STIHL

STIHL MS 500i

Service Manual
2020-01

Contents

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1 About this Service Manual

1.1 Applicable Documentation

- Please observe the following documentation in addition to this service manual.

– Spare parts documentation
– TI bulletins
– Instruction manual

1.2 Symbols in Text

This symbol refers to a chapter in this service manual.

A video is available for this chapter

This symbol shows the tightening torque for a screw joint and the procedure after tightening.

In this example: Tightening torque 5 Nm. Then rotate 1 full turn counterclockwise.

2 Safety During Repair Work

2.1 Protective gloves

Sharp or hot components can cause cuts or burns.

- If sharp or hot components have to be handled during a repair: Wear protective gloves.

2.2 Safety glasses

Particles and objects can be thrown into the air at high speed during a repair. Thrown particles or objects can cause eye injuries.

- If there is a risk of particles being thrown during the repair: Wear safety glasses.

2.3 Replacement Parts

If replacement parts not approved by STIHL are installed, they may not fulfill the required function or deactivate safety devices. This can result in serious or fatal injuries.

- STIHL recommends the use of genuine STIHL replacement parts.

2.4 Screws

Thread forming screws

Type P or DG screws form a permanent thread in the material when installed for the first time. If the screw is not re-installed in the existing thread, the security of the fixing can no longer be guaranteed.

- How to install type P or DG screws in an existing thread:

– Place the screw in the hole.
– Turn the screw counterclockwise until it drops down slightly.
  The screw engages the existing thread.
– Tighten the screw to the specified torque.

Microencapsulated screws

The microencapsulation is only effective when the screw is installed for the first time. If a microencapsulated screw is re-used the screw joint may loosen in operation.

- Replace the microencapsulated screw.
- If a microencapsulated screw is re-used, perform the following steps:

– Clean tapped hole and screw thread.
– Coat screw thread with Loctite 242.
– Insert the screw and tighten it down to the specified torque.

Aluminum screws

- Do not re-use screws.
- Insert screws in a crosswise pattern as far as stop.
- Tighten down the screws in a crosswise pattern.
- Turn the screws another 90° in a crosswise pattern.

3 Preparations for Repair

3.1 Preparations

- Drain the fuel tank into a container approved for fuels.
- Remove the chain and guide bar.
- Clean the saw.

4 Troubleshooting Guide

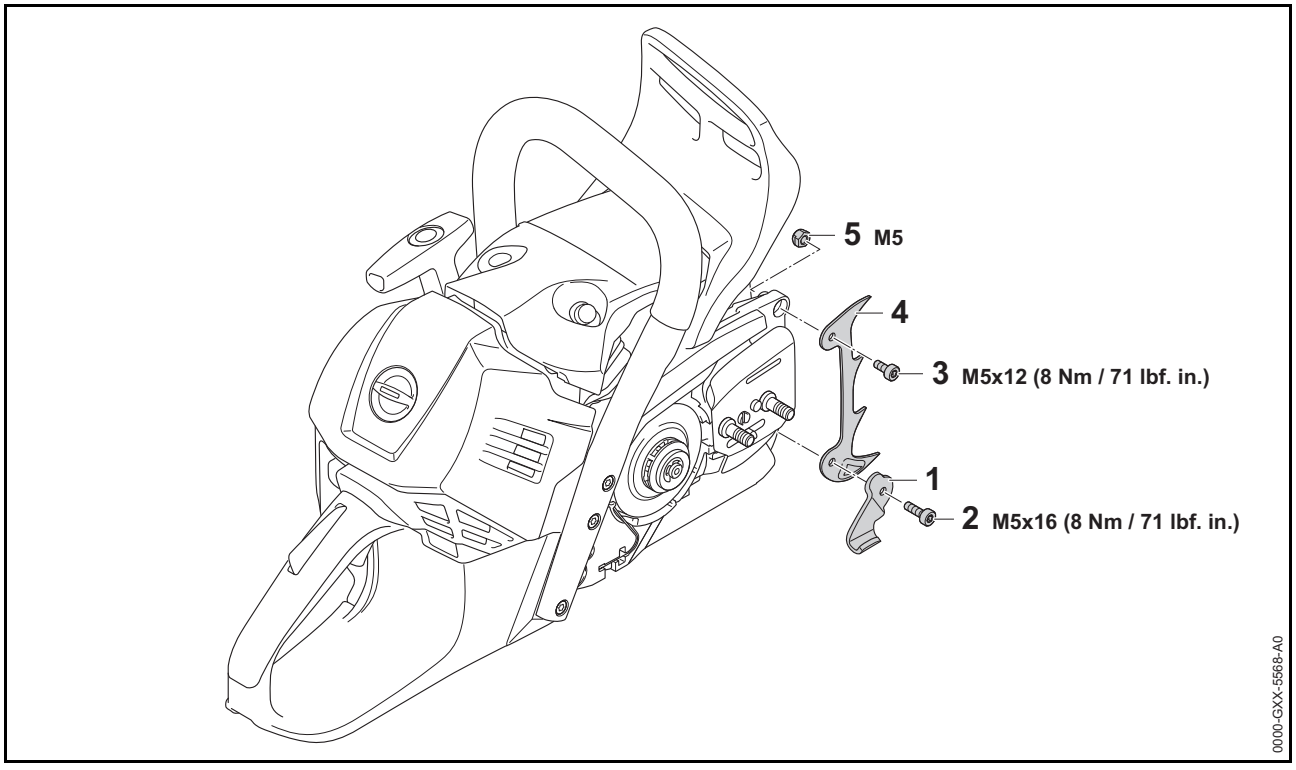
4.1 Troubleshooting Guide

Use the diagnostic software to directly access the detailed troubleshootiing guide.

The guide describes symptoms and possible causes as well as the following tests to locate the problem:

- Testing fuel system for leaks and correct operation.
- Testing engine for leaks.
- Testing fuel tank and tank vent for leaks.
- Calibrating the saw.

5 Spiked Bumper, Chain Catcher



5.1 Tools, Servicing Aids

- Socket, T27x125 – 0812 542 2104 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent
- Open-end wrench, 8 mm
- Loctite 242 (medium-strength threadlocking adhesive) – 0786 111 2101

5.2 Removing the Chain Catcher

- Preparations, 🕮 3.1.
- Remove the chain sprocket cover.
- Take out the screw (2).
- Remove the chain catcher (1).

5.3 Installing the Chain Catcher

- Fit the chain catcher (1).
- If the original screw (4) is re-used: Coat thread of screw (2) with Loctite 242.
- Insert and tighten down the screw (2).
- Fit the chain sprocket cover.

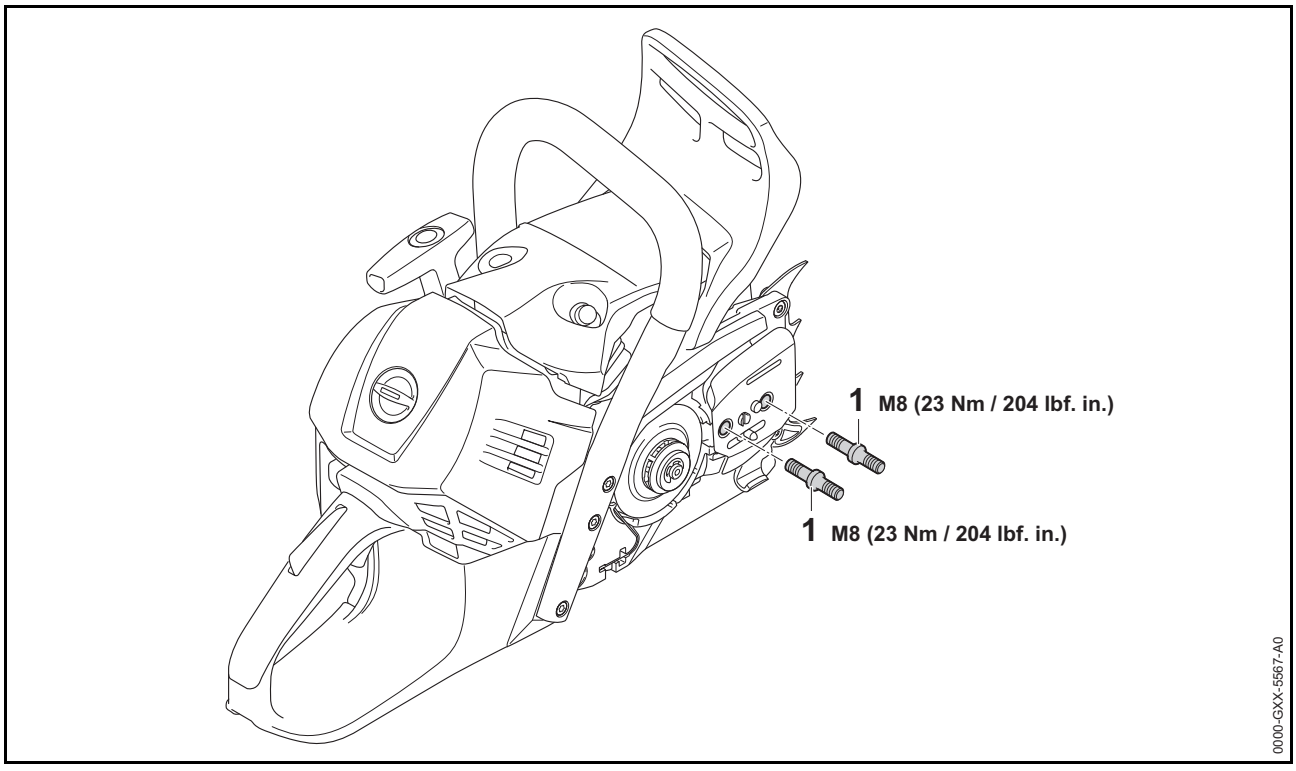
5.4 Removing the Spiked Bumper

- Preparations, 🕮 3.1.
- Remove the chain catcher, 🕮 5.2.
- Hold nut (5) steady and take out the screw (3).
- Remove the spiked bumper (4).

5.5 Installing the Spiked Bumper

- Place the spiked bumper (4) in position.
- Insert the screw (3).
- Hold the nut (5) steady and tighten down the screw (5).
- Install the chain catcher, 🕮 5.3.
- Fit the chain sprocket cover.

6 Bar Mounting Studs



6.1 Tools, Servicing Aids

- Combination wrench – 1129 890 3401
- Torque wrench – 5910 890 0312 or equivalent
- Stud puller, M8-7.5 – 5910 890 3000
- Stud puller, M8 – 5910 893 0501
- Loctite 270 (high-strength threadlocking adhesive) – 0786 111 2109

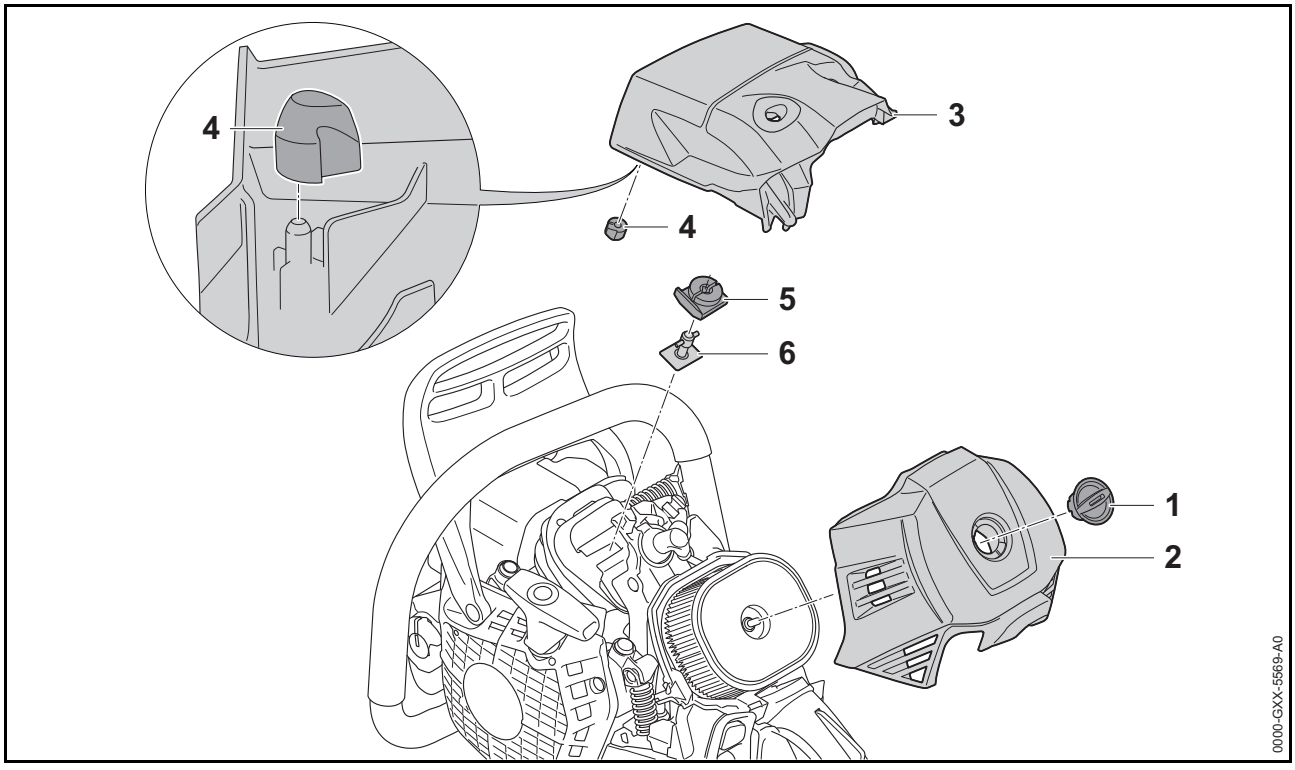
6.2 Removing the Bar Mounting Studs

- Preparations, 🕮 3.1.
- Remove the chain sprocket cover.
- Use stud puller 5910 893 0501 to remove the collar stud (1).

