Husqvarna®

Workshop manual

# 545 Mark II, 550 XP® Mark II, 545G Mark II, 550 XP®G Mark II

English

722 - 003 - 26.03.2019

# Contents

# 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.

## 2.1 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

**WARNING:** Read the warning instructions that follow before you use the product.

The service center that repairs the product must have safety devices that obey local regulations. Warnings and cautions are used to point out specially important parts of the workshop manual.

## 2.3 Special safety instructions

- Do not use accessories that are not approved by the manufacturer. Do not do changes that are not approved by the manufacturer. This can cause injury or death to the operator or other persons.
- Always use original spare parts and accessories.
- Use approved hearing protection. Noise from the product can result in permanent hearing loss.
- Be careful with the fuel. The fluid and its fumes are poisonous, can cause skin damage and is very flammable.
- The guide bar, saw chain, chain brake and clutch cover must be attached correctly before you start the product. If not, the clutch can become loose and cause injury.
- Adjust the saw chain before you use the product. Make sure that the saw chain does not move at idle speed.
- Not sufficient lubrication of the saw chain can result in the saw chain breaking. This can cause injury or death to the operator or other persons.
- After operation, do not touch the muffler until the temperature of the muffler has decreased. Risk of burn injuries.
- Use safety glasses when you do maintenance on springs that have tension. Make sure that the spring in the starter pulley does not eject and cause injury.
- Wear protective gloves when you replace the crankshaft bearings. The crankcase halves are hot, risk of burn injuries.
- Make sure that the chain brake is engaged when you remove the pressure spring on the chain brake. If the chain brake is not engaged, the pressure spring can eject and cause injury.
- After repair, examine the chain brake before you use the product. Obey the instructions in the chain brake chapter.

## 2.4 Symbols on the product


Be careful and use the product correctly. This product can cause serious injury or death to the operator or others.


Read the operator's manual carefully and make sure that you understand the instructions before you use this product.


Always wear approved protective helmet, approved hearing protection and eye protection.


This product complies with applicable EC Directives.

Noise emission to the environment complies with applicable EC Directives. The noise emission of the product is specified in *Technical data on page 7* and on the label.


Chain brake, engaged (right). Chain brake, disengaged (left).


Choke.


Air purge bulb.


Adjustment of the oil pump.


Fuel.


Chain oil.


If your product has this symbol it has heated handles.

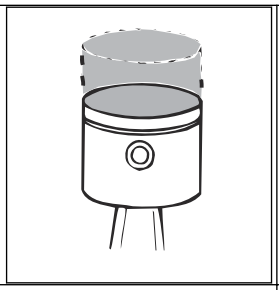
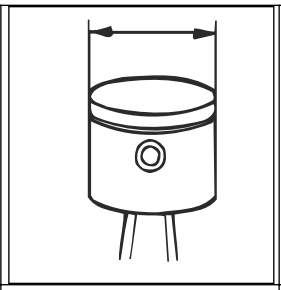
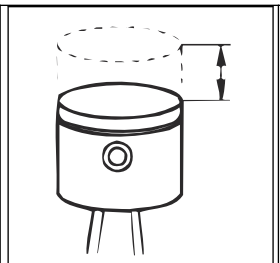
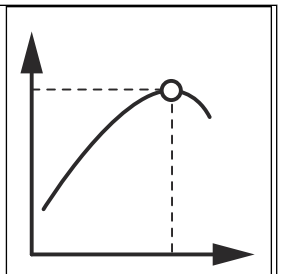
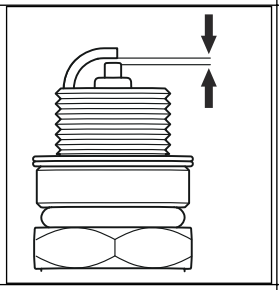
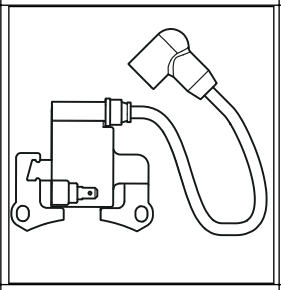
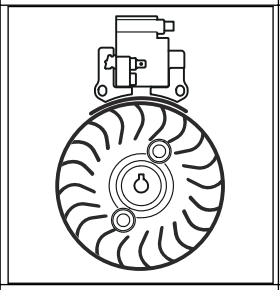
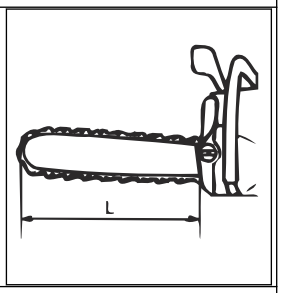
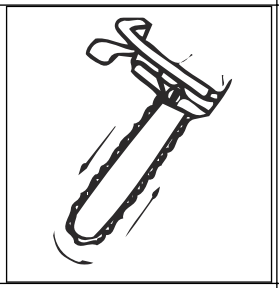
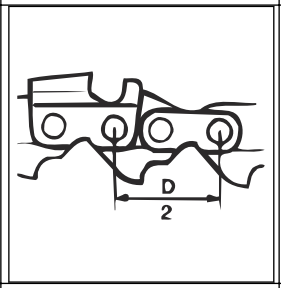
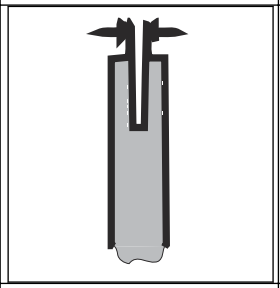
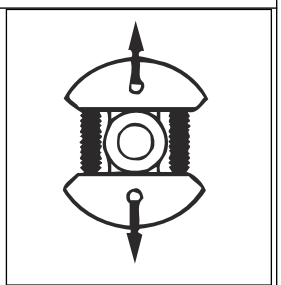
| | |
|---|---|
| **yyyywwxxxx** | The rating plate shows serial number **xxxx**. **yyyy** is the production year and **ww** is the production week. |

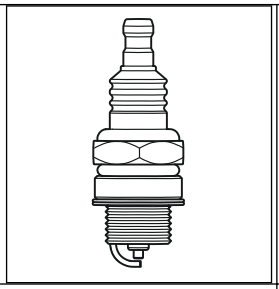
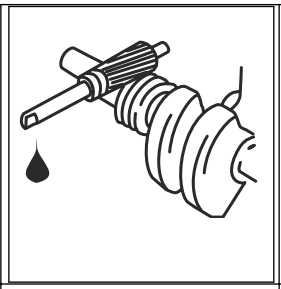
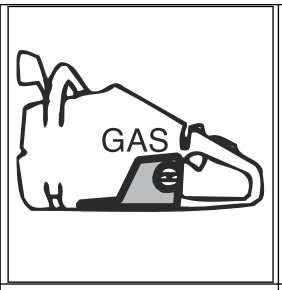
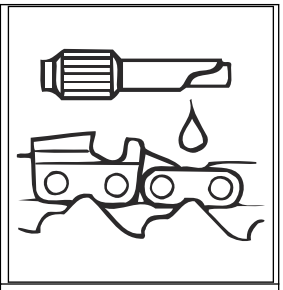
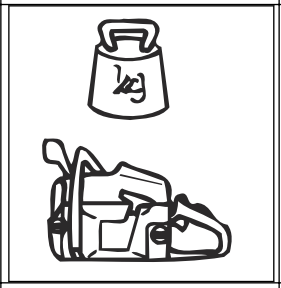
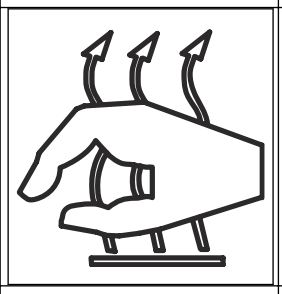
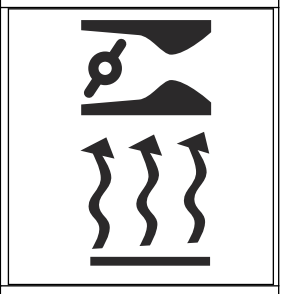
**Note:** Other symbols/decals on the product refer to certification requirements for some markets.

## 3.1 Maintenance schedule

| Daily maintenance | Weekly maintenance | Monthly maintenance |
|---|---|---|
| Clean the external parts of the product and make sure that there is no oil on the handles. | Clean the cooling system. Make sure to clean the flywheel wings. | Do a check of the brake band. |
| Do a check of the throttle trigger and throttle trigger lockout. | Do a check of the starter, starter rope and return spring. | Do a check of the clutch centre, clutch drum and clutch spring. |
| Make sure that there is no damage on the vibration damping units. | Lubricate the needle bearing for the clutch drum. | Clean the spark plug. |
| Clean and do a check of the chain brake. | Remove burrs from the edges of the guide bar. | Clean the external parts of the carburetor. |
| Do a check of the chain catcher. | Clean or replace the spark arrestor mesh on the muffler. | Do a check of the fuel filter and the fuel hose. Replace if necessary. |
| Turn the guide bar, do a check of the lubrication hole and clean the groove in the guide bar. | Clean the carburetor area. | Do a check of all cables and connections. |
| Make sure that the guide bar and saw chain are getting sufficient oil. | Clean or replace the air filter. | Empty the fuel tank. |
| Do a check of the saw chain. | Clean between the cylinder fins. | Empty the oil tank. |
| Sharpen the saw chain and do a check of its tension. | Clean the air channel. | |
| Do a check of the chain drive sprocket. | | |
| Clean the air intake on the starter. | | |
| Make sure that nuts and screws are tightened. | | |
| Do a check of the stop switch. | | |
| Make sure that these are no fuel leaks from the engine, tank or fuel lines. | | |
| Make sure that the saw chain does not rotate when the engine is at idle speed. | | |
| Make sure that the muffler is correctly attached, has no damages and that no parts of the muffler are missing. | | |

## 4.1 Technical data

| |  |  |  |  |
|---|---|---|---|---|
| Model | Cylinder displacement $cm^3$/cubic inch | Cylinder bore Ømm/Øinch | Stroke mm/inch | Max. power/rpm kW/hp / rpm |
| 545 Mark II | 50.1/3.06 | 43/1.69 | 34.5/1.36 | 2.7/3.6/9900 |
| 550 XP® Mark II | 50.1/3.06 | 43/1.69 | 34.5/1.36 | 3.0/4.0/10 200 |
| 545G Mark II | 50.1/3.06 | 43/1.69 | 34.5/1.36 | 2.7/3.6/9900 |
| 550 XP®G Mark II | 50.1/3.06 | 43/1.69 | 34.5/1.36 | 3.0/4.0/10 200 |
| |  |  |  |  |
| Model | Electrode gap mm/inch | Ignition system | Air gap mm/inch | Usable cutting length cm/inch |
| 545 Mark II | 0.5/0.02 | MBU-89 | 0.3/0.012 | 33-50/13-20 |
| 550 XP® Mark II | 0.5/0.02 | MBU-88 | 0.3/0.012 | 33-50/13-20 |
| 545G Mark II | 0.5/0.02 | MBU-89 | 0.3/0.012 | 33-50/13-20 |
| 550 XP®G Mark II | 0.5/0.02 | MBU-88 | 0.3/0.012 | 33-50/13-20 |
| |  |  |  |  |
| Model | Chain speed att 133% of maximum engine power speed ft/s / m/s | Chain pitch mm/inch | Drive link mm/inch | Engage speed rpm |
| 545 Mark II | 83.3/25.4 | 8.25/0.325 | 1.3-1.5/0.050-0.058 | 3900 |
| 550 XP® Mark II | 85.6/26.1 | 8.25/0.325 | 1.3-1.5/0.050-0.058 | 3900 |
| 545G Mark II | 83.3/25.4 | 8.25/0.325 | 1.3-1.5/0.050-0.058 | 3900 |
| 550 XP®G Mark II | 85.6/26.1 | 8.25/0.325 | 1.3-1.5/0.050-0.058 | 3900 |

| |  |  |  |  |
|---|---|---|---|---|
| Model | Spark plug | Type of oil pump | Volume fuel tank<br>Litre/US. pint | Capacity oil pump at 9,000 rpm<br>ml/min |
| 545 Mark II | NGK CMR6H | Adjustable | 0.53/1.12 | 5-12 |
| 550 XP® Mark II | NGK CMR6H | Adjustable | 0.53/1.12 | 5-12 |
| 545G Mark II | NGK CMR6H | Adjustable | 0.53/1.12 | 5-12 |
| 550 XP®G Mark II | NGK CMR6H | Adjustable | 0.53/1.12 | 5-12 |
| |  |  |  |  |
| Model | Volume oil tank<br>Litre/US. pint | Weight without guide bar and saw chain<br>kg/lbs | Heated handles | Electrical carburetor heating |
| 545 Mark II | 0.32/0.68 | 5.3/11.7 | - | - |
| 550 XP® Mark II | 0.32/0.68 | 5.3/11.7 | - | - |
| 545G Mark II | 0.32/0.68 | 5.5/12.1 | Yes | Yes |
| 550 XP®G Mark II | 0.32/0.68 | 5.5/12.1 | Yes | Yes |

# 5 Servicing data

## 5.1 Symbols in the diagrams

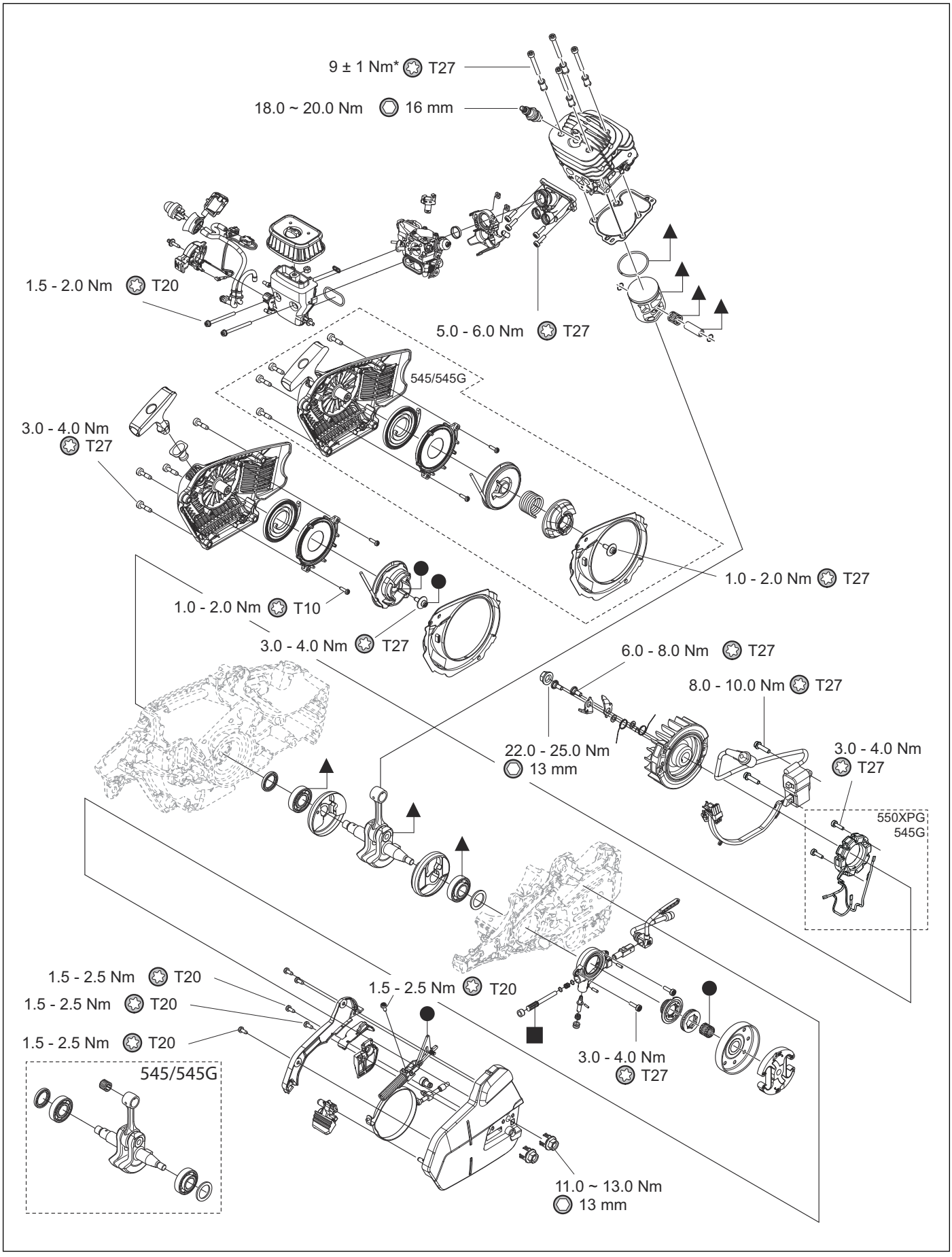
Lubricate with grease.

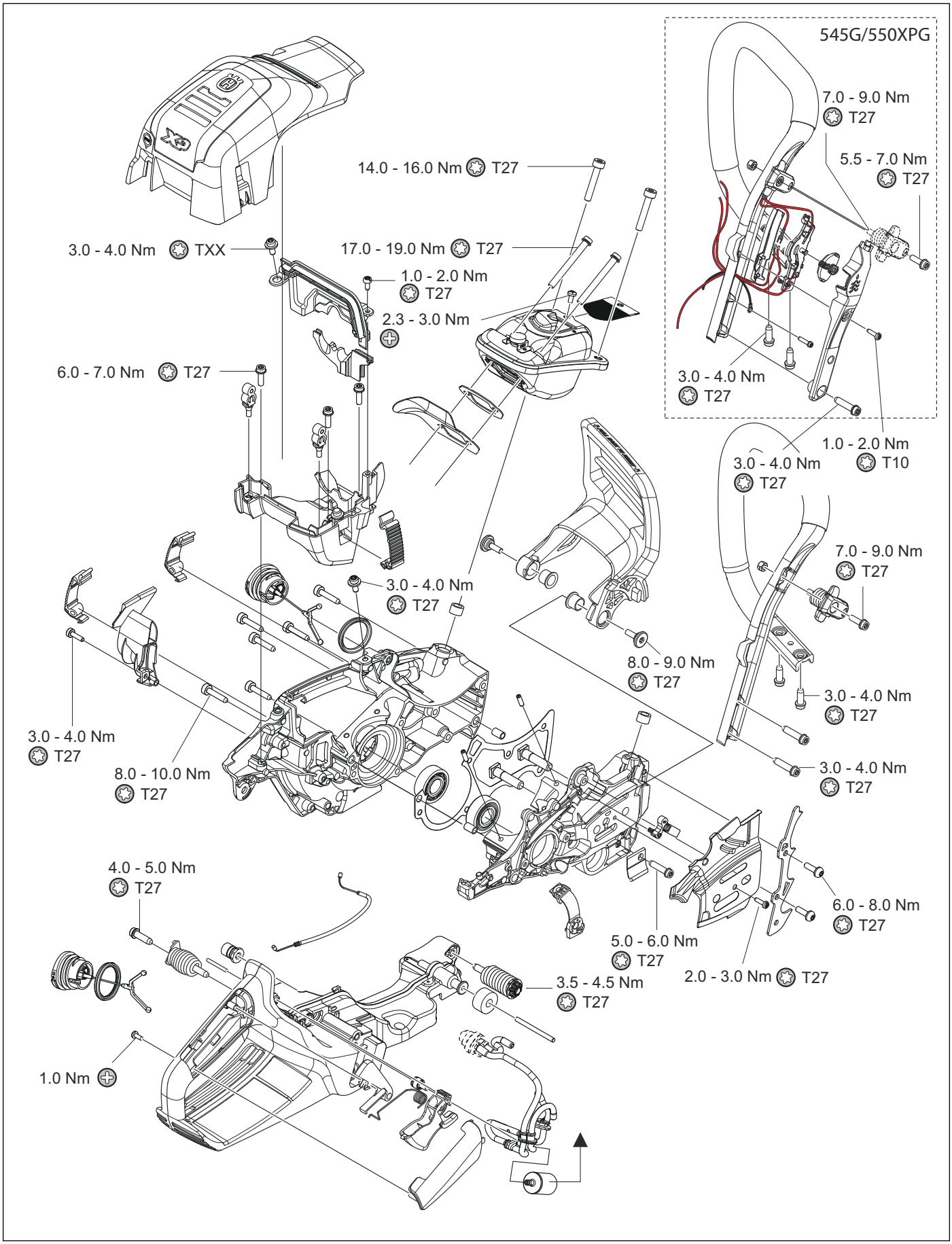
Lubricate with chain oil.

Lubricate with two-stroke oil.

## 5.2 Servicing data

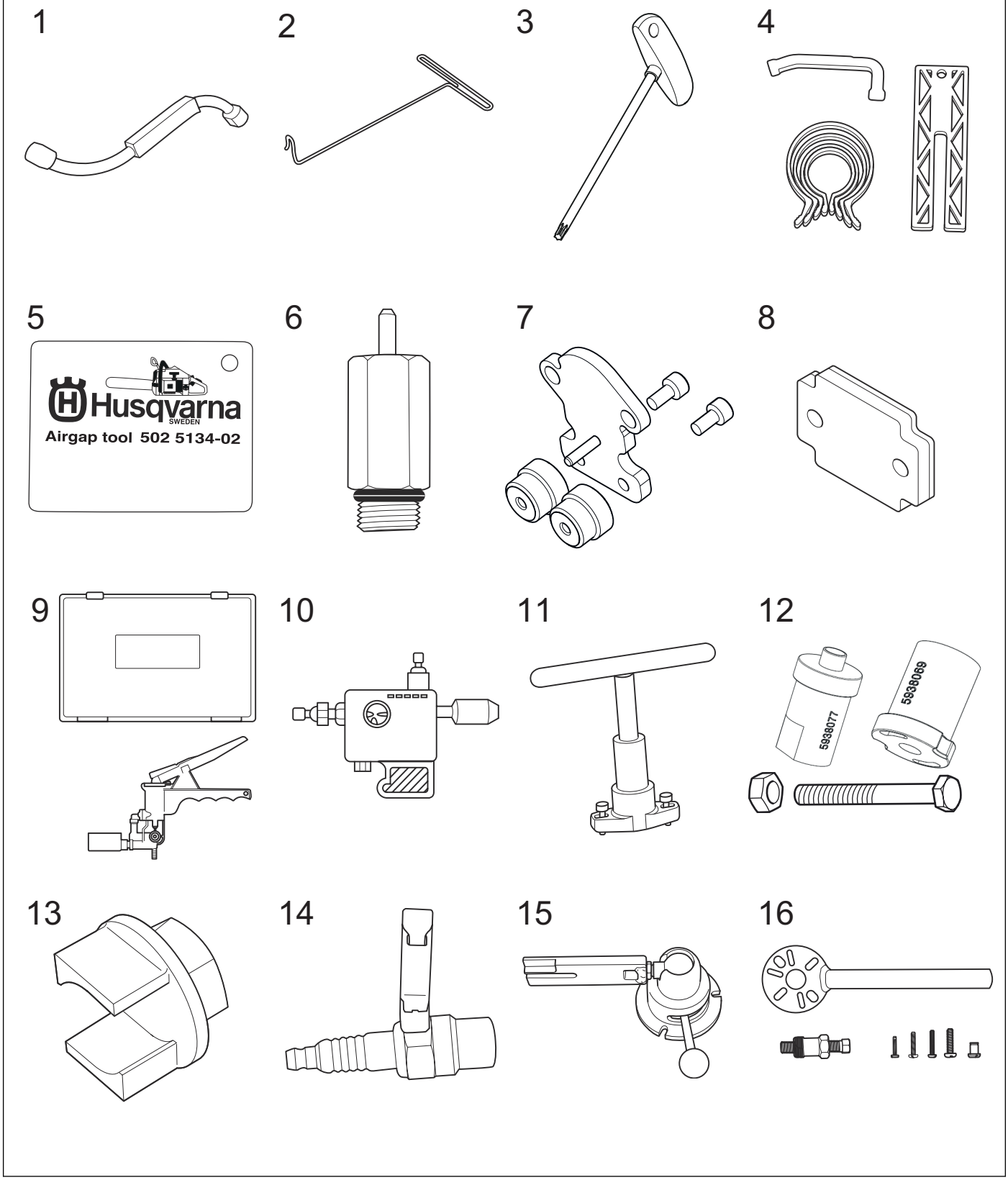
* When you operate the product, this value will decrease. Examine torque, minimum 5 Nm.

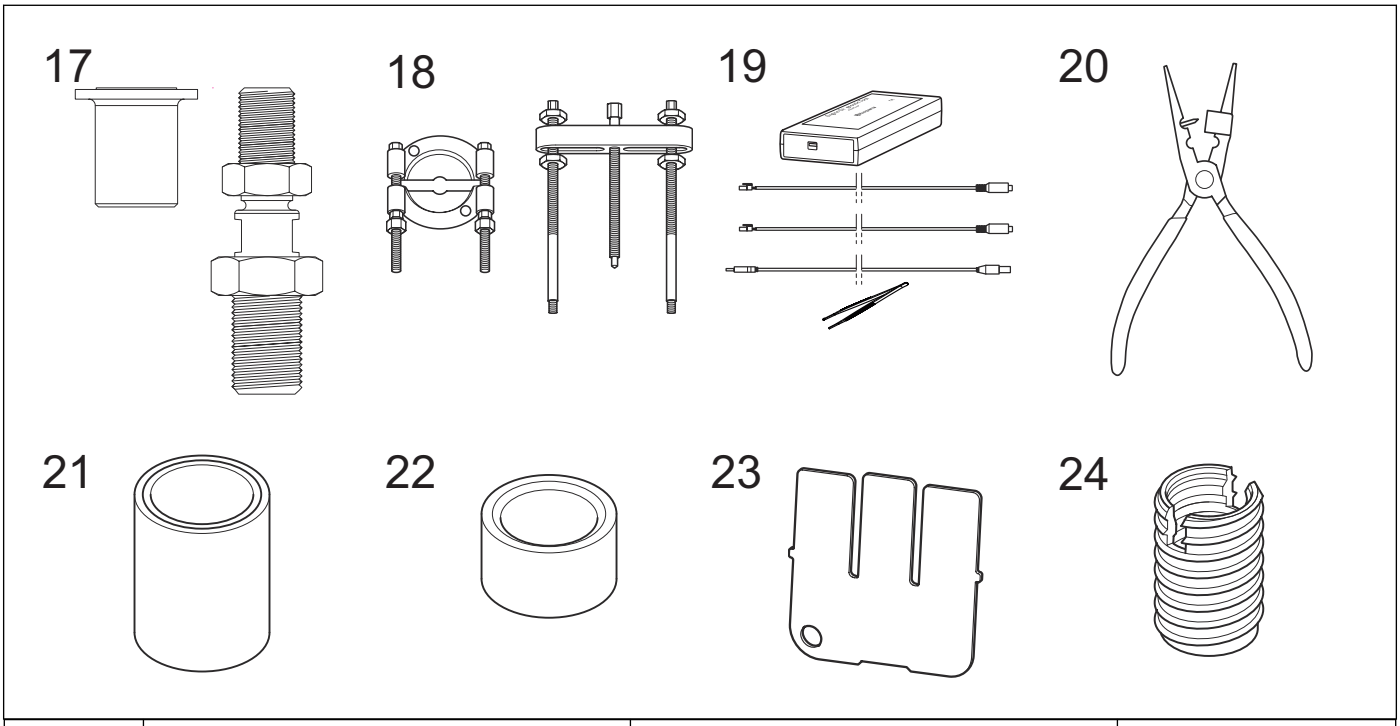



545G/550XPG
7.0 - 9.0 Nm T27
5.5 - 7.0 Nm T27
3.0 - 4.0 Nm T27
14.0 - 16.0 Nm T27
3.0 - 4.0 Nm TXX
17.0 - 19.0 Nm T27
1.0 - 2.0 Nm T27
2.3 - 3.0 Nm
6.0 - 7.0 Nm T27
3.0 - 4.0 Nm T27
1.0 - 2.0 Nm T10
7.0 - 9.0 Nm T27
3.0 - 4.0 Nm T27
8.0 - 9.0 Nm T27
3.0 - 4.0 Nm T27
3.0 - 4.0 Nm T27
8.0 - 10.0 Nm T27
3.0 - 4.0 Nm T27
4.0 - 5.0 Nm T27
6.0 - 8.0 Nm T27
5.0 - 6.0 Nm T27
2.0 - 3.0 Nm T27
3.5 - 4.5 Nm T27
1.0 Nm

# 6 Servicing tools

## 6.1 Servicing tools for 545 Mark II, 550 XP® Mark II, 545G Mark II and 550 XP®G Mark II



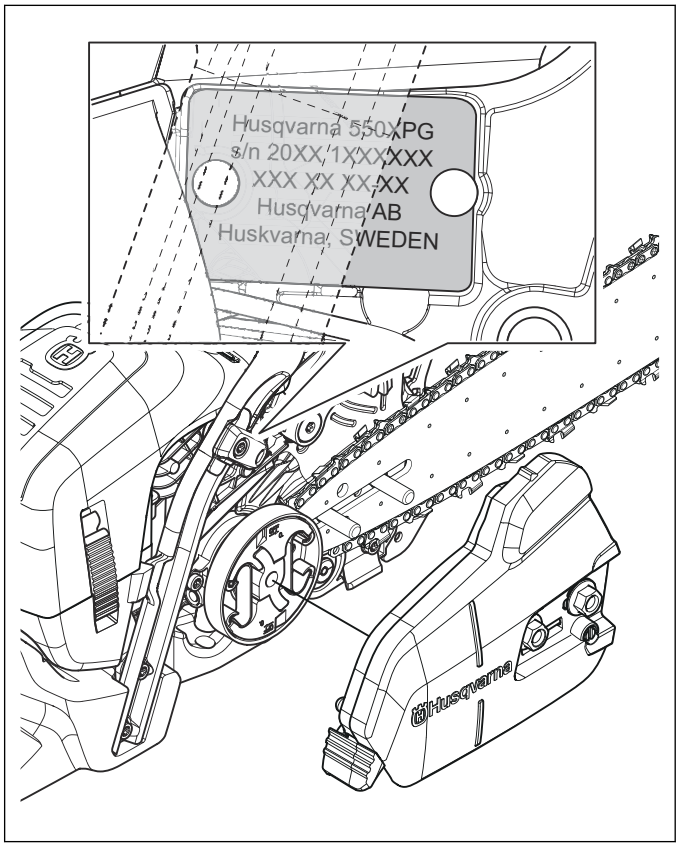



| Item | Description | Use for | Article number |
|---|---|---|---|
| 1 | Piston stop | Locking the crankshaft | 575 29 36-01 |
| 2 | Hook | Suspending the fuel filter | 502 50 83-01 |
| 3 | T-handle Torx T10 | For Torx screws | 588 52 41-01 |
| 3 | T-handle Torx T20 | For Torx screws | 588 59 85-01 |
| 3 | T-handle Torx T27 | For Torx screws | 502 71 27-03 |
| 4 | Piston assembly kit | Assembling the piston | 502 50 70-01 |
| 5 | Air gap tool | Setting, ignition module | 502 51 34-02 |
| 6 | Spark plug adapter | Pressure testing | 503 84 40-03 |
| 7 | Cover plate, inlet | Closure of inlet | 594 91 10-01 |
| 8 | Cover plate, outlet | Closure of outlet | 578 04 18-01 |
| 9 | Pressure gauge | Pressure testing | 531 03 06-23 |
| 10 | Ignition checker | Spark strength check | 501 97 64-01 |
| 11 | Disassemble tool | Dismantling the crankcase | 593 74 42-01 |
| 12 | Mounting kit for bearings | Bearing assembly for the crankcase | 593 79 15-01 |
| 13 | Clutch tool | Centrifugal clutch | 502 54 16-03 |
| 14 | Test spark plug | Checking the ignition module | 502 71 13-01 |
| 15 | Assembly fixture | Securing the chain saw | 502 51 02-01 |
| 16 | Flywheel puller kit | Dismantling of the flywheel | 502 51 49-02 |
| 17 | Disassemble tool | Assembling the crankshaft | 502 50 30-23 |
| 18 | Puller | Pulling bearing of crankshaft | 531 00 48-67 |
| 19 | Engine Diagnostic Tool | Diagnosis and troubleshooting | 583 89 71-01 |
| 20 | Assembly pliers | Assembly of spark plug caps | 502 50 06-01 |
| 21 | Seal ring tool | Installation of seal ring | 596 87 18-01 |
| 22 | Guide ring | Installation of seal ring | 575 34 69-01 |
| 23 | Service tool | Metering lever height gauge | 590 58 54-01 |
| 24 | Thread insert | PL5 screw | 503 27 39-01 |

| Item | Description | Use for | Article number |
|---|---|---|---|
| 24 | Thread insert | MT6 screw | 503 27 40-01 |
| 24 | Thread insert | MT4 screw | 503 27 31-01 |
| 24 | Thread insert | M5 screw | 578 12 03-01 |
| 24 | Thread insert | M5 screw | 582 52 60-01 |

## 7.1 Type plate and product serial number

The product serial number is given on the type plate. Supply the model name and the article number when you send an order for spare parts.




## 7.2 Fuel

This product has a two-stroke engine.

**CAUTION:** Incorrect type of fuel can result in engine damage. Use a mixture of gasoline and two-stroke oil.

### 7.2.1 Premixed fuel

Use Husqvarna premixed alkylate fuel of a good quality, for best performance and extension of the engine life. This fuel contains less harmful chemicals compared to regular fuel, which decreases harmful exhaust fumes. The quantity of remains after combustion is lower with this fuel, which keeps the components of the engine more clean.

### 7.2.2 To mix fuel

#### 7.2.2.1 Gasoline

**CAUTION:** Do not use gasoline with an octane grade less than 90 RON/87 AKI. Use of a lower octane grade can cause engine knocking, which causes engine damages.

We recommend that you use gasoline of a higher octane grade for work with continuously high rpm. Limbing is an example of such work.

Use good quality unleaded gasoline with a maximum of 10% ethanol contents.

#### 7.2.2.2 Two-stroke oil

**CAUTION:** Do not use two-stroke oil for water-cooled outboard engines, also referred to as outboard oil. Do not use oil for four-stroke engines.

For best results and performance use Husqvarna two-stroke oil.

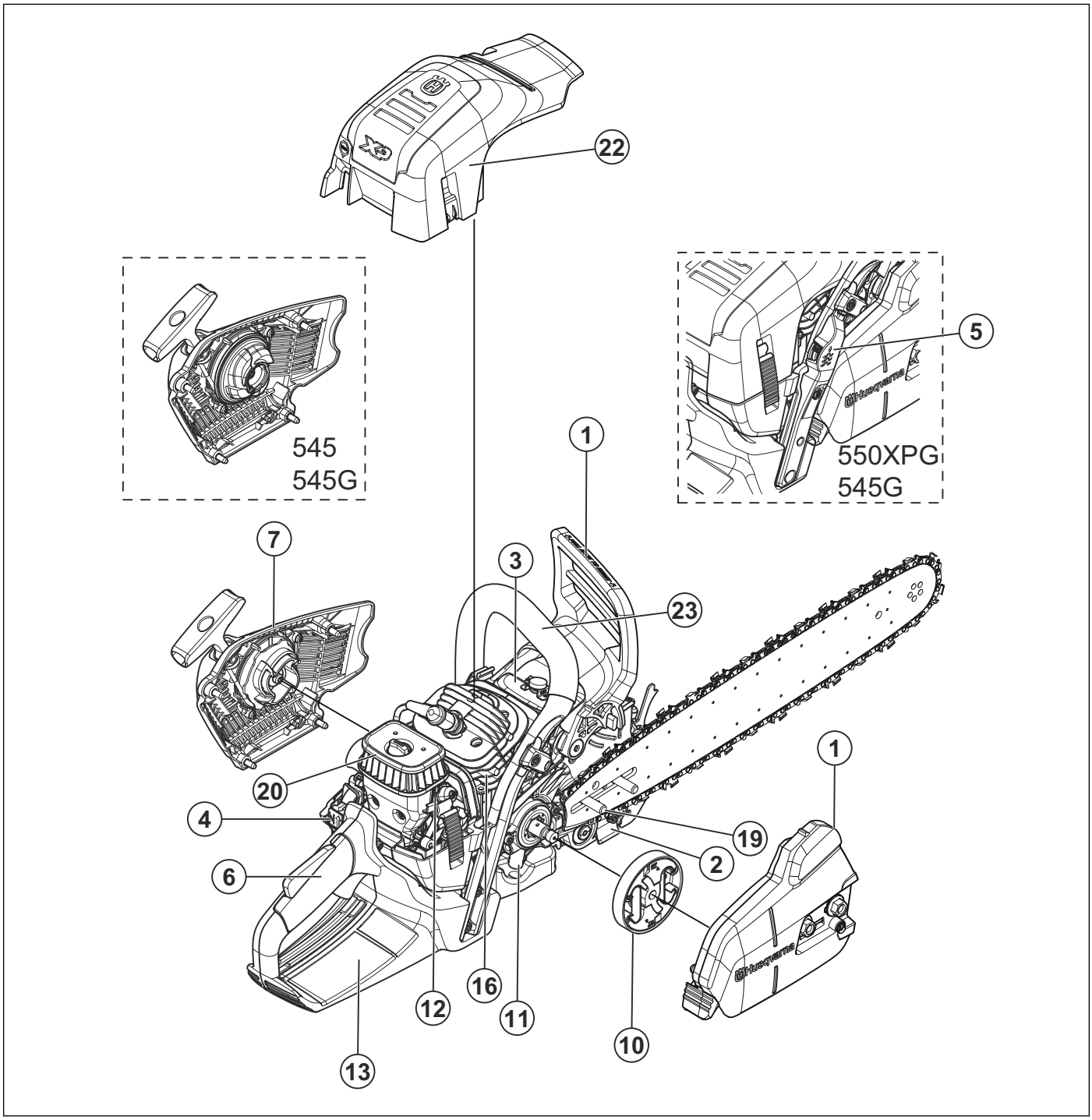
If Husqvarna two-stroke oil is not available, use a two-stroke oil of good quality for aircooled engines. Speak to your servicing dealer to select the correct oil.

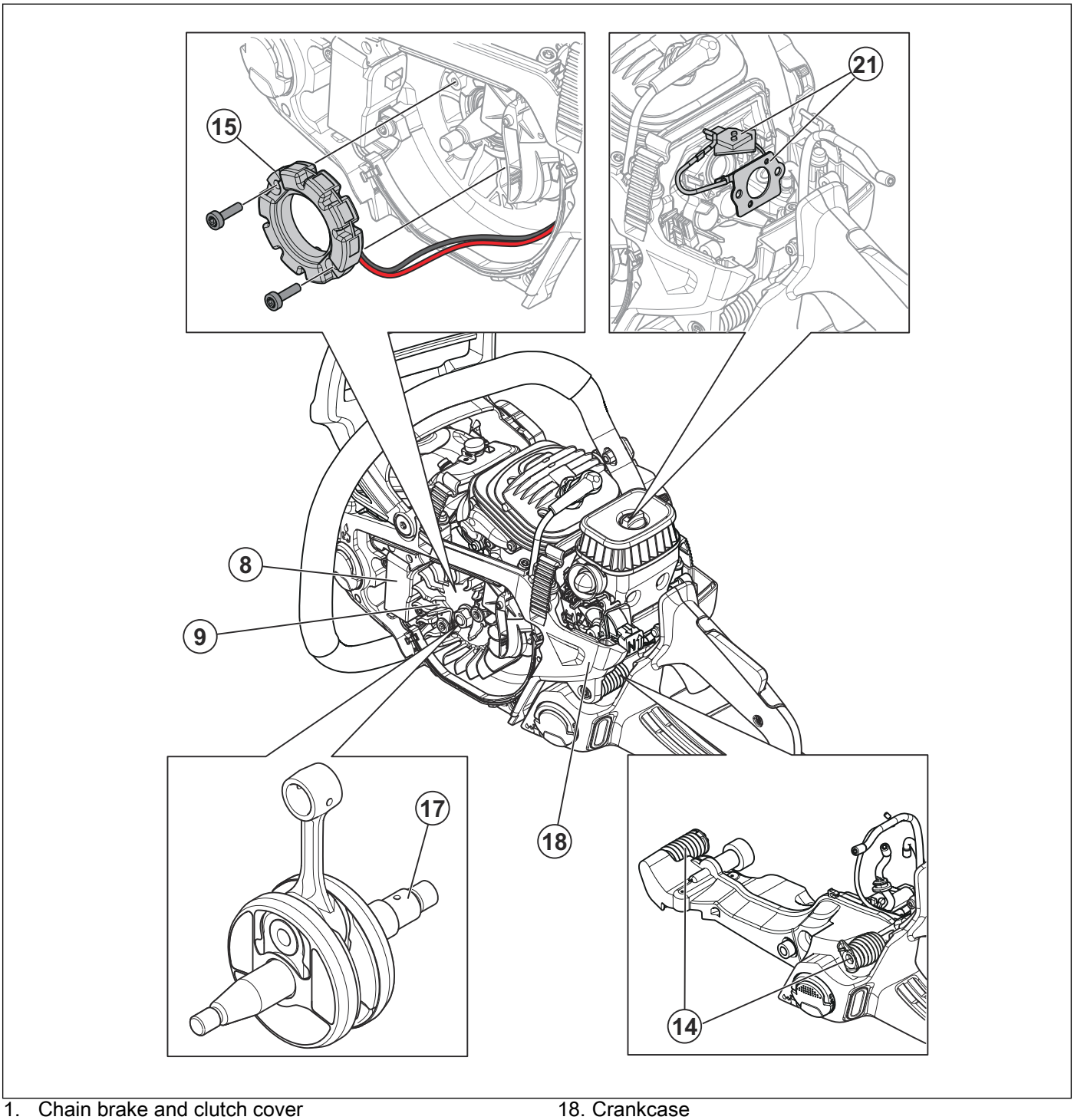
#### 7.2.2.3 To mix gasoline and two-stroke oil

| Gasoline, liter | Two-stroke oil, liter |
|---|---|
| | 2% (1:50) |
| 5 | 0.10 |
| 10 | 0.20 |
| 15 | 0.30 |
| 20 | 0.40 |

# 8 Repair instructions

## 8.1 Product overview for repair instructions






1. Chain brake and clutch cover
2. Chain catcher
3. Muffler
4. Start/stop switch
5. Heated front handle
6. Handle and throttle trigger
7. Starter
8. Ignition system
9. Flywheel
10. Centrifugal clutch and clutch drum
11. Lubrication system
12. Carburetor
13. Fuel tank
14. Vibration damping system
15. Generator
16. Cylinder and piston
17. Crankshaft
18. Crankcase
19. Guide bar bolts
20. Air filter
21. Thermostat and heating element
22. Cylinder cover
23. Front handle

## 8.2 To clean and examine the product parts

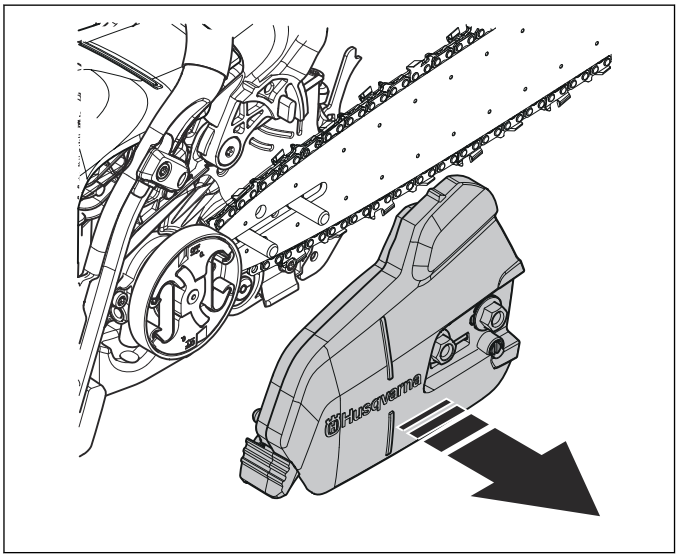
- Clean and examine all parts fully. You find more instructions in the chapter for each part if special tools or procedures are necessary.
- Replace damaged or defective parts.
- Always use original spare parts.

## 8.3 Chain brake

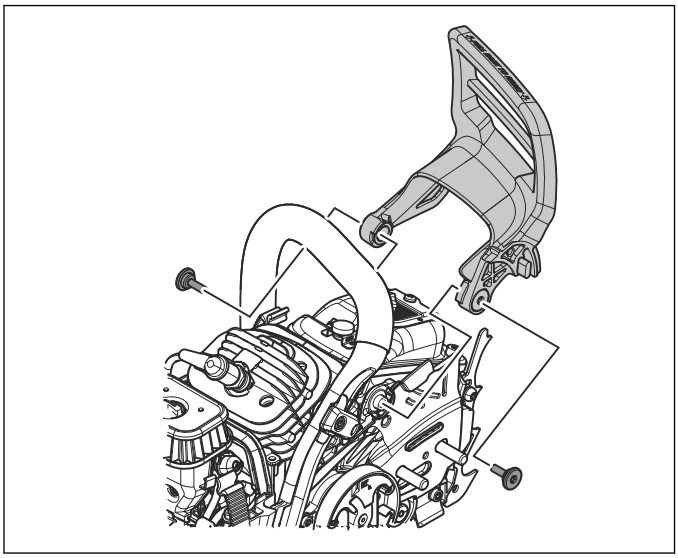
### 8.3.1 To disassemble the chain brake

**WARNING:** Make sure that the chain brake spring does not eject and cause injury. Use protective goggles.

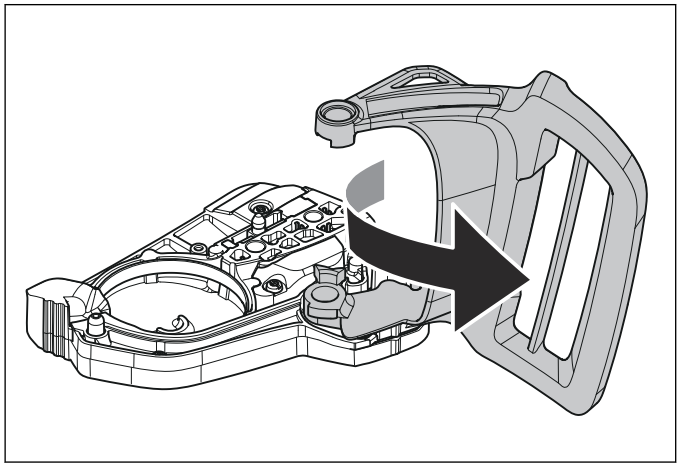
1. Loosen the guide bar nuts. Remove the clutch cover, the guide bar and the saw chain.



