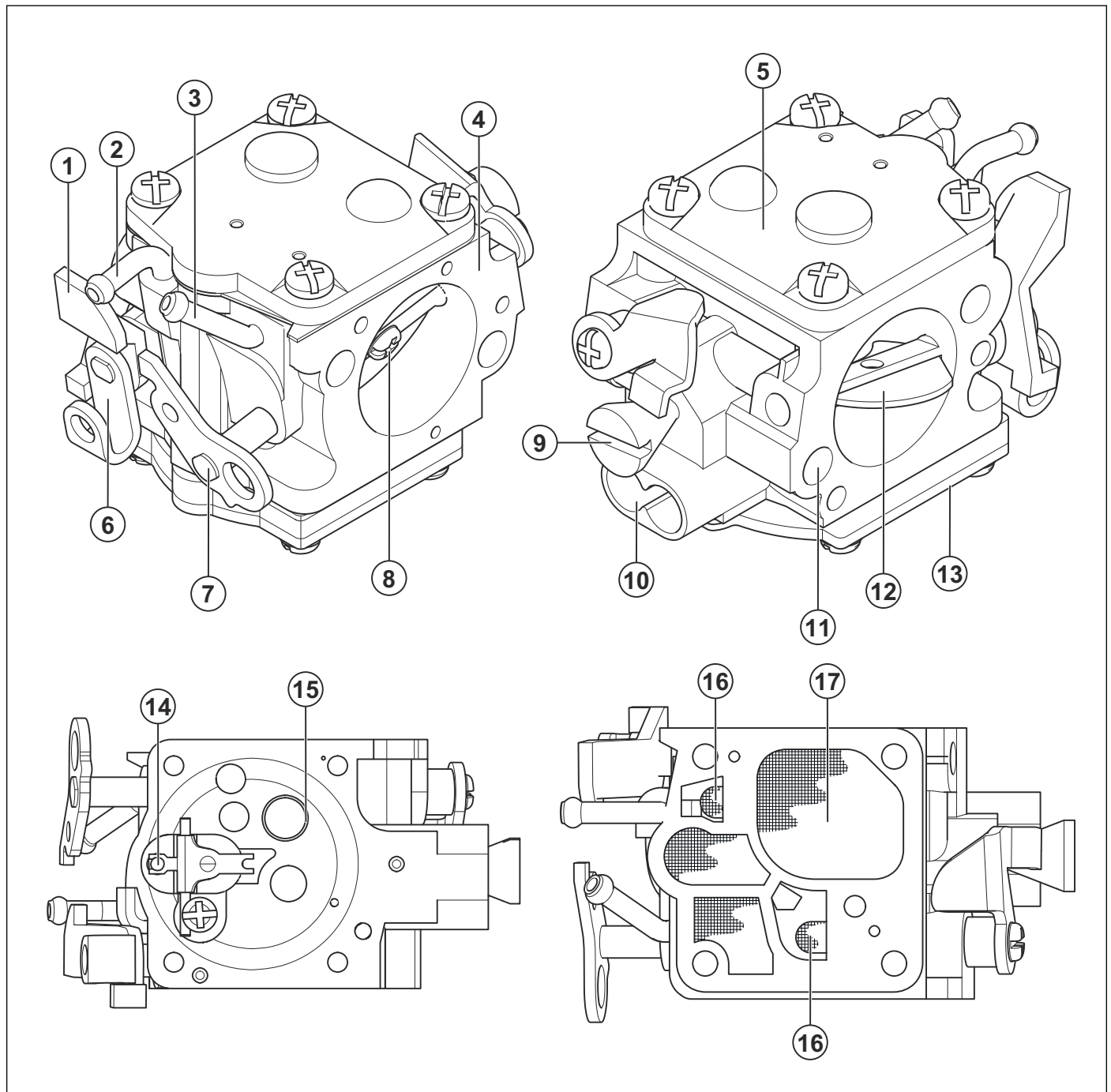


2. Push the snap lock with pliers and push the air purge bulb out.



6.6 Carburetor

6.6.1 Carburetor components



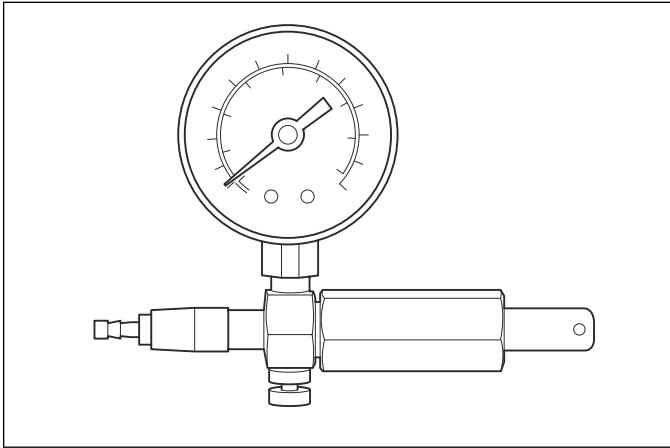
1. Lever for the start throttle
2. Connection to the air purge bulb
3. Fuel line from the fuel tank
4. Impulse channel, from the crankcase to the carburetor pump diaphragm
5. Cover measuring chamber
6. Throttle lever for choke
7. Throttle valve
8. Throttle lever
9. Idle screw, speed adjustment
10. High and low speed nozzle (set at the factory)
11. Duct for pressure control of the the filter chamber
12. Choke valve
13. Cover measuring chamber

14. Needle valve
15. Pump diaphragm measurement chamber
16. Fuel pump valves
17. Fuel pump diaphragm

6.6.2 Pressure tester

The pump piston of the pressure tester must be operated with one hand. Refer to *Servicing tools overview on page 12*. The pressure tester is supplied with an adapter for small dimensions. Make the hose

connection as short as possible, this gives a more accurate test result.



6.6.3 Needle valve

6.6.3.1 Indications of a needle valve leak

There are many symptoms of a needle valve with a leak.

A product that is used for short periods is usually not easy to start when it is warm. Fuel leaks into the venturi and gives too much fuel for the next warm start.

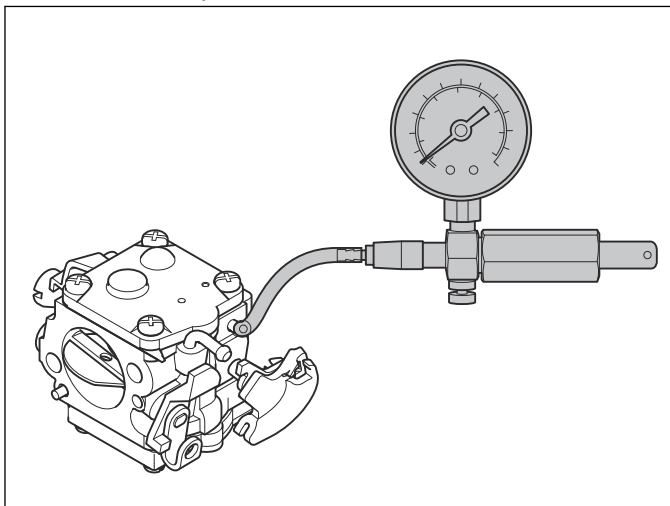
With a cold start, the fuel chamber above the needle valve is dry. This is the situation especially when the product has not been used for a long period. After many tries to start, new fuel has gone into the carburetor and the product starts.

6.6.3.2 Test conditions

The best test result is from a carburetor that is drained, but has some fuel left. Do not examine a fully dry carburetor, or a carburetor that has not been used for a long time.

6.6.3.3 To prepare the needle valve test

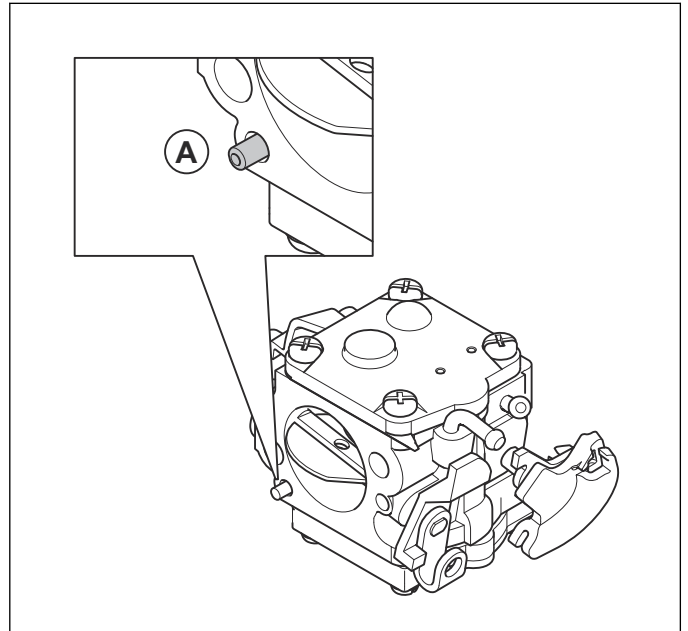
1. Connect the pressure test tool to the fuel line.



2. Increase the pressure until fuel flow out through the venturi.

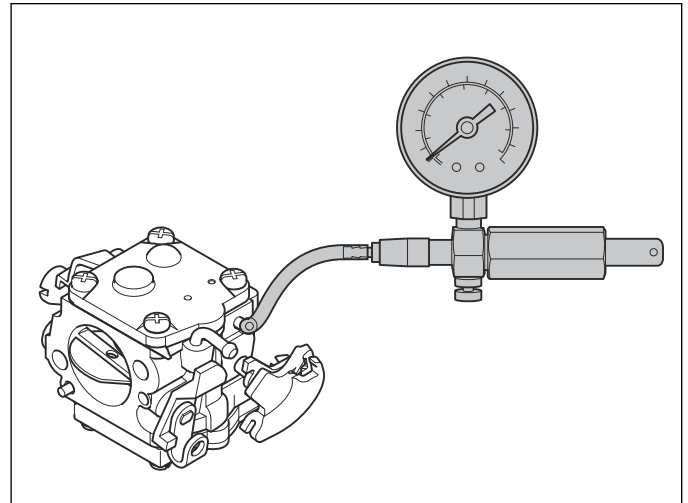
Note: The maximum permitted pressure during the test is 36 psi/2.5 bar.

If the needle valve does not open at 36 psi/2.5 bar, the needle valve has locked. Blow through the hole for filter compensation (A) to open the needle valve.



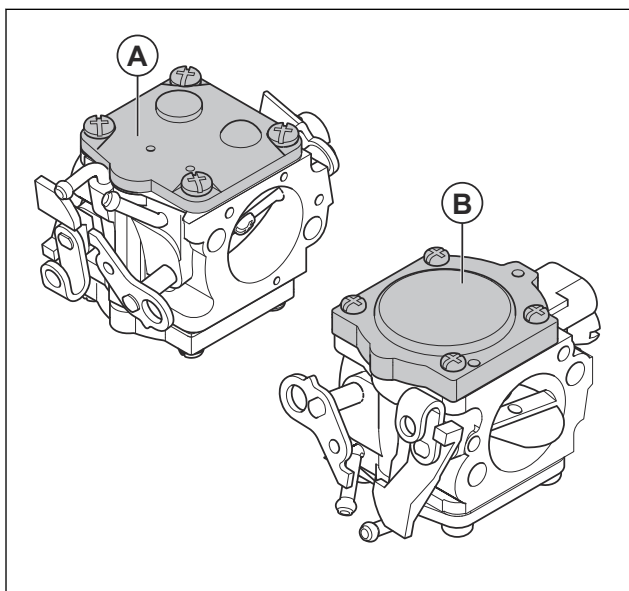
6.6.3.4 To do a test of the needle valve

1. Connect the pressure tester to the fuel line.



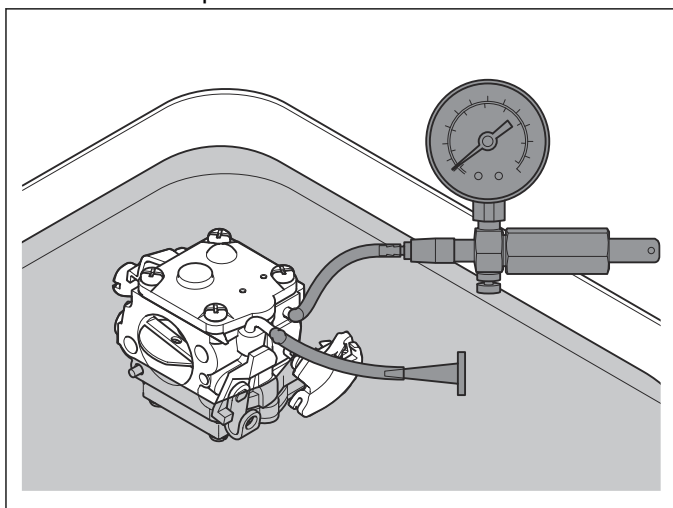
2. Increase the pressure to 14.5-36 psi/1-2.5 bar. If the needle valve operates correctly, it lifts. The pressure then decreases to approximately 14.5-7.2psi/1.0-0.5 bar and then decreases much slower or stops. A pressure drop after 7.2 psi/0.5 bar means there is a leak. The leak can be in the needle valve, the pump unit (A) or the measurement chamber (B). If there is a leak, first make sure that the screws on the pump and the measurement chambers covers are tightened. If the pump and measurement chamber covers are tight, examine

the needle valve. Refer to *To examine and clean the needle valve on page 39*.



6.6.3.5 To examine external leakage and the function of the needle valve

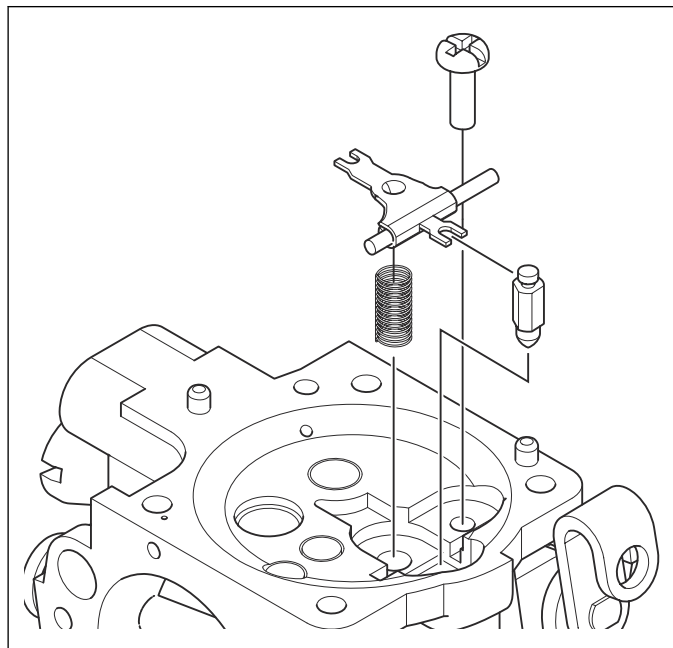
1. Lower the carburetor into water.
2. Connect the pressure tester to the fuel line.



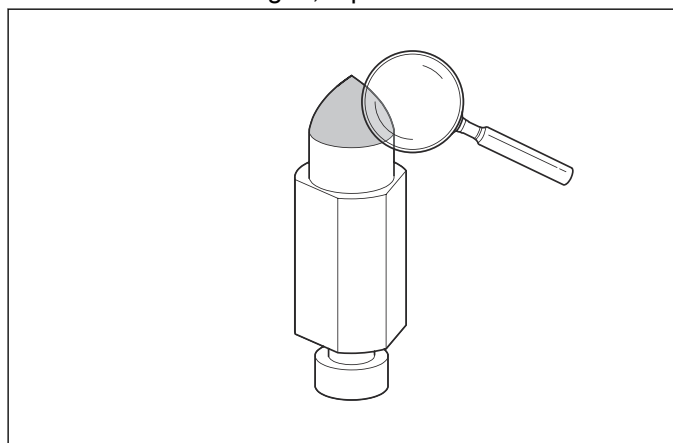
3. Increase the pressure to 7-14 psi/0.5-1 bar.
4. Examine if air comes out from the carburetor.

6.6.3.6 To examine and clean the needle valve

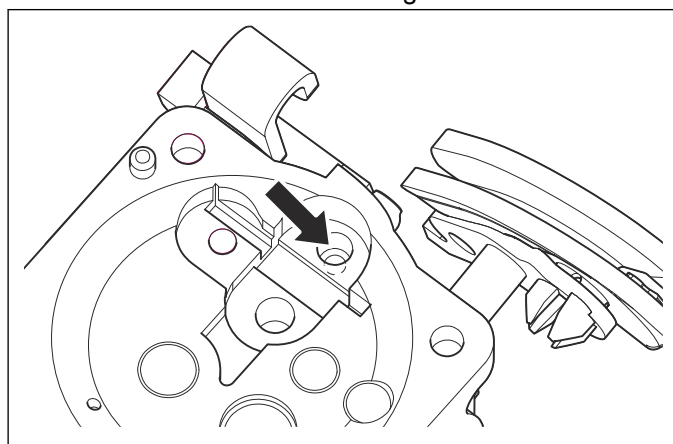
1. Remove the needle valve.



2. Examine the spring and make sure that the lever moves easily on the axle.
3. Examine the needle valve end with a magnifying glass. If there are signs of particles or if the needle valve end is damaged, replace the needle valve.



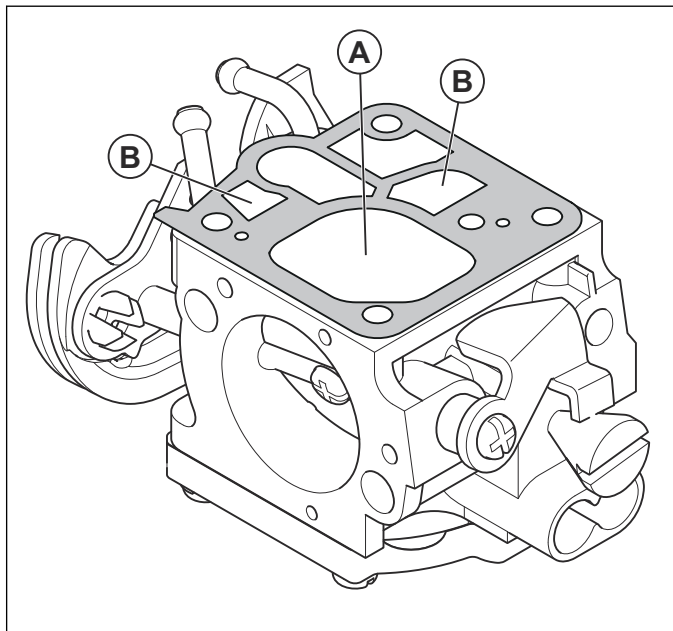
4. Clean the needle valve seating.



5. Install the needle valve in the opposite sequence.

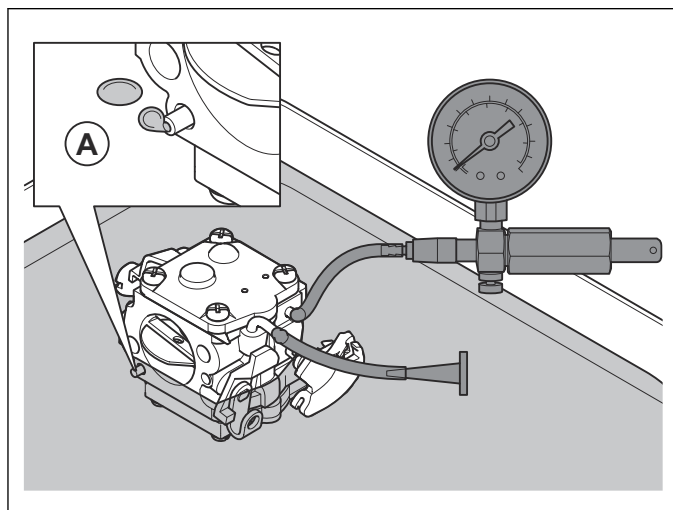
6.6.4 Pump unit function

The pump diaphragm (A) receives power by changes of pressure in the crankcase. The pressure changes are caused by the piston movement and transmitted to the top of the pump diaphragm. The fuel below the diaphragm is pushed to the valves (B). Pressure from the measurement chamber diaphragm to the needle valve in the measurement chamber controls how much the valve opens. It also controls the quantity of fuel transmitted to the fuel side of the measurement chamber.



6.6.5 To examine the fuel pump diaphragm

1. Connect the pressure tester to the fuel line.
2. Increase the pressure to to a maximum of 36 psi/ 2.5 bar.

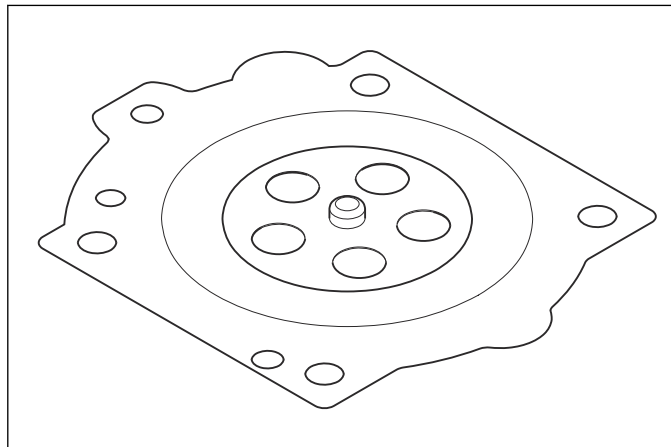


If air comes out of the impulse channel (A), the pump diaphragm is broken.

6.6.6 Function of the measurement chamber

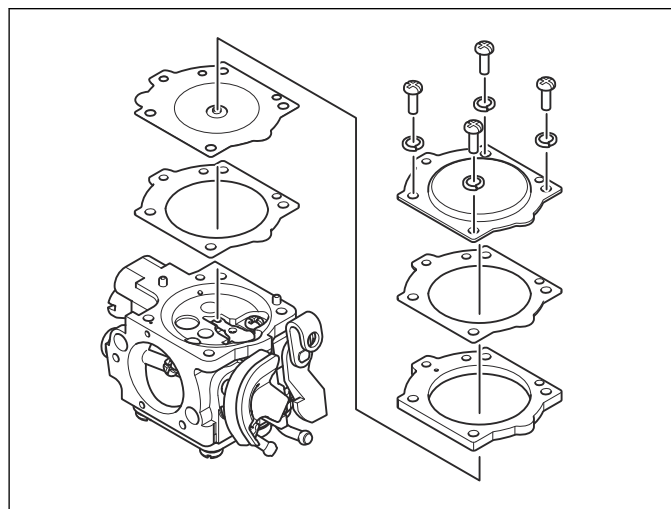
The product has SmartCarb™ filter compensation. The measurement chamber has an air chamber to the cover and a fuel chamber to the carburetor body. The air chamber and the fuel chamber are divided by the

measurement chamber diaphragm. The diaphragm controls and keeps a constant level of fuel in the fuel chamber through the mechanically connected needle valve. The air chamber is near the inlet, after the air filters, and gives the air chamber the same pressure. You cannot examine the chamber diaphragm with a pressure check. To examine the diaphragm, refer to *To examine the measurement chamber diaphragm on page 40*. A hole in the diaphragm stops the fuel supply.