6.3 Installing the Bar Mounting Studs

- Coat threads of collar studs (1) with Loctite 270.
- Use stud puller 5910 890 3000 to fit and tighten down the collar studs (1).
- Fit the chain sprocket cover.

7 Filter Cover, Shroud



7.1 Tools, Servicing Aids

– Screwdriver, 1.0x5.5x125

7.2 Removing the Twist Lock

- Preparations, 🕮 3.1.
- Remove the filter cover (2).
- Unlock the retaining tabs on the twist lock (1) and pull the twist lock out of the filter cover (2).

7.3 Installing the Twist Lock

- Push the twist lock (1) in the filter cover (2).
- Fit the filter cover (2).

7.4 Removing the Stop Buffer

- Preparations, 🕮 3.1.
- Remove the shroud (3).
- Pull off the stop buffer (4).

7.5 Installing the Stop Buffer

- Push stop buffer (4) onto peg in shroud as far as the stop.
- Mount the shroud (3).

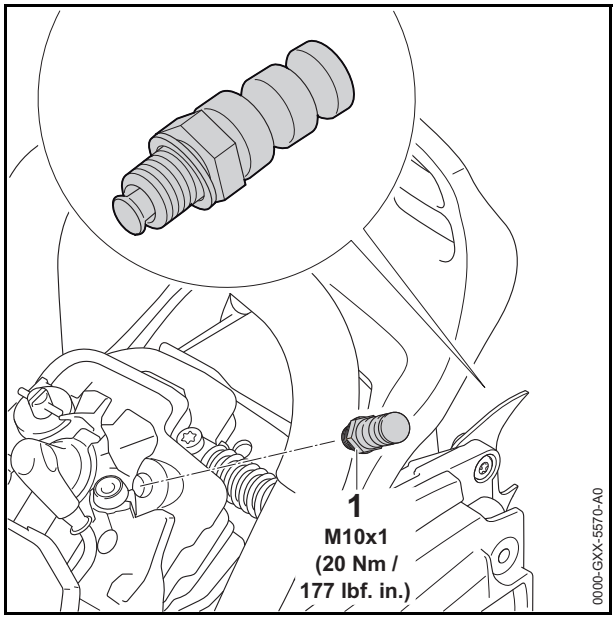
7.6 Removing the Shroud Lock

- Preparations, 🕮 3.1.
- Remove the filter cover (2).
- Remove the shroud (3).
- Remove grommet (5) with shroud lock (6) sideways.
- Push the shroud lock (6) out of the grommet (5).

7.7 Installing the Shroud Lock

- Push the shroud lock (6) into the grommet (5) so that its base is properly seated in the grommet (5).
- Push grommet (5) with shroud lock (6) into the guide in the cylinder as far as stop.
- Mount the shroud (3).
- Fit the filter cover (2), .

8 Decompression Valve



8.1 Tools, Servicing Aids

- Socket, 13 mm, long – 5910 893 2804 or equivalent
- Torque wrench – 5910 890 0312 or equivalent

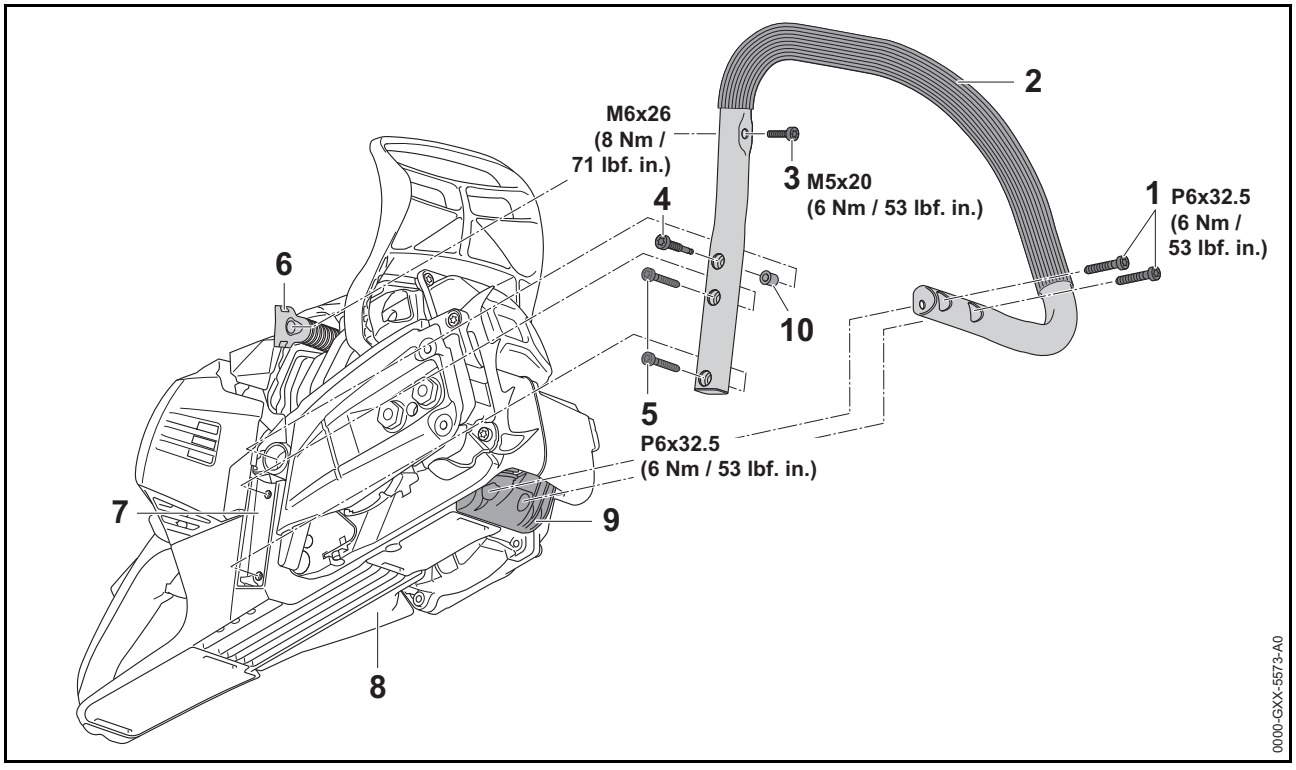
8.2 Removing the Decompression Valve

- Preparations, 📖 3.1.
- Remove the shroud.
- Unscrew the decompression valve (1).

8.3 Installing the Decompression Valve

- Screw decompression valve (1) into place by hand.
- Tighten decompression valve (1) to specified torque.
- Mount the shroud.

9 Handle

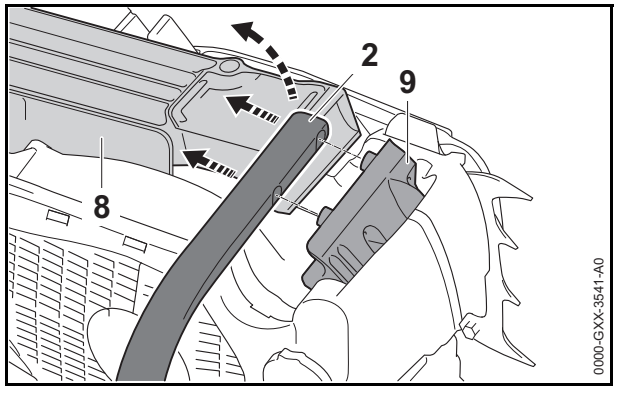


9.1 Tools, Servicing Aids

- Socket, T27x125 – 0812 542 2104 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent

9.2 Removing the Handlebar

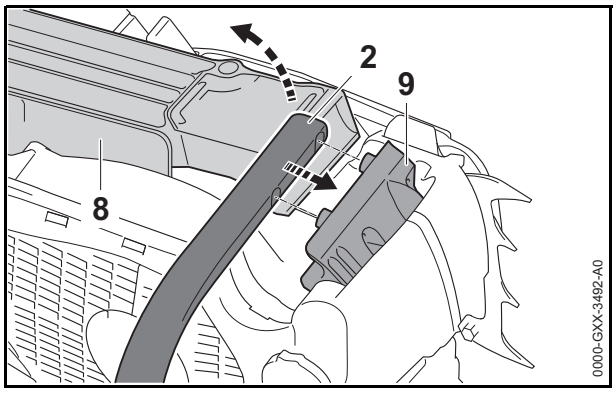
- Preparations, 📖 3.1.
- Take out the screws (5).
- Take out the screw (3).
- Take out the screws (1).
- Remove the handlebar (2) from the guide (7).



- Ease the handle housing (8) away from the crankcase (arrow) and hold it there.
- Pull the handlebar (2) off the screw bosses on handlebar mount (9).
- Remove the handlebar (2) forwards, over the hand guard.
- Pull off the bushing (10).
- Take out the screw (4).

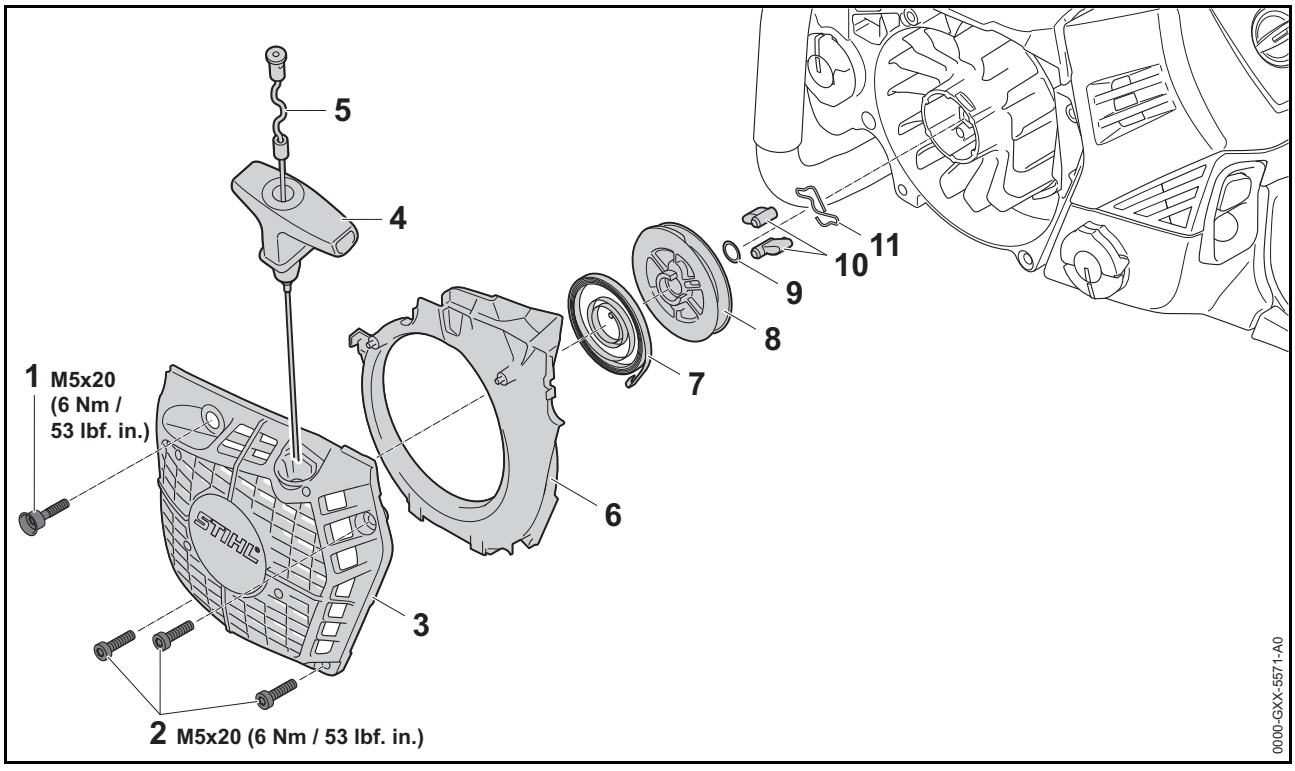
9.3 Installing the Handlebar

- Insert and tighten down the screw (4).
- Push bushing (10) onto the screw (4) so that it snaps into place.
- Fit the handlebar (2) over the hand guard from the front.



- Ease the handle housing (8) away from the crankcase (arrow) and hold it there.
- Push holes in handlebar (2) onto the screw bosses on the handlebar mount (9) (arrows).
- Place the handlebar (2) in the guide (7).
- Insert and tighten down the screws (1).
- Insert and tighten down the screws (5).
- Insert and tighten down the screw (3).

10 Rewind Starter



10.1 Tools, Servicing Aids

- Socket, T27x125 – 0812 542 2104 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent
- Pin punch, 2 mm
- STIHL multipurpose grease – 0781 120 1110
- STIHL gear grease – 0781 417 1315

10.2 Removing the Rewind Starter

- Preparations, 📖 3.1.
- Take out the screw (1).
- Take out the screws (2).
- Remove the fan housing (3) with rewind starter (4 - 12).

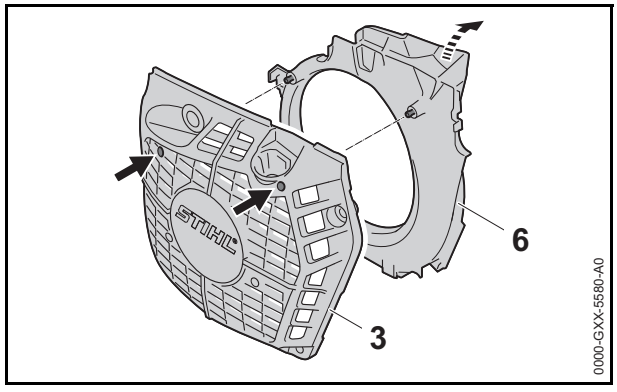
10.3 Relieving Tension of Rewind Spring

⚠ WARNING

The rewind spring can pop out and cause serious eye and hand injuries.

Wear safety glasses and work gloves.

- Remove the rewind starter, 📖 10.2.