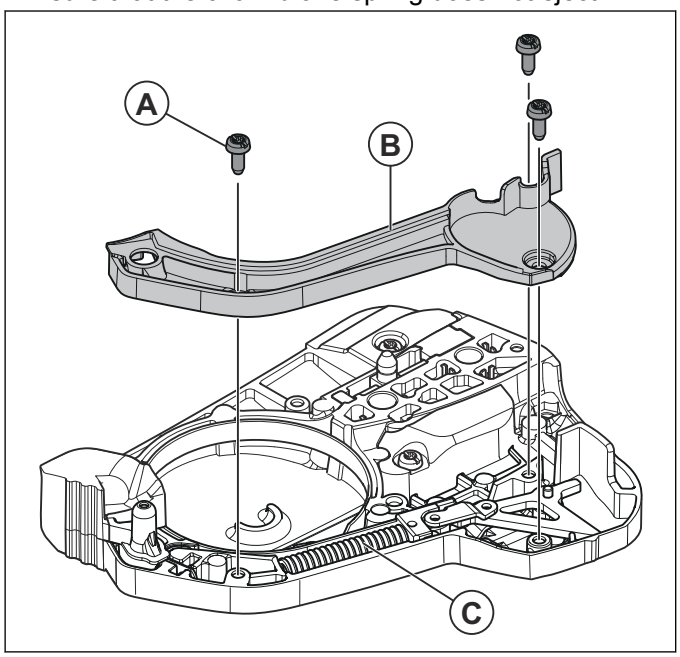
2. Loosen the 2 screws and remove the hand guard.



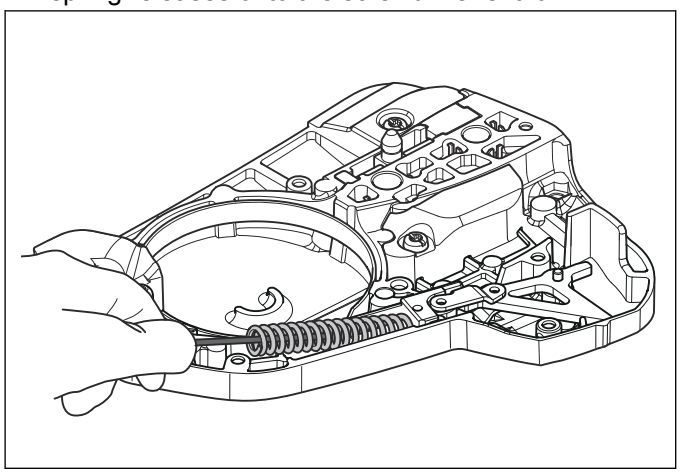
3. Carefully tighten the clutch housing in a vise. Use the hand guard to release the chain brake.



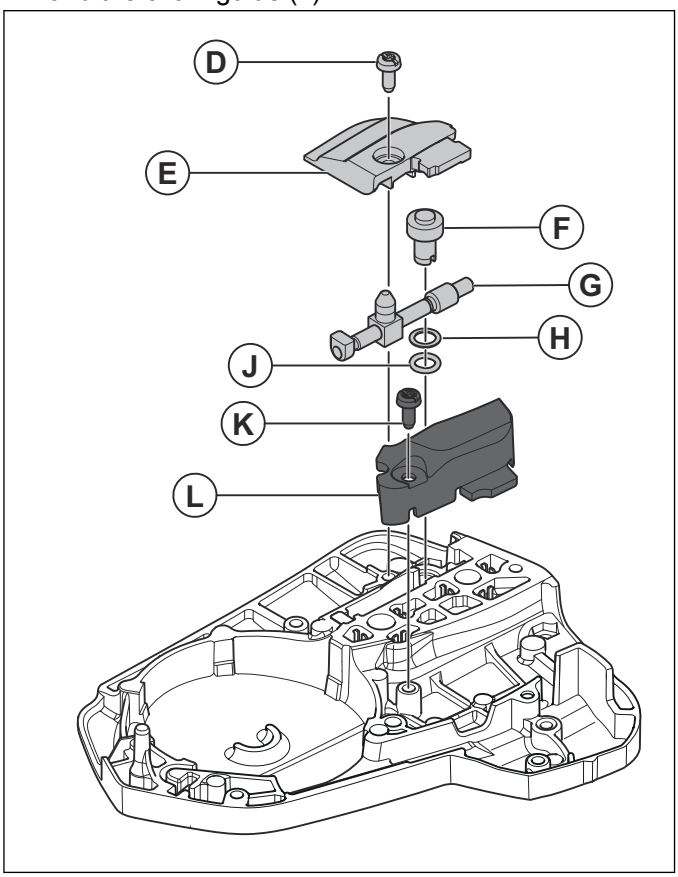
4. Loosen the screws (A) and carefully remove the cover (B) in front of the chain brake spring (C). Make sure that the chain brake spring does not eject.



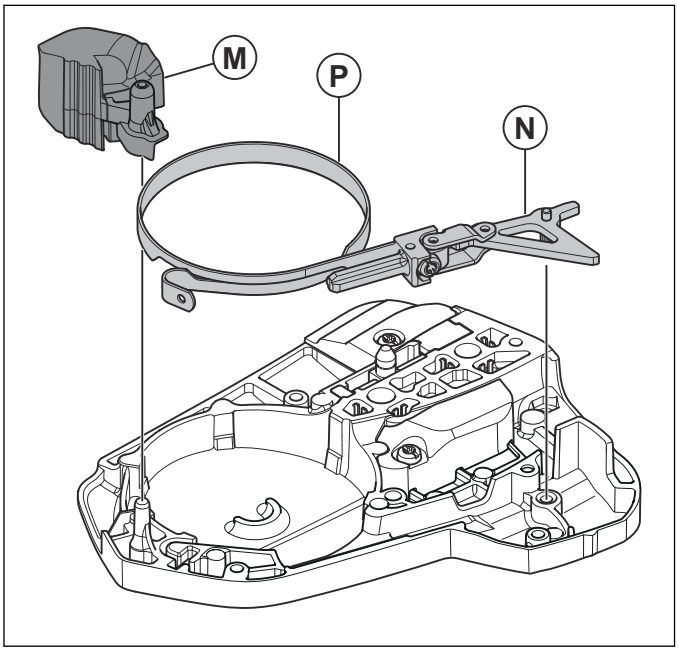

5. Hold one hand above the chain brake spring. Use the other hand to push a small screwdriver in between the rear section of the chain brake spring and the clutch cover. Carefully push the screwdriver against the chain brake spring until the chain brake spring releases onto the screwdriver shaft.



6. Remove the screw (D), the chain tensioner cover (E), the worm wheel (F), the worm screw (G), the washer (H) and the o-ring (J). Remove the screw (K) and the chain guide (L).

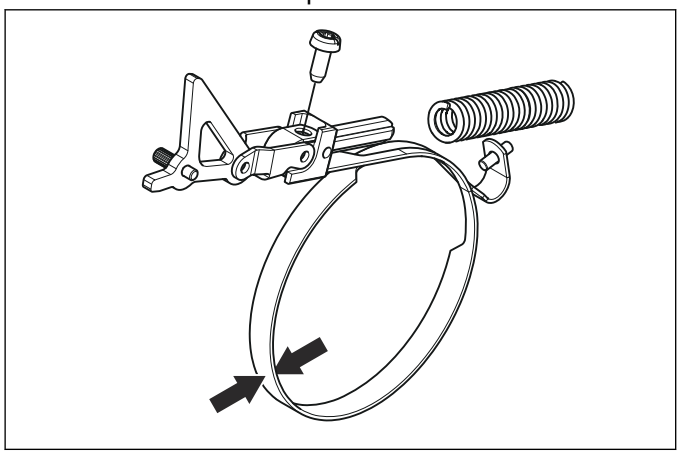



7. Remove the saw dust guard (M), the knee joint (N) and the brake band assembly (P) from the clutch cover.




### 8.3.2 To clean and examine the chain brake

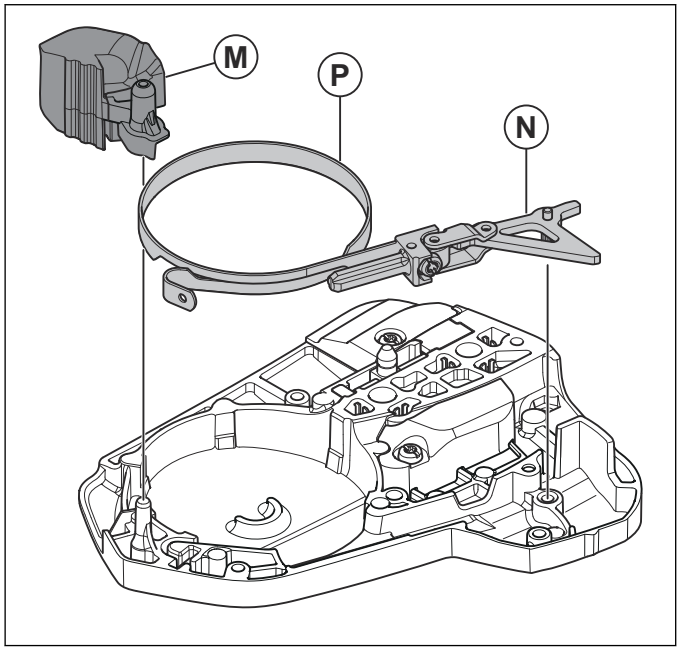
1. Carefully clean and examine all parts of the chain brake. Replace damaged parts.
2. Measure the thickness of the brake band. The thickness of the brake band must be minimum 0.6 mm at the most worn point.



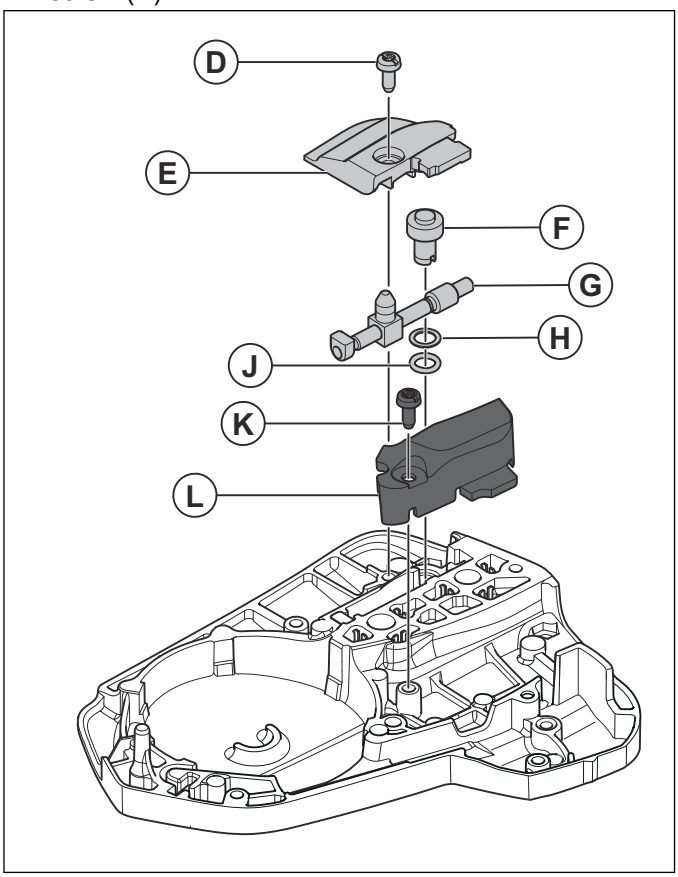
3. Lubricate the knee joint with grease.

### 8.3.3 To assemble the chain brake

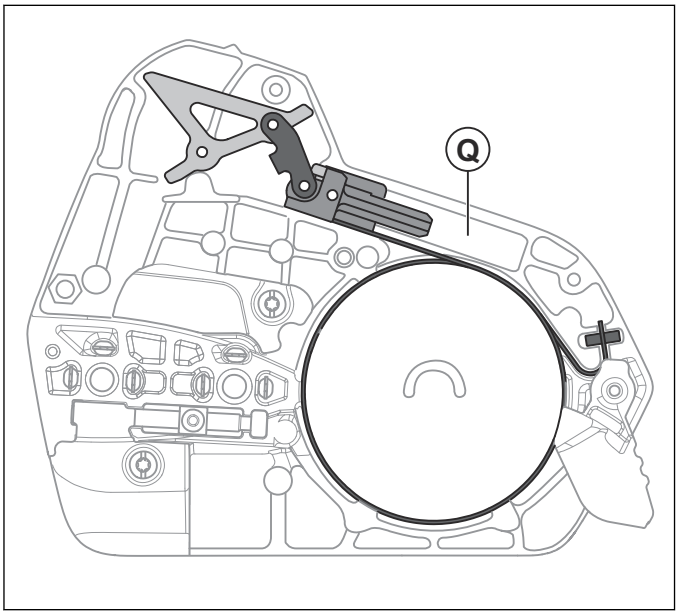
1. Attach the knee joint to the brake band and tighten to the correct torque. Refer to *Servicing data on page 10*.
2. Attach the knee joint (N), the brake band assembly (P) and the saw dust guard (M) to the clutch cover.



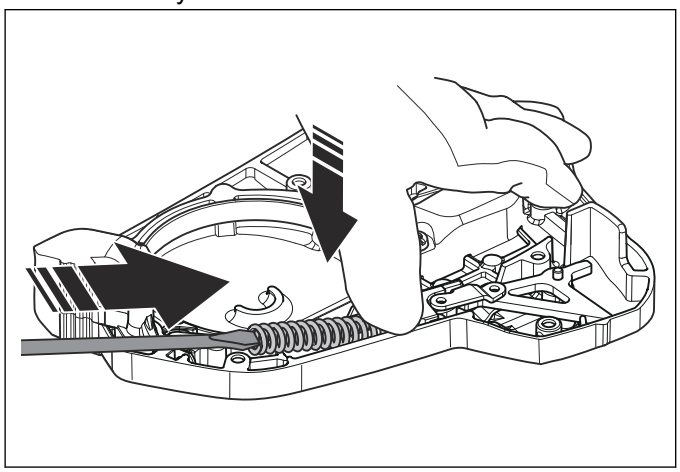
3. Attach the chain guide (L) and the screw (K). Attach the O-ring (J), the washer (H), the worm screw (G), the worm wheel (F), the chain tensioner (E) and the screw (D).




4. Lubricate the recess for the chain brake spring (Q) with grease.

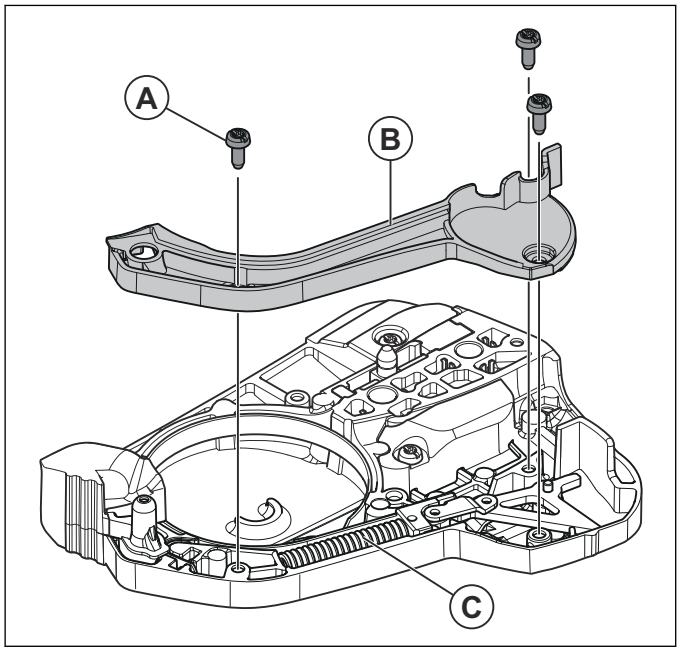



5. Put the clutch cover in a vise. Compress the chain brake spring with a wide screwdriver and push it down with your thumb.

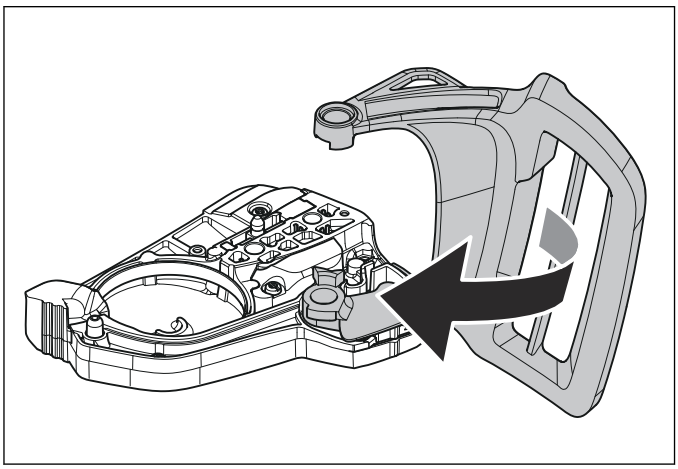


**WARNING:** Use protective goggles. The chain brake spring can eject and cause injury.

6. Attach the cover (B) over the chain brake spring (C). Tighten the screws (A) to the correct torque. Refer to *Servicing data on page 9*.



7. Use the hand guard to tighten the chain brake spring. Connect the hand guard to the chain brake mechanism and turn clockwise to release the chain brake.



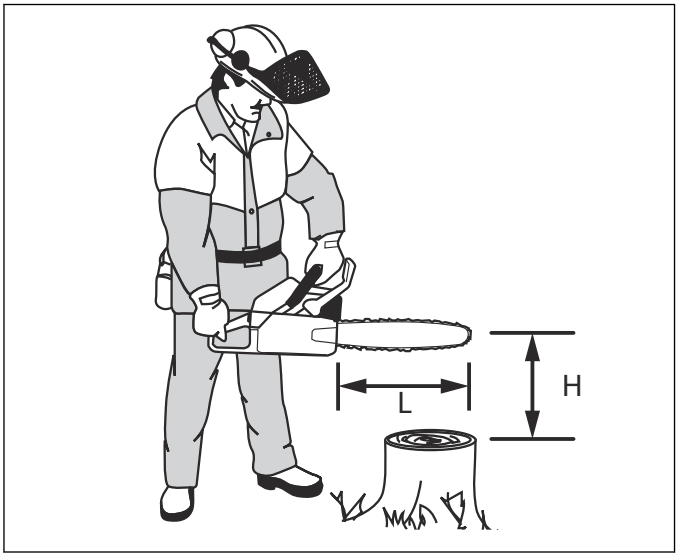
8. Turn the chain tensioner counterclockwise as much as you can.
9. Attach the guide bar, the saw chain and the clutch cover.
10. When the chain brake is assembled, you must do a function test of the chain brake.

### 8.3.4 To do a function test of the chain brake

1. Hold the product with 2 hands above a stump or other stable surface.

**WARNING:** The engine must be off.

2. Release the front handle. The guide bar tip falls onto the stump.




| Guide bar length, L | Height, H |
|---|---|
| 15 inch | 30-40 cm |

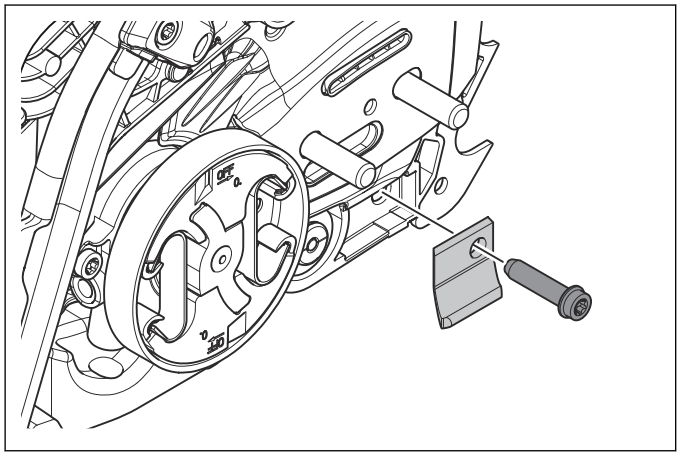
3. Make sure that the chain brake engages when the guide bar tip hits the stump.

## 8.4 Chain catcher

### 8.4.1 To replace the chain catcher

**WARNING:** You must always replace a worn chain catcher with a new one. Always use original spare parts.

1. Remove the clutch cover.
2. Remove the screw and the chain catcher.



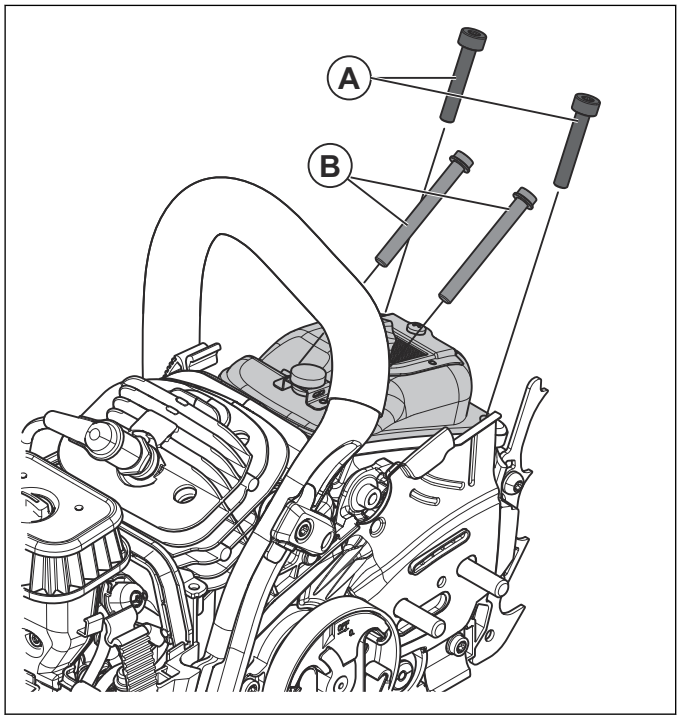
3. Replace the chain catcher with a new one.
4. Attach the clutch cover.

## 8.5 Muffler

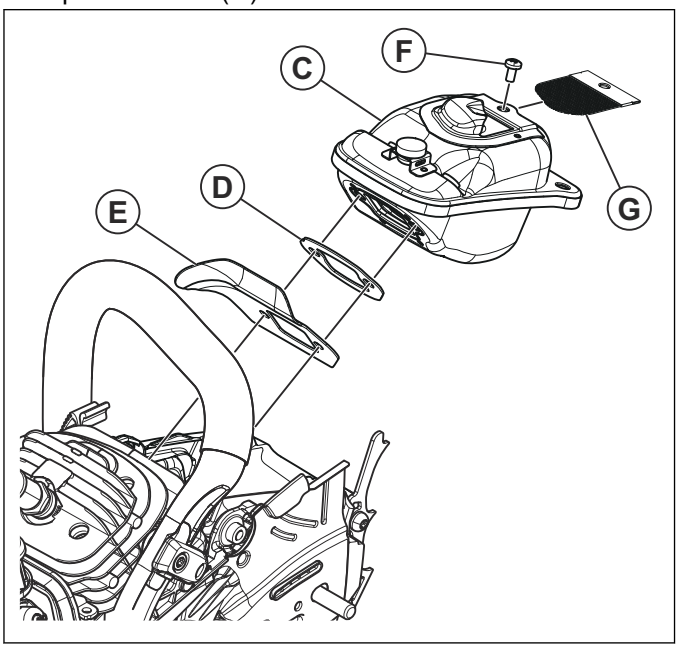
### 8.5.1 To disassemble the muffler

**WARNING:** Do not touch a hot muffler. Risk of burn injuries.

1. Remove the cylinder cover.
2. Remove the 2 crankcase screws (A) and the 2 cylinder screws (B).



3. Remove the muffler (C), the gasket (D) and the heat deflector (E). Remove the screw (F) and pull out the spark arrester (G).

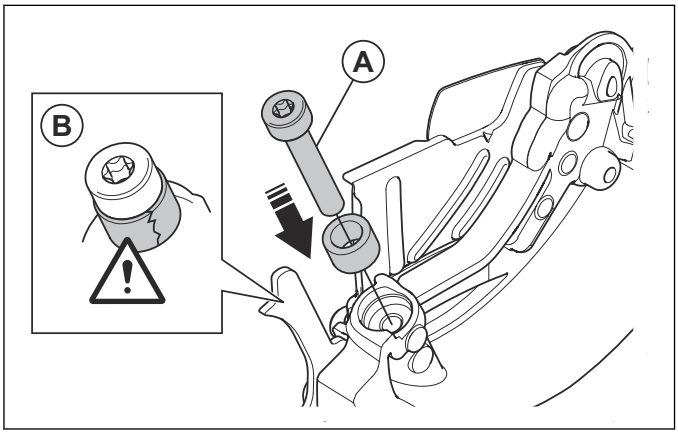



### 8.5.2 To clean and examine the muffler

1. Clean all components. Clean the contact surfaces of the gasket, the heat deflector and the cylinder.
2. Examine the spark arrester for damage.
3. Examine the muffler and the muffler holder for damage.
4. Examine the gasket for damage.
5. Replace all damaged parts.

### 8.5.3 To replace the muffler sleeve

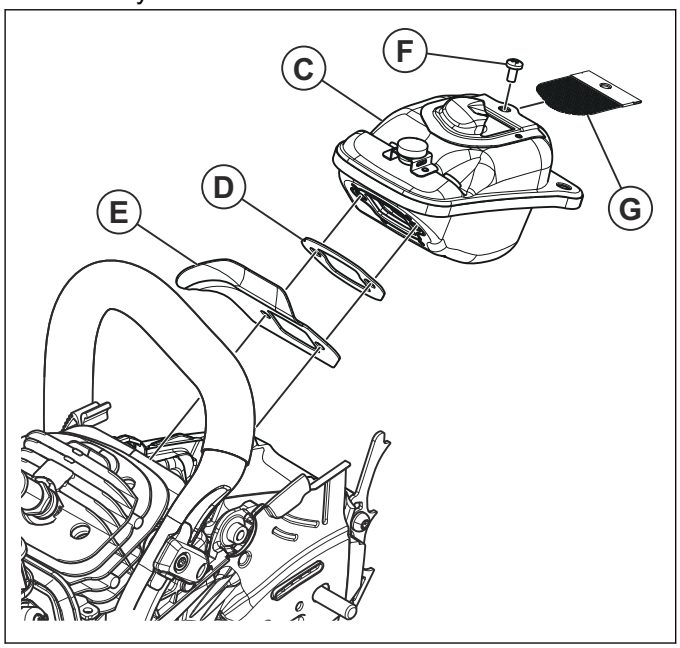
1. Remove the muffler, refer to *To disassemble the muffler on page 21*.
2. Remove the damaged muffler sleeve.
3. Clean the sleeve hole from dirt.
4. Put a new muffler sleeve on an applicable screw M6x20 (A).



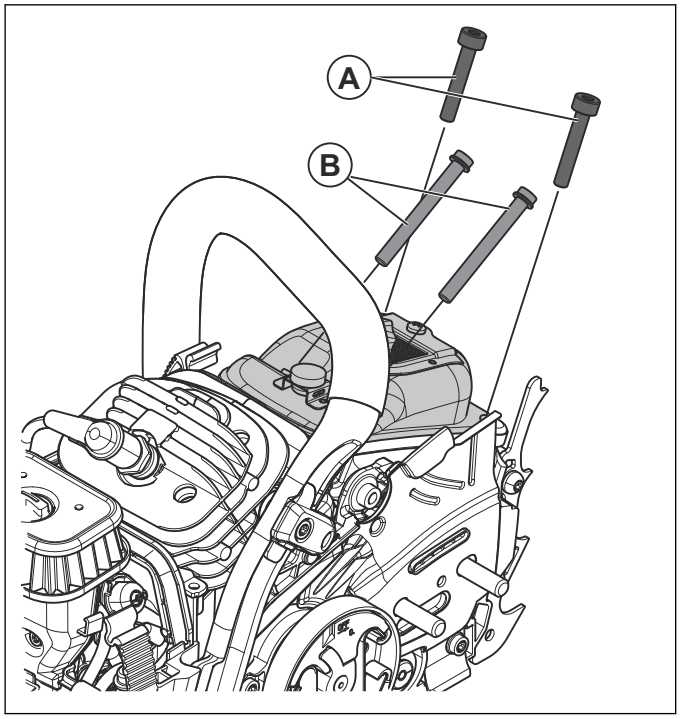

5. Attach the screw fully and make sure that you do not cause damage to the muffler sleeve (B).

### 8.5.4 To assemble the muffler

1. Attach the spark arrester (G) with the screw (F).
2. Attach the heat deflector (E) and the gasket (D) to the 2 cylinder screws (B). Put the 2 cylinder screws in the cylinder.




3. Attach the muffler. Put the 2 crankcase screws (A) in the crankcase min. 2 revisions, but do not tighten fully.
4. Tighten the 2 cylinder screws (B) to the correct torque. Refer to *Servicing data on page 9*.
5. Tighten the 2 crankcase screws (A) to the correct torque. Refer to *Servicing data on page 9*.

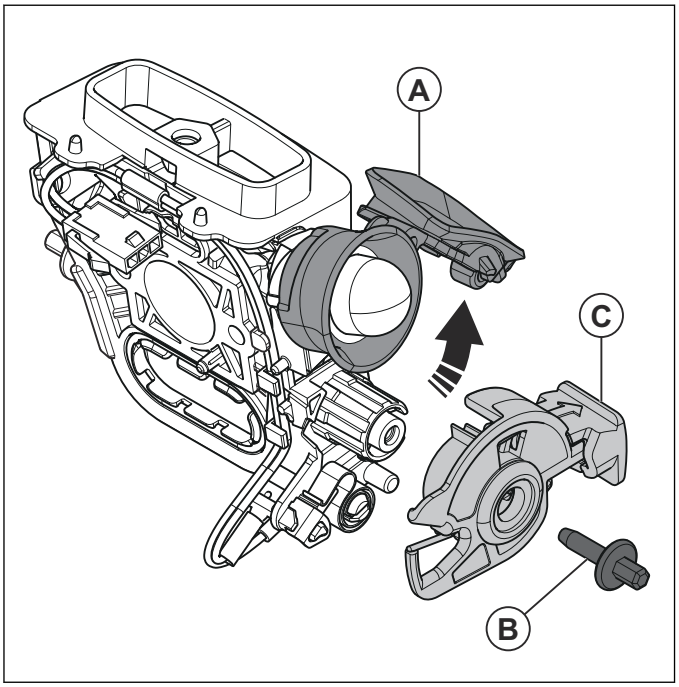



6. Attach the cylinder cover.

## 8.6 Start/stop switch

### 8.6.1 To disassemble the start/stop switch

1. Remove the cylinder cover.
2. Remove the air filter.
3. Remove the air filter holder assembly. Refer to *To disassemble the carburetor on page 46*.
4. Remove the rubber sealing (A) from the start/stop switch (C).
5. Remove the screw (B) and the start/stop switch.

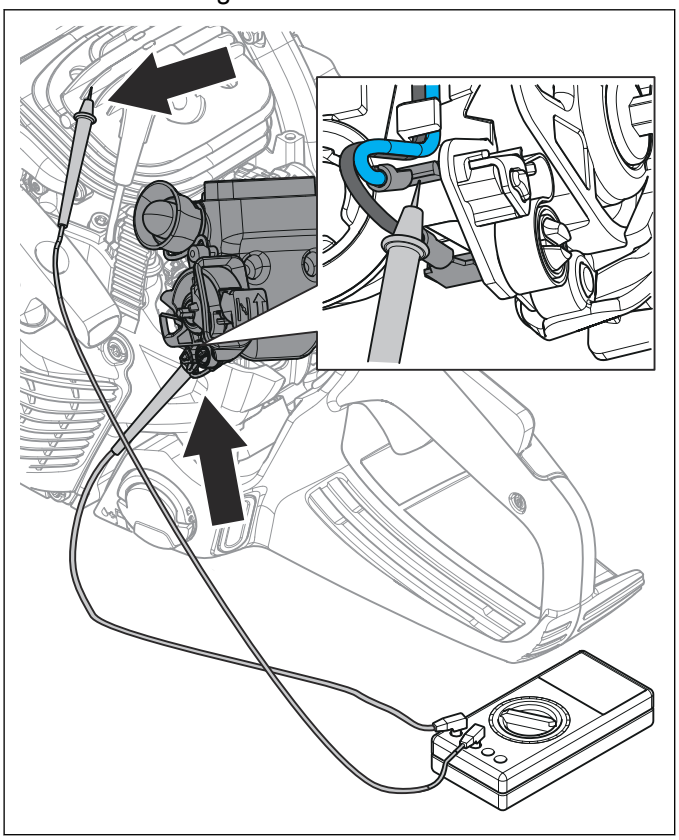



### 8.6.2 To assemble the start/stop switch

1. Assemble the start/stop switch in the opposite sequence to how it was disassembled.

### 8.6.3 To do a function test of the start/stop switch

1. Clean the mating surfaces.
2. Connect a multimeter to the blue cable and the cylinder to measure the resistance. The resistance must not be higher than 0.5 Ω.

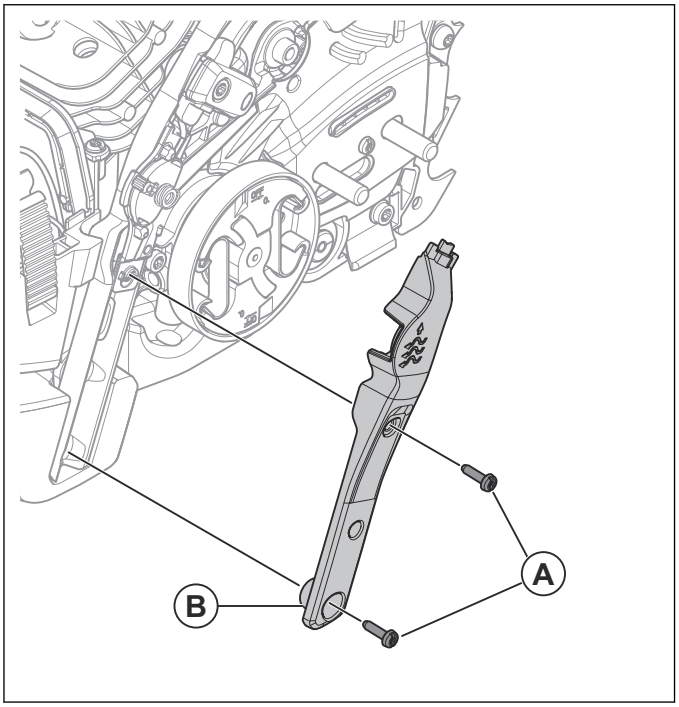


**Note:** The start/stop switch must be in the ON position to give the correct indication. The start/stop switch is in the ON position when you hold the button down.

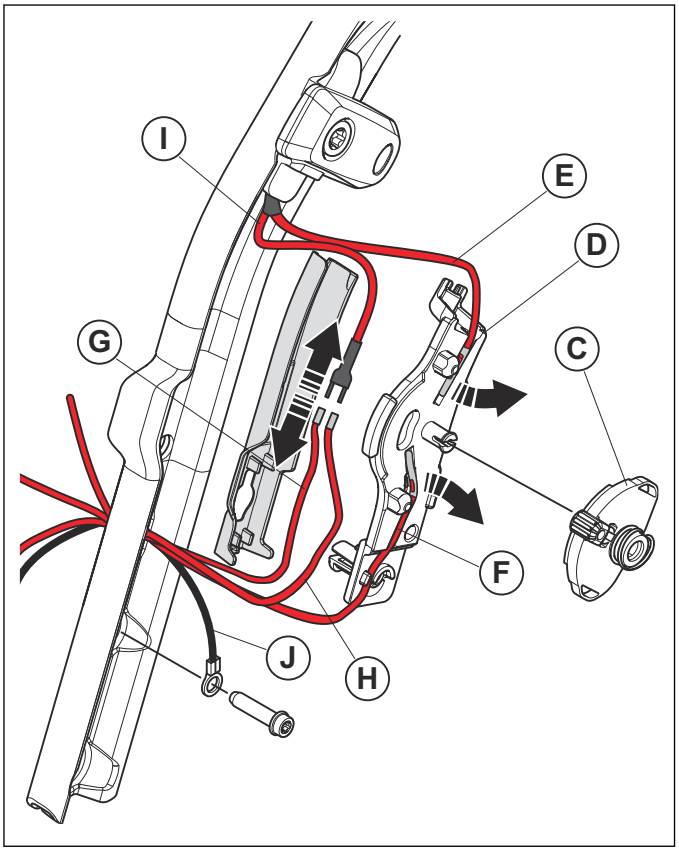
## 8.7 Heated handles

### 8.7.1 To disassemble and assemble the front heated handle

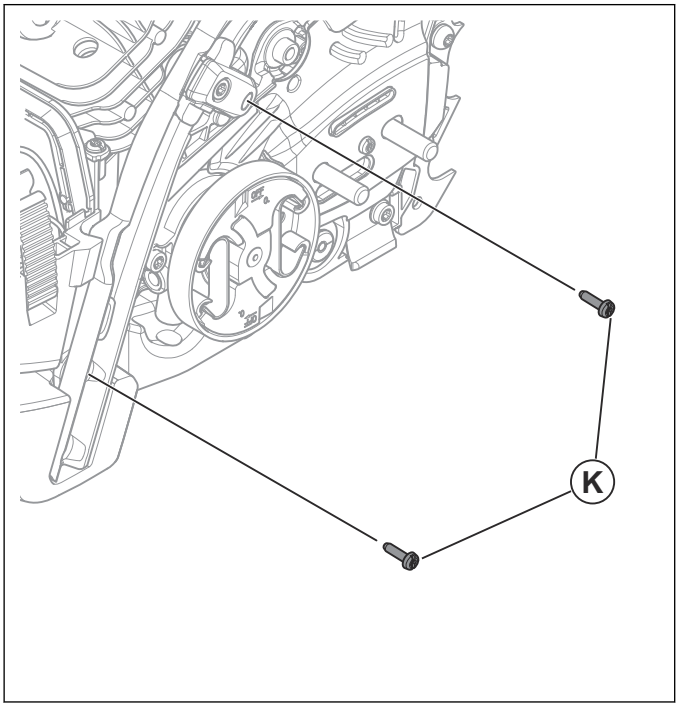
1. Remove the screws (A) and the heated handle cover (B).



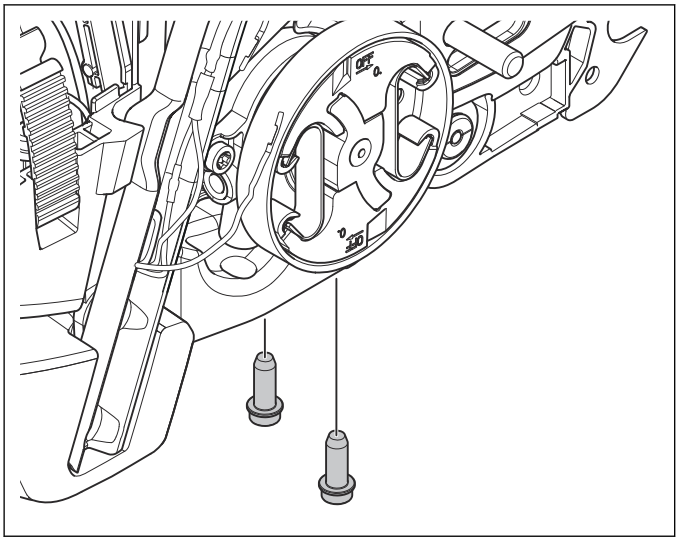

2. Remove the switch (C) from the contact plate (D). Disconnect the wire (E) from the contact plate. Disconnect the handle wire (F) from the contact plate. Remove the contact plate (D). Disconnect the stator wire (G) and the carburetor wire (H) from the wire (I). Disconnect the earth cable (J) from the handle.



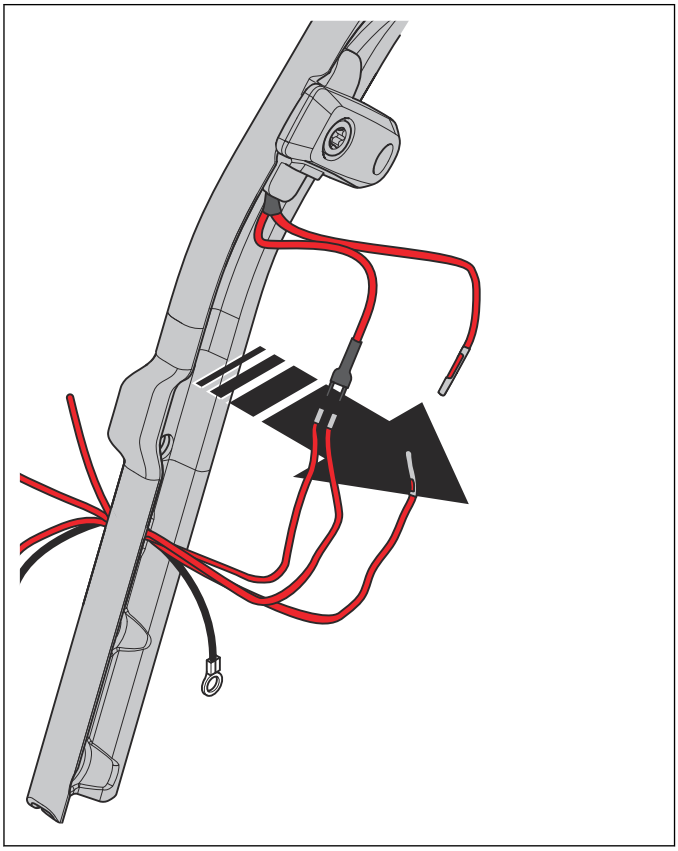

3. Remove the 2 screws (K).




4. Remove the 2 screws.



5. Remove the handle from the product.

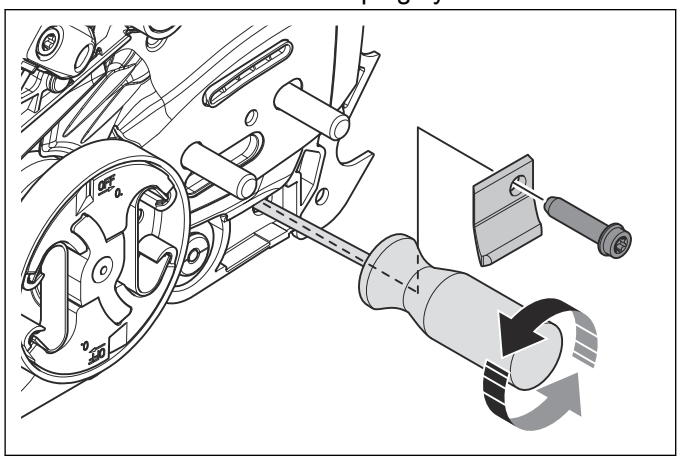


6. Assemble the front heated handle in the opposite sequence to how it was disassembled.

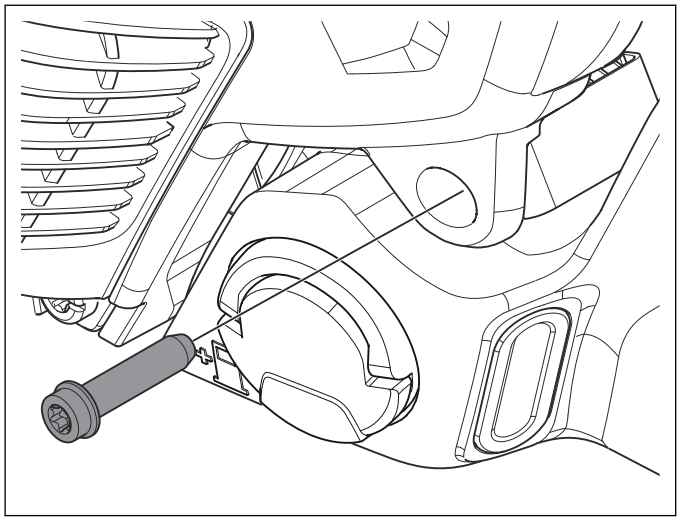
### 8.7.2 To disassemble and assemble the rear heated handle

1. Remove the front heated handle, refer to *To disassemble and assemble the front heated handle on page 24*.
2. Remove the chain brake system, refer to *To disassemble the chain brake on page 18*.
3. Remove the guide bar and the saw chain.
4. Remove the cylinder cover.
5. Remove the air filter.
6. Remove the air filter holder and the carburetor, refer to *To disassemble the carburetor on page 46*.

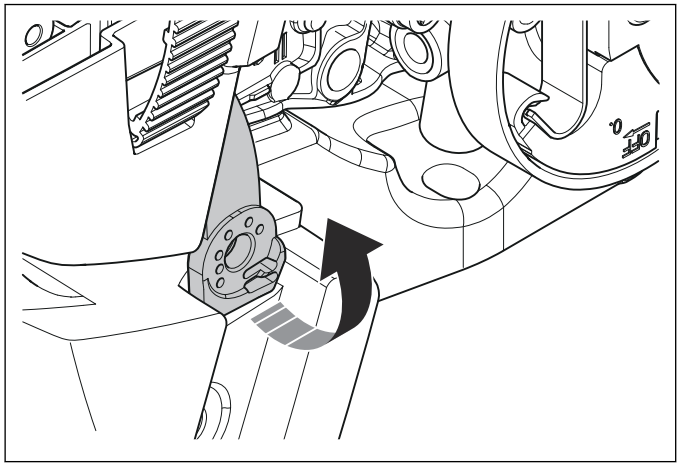
7. Remove the chain catcher to get access to the screw of the vibration damping system. Loosen the screw of the vibration damping system.