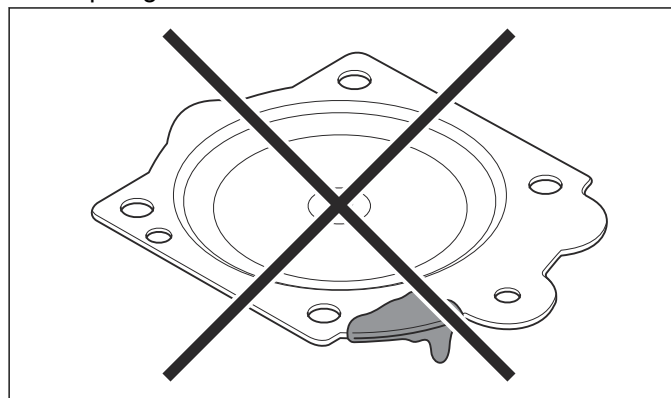


6.6.7 To examine the measurement chamber diaphragm

1. Remove the 4 screws and disassemble the measurement chamber.

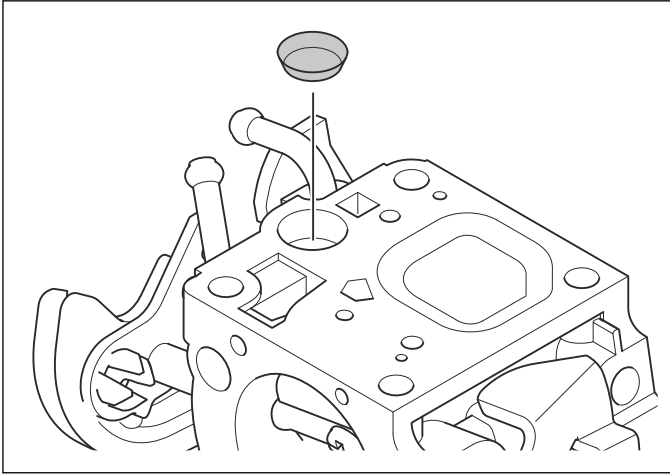


2. Examine the chamber diaphragm visually. Fuel on the top side, against the cover, is a sign of leaks. If there is fuel on the top side, replace the chamber diaphragm.



6.6.8 To examine the fuel strainer

1. Examine the fuel strainer with a magnifying glass.



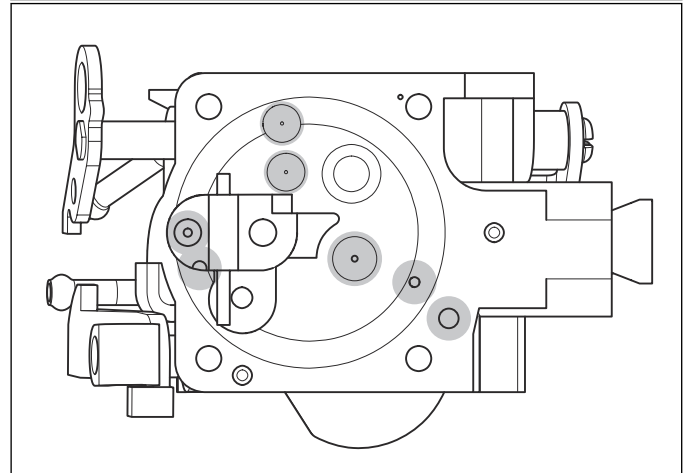
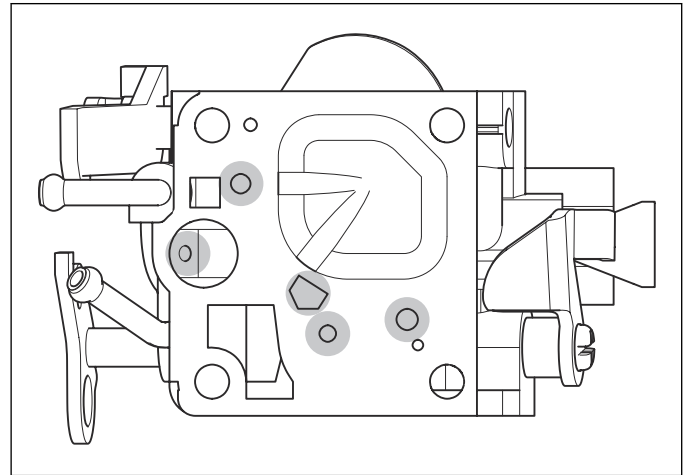
2. Remove loose dirt particles from the needle valve seating with air.

Replace the fuel strainer if it is damaged. Remove the fuel strainer and install a new one with a 7 mm pin punch.

6.6.9 To clean the carburetor channels

1. Disassemble the chamber diaphragm, the pump diaphragm and the needle valve.
2. Open the choke valve to give free airflow through the venturi.

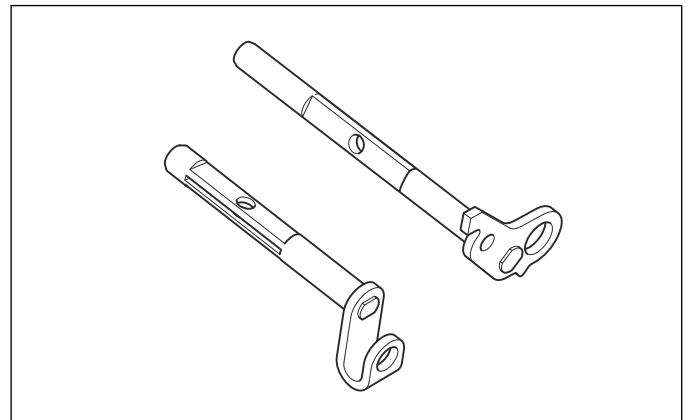
3. Clean the channels with compressed air. The rings in the illustration below show where to blow clean.



6.6.10 To examine the valve axles

Leakage from the valve axles results in incorrect fuel/air mixture and dust in the engine.

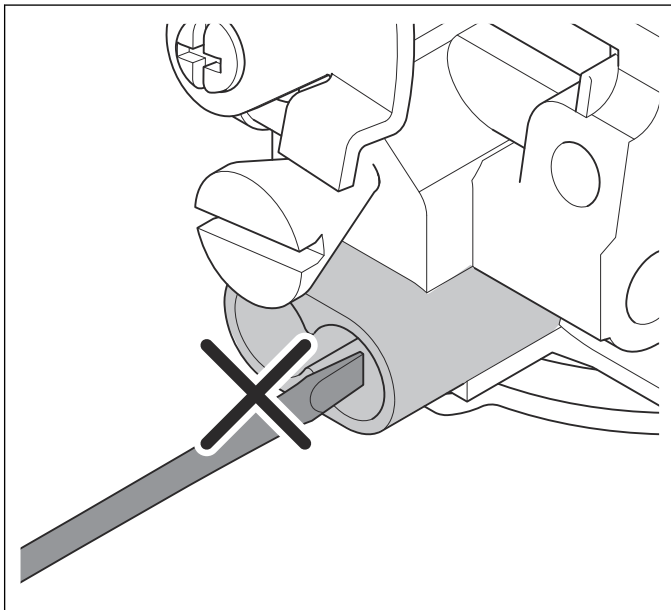
1. Make sure there is no radial play on the valve axles.



2. Replace parts if necessary.

6.6.11 High and low speed jets

The low and high speed nozzles on the carburetor are set in the factory. They must not be adjusted.



6.6.12 To adjust the idle speed

Use a special screwdriver, refer to *Servicing tools overview on page 10* and a tachometer, refer to *Servicing tools overview on page 12*. Make sure that the cutting blade is installed.

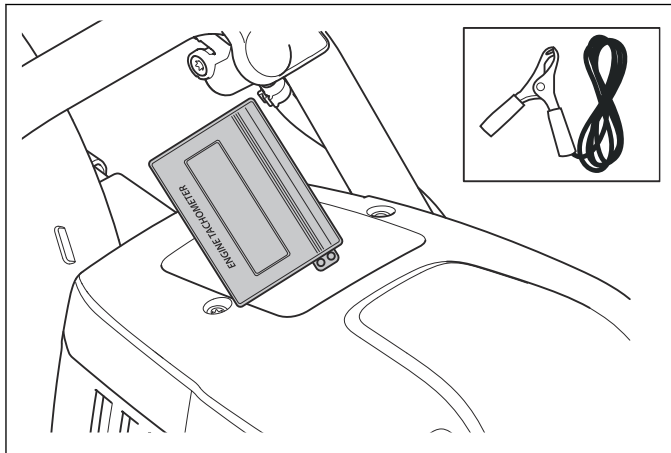
Note: Do not connect the tachometer directly to the ignition system. The tachometer senses the magnetic field from the ignition system.

Note: Do not remove the air filter cover.

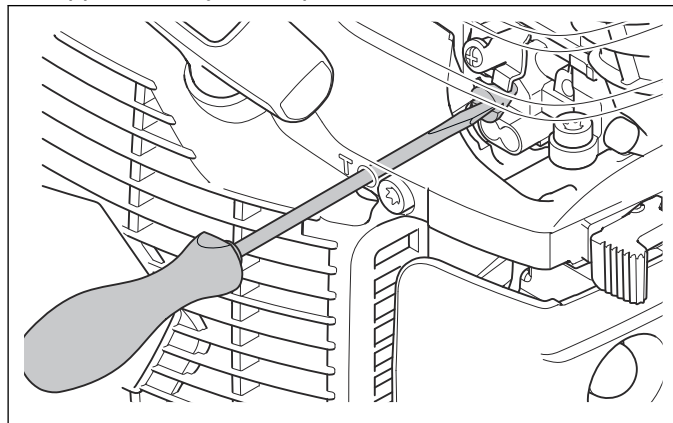


WARNING: Adjust the idle speed outdoors. The exhaust fumes are poisonous.

1. Operate the product for approximately 5 minutes until it is warm.
2. Keep the instrument with the arrow down to the position of the spark plug.



3. Adjust the idle screw to an idle speed of approximately 2700 rpm.

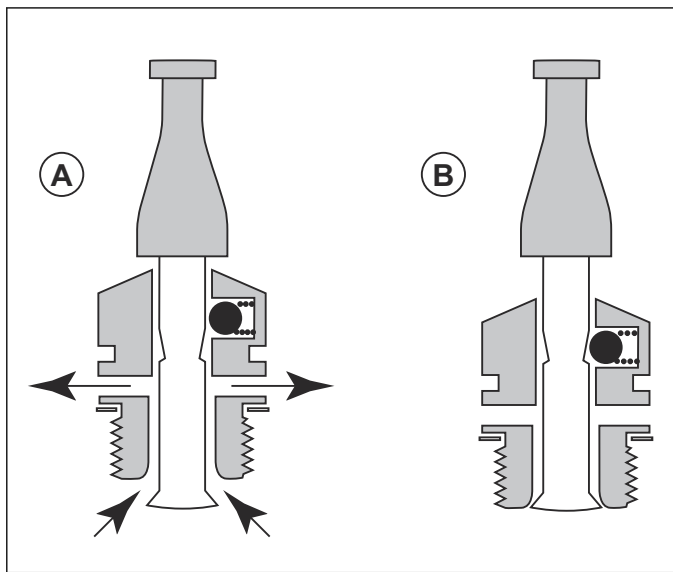


If the cutting blade rotates at this speed, do a check of the clutch.

6.7 Decompression valve

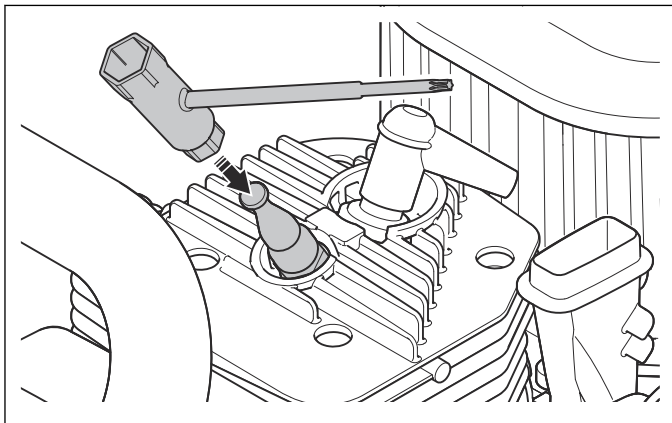
6.7.1 Decompression valve function

The decompression valve decreases the compression in the cylinder when the engine starts. A small quantity of a mixture of fuel and air goes through the decompression valve (A). The valve closes because of the combustion pressure when the engine fires (B).



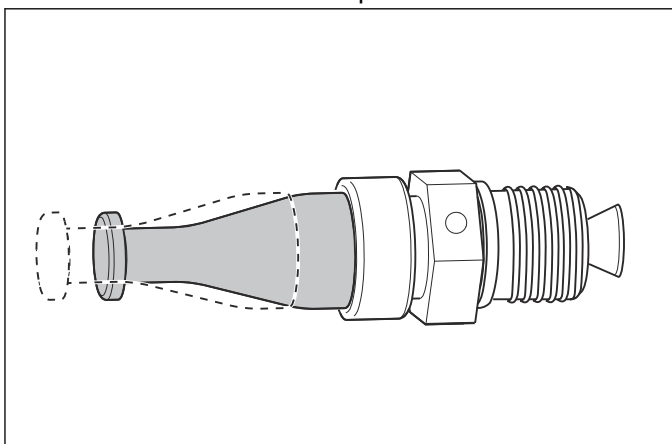
6.7.2 To remove the decompression valve

- Remove the decompression valve with a long socket or the combination wrench.



6.7.3 To examine the decompression valve

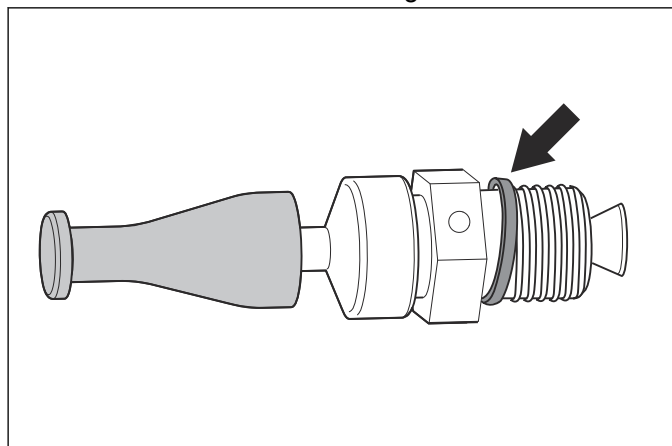
- Make sure that the decompression valve moves.



- Clean the decompression valve.
- Apply leakage spray or soap water on the decompression valve before installation.
- Install the decompression valve, refer to *To install the decompression valve on page 43*.
- Move the stop button to the stop position.
- Slowly pull the starter rope handle and make sure that there are no leaks from the decompression valve.

6.7.4 To install the decompression valve

- Clean and examine the sealing washer.



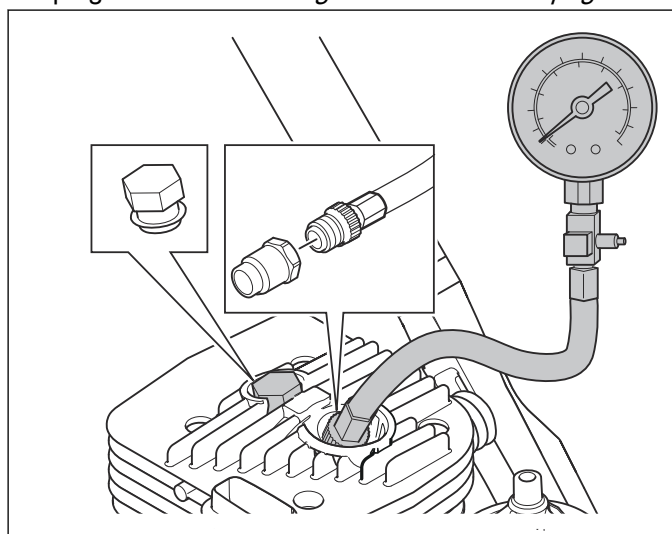
- Install the decompression valve.

6.8 Cylinder and piston

6.8.1 To examine the compression of the cylinder

The test shows leakage from the combustion chamber.

- Operate the engine for some minutes until it is warm.
- Close the decompression valve or put in the sealing plug. Refer to *Servicing tools overview on page 10*.

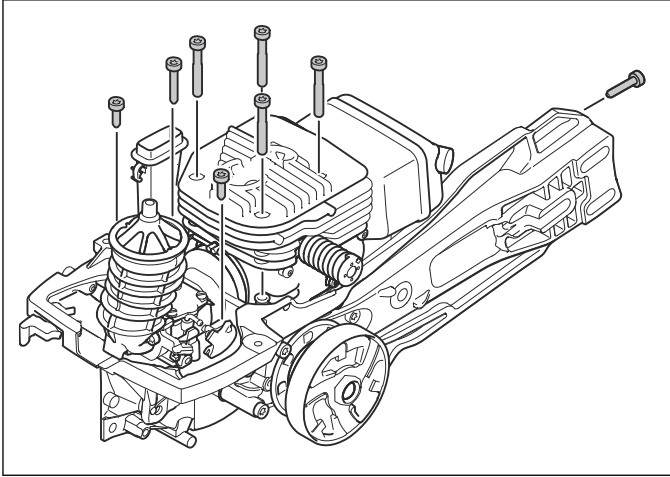


- Remove the spark plug.
- Connect the compression tester to the spark plug hole.
- Pull the starter rope 5-6 times and read the pressure on the gauge. Remove the pressure from the cylinder and do the procedure some more times.
- Make a note of the average of the tests.

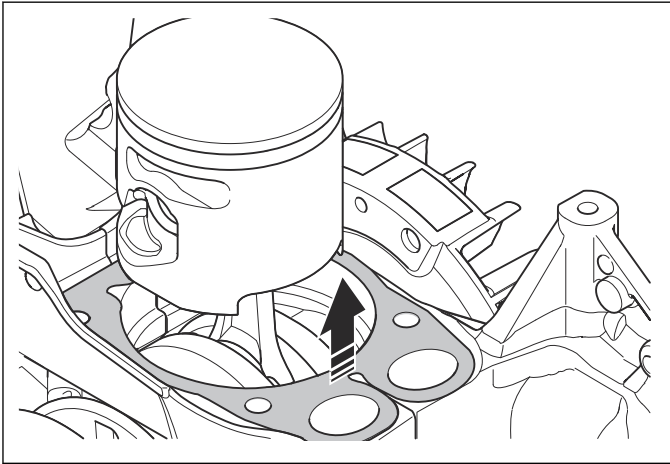
The average for a new engine is approximately 7.5 bar/110 psi. Values less than 5.5 bar/80 psi show faults with or on the cylinder, piston or piston rings.

6.8.2 To remove the cylinder

1. Remove the 8 screws for the cylinder, inlet manifold, muffler and remove the cylinder.

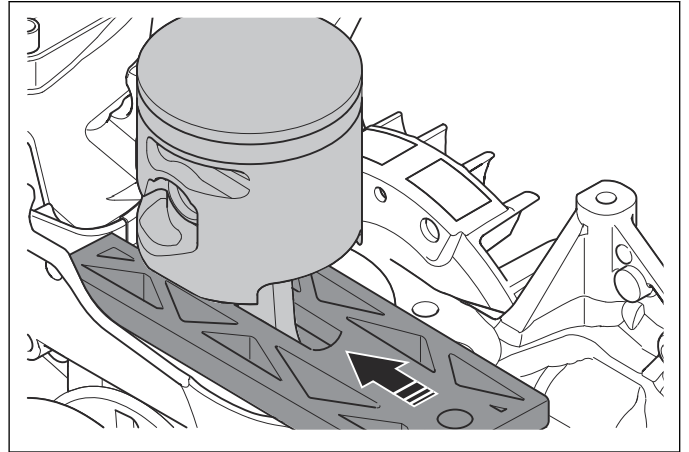


2. Remove the cylinder gasket.

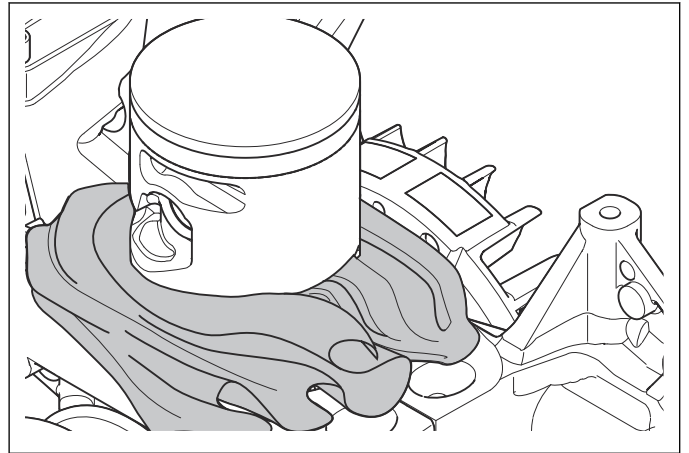


contains piston ring compressors, a piston stop, and a support plate for the piston.

1. Put the support plate below the piston.



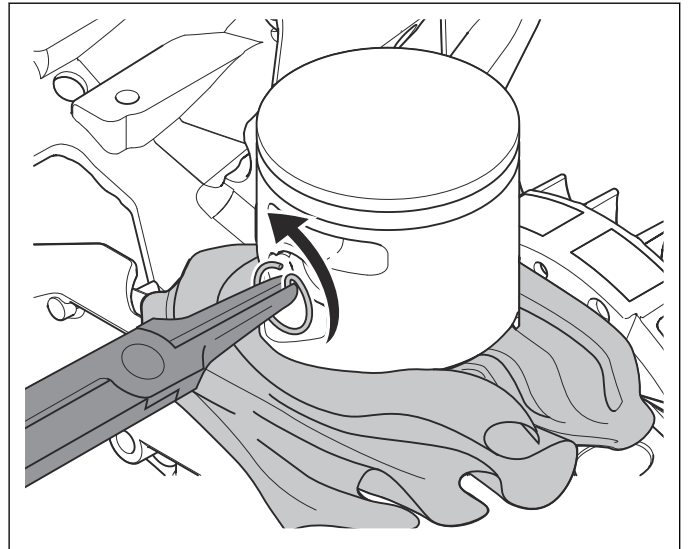
2. Seal with a cloth or paper to make sure that parts do not fall into the crankcase.