- Grip the segment (6) by the lug and pull it out of the fan housing (3).
- If the segment (6) is stuck: Use 2 mm pin punch to drive out the pins (arrows) in the segment.
- Remove the segment (6).
- Pull out the starter grip (4) about 10 cm (4 in).
- Hold the rope rotor (8) steady.
- Take three turns of the rope off the rotor (8).
- Pull out the starter grip (4) until the starter rope (5) is under tension.
- Let go of the rope rotor (8) and guide the starter rope (5) back into the housing until the rewind spring (7) is no longer under tension.

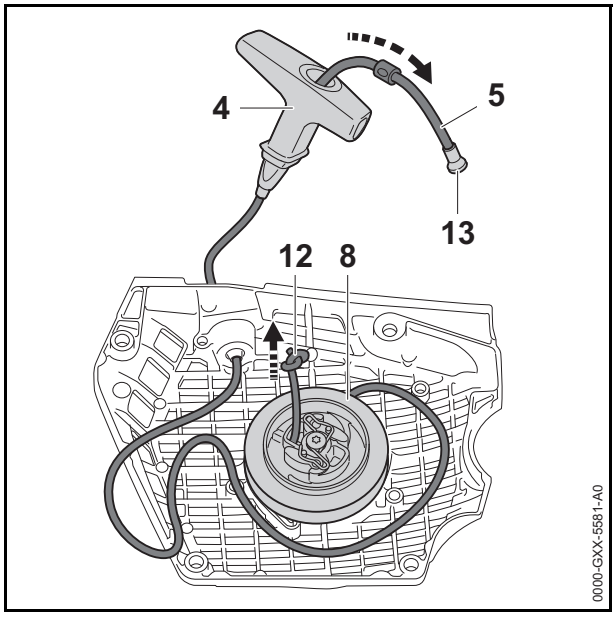
10.4 Removing the Starter Rope

WARNING

The rewind spring can pop out and cause serious eye and hand injuries.

Wear safety glasses and work gloves.

- Remove the rewind starter, 🕮 10.2.
- Relieve tension of rewind spring, 🕮 10.3.
- Unwind the starter rope (5) from the rope rotor (8).



- Pull about 10 cm (4 in) length of starter rope (5) out of the rotor (8).
- Undo the knot (12).
- Pry the nipple (13) out of the grip (4).
- Pull out the starter rope (5).

10.5 Removing the Rope Rotor

WARNING

The rewind spring can pop out and cause serious eye and hand injuries.

Wear safety glasses and work gloves.

- Remove the rewind starter, 🕮 10.2.
- Relieve tension of rewind spring, 🕮 10.3.
- Remove the starter rope, 🕮 10.4.
- Remove the spring (11).
- Remove the pawls (10).
- Remove the washer (9).
- Pull off the rope rotor (8). The rewind spring (7) may pop out and unwind.

10.6 Removing the Rewind Spring

WARNING

The rewind spring can pop out and cause serious eye and hand injuries.

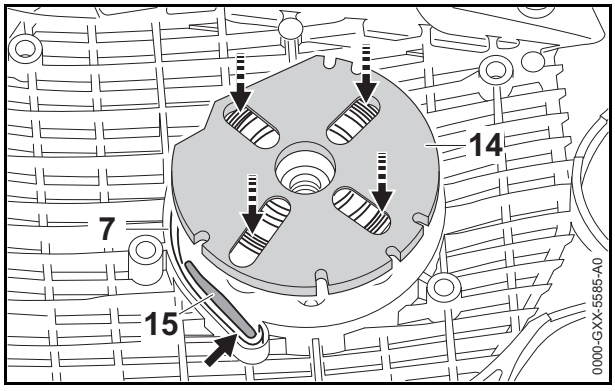
Wear safety glasses and work gloves.

- Remove the rewind starter, 🕮 10.2.
- Relieve tension of rewind spring, 🕮 10.3.
- Remove the rope rotor, 🕮 10.5.
- Take out the rewind spring (7). The rewind spring (7) may pop out and unwind.

10.7 Installing the rewind spring

Installing new rewind spring

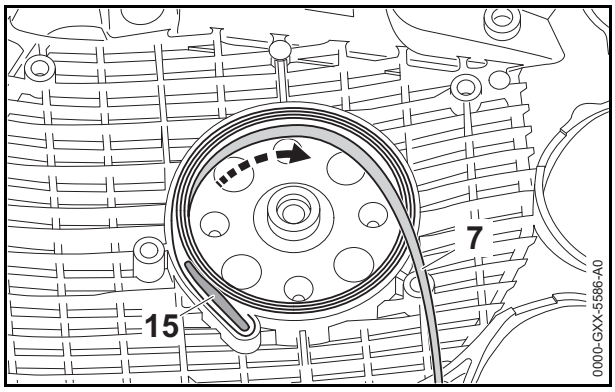
- Wear safety glasses and work gloves.
- Lubricate the rewind spring (7) in the frame with a few drops of special lubricant before installing.



- Fit the rewind spring (7) with frame (14) in position so that the anchor loop engages the lug (15).
- Apply punch to holes in frame (15) and push the rewind spring (7) into the fan housing (3) (arrows).
- Remove the frame (14). The rewind spring (7) may pop out and unwind.
- Push the rewind spring (7) fully into its seat in the fan housing (3).
- Coat the rewind spring (7) with special lubricant.
- Install the rope rotor, 🕮 10.8.

Installing unwound rewind spring

- Wear safety glasses and work gloves.



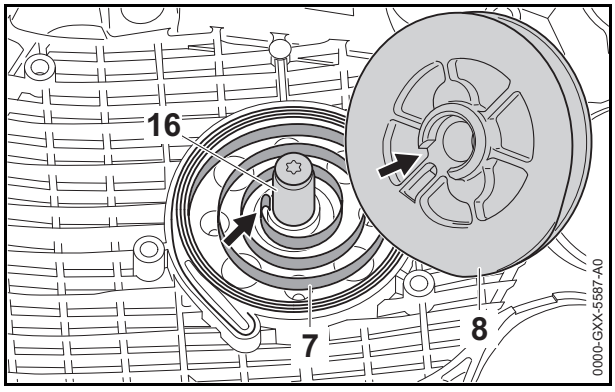
- Fit anchor loop of rewind spring (7) over the lug (15).
- Fit the rewind spring (7) in the housing clockwise, holding it in place at the same time.
- Push the rewind spring (7) fully into its seat in the fan housing (3).
- Coat the rewind spring (7) with special lubricant.
- Install the rope rotor, 🕮 10.8.

10.8 Installing the Rope Rotor

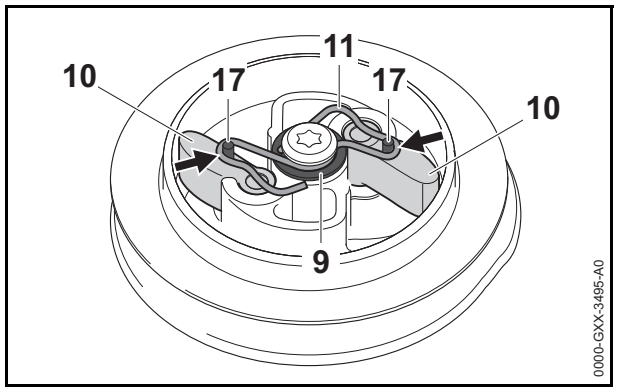
⚠ WARNING

The rewind spring can pop out and cause serious eye and hand injuries.

Wear safety glasses and work gloves.



- Coat the starter post (16) with special lubricant.
- Push the rope rotor (8) onto the starter post (16) so that the loop (arrow) of the rewind spring (7) engages the recess in the rotor (8).



- Fit the washer (9).
- Fit the pawls (10).
- Lubricate pegs (17) on pawls with multipurpose grease.
- Fit the spring clip (11) so that its loops (arrows) are around the pegs (17).
- Install the starter rope,🕮 10.9.

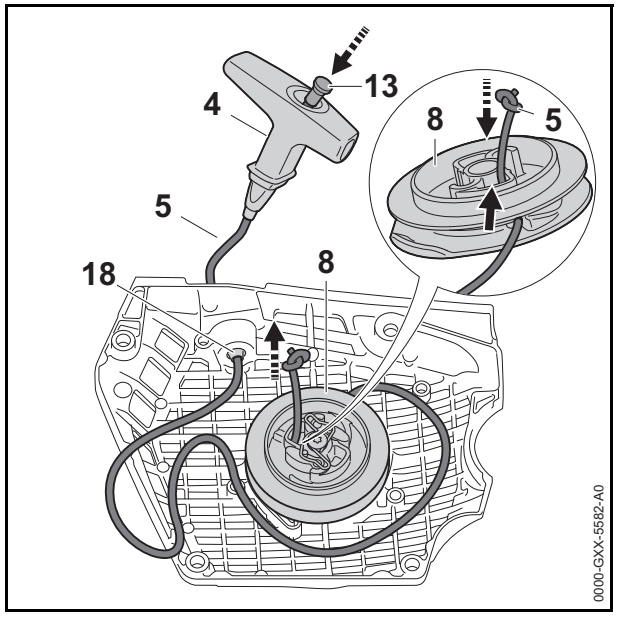
10.9 Installing the Starter Rope

- Install the rope rotor, 🕮 10.8.

⚠ WARNING

The rewind spring can pop out and cause serious eye and hand injuries.

Wear safety glasses and work gloves.



- Thread the starter rope (5) through the grip (4).
- Press the nipple (13) into the grip (4) as far as stop.
- Thread the starter rope (5) through the bushing (18).
- Thread the starter rope (5) through the rope rotor (8).
- Secure the end of the rope (5) with a simple overhand knot.
- Push the rope (5) into the recess (arrow).

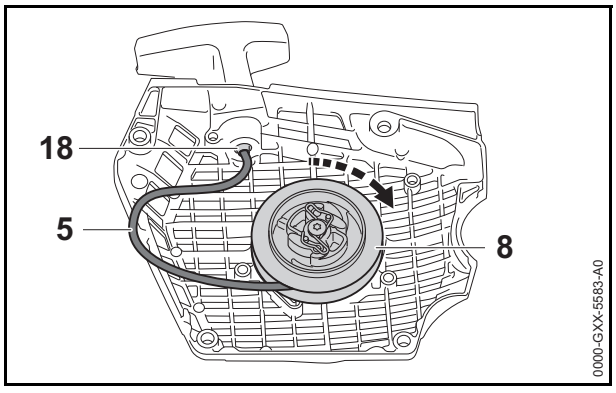
- Wind the starter rope (5) onto the rope rotor (8).
- Tension the rewind spring, 📖 10.10.

10.10 Tensioning the Rewind Spring.

⚠ WARNING

The rewind spring can pop out and cause serious eye and hand injuries.

Wear safety glasses and work gloves.



- Pull out a short length of starter rope (5) between the rope rotor (8) and bushing (18).
- Use the starter rope (5) to rotate the rope rotor six full turns clockwise.
- Hold the rope rotor (8) steady.

The rewind spring (7) is now pre-tensioned. Rotating the starter rope (5) and rope rotor (8) causes the rope to become twisted.

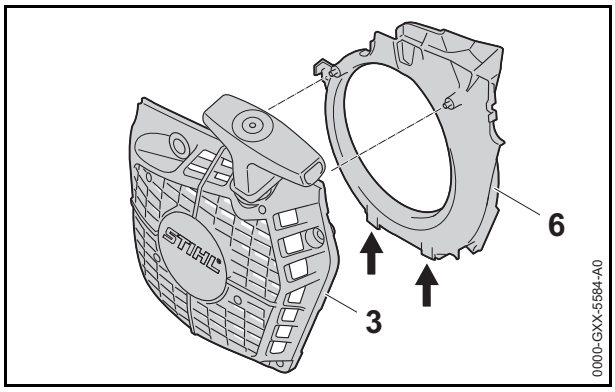
- Pull out the twisted rope (5) with the starter grip (4) and straighten it out.
- Keep the starter rope (5) under tension and allow it to slowly rewind onto the rope rotor (8).

The starter grip (4) should sit firmly in the rope guide bushing (18).

- If the starter grip (4) is too loose, rotate the rope rotor (8) one more turn to increase tension of rewind spring (7).
- Pull starter grip (4) out to full length and check how much further the rope rotor (8) can be turned.

It must be possible to turn the rotor (8) another half turn.

- If the rope rotor (8) cannot be turned any further: Hold the rotor (8) steady and take one turn of the rope off the rotor (8).

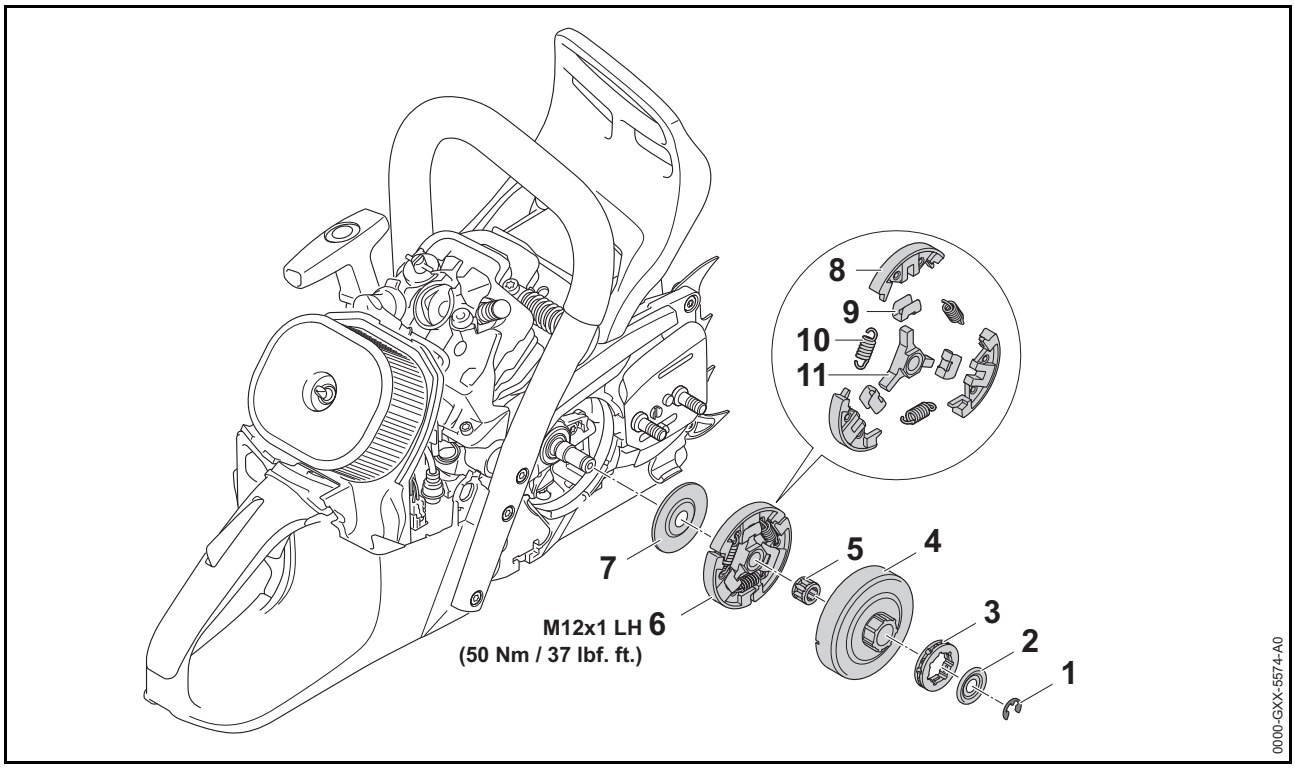


- Position retaining lugs (arrows) of segment (6) in recesses in fan housing (3).
- Push the pins of the segment (6) into the holes in the fan housing (3) so that they snap into position.