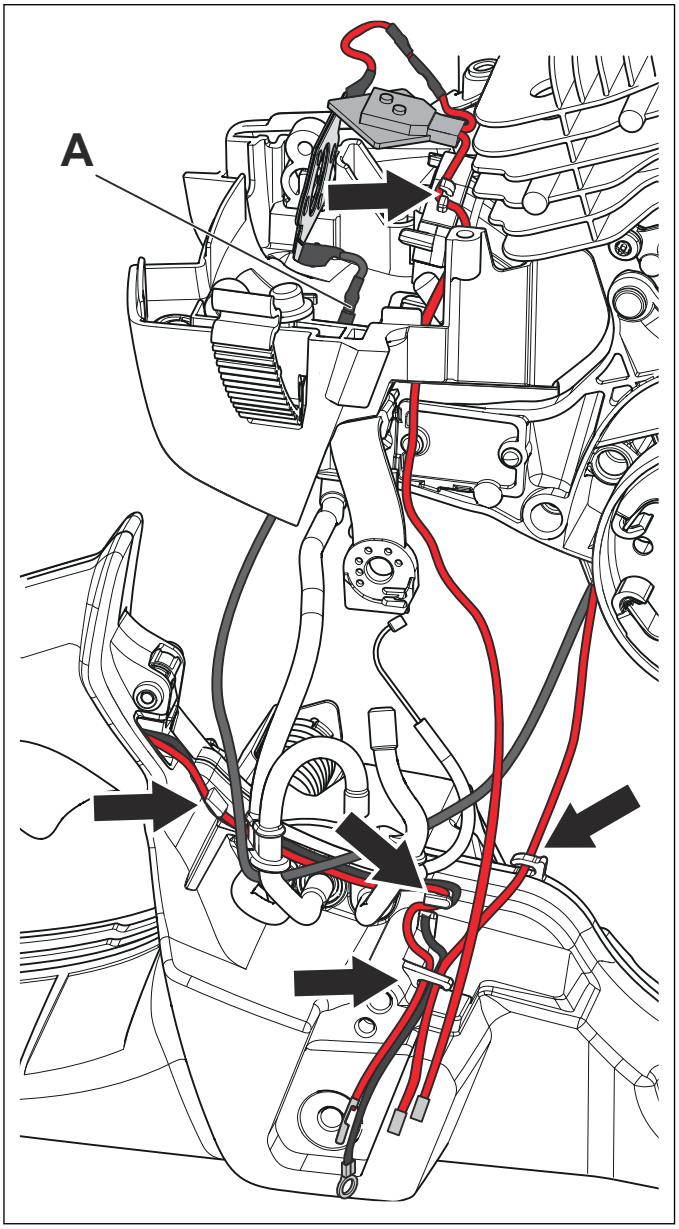
8. Loosen the screw to the vibration damping system.



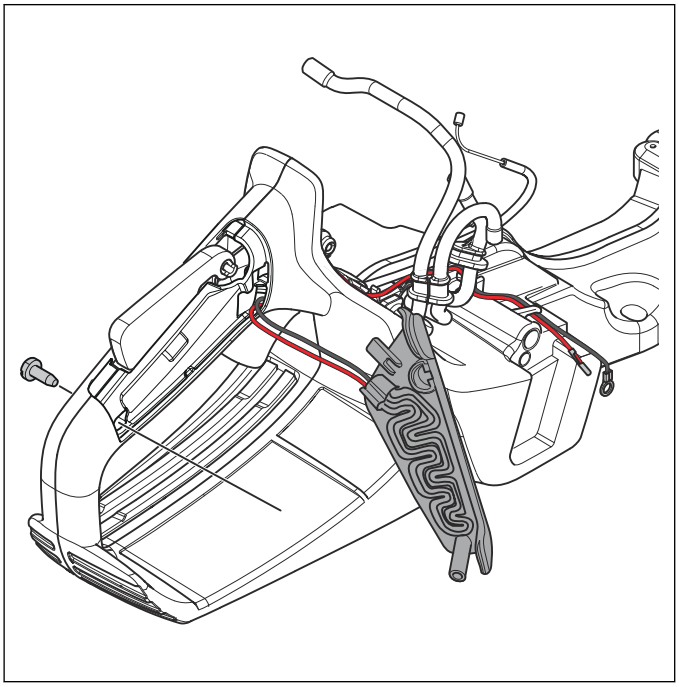
9. Loosen the deflection limiter.



10. If the heating elements of the carburetor has not been removed, disconnect the cables (A). Lift the saw up carefully. Pull down the hoses through the carburetor bottom plate. Pull the throttle wire down through the carburetor bottom plate. Make sure that you understand how the cables are attached.




11. Remove the screw and pull out the rear heated handle. Pull out the cables.

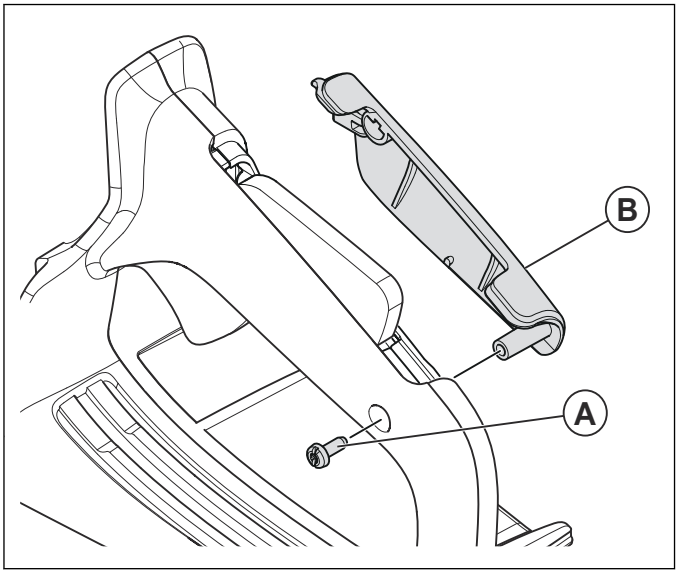


12. Assemble the rear heated handle in the opposite sequence to how it was disassembled.

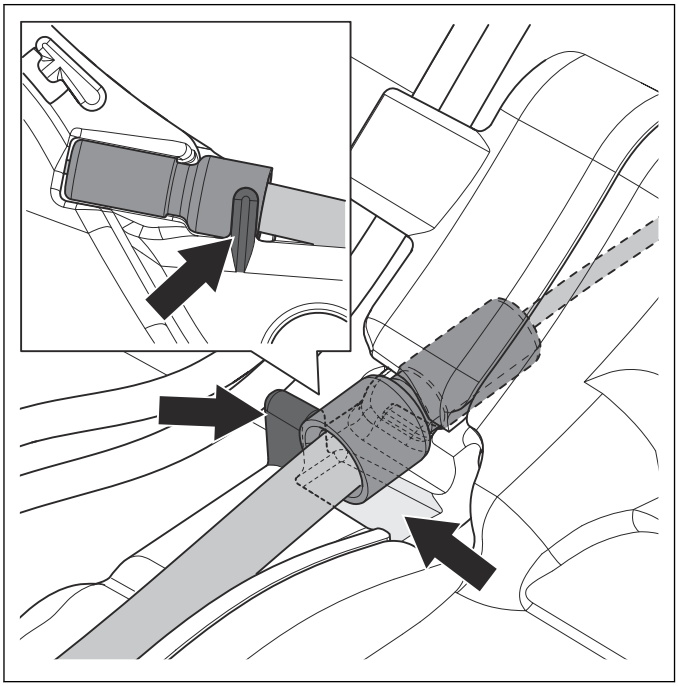
## 8.8 Handle and throttle trigger

### 8.8.1 To disassemble the handle

1. Remove the screw (A) and the handle cover (B).

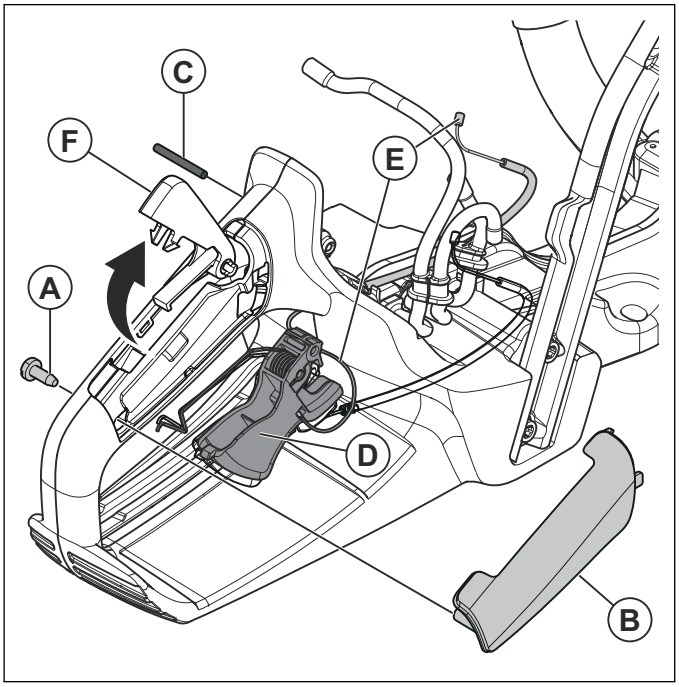



2. Use a screwdriver to move the throttle wire sleeve from the notch. Disconnect the throttle wire from the throttle trigger.

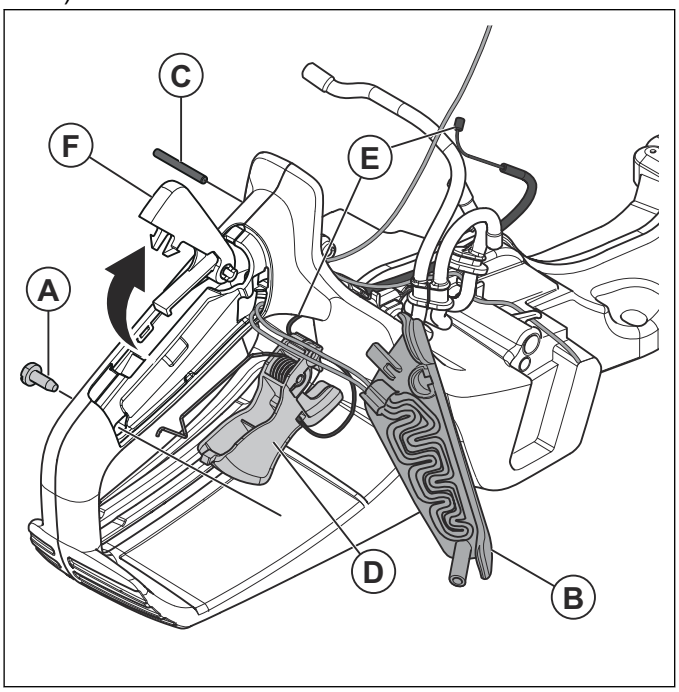


3. Use a punch to remove the pin (C). Remove the throttle trigger (D). Remove the throttle wire (E).

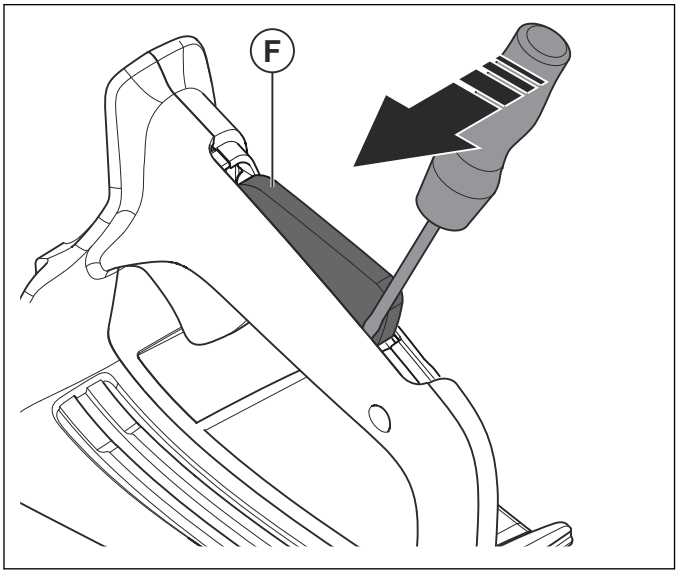
a) On 545 Mark II and 550 XP® Mark II:




a) On 545G Mark II and 550 XP®G Mark II:



4. Use a flat screwdriver to push out and remove the throttle trigger lockout (F).



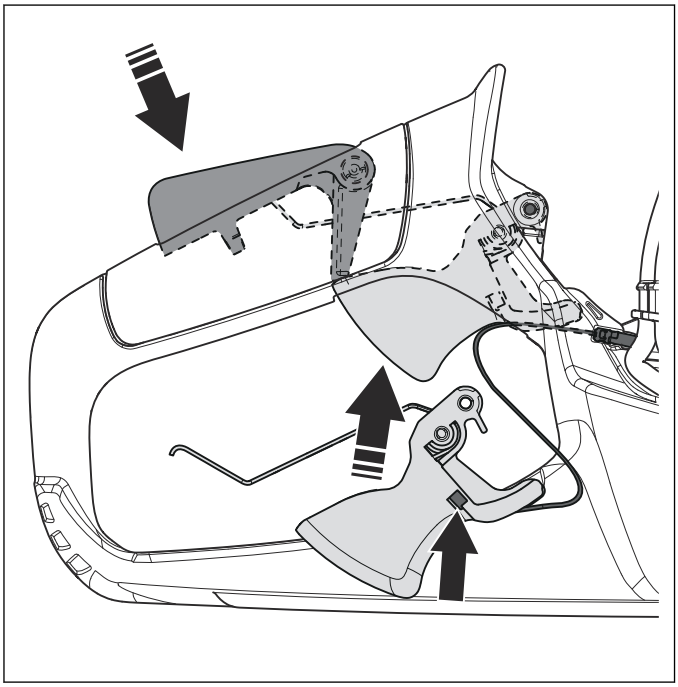

**Note:** On 545G Mark II and 550 XP®G Mark II, do not disconnect the cables to the handle.

### 8.8.2 To clean and examine the handle and throttle trigger

1. Carefully clean and examine all parts.
2. Replace parts that are damaged. Always use original spare parts.
3. Use a flat screwdriver to remove dirt particles from the notch in the fuel tank.
4. Make sure that the spring in the throttle trigger is not damaged and keeps all its tension.

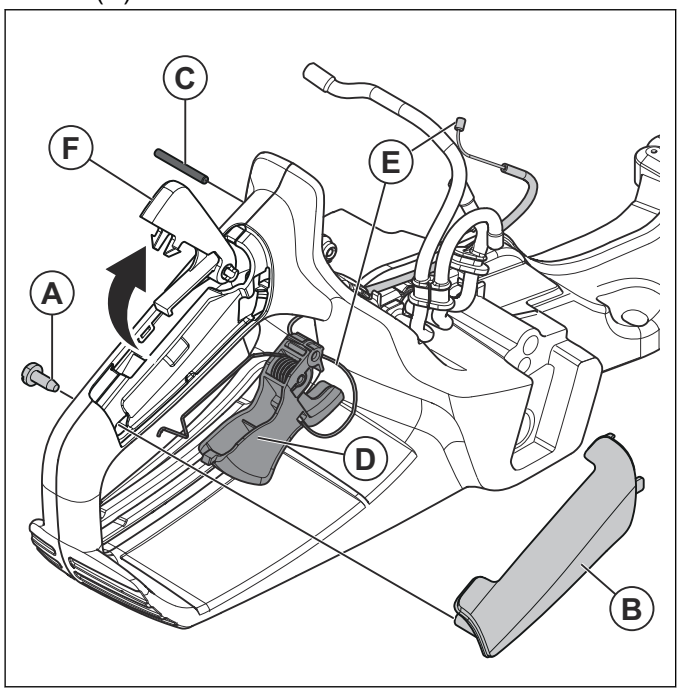
### 8.8.3 To replace the throttle wire

1. Attach the wire to the throttle trigger.
2. Pull the wire through the handle.

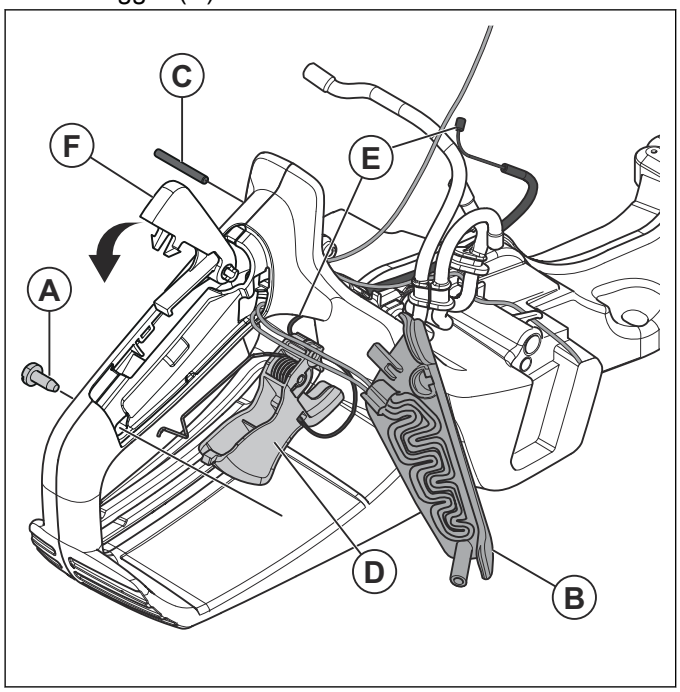


### 8.8.4 To assemble the handle

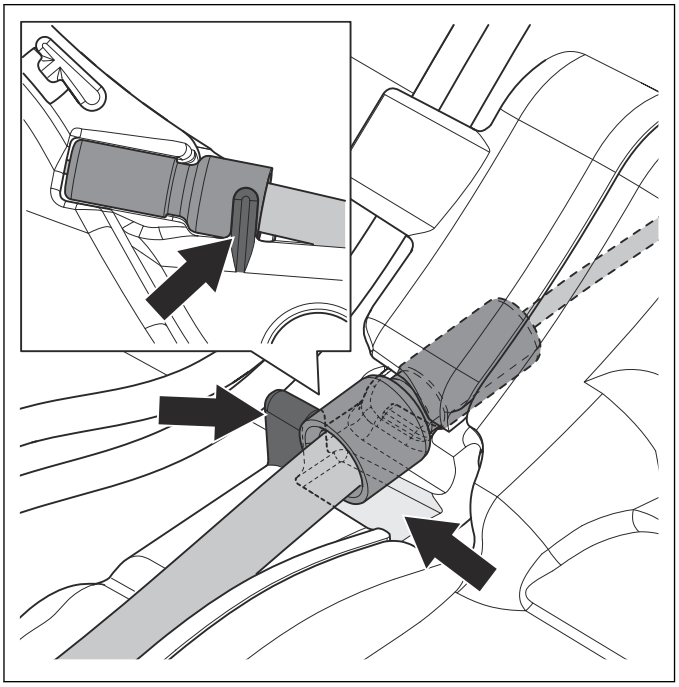
1. Put the throttle trigger lockout (F) into the handle.
2. Attach the throttle wire (E) to the throttle trigger (D). Pull the throttle wire through the hole in the tank unit.
3. Attach the throttle trigger.
   a) On 545 Mark II and 550 XP® Mark II: Push the throttle trigger (D) into the handle. Push the pin (C) into the handle to attach the throttle trigger (D) to the handle.




   a) On 545G Mark II and 550 XP®G Mark II: Push the throttle trigger (D) into the handle. Push the pin (C) into the handle to attach the throttle trigger (D).



4. Use a screwdriver to push the throttle wire sleeve to attach it as the illustration shows.



5. Attach the handle cover (B).

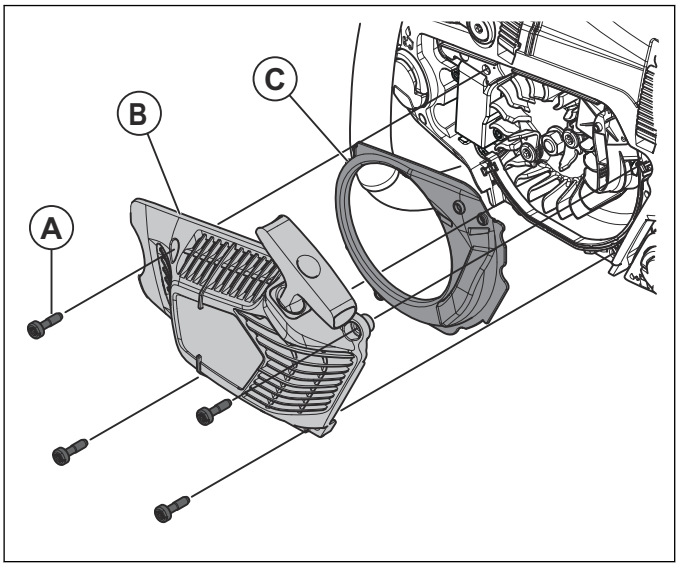
**CAUTION:** Make sure that you do not cause damage to the cables on 545G Mark II and 550 XP®G Mark II.

6. Tighten the screw (A). Make sure that you use the correct torque. Refer to *Servicing data on page 9*.

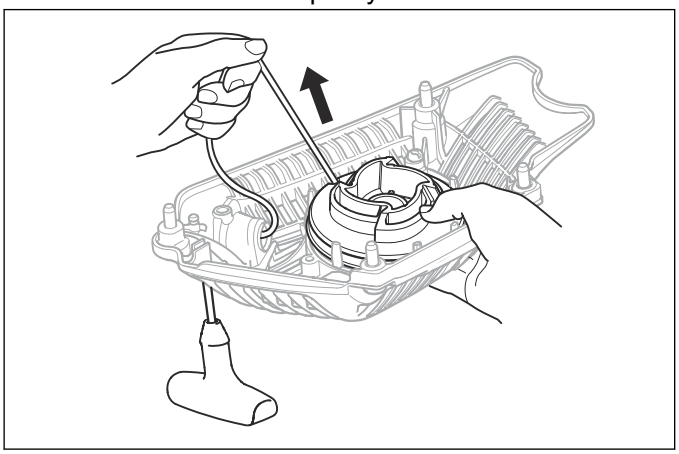
## 8.9 Starter

### 8.9.1 To disassemble the starter

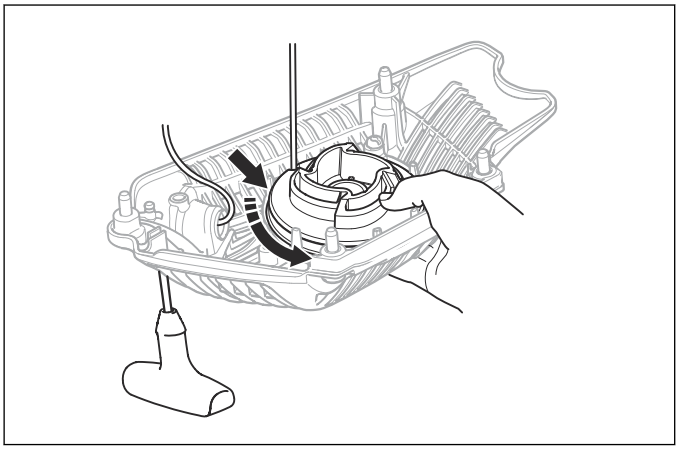
1. Loosen the 4 screws (A) that hold the starter (B) against the crankcase. Remove the starter unit. Remove the cooling air conductor (C).




2. Pull out the rope approximately 30 cm /12 in and put it into the notch in the pulley.

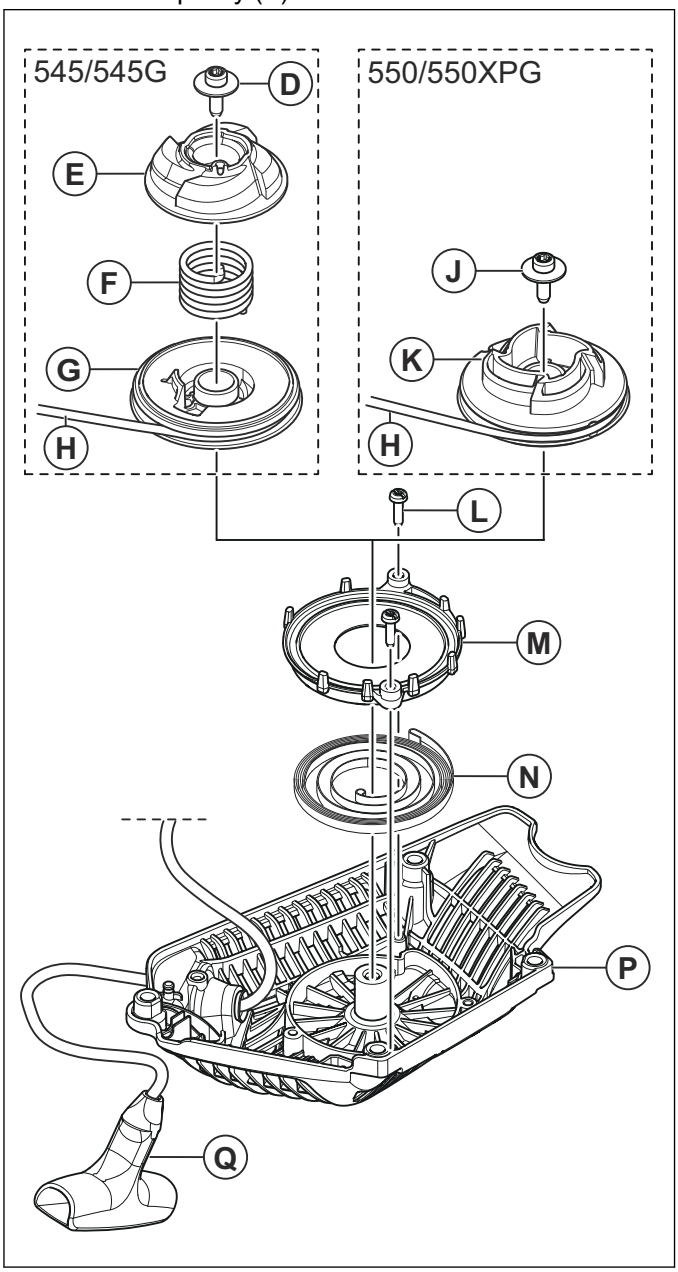


3. Let the pulley rotate slowly rearward to release the tension of the recoil spring.



4. Remove the starter from the starter housing.
   a) On 545 Mark II and 545G Mark II: Remove the bolt (D) and washer. Lift up the pulley (E), the starter spring (F) and starter pulley (G).

b) On 550 XP® Mark II and 550 XP®G Mark II: Remove the bolt (J) and washer. Lift up the starter pulley (K).




5. Cut off the starter rope (H).
6. Use pointed pliers to pull out the ends of the starter rope from the handle (Q) and starter pulley.
7. To replace the recoil spring (N), loosen the two screws (L) remove the spring cassette (M) and remove the recoil spring (N).

**WARNING:** The recoil spring can eject and cause injuries. Use eye protection.

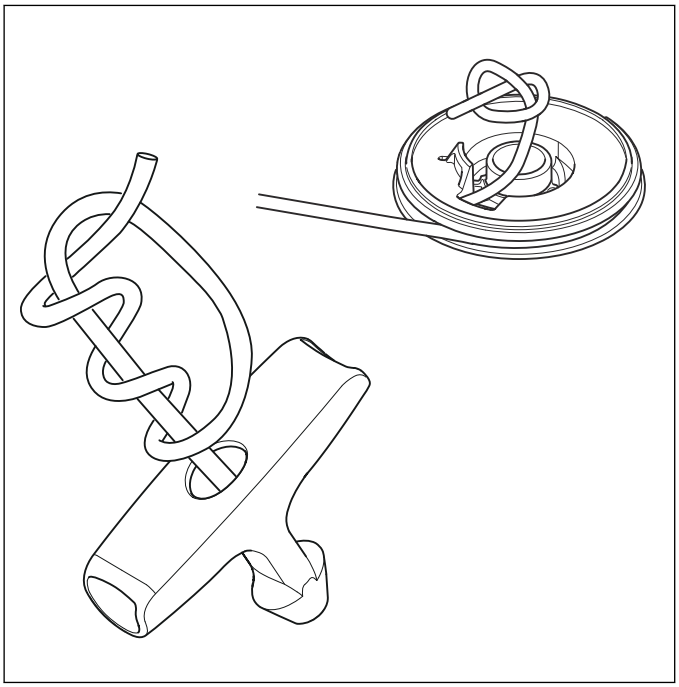
### 8.9.2 To clean and examine the starter

1. Clean all components.
2. Examine the starter rope. Replace the starter rope if it is damaged.
3. Examine the starter pulley. Replace damaged parts.
4. Make sure that the pawls on the flywheel are not damaged. Make sure that the pawl springs on the flywheel are attached correctly and moves freely.
5. Lubricate the pawls on the flywheel.
6. On 545 Mark II and 545G Mark II: Examine the starter spring. Replace the starter spring if it is damaged.
7. On 545 Mark II and 545G Mark II: Lubricate the starter spring.
8. Lubricate the recoil spring.

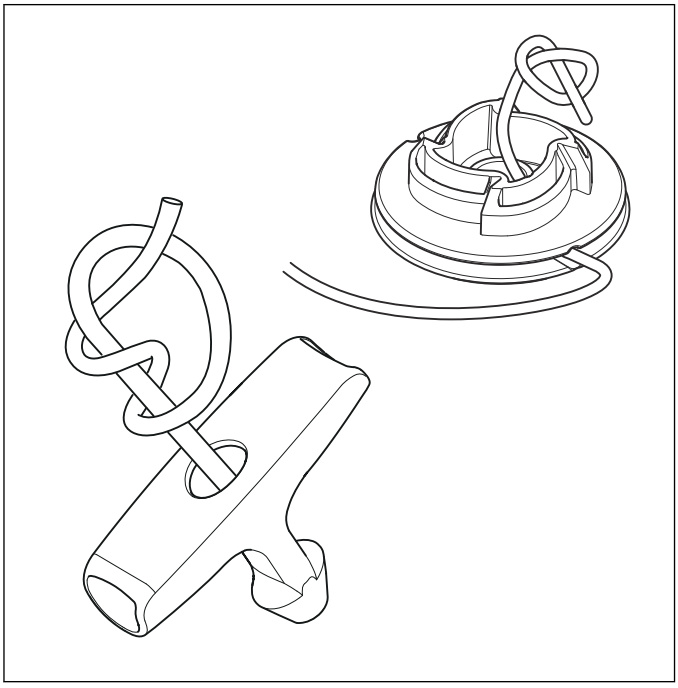
### 8.9.3 To assemble the starter

**WARNING:** The spring in the starter pulley can eject and cause injury.

1. Put a new recoil spring on the starter housing (P). Attach the spring cassette (M) to the starter housing. Tighten the two screws (L) to the correct torque. Refer to *Servicing data on page 9*.
2. Push the end of the starter rope into the hole in the starter pulley. Use a pointed pliers to pull out the starter rope from the starter pulley. Make a knot at the end of the starter rope.
3. Pull the starter rope through the starter rope handle and tie a knot as the illustration shows.
   a) On 545 Mark II and 545G Mark II:

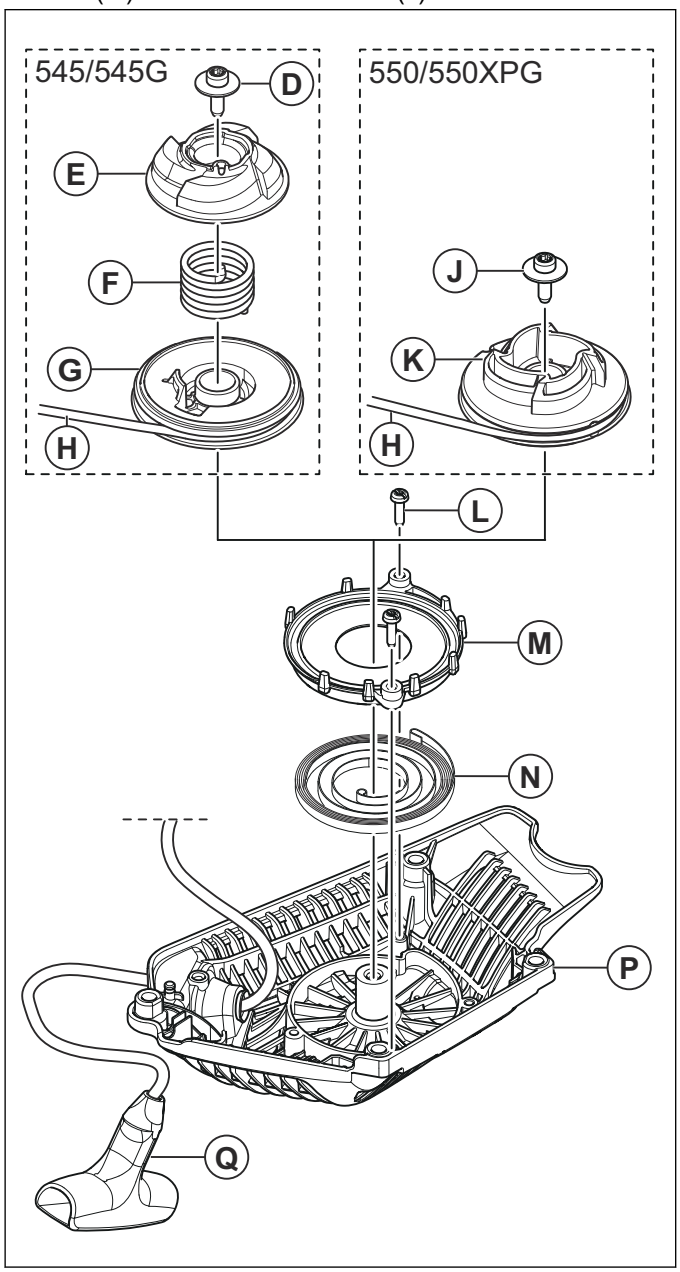


b) On 550 XP® Mark II and 550 XP®G Mark II:

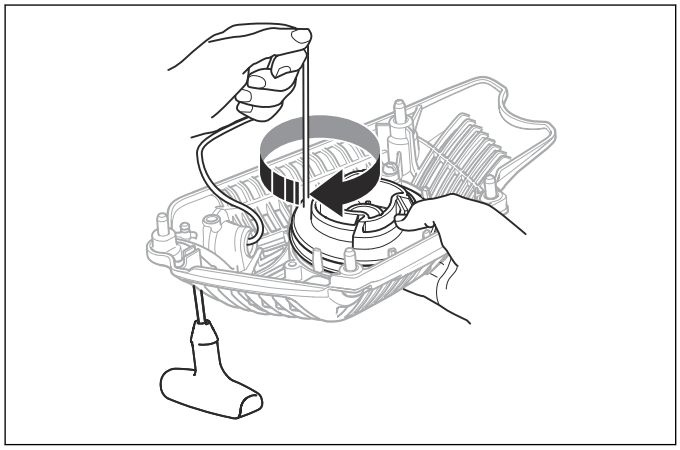


4. Put the starter in the starter housing.
   a) On 545 Mark II and 545G Mark II: Put the starter pulley (G) against the spring cassette (M). Put the spring (F) in the starter pulley. Put the pulley (E) on the spring and attach the screw (D).

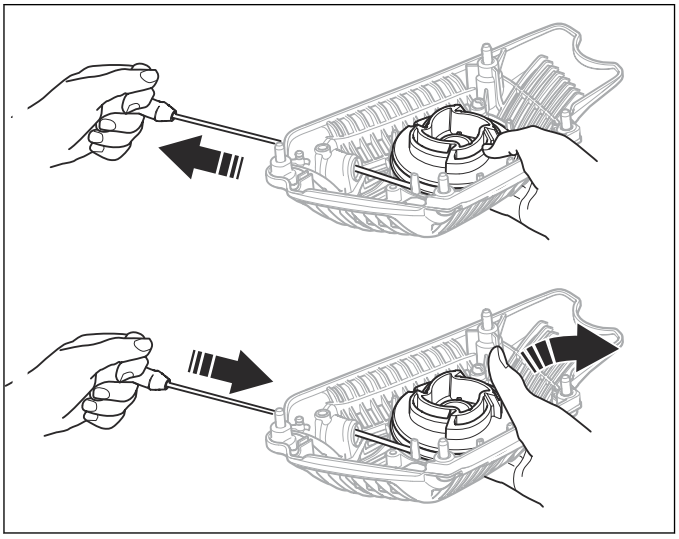
b) On 550 XP® Mark II and 550 XP®G Mark II: Put the starter pulley (K) against the spring cassette (M) and attach the screw (J).



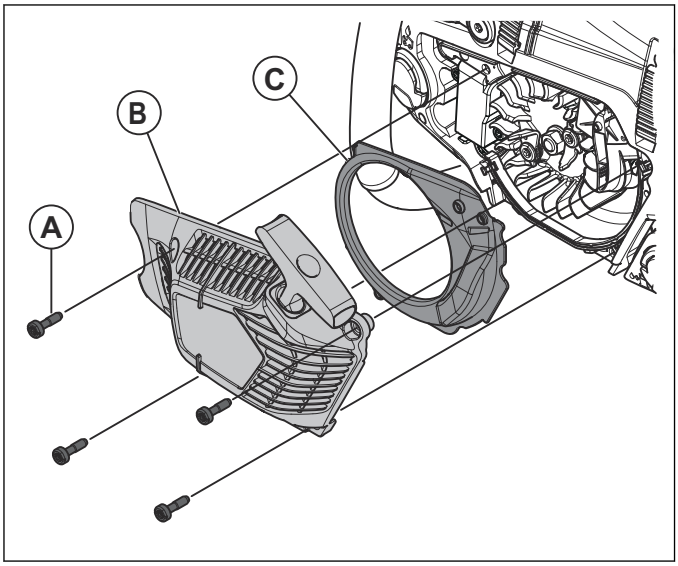

5. Pull the starter rope up into the notch in the starter pulley. Use your thumb and turn the starter pulley 3 turns clockwise to wind the rope on the starter pulley. Make sure that you can turn the starter pulley ½ turn more when you pull out the starter rope fully.



6. Pull the starter rope to make it straight, remove your thumb and let the starter rope wind up.



7. Attach the starter (B) and the cooling air conductor (C) on the crankcase. Pull the starter rope lightly to make sure that the starter pulley is attached correctly against the crankcase. Tighten the four screws (A) to the correct torque. Refer to *Servicing data on page 9*.

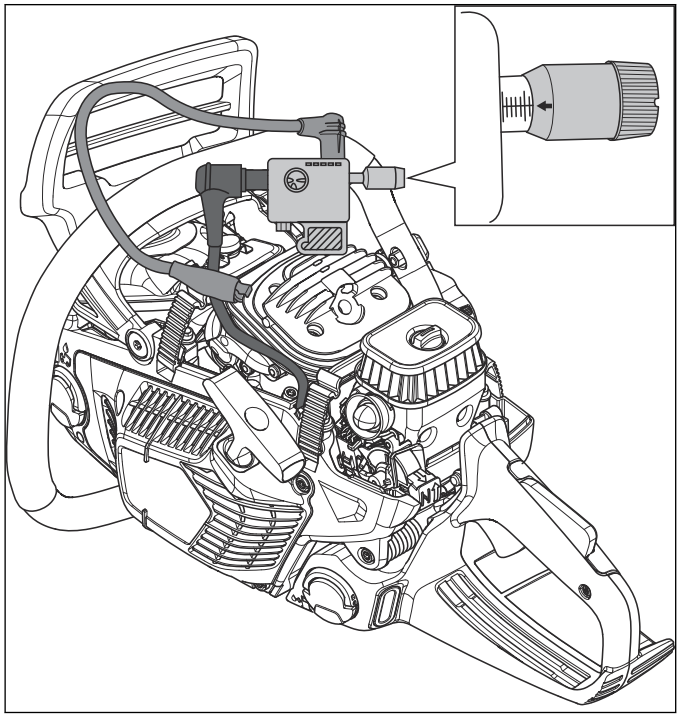



## 8.10 Ignition system

### 8.10.1 To do a spark test

The ignition system must supply a strong spark. A weak spark or no spark cause performance problems.

1. Disconnect the spark plug from the cylinder.
2. Connect the Ignition tester to the spark plug cap and ground the clip to the cylinder fins.
3. Use the knob to adjust the distance between the 2 electrodes to 6 mm.



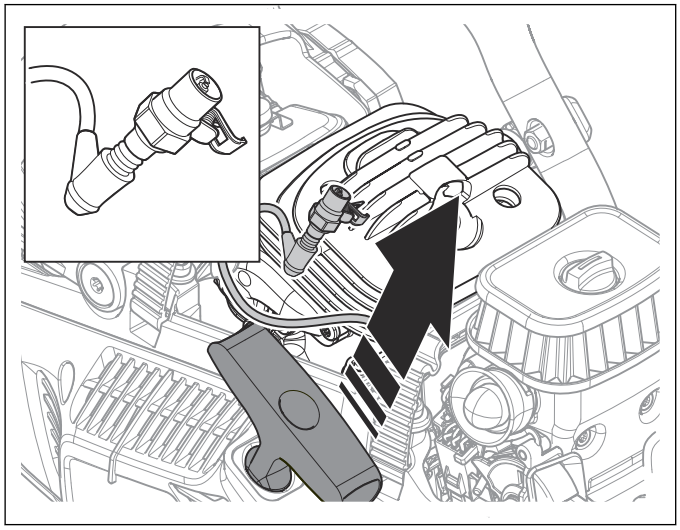
**Note:** 6 mm is 6 marks on the scale.

4. Pull tightly in the starter rope handle.
5. If the ignition works correctly, you will see a clear blue spark between the electrodes. If you do not see a spark or if you see a weak spark, refer to *Ignition System Diagnostic Flow Chart on page 74*.

### 8.10.2 To do a test of the ignition module

If there is a fault in the ignition system, do a test of the ignition module.

1. Remove the cylinder cover.
2. Remove the spark plug cable.
3. Remove the spark plug from the cylinder.
4. Connect a test spark plug to the spark plug cable. Refer to *Servicing tools on page 12*. Attach the test spark plug onto the cylinder.

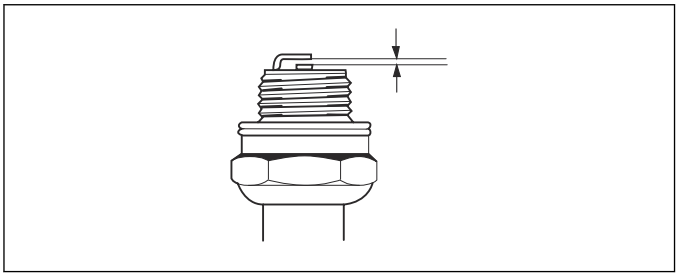


5. Pull the starter rope handle. If a spark occurs, the spark plug is damaged. If no spark occurs, the ignition module is damaged. Replace the damaged part.

### 8.10.3 To examine the spark plug

**CAUTION:** Always use the recommended spark plug type. Incorrect spark plug type can cause damage to the product.

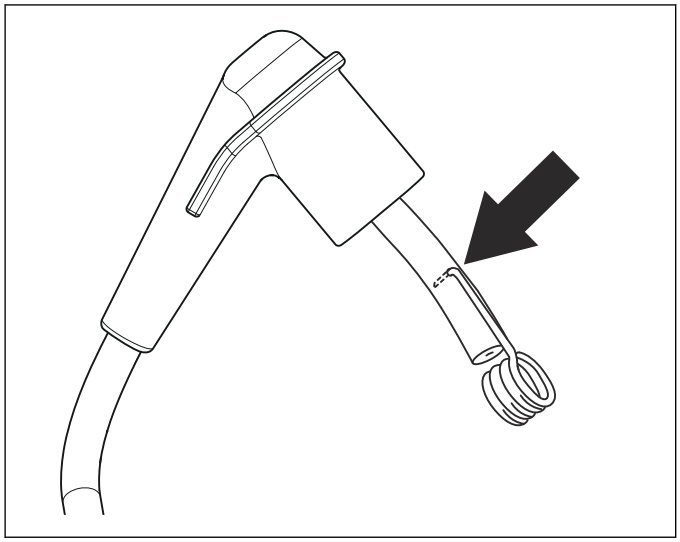
- Examine the spark plug if the engine is low on power, is not easy to start or does not operate correctly at idle speed.
- To decrease the risk of unwanted material on the spark plug electrodes, obey these instructions:
  a) Make sure that the idle speed is correctly adjusted.
  b) Make sure that the fuel mixture is correct.
  c) Make sure that the air filter is clean.
- If the spark plug is dirty, clean it and make sure that the electrode gap is correct, refer to *Technical data on page 7*.



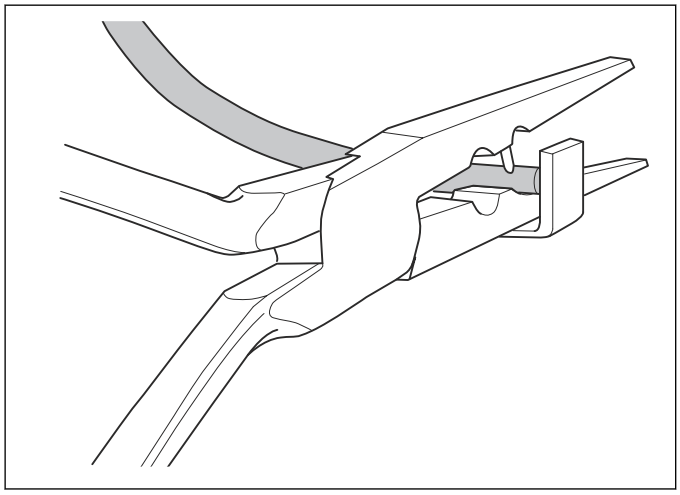
- Replace the spark plug if it is necessary.