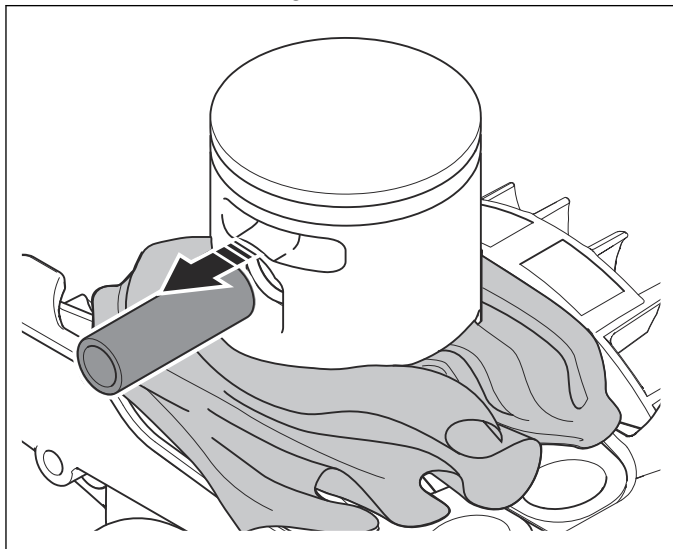
6.8.3 To remove the piston

The piston is removed with the kit for piston servicing. Refer to *Servicing tools overview* on page 11. The kit

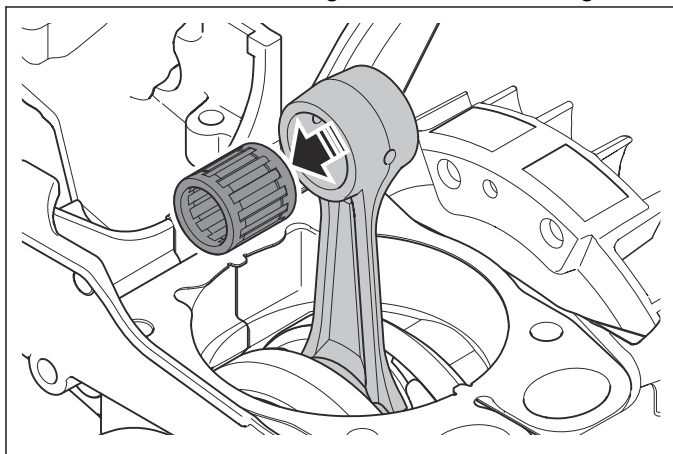
3. Remove the snap rings on the 2 sides of the wrist pin.



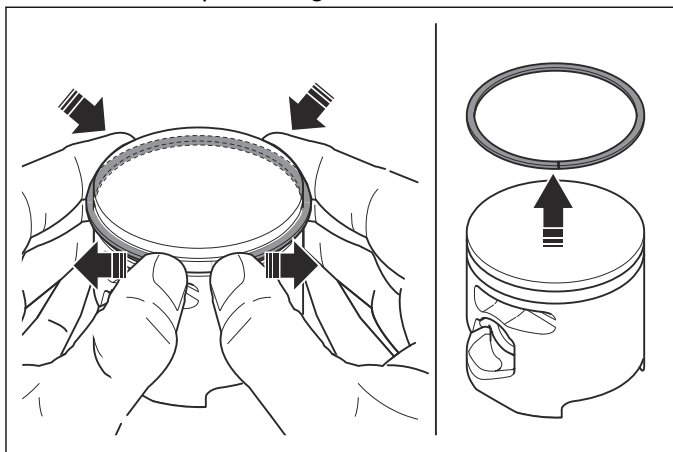
4. Push out the wrist pin by hand. If it is tight, use a small hammer and light force.



5. Remove the piston.
6. Push the needle bearing out of the connecting rod.



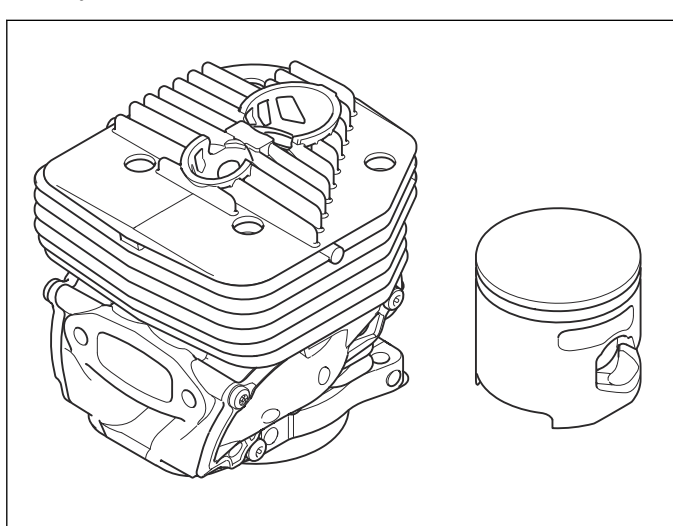
7. Remove the piston rings.



6.8.4 Cause of failure in the cylinder and piston

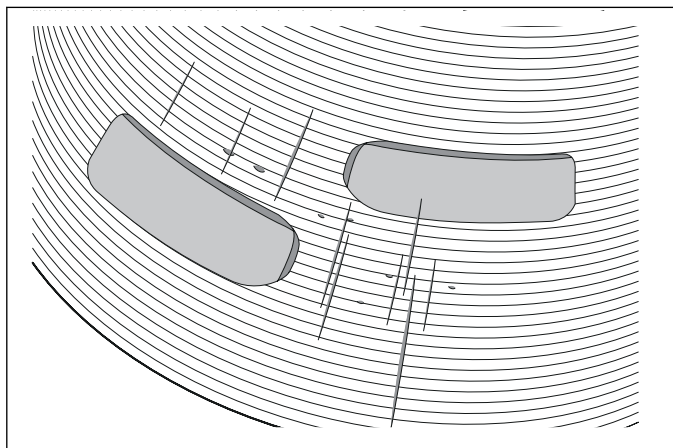
With usual wear and many hours of operation, components must be examined and replaced if necessary. A product that has not been used for many

hours must be examined carefully. It is important to identify the cause of the unusual wear.



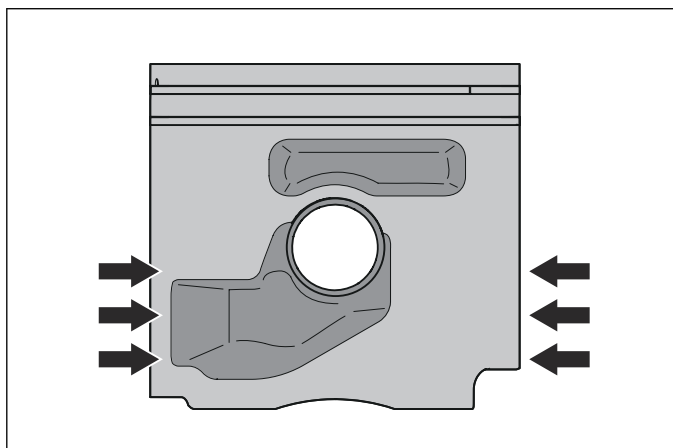
6.8.5 To examine cylinder wear

Examine the cylinder bore against the light. You can continue to use the cylinder if the surface layer has not been broken through. Aluminium from the piston can be removed using emery cloth.



6.8.6 To examine the piston

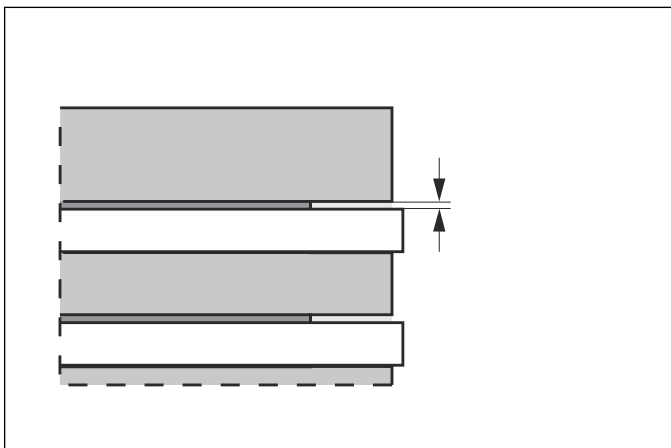
The bottom of the piston, near the inlet and exhaust ports, usually shows the largest signs of wear. Examine the lines made by the manufacturing process. Replace the piston if the bottom has been worn smooth. A product with a worn piston is difficult to start because of the decreased valve function of the piston.



6.8.7 Piston wear tolerances

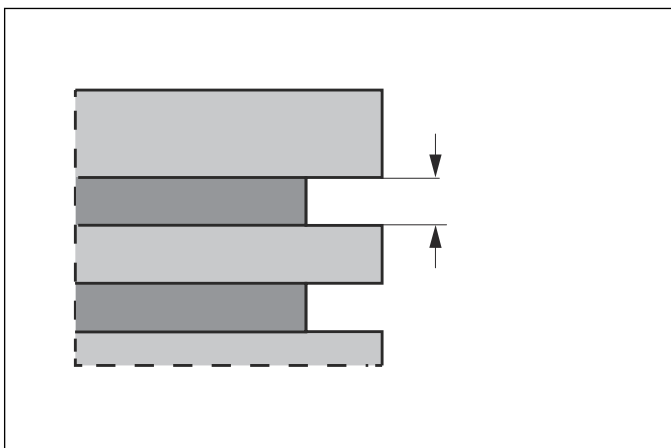
6.8.7.1 Piston ring play

If the piston ring play is more than 0.006 in./0.15 mm, the piston ring groove must be measured as set out below.



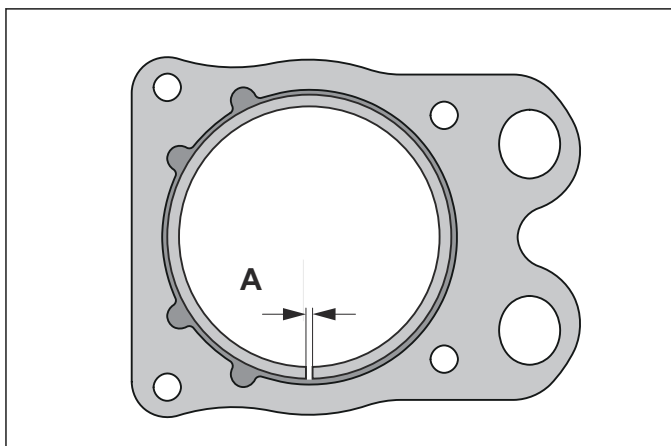
6.8.7.2 Piston ring groove

If the piston ring groove is larger than 0.06 in./1.6 mm, the piston must be replaced. Install a complete piston kit with piston rings, needle bearing and wrist pin.



6.8.7.3 To examine the piston ring for wear

- Put the piston ring in the cylinder with the aid of the piston. Put it approximately 1 in./2.5 cm from the bottom of the cylinder. The piston ring distance (A) must be maximum 0.04 in./1.0 mm.



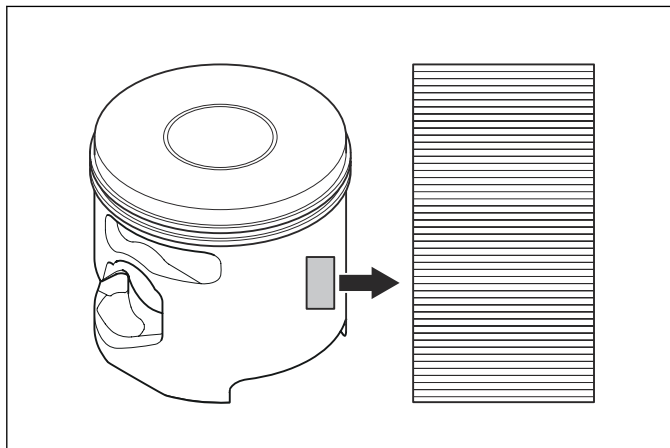
6.9 Piston wear

The cause of engine failure can be hard to find if the previous operation and service of the product is not available. Use the following examples for help.

6.9.1 Usual wear

Usual wear is easiest to see on the piston sections that point at the exhaust and inlet sides. The picture shows that the piston has been polished to give a bright surface. The lines from the production can also be seen.

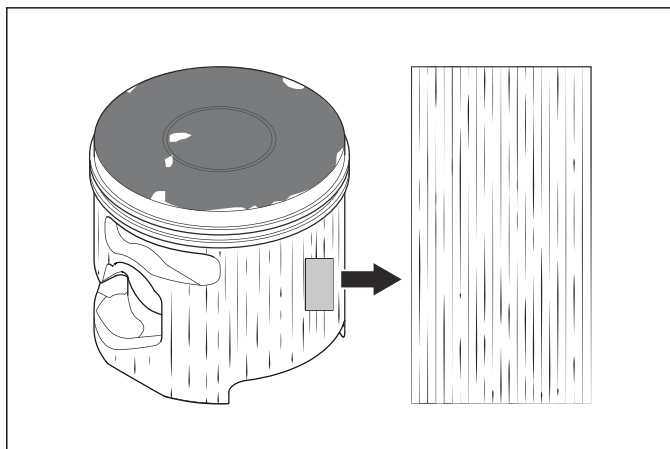
Oil on the piston rings shows correct lubrication. The piston rings can move freely in the piston ring groove.



6.9.2 Dust

If dust enters the engine, the engine life decreases. The effect of dust can be seen with a magnifying glass. Rounded lines in line with the travel of the piston are clear signs. The lines after production cannot be seen. The surface is matt.

The usual cause is a bad filter and/or leakage. Examine the condition of the filters and gaskets. Also examine the rubber guides between the cylinder, the carburetor and the connections. Look for dust from the filter units to the inlet by the cylinder. Carbon particles on the top of the piston show that the product is used at short intervals. The engine has not become fully warm.

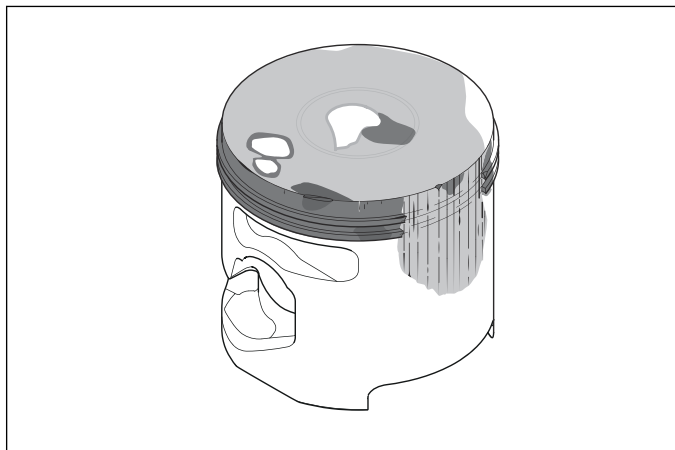


6.9.3 Scoring

Scoring occurs when the engine is too hot. The scores are usually on the exhaust side, which is the hottest. The inlet side can show equivalent damage.

Examine the product to see if it has broken down because of an incorrect oil mixture, or no oil at all. If there is oil on a piston that is too hot it can carbonize. If not, check if the connecting rod or the crankcase has a thin layer of oil.

If there is sufficient oil, inlet leakage can be the cause. When the engine leaks air on the inlet side, the fuel/air mixture changes. This causes scoring, mainly on the exhaust side. Look for scoring damage in combination with a piston top that has become too hot.



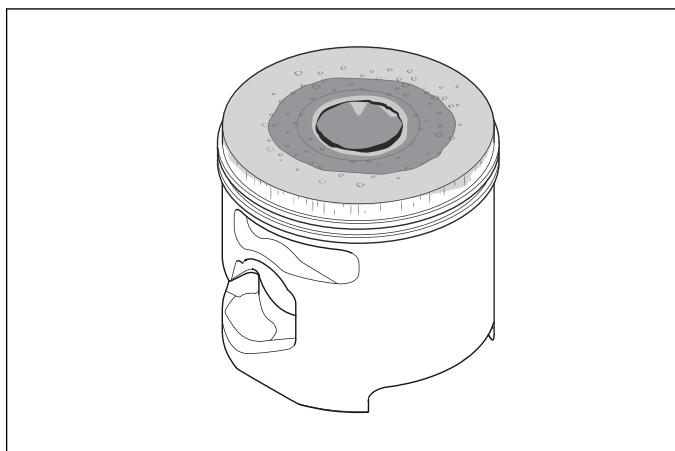
6.9.4 Too hot piston top

If the engine has been too hot, aluminum particles are frequently found on the top of the piston. This can cause the piston to melt.

Too much air in relation to the fuel volume increases the temperature in the combustion chamber. Examine if the inlet system is blocked. Examine that the fuel supply has not been blocked by a defective fuel hose, tank vent or the pulse hose.

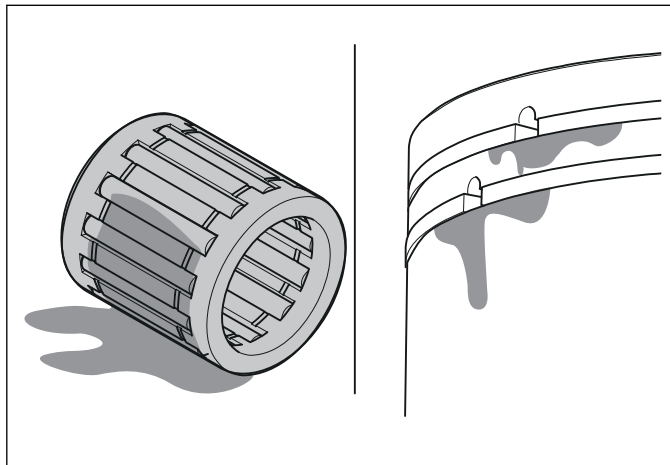
Gasoline with a too low octane grade can cause ignition at the incorrect position. Spark plugs with incorrect heat rated value can cause the same problem. They can increase the temperature in the combustion chamber.

Make sure that the key on the flywheel of the crankshaft is not damaged. The flywheel position on the crankshaft controls the ignition point.

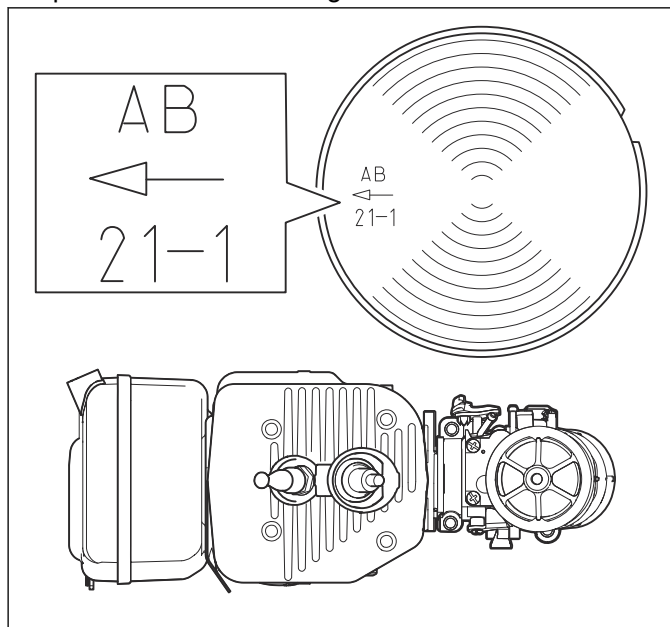


6.10 To assemble the piston

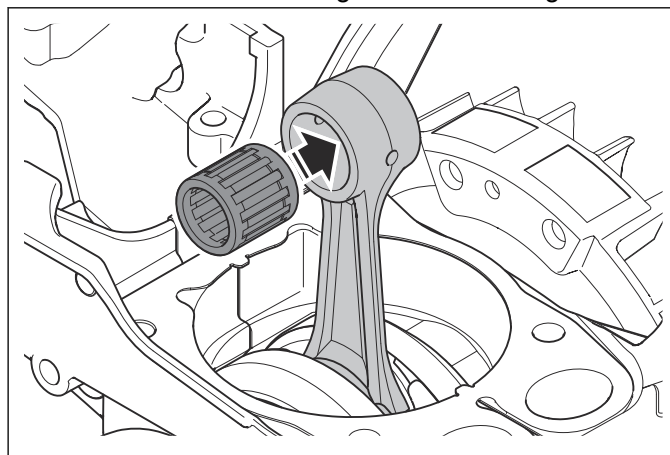
Lubricate new or cleaned bearings and piston rings with 2-stroke oil before you assemble them.



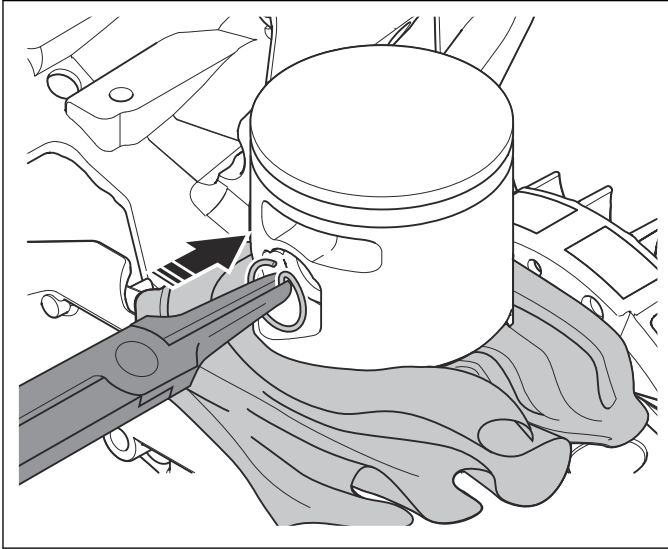
1. Make sure that the arrow on the piston points in the direction of the muffler when you assemble the piston on the connecting rod.



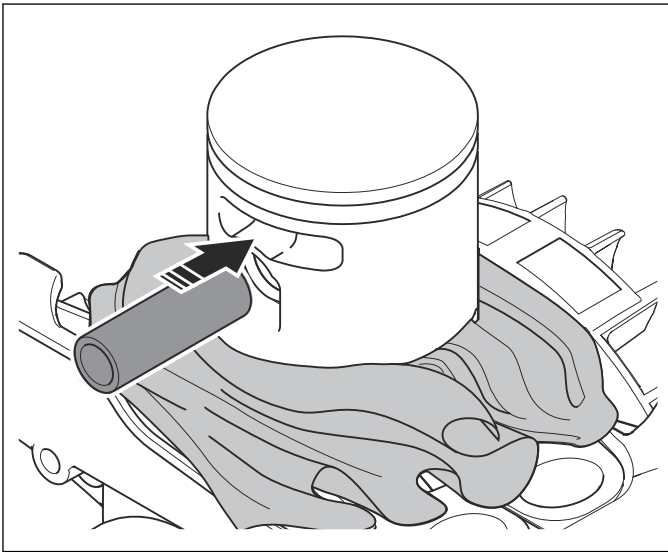
2. Install the needle bearing in the connecting rod.