10.11 Installing the Rewind Starter

- Fit the fan housing (3) with the rewind starter (4 - 12).
- Insert and tighten down the screws (2) firmly.
- Insert and tighten down the screw (1) firmly.

11 Clutch



11.1 Tools, aids

- Screwdriver - 0000 890 2300
- Locking strip - 0000 893 5904
- Torque wrench – 5910 890 0312 or equivalent tool
- Screwdriver T27x200 – 5910 890 2415 or equivalent tool
- Assembly hook - 5910 890 2800
- Socket DIN3124-S19x12.5L – 5910 893 5613 or equivalent tool
- Flex ratchet wrench

11.2 Removing Clutch

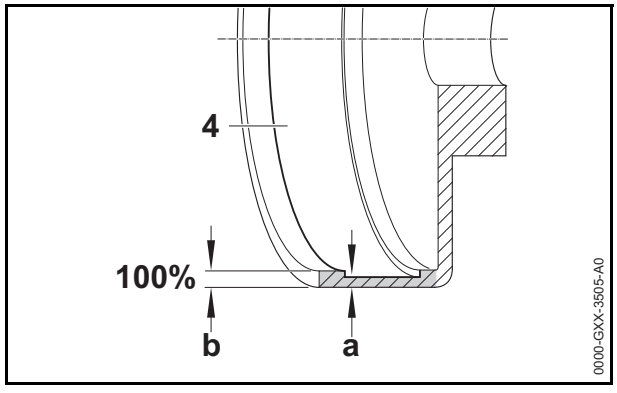
- Prepare for repair, 📖 3.1.
- Release chain brake.
- Remove chain sprocket cover.
- Remove circlip (1).
- Remove washer (2).
- Remove rim sprocket (3).
- Remove clutch drum (4).
- Remove needle cage (5).
- Remove shroud.
- Remove the spark plug.
- Slide locking strip 0000 893 5904 through the spark plug hole and hold.
- Turn clutch (6) as far as possible clockwise by hand.

The piston is blocked.

- Unscrew clutch (6) clockwise.
- Pull locking strip 0000 893 5904 out of the spark plug hole.
- Remove the washer (7).

11.3 Checking clutch drum

- Remove the clutch drum, 📖 11.2.



- Examine the clutch drum (4) for signs of wear.

If distinct wear marks are visible on the inner diameter of the clutch drum (4):

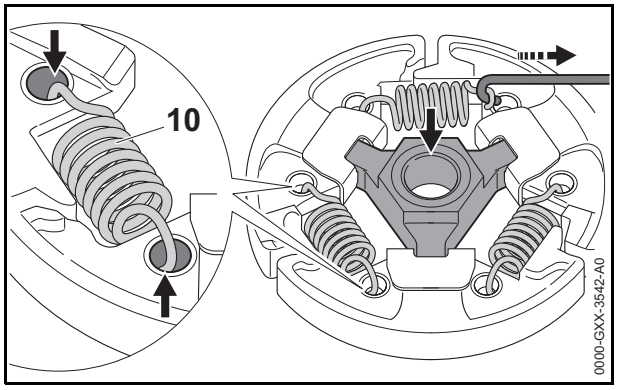
- Measure wall thickness a.

If wall thickness a is less than 80% of wall thickness b:

- Replace clutch drum (4).

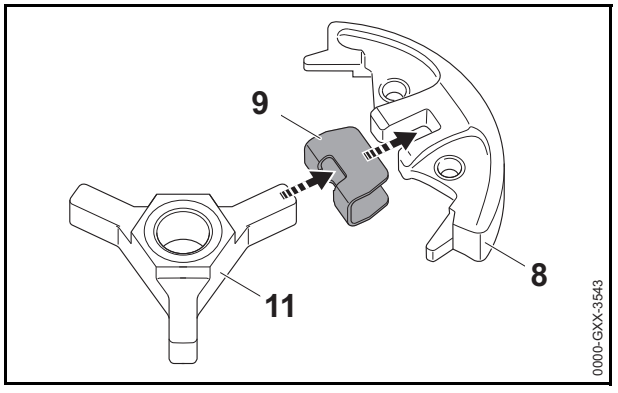
11.4 Disassembling clutch

- Remove the clutch, 🕮 11.2.

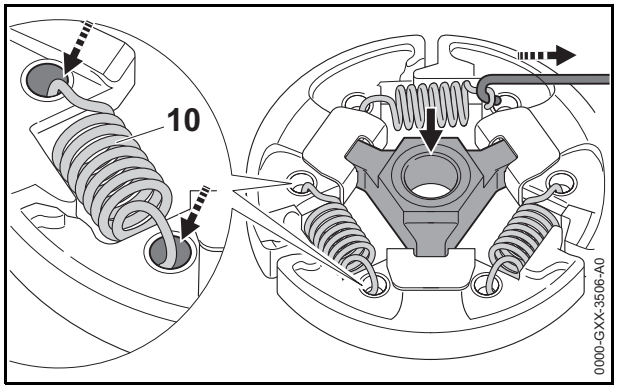


- Use hook 5910 890 2800 to remove the clutch springs (10).
- Remove centrifugal weights (8) from carrier (11).
- Remove the holder (9) from the carrier (11).

11.5 Assembling clutch



- Slide the holder (9) onto the centrifugal weights (8).
- Slide the centrifugal weights (8) together with the holder (9) onto the carrier (11).



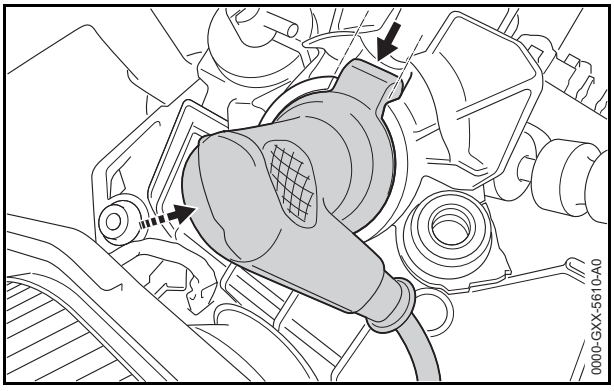
- Hook clutch springs (10) onto the side with the hexagon (arrow) using the hook 5910 890 2800.

11.6 Installing clutch

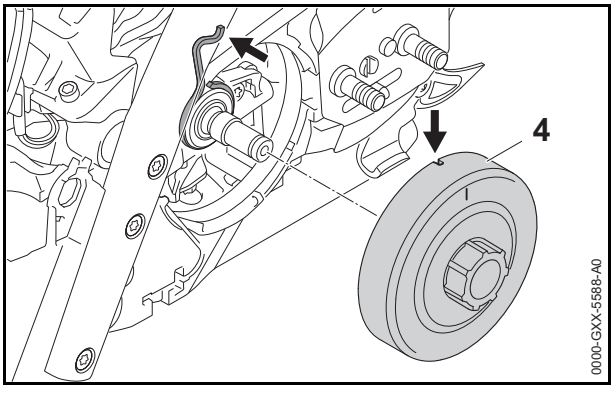
- Assembling clutch, 🕮 11.5.
- Slide washer (7) onto the crankshaft (8) so that the marking “TOP” is visible.
- Slide locking strip 0000 893 5904 through the spark plug hole and hold.
- Turn clutch (6) as far as possible anticlockwise by hand on the crankshaft.

The piston is blocked.

- Tighten clutch (6) counterclockwise.
- Pull locking strip 0000 893 5904 out of the spark plug hole.
- Install the spark plug.



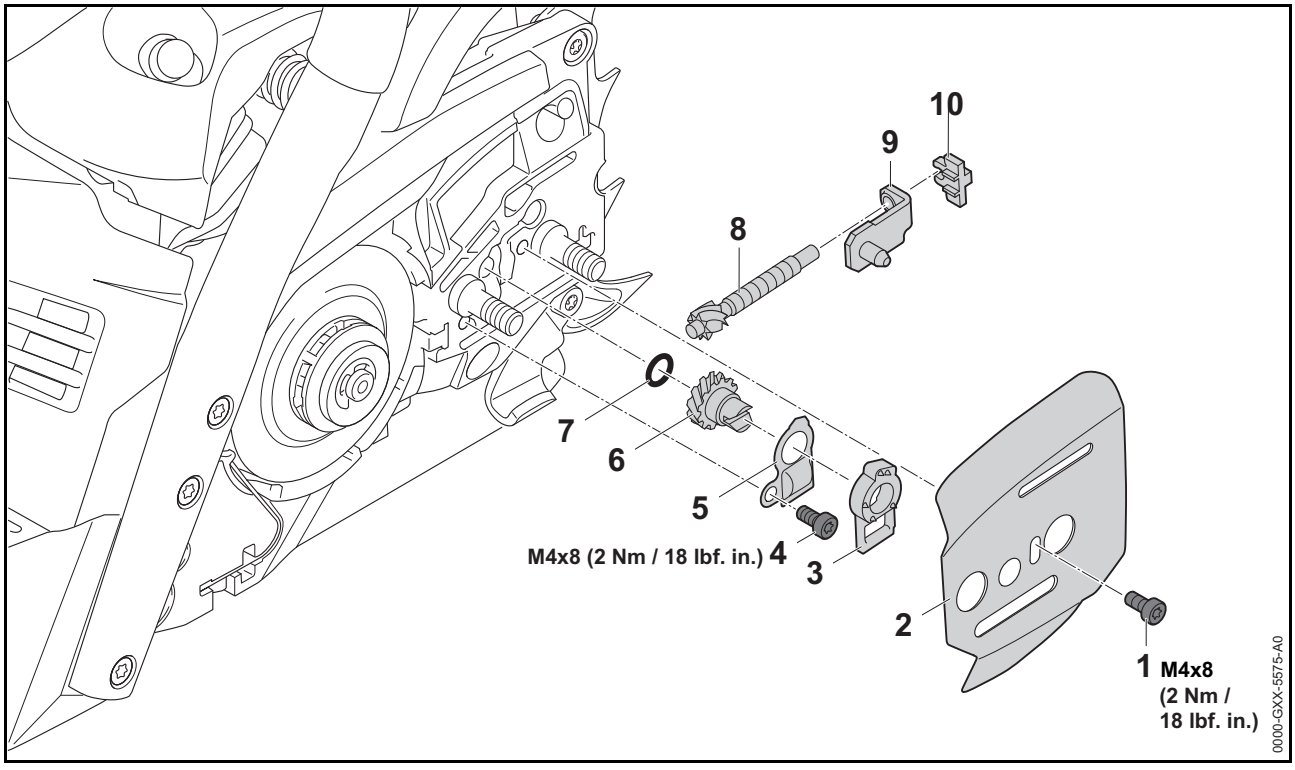
- Position the spark plug boot (2) so that the tab (arrow) is located in the recesses of the air guide shroud.
- Install shroud.
- Slide on the needle cage (5).



- Slide on the clutch drum (4) so that the spigot (arrow) of the worm sits in the groove (arrow) of the clutch drum (4).
- Slide on rim sprocket (3).
- Slide on the washer (2).
- Install the circlip (1).
- Attach the chain sprocket cover.
- Engage chain brake.
- Calibrate the chain saw, 🕮 4.

The control unit is optimally adjusted to the mechanical and mechatronic components.