### 8.10.4 To replace the spark plug cap

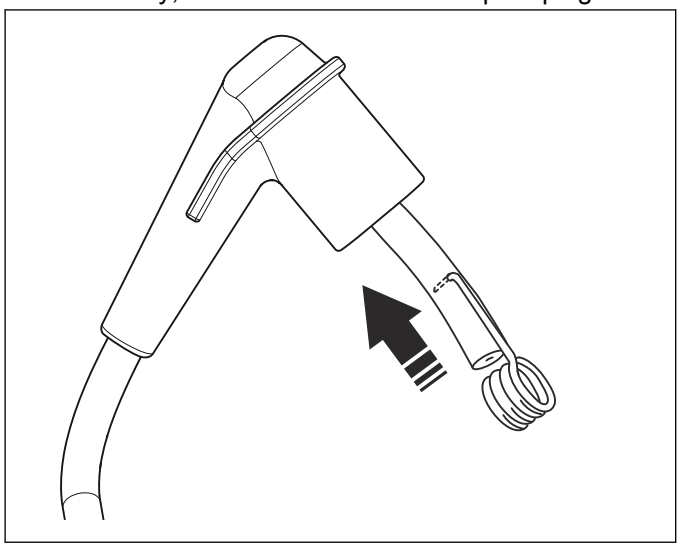
1. Examine the spark plug connection. Remove the spark plug cover and make sure that the ignition cable is not damaged. If it is necessary, remove a part of the cable to get sufficient connection at the connection coil.



2. Use pliers to make a new hole in the ignition cable to attach the connection coil.

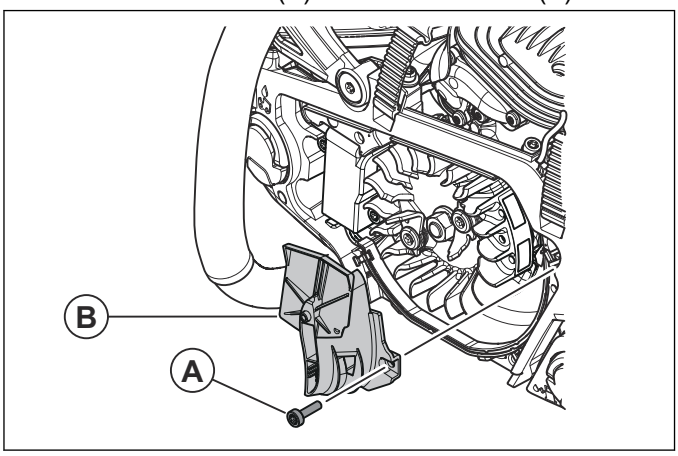


3. Attach the ignition coil to the ignition cable and make sure that the wire is folded along the cable. Move the connection coil into the spark plug cover. If it is necessary, lubricate the hole in the spark plug cover.

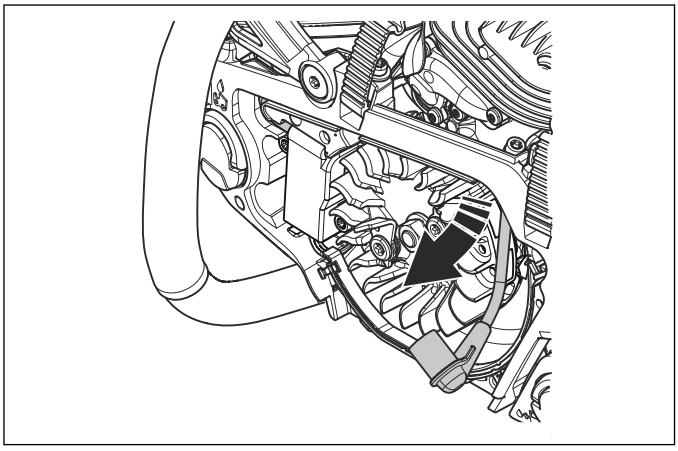


### 8.10.5 To disassemble the ignition system

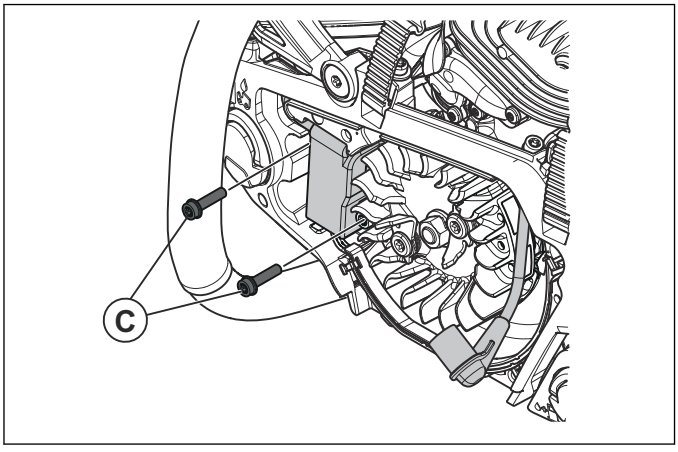
1. Remove the cylinder cover.
2. Remove the starter unit.
3. Remove the spark plug cable from the spark plug. Remove the spark plug.
4. Remove the air filter, the air filter holder and the carburetor. Refer to *To disassemble the carburetor on page 46*.
5. Remove the screw (A) and the air nozzle (B).



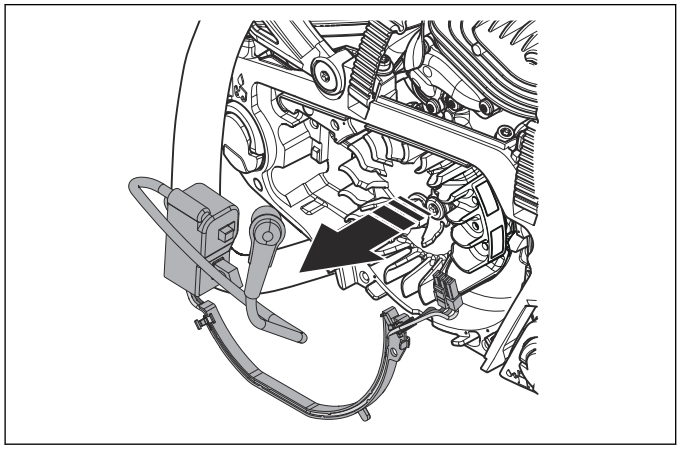

6. Pull out the spark plug cable.



7. Remove the screws (C).



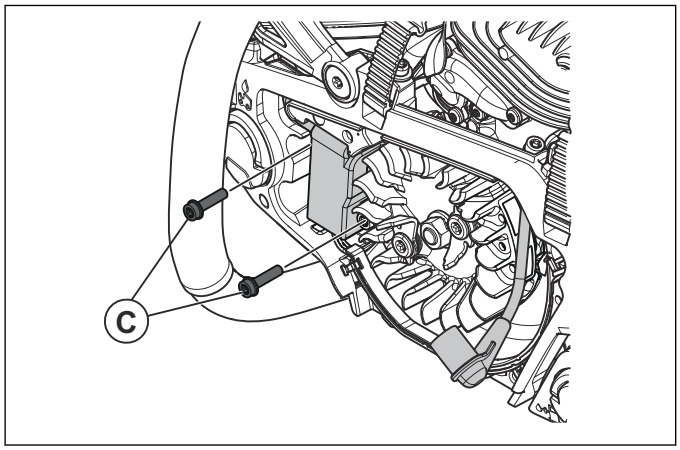

8. Disassemble the cable holder from the crankcase and remove the cables and the ignition module.



9. Remove the cables from the cable holder, if it is necessary.

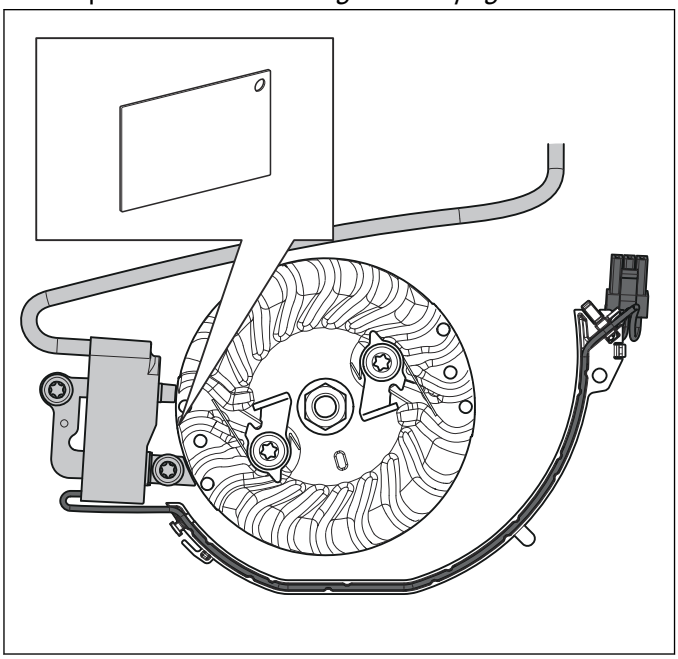
### 8.10.6 To assemble the ignition system

1. Assemble the cables in the cable holder, if it is necessary.
2. Attach the cable holder to the crankcase.
3. Attach the ignition module to the crankcase. Do not tighten the screws (C) fully.




4. Put the spark plug cable through the crankcase. Make sure that the spark plug cable is in the correct position on the crankcase.
5. Attach the air nozzle.

6. Put a clearance gauge between the ignition module and the flywheel. Tighten the screw to the correct torque. Refer to *Servicing data on page 9*.

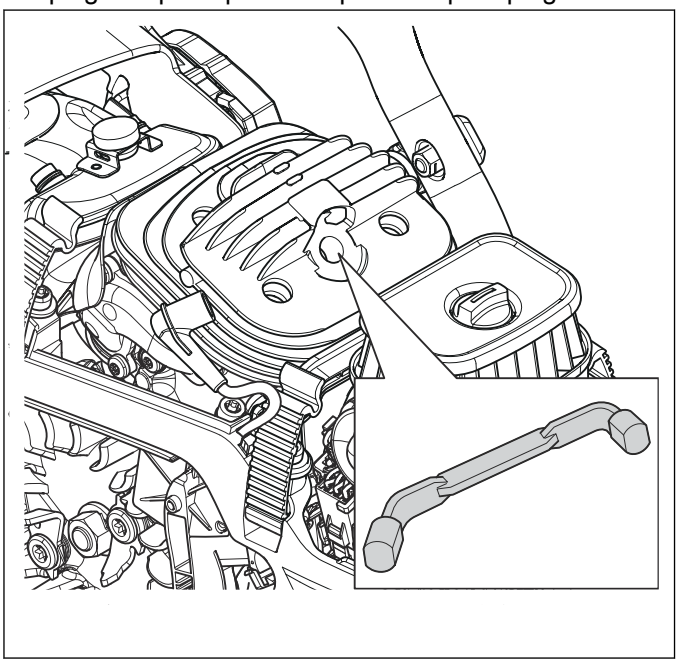


7. Assemble the remaining parts in the opposite sequence to how they were disassembled. Refer to *To disassemble the ignition system on page 34*.

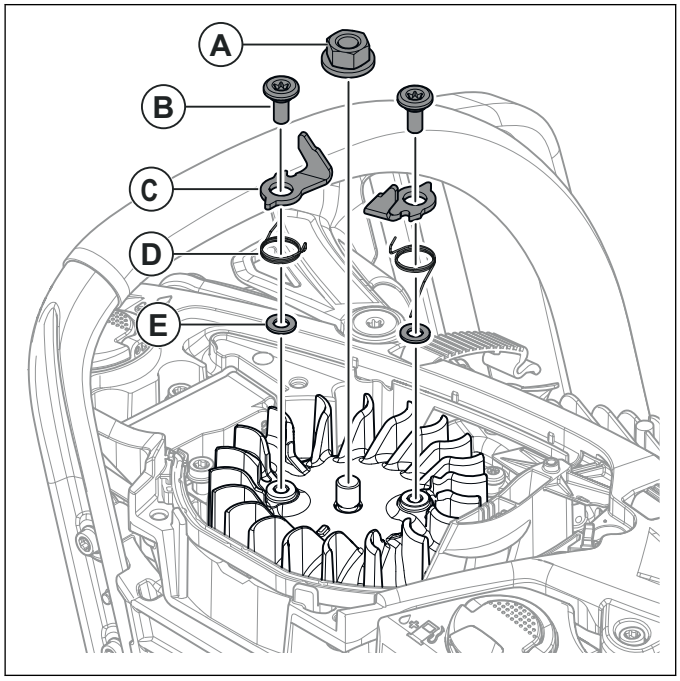
## 8.11 Flywheel

### 8.11.1 To disassemble the flywheel

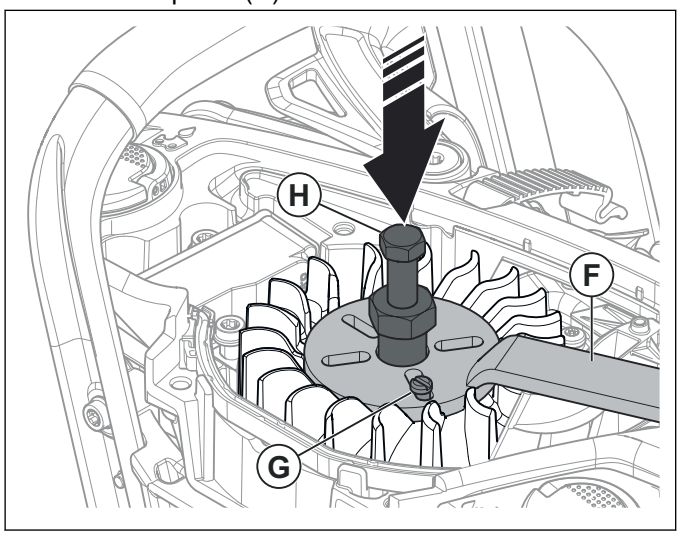
1. Remove the cylinder cover.
2. Remove the starter unit and cooling air conductor. Refer to *To disassemble the starter on page 29*.
3. Clean around the spark plug. Remove the spark plug and put a piston stop in the spark plug hole.



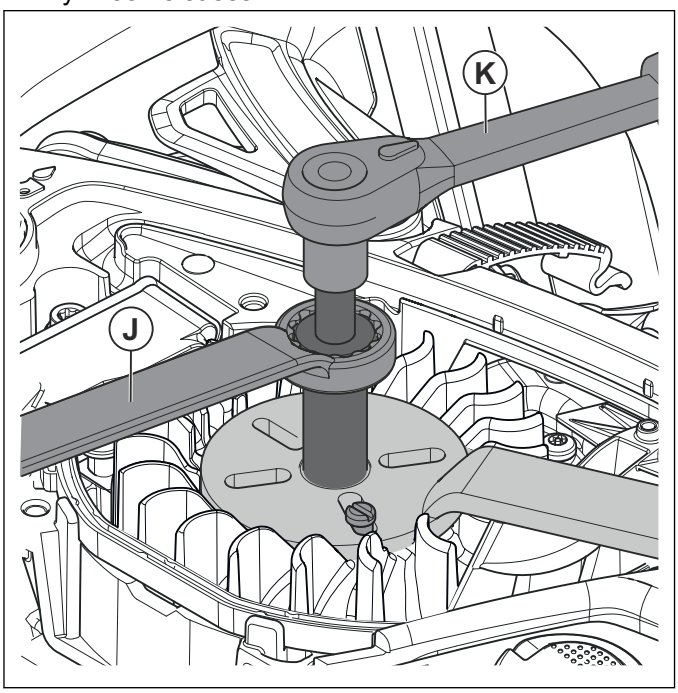
4. Loosen but do not remove the screws that hold the ignition module.
5. Remove the flywheel nut (A). Remove the screws (B), pawls (C), springs (D) and washers (E).




6. Use the flywheel puller kit to disassemble and assemble the flywheel. Refer to *Servicing tools on page 12*. Put the tool (F) supplied with the flywheel puller kit in the center of the flywheel and attach the screws (G) in the holes for the start hooks. Attach the screw press (H) on the crankshaft.



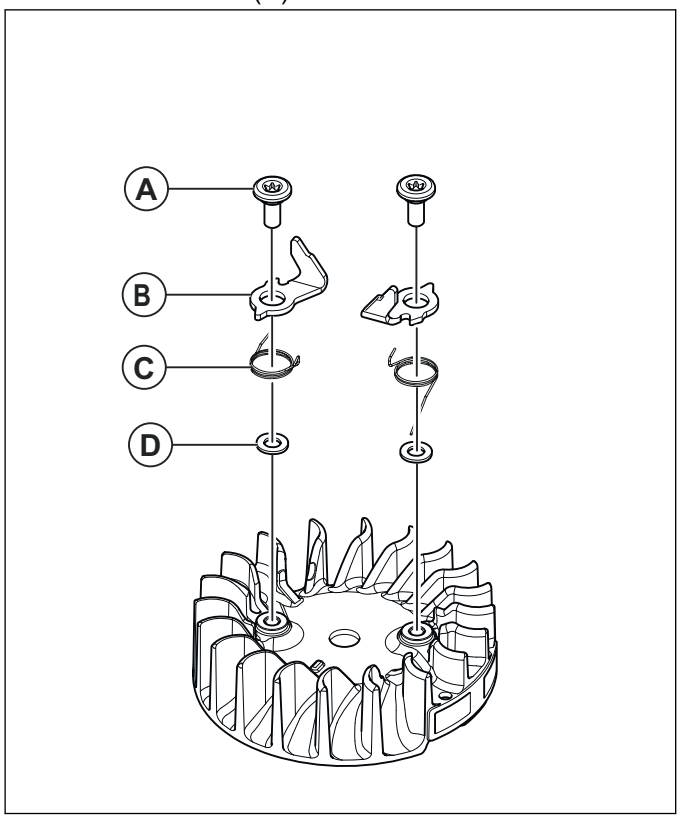
7. Use a wrench (J) to lock the outer socket of the screw press. Use a socket wrench (K) to tighten the screw in the center of the screw press until the flywheel releases.



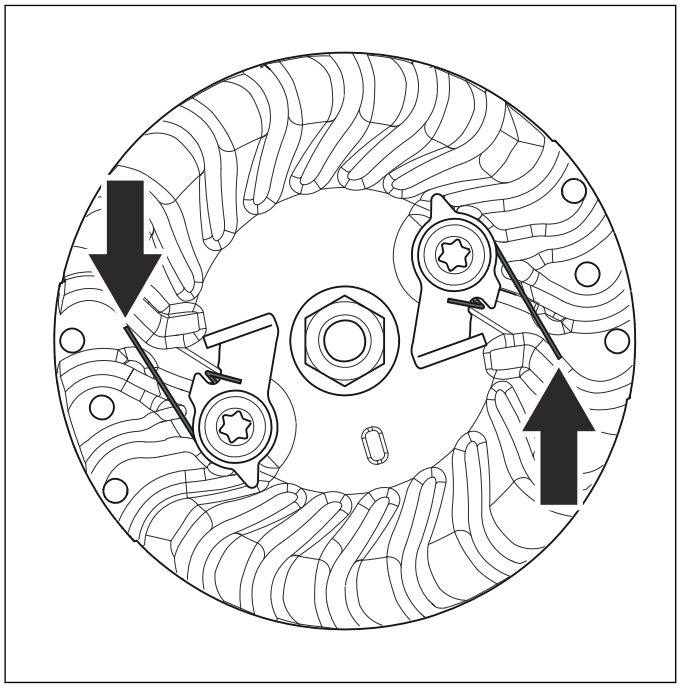

**Note:** If the flywheel does not release, hit lightly with a hammer on the screw to the flywheel. At the same time lift the tool handle slightly to tilt the product.

### 8.11.2 To assemble the flywheel

1. Attach the screws (A), the pawls (B), the springs (C), and the washers (D).

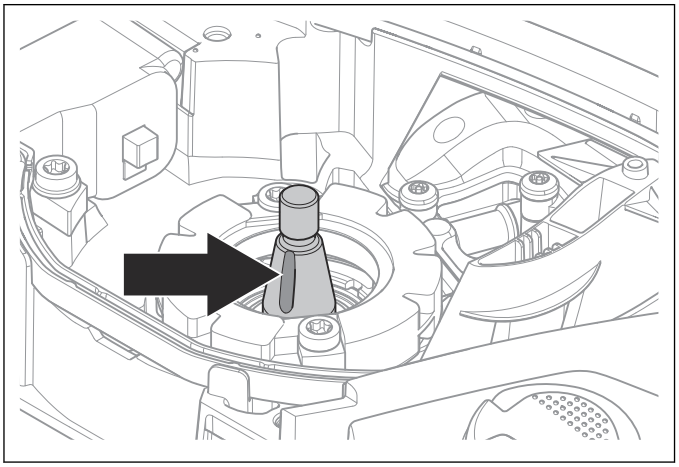



2. Make sure that you attach the springs in the correct position, as shown in the illustration.

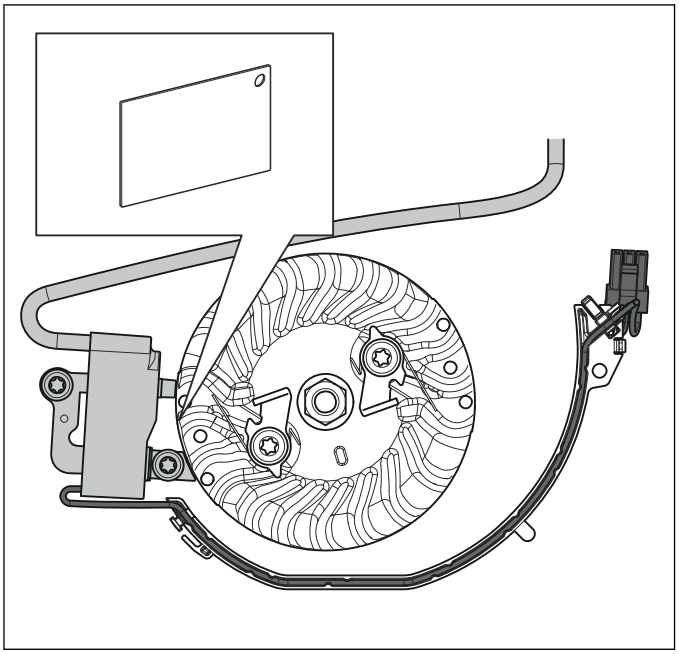


3. Clean the crankshaft from grease and oil.

4. Put the flywheel on the crankshaft. Turn the flywheel until the key goes into the key slot on the shaft.



5. Turn the flywheel to align the magnets with the ignition module.
6. Attach the flywheel nut and tighten it to the correct torque, refer to *Servicing data on page 9*.
7. Attach the clearance gauge. Set a distance of 0.3 +/-0.1 mm, between the ignition module and magnet. Tighten the screws to the correct torque. Refer to *Servicing data on page 9*.



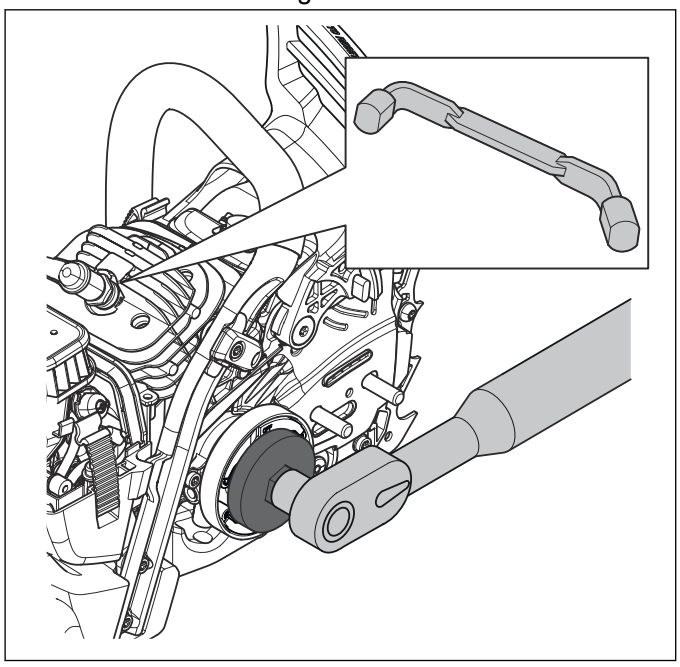
8. Assemble the cooling air conductor and starter unit on the product.
9. Attach the spark plug in the cylinder. Attach the spark plug cable to the spark plug.
10. Assemble the cylinder cover.

## 8.12 Centrifugal clutch

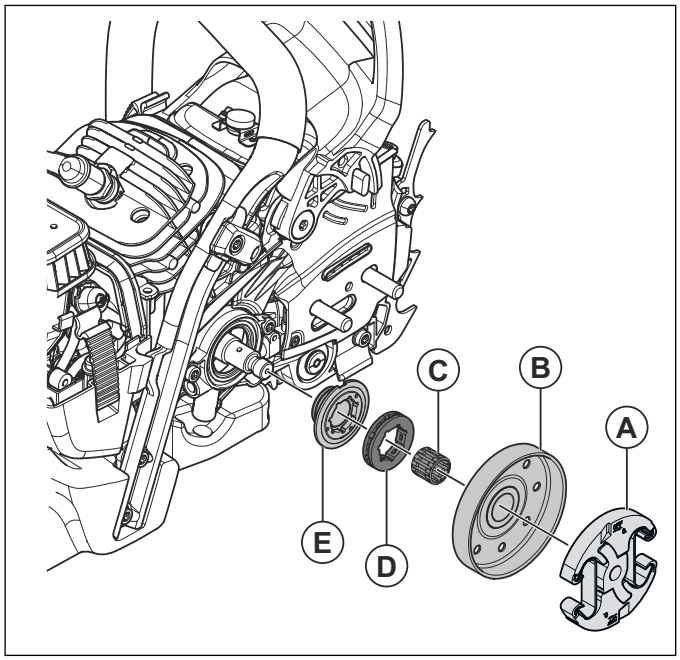
### 8.12.1 To disassemble the centrifugal clutch

Make sure that the chain brake is disengaged before you disassemble the centrifugal clutch.

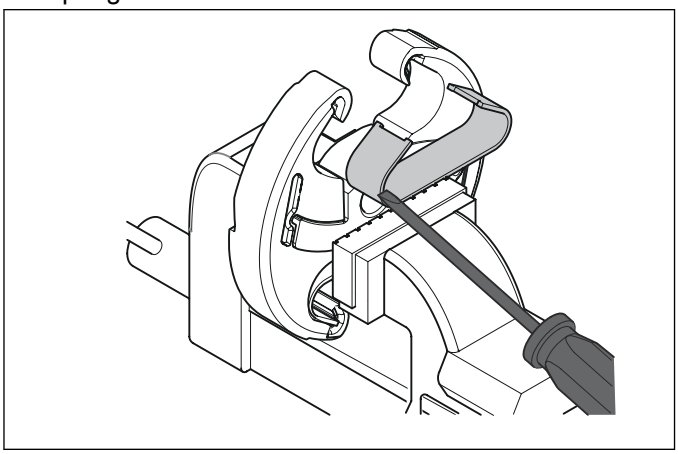
1. Remove the cylinder cover.
2. Remove the clutch cover.
3. Remove the guide bar and saw chain.
4. Remove the spark plug cable. Remove the spark plug and replace the spark plug with a piston stop.
5. Attach the clutch tool to the centrifugal clutch. Refer to *Servicing tools on page 12*. Use a socket wrench to loosen the centrifugal clutch.



6. Remove the clutch (A), the clutch drum (B), the bearing (C), the rim (D) and the worm wheel (E).



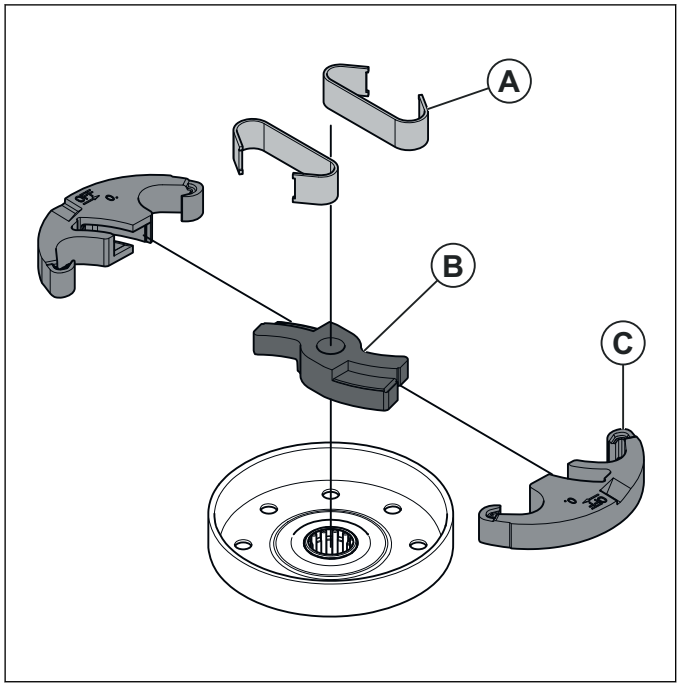
7. Put the centrifugal clutch in a vise. Carefully remove the clutch shoe springs. Remove the clutch shoe springs from the side that does not have text.



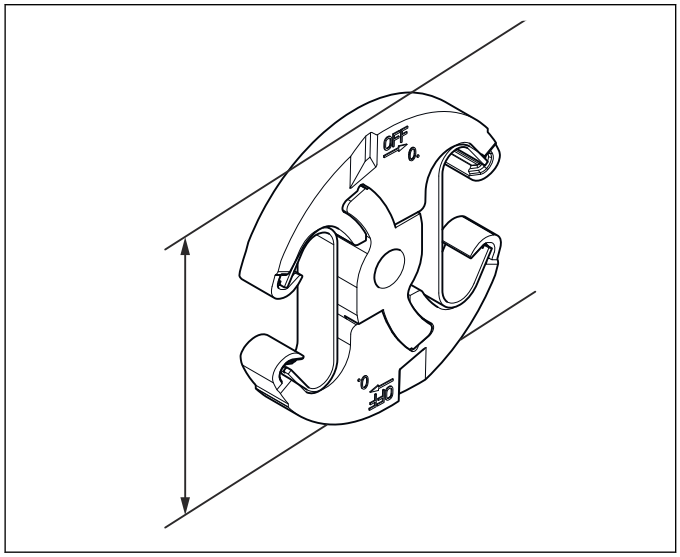
**CAUTION:** Do not open the clutch spring too much as this causes damage to the product.

### 8.12.2 To clean and examine the centrifugal clutch

1. Clean and examine the C-spring (A), the clutch hub (B), the clutch shoes (C) carefully. Replace damaged parts. Always use the original spare parts.

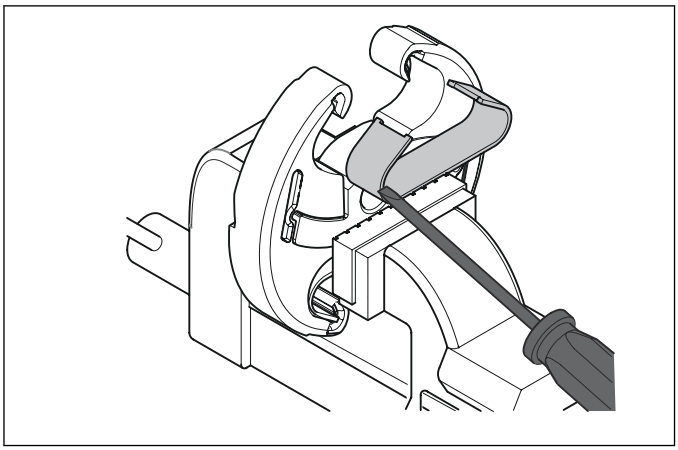



2. Measure the diameter of the clutch shoes across the full clutch hub. Replace the clutch if the thickness is less than 65 mm.



### 8.12.3 To assemble the centrifugal clutch

1. Put the clutch springs on the side of the shoes without text.



2. Turn the clutch counterclockwise until it stops. Use a clutch tool and an applicable socket wrench. Refer to *Servicing tools on page 12*. Tighten the clutch to the correct torque. Refer to *Servicing data on page 9*.
3. Remove the piston stop and attach the spark plug and the spark plug cable.
4. Assemble the guide bar and the saw chain.
5. Attach the cylinder cover.
6. Attach the clutch cover.

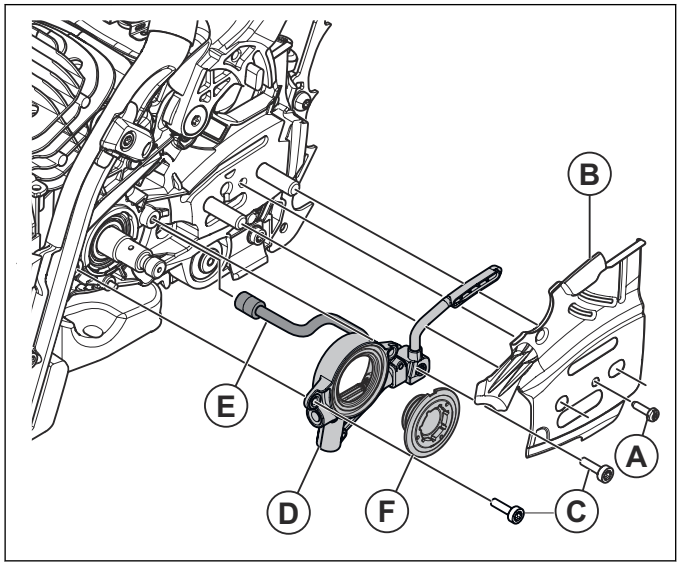
## 8.13 Lubrication system

### 8.13.1 To disassemble the lubrication system

**WARNING:** The saw chain can break if the lubrication is not sufficient.

The lubrication system has an oil pump, a suction hose with filter and an oil hose with integrated filter.

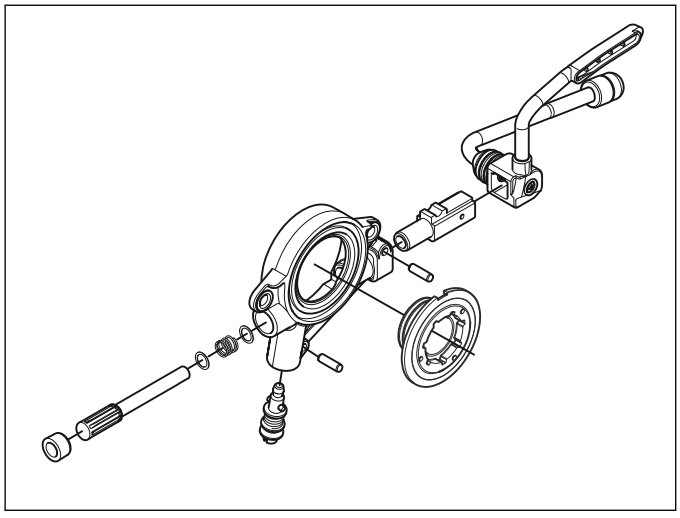
1. Drain the oil from the oil tank. Clean the oil tank.
2. Remove the cylinder cover and the clutch cover.
3. Remove the clutch. Refer to *To disassemble the centrifugal clutch on page 37*.
4. Remove the screw (A) and the guide bar plate (B).




5. Remove the screws (C) and the pump housing (D).
6. Pull out the oil hose (E) from the crankcase.
7. Remove the worm wheel (F).

### 8.13.2 To clean and examine the lubrication system

1. Clean and examine all parts carefully. Replace damaged parts. Always use the original spare parts.
2. Use chain oil to lubricate all moving parts.



### 8.13.3 To assemble the lubrication system

1. Assemble the lubrication system in the opposite sequence to how it was disassembled.

## 8.14 Carburetor

### 8.14.1 Carburetor design

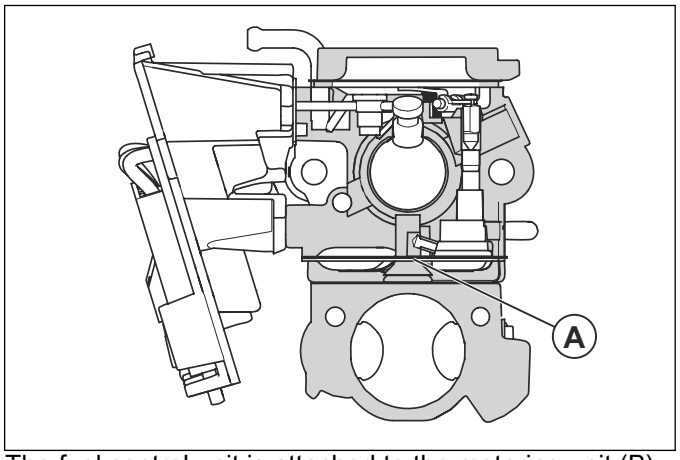
**WARNING:** The fuel used in the product has the following hazardous properties: The fluid and its vapour are poisonous, can cause skin irritation and are highly inflammable.

The figures accompanying this description do not correspond with the carburettor on the product. They show only the principle of design and function.

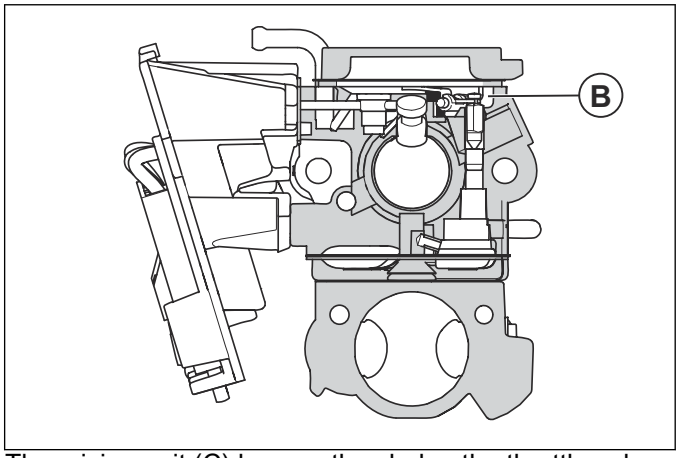
The carburettor is based on three sub-systems:

- Pump unit.
- Metering unit.
- Mixing unit.

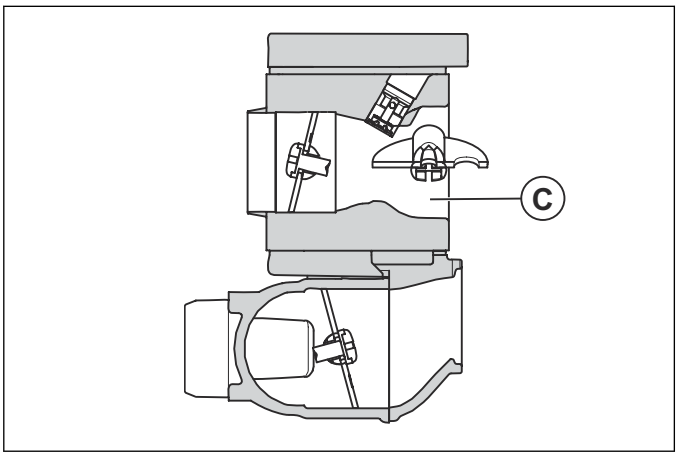
In the pump unit (A), fuel is pumped from the fuel tank to the carburettor's metering unit. One side of the pump diaphragm is connected to the crankcase and pulses in time with the pressure changes in the crankcase. With the help of inlet and outlet valve in diaphragm, the fuel is transfered through a filter screen to inlet needle.




The fuel control unit is attached to the metering unit (B). Here the correct quantity of fuel is adjusted for the actual speed and power output.




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

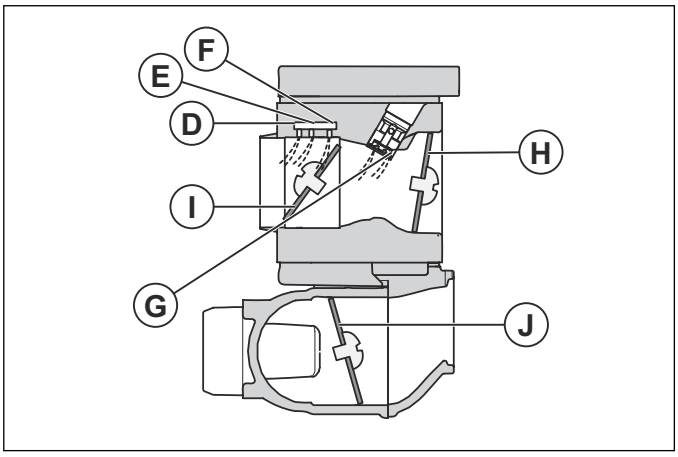



### 8.14.2 Carburetor function

The carburetor operates differently in the following modes:

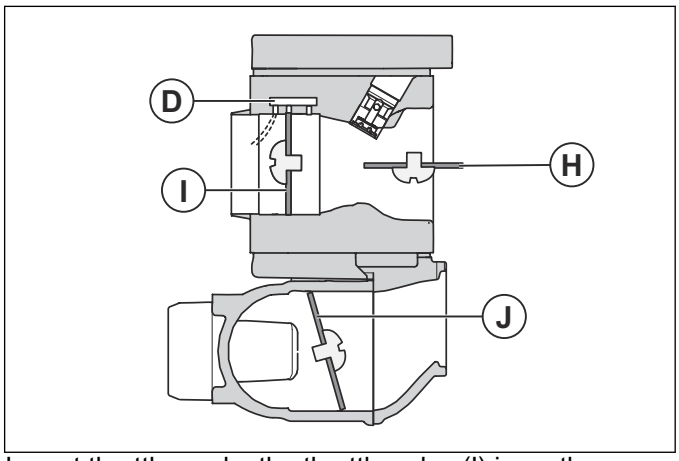
- Cold start mode
- Idling mode
- Part throttle mode
- Full throttle mode

In cold start mode the choke valve (H) is completely shut. This increases the vacuum in the carburettor and fuel is easier to suck from all the diffuser jets (D), (E), and (F). The throttle valve (I) is partly open. The air throttle valve (J) is closed.

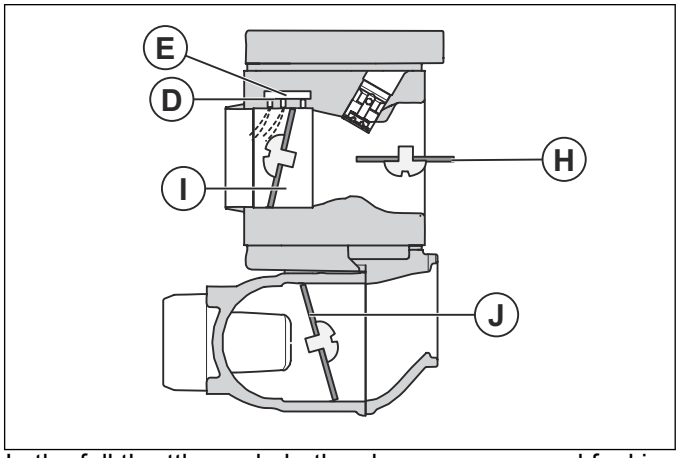


In idling mode, the throttle valves (I) and (J) are closed and the choke valve (H) is open.

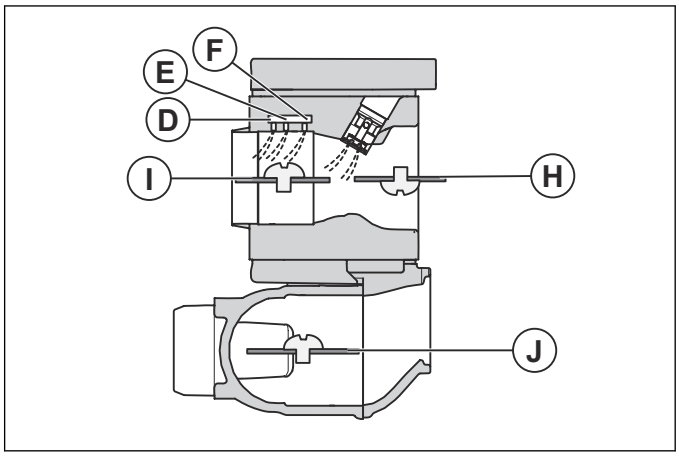
Air is sucked in through an aperture in the throttle valve and a small amount of fuel is supplied through the diffuser jet (D).




In part throttle mode, the throttle valve (I) is partly open and the choke valve (H) is fully open. Fuel is supplied through the diffuser jets (D) and (E). The air throttle valve (J) starts to open.

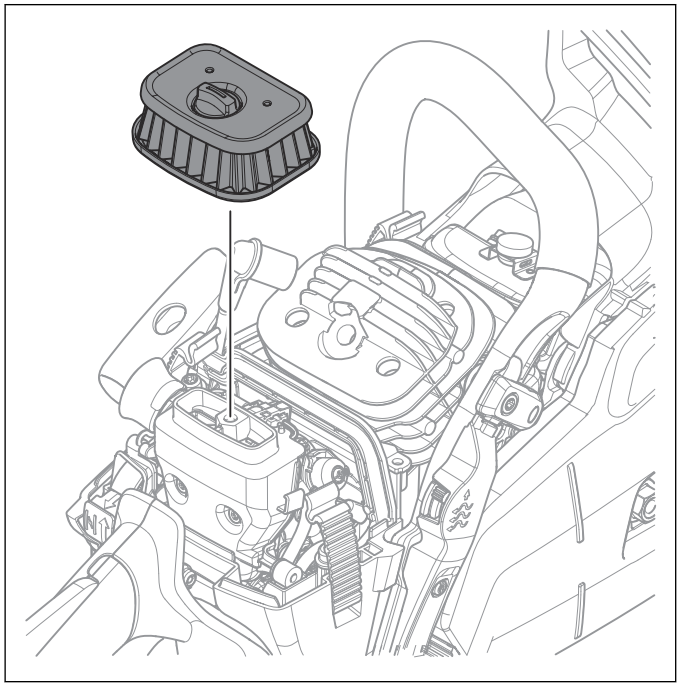



In the full throttle mode both valves are open and fuel is supplied through all four diffuser jets (D, E, F and G). The air throttle valve (J) is fully open.