3. Install a snap ring in the piston.

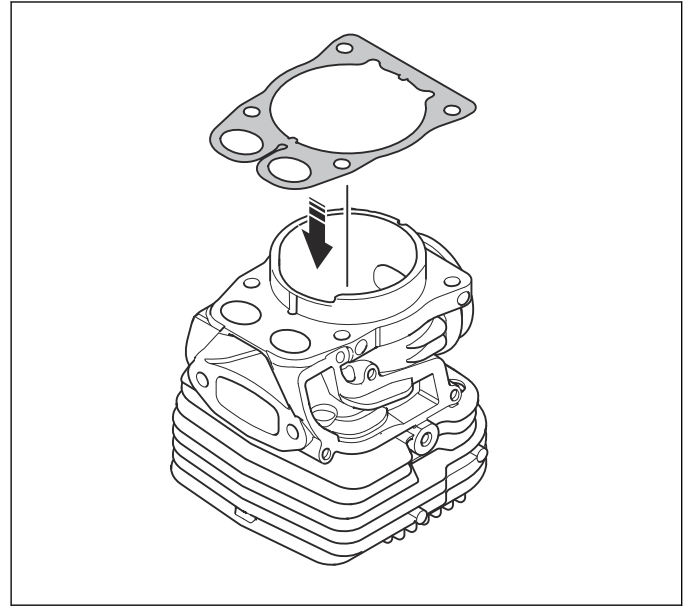


4. Hold the piston in position, push in the wrist pin and install the other snap ring.

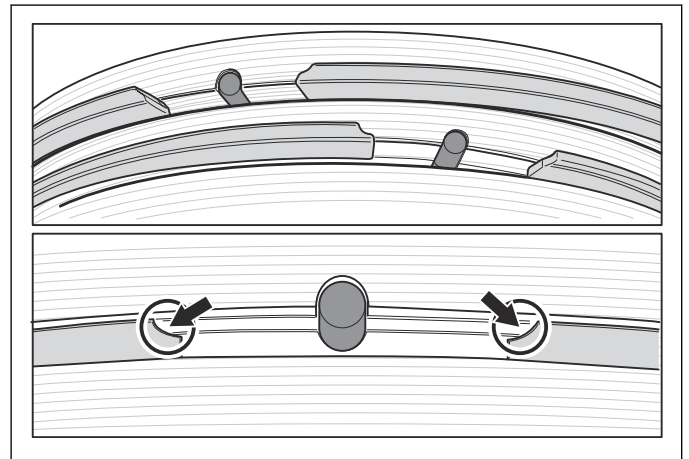


6.11 To assemble the cylinder

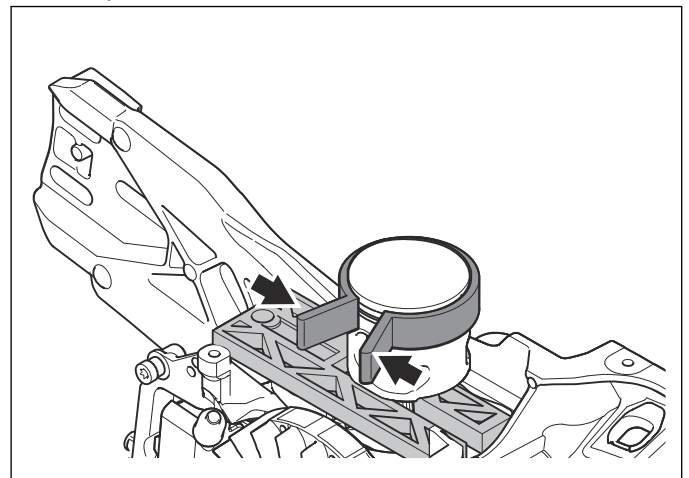
1. Clean and remove remaining bits of the first gasket from the surfaces that connect with the gasket.
2. Put the gasket on the cylinder.



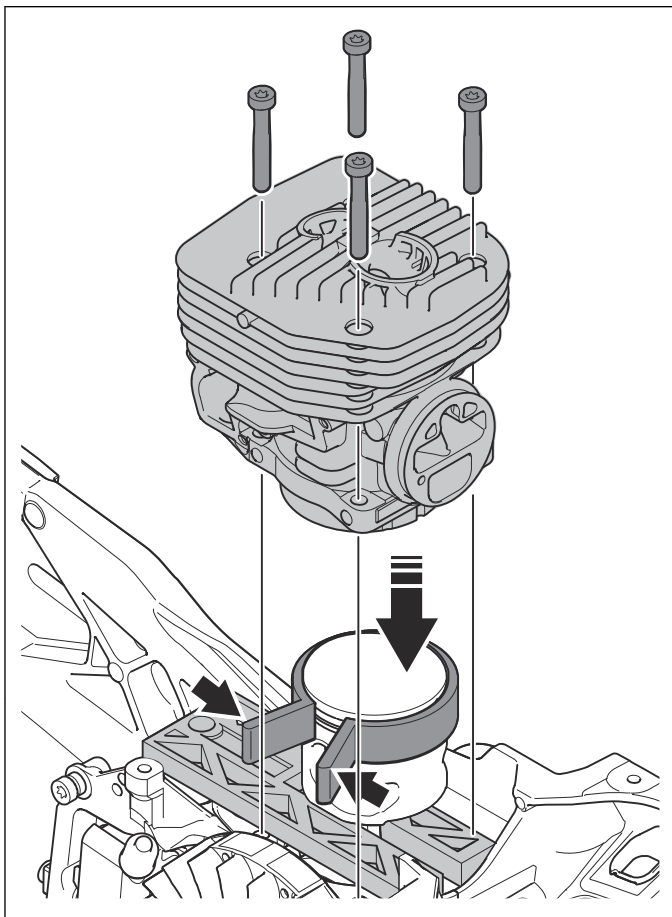
3. Make sure that the opening on the piston rings aligns with the guide pin.



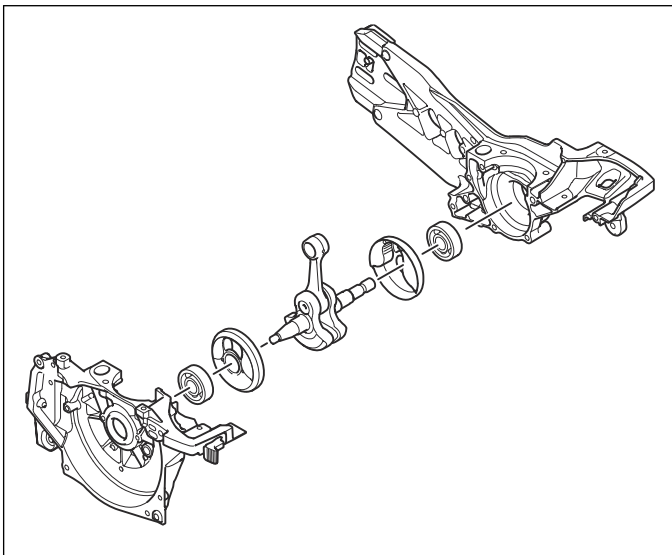
4. Push the piston rings together, use the piston ring compressor.



5. Push down the cylinder on the piston and let the piston ring compressor move along the piston. Tighten the screws crosswise to a torque of 10–11 lbf·ft/14–15 Nm.

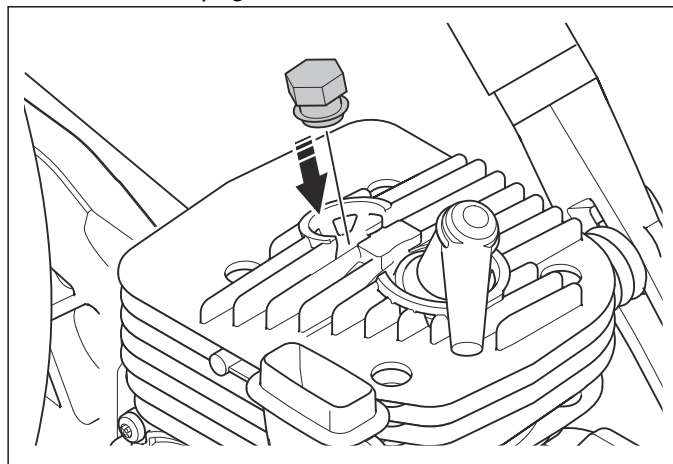


6.12 Crankcase

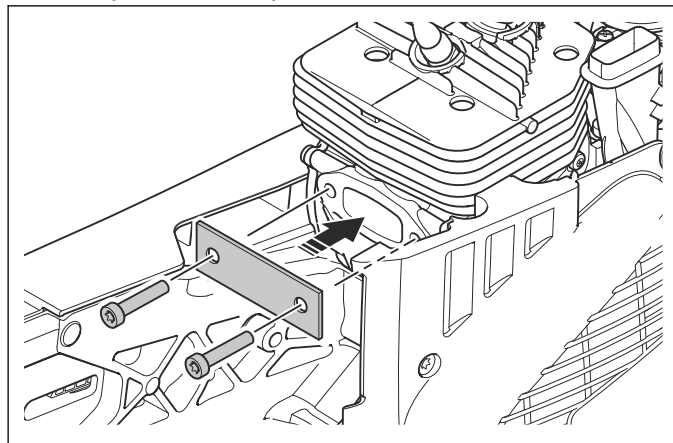


6.12.1 To examine the crankcase for leaks

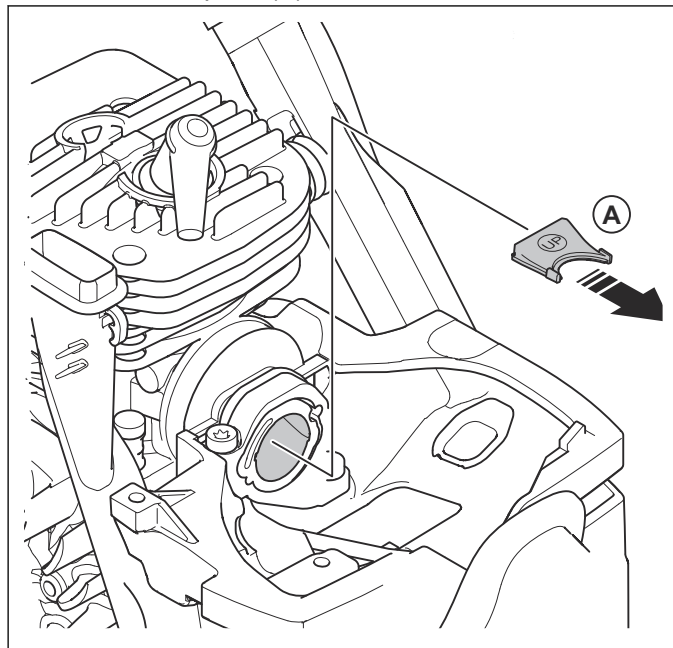
1. Turn the crankshaft until the exhaust port is fully open. The piston must be at its bottom point.
2. Put the sealing plug in the space for the decompression valve. Refer to *Servicing tools overview on page 10*.



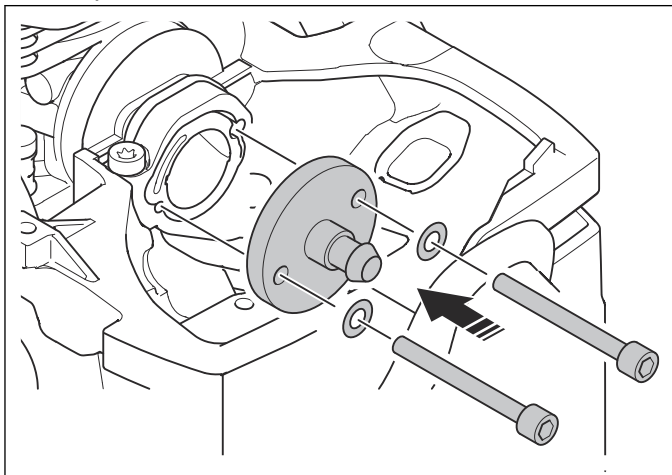
3. At the exhaust port, attach the exhaust port seal on the cylinder at the position for the muffler.



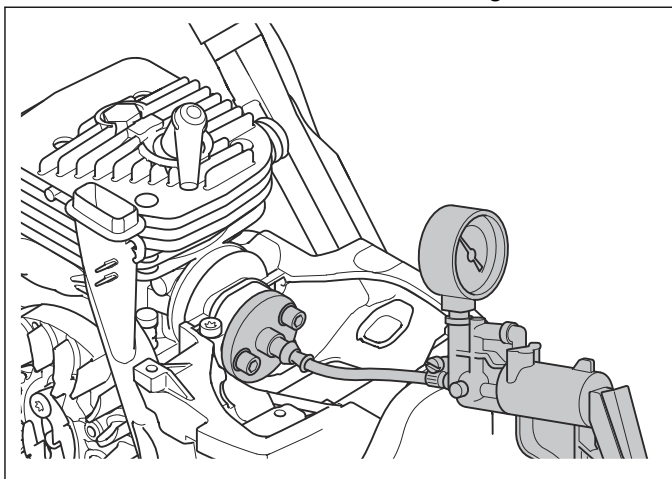
4. Remove the plate (A) in the inlet duct.



5. At the inlet port, attach the cylinder seal and connect the pressure tester.



6. With the pressure tester, increase the pressure to 11.6 psi/0.8 bar. The pressure decreases. If the pressure decreases more than down to 8.7 psi/0.6 bar after 30 seconds, there is a leakage.

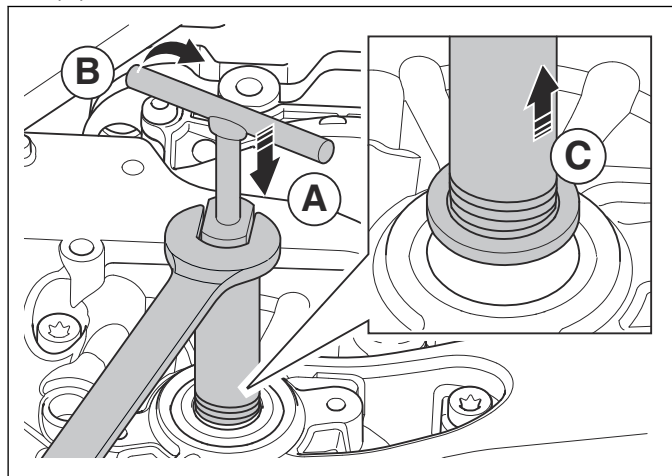


7. If there is a leakage, apply a solution of soap and water or use a leakage spray to find it.
 - a) Examine the seals on the crankshaft.
 - b) Examine around the gaskets where the crankcase halves are bonded and at the bottom of the cylinder.
 - c) Look for cracks on the crankcase.

6.12.2 To remove the crankcase seal

To replace the crankcase seal rings, use a Husqvarna puller and an assembly punch. Refer to *Servicing tools overview* on page 10.

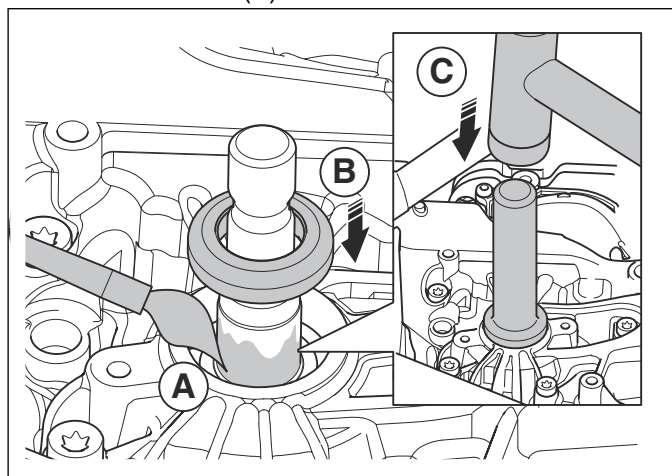
1. Push down the puller (A) and tighten the outer thread of the puller in the sealing ring with a wrench (B).



2. Turn the T-handle of the tool to pull up the crankcase seal (C).
3. Remove the crankcase seal in the same procedure on the flywheel side.

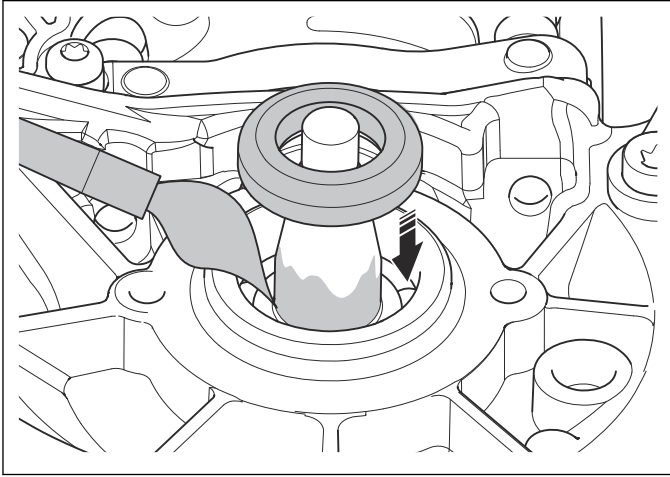
6.12.3 To assemble the crankcase seal

1. On the clutch side, lubricate the axle at the taper for the clutch drum (A).



2. Push down the sealing ring past the taper (B).
3. Hit the sealing ring into position with the assembly punch (C).

4. On the flywheel side, lubricate the axle.



5. Push the sealing ring down.
6. Hit the sealing ring into position with the assembly punch.
7. Clean the grease from the axle before you install the flywheel.

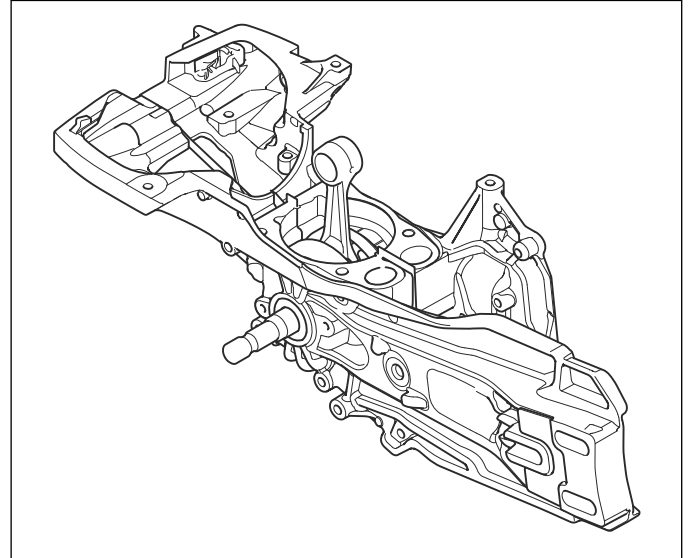
6.12.4 To examine the crankcase seals

1. Apply leakage spray or a solution of soap and water to examine the seals for leaks.
2. Use the pressure tester to find leaks.

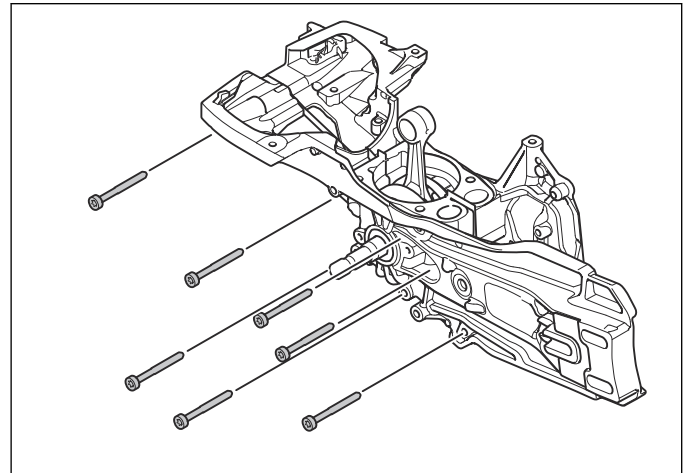
6.12.5 To disassemble the crankcase

Divide the crankcase with a universal puller and a grip plate from Husqvarna. Refer to *Servicing tools overview on page 10* and *Servicing tools overview on page 11*.

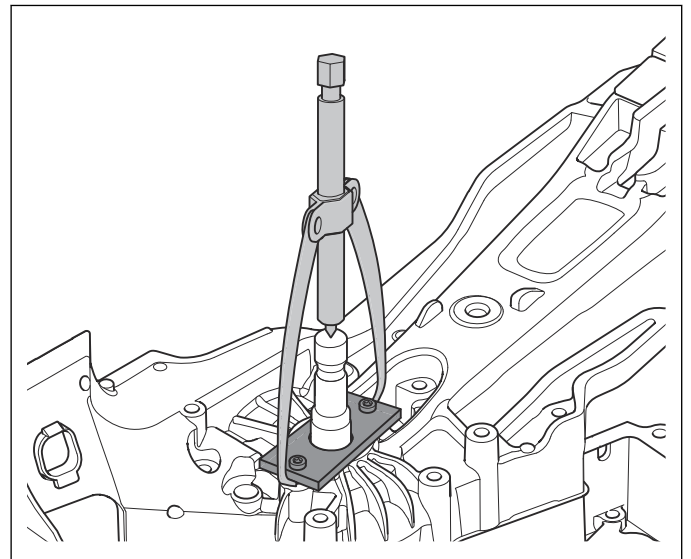
1. Disassemble the basic modules from the crankcase.



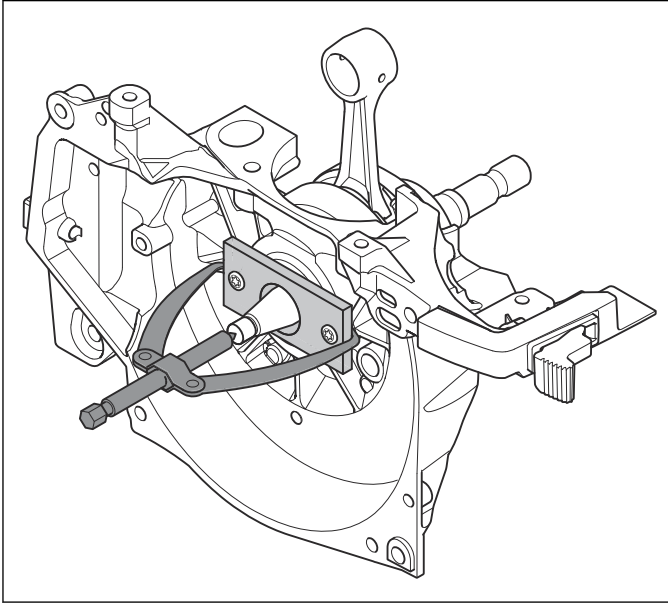
2. Remove the 7 screws that hold the crankcase halves together.



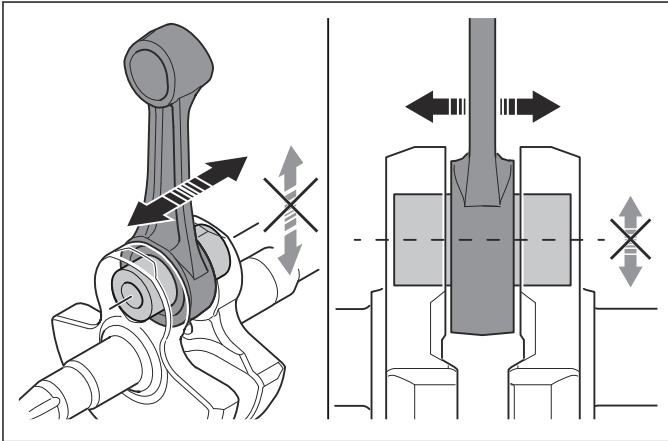
3. Put the grip plate above the hole for the crankshaft and push out the crankshaft with the puller.