12 Chain Tensioner



12.1 Tools, Servicing Aids

- Screwdriver – 0000 890 2300 or equivalent
- Socket, T27x125 – 0812 542 2104 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent
- STIHL multipurpose grease – 0781 120 1110

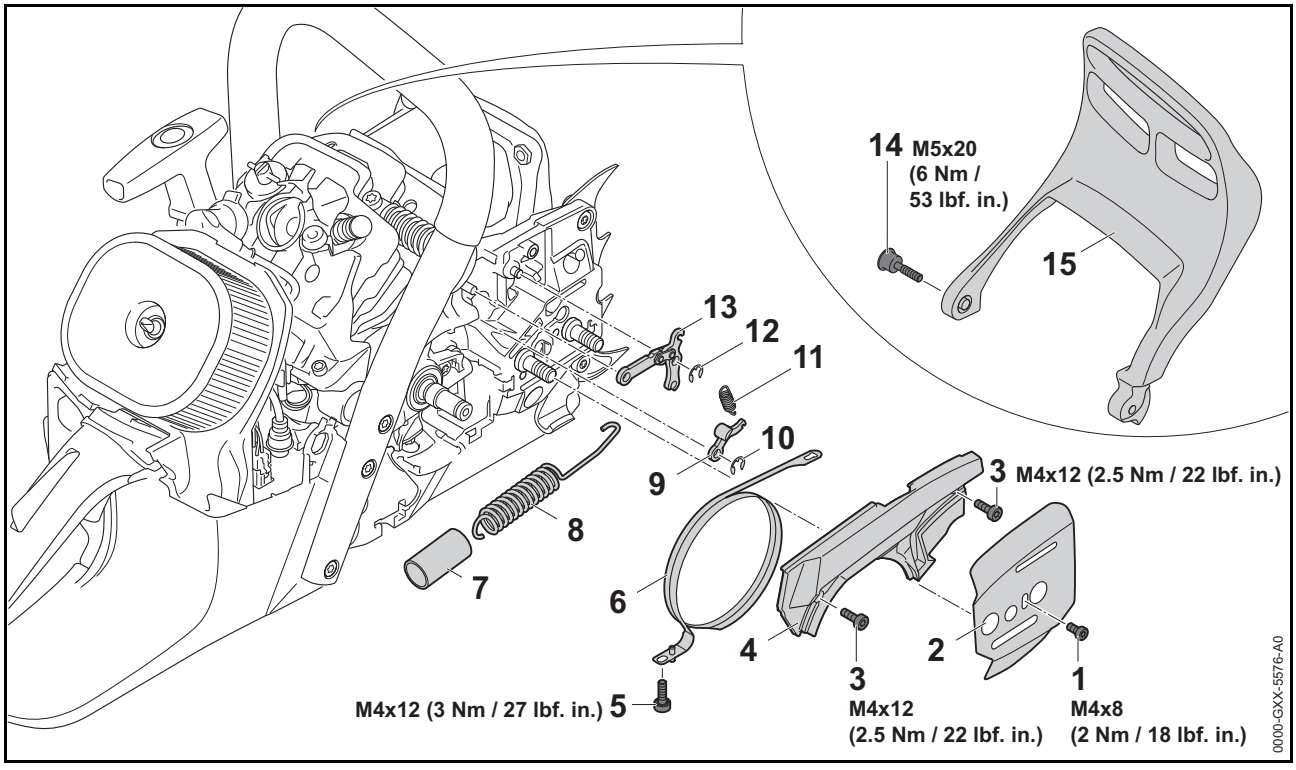
12.2 Removing the Chain Tensioner

- Preparations, 📖 3.1.
- Remove the chain sprocket cover.
- Take out the screw (1).
- Remove the side plate (2).
- Turn spur gear (6) clockwise until the tensioner slide (9) butts against the right end of the slot and exposes the screw (4).
- Take out the screw (4).
- Pull out the spur gear (6) together with the cover plate (5) and retainer (3).
- Pry the retainer (3) off the cover plate (5).
- Remove the cover plate (5) from the spur gear (6).
- Pull out the sealing ring (7).
- Pull out the tensioner slide (9) together with the adjusting screw (8).
- Remove the thrust pad (10).
- Unscrew the adjusting screw (8) from the tensioner slide (9).

12.3 Installing the Chain Tensioner

- Coat teeth of adjusting screw (8) with multipurpose grease.
- Screw the adjusting screw (8) a few turns into the tensioner slide (9).
- Fit the thrust pad (10) on the end of the adjusting screw (8).
- Fit the tensioner slide (9) together with the adjusting screw (8).
- Lubricate sealing ring (7) with multipurpose grease.
- Fit the sealing ring (7) in the recess in the spur gear (6).
- Coat teeth of spur gear (6) with multipurpose grease.
- Slide the cover plate (5) onto the spur gear (6).
- Push the retainer (3) onto the spur gear (6).
- Fit the spur gear (6) together with the cover plate (5) and retainer (3) in position.
- Insert and tighten down the screw (4).
- Place the side plate (2) in position.
- Insert and tighten down the screw (1).
- Fit the chain sprocket cover.

13 Chain Brake



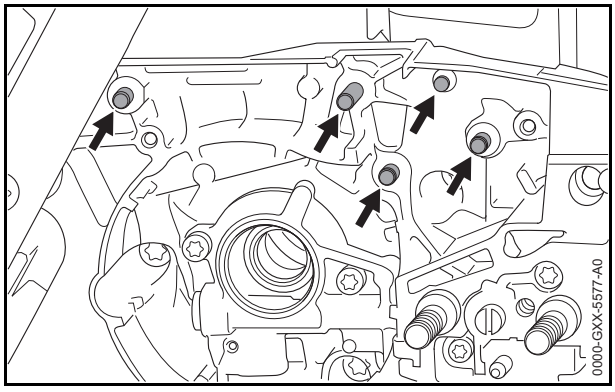
13.1 Tools, Servicing Aids

- Screwdriver – 0000 890 2300 or equivalent
- Socket, T27x125 – 0812 542 2104 or equivalent
- Assembly tool – 1117 890 0900
- Combination wrench – 1142 890 3400
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent
- Hook – 5910 890 2800
- Flat nose side cutting pliers
- STIHL multipurpose grease – 0781 120 1110
- Loctite 242 (medium-strength threadlocking adhesive) – 0786 111 2101

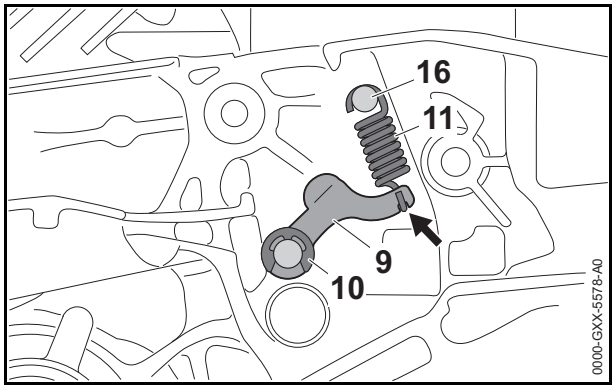
13.2 Removing the Brake Band, Spring and Lever

- Preparations, 🕮 3.1.
- Remove the chain sprocket cover.
- Remove the clutch drum, 🕮 11.2.
- Take out the screw (1).
- Remove the side plate (2).
- Take out the screws (3).
- Remove the cover (4).
- Engage the chain brake.
- Take out the screw (5).
- Pull the brake band (6) out of its seat.
- Unhook the brake band (6) from the lever (13).
- Install a new brake band (6) if:
- there are noticeable signs of wear on the inside diameter
- the remaining thickness is less than 0.6 mm (0.0024 in).
- Use hook 5910 890 2800 to disconnect short end of brake spring (8).
- Unhook the brake spring (8) from the lever (13).
- Pull the protective tube (7) off the brake spring (8).
- If the turns of the brake spring (8) are not tightly against one another, install a new spring.
- Remove the E-clip (12).
- Take out the screw (14).
- Remove the hand guard (15) with brake lever (13).
- Pull the lever (13) out of the hand guard (15).
- Disconnect and remove the torsion spring (11) from the lever (9).
- Remove the E-clip (10).
- Remove the lever (9).

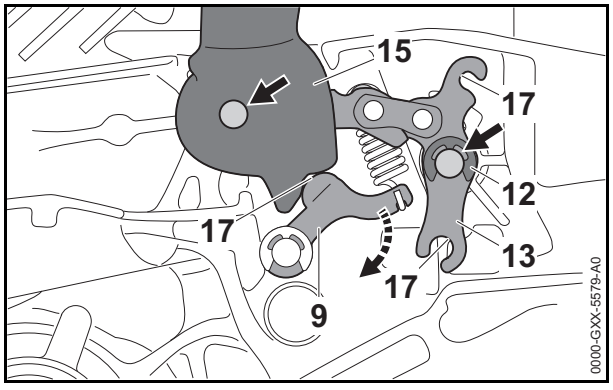
13.3 Installing the Brake Band, Spring and Lever



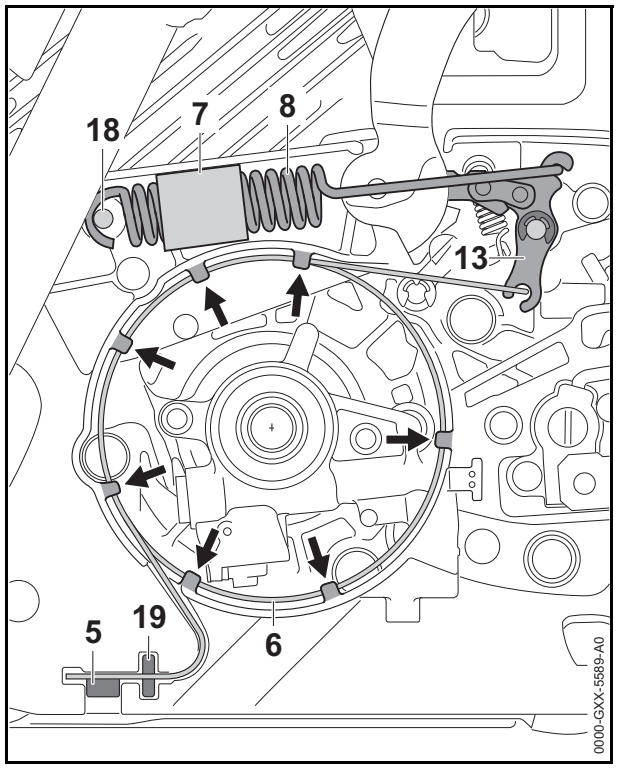
- Lubricate bearing pins (arrows) with multipurpose grease.



- Fit the lever (9).
- Fit the E-clip (10).
- Attach spring (11) to the pin (16).
- Attach spring (11) to lever (9) so that opening in spring hook faces outwards (arrow).
- Place hand guard (15) in position and insert screw (14) just a few turns.



- Fit the lever (13) in the hand guard (15).
- Fit the hand guard (15) with lever (13) on the bearing pins (arrows).
- Swing lever (9) in direction of arrow until the hand guard (15) and lever (13) can be pushed into place as far as stop.
- Fit the E-clip (12).
- If the original screw (14) is re-used: Coat thread of screw (14) with Loctite 242.
- Insert and tighten down the screw (14).
- Lubricate running faces (17) with multipurpose grease.



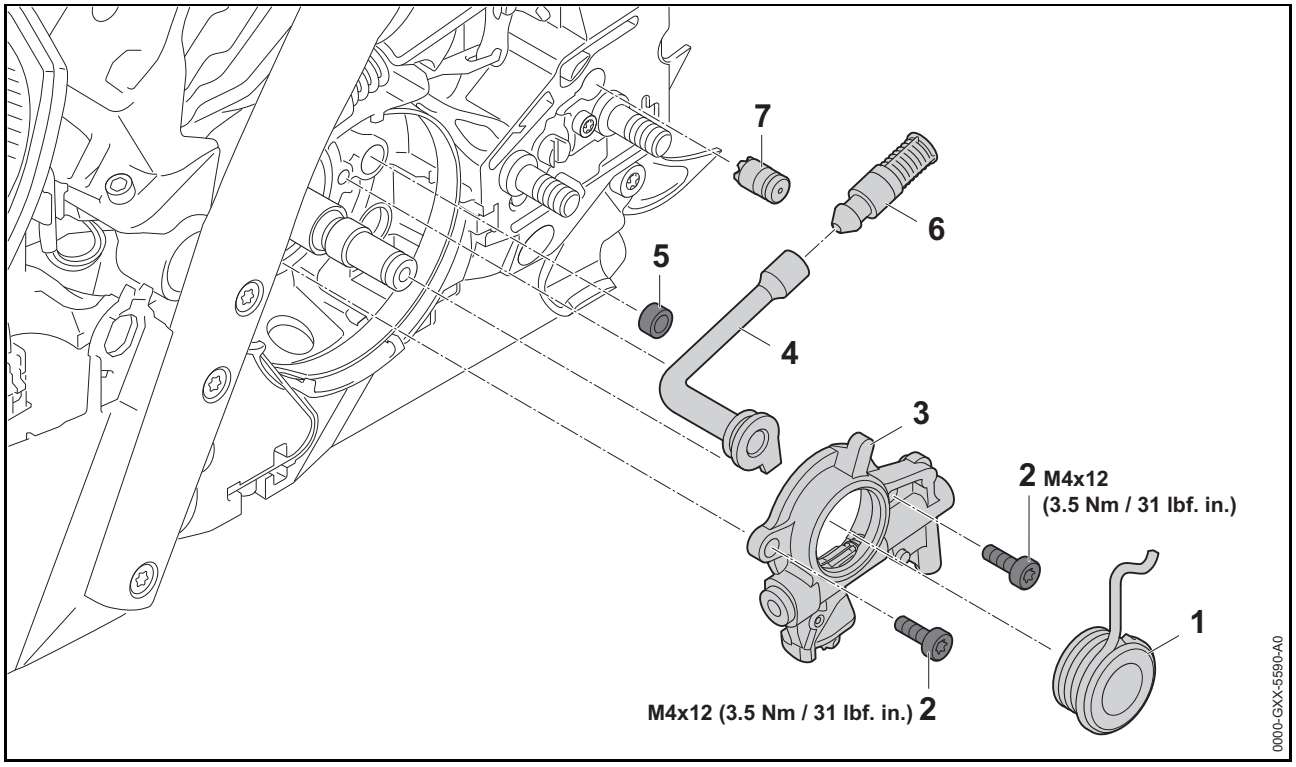
- Push the tube (7) over the center of the brake spring (8).
- Attach the brake spring (8) to the lever (13).
- Push the hand guard (15) forwards and use tool 1117 890 0900 to attach brake spring (8) to the bearing pin (18).
- Engage the chain brake.
- Attach the brake band (6) to the brake lever (13).
- Place brake band (6) in the guides (arrows).
- Press pin (19) in brake band (6) into its seat in the crankcase.
- If the original screw (5) is re-used: Coat thread of screw (5) with Loctite 242.
- Insert and tighten down the screw (5).
- Lubricate joints and pivot points of lever (13) with multipurpose grease.
- Fit the cover (4).
- Insert and tighten down the screws (3) firmly.
- Fit the side plate (2).
- Insert and tighten down the screw (1) firmly.
- Install the clutch drum, 📖 11.6.
- Fit the chain sprocket cover.
- Check operation of chain brake, 📖 3.1.