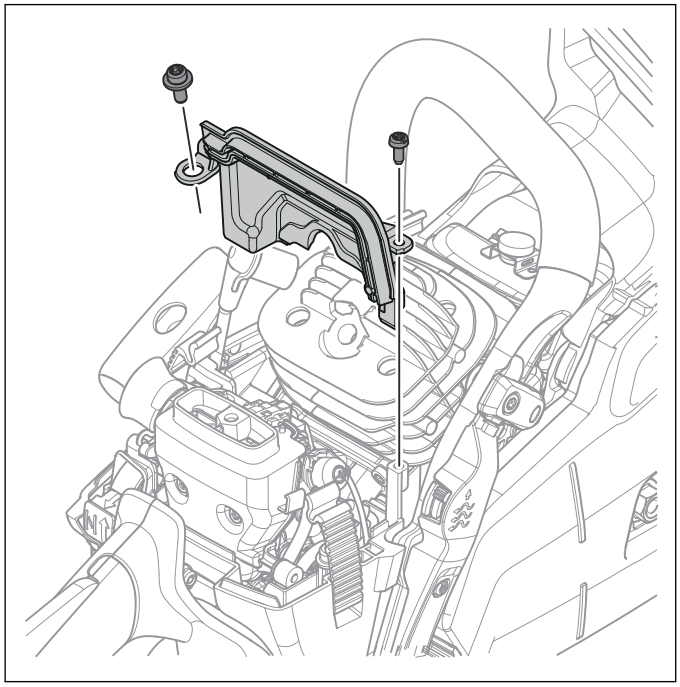



### 8.14.3 To get access to the carburetor

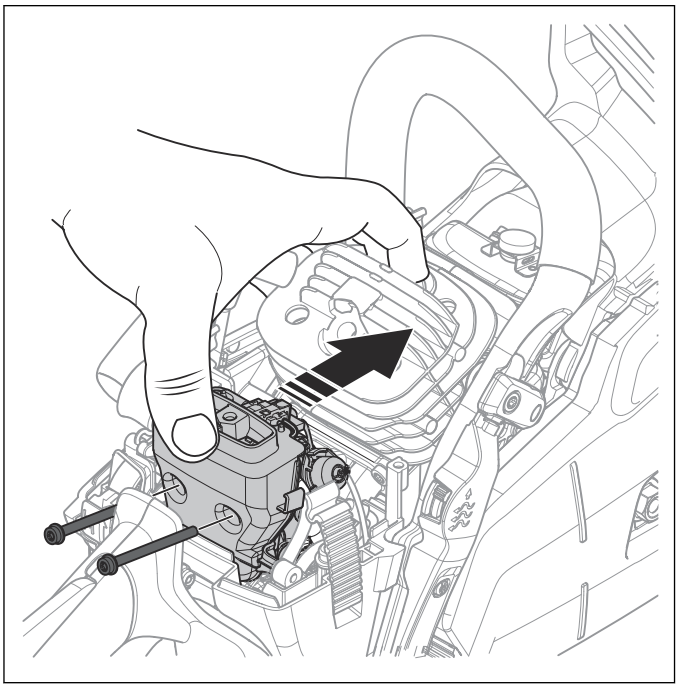
1. Remove the cylinder cover.
2. Remove the spark plug and the spark plug cap.
3. Turn the knob and remove the air filter from the air filter holder.



4. Remove the insulation wall.

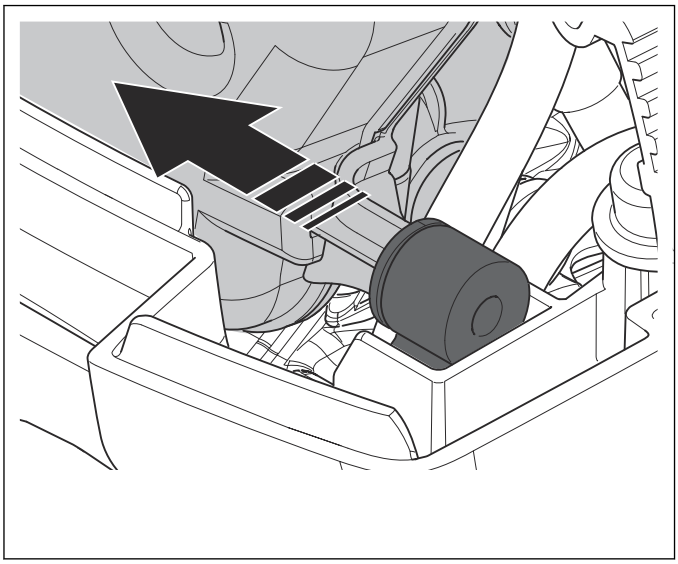


5. Push the air filter holder and the carburetor slightly forward to get access to the screws with the Torx tool. Remove the 2 screws.

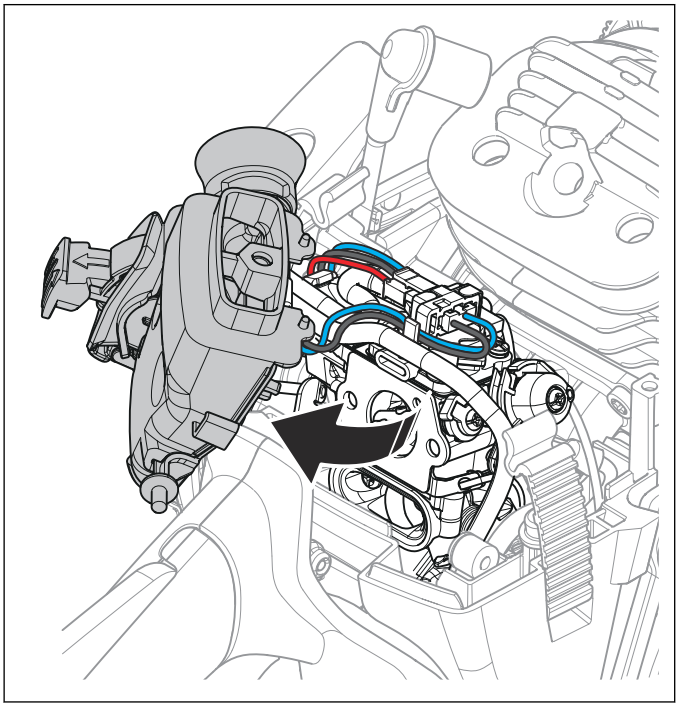


6. Lift the electrical wires from the air filter holder.

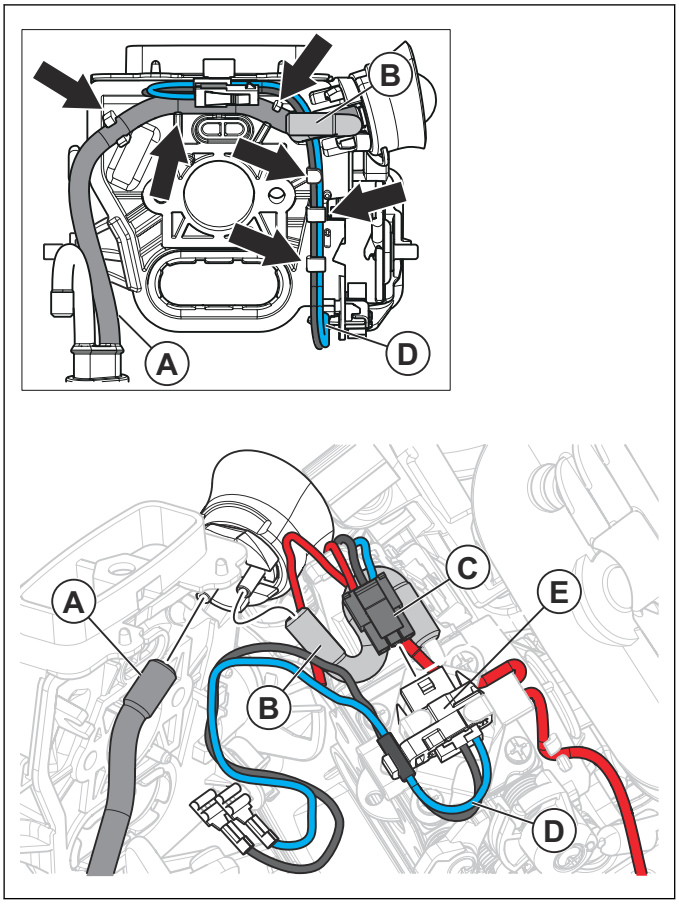
7. Disconnect the air filter holder from the rubber parts on the sides.



8. Remove the air filter holder



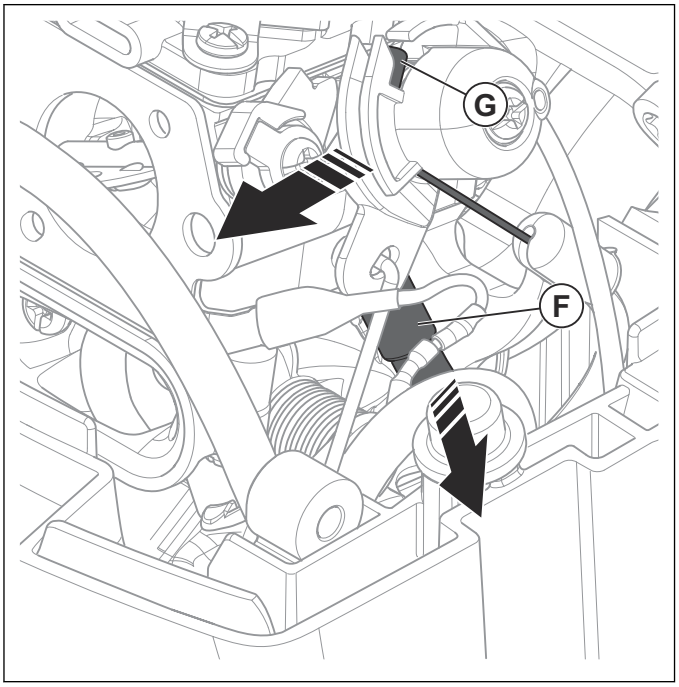
9. Remove the suction hose (B) and return hose (A) from the air purge bulb. Remove the cable connector (C) from the contact clamp (E).



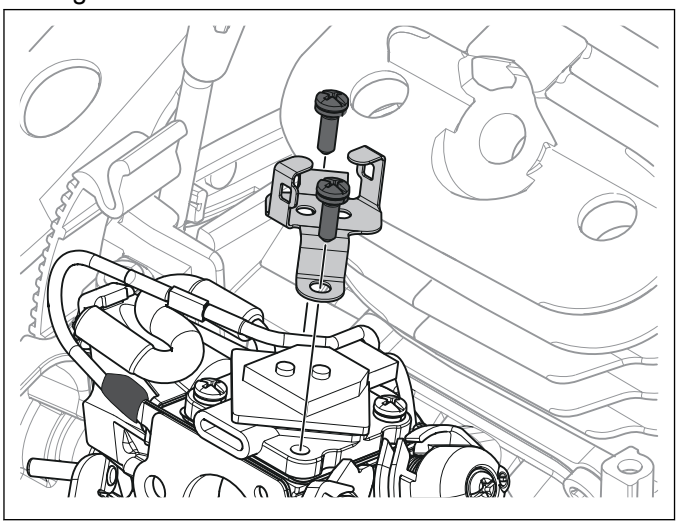

**Note:** Make sure that you remember the position of the return hose and cabling on the air filter holder.

10. Remove the contact clamp (E) from the bracket on the carburetor and remove the air filter holder.

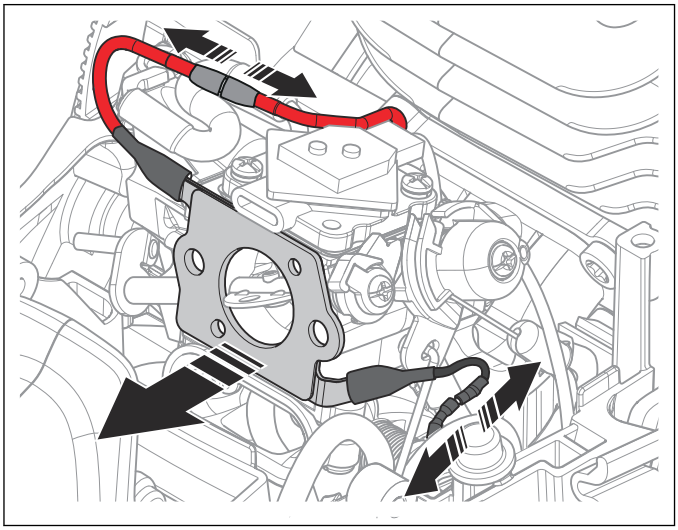
11. Disconnect the throttle wire (G). Remove the fuel hose (F).



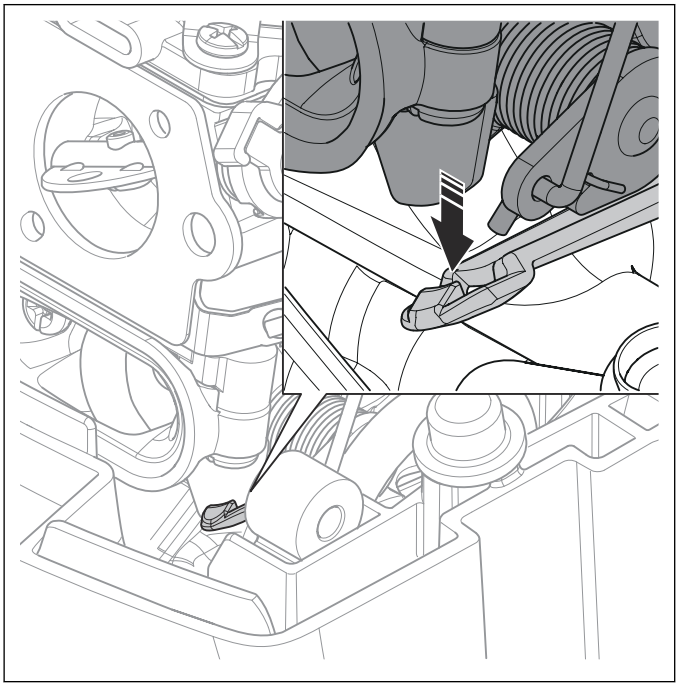

12. Remove the 2 screws. Remove the bracket and the regulator.



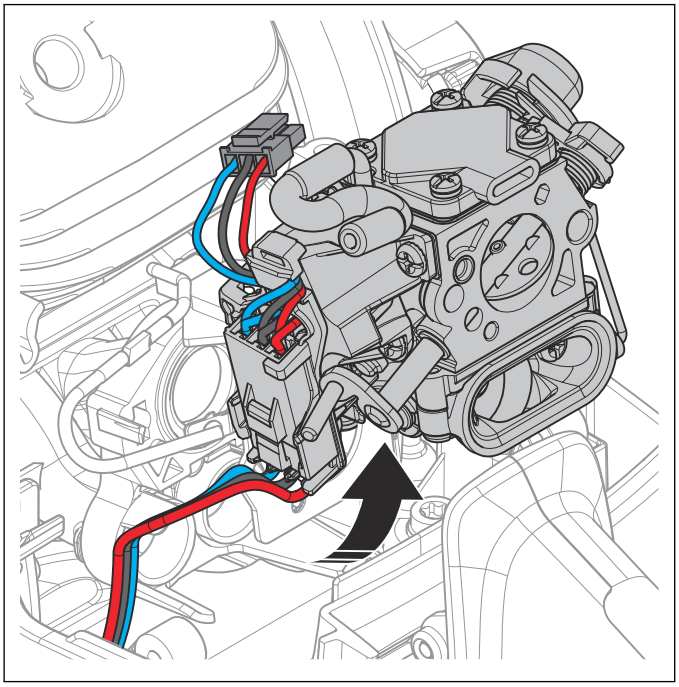
13. Disconnect the thermostat wires. Disconnect the generator wires. Remove the heating elements.



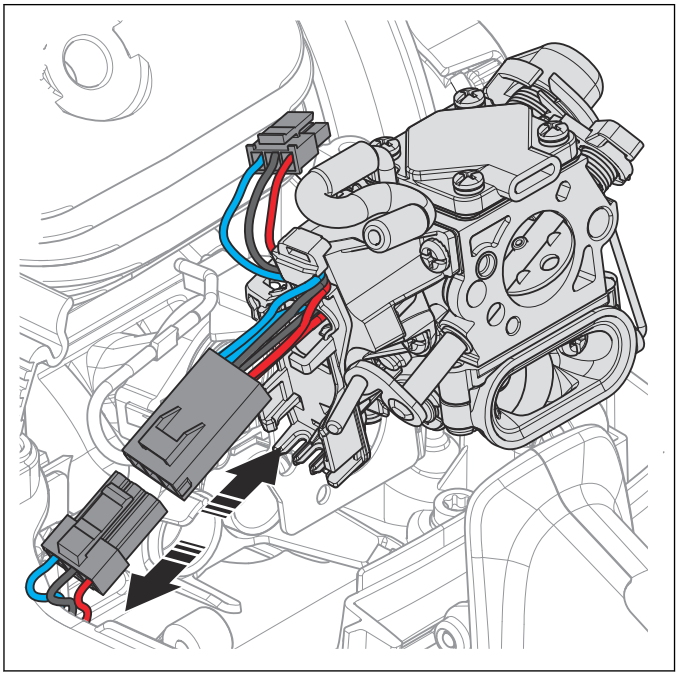
14. Press down the lug to release the carburetor.



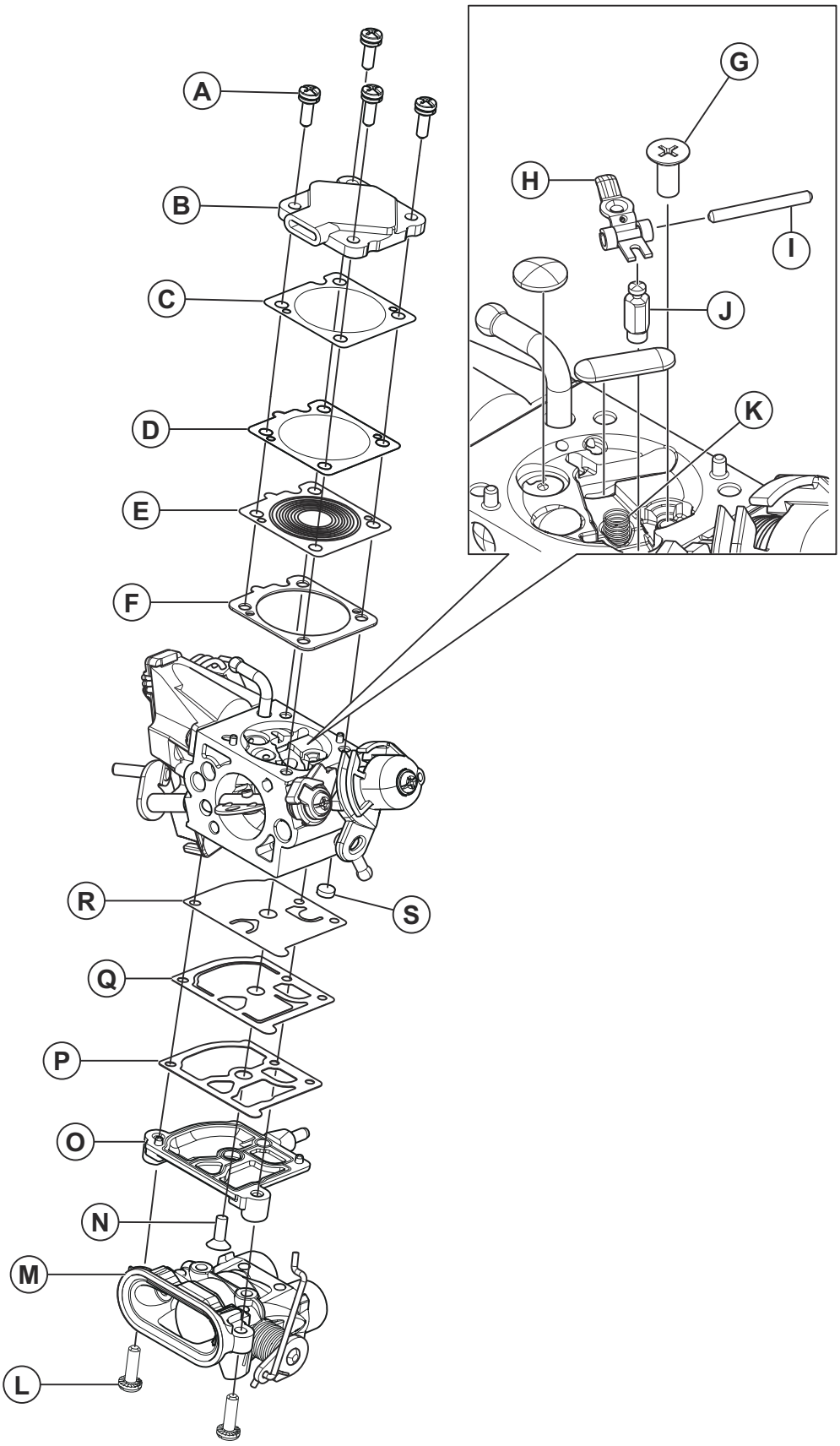
15. Remove the carburetor from the flange.



16. Disconnect the cable connectors.



## 8.14.4 Carburetor components



### 8.14.5 To disassemble the carburetor

To get access to the carburetor, refer to *To get access to the carburetor on page 41*.

1. Remove the four screws and washers (A) from the metering cover (B).
2. Remove the gasket (C), metering diaphragm (D), spiral (E) and gasket (F).
3. Remove the screw (G), the inlet needle (J), the metering lever (H), the pin (I) and the spring (K).
4. Remove the two screws (L).
5. Remove the throttle body assembly (M).
6. Remove the screw (N) and pump cover (O).
7. Remove the gasket (P), the boost diaphragm (Q) and the pump diaphragm (R).
8. Remove the fuel screen (S).

### 8.14.6 To clean and examine the carburetor

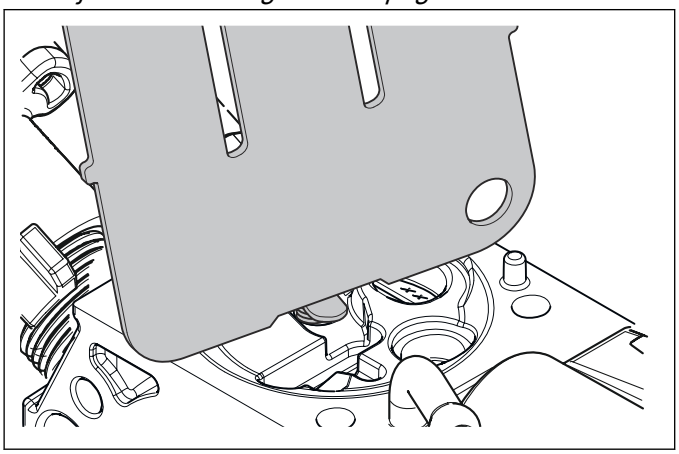
1. Clean all parts in clean gasoline. Use compressed air to dry the gasoline. Point the air through all channels in the carburetor housing and make sure that the channels are not blocked.
2. Make sure that there is no play on the throttle valve and the shafts of the choke valve.
3. Examine all parts for damage and wear. Replace the parts that show sign of damage.
4. Use the Engine Diagnostic Tool to examine the AutoTune™ unit. Refer to *Servicing tools for 545 Mark II, 550 XP® Mark II, 545G Mark II and 550 XP®G Mark II on page 12*.

### 8.14.7 To assemble the carburetor

**CAUTION:** Assemble the carburetor in a clean environment. Contamination can cause damage to the product.

**Note:** When you replace the carburetor, a firmware download is necessary on the new carburetor. With the firmware installed, the carburetor must be approved on the test “autotest” in the CST before use. Refer to the CST for instructions.

1. Lubricate the shaft bearings with a light oil.
2. Attach the fuel screen (S). Use the handle of a small screwdriver.
3. Assemble the pump diaphragm (R), the boost diaphragm (Q), the gasket (P) and the pump cover (O) to the carburetor with the screw (N).
4. Attach the two screws (L) to the throttle body assembly (M).
5. Assemble the inlet needle (J) and the metering lever (H), the pin (I) and the spring (K). Tighten the screw (G).
6. Measure the distance between the metering lever (H) and the gasket surface of the carburetor housing. Refer to *Servicing tools on page 12*. The distance must be 0.55 mm. If it is more or less than 0.55 mm, you must adjust the distance. Refer to *To adjust the metering lever on page 47*.

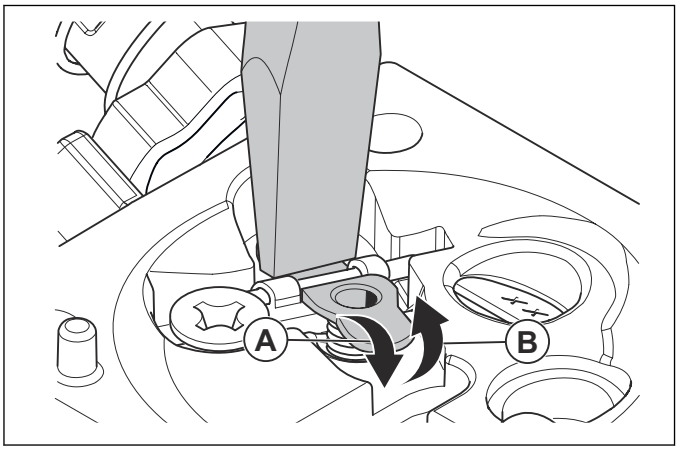


7. Assemble the gasket (C), the metering diaphragm (D), the spiral (E), and the gasket (F) on the carburetor housing. Make sure that you assemble the parts in the correct sequence.
8. Attach the metering cover (B) to the carburetor housing.
9. Do a pressure test of the carburetor. Refer to *To do a pressure test of the carburetor - option 1 on page 47* or *To do a pressure test of the carburetor - option 2 on page 47*.
10. On 545 Mark II and 550 XP® Mark II: Attach the four screws and washers (A) and tighten the screws.
11. On 545G Mark II and 550 XP®G Mark II: Assemble the heating element on the carburetor. Attach the four screws and washers (A) and tighten the screws.

### 8.14.8 To adjust the metering lever

The distance between the metering lever and the gasket surface of the carburetor housing must be 0.55 mm. Adjust the distance if it is more or less than 0.55 mm.

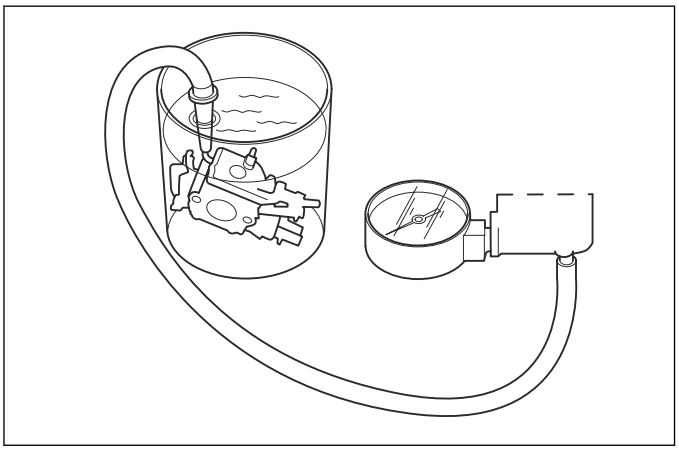
- Move the end of the metering lever down (A) to decrease the distance. Move the end of the metering lever up (B) to increase the distance.




### 8.14.9 To do a pressure test of the carburetor - option 1

Always do a pressure test after you repair the carburetor.

1. Make sure the carburetor is fully assembled.
2. Connect a pressure tester to the carburetor fuel inlet.
3. Put the carburetor into water.



4. Increase the pressure to 0.2 bar.
5. No leakage is permitted. If a leakage occurs, refer to *Troubleshooting leakage on page 47*.

### 8.14.10 Troubleshooting leakage

| Fault | Cause |
|---|---|
| Leakage in the diffuser jets | The needle valve |
| Leakage in the impulse pipe | The pump gasket |
| Leakage in the ventilation hole on the metering unit | The control gasket |

### 8.14.11 To do a pressure test of the carburetor - option 2

1. Block the fuel inlet.
2. Make a 0.2 bar negative pressure to the purge nipple on the carburetor. No leakage is permitted.
3. If there is a leak, use leakage spray and identify where the spray is absorbed. Use leakage spray to show leakages in primary jets, idling needles, measuring cover gaskets and measuring diaphragms, and AutoTune™ gaskets.

### 8.14.12 Adjustment of the AutoTune unit

**Note:** The product adjusts automatically and will be fully adjusted after some minutes of normal operation.

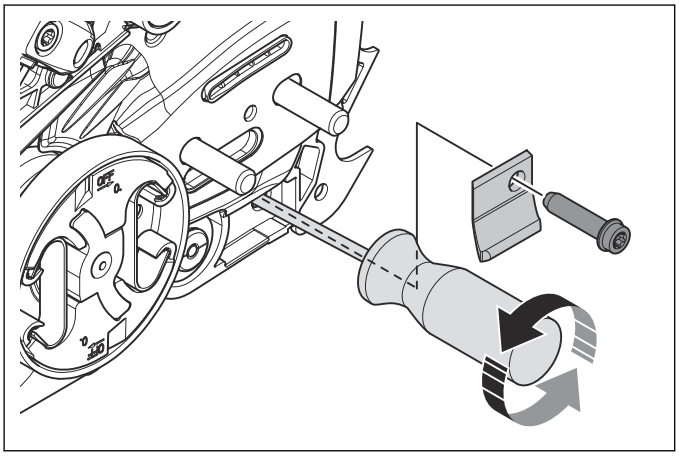
The high speed part is adjusted during loaded operation, such as cutting and felling.

The idle part is adjusted when you operate the product at idle speed.

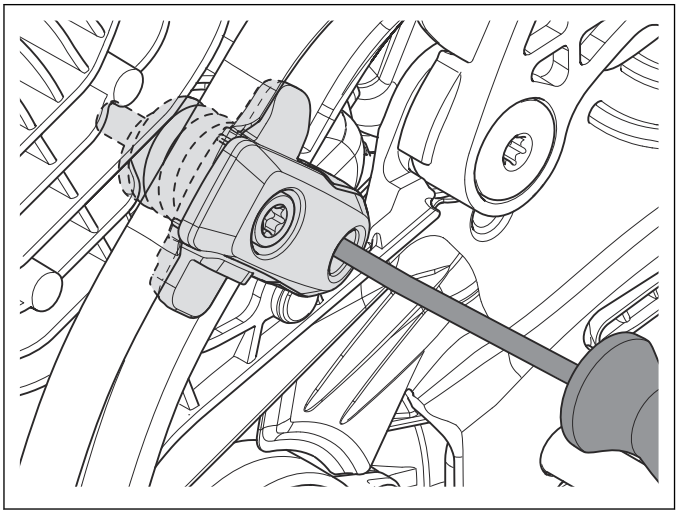
## 8.15 Fuel tank

### 8.15.1 To disassemble the fuel tank on model 545 Mark II and 550 XP® Mark II

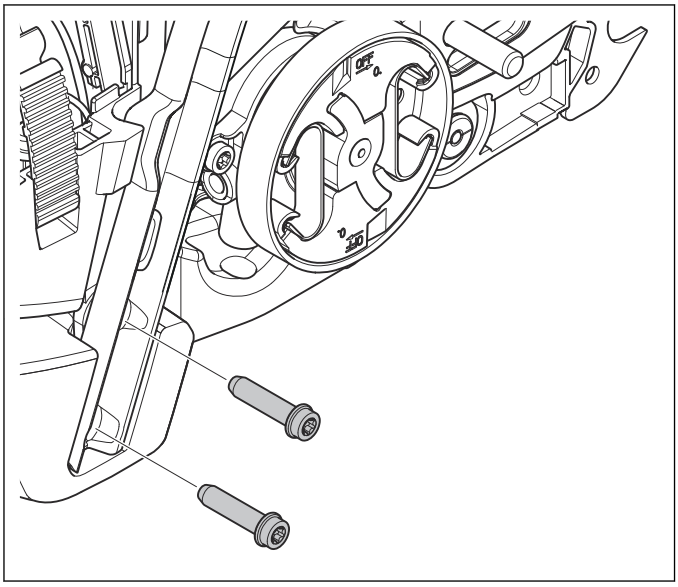
1. Drain the fuel from the tank.
2. Remove the chain brake system. Refer to *To disassemble the chain brake on page 18*.
3. Remove the guide bar and saw chain.
4. Remove the cylinder cover.
5. Remove the spark plug cap and the spark plug.
6. Remove the air filter.
7. Remove the air filter holder and carburetor. Refer to *To disassemble the carburetor on page 46*.
8. Remove the chain catcher to get access to the screw of the vibration damping system. Loosen the screw.



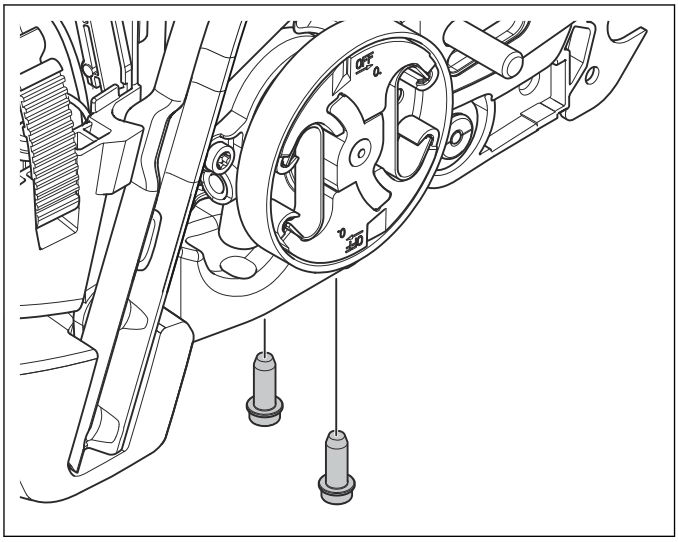
9. Loosen the screw in the vibration damping system.



10. Remove the two screws as the illustration shows.

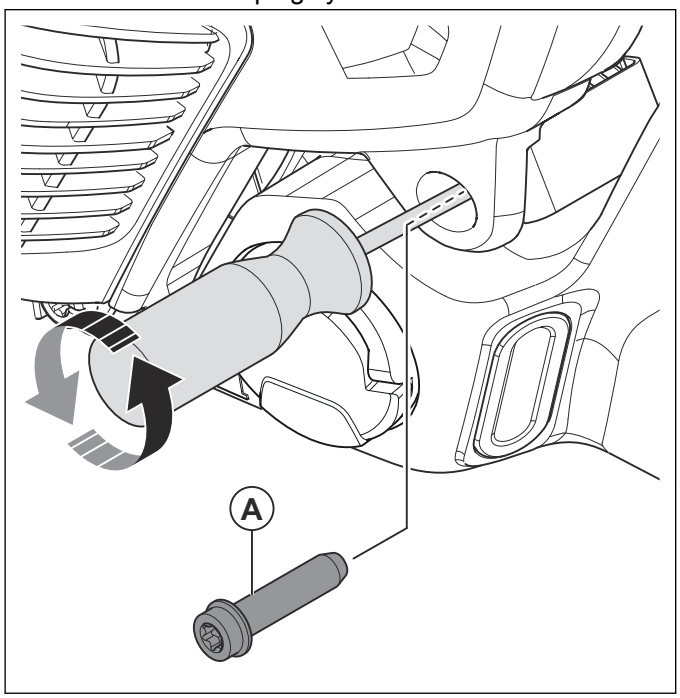


11. Remove the two screws as the illustration shows.

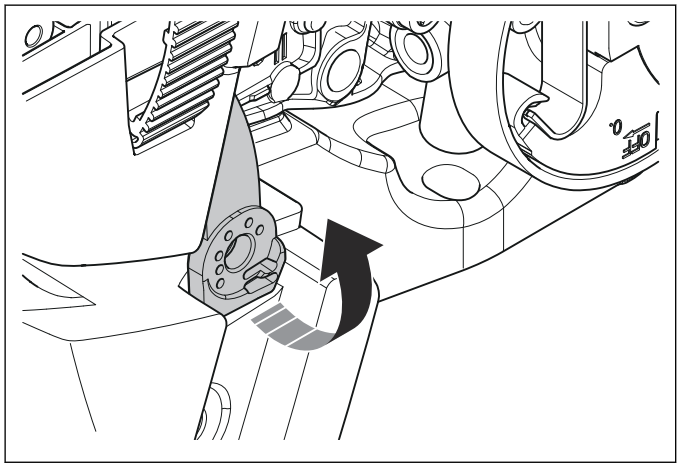


12. Remove the handle from the product.

13. Remove the screw (A) to get access to the screw of the vibration damping system. Loosen the screw of the vibration damping system.

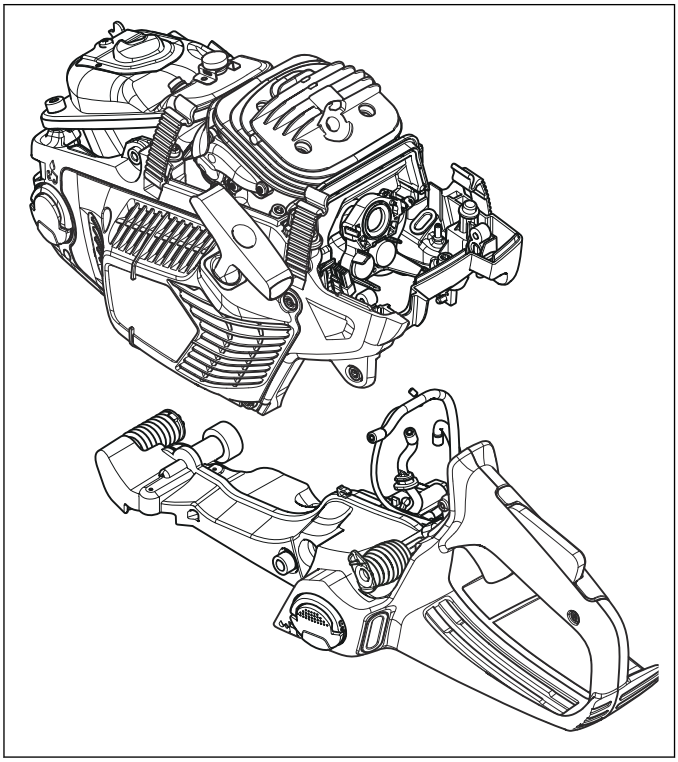



14. Loosen the deflection limiter.



15. Pull the throttle wire through the carburetor bottom plate.

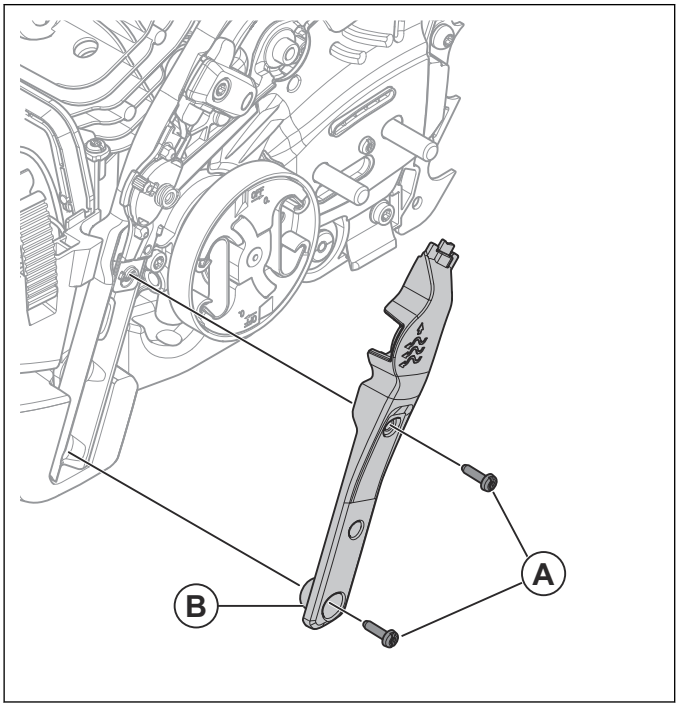
16. Remove the tank unit.



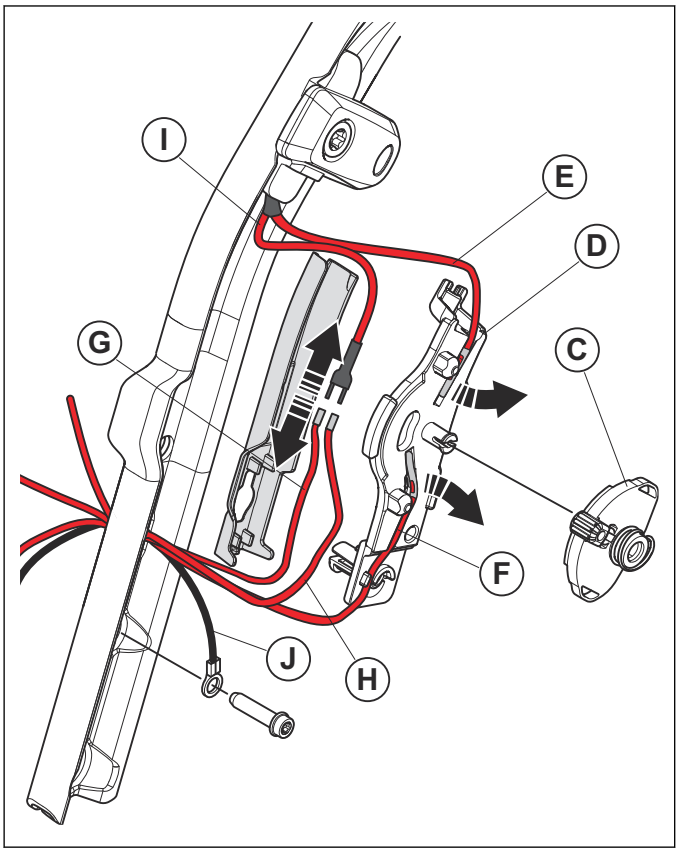
**CAUTION:** Be careful not to cause damage to the hoses when lifting the saw from the tank unit.

### 8.15.2 To disassemble the tank unit on 545G Mark II and 550 XP®G Mark II

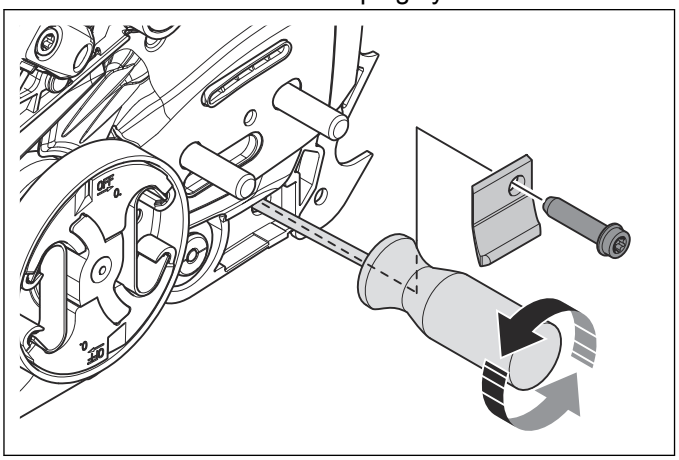
1. Drain the fuel from the fuel tank.
2. Remove the chain brake system. Refer to *To disassemble the chain brake on page 18*.
3. Remove the guide bar and the saw chain.
4. Remove the cylinder cover.
5. Remove the spark plug cap and the spark plug.
6. Remove the air filter.
7. Remove the air filter holder and the carburetor. Refer to *To disassemble the carburetor on page 46*.
8. Loosen the 2 screws (A) in the vibration damping system (B).



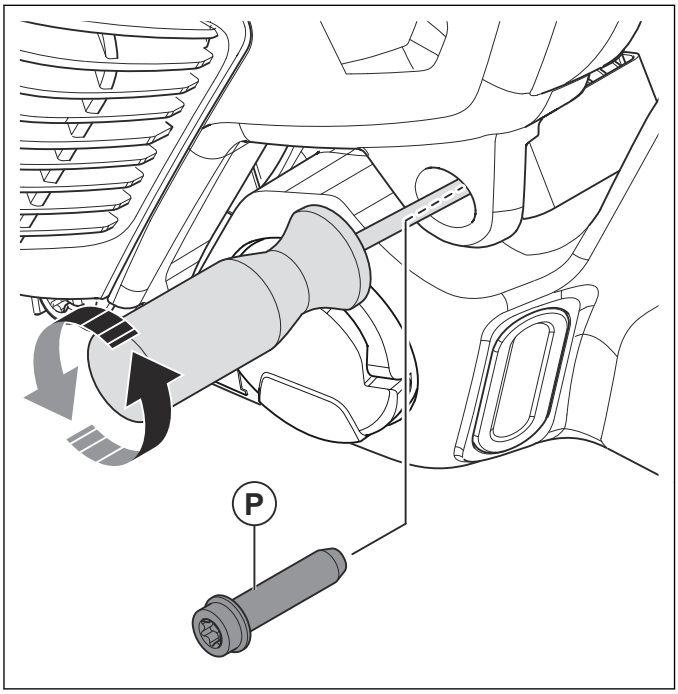

9. Remove the switch (C) from the contact plate (D). Disconnect the wire (E) from the contact plate. Disconnect the handle wire (F) from the contact plate. Remove the contact plate (F). Disconnect the stator wire (G) and the carburetor wire (H) from the wire (I). Disconnect the earth cable (J) from the handle.



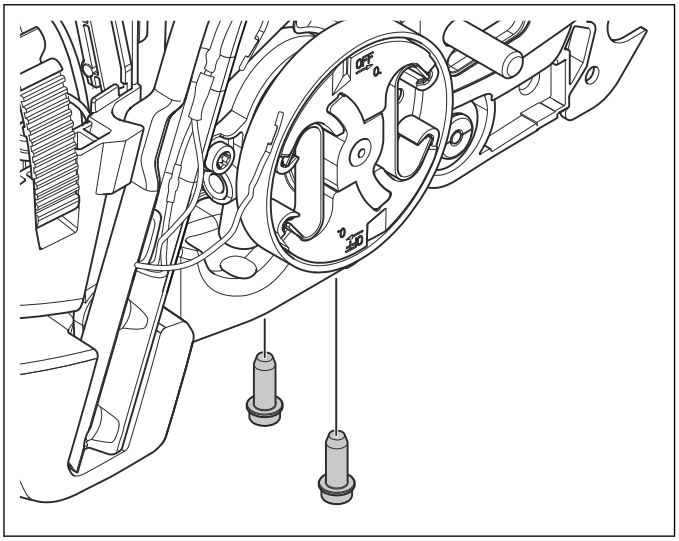
10. Remove the chain catcher to get access to the screw of the vibration damping system. Loosen the screw of the vibration damping system.