4. Do the same with the other side of the crankcase.



5. Make sure there is no radial play on the connecting rod by the crankshaft journal. If there is radial play, the unit must be replaced.



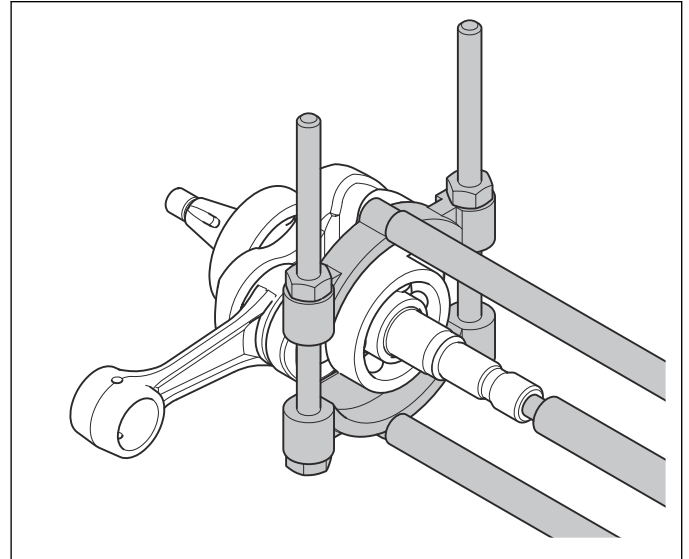
6. Carefully clean the gasket surfaces.

6.12.6 To remove the bearings from the crankcase

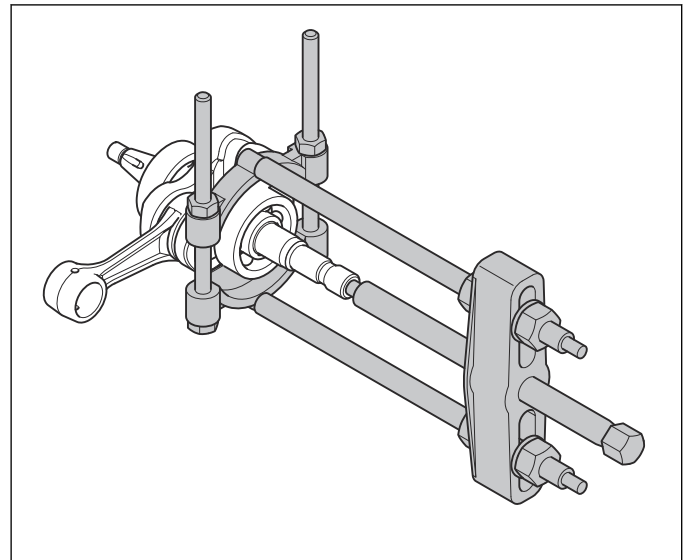
Usually the bearing releases from the crankshaft when the crankcase is disassembled. If not, you can remove the bearing with the puller, refer to *Servicing tools overview on page 10*. To replace the bearing you must

use 2 Husqvarna bearing press kits, refer to *Servicing tools overview on page 10*.

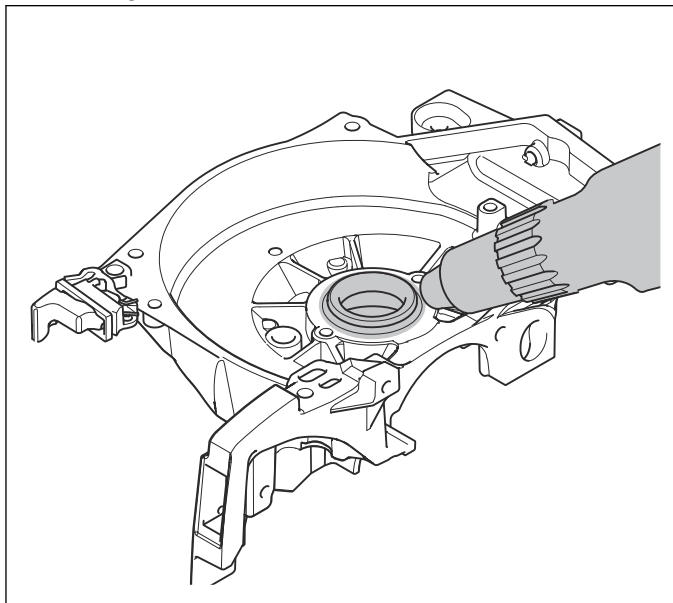
1. Put the puller plate behind the bearing.



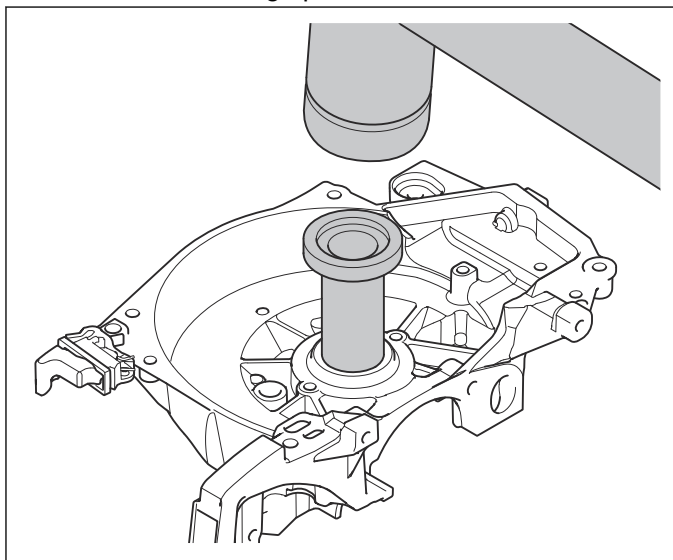
2. Attach the puller unit and press the bearing off from the crankshaft.



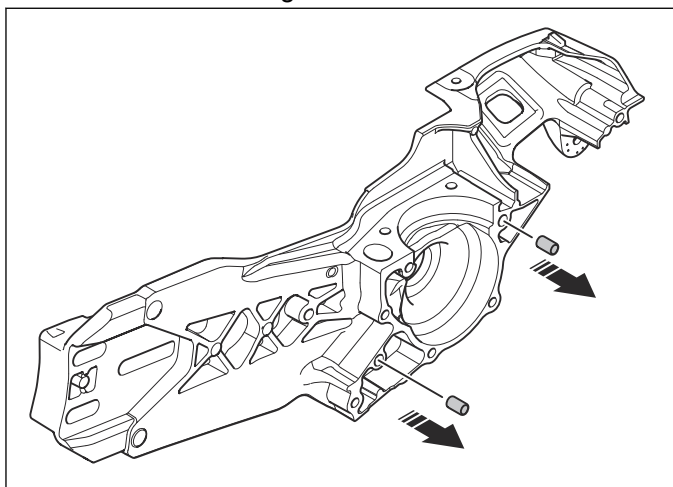
- Put the crankcase halves against a flat piece of wood or equivalent. Use a hot air gun around the bearing, maximum 100°C / 212°F.



- Put the sleeve from the tool kit against the bearing and hit it with a large plastic mallet.



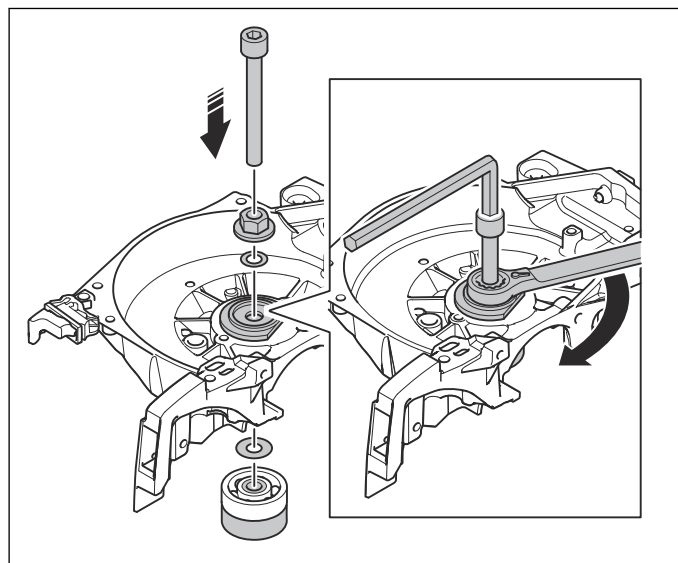
- Remove the bushings for the crankcase halves.



6.12.7 To install the crankcase bearings

Assemble the bearings in the 2 crankcase halves. Use a Husqvarna bearing press, refer to *Servicing tools overview on page 10*.

- Put the bearing on the support plate and hold it below the crankcase half.

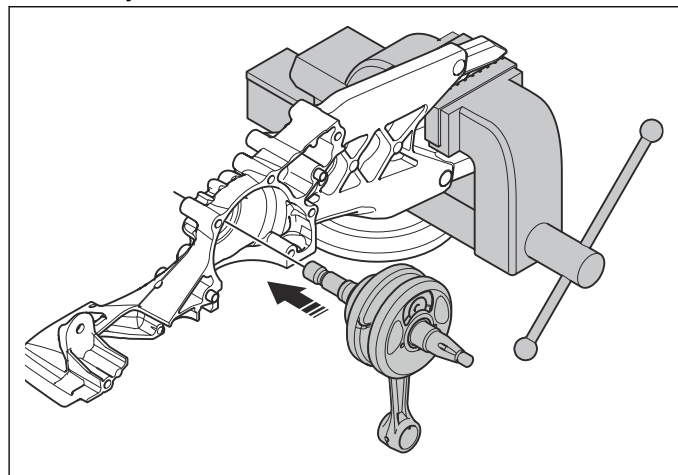


- Put the screw through the washer and put the screw in the support plate.
- Lock the screw and turn the nut until the bearing is in the stop in the crankcase half.

6.12.8 To assemble the crankcase

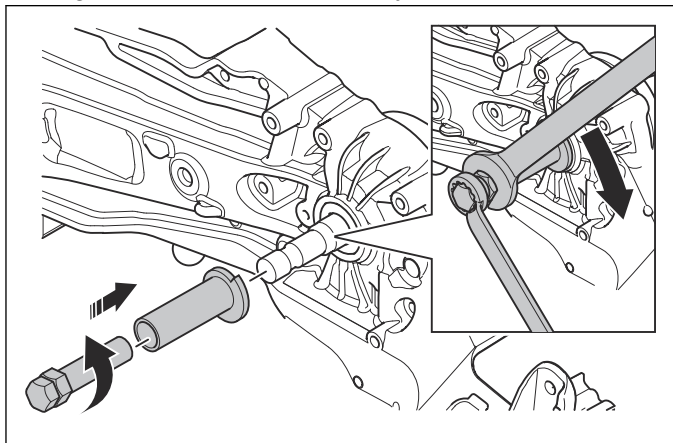
Use a Husqvarna bearing press, refer to *Servicing tools overview on page 11*.

- Lock the crankcase half. The bottom of the cylinder plane must be down. This makes sure that the connecting rod does not push on the crankcase when you assemble the crankcase.



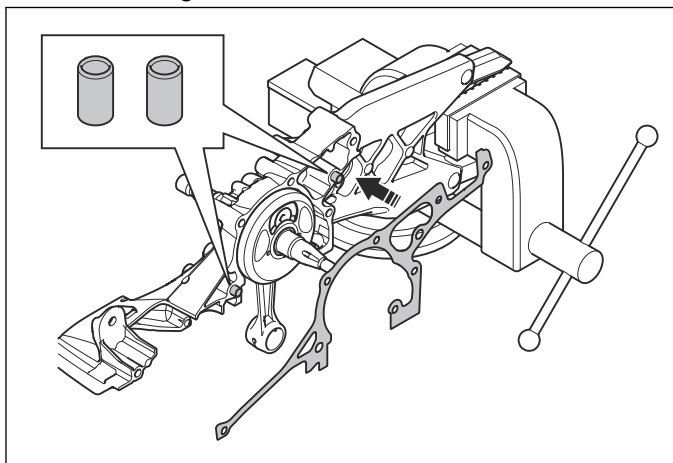
- Push the crankshaft in the bearing.

3. Put the sleeve from the tool kit against the crankcase half. Use the mandrel with M12V threads. Tighten it on the crankshaft by hand.



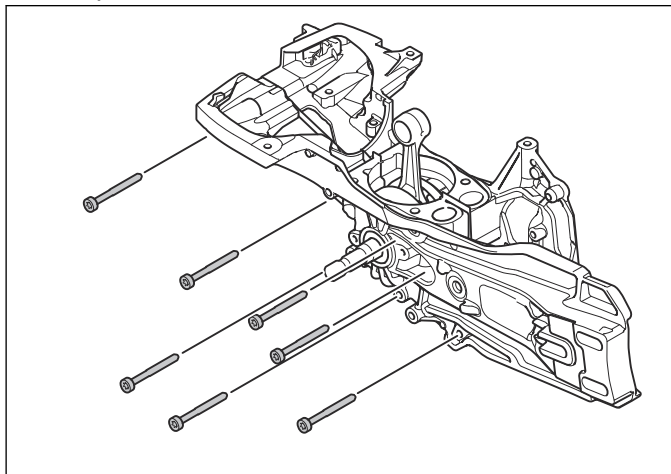
Note: The crankshaft has a reverse thread on the clutch side.

4. Lock the movement of the mandrel. Turn the nut to push it into the crankshaft until the bearing is at the end of the crankcase half. Do not hold the connecting rod against the crankcase half.
5. Put the bushings in the holes and install the new crankcase gasket.

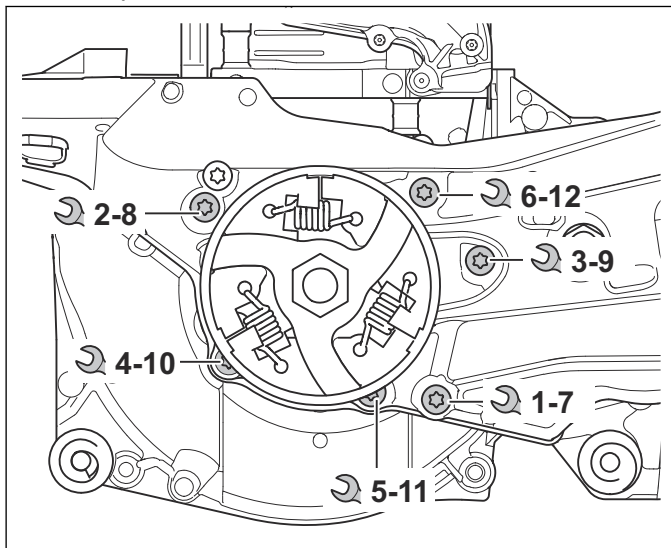


6. Assemble the other crankcase half in the same procedure as the first crankcase half.
 - a) Change to the mandrel with M10V threads.
 - b) Make sure that the position of the connecting rod is correct.
 - c) Align the bushings to prevent damage to the crankcase gasket.

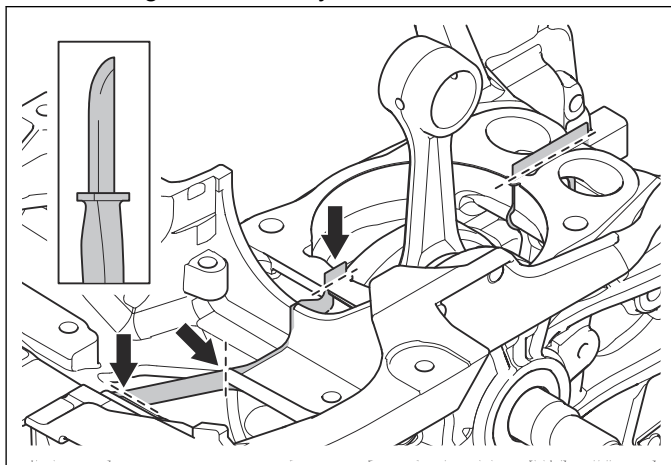
- d) Put in the 7 screws before the crankcase halves are put together. This helps put the gasket into position.



7. Tighten the screws around the crankshaft in correct order, refer to the illustration, torque 10–11 lbf-ft/14–15 Nm. Make sure that the crankshaft moves freely after it is assembled. Hit the ends of the shaft with a small plastic hammer to release tension.



8. Cut the gasket at the cylinder face.



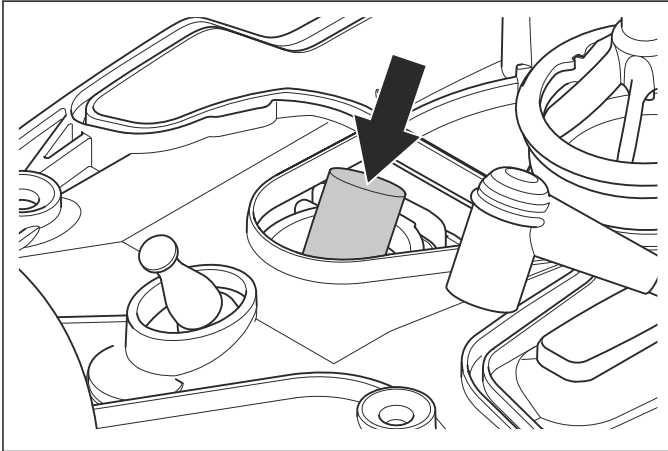
Examine the crankcase for leakages after the cylinder is assembled.

6.13 Clutch

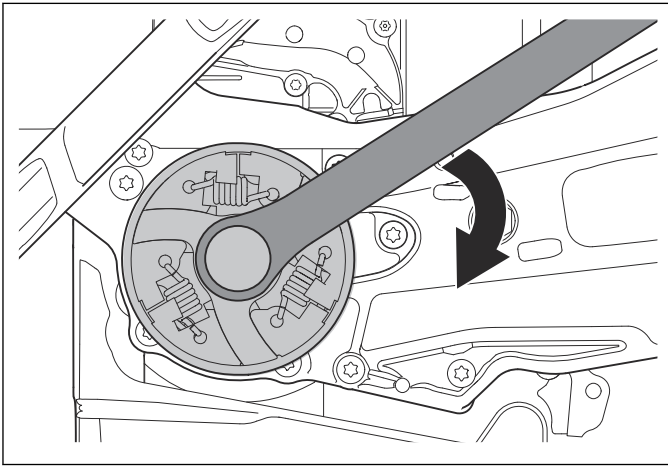
6.13.1 To remove the clutch

To remove the clutch, use a Husqvarna piston stop, refer to *Servicing tools overview on page 10*.

1. Lock the crankshaft with the piston stop.

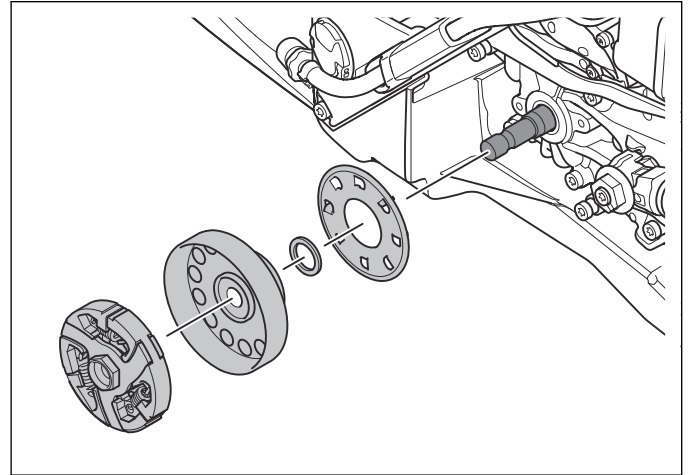


2. Release the clutch clockwise.



CAUTION: Do not hit the puller, the piston can break. Do not use a hammer or equivalent without the piston stop. It can cause damage to the lock mechanism of the flywheel slot.

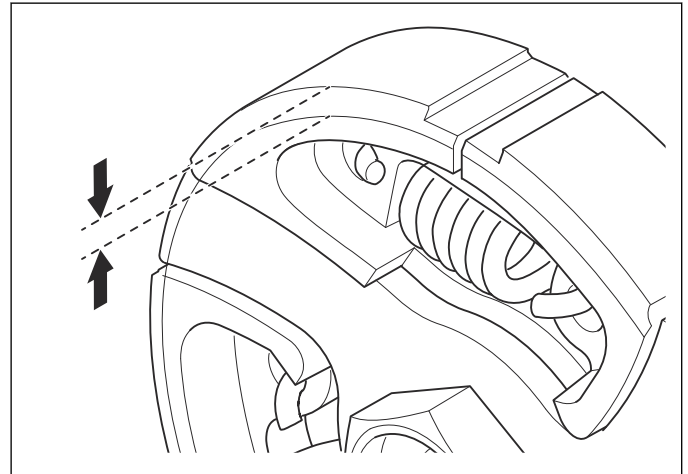
3. Pull the clutch drum from the axle. Make a note of the position of the washer against the bearing nearest the crankcase.



6.13.2 To examine the clutch for wear

Repair the clutch if the cutting blade is engaged at engine speeds less than 3100 rpm.

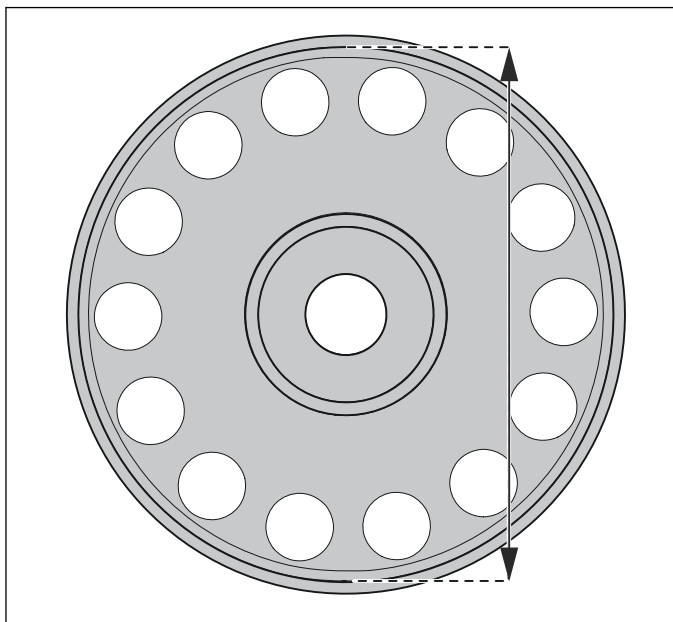
1. Measure the height of the clutch shoe edges.



The clutch shoe edges must not be less than 1 mm/ 0.04 in. Make sure that the clutch is balanced. Do not replace only 1 clutch shoe from a different

clutch. If it is necessary, replace with a full clutch assembly.

2. Measure the inner diameter of the clutch drum.



The inner diameter of the clutch drum must not be more than 79.8 mm/3.1 in. If it is necessary, replace with a new clutch drum.