13.4 Testing the Chain Brake

- Mount one of the cutting attachment combinations listed in the instruction manual.
- Start the engine.
- Disengage the chain brake.
- Open throttle wide and engage brake manually.

The chain brake is operating properly if the chain comes to a stop without any noticeable delay.

14 Chain lubrication

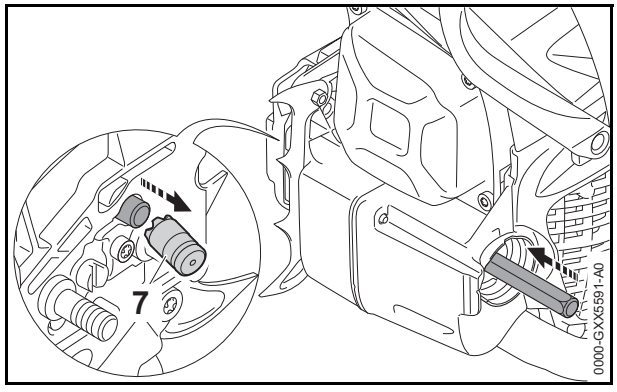


14.1 Tools, Servicing Aids

- Socket, T27x125 – 0812 542 2104 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent
- Hook – 5910 893 8800
- Flat nose side cutting pliers
- Pin punch, 6 mm
- STIHL OH 723 press fluid – 0781 957 9000
- Loctite 242 (medium-strength threadlocking adhesive) – 0786 111 2101
- Chain oil

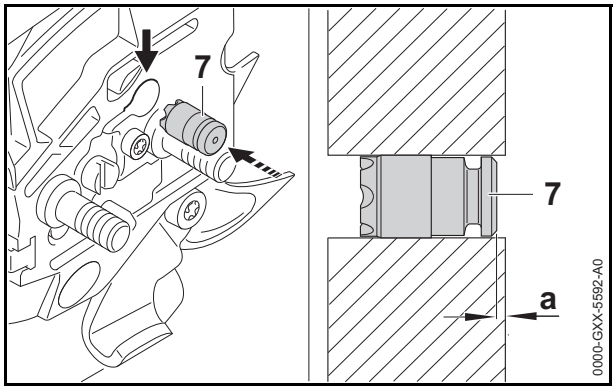
14.2 Removing Oil Tank Vent Valve

- Preparations, 🕮 3.1.
- Remove the side plate, 🕮 12.2.
- Open the tank cap.
- Drain the oil tank into a suitable container.



- Use a 6 mm punch to drive out the valve (7) from inside the tank.

14.3 Installing Oil Tank Vent Valve



- Insert valve (7) from outside in the crankcase bore (arrow).
- Use a 6 mm punch to drive home the valve until distance ‘a’ is 1 mm (0.04 in).
- Fit the side plate, 🕮 12.3.
- Fill up with oil.
- Close the tank cap.

14.4 Removing the Worm

- Preparations, 🕮 3.1.
- Open the tank cap.
- Drain the oil tank into a suitable container.
- Remove the chain sprocket cover.
- Remove the clutch, 🕮 11.2.
- Pull off the worm (1).

14.5 Removing the Oil Pump

- Remove the worm, 🕮 14.4.
- Take out the screws (2).
- Remove the oil pump (3).
- Remove the sealing ring (5).

14.6 Removing the Hose

- Remove the oil pump, 🕮 14.5.
- Remove the brake band, 🕮 13.2.
- Grip the tab of the hose (4) with flat nose pliers and pull it out together with the pickup body (6).

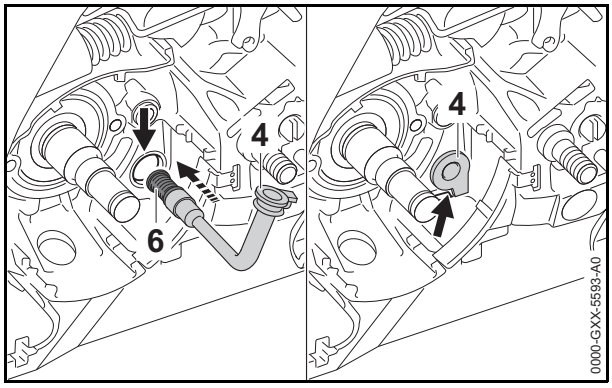
14.7 Removing Pickup Body from Oil Tank

- Remove the hose, 🕮 14.6.
- Pull off the pickup body.

14.8 Installing Pickup Body in Oil Tank

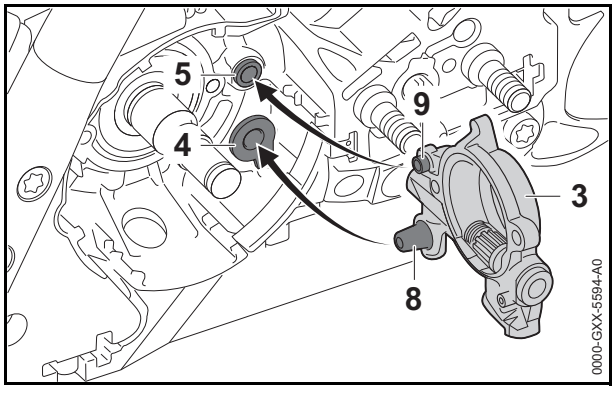
- Push the pickup body (6) onto the hose (4) - make sure it is firmly seated.
- Install the hose (4), 🕮 14.9.

14.9 Installing the Hose



- Push the hose (4) with pickup body (6) through the housing bore (arrow).
- Position the hose (4) so that the tab butts against the guide (arrow).
- Push home the tab as far as stop.
- If the pickup body (6) is not properly positioned in the oil tank: Use hook 5910 893 8800 to re-position the pickup body (6).
- Install the brake band, 🕮 13.3.
- Install the oil pump, 🕮 14.10.

14.10 Installing the Oil Pump

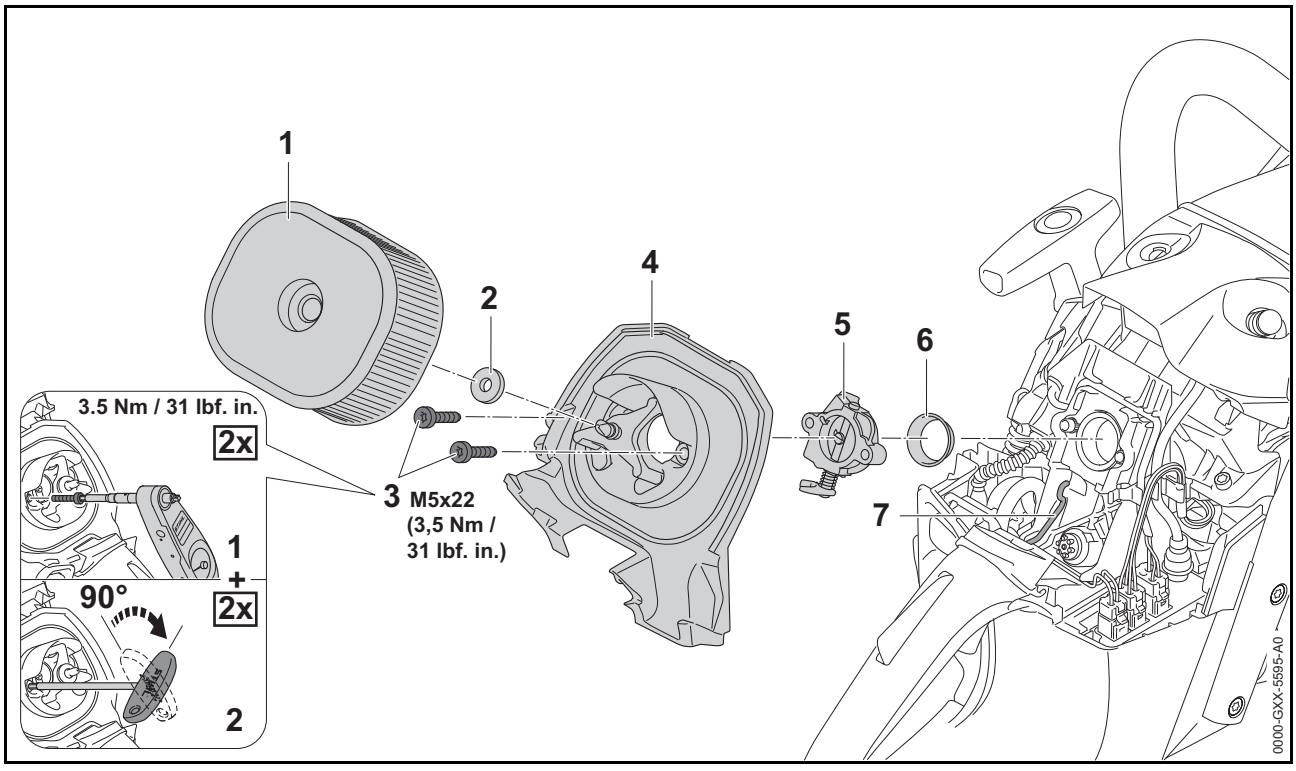


- Fit the sealing ring (5).
- Coat sealing ring (5) and connector (8) with press fluid.
- Fit the oil pump (3) so that the connector (8) engages the hose (4) and face (9) locates against the sealing ring (5).
- If the original screws (2) are re-used: Coat threads of screws (2) with Loctite 242.
- Insert and tighten down the screws (2) firmly.
- Install the worm gear, 🕮 14.11.

14.11 Installing the Worm

- Coat worm (1) with chain lubricant.
- Push home the worm (1) as far as stop.
- Install the clutch, 🕮 11.6.
- Fit the chain sprocket cover.
- Close the tank cap.

15 Filter Base, Throttle Body



15.1 Tools, Servicing Aids

- Socket, T27x125 – 0812 542 2104 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent

15.2 Removing the Filter Base

- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the air filter (1).
- If the seal (2) is damaged: Remove the seal (2).
- Take out the screws (3).
- Remove the filter base (4).

15.3 Installing the Filter Base

- Place the filter base (4) in position.
- Insert and tighten down the screws (3).
- Turn the screws (3) another 90°.
- Push seal (2) onto flange of filter base (4) as far as stop.
- Fit the air filter (1).
- Fit the filter cover.
- If a new air filter (1) has been fitted: Calibrate the saw, 🕮 4.

The controller is optimally adjusted to suit the mechanical components.

15.4 Removing the Throttle Body

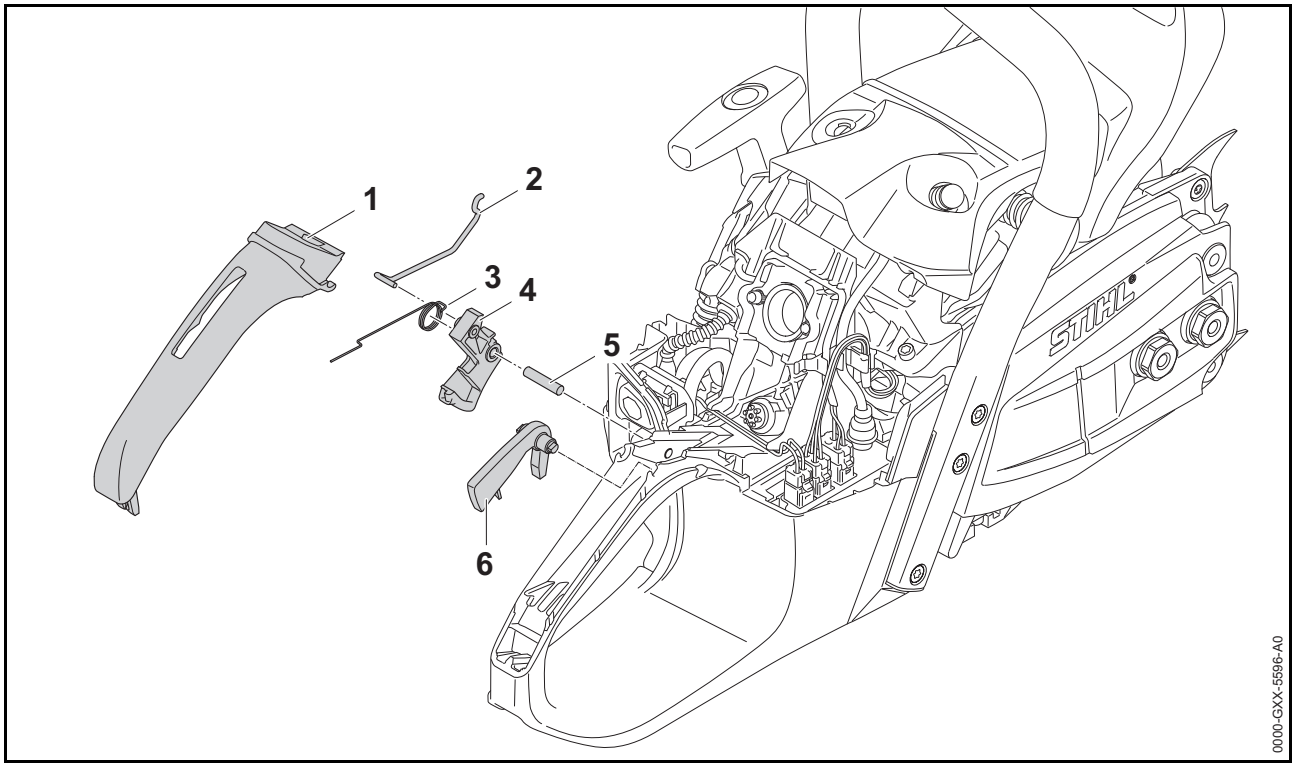
- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the filter base, 🕮 15.2.
- Remove the throttle body (5) and disconnect it from the throttle linkage (7).
- Remove the sleeve (6).

15.5 Installing the Throttle Body

- Fit the sleeve (6) in the manifold.
- Connect throttle body (5) to throttle linkage (7) and place it in position.
- Install the filter base, 🕮 15.3.
- Fit the filter cover.
- Calibrate the saw, 🕮 4.

The controller is optimally adjusted to suit the mechanical and mechatronic components.