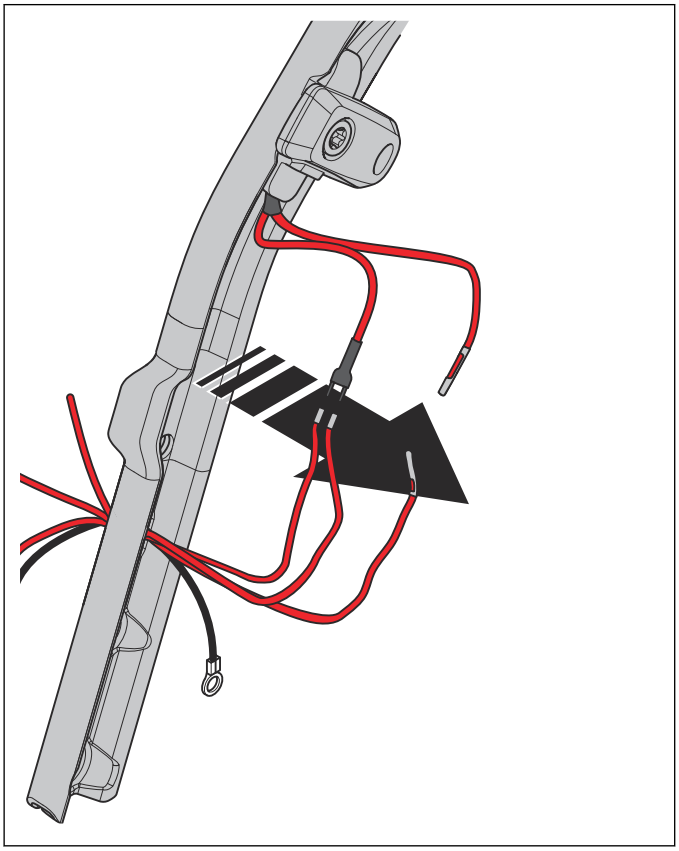
11. Remove the screw (P) to get access to the screw of the vibration damping system. Loosen the screw of the vibration damping system.



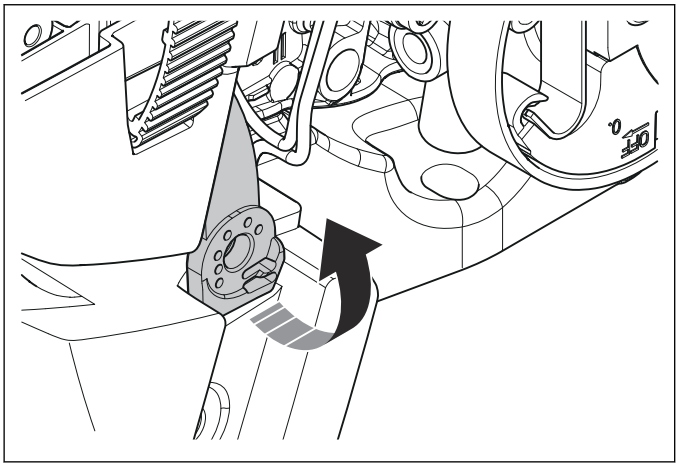

12. Remove the two screws as the illustration shows.



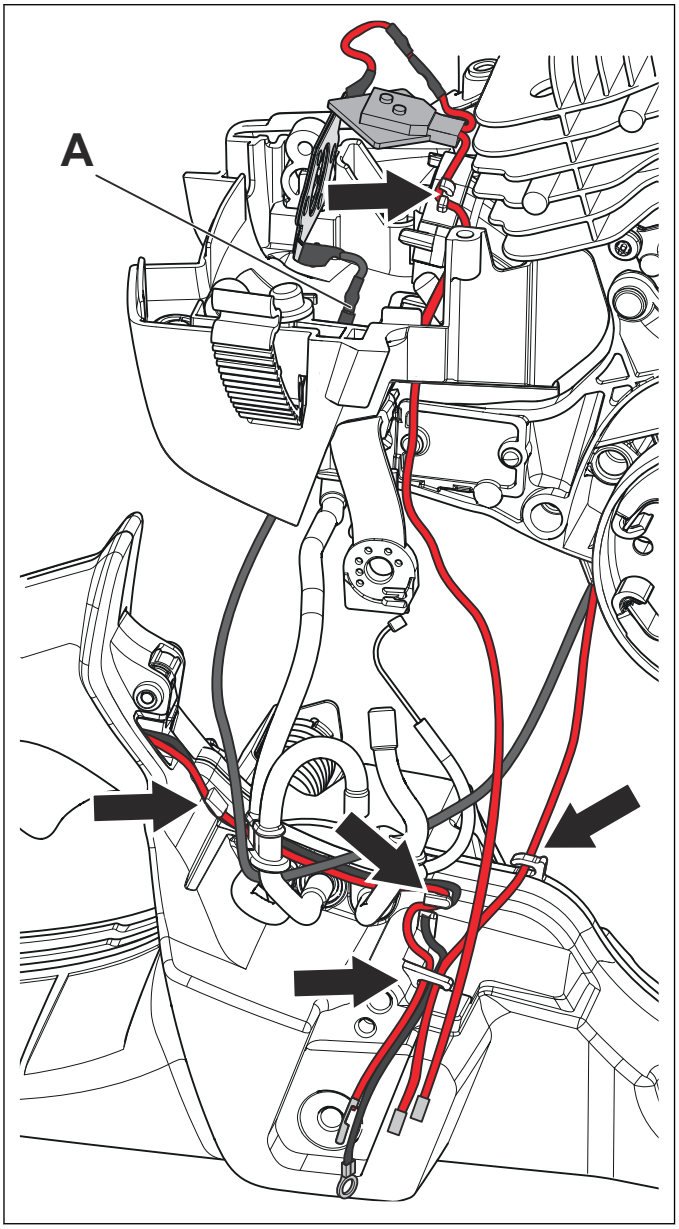
13. Remove the handle from the product.



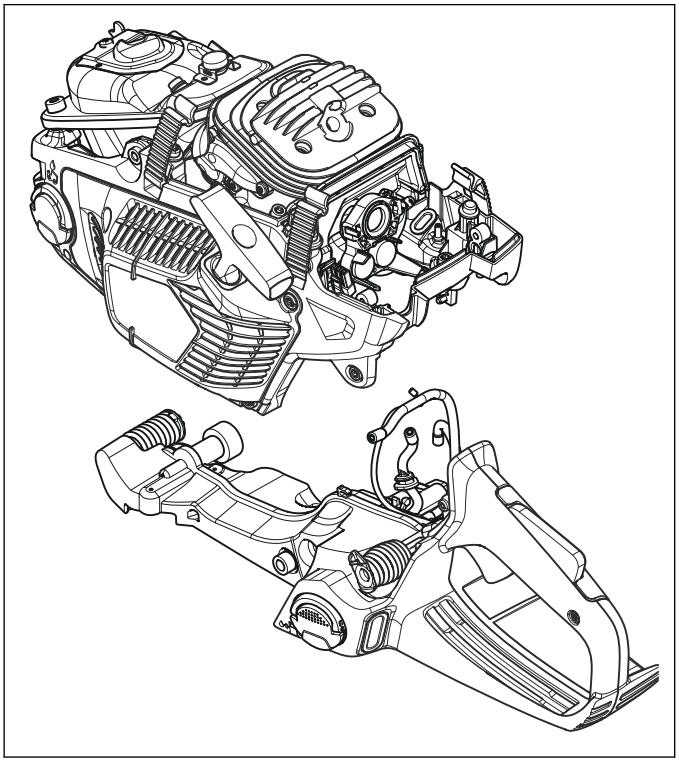
14. Loosen the deflection limiter.



15. If the heating elements of the carburetor has not been removed, disconnect the cables (A). Lift the saw up carefully. Pull down the hoses through the carburetor bottom plate. Pull the throttle wire down through the carburetor bottom plate. Make sure that you understand how the cables are attached.



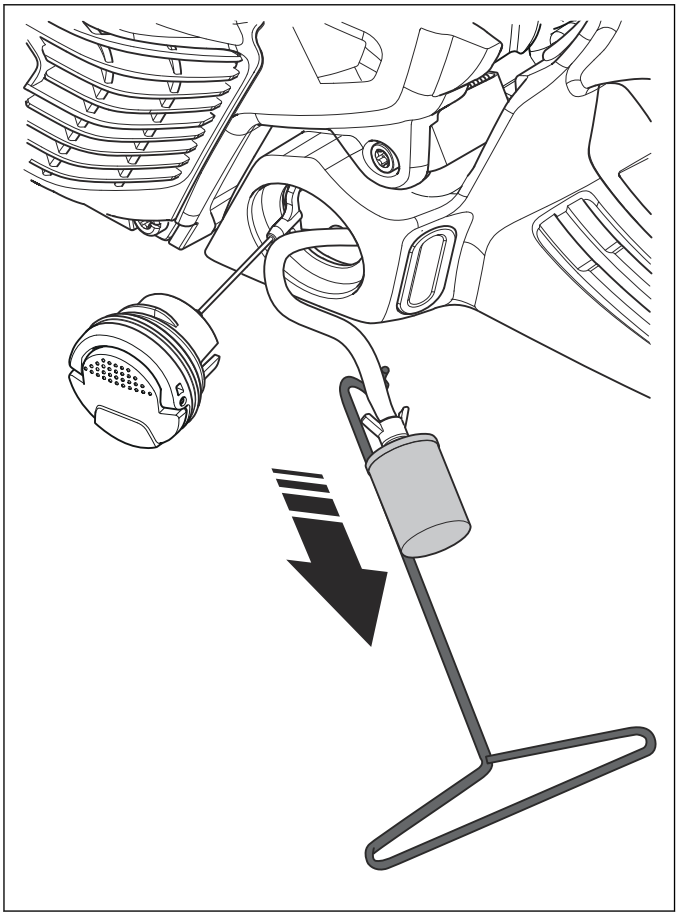

16. Remove the tank unit.



**CAUTION:** Be careful not to cause damage to the hoses when lifting the saw from the tank unit.

### 8.15.3 To replace the fuel filter

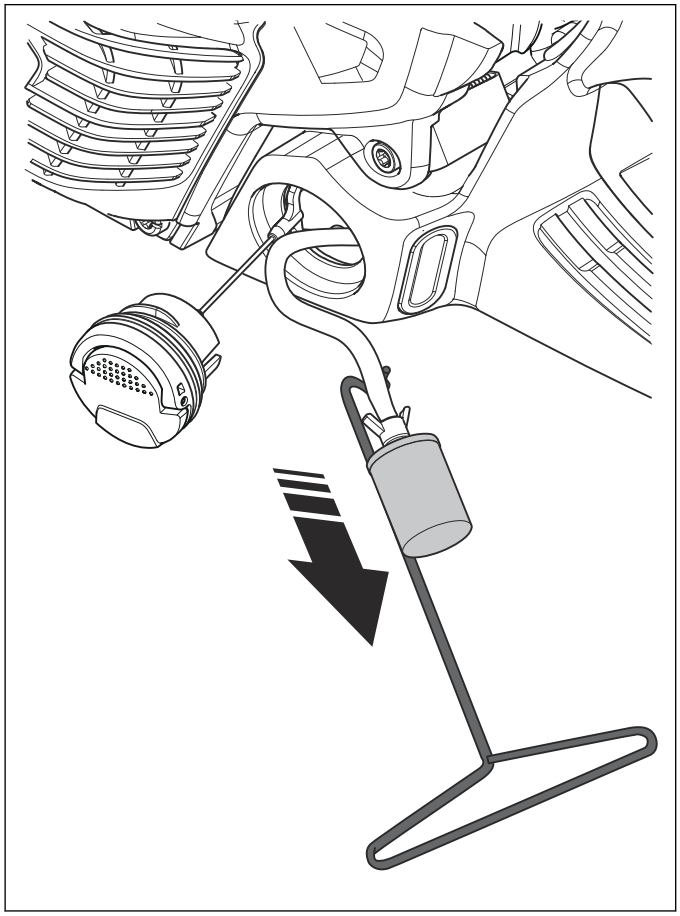
1. Open the fuel tank cap.
2. Use a special hook to pull out the fuel hose and the fuel filter. Refer to *Servicing tools on page 12*



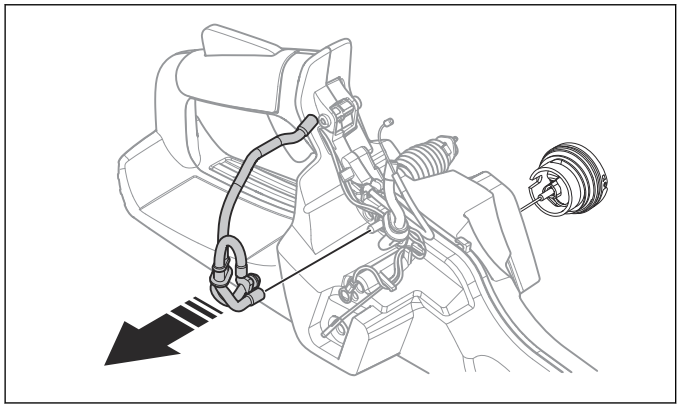
3. Remove the fuel filter.
4. Attach a new fuel filter.
5. Close the fuel tank cap.

### 8.15.4 To replace the fuel hose

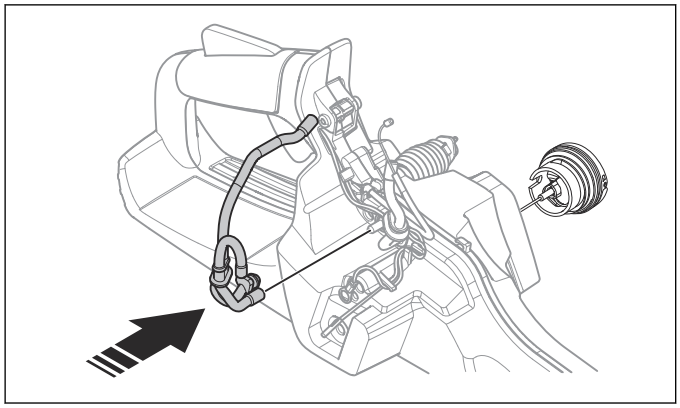
1. Disassemble the fuel tank. Refer to *To disassemble the fuel tank on model 545 Mark II and 550 XP® Mark II on page 47* or *To disassemble the tank unit on 545G Mark II and 550 XP®G Mark II on page 49*.
2. Open the fuel tank cap.
3. Use a special hook to pull out the fuel hose and the fuel filter. Refer to *Servicing tools on page 12*.



4. Remove the fuel filter.
5. Pull out and remove the fuel hose from the fuel tank as the illustration shows.



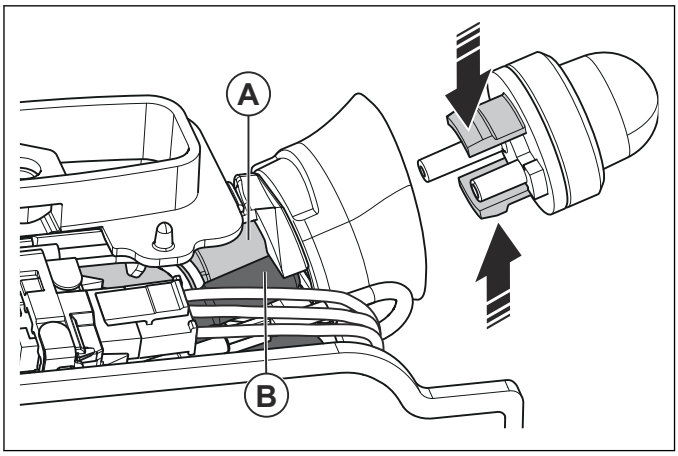
6. Attach the new fuel hose to the fuel tank as the illustration shows.



7. Attach the fuel filter to a new fuel hose.
8. Close the fuel tank cap.
9. Assemble the fuel tank in the opposite sequence to how it was disassembled.

### 8.15.5 To replace the air purge bulb

1. Disassemble the cylinder cover and the air filter.
2. Loosen the suction hose (A) and the return hose (B) from the air purge bulb.
3. Push the snap locks to remove the air purge bulb from the air filter holder.



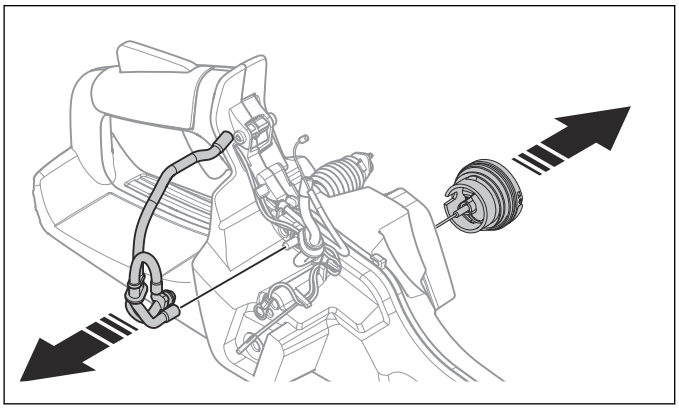

4. Replace the air purge bulb.
5. Assemble the air purge bulb in the opposite sequence to how it was disassembled.

### 8.15.6 Air pressure in the fuel tank

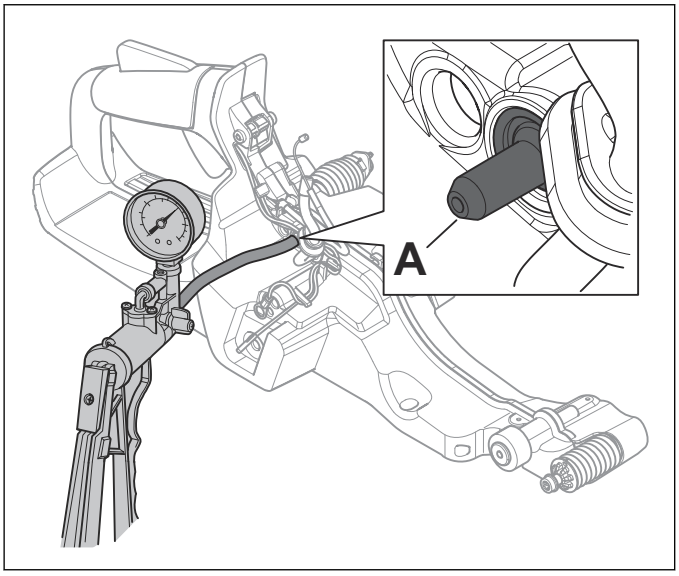
The two-way tank valve has a controlled opening pressure in the two directions. The controlled opening prevents positive pressure or vacuum in the fuel tank, and fuel leakage. Positive pressure, vacuum and fuel leakage decreases engine performance.

#### 8.15.6.1 To do a pressure test of the fuel tank

1. Open the fuel tank cap and drain the fuel from the tank. Pull out and remove the fuel hose as the illustration shows.



2. Connect the pump to the tank valve (A).




3. Do a pressure test of the outwards pressure.
   a) Use the pump in vacuum mode.
   b) Read the indicator, it must be between 0.10-0.45 bar.
4. Do a pressure test of the inwards pressure.
   a) Use the pump in pressure mode.
   b) Read the indicator, it must stop at max. 0.07 bar.
5. Close the fuel tank cap.

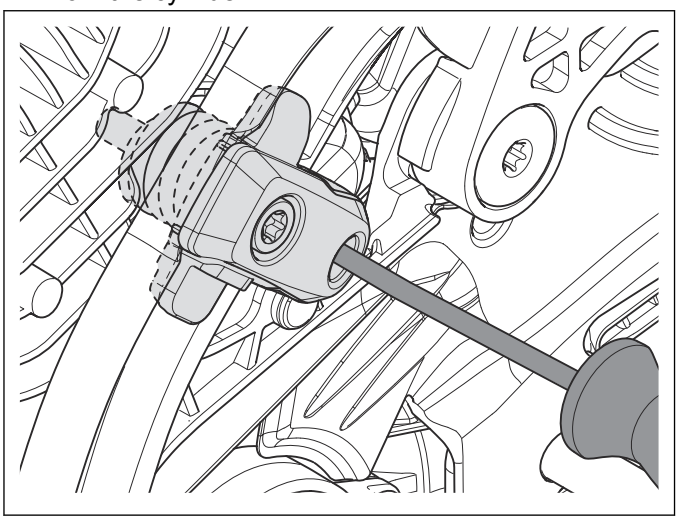
### 8.15.7 To assemble the tank unit

- Assemble the tank unit in the opposite sequence to how it was disassembled.

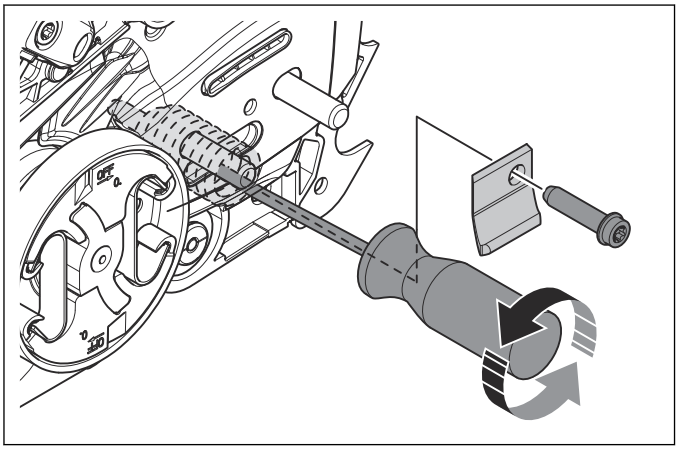
## 8.16 Vibration damping system

### 8.16.1 To disassemble the vibration damping system

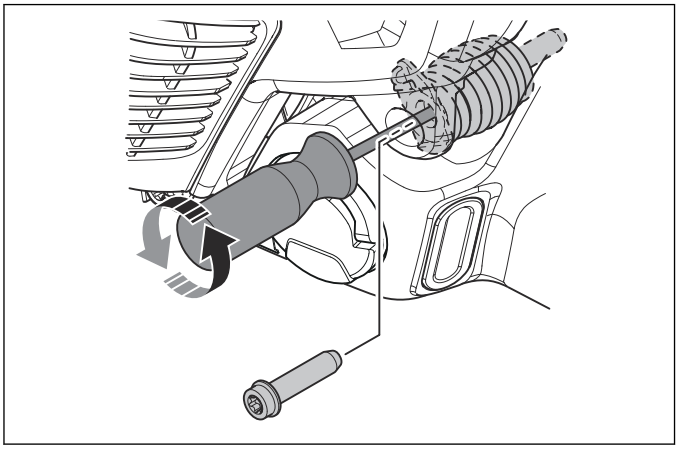
1. Use a Torx to remove the vibration damping unit from the cylinder.



2. Remove the chain catcher to get access to the vibration damping system. Use a Torx to remove the vibration damping unit.



3. Remove the screw to get access to the vibration damping system. Use a Torx to remove the vibration damping unit.



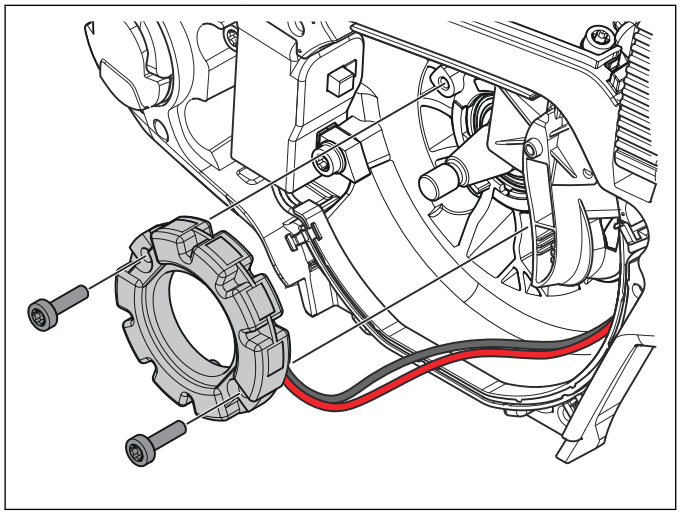
### 8.16.2 To assemble the vibration damping system

1. Assemble the vibration damping system in the opposite sequence to how it was disassembled.

## 8.17 Generator

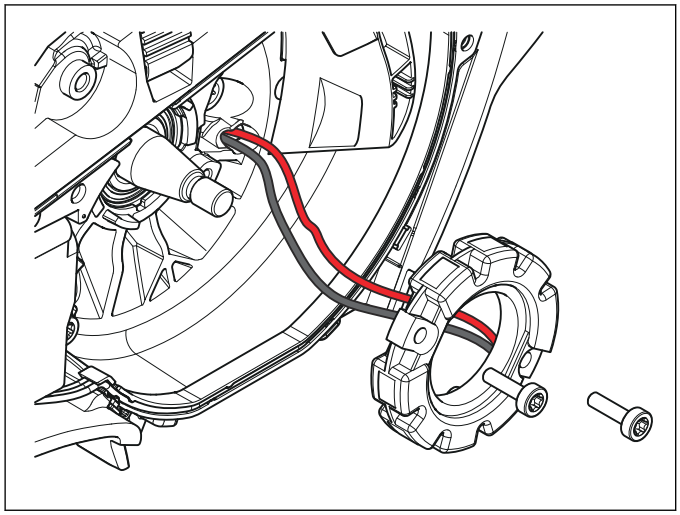
### 8.17.1 To disassemble the generator

1. Remove the tank unit. Refer to *To disassemble the tank unit on 545G Mark II and 550 XP®G Mark II on page 49*.
2. Remove the starter unit. Refer to *To disassemble the starter on page 29*.
3. Remove the flywheel. Refer to *To disassemble the flywheel on page 35*.
4. Remove the screws. Remove the generator and the wires.



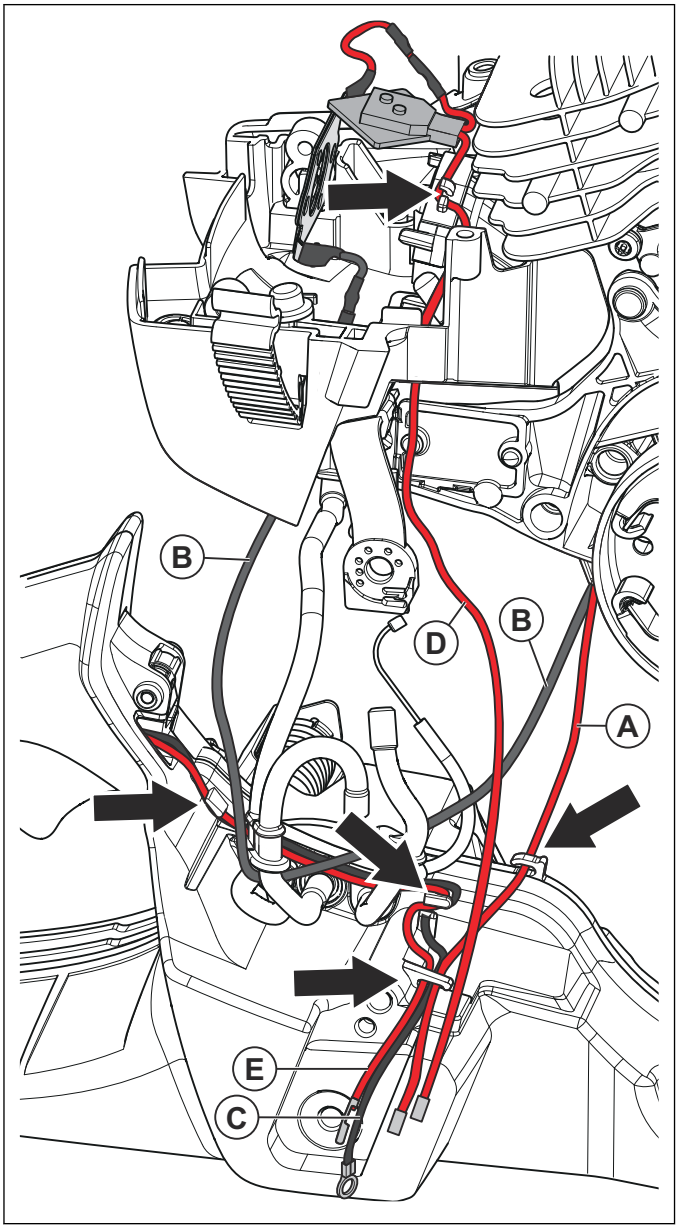
### 8.17.2 To assemble the generator

1. Pull the cables through the hole in the crankcase.



2. Attach the generator to the crankcase. Tighten the screws to the correct torque. Refer to *Servicing data on page 9*.
3. Attach the flywheel.
4. Attach the starter unit.

5. Attach the cables.

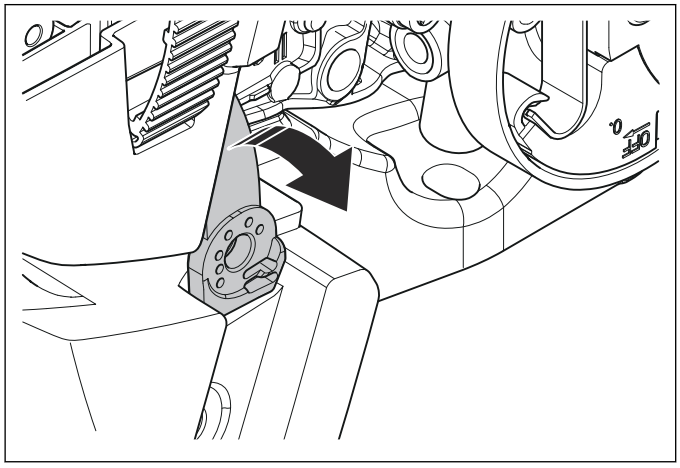



a) Attach the cable (A) between the generator and the heating element.
b) Attach the cable (B) between the generator and the carburetor.
c) Attach the cable (C) between the rear handle and the carburetor.
d) Attach the cable (D) between the heating element and the carburetor.
e) Attach the cable (E) between the heating element and the rear handle.

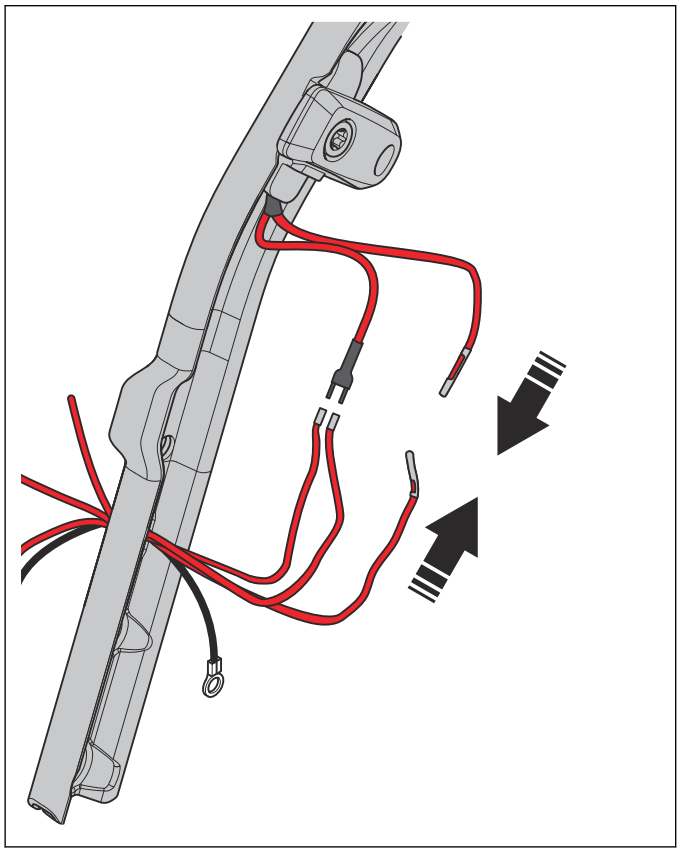
6. Pull up the hoses through the carburetor bottom plate. Pull up the throttle wire through the carburetor bottom plate.

7. Put the product on the tank unit.

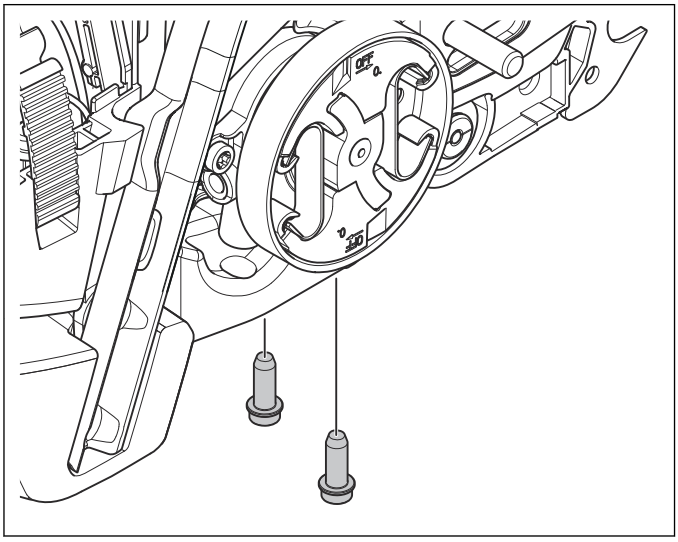
8. Attach the deflection limiter.



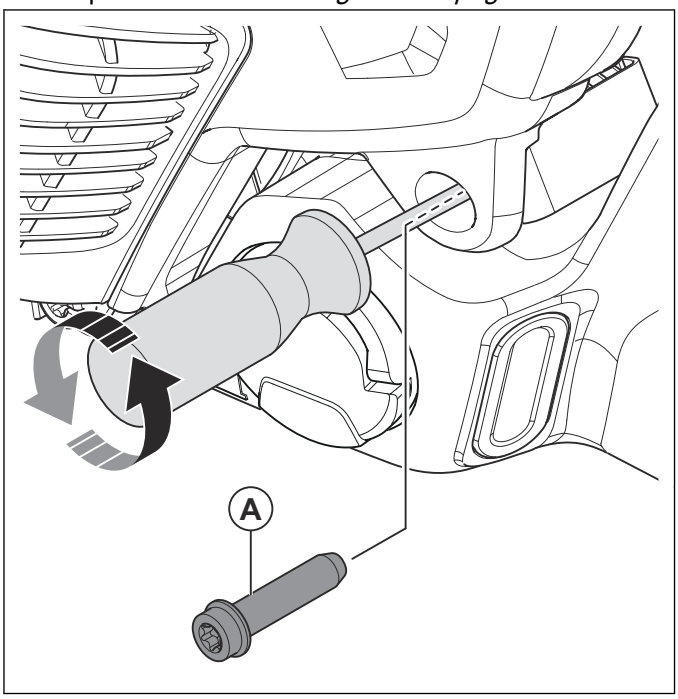
9. Attach the handle to the product and the tank unit. Pull the wires through the hole in the handle and connect them.



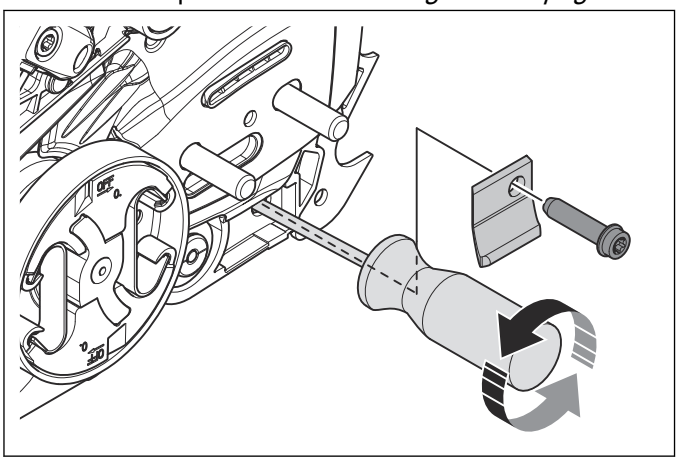
10. Attach the 2 screws to the handle.



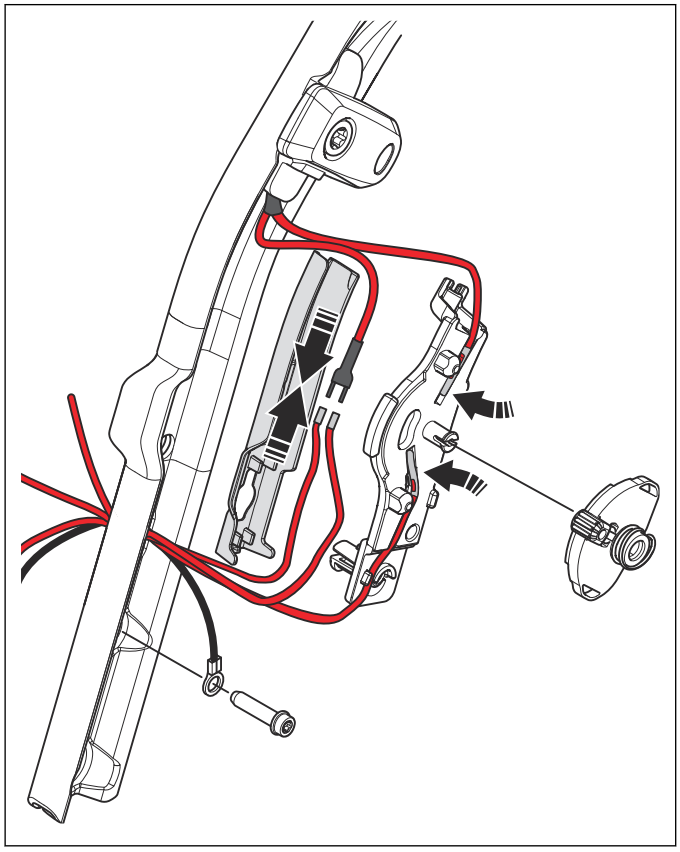
11. Tighten the screw in the vibration damping unit. Attach the screw. Tighten the 2 screws to the correct torque. Refer to *Servicing data on page 9*.



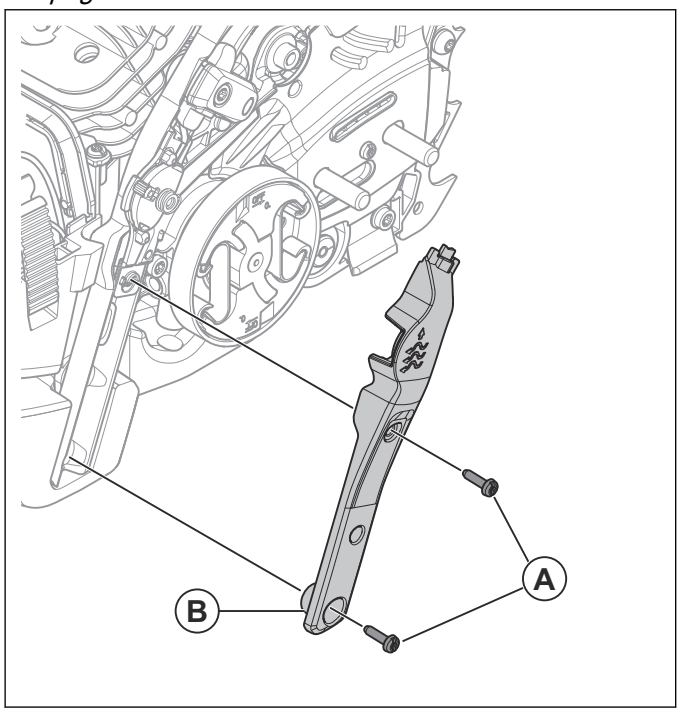

12. Tighten the screw in the vibration damping unit. Attach the chain catcher. Tighten the 2 screws to the correct torque. Refer to *Servicing data on page 9*.



13. Attach the wires as the illustration shows.



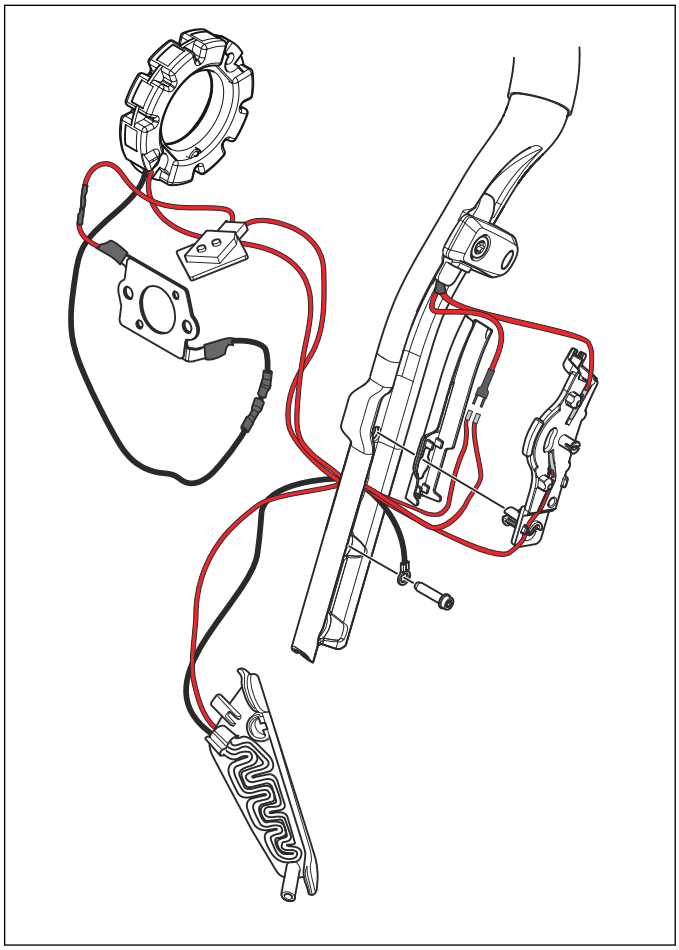
14. Attach the handle cover (B. Tighten the 2 screws (A) to the correct torque. Refer to *Servicing data on page 9*.




15. Attach the air filter holder and the carburetor. Refer to *To assemble the carburetor on page 46*.
16. Attach the air filter.
17. Attach the guide bar and the saw chain. Refer to the operator's manual.
18. Attach the chain brake system.
19. Attach the spark plug and the spark plug cable.

20. Attach the cylinder cover.

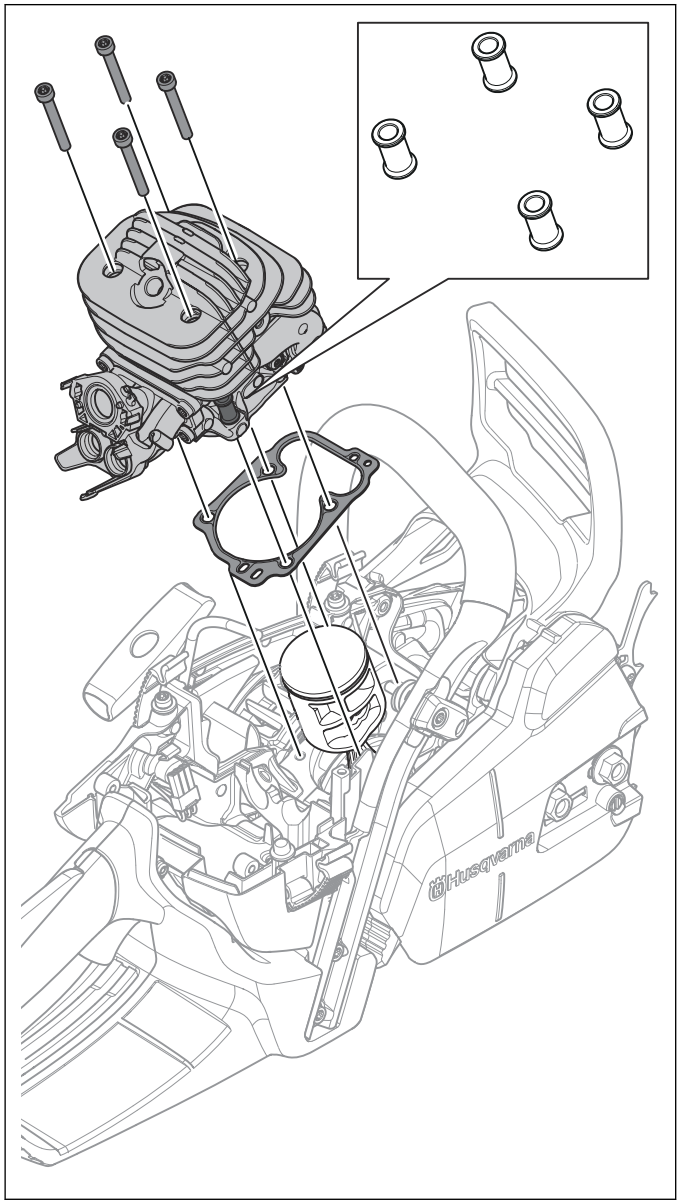
### 8.17.3 Product overview of the generator cables



## 8.18 Cylinder and piston

### 8.18.1 To disassemble the cylinder and piston

1. Remove the cylinder cover.
2. Remove the spark plug cap.
3. Remove the carburetor.
4. Remove the muffler and heat deflector.
5. Remove the 4 screws and lift the cylinder. Remove the sleeves for the 4 screws.