6.13.3 To assemble the clutch

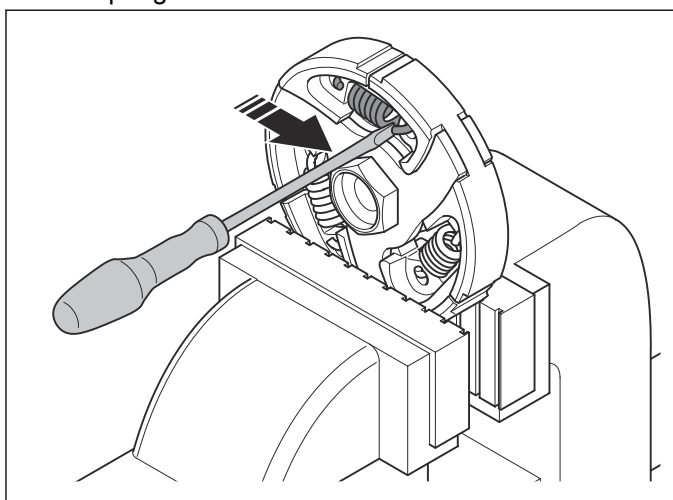


WARNING: Risk of injury. Assemble the clutch with the correct tightening torque. Use a torque wrench.

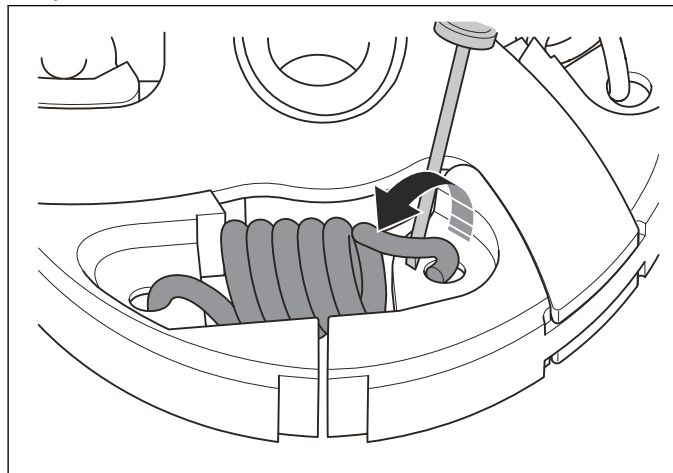
- Tighten the clutch with a torque of 37–43 Nm.

6.13.4 To remove the clutch springs

1. Put the clutch in a vise.
2. Put a large screwdriver against the end of the spring. Hit the screwdriver with your hand to release the spring.



3. Remove the spring with a small screwdriver or a pin punch.

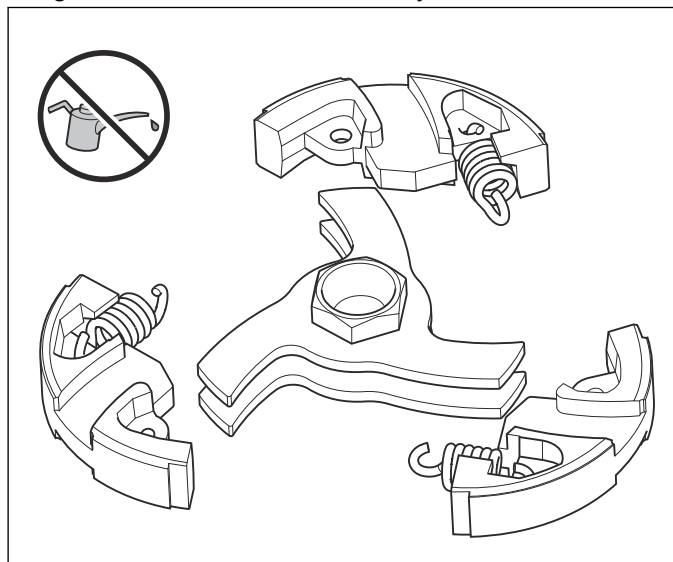


6.13.5 To examine the clutch shoes and hub



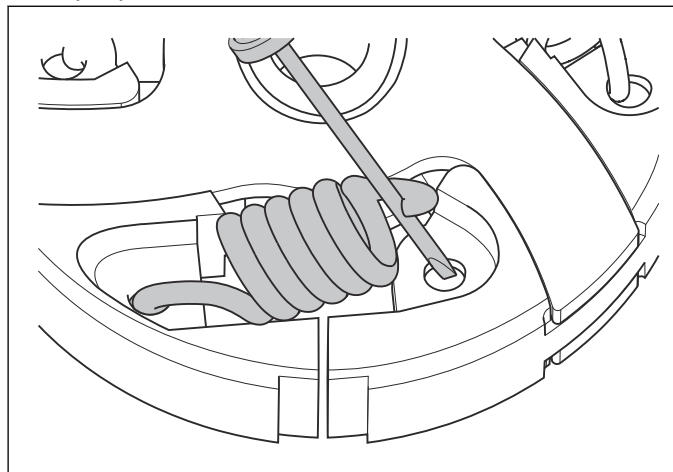
CAUTION: Do not lubricate the clutch.

- Make sure that the clutch shoes move easily in their grooves. Clean if it is necessary.



6.13.6 To install the clutch springs

1. Install the clutch springs with a small screwdriver or a pin punch.

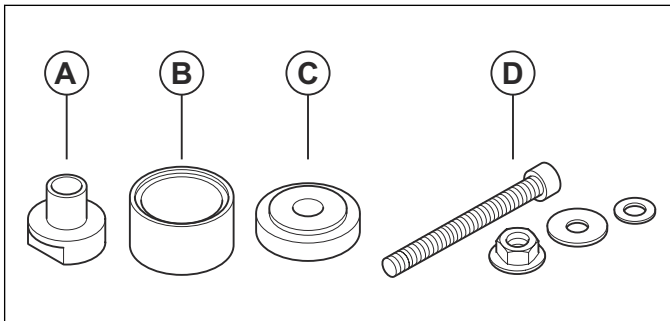


6.13.7 Belt pulley bearings

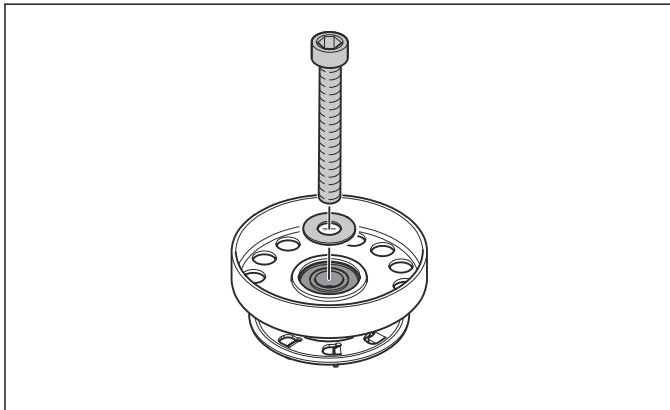
The clutch drum and the belt pulley are connected units. The belt pulley has 2 permanently lubricated ball bearings that are adjacent to each other without spacers. The outer rings of the ball bearings are installed with a light force on the belt pulley. They are installed with a sliding fit against the crankshaft. This means that the belt pulley can easily be pulled from the crankshaft when disassembling the clutch.

6.13.8 To remove the belt pulley bearings

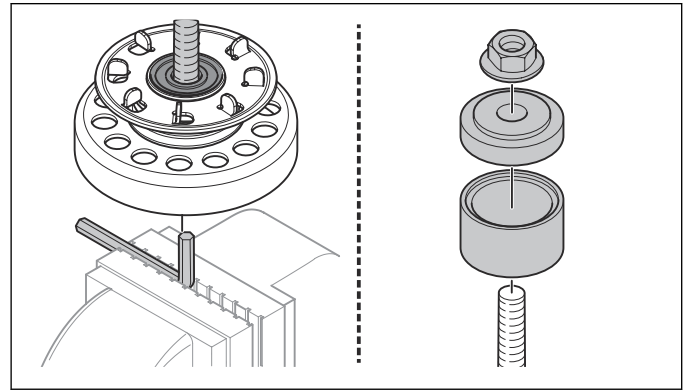
Use the bearing press for the clutch drum bearing, refer to *Servicing tools overview on page 10*. Use the tool kit to disassemble and install the belt pulley bearing. The tool kit has a support plate for the belt pulley bearing (A), the sleeve (B) and the cover (C). The cover has different contours. One side aligns with the sleeve when you disassemble the belt pulley bearing. The other aligns with the clutch drum when you install the belt pulley bearing. The kit also contains the screw (D) with washers and nut.



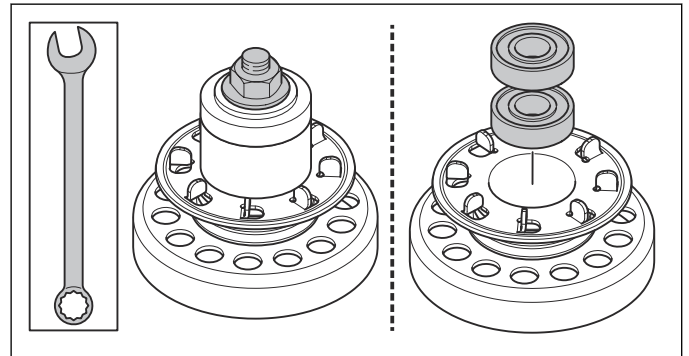
1. Lubricate the threads of the screw and the washers.
2. Put the screw with the large washer on the bearing.



3. Put the hex key in a vise. Put the head of the screw on the hex key. Put the socket and cover in position. Install the washer and the nut.

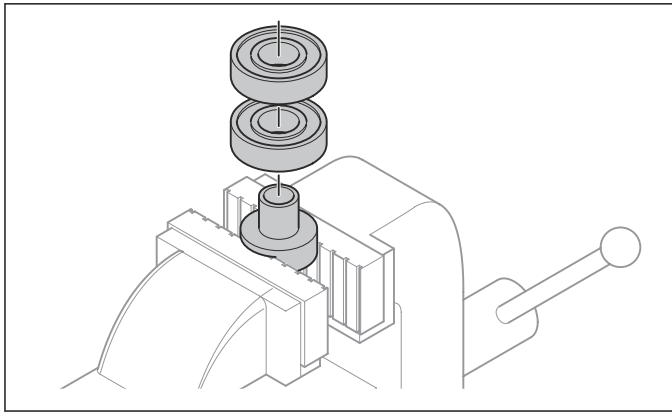


4. Tighten the nut and pull out the bearing

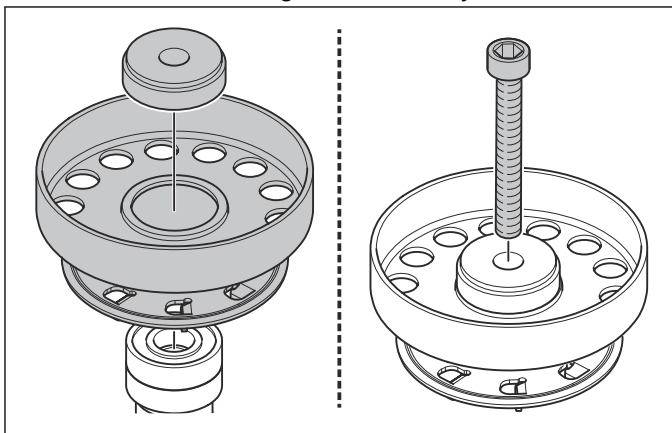


6.13.9 To install the belt pulley bearings

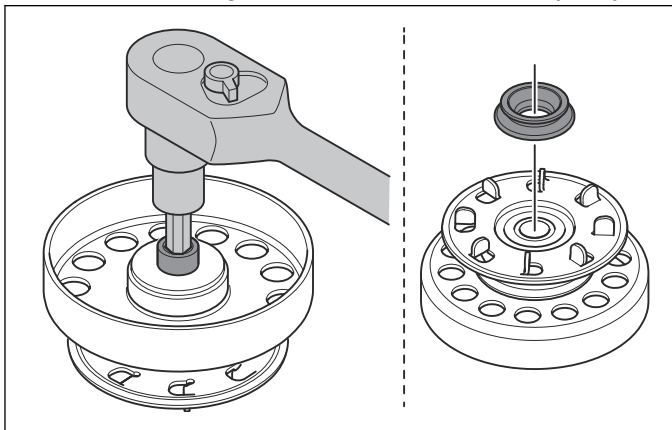
1. Put the support plate of the bearings in a vise. Put the 2 ball bearings on the support plate.



2. Put the belt pulley on top of the belt pulley bearings. Put the cover and washers on top of the belt pulley. Put the screw through the assembly.



3. Tighten the screw to push the belt pulley bearing until the bearings are at the end in the belt pulley.

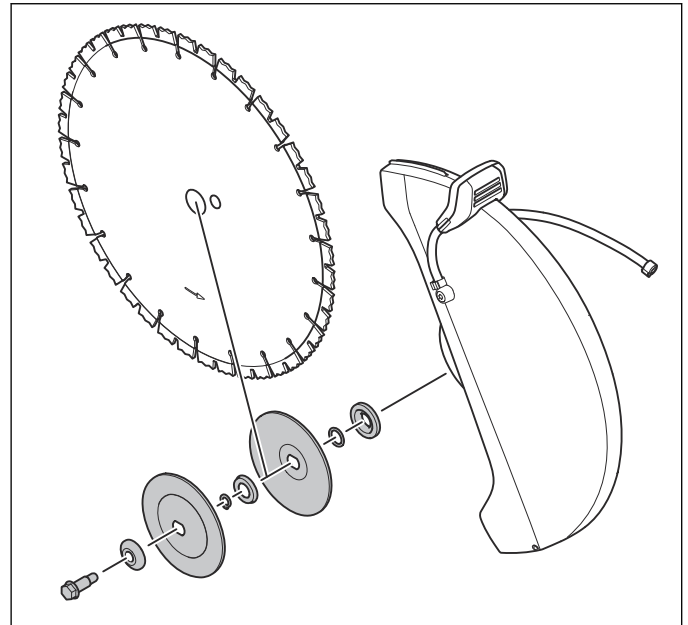


Note: When you install the clutch, first put the washer on the crankshaft.

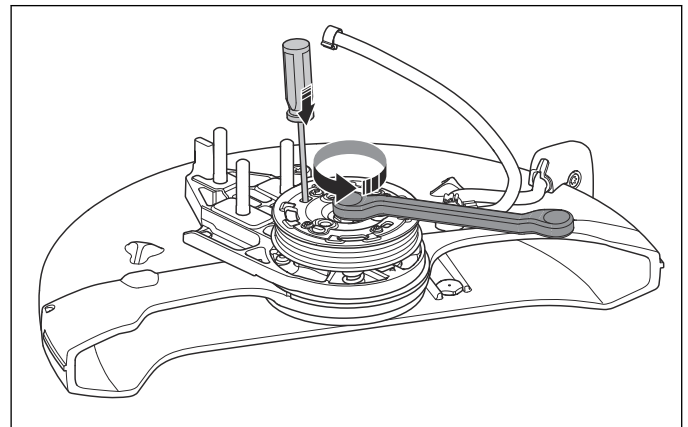
6.14 Cutting head

6.14.1 To disassemble the blade guard and the bearing housing

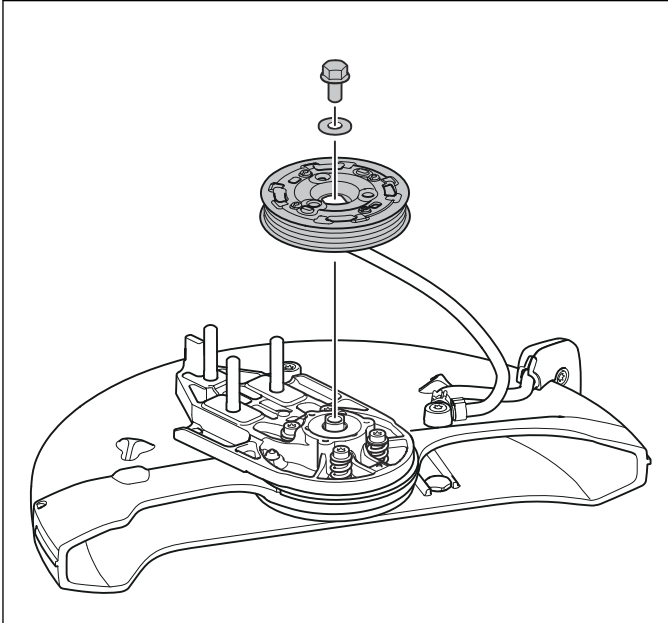
1. Remove the cutting head from the product.



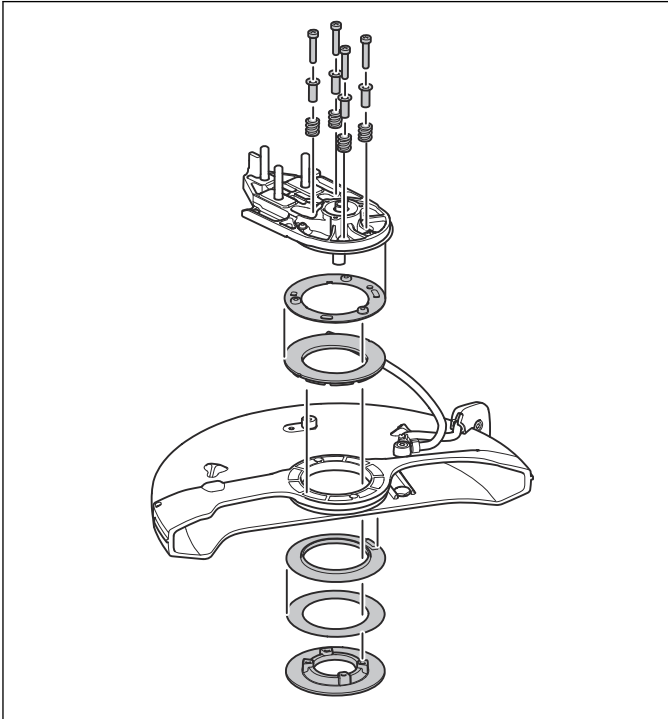
2. Put the cutting head on a solid support.
3. Lock the belt pulley with a mandrel or a screwdriver and loosen the center screw.



4. Remove the pulley.



5. Remove the 4 screws, seals and the screen rings.

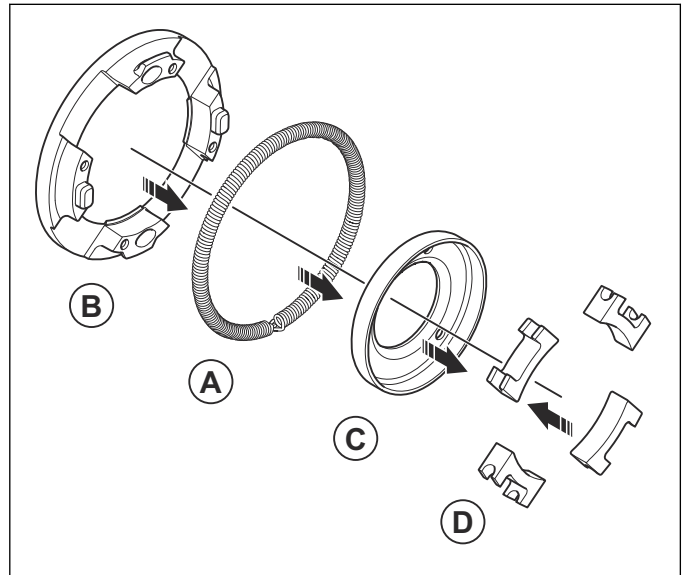


6.14.2 Function friction retarder

The friction retarder has a number of loosely assembled parts that are held together by the spring. Always replace the complete unit, as shown in the illustration. The brake drum is attached to the bearing housing with 3 screws. The guide plate is attached to the belt pulley with 4 screws.

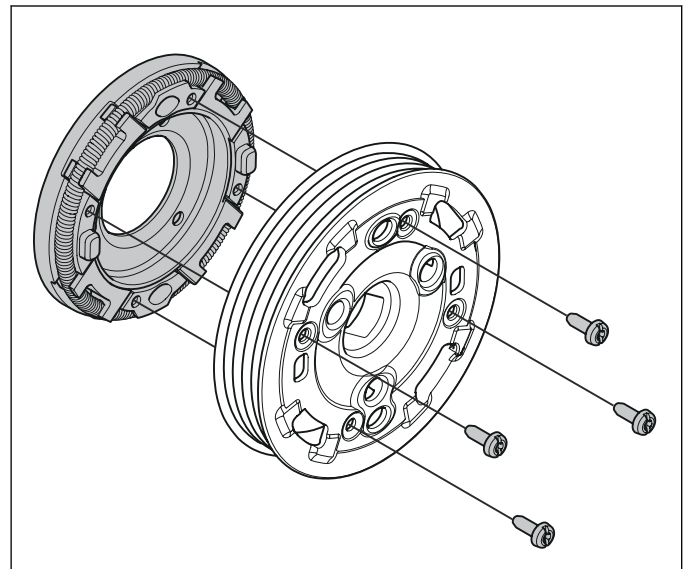
The friction retarder slowly stops the cutting blade after operation. It operates when below work speed. The brake shoes (D) are pressed against the brake drum (C) by the spring (A). These units are held in position by the guide plate (B). When the speed goes above work

speed, the brake shoes are pushed out from the brake drum. The retarder does not operate.



6.14.3 To disassemble the friction retarder

1. Remove the 4 screws.



2. Release the retarder unit from the belt pulley .

6.14.4 To clean the friction retarder

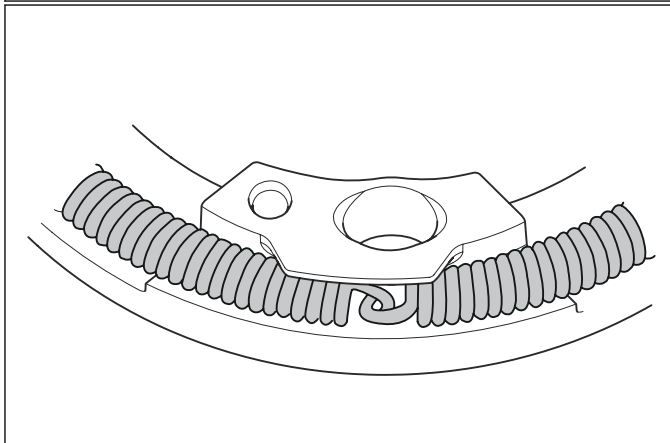
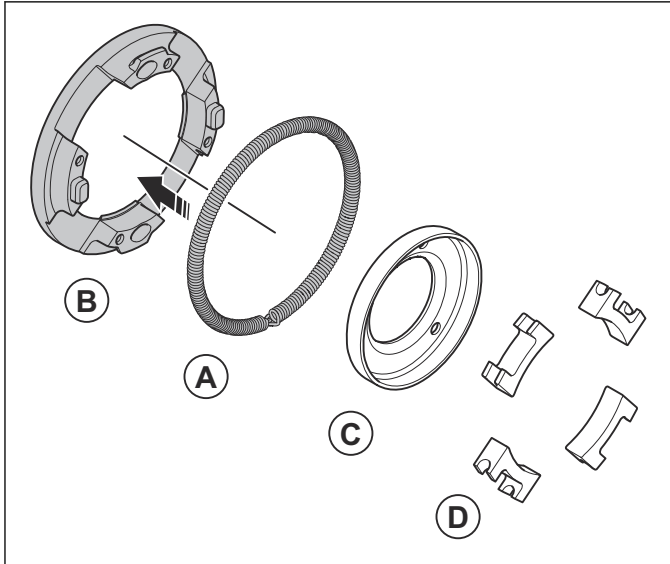


CAUTION: The retarder must not be lubricated.