16 Throttle Control

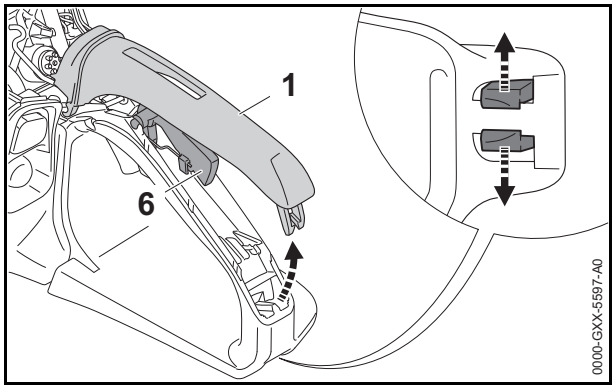


16.1 Tools, Servicing Aids

– Pin punch, 5 mm

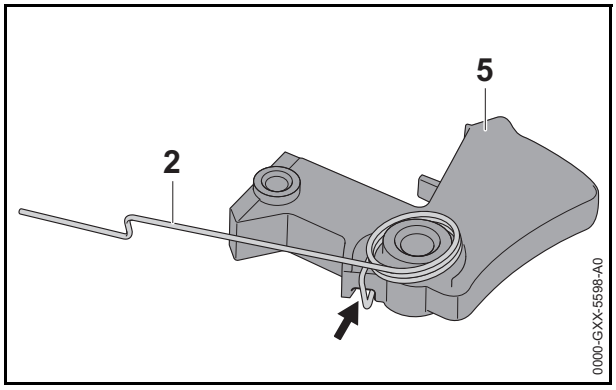
16.2 Removing Trigger Lockout, Throttle Trigger and Throttle Linkage

- Preparations, 📖 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the filter base, 📖 15.2.
- Remove the throttle body and sleeve, 📖 15.4.

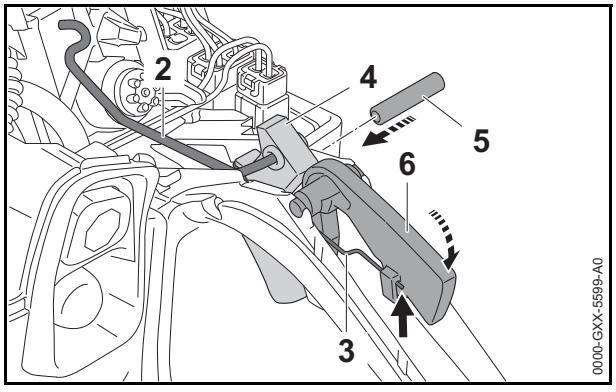


- Hold the handle molding (1) steady.
- Disengage the retaining lugs on the handle molding (1).
- Depress the lockout lever (6) and hold it in that position.
- Swing the handle molding (1) upwards, making sure the lockout lever (6) and torsion spring (3) do not pop out.
- Remove the handle molding (1).
- Swing the lockout lever (6) upwards and lift it away.
- Pull the throttle linkage (2) out of the throttle trigger (4).
- Use a 5 mm pin punch to drive the pin (5) out of the handle housing.
- Take out the throttle lever (4) together with the torsion spring (3).
- Take the torsion spring (3) off the throttle trigger (4).

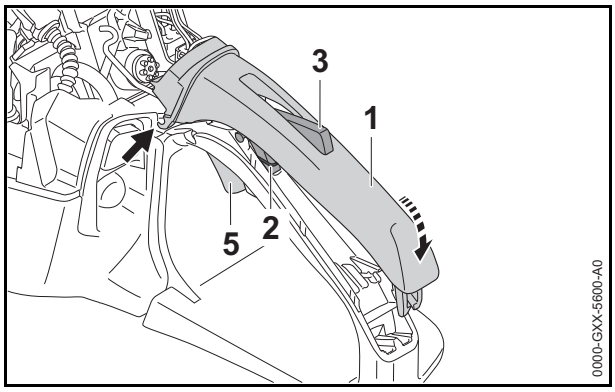
16.3 Installing Trigger Lockout, Throttle Trigger and Throttle Linkage



- Fit torsion spring (3) on throttle trigger (4).
- Engage leg (arrow) of torsion spring (3) in throttle trigger (4).

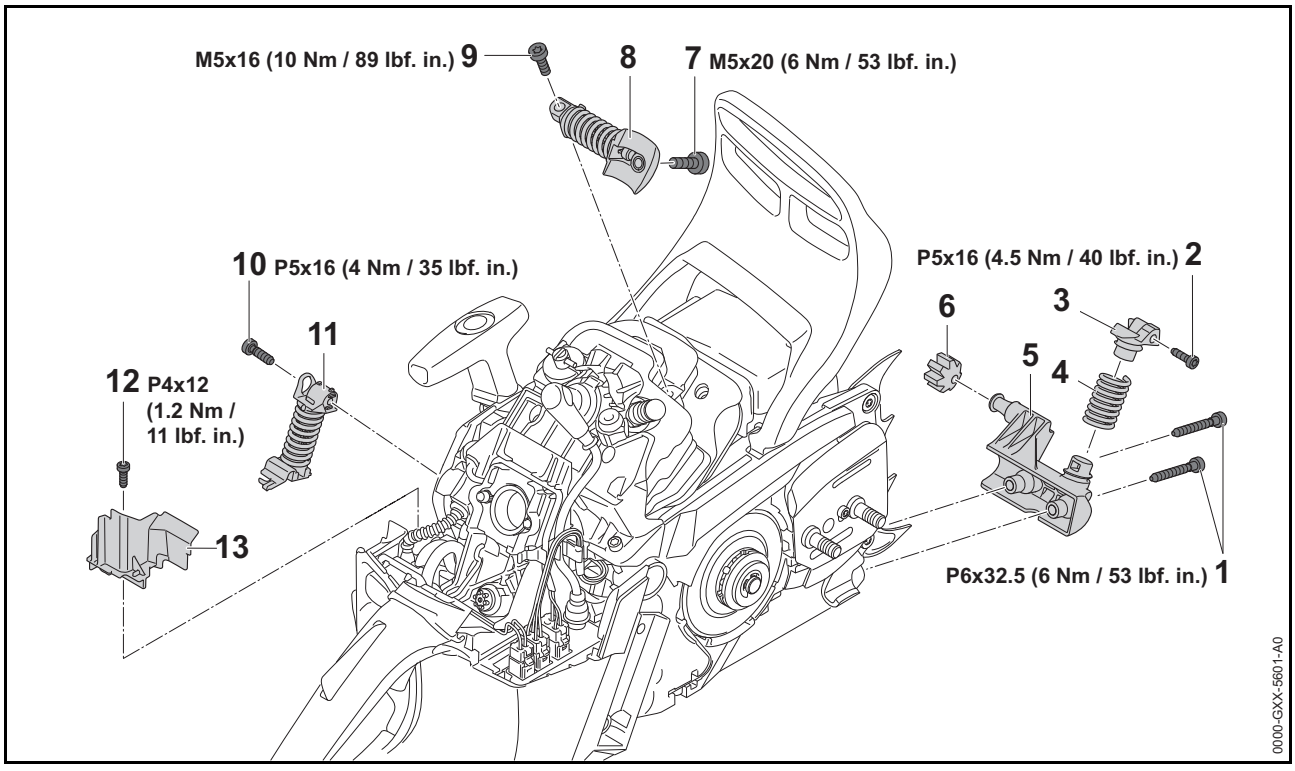


- Place throttle trigger (4) with torsion spring (3) in the handle housing.
- Use a 5 mm pin punch to drive the pin (5) into the bore in the handle housing.
- Swing torsion spring (3) to side of handle and attach throttle linkage (2) to the throttle trigger (4).
- Depress throttle trigger (4) and place the lockout lever (6) in the handle housing so that the torsion spring (3) is under the lever's pivot.
- Swing the lockout lever (6) towards the handle housing.
- Attach torsion spring (3) to the guide (arrow) on the lockout lever (6).



- Push the handle molding (1) into the guides (arrow) in the handle housing as far as stop.
- Swing the handle molding (1) downwards, making sure the lockout lever (6) and torsion spring (3) do not pop out.
- Engage the handle molding (1) in position.
- Try to pull the throttle trigger (4) without depressing the lockout lever (6).
- If the trigger (4) can be pulled: Remove and then re-install the lockout lever (6) and throttle trigger (4). Replace damaged parts.
- Install sleeve and throttle body, 📖 15.5.
- Install the filter base, 📖 15.3.
- Install the air filter.
- Fit the filter cover.

17 Antivibration Elements

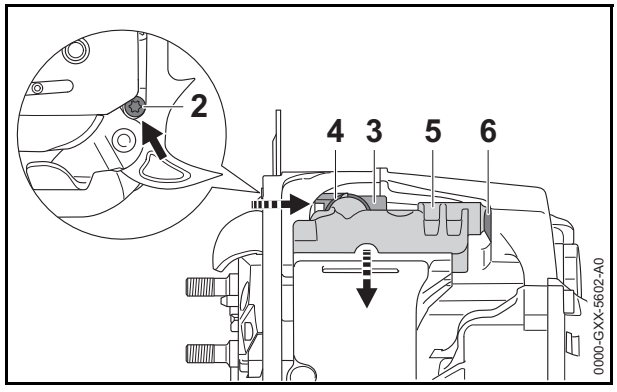


17.1 Tools, Servicing Aids

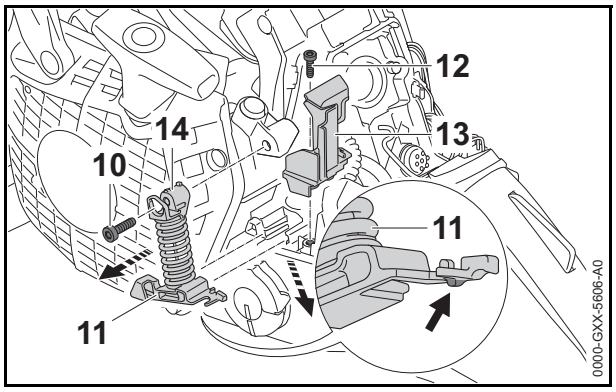
- Socket, T20x125 – 0812 542 2041 or equivalent
- Socket, T27x125 – 0812 542 2104 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T20 – 5910 890 2301 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent
- Punch-down tool – 5910 890 4000
- STIHL OH 723 press fluid – 0781 957 9000
- Loctite 242 (medium-strength threadlocking adhesive) – 0786 111 2101

17.2 Removing the Antivibration Elements

- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the shroud.
- Remove screw (7) from handlebar.
- Take out the screw (9).
- Remove the AV spring (8).
- Remove the chain sprocket cover.
- Take out the screws (1).
- Remove the handlebar, 🕮 9.2.

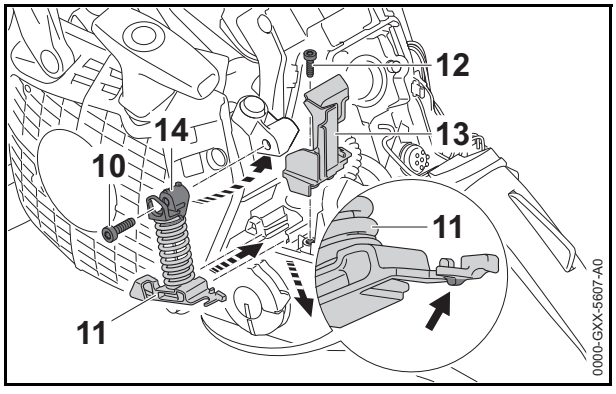


- Take out the screw (2).
- Ease the tank housing away from the crankcase and hold it there.
- Use punch-down tool 5910 890 4000 to pry out the bearing plug (3) sideways.
- Remove the handlebar bracket (5) together with the bearing plug (3), spring (4) and annular buffer (6).
- Rotate bearing plug (3) counterclockwise to remove it from the spring (4).
- Unscrew spring (4) counterclockwise from the handlebar bracket (5).
- Pull off the annular buffer (6).
- Remove the filter base, 🕮 15.2.

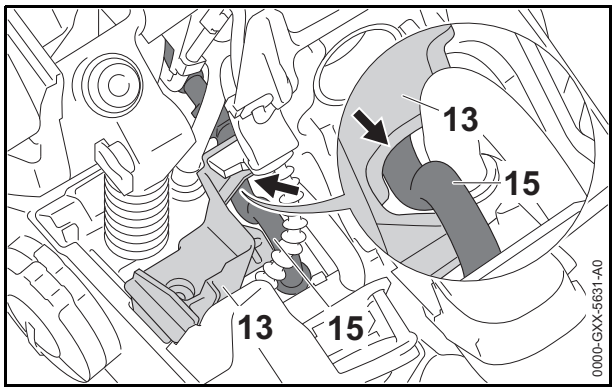


- Take out the screw (12).
- Remove the retainer (13).
- Take out the screw (10).
- Ease the tank housing away from the crankcase (arrow) and hold it there.
- Unlock the detent (arrow)) and pull out the AV spring (11).

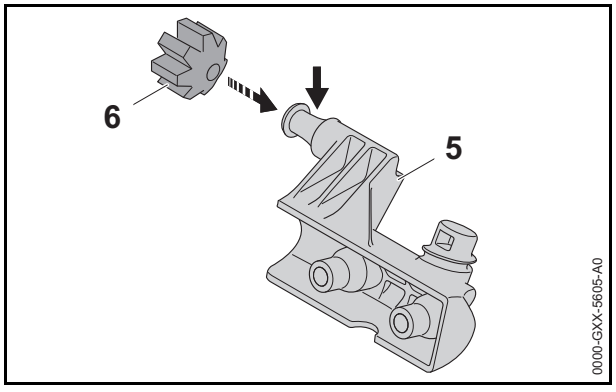
17.3 Installing the Antivibration Elements



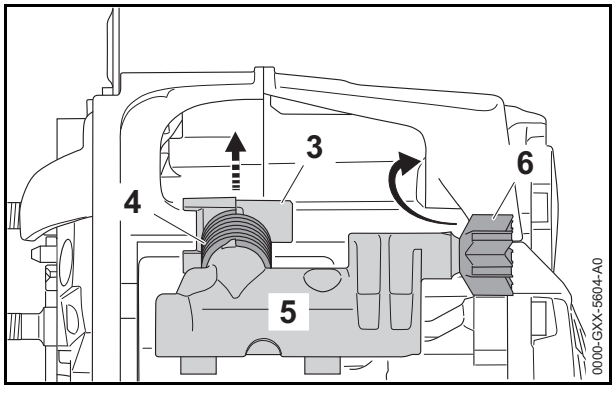
- Ease the tank housing away from the crankcase (arrow) and hold it there.
- Push the AV spring (11) into the guides in the tank housing until the detent (arrow) snaps into place.
- Position the tank housing on the crankcase so that the bearing plug (14) is in its seat in the crankcase.
- Insert and tighten down the screw (10).