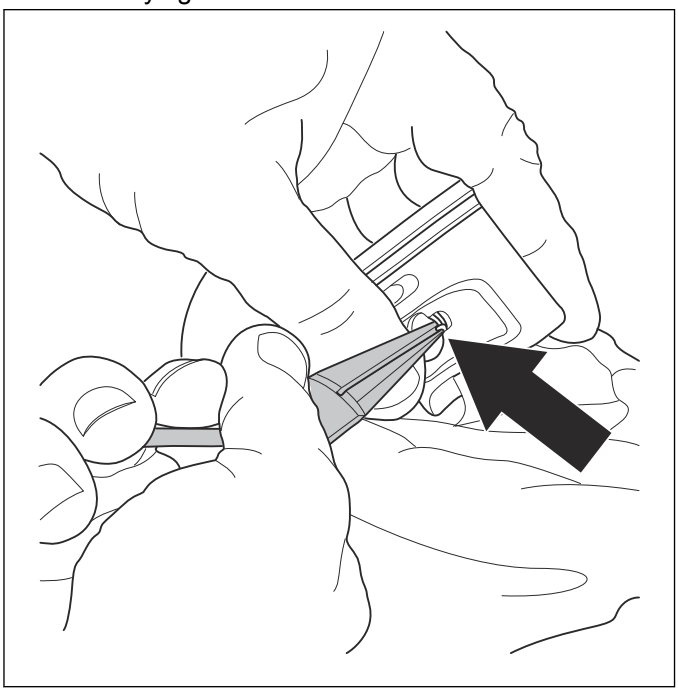

**CAUTION:** Make sure that the piston does not move. The guide pin can cause damage to the piston if it falls.

6. Remove the cylinder base gasket.

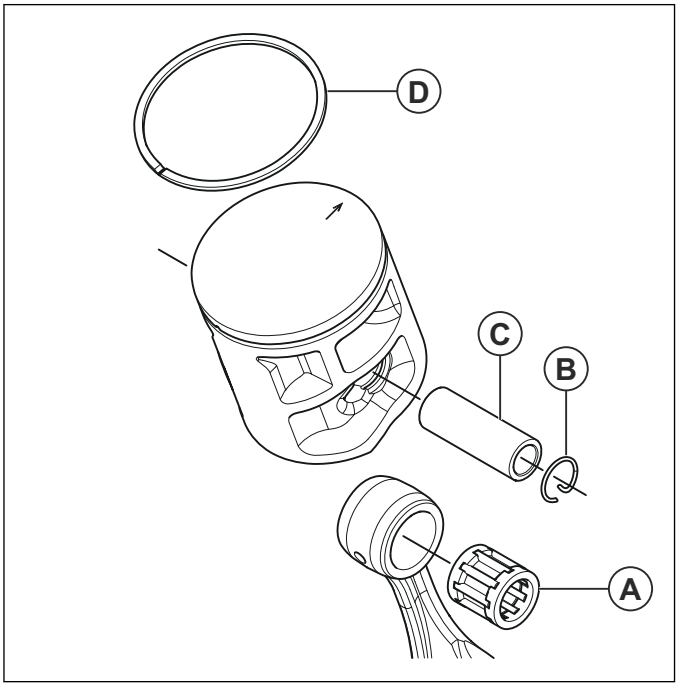
**CAUTION:** Make sure that no dirt or unwanted particles go into the crankcase.

7. Put a cover on the crankcase opening.

8. Use a long-nosed pliers to remove the G circlip from the pin. Keep your thumb over the circlip to prevent it from flying out.



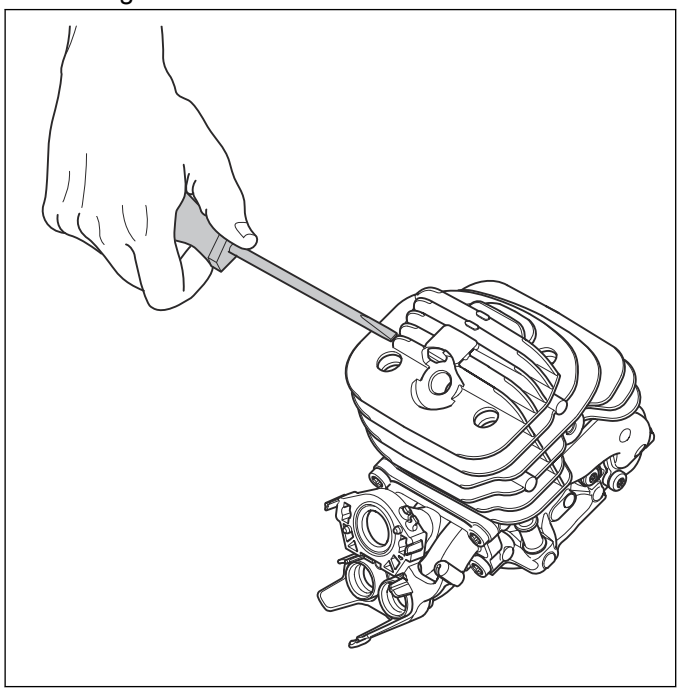
9. Carefully remove the G circlip (B) for the piston pin (C). Make sure that you do not cause damage to the groove.




10. Push out the piston pin (C). Lift off the piston.
11. Remove the needle bearing (A). Replace the needle bearing if it is damaged or worn.
12. Remove the piston ring (D).

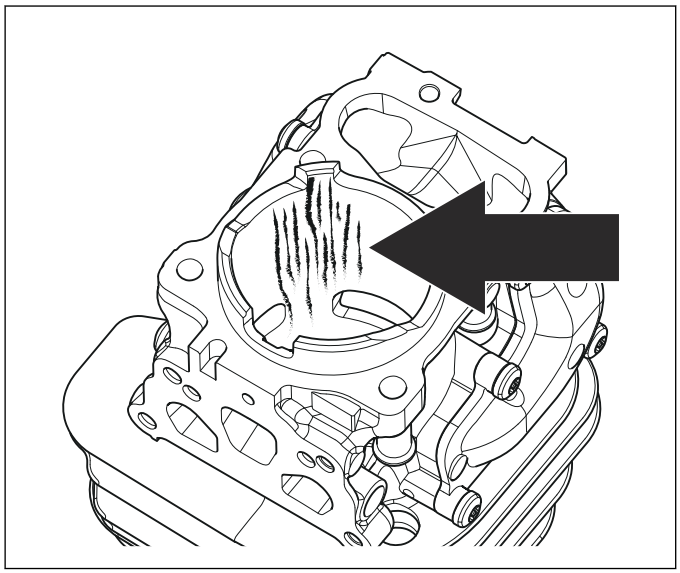
### 8.18.2 To clean the cylinder and piston

1. Clean the piston crown.
2. Clean the top of the cylinder bore.
3. Clean the cylinder exhaust port.
4. Clean the bottom of the cylinder and the bottom of the crankcase. Remove all gasket particles and dirt particles.
5. Use a screwdriver to remove dirt particles from the cooling fins.



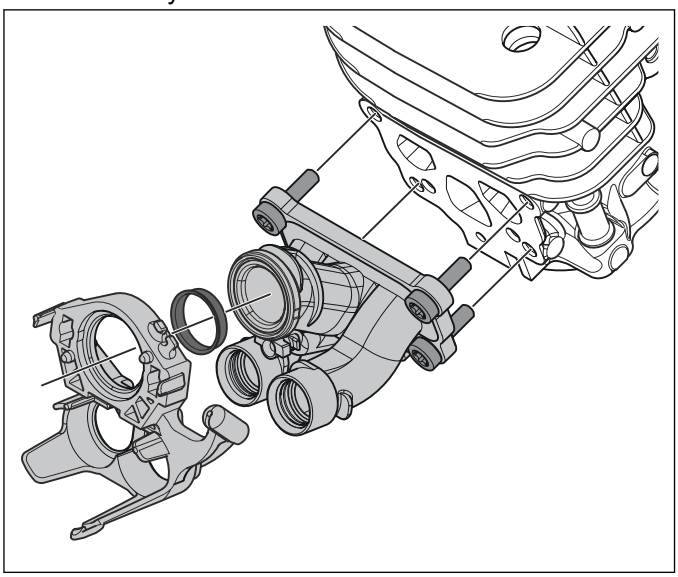
### 8.18.3 To examine the cylinder

1. Make sure that the surface layer of the cylinder is not worn, especially in the top end of the cylinder.
2. Make sure that the cylinder does not have score marks.



### 8.18.4 To examine the inlet pipe

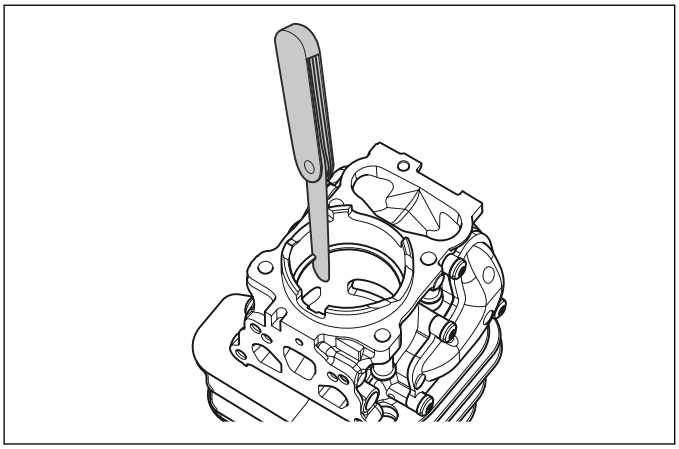
1. Remove the 4 screws and remove the inlet pipe from the cylinder.



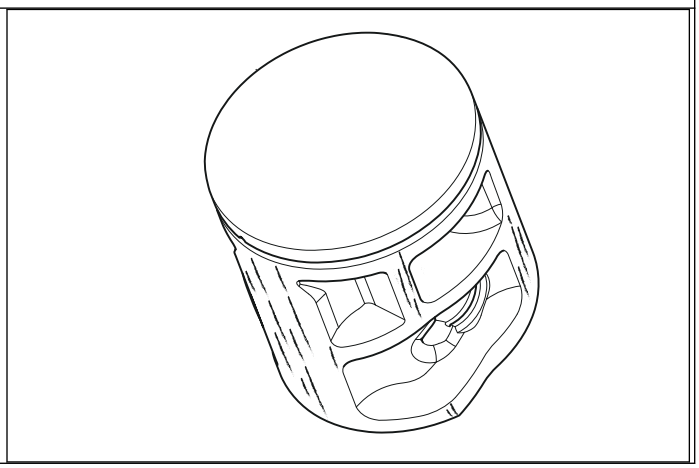
2. Remove the flange and support sleeve from the inlet pipe.
3. Examine the parts for damage. Replace damaged parts.

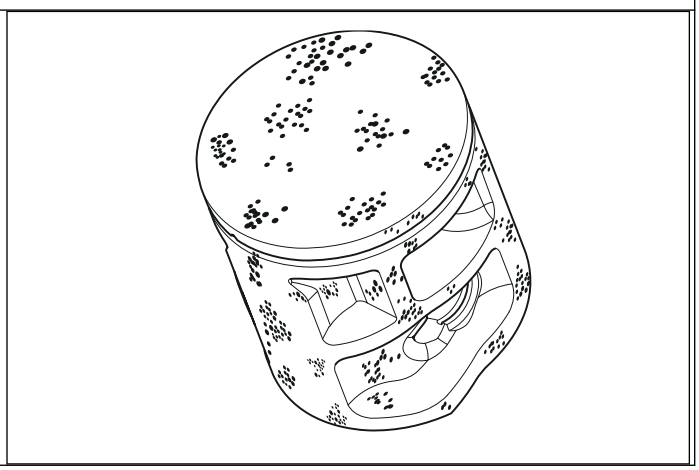
### 8.18.5 To examine the piston

1. Make sure that the piston pin bearing is not damaged.
2. Make sure that the piston pin does not have damages on the running surface for the bearing.
3. Make sure that the piston ring can move freely in the groove.
4. Put the piston ring in the cylinder and measure the ring gap with a feeler gauge. The space must not be more than 1 mm.



### 8.18.6 Piston damages

| Score marks on the piston | |
|---|---|
| Incorrect carburetor setting. Too high speed. |  |
| Too low octane fuel. | |
| The fuel has a too low octane grade. | |

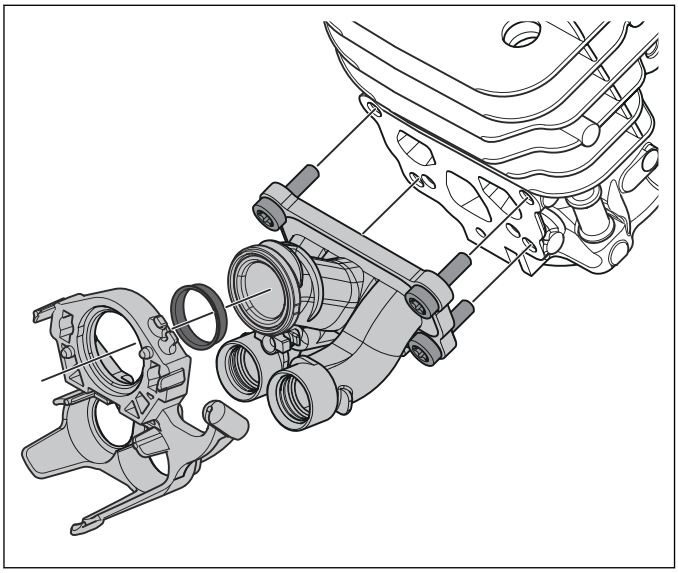
| Carbon build-up | |
|---|---|
| Incorrect carburetor setting. Too low speed. |  |
| Too much or incorrect oil in the fuel. | |
| | |

### 8.18.7 To examine the piston rings

1. Examine the piston rings for damage.
2. Replace damaged piston rings.

### 8.18.8 To assemble the cylinder and piston

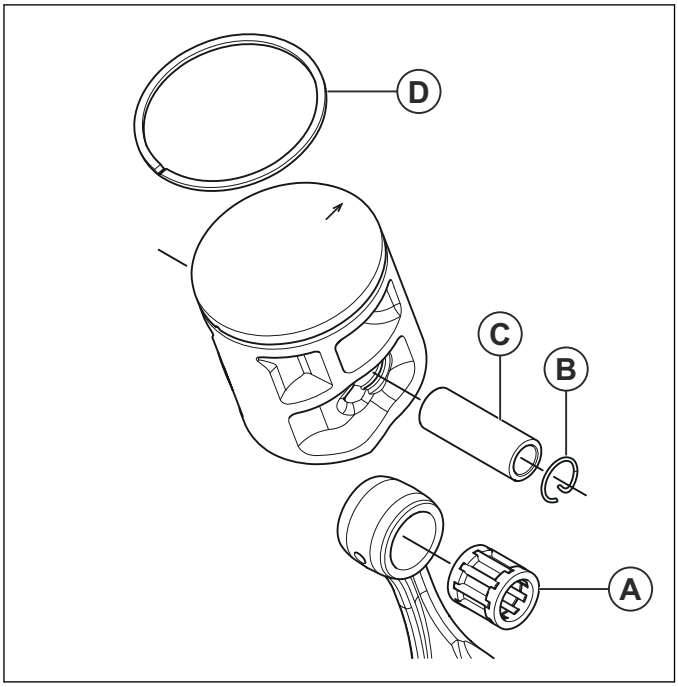
1. Attach the flange to the inlet pipe. Attach the inlet pipe to the cylinder. Tighten the screws to the correct torque. Refer to *Servicing data on page 9*.



2. Lubricate the needle bearing (A) and put it into the connecting rod. Make sure the bearing moves freely in the connecting rod.
3. Attach the piston. The arrow at the piston top must be turned to the exhaust port. Push in the piston pin (C) and attach the G circlip (B).

**Note:** Always use a new G circlip.

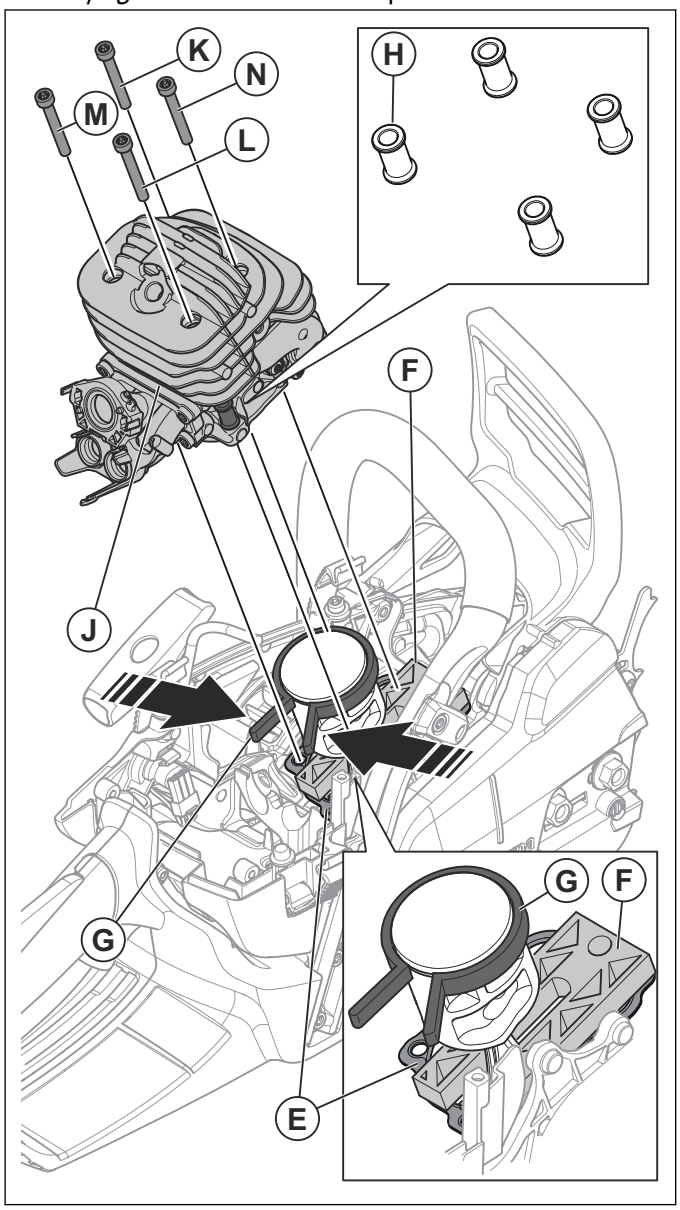
4. Lubricate the piston and piston ring (D).
5. Carefully attach the piston ring (D) on the piston. Make sure that you do not cause damage to the piston ring or the piston.




6. Put a new cylinder base gasket (E) on the crankcase.

**Note:** Make sure that the gasket has not been used and does not have signs of damage or wear.

7. Attach the support plate (F) from the piston assembly kit.
8. Use a clamp (G) from the piston assembly kit to compress the piston ring and carefully push the piston into the cylinder opening. Make sure that the four sleeves (H) are in the correct position and attach the cylinder (J) to the crankcase. Tighten the screw (K). Tighten the screw (L). Tighten the screw (M). Tighten the screw (N). Refer to *Servicing data on page 9* for the correct torque.

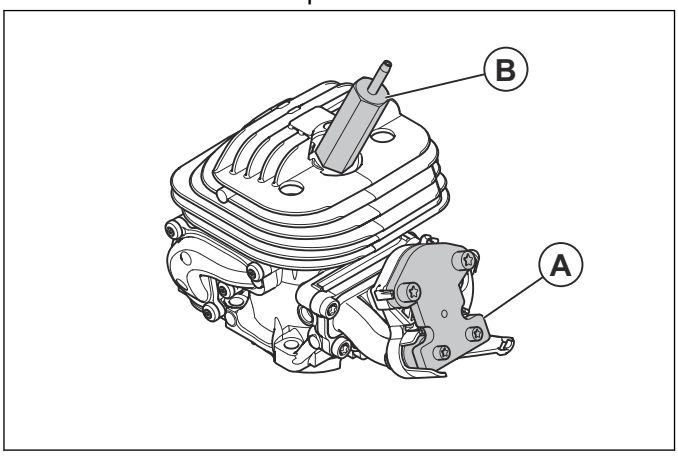



**Note:** When you operate the product, the torque of the screws (K), (L), (M) and (N) decreases.

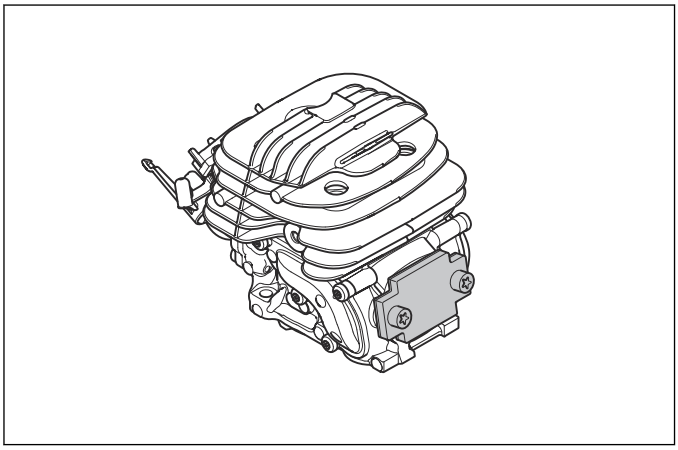
9. Assemble the remaining parts in the opposite sequence to how they were disassembled.

### 8.18.9 To do a pressure test of the product

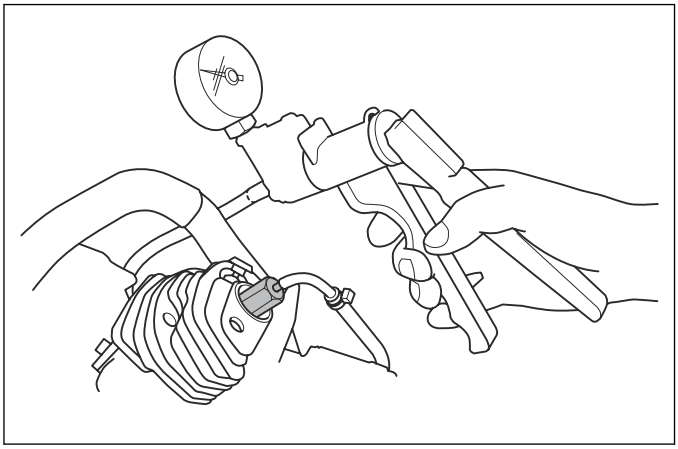
1. Remove the cylinder cover.
2. Remove the air filter.
3. Remove the air filter holder and the carburetor. Refer to *To disassemble the carburetor on page 46*.
4. Remove the spark plug.
5. Attach the inlet cover (A) and the spark plug adapter (B). Refer to *Servicing tools on page 12* for the correct cover and adapter.




6. Loosen the screws on the muffler and attach the outlet cover. Refer to *Servicing tools on page 12* for the correct cover. Tighten the screws for the muffler.



7. Connect the pressure gauge tool to the nipple on the spark plug adapter. Refer to *Servicing tools on page 12*.



8. Increase the pressure to 0.8 bar. Wait for 30 seconds. Make sure the pressure does no decrease to less than 0.6 bar. Remove the cover from the muffler and the carburetor, tighten the bolts to the correct torque. Remove the pressure test nipple and attach the spark plug.

**CAUTION:** Make sure the inlet manifold is attached correctly after the pressure test. An incorrectly attached inlet manifold will cause damage to the product.

## 8.19 Crankshaft and crankcase

### 8.19.1 To get access to the crankshaft and crankcase

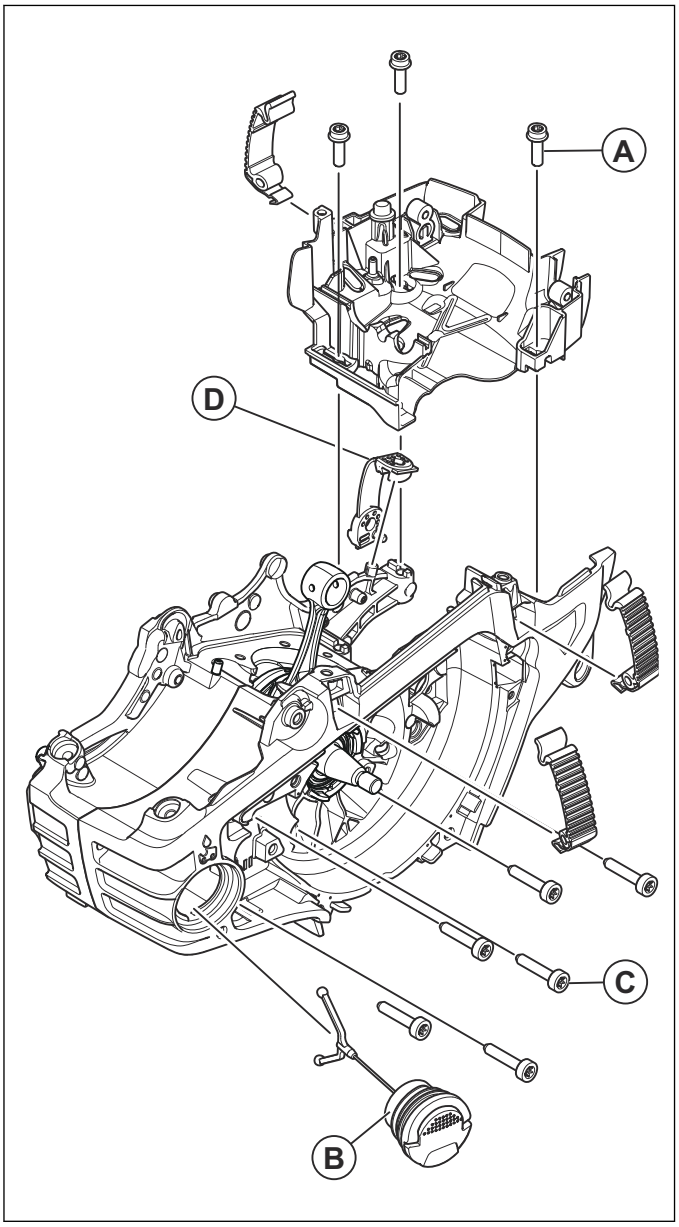
1. Drain the oil and the fuel.
2. Remove the cylinder cover.
3. Remove the spark plug.
4. Remove the chain brake system. Refer to *To disassemble the chain brake on page 18*.
5. Remove the guide bar and saw chain.
6. Remove the chain catcher. Refer to *To replace the chain catcher on page 21*.
7. Remove the chain guide plate.
8. Remove the centrifugal clutch. Refer to *To disassemble the centrifugal clutch on page 37*.
9. Remove the lubrication system. Refer to *To disassemble the lubrication system on page 39*.
10. Remove the muffler. Refer to *To disassemble the muffler on page 21*.
11. Remove the starter. Refer to *To disassemble the starter on page 29*.
12. Remove the air filter and the air filter holder. Refer to *To remove the air filter on page 68*. Remove the start/stop switch. Refer to *To disassemble the start/stop switch on page 23*.
13. Remove the carburetor. Refer to *To disassemble the carburetor on page 46*.
14. Remove the ignition module. Refer to *To disassemble the ignition system on page 34*.
15. Remove the flywheel. Refer to *To disassemble the flywheel on page 35*.
16. Remove the fuel tank. Refer to *To disassemble the fuel tank on model 545 Mark II and 550 XP® Mark II on page 47* or *To disassemble the tank unit on 545G Mark II and 550 XP®G Mark II on page 49*.
17. Remove the handle and throttle trigger. Refer to *To disassemble the handle on page 27*.
18. Disconnect the wires.

19. For 545G Mark II and 550 XP®G Mark II: Remove the generator. Refer to *To disassemble the generator on page 54*.
20. Remove the cylinder and the piston. Refer to *To disassemble the cylinder and piston on page 57*.

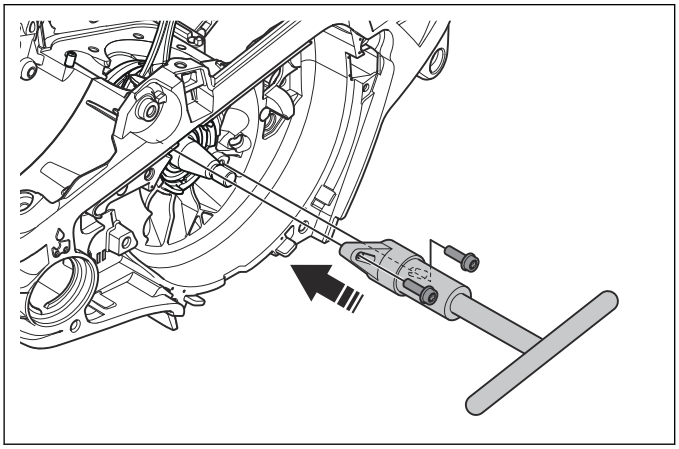
**Note:** Make sure that no dirt or object can come into the bearings.

### 8.19.2 To disassemble the crankshaft and crankcase

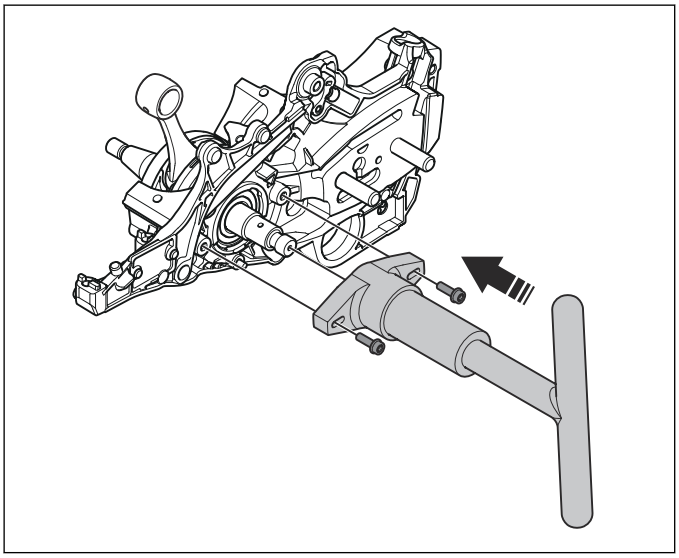
1. Remove the 3 screws (A) and remove the carburetor bottom plate.
2. Remove the oil cap assembly (B).
3. Remove the 6 screws (C).
4. Remove the distance limiter (D).



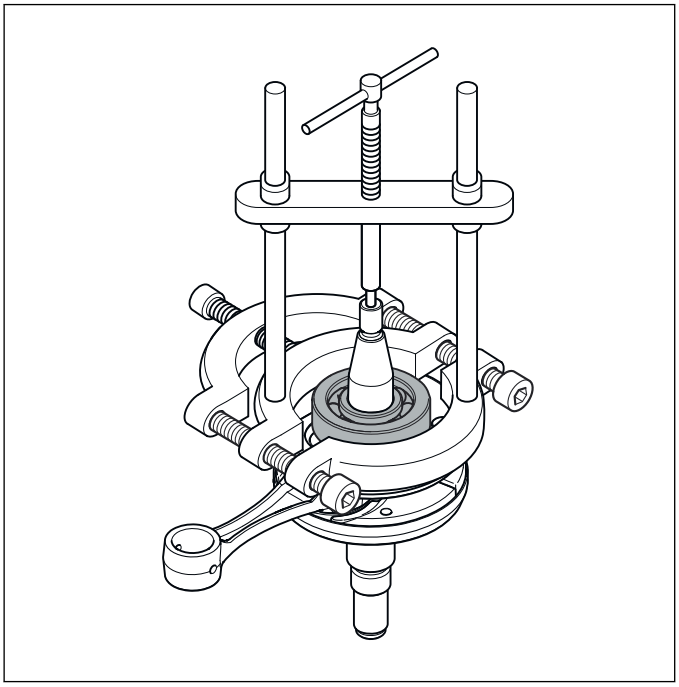

5. Remove the crankcase on the flywheel side from the crankshaft. Use the crankcase splitting tool, refer to *Servicing tools on page 12*.



6. Remove the crankcase half on the clutch side from the crankshaft. Use the crankcase splitting tool, refer to *Servicing tools on page 12*.



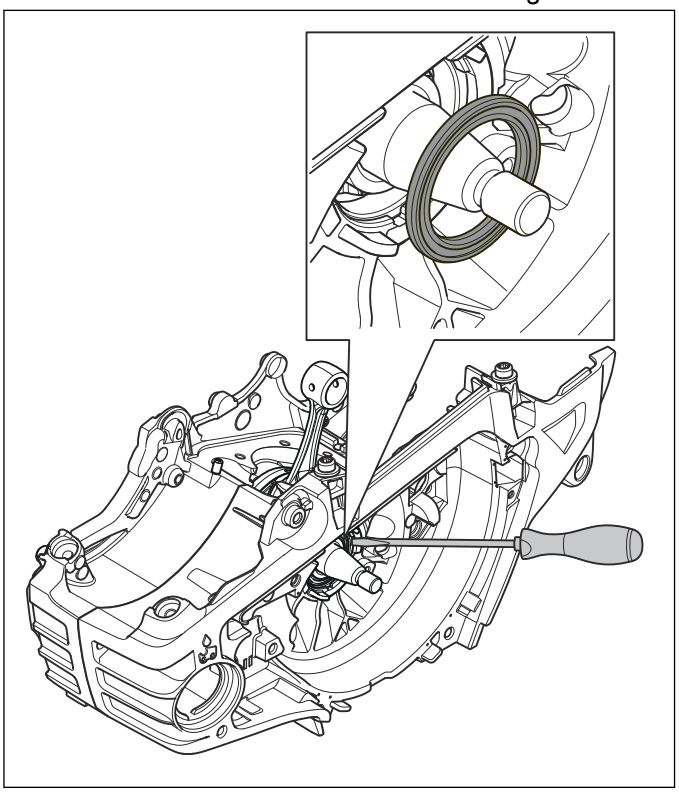
7. If the main bearing is attached to the crankshaft, use a puller tool to remove the main bearing.



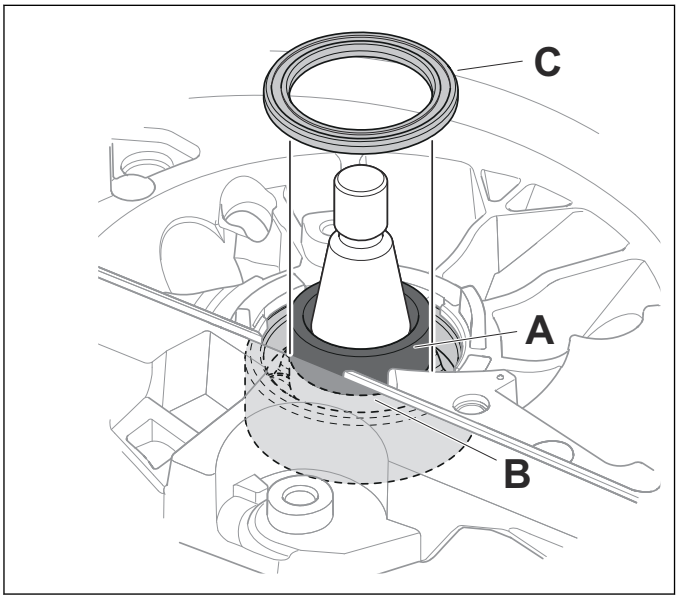
### 8.19.3 To replace the seal ring

**Note:** Hold the outer part of the bearing when you the replace seal ring. Make sure that the bearing does not move.

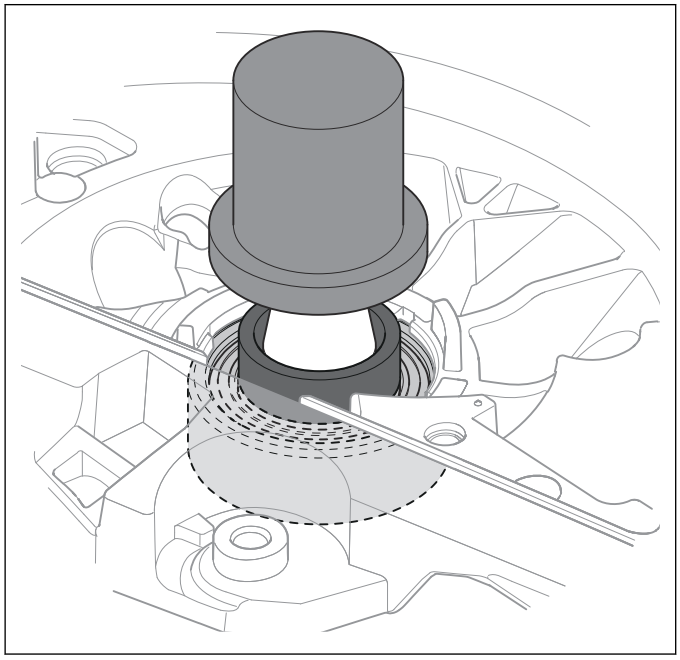
1. On the flywheel side: Remove the starter and the flywheel.
2. On the clutch side: Remove the guide bar and saw chain, the chain guide plate, the centrifugal clutch and the oil pump.
3. Use a screwdriver to remove the seal ring.



4. Attach the guide ring (A) on the crankshaft axle (B). Take the new seal ring (C) and apply two-stroke oil on the sealing lip. Pull the sealing lip onto the seal ring (C) and move the seal ring (C) onto the guide ring (A).




5. Use a seal ring tool to put the new seal ring in the correct position. Refer to *Servicing tools on page 12*



6. Remove the guide ring (A).

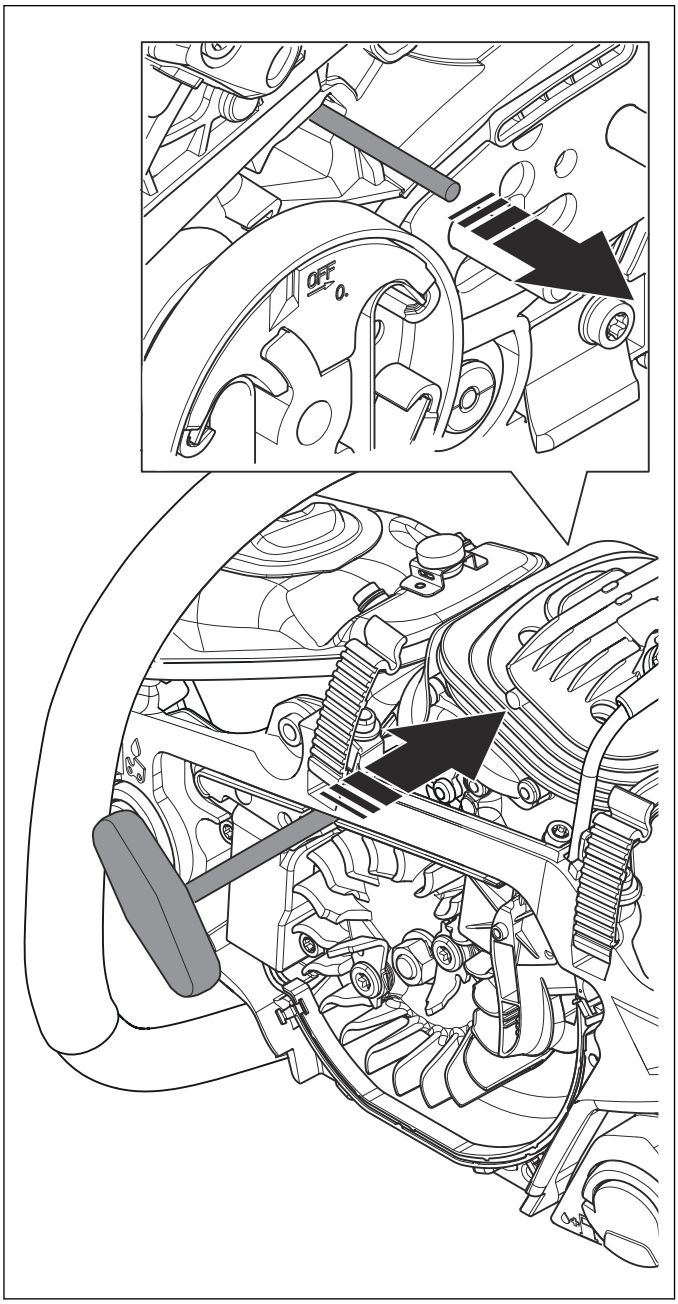
### 8.19.4 To clean the air channel

The product has an air channel from the the clutch side to the flywheel side.

**CAUTION:** Make sure that the air channel does not get clogged. A clogged air channel increases the risk to overheat the product.

1. Remove the guide bar from the clutch side.
2. Remove the starter from the flywheel side.
3. Remove the clutch cover.
4. Examine the air channel.

5. Push a Torx T27 or an equivalent tool through the air channel to remove dirt. Compressed air can also be used to clean the air channel.

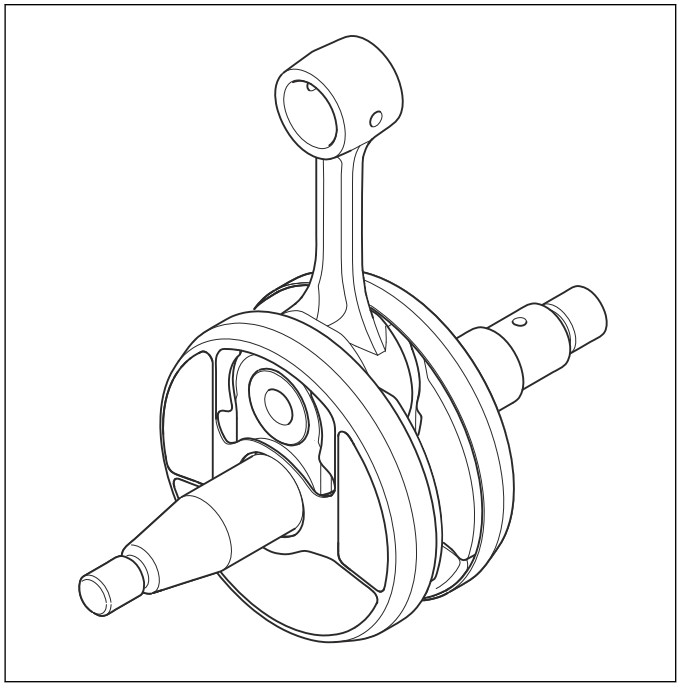


### 8.19.5 To clean and examine the crankshaft and crankcase

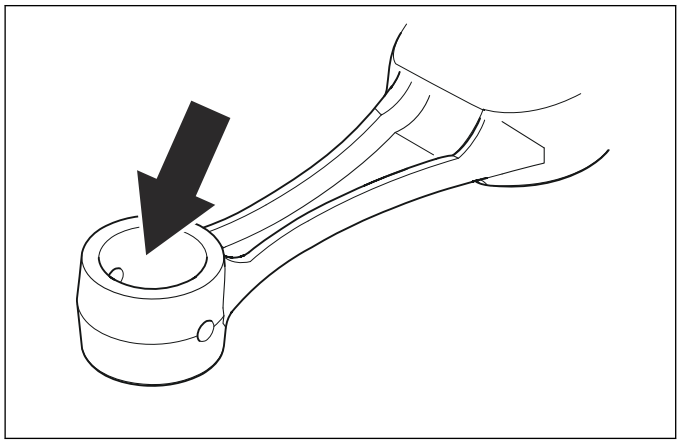
**CAUTION:** Make sure that dirt and unwanted particles does not go into the crankcase and into the bearings.

Clean all components and remove gasket particles from the mating surfaces of the crankcase halves.

1. Make sure that the crankpin bearing does not have radial play. Axial play is permitted.
2. Make sure that the crankpin bearing does not have score marks or discoloration on the sides.



3. Make sure that the bearing surfaces in the small end of the connecting rod do not have score marks or discoloration.

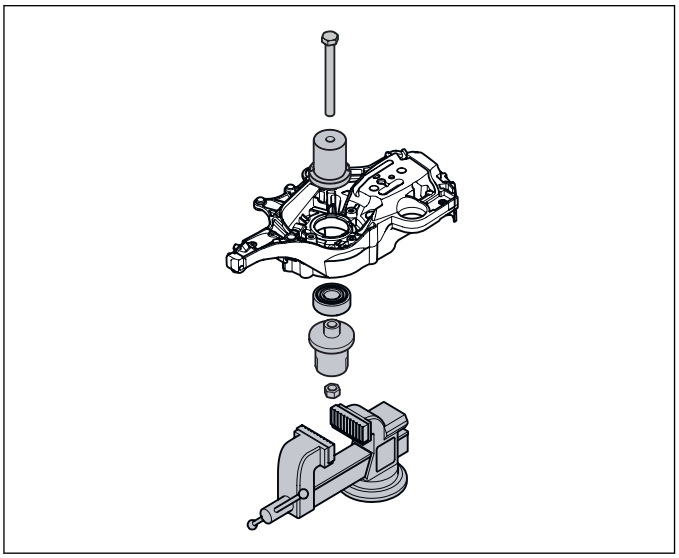


4. Make sure that the crankpin bearing is attached correctly and does not have radial play. Make sure the crankpin bearing is lubricated.
5. Make sure that the crankcase has no cracks.

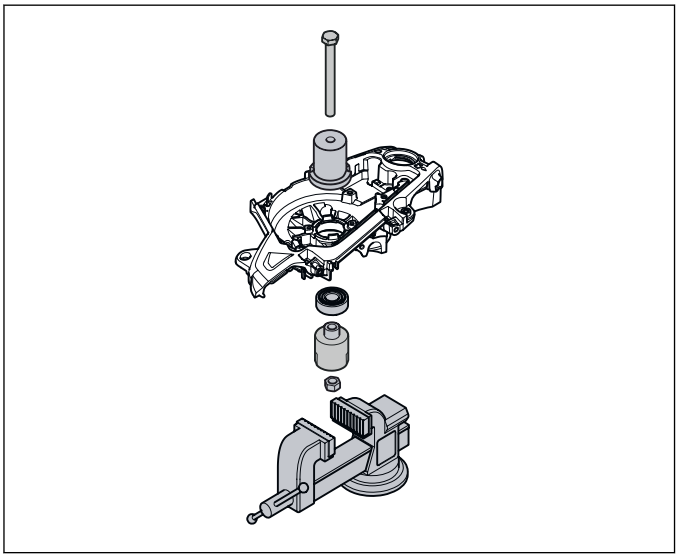
### 8.19.6 To assemble the crankshaft and the crankcase

1. On the clutch side:

a) Put the guide shaft in a vise.
b) Put the bearing on top of the guide shaft with the sealing up.
c) Attach the bearing with the sleeve, the screw and the nut.



2. On the flywheel side:
   a) Put the guide shaft in a vise.
   b) Put the bearing on top of the guide shaft with the sealing up.
   c) Attach the bearing with the sleeve, the screw and the nut.