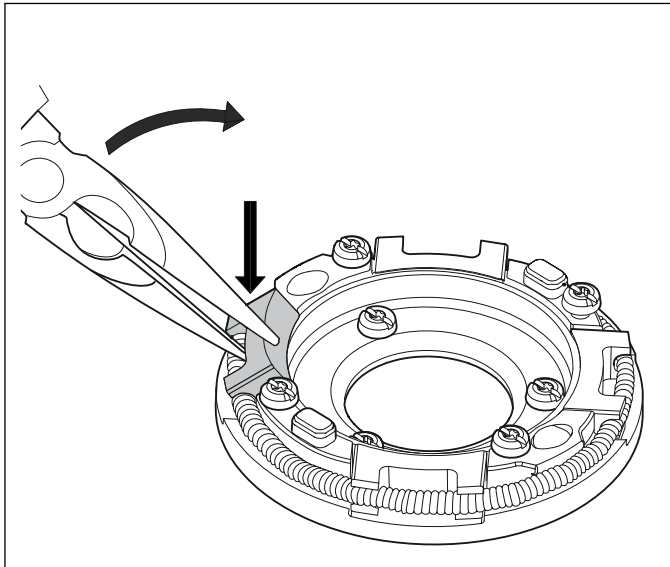
- If it is necessary, clean off dust with compressed air.

6.14.5 To assemble the retarder unit

1. Put the spring (A) in position in the guide plate (B).
Note where the spring ends must be.

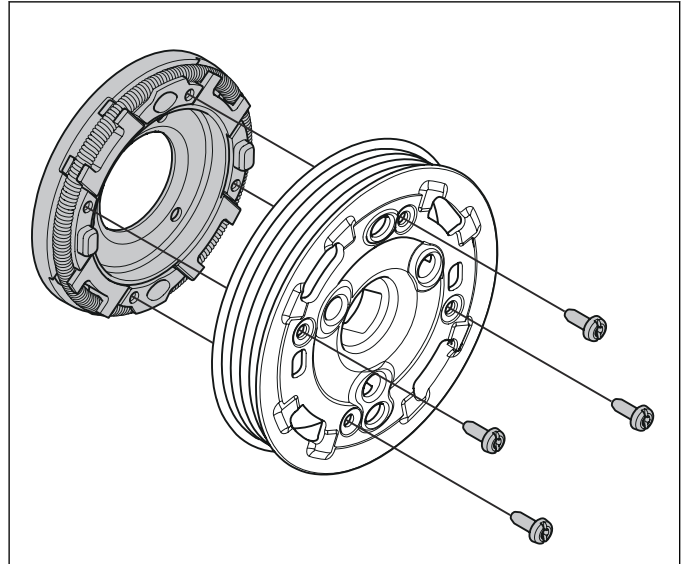


2. Put the brake drum (C) in position in the center of the guide plate.
3. Assemble the brake shoes (D) with a pair of pliers.

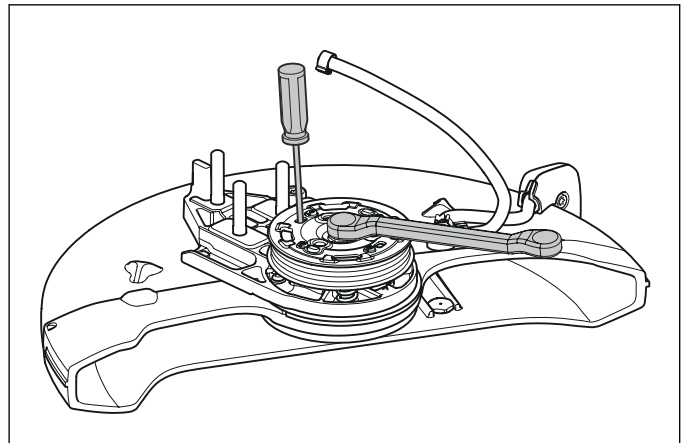


6.14.6 To assemble the retarder and belt pulley

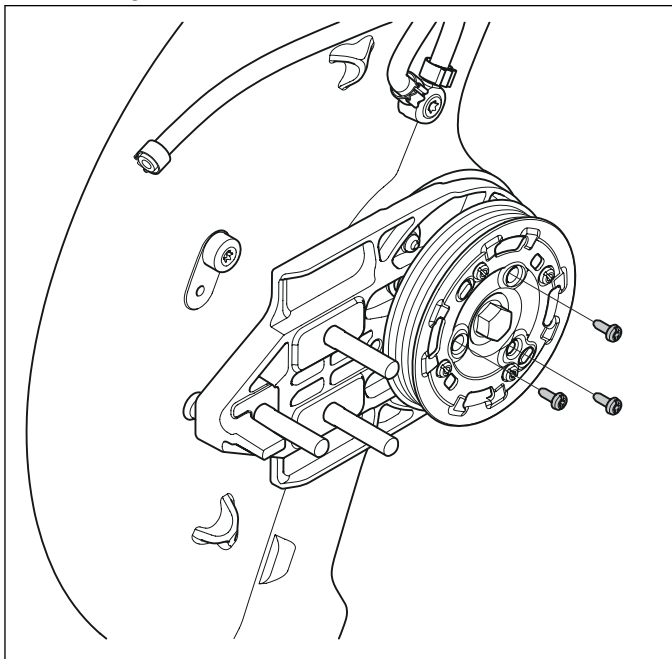
1. Assemble the plate of the retarder unit and the belt pulley with the 4 screws.



2. Put the retarder unit on the bearing housing. Lock the belt pulley with a mandrel and put the center screw with the washer on the blade shaft. Tightening torque: 28–31 lbf·ft/38–42 Nm.

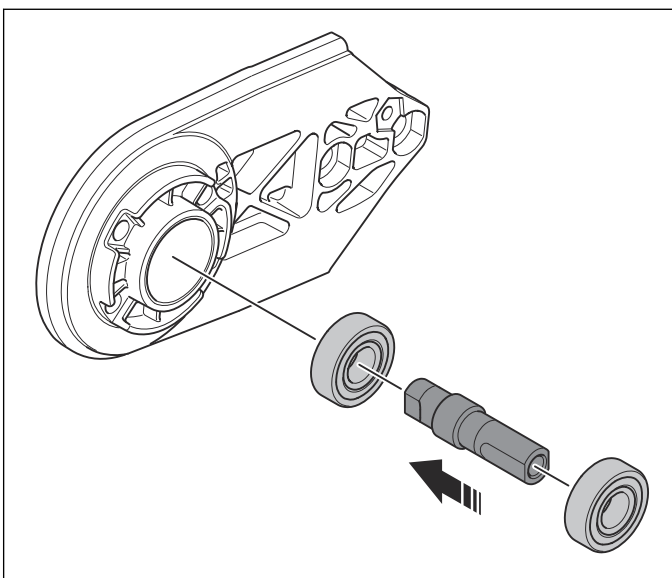


3. Assemble the the brake drum and the bearing housing.



6.14.7 To remove the blade shaft bearings

The blade shaft bearings are pushed against a spacer on the blade shaft. The inner rings of the bearing are installed against the shaft. The outer rings of the bearings are installed against the bearing housing.

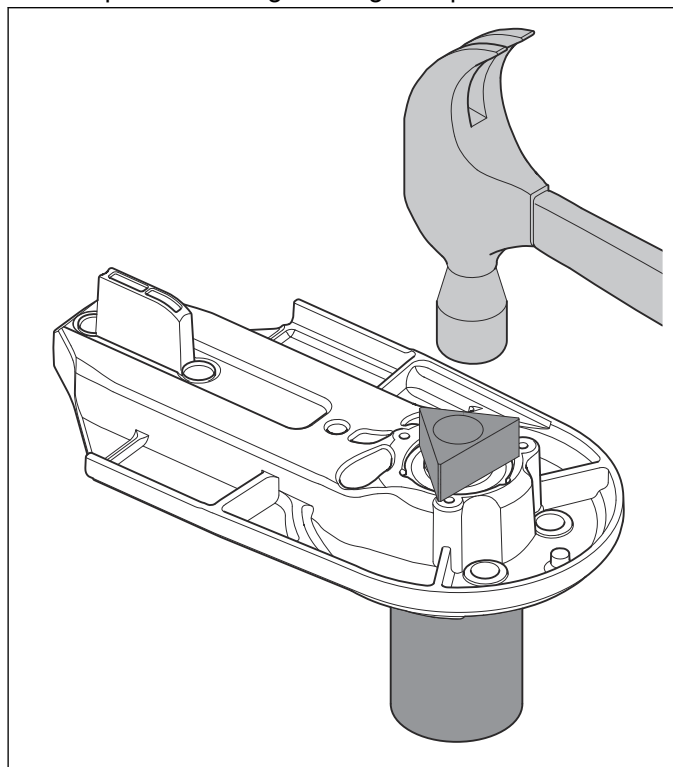


Use a hydraulic press or a bearing press kit to remove the blade shaft bearings.

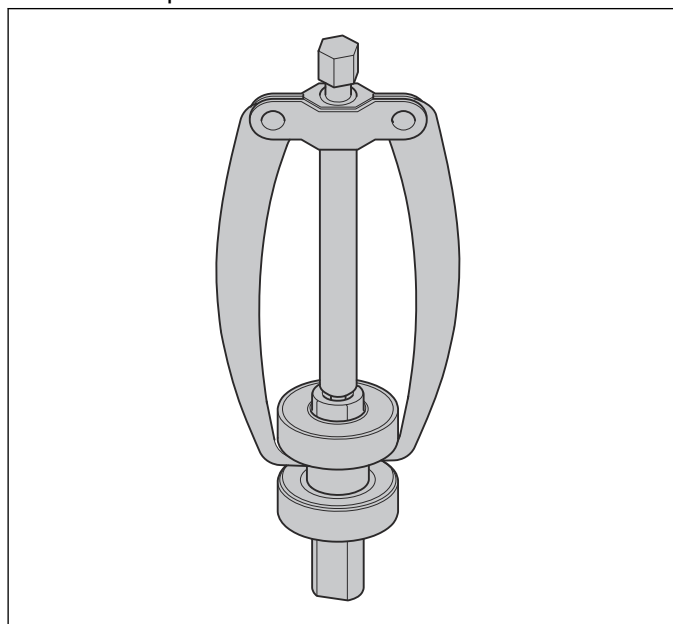
- If you replace the blade shaft bearings with a hydraulic press, use the Husqvarna press tool. Refer to *Servicing tools overview on page 10*.

- If you replace the bearings with a bearing press kit, use the Husqvarna bearing press kit. Refer to *Servicing tools overview on page 10*.

1. Turn the support for assemble with its shoulder up and put the bearing housing on top of it.



2. Put the triangle from the bearing press kit, or assembly support from the hydraulic press, on top of the bearing. Refer to *Servicing tools overview on page 10*.
3. Push out the bearing until the triangle is at the edge of the bearing housing. Then extend with a tool socket to push out the bearing unit fully from the bearing housing.
4. Remove the bearings from the blade shaft with a universal puller.



6.14.8 To assemble the blade shaft bearing



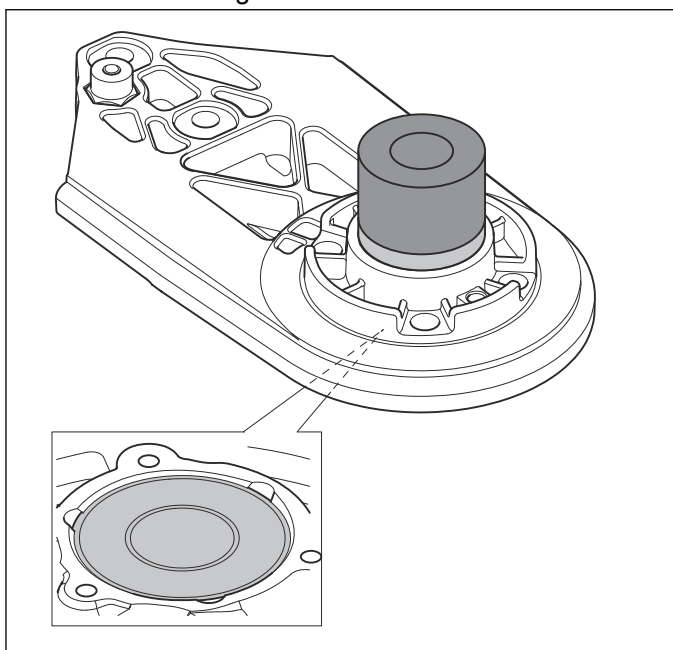
CAUTION: Do not put force between the inner and outer rings of the blade shaft bearing. The bearings can become damaged.

Use a hydraulic press or a Husqvarna bearing press kit to assemble the blade shaft bearings. Refer to *Servicing tools overview on page 10*.

- If you replace the blade shaft bearings with a hydraulic press, use the Husqvarna press tool. Refer to *Servicing tools overview on page 10*.
- If you replace the blade shaft bearings with a bearing press kit, use the Husqvarna bearing press kit. Refer to *Servicing tools overview on page 10*.

1. To assemble the blade shaft bearing with a hydraulic press:

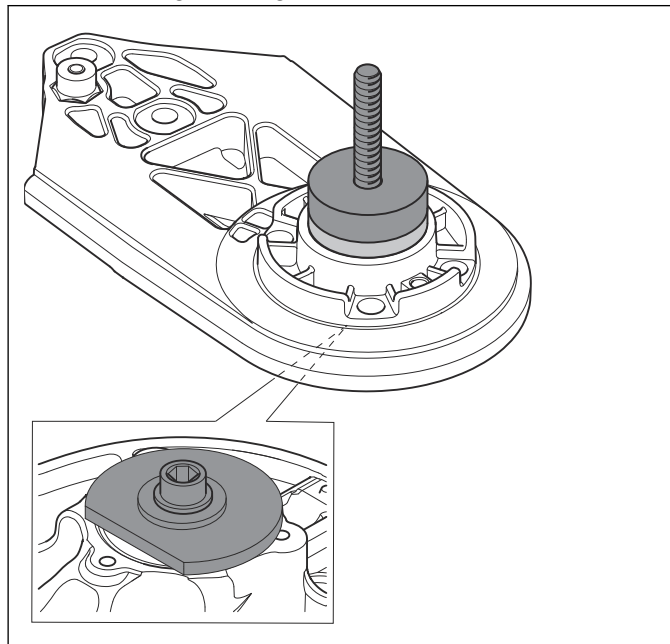
- a) Put a piece of wood below the area for the blade shaft bearing to put the bearing housing in level position.
- b) Put the blade shaft bearing on the bearing housing and put the medium sized mandrel from the Husqvarna press tool kit on top of the blade shaft bearing.



- c) Push down the blade shaft bearing fully to the stop in the bearing housing.

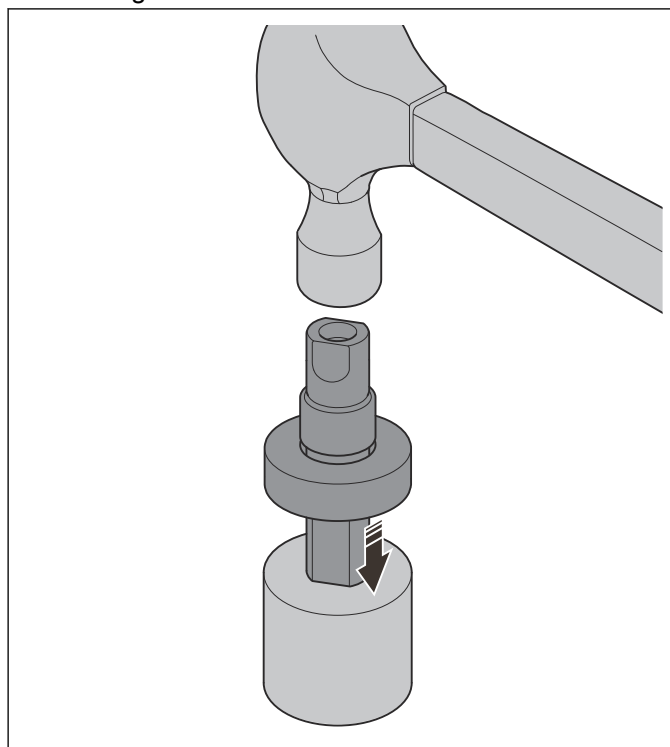
2. To assemble the blade shaft bearing with a bearing press kit:

- a) Put the bearing and the bearing press on the bearing housing.



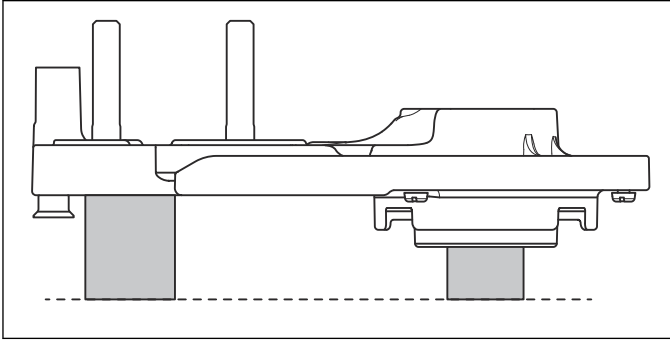
- b) Pull in the bearing to the stop.

3. Use a plastic hammer and push the axle down until the spacer touches the inner stop in the bearing housing.

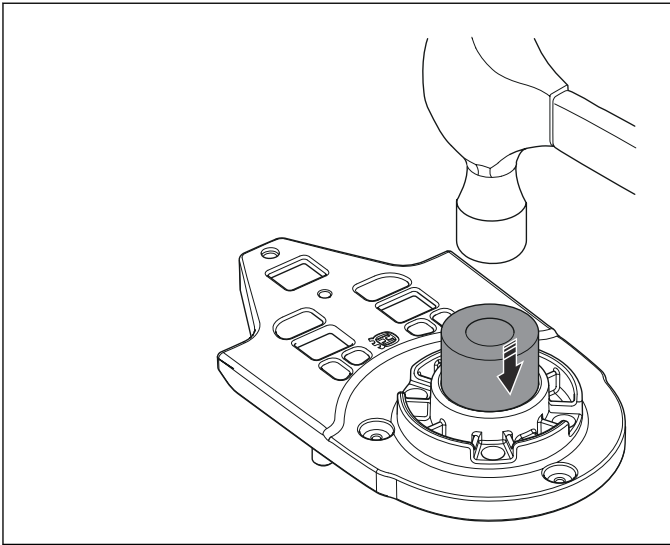


4. Put the shaft bearing on the axle and put the axle in the support for assembly.

5. Use the assembly support to make the bearing housing level.



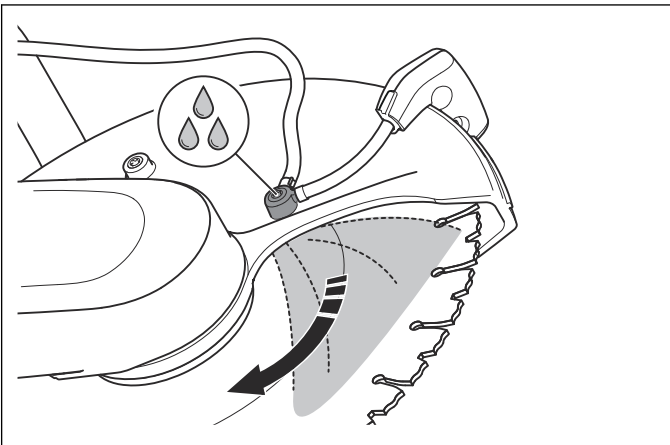
6. Put the axle with the blade shaft bearing in the bearing housing with the spacer down.
7. Use a plastic hammer and push down the axle.



6.15 Wet system

6.15.1 Function of the wet system

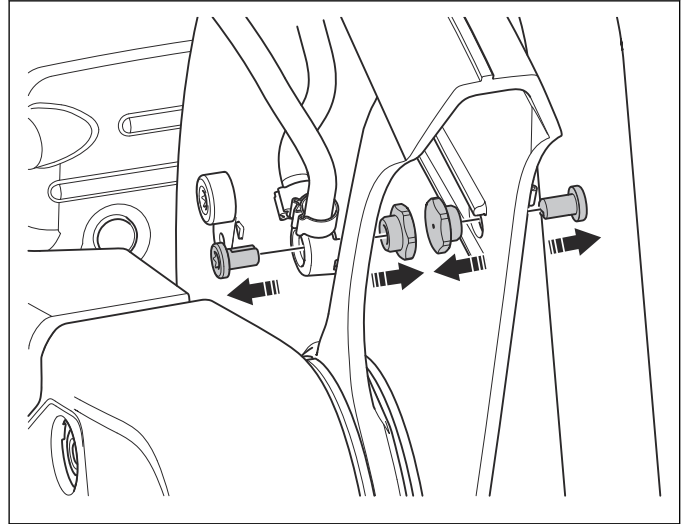
Each side of the blade guard has a spray nozzle. The water hits a section of the cutting blade and the centrifugal force moves it out to the edge.



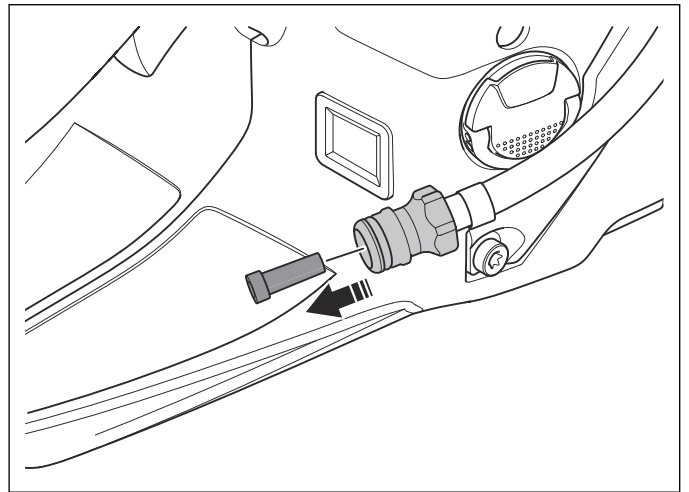
- The spray nozzles are available in many different hole diameters.
- Find the correct nozzle in the spare parts list.

6.15.2 To disassemble the wet system

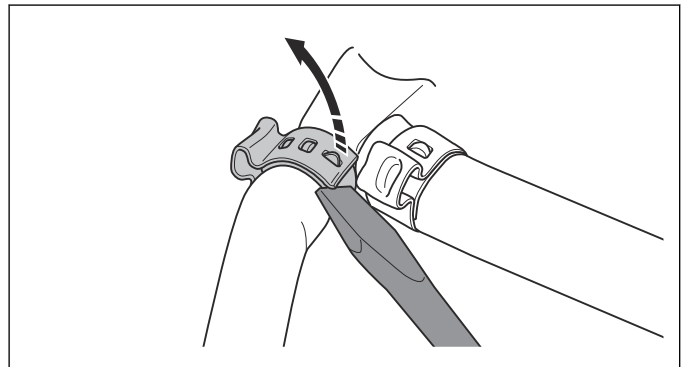
1. Remove the screws that hold the spray nozzle.



2. Remove the filter with a wood screw.



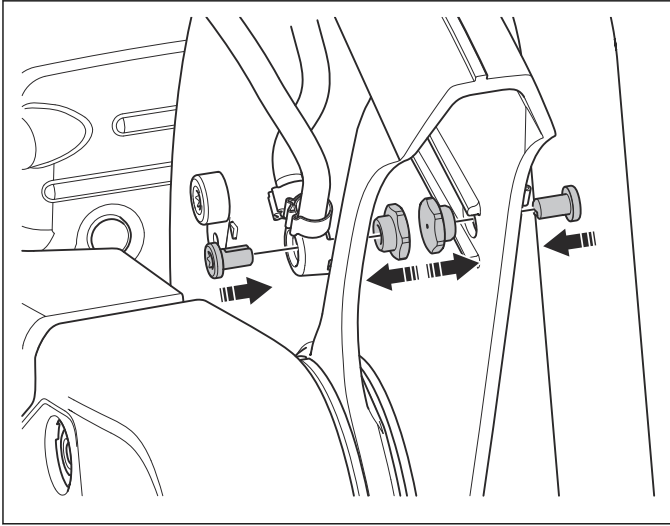
3. Remove the hose clip with a screwdriver.



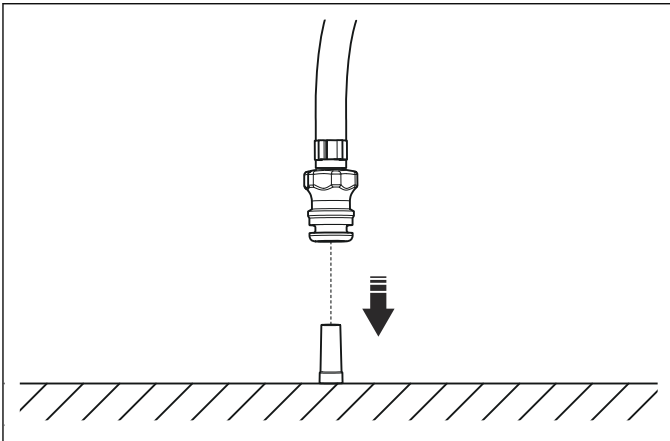
4. Discard the hose clip.

6.15.3 To assemble the wet system

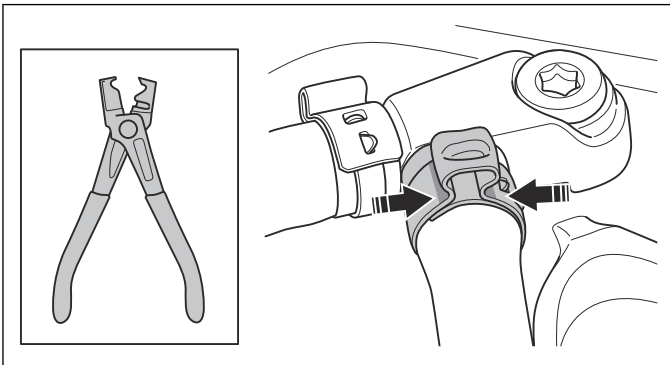
1. Put the spray nozzles on to the blade guard.



2. To put the filter in the connector, push it in on a flat surface.



3. Install new hose clips and close the hose clips with a pair of pliers.

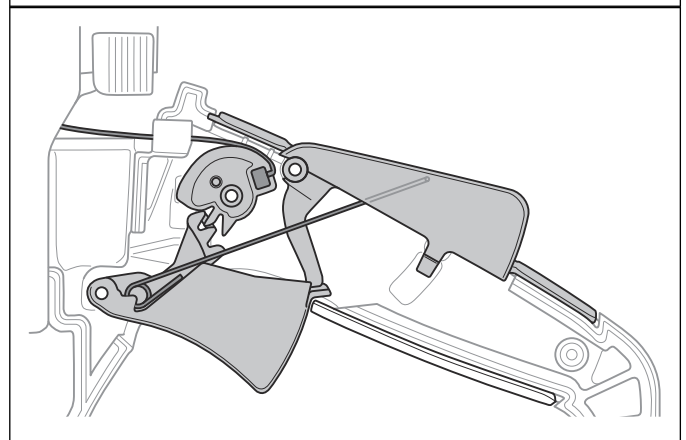
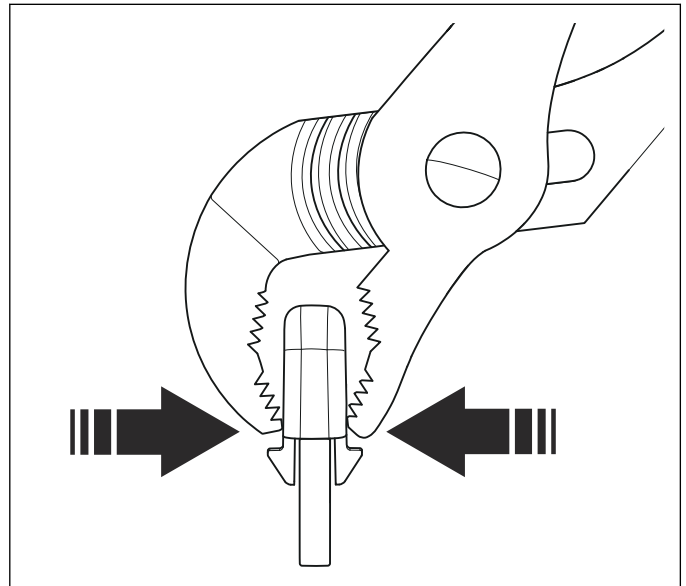


6.16 Throttle trigger and throttle trigger lockout

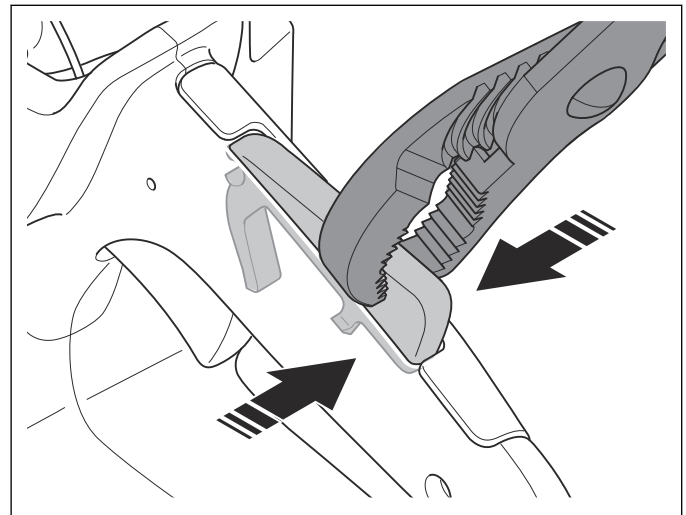
6.16.1 To remove the throttle trigger and throttle trigger lockout

When you remove the throttle trigger lockout, use a V-jaw adjustable pliers. Make sure that you hold the V-jaw of the pliers adjacent to the handle. Put a cloth on the

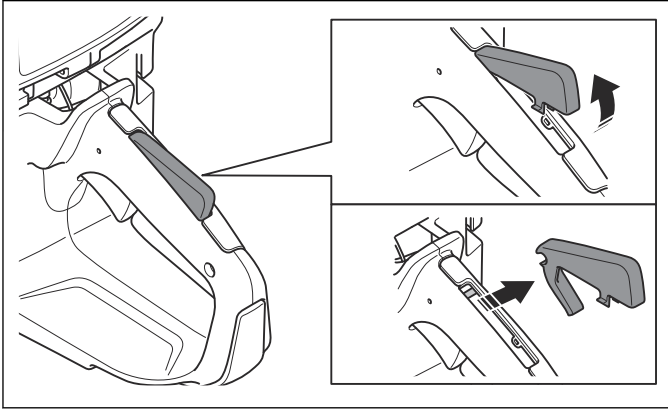
throttle trigger lockout before you apply the pliers to prevent damage to the surface.



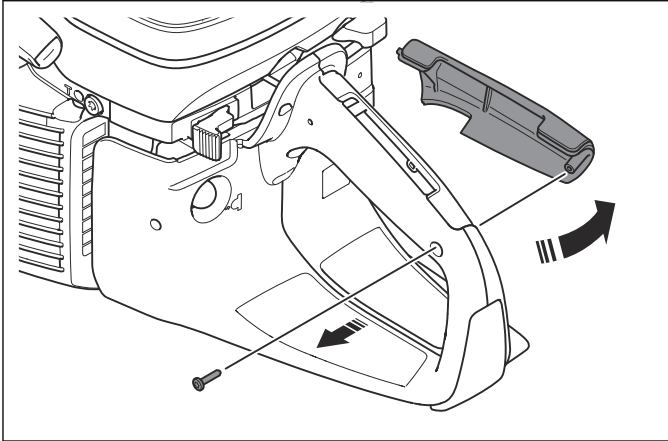
1. Remove the carburetor. Refer to *To remove the carburetor on page 16*.
2. Push in the lower part of the throttle trigger lockout with a V-jaw adjustable pliers.



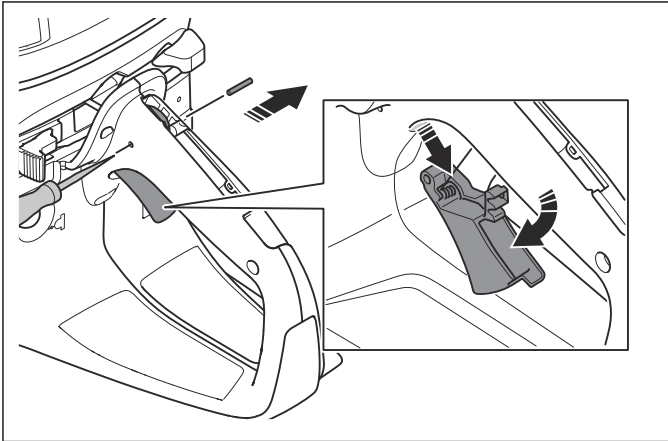
3. Lift the lower part of the throttle trigger lockout and pull it out from the pin.



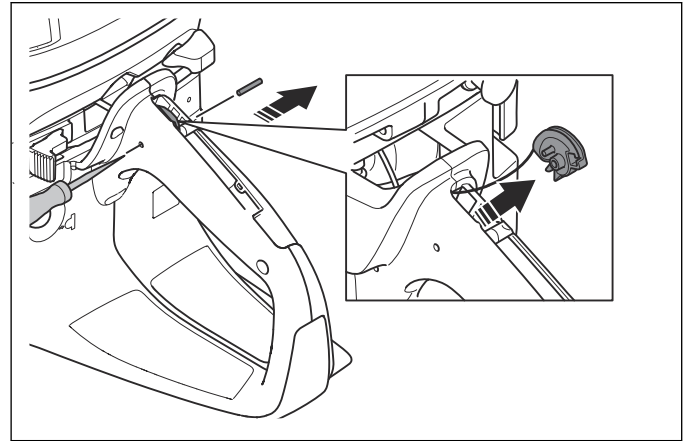
4. Remove the screw and the right handle side.



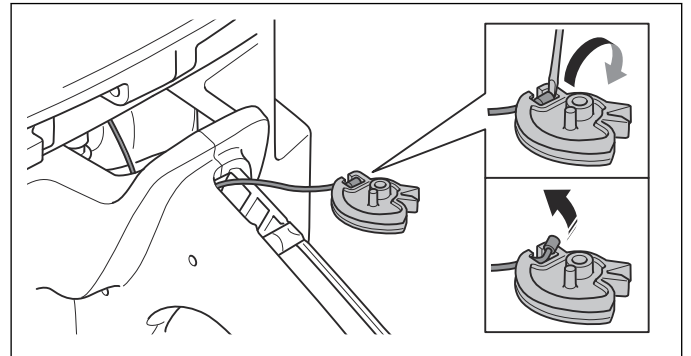
5. Push out the spindle to the right side. Use a rod with a diameter of 0.08–1.0 in./2–2.5 mm and minimum 4 in./10 mm in length and remove the throttle trigger.



6. Push out the spindle to the right side. Use a rod with a diameter of 0.08–1.0 in./2–2.5 mm and approximately 4 in./10 mm in length and remove the throttle control wheel.



7. Remove the wire from the throttle control wheel.



6.16.2 To examine the throttle trigger lockout

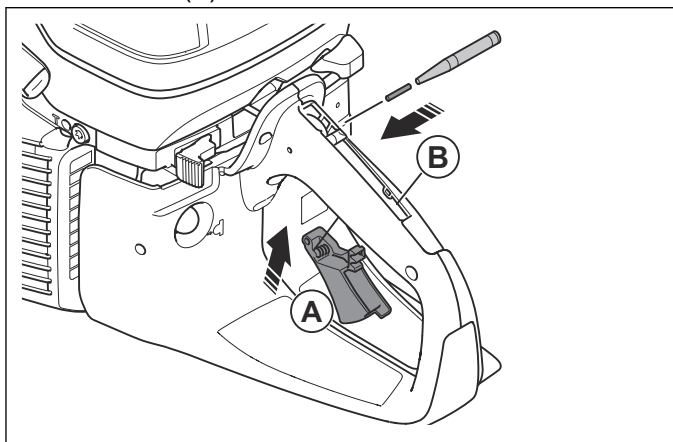
The throttle trigger lockout operates correctly if the throttle trigger is locked at idle speed.

- Make sure the throttle trigger cannot be released until the throttle trigger lockout is pressed.

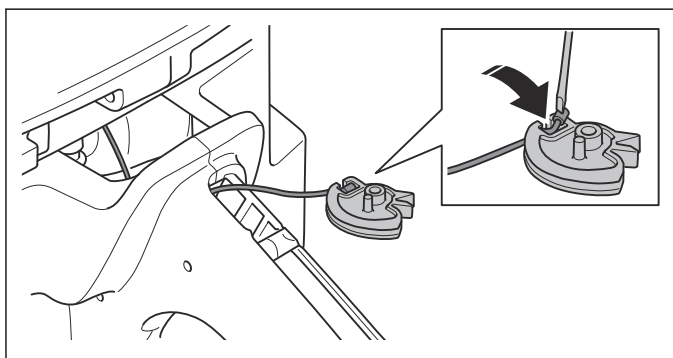
6.16.3 To install the throttle trigger and throttle trigger lockout

The spindles for the throttle trigger and the throttle control wheel must be installed from the right side.

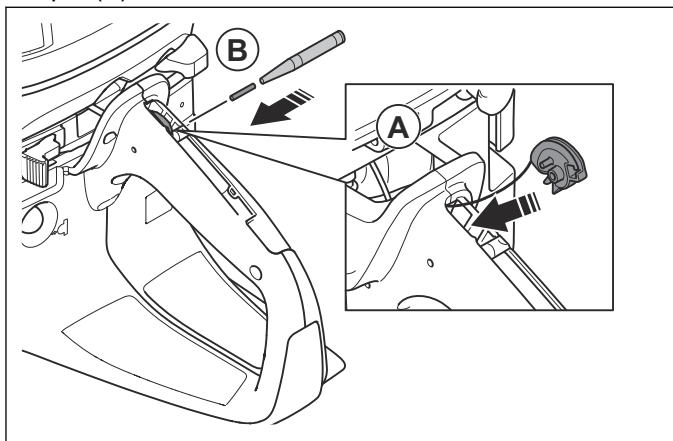
1. Install the throttle trigger from the carburetor area (A). Make sure that the spring comes out through the handle (B).



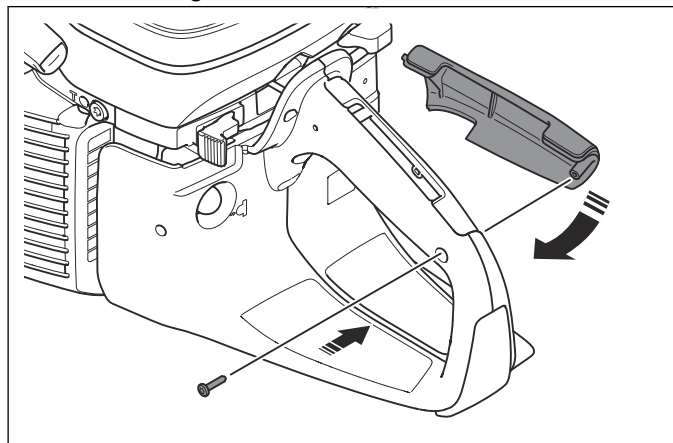
2. Install the wire into the throttle control wheel.



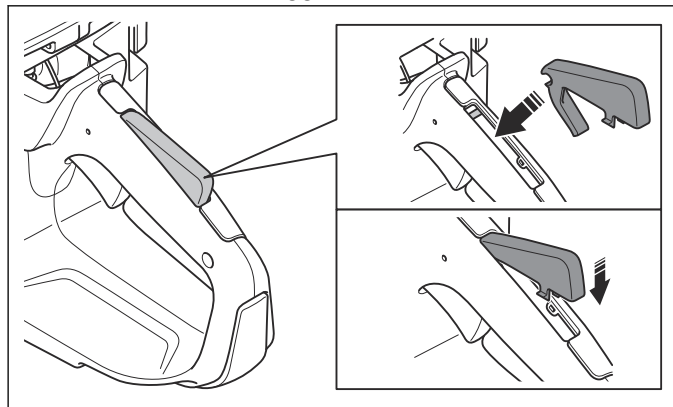
3. Install the throttle control wheel (A). Attach it with a pin (B).



4. Install the right handle side.



5. Install the throttle trigger lockout.



7 Troubleshooting

7.1 Engine does not start

Remove the spark plug from the cylinder. Hold the cylinder, pull the starter rope and see if there are sparks between the spark plug electrodes.

There are no sparks at the spark plug.		
Examine	Cause	Solution
Spark plug	The spark plug electrodes are wet.	Dry them.
	There is carbon on the spark plug electrodes.	Remove the carbon or replace the spark plug.
	The insulation on the ignition cable is damaged.	Replace the spark plug.
	The space between the spark plug electrodes is too small or large.	Champion RCJ 6Y/NGK BPMR 7A: Adjust to 0.5 mm.
Ignition coil	The coil insulation is defective.	Replace.
	The cable trunks are damaged or the cable is broken.	Repair or replace.
	The distance between the rotor and coil is not correct.	Adjust to 0.3 mm.
Switch	The switch is OFF.	Set the switch to the left position.
	The switch is defective.	Replace.
	The primary wire is grounded.	Repair or replace.

There are sparks at the spark plug.		
Problem	Cause	Solution
Compression is good and fuel flows	There is too much fuel.	Remove the fuel.
	The carburetor is adjusted to give too rich mixture.	Repair, adjust or replace the carburetor.
	There is too much fuel mixture.	Adjust or replace the carburetor.
	The air filter is too dirty.	Replace the air filter.
	Low quality fuel is being used.	Replace with good quality fuel.
Fuel flows but compression is low	The spark plug is loose.	Tighten.
	There is wear or damage on the cylinder and piston.	Replace.
	There is a gas leak around the cylinder and crankcase.	Replace the gasket.
No fuel flows	The carburetor is not adjusted.	Adjust.
	There is a blockage in the carburetor.	Clean.
	There is a blockage in the fuel filter.	Clean or replace the fuel filter.
	The fuel hose is damaged or blocked.	Adjust.

7.2 Engine stops during operation - no sparks

There are no sparks at the spark plug		
Problem	Cause	Solution
Engine suddenly stops.	The switch is accidentally set to off.	Set the switch to the left position.
	The plug cap is not attached.	Attach the plug cap fully.
	The switch cable or high-voltage cable is worn.	Replace.
	Internal fault in the coil.	Replace.
	The engine has burned out.	Disassemble and repair.
	The air flow filter is blocked.	Clean.
Engine speed gradually decreases and the engine stops.	There is no fuel.	Fill with fuel.
	There is a blockage in the carburetor.	Clean.
	There is water in the fuel.	Empty the fuel tank, clean the inner surface of the tank and then fill with good quality fuel.
Engine speed suddenly increases, and then the engine stops.	There is no fuel.	Fill with fuel.
	There is a blockage in the carburetor.	Clean.

7.3 Engine stops during operation

Remove the spark plug from the cylinder. Hold the cylinder and pull the starter to see if there are sparks between the spark plug electrodes.

Problem	Cause	Solution
Engine suddenly stops.	The engine runs lean.	Adjust, repair or replace the carburetor.
	Dirt causes blockage in the air flow. This decreases the temperature of the engine.	Clean.
	Dirt on the cylinder fin causes blockage.	Clean.
	Low quality fuel is used.	Replace with good quality fuel.
	There is carbon in the combustion chamber (run-on occurs).	Clean.
	The edge of the spark plug is red hot.	Champion RCJ 6Y/NGK BPMR 7A: Adjust to 0.5 mm.
Switch.	The switch is defective.	Replace.
	The cable is broken.	Replace.
	There is an internal fault in the ignition module.	Replace.

7.4 Weak output or change of speed

There are no sparks at the spark plug		
Symptom/Category	Cause	Solution
Compression is good and there is no flame out.	Air has gone through the fuel pipe joint.	Make sure it is tight.
	Air has gone into the fuel pipe because of a crack or pin hole.	Replace.
	Air has gone through the pulse pipe.	Make sure it is tight.
	Air has gone through the insulator and carburetor installation part.	Replace or tighten the gasket.
	Air has gone through the oil seal.	Replace.
	There is water in the fuel.	Empty and clean the tank, then fill with good quality fuel.
	The piston is burned.	Remove the burn with a file, or replace.
	Carbon blockage in the muffler.	Clean.
Overheating.	The engine is running lean.	Repair or replace the carburetor.
	Blockage because of dirt in the air channel for decreasing temperature.	Clean.
	Blockage because of dirt on the cylinder fin.	Clean.
	Low quality fuel is being used.	Replace with good quality fuel.
	The level of carbon has increased in the combustion chamber.	Clean.
	The spark plug tip is red hot.	Champion RCJ 6Y/NGK BPMR 7A: Adjust to 0.5 mm.
Other.	The air filter is too dirty.	Replace the air filter.
	Too high load.	Lower the load.

7.5 Other engine problems

There are no sparks at the spark plug		
Problem	Cause	Solution
When the engine revolution decreases, the blade does not stop.	The clutch spring is broken.	Replace the clutch spring of the engine.
	The clutch is open because of rusty clutch bolts.	Remove corrosion from clutch bolts, apply grease and assemble.
When the engine revolution increases, the blade does not rotate.	The drum bearing does not move.	Replace.
Strong vibration.	The blade not balanced.	Install a new blade. Make sure that the right bushing is used.
	The vibration dampening element is broken.	Replace.



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