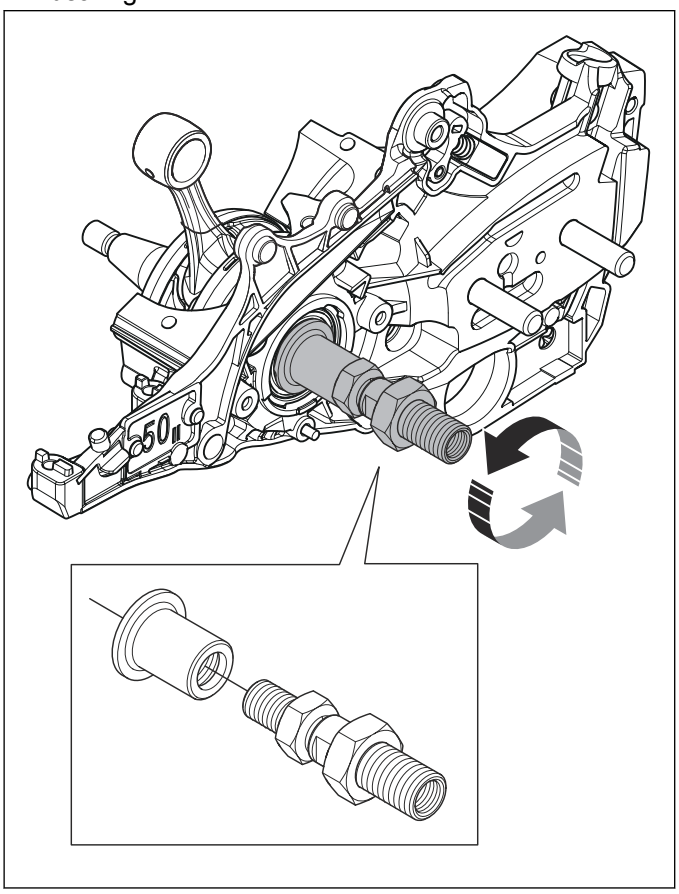


**Note:** The vise, the screw and the nut are not necessary when you use a press.

**CAUTION:** Make sure that dirt and unwanted particles do not go into the bearing.

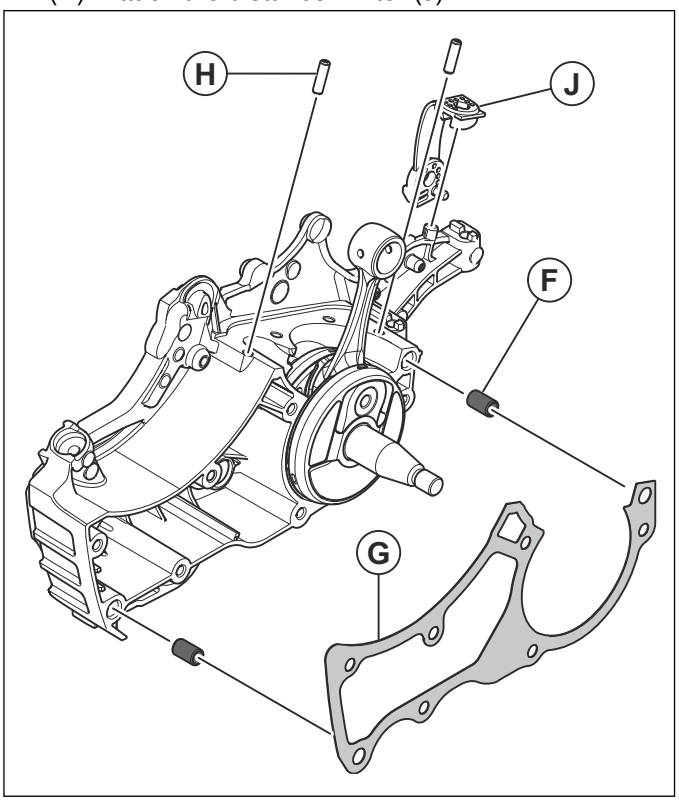
**CAUTION:** Make sure that you do not put the force only on the inner ring when you use the press.

3. Use the rear side of the sleeve and pull the crankshaft into the crankcase half on the clutch side. Pull until the crankshaft shoulder touches the main bearing.



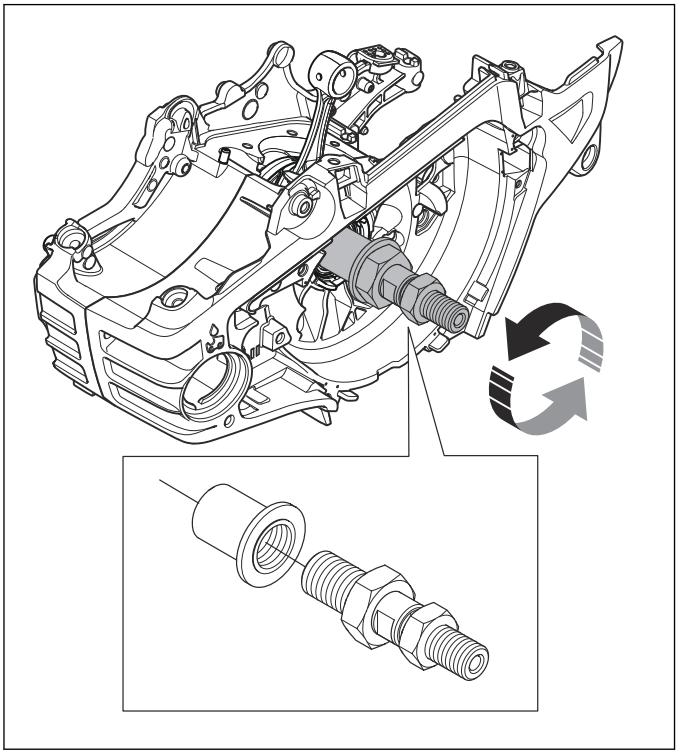
**Note:** Make sure that you keep the crankshaft in the correct position.

4. Put the 2 guide bushings (F) in the crankcase half on the clutch side. Attach the gasket (G) between the crankcase halves. Attach the 2 crankcase pins (H). Attach the distance limiter (J).

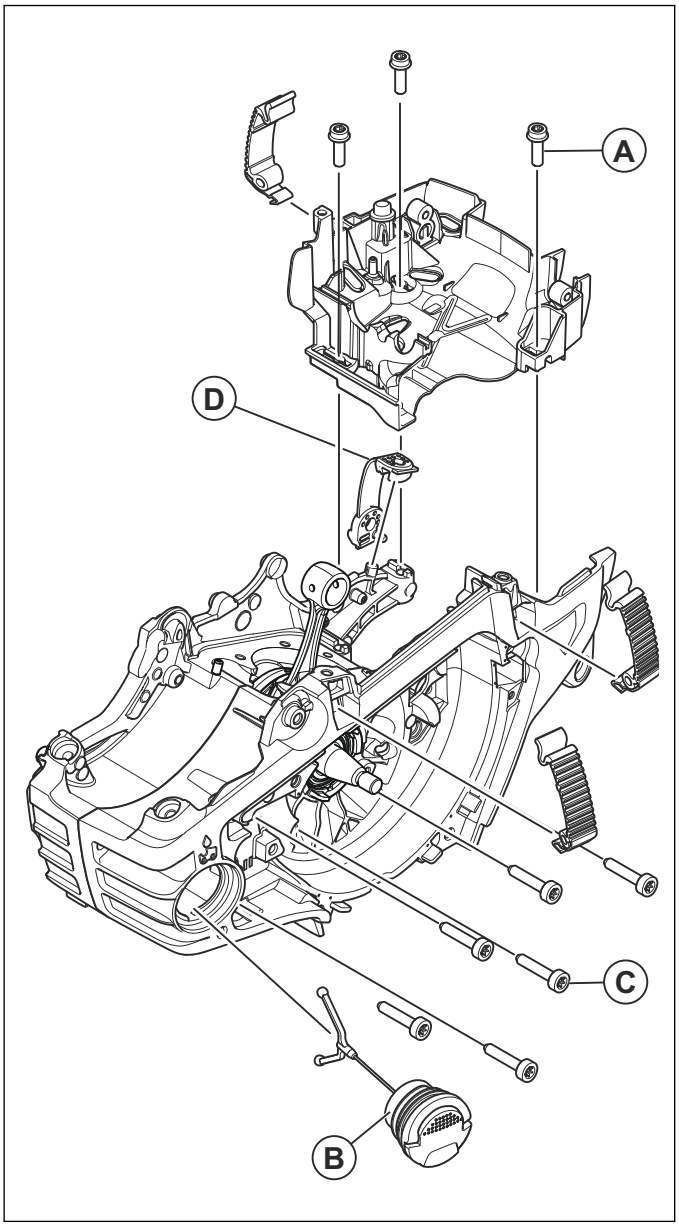



**Note:** Do not push the crankcase pins (H) down too much, it can cause damage to the product. Make sure that you can see 6 mm of the crankcase pins (H).

5. Use the crankshaft assembly tool, refer to *Servicing tools on page 12*. Turn the sleeve and push the crankcase half of the flywheel side. Push until the gasket is fixed between the crankcase halves.



6. Attach the 6 screws (C). Tighten them in turn to the correct torque. Refer to *Servicing data on page 9*. Make sure the crankshaft rotates freely.
7. Carefully cut off the gasket along the cylinder interface. Make sure that you do not cause damage to the crankcase surface. Assemble the carburetor bottom plate to the crankcase.
8. Tighten the four screws (A) to the correct torque. Refer to *Servicing data on page 9*. Make sure the crankshaft rotates freely after you have tightened the screws.
9. Attach the sealing (D) to the hole in the crankcase and attach the oil cap assembly (B).



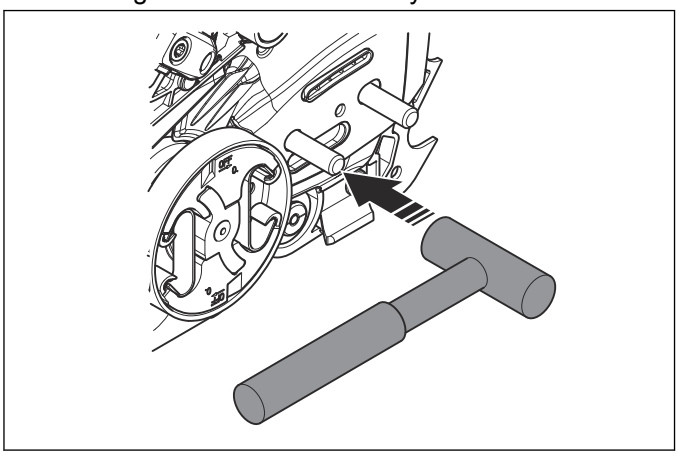

10. Assemble the remaining parts as given in *To get access to the crankshaft and crankcase on page 61*.

## 8.20 Guide bar bolts

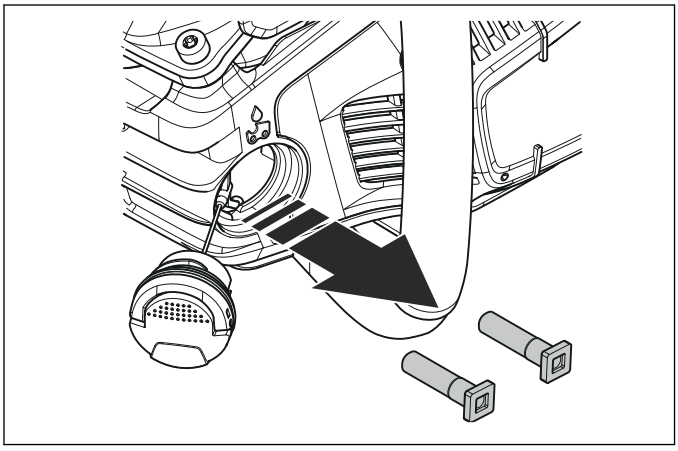
### 8.20.1 To disassemble the guide bar bolts

1. Drain the oil tank.
2. Remove the clutch cover.

3. Remove the guide bar and saw chain.
4. Hit the guide bar bolts until they fall into the oil tank.

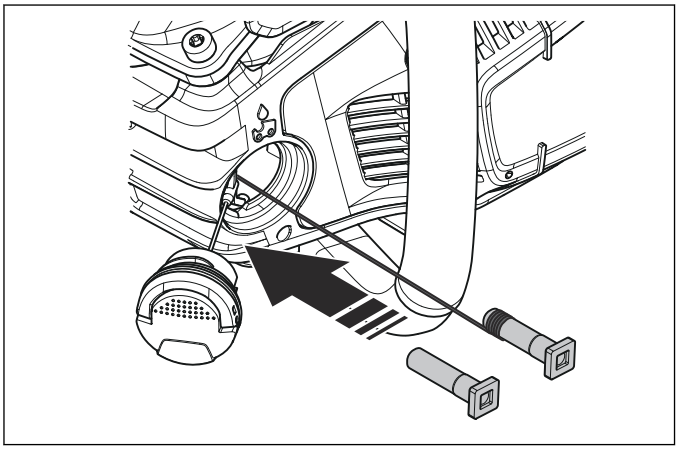


5. Remove the guide bar bolts from the oil tank.

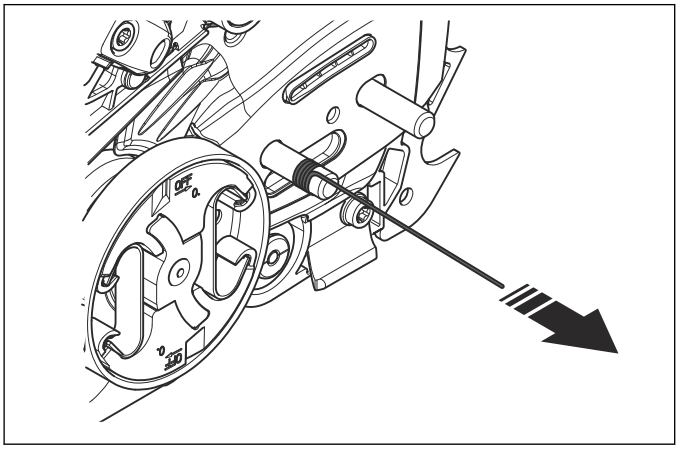


### 8.20.2 To assemble the guide bar bolts

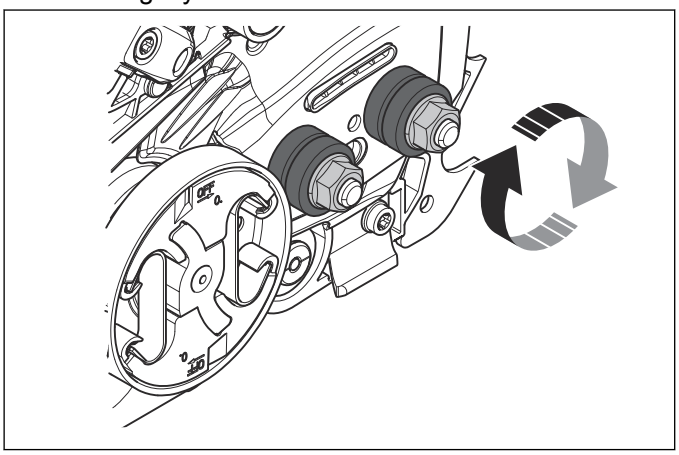
1. Attach a steel wire to the outer part of the guide bar bolt.



2. Put the steel wire through the oil tank and out through the hole for the guide bar bolt.
3. Pull the steel wire to pull out the guide bar bolt.



4. Make sure that the square head of the guide bar bolt is correctly attached in the oil tank.
5. Attach 2 spaces on the guide bar bolt. Attach a nut to the guide bar bolt. Turn the nut until the guide bar bolt is tightly attached to the crankcase.

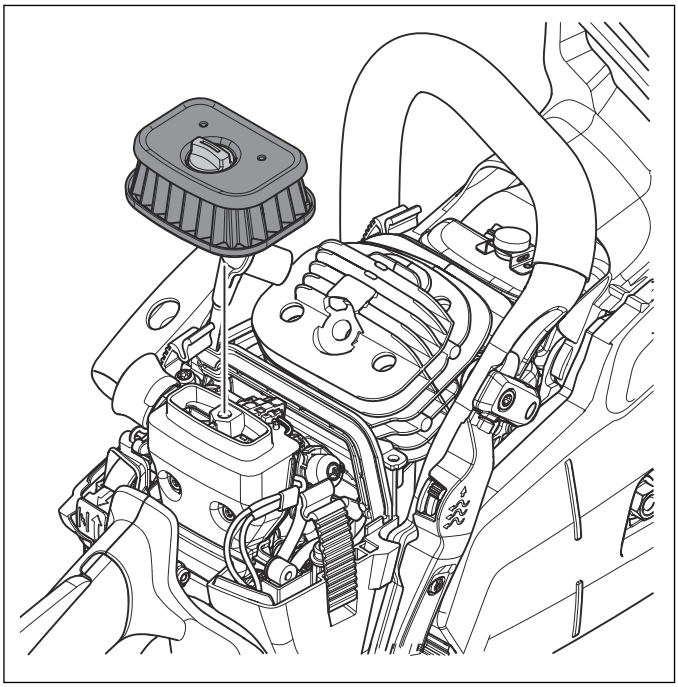


**Note:** Fill the tank with chain oli before you operate the product.

## 8.21 Air filter

### 8.21.1 To remove the air filter

1. Remove the cylinder cover.
2. Turn the knob and remove the air filter from the air filter holder.



### 8.21.2 To clean and examine the air filter

1. Examine the air filter.
2. Clean the air filter if it is dirty. Shake the air filter and blow pressurized air to remove the dirt particles.
3. Replace the air filter if it is damaged.

### 8.21.3 To attach the air filter

1. Put the air filter on the air filter holder.
2. Turn the knob to attach the air filter.
3. Assemble the cylinder cover.

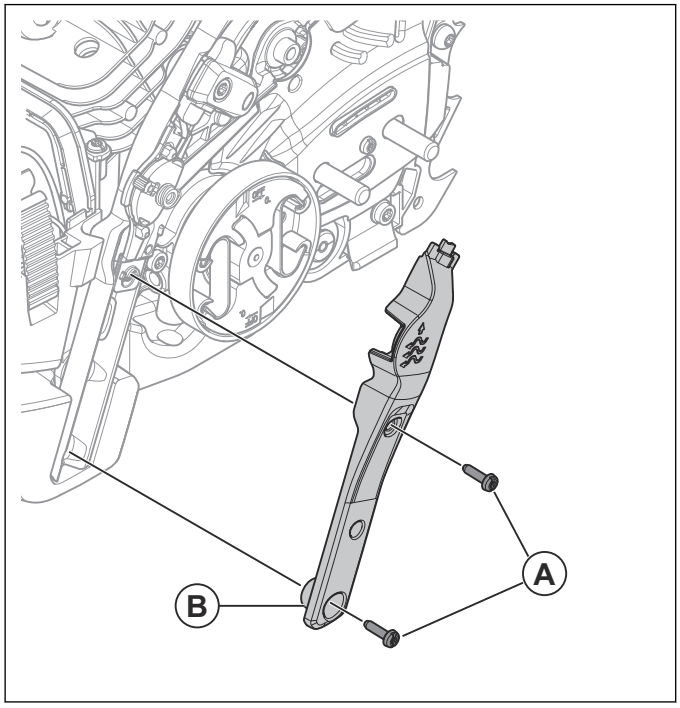
## 8.22 Thermostat and heating element

### 8.22.1 To disassemble and assemble the thermostat and heating element

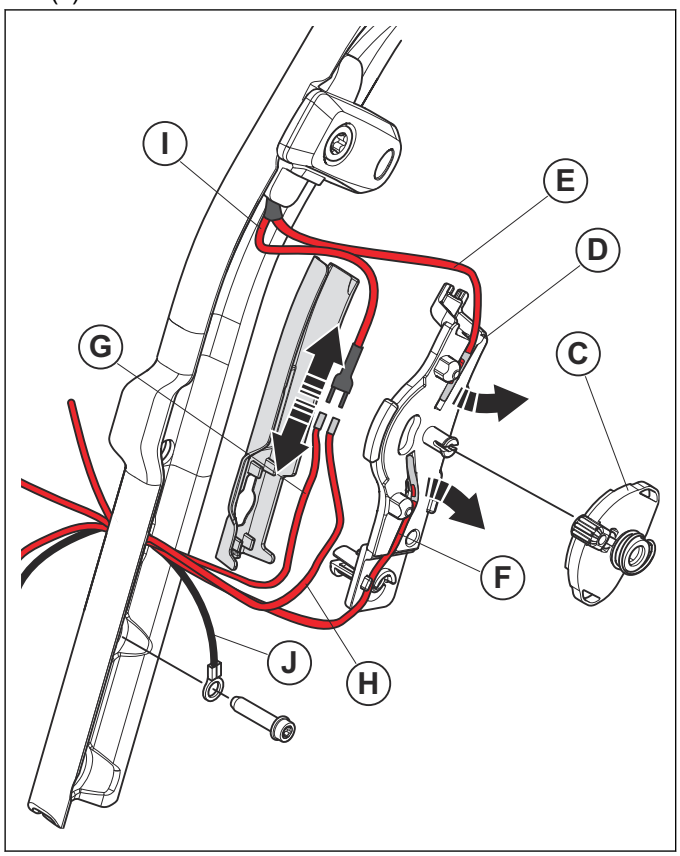
The models 545G Mark II and

550 XP®G Mark II has a thermostat and heating element.

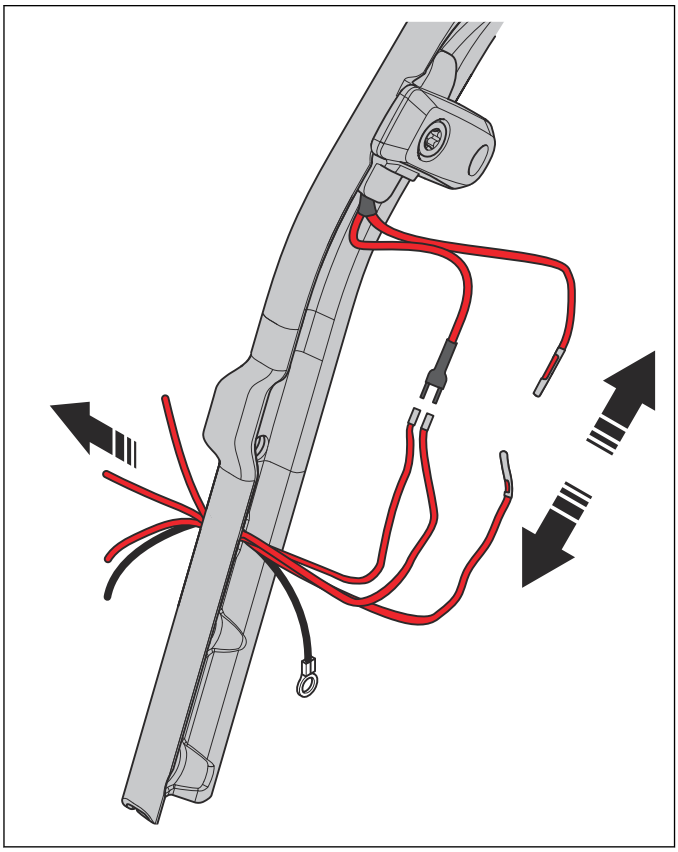
1. Drain the fuel from the tank.
2. Remove the chain brake system. Refer to *To disassemble the chain brake on page 18*.
3. Remove the guide bar and saw chain.
4. Remove the cylinder cover.
5. Remove the spark plug cap and the spark plug.
6. Remove the air filter.
7. Remove the air filter holder and the carburetor. Refer to *To disassemble the carburetor on page 46*.
8. Remove the 2 screws (A) and the cover for the heated handle (B).



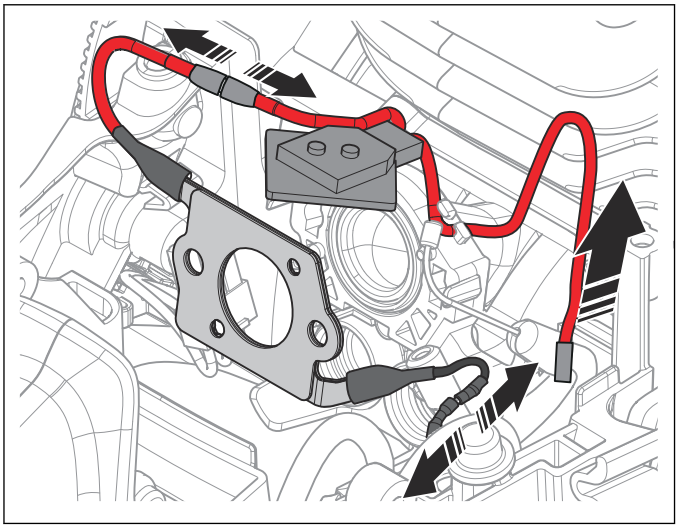

9. Remove the start/stop switch (C) from the contact plate (D). Disconnect the wire (E) from the contact plate. Disconnect the handle wire (F) from the contact plate. Remove the contact plate (F). Disconnect the stator wire (G) and the carburetor wire (H) from the wire (I). Disconnect the earth cable (J) from the handle.



10. Disconnect the wires and pull out the wires from the handle. Be careful when you pull the wire through the handle.



11. Pull the wire up through the carburetor bottom plate. Disconnect the wires from the heating elements.



12. Replace the thermostat and heating elements.
13. Assemble the thermostat and heating element in the opposite sequence to how it was disassembled.

## 8.23 To repair a damaged thread

A damaged thread can be repaired with a thread insert.

**Note:** For aluminum threads, use helicoil and metric screws. Refer to the manufacturer's manual for more information.

1. Use the applicable drill bit to make a new hole that removes the damaged threads.

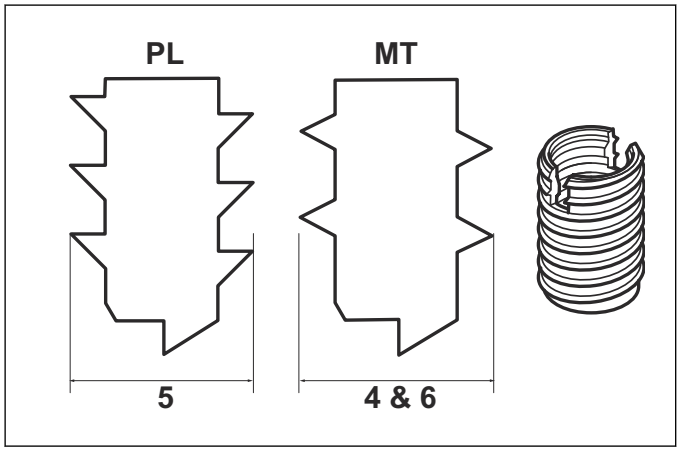
   **Note:**

   If you have a MT6 screw, use a 7.1 mm diameter drill bit.

   If you have a MT4 screw, use a 5.1 mm diameter drill bit.

   If you have a PL5 screw, use a 6.1 mm diameter drill bit.

2. Attach the thread insert with the sharp part of the thread insert first.



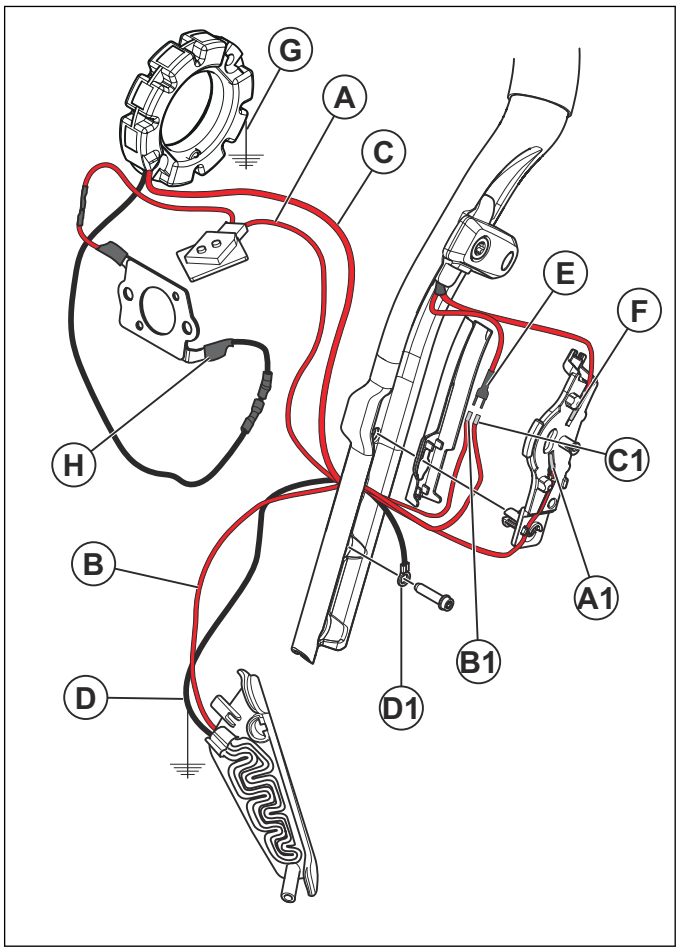

3. Attach the thread insert with an applicable screw and wrench.

## 9.1 Troubleshooting

You can do the troubleshooting procedure with most components attached to the product. Tools necessary for the troubleshooting procedure is:

- Ammeter
- Ohmmeter
- Cooling spray

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




## 9.2 To troubleshoot the heating element in the front handle

1. Measure the resistance between point (E) and (F). The resistance for heating element must be 3.0-4.0 Ω.
2. Replace the front handle if the resistance is less than 3.0 Ω or more than 4,0 Ω.

## 9.3 To troubleshoot the heating element in the rear handle

1. Disconnect the cable connection at (B1) and (D1).
2. Clean the contacts (B1) and (D1).
3. Measure the resistance between point (B1) and (D1). The resistance for heating element must be 0,8-1,0 Ω.
4. Replace the heating element if the resistance is less than 0.8 Ω or more than 1,0 Ω.

## 9.4 To troubleshoot the generator

1. Measure the resistance in the generator between point (A1) and (G). The resistance for generator must be 0.5 Ω.
2. Replace the generator if the resistance is more than 0.5 Ω.

## 9.5 To troubleshoot the start/stop switch

1. Disconnect one of the wires to the switch and connect the ohmmeter between the points (A1) and (F).
2. The ohmmeter must show more than 1000 Ω with the start/stop switch in the OFF position. Replace the start/stop switch if the resistance is less than 1000 Ω.
3. The ohmmeter must show more than 0.1 Ω with the start/stop switch in the ON position. Replace the start/stop switch if the resistance is less than 0.1 Ω.

## 9.6 To troubleshoot the heating element and thermostat

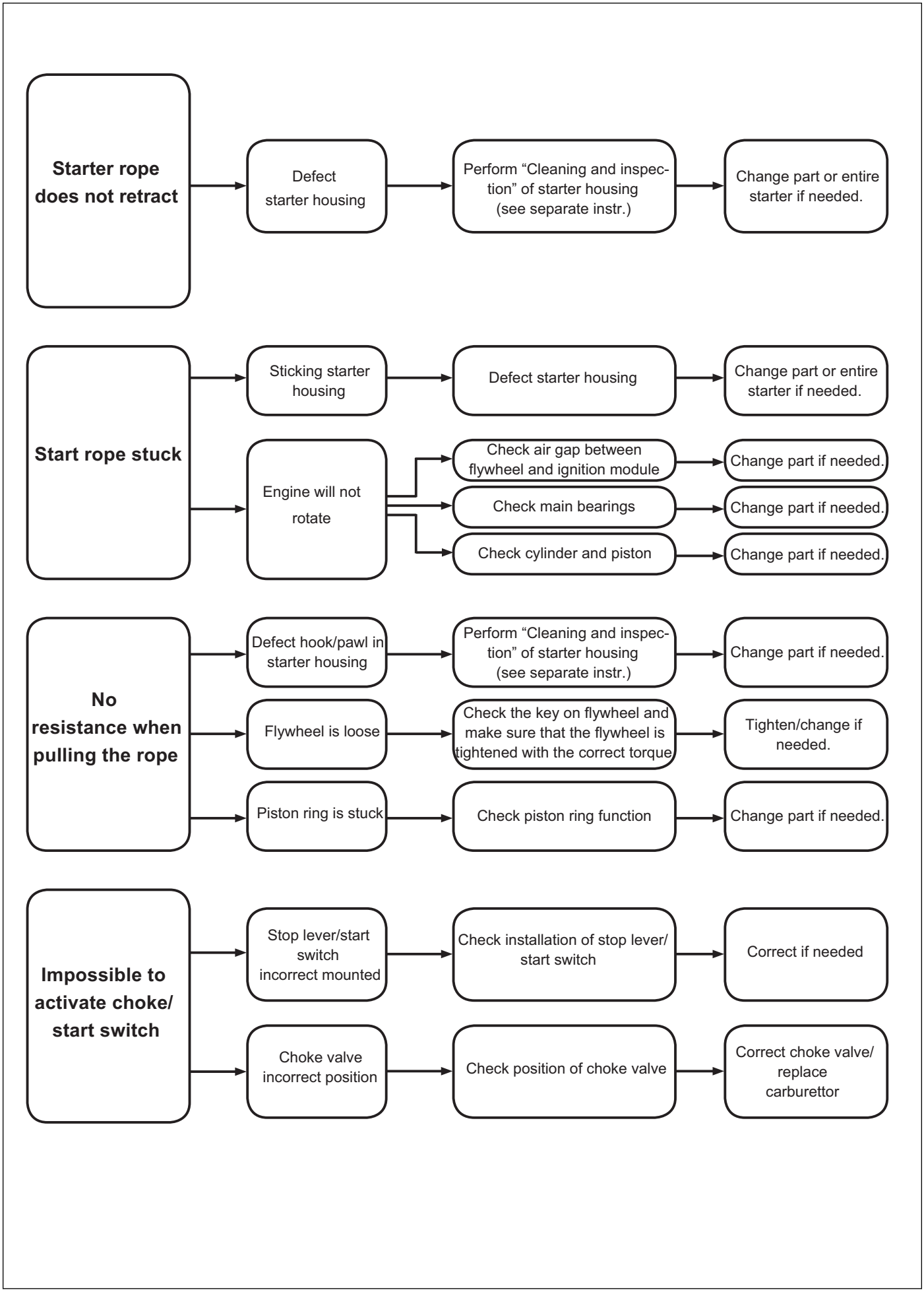
1. Disconnect the earth cable (H).
2. Measure with the ohmmeter between (H) and (C1).
3. The ohmmeter must show 0.0 Ω at an air temperature of 15 C° or more. Replace the heating element and thermostat if the resistance is less or more than 0.0 Ω.

   **Note:** You must replace the heating element and thermostat at the same time.

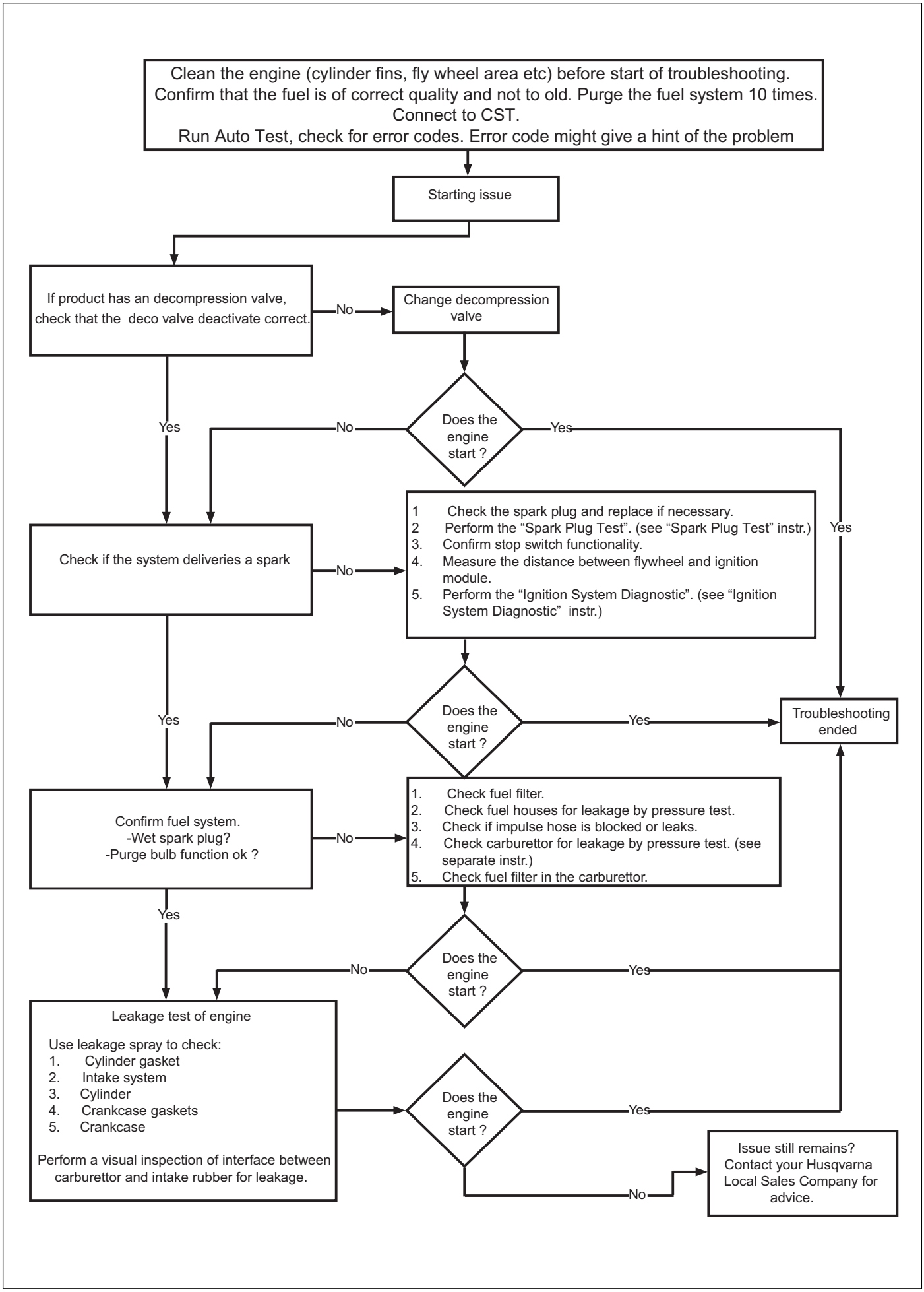
4. Cool the thermostat with a cooling spray. The ohmmeter must show 8.0 Ω. Replace the heating element and thermostat if the resistance is less or more than 8.0 Ω.

   **Note:** You must replace the heating element and thermostat at the same time.

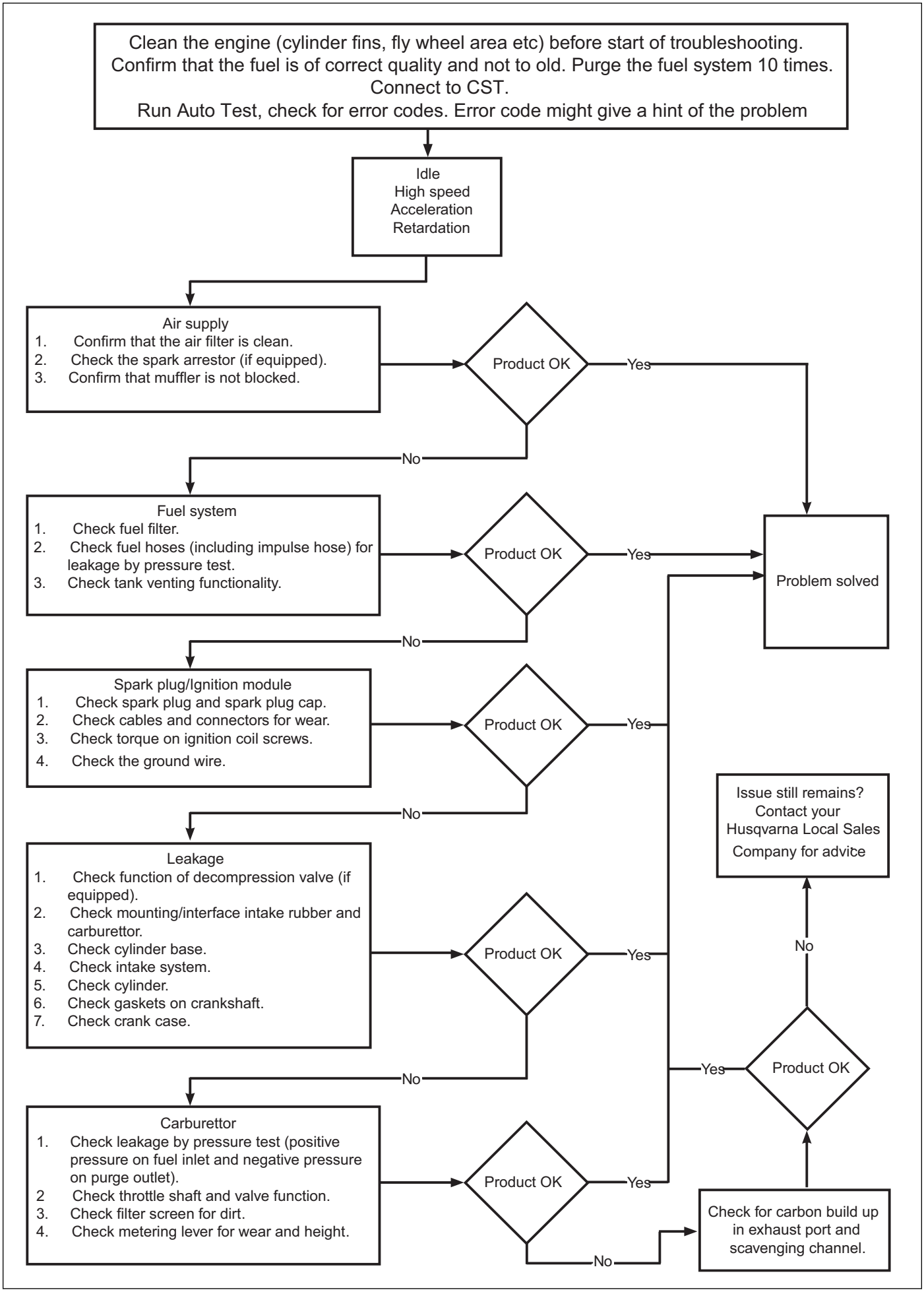
## 9.7 Troubleshooting diagram



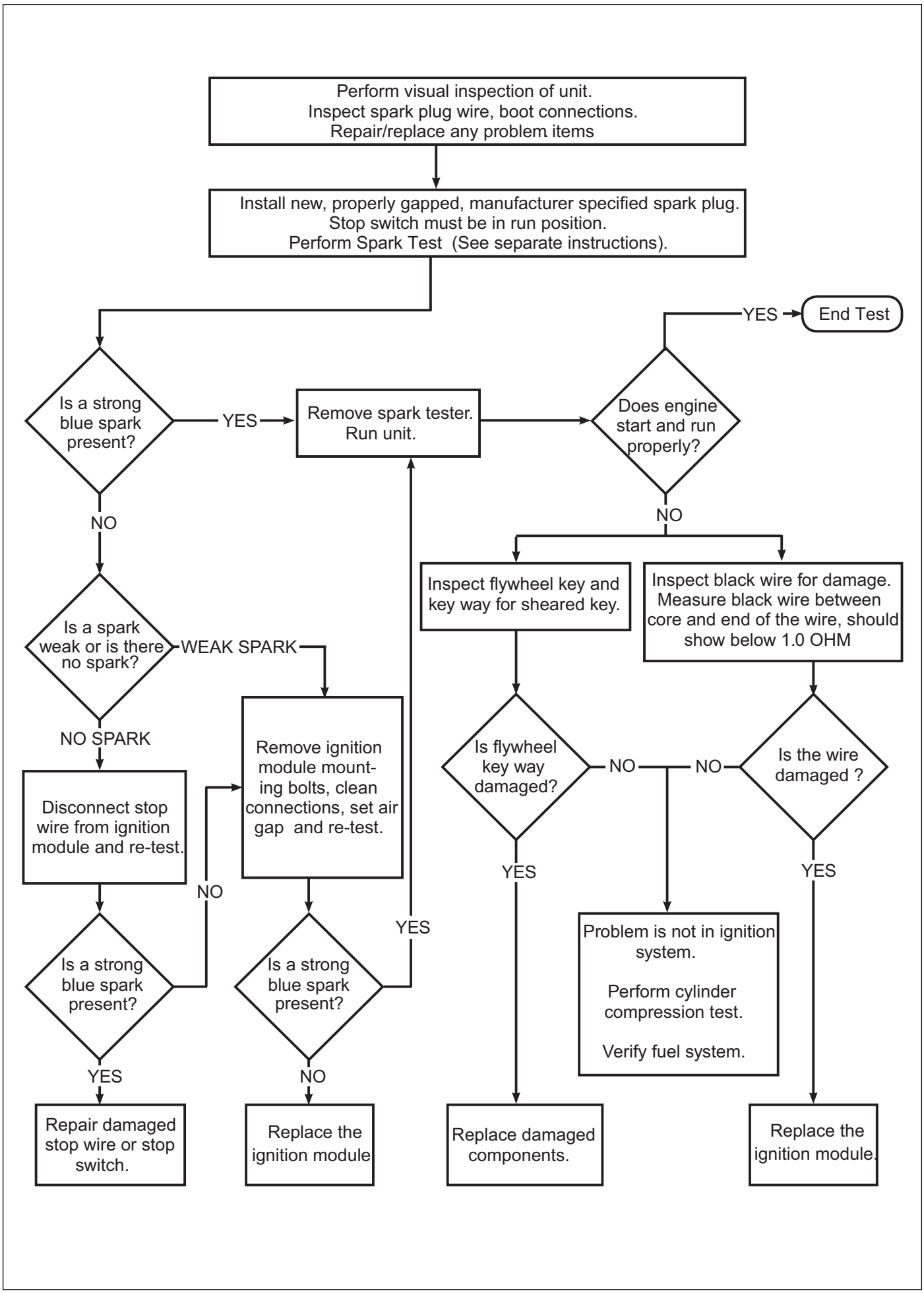
## 9.8 Engine running issue



## 9.9 Engine running issue



## 9.10 Ignition System Diagnostic Flow Chart



Husqvarna®

www.husqvarna.com

115 99 39-26

2019-03-28