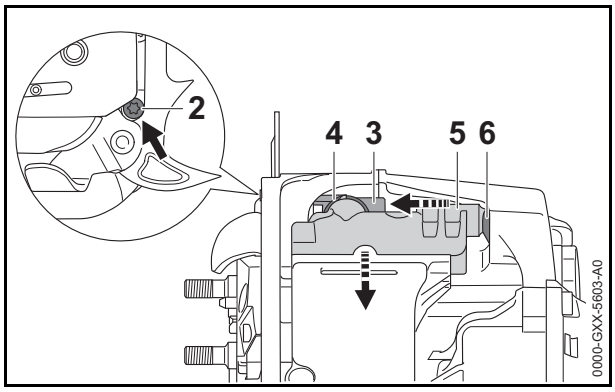
- Fit the retainer (13) so that the impulse hose (15) is in the recess (arrows).
- Insert and tighten down the screw (12).
- Install the filter base, 📖 15.3.



- Coat stub (arrow) on handlebar bracket (5) with press fluid.
- Push the annular buffer (6) onto the stub as far as the stop.
- Screw the spring (4) clockwise onto the handlebar bracket (5) as far as stop.
- Screw the bearing plug (3) clockwise onto the spring (4) as far as stop.
- Ease the tank housing away from the crankcase and hold it there.

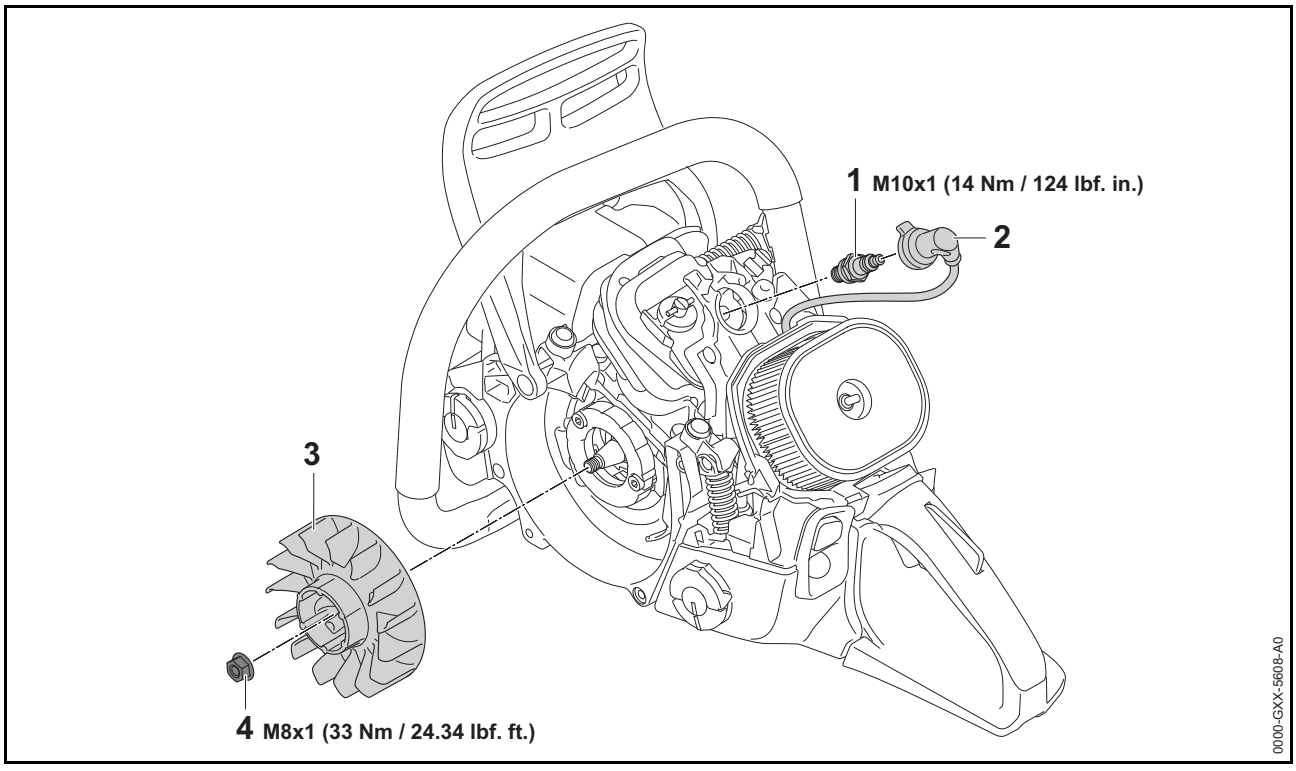


- Position the annular buffer (6) in its seat in the crankcase.



- Use punch-down tool 5910 890 4000 to push the bearing plug (3) into it seat in the crankcase.
- Insert and tighten down the screw (2).
- Install the handlebar, 🕮 9.3.
- Fit the chain sprocket cover.
- Place the AV spring (8) in position.
- If the original screw (9) is re-used: Coat thread of screw (9) with Loctite 242.
- Insert and tighten down the screw (9).
- Insert and tighten down the screw (7).
- Mount the shroud.
- Fit the filter cover.

18 Fly wheel



18.1 Special Servicing Tools, Servicing Aids

- Locking strip – 0000 893 5904
- Torque wrench – 5910 890 0302 or equivalent
- Torque wrench – 5910 890 0312 or equivalent
- Socket, DIN3124, 13mm – 5910 893 5608 or equivalent
- Socket, 17 mm – 5910 893 5610 or equivalent
- Solvent-based degreasant containing no chlorinated or halogenated hydrocarbons

18.2 Removing the Flywheel

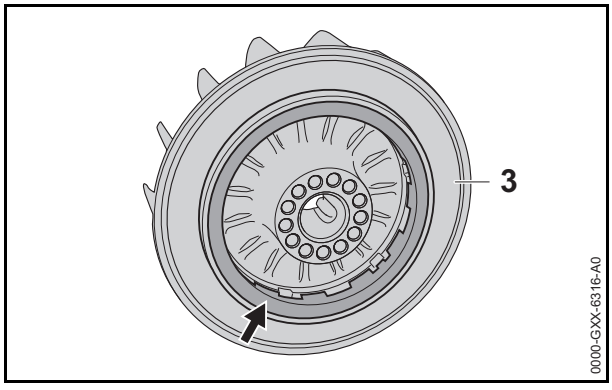
- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the shroud.
- Remove the fan housing with rewind starter, 🕮 10.2.
- Pull boot (2) off the spark plug.
- Remove the spark plug (1).
- Push the locking strip 0000 893 5904 into the spark plug hole and hold it there.
- Rotate the flywheel (3) counterclockwise as far as stop.

The piston is now blocked.

- Unscrew the nut (4).
- Pull the locking strip 0000 893 5904 out of the spark plug hole.
- Insert screws of puller 5910 890 4504 in the holes in the flywheel (3) and tighten them down.
- Turn the screw of puller 5910 890 4504 clockwise.

The flywheel (3) is released from the crankshaft.

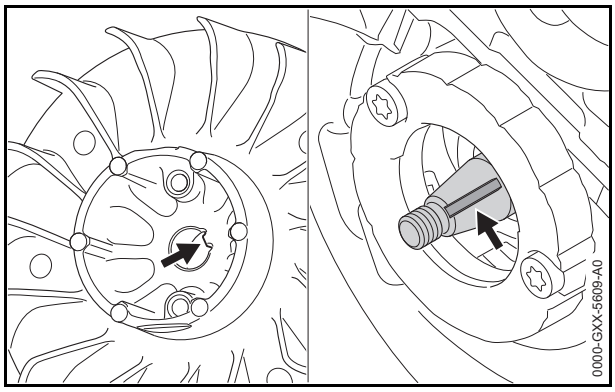
- Remove the flywheel (3) together with the puller 5910 890 4504.
- Take out screws of puller 5910 890 4504 and remove the puller.



- If the flywheel (3) or magnet ring (arrow) is damaged: Replace the flywheel (3).

18.3 Installing the Flywheel

- Push the locking strip 0000 893 5904 into the spark plug hole and hold it there.



The bore in the flywheel (3) and the crankshaft taper must be degreased and free from oil.

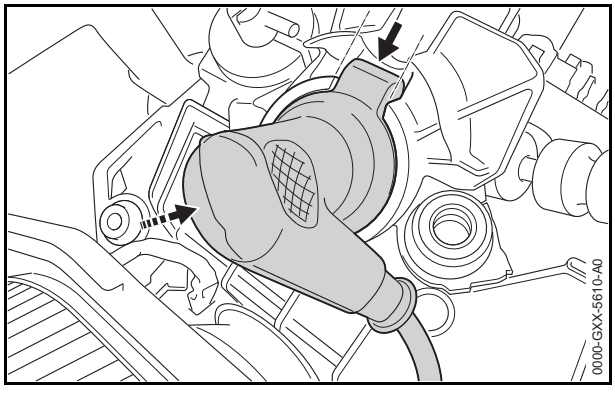
- Fit the flywheel (3) on the crankshaft as far as stop so that its spline (arrow) engages the slot (arrow) in the crankshaft.
- Rotate the flywheel (3) clockwise by hand as far as stop.

The piston is now blocked.

- Fit and tighten down the nut (4).

If the locking strip 0000 893 5904 slips out during tightening:

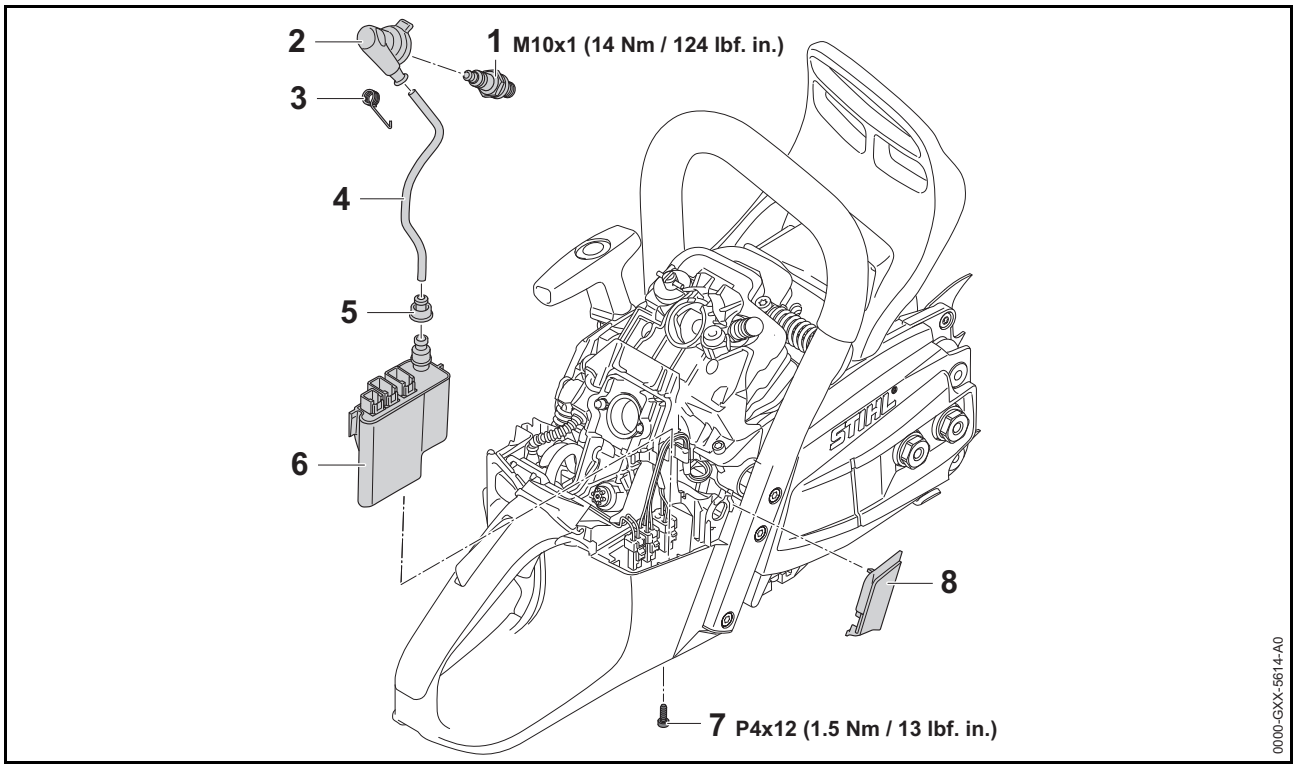
- Push the locking strip 0000 893 5904 into the spark plug hole and hold it there.
- Fit and tighten down the nut (4).
- Pull the locking strip 0000 893 5904 out of the spark plug hole.
- Install the spark plug (1).



- Fit the spark plug boot (2) so that its tab (arrow) is seated in the recess in the airflow shroud.
- Install the fan housing with rewind starter, 🕮 10.11.
- Mount the shroud.
- Remove the filter cover
- Calibrate the saw, 🕮 4.

The controller is optimally adjusted to suit the mechanical and mechatronic components.

19 Controller, Ignition Lead



19.1 Special Servicing Tools, Servicing Aids

- Open-end wrench, 14 mm
- Socket, T20x125 – 0812 542 2041 or equivalent
- MDG 1 analyzer – 5910 840 0210
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T20 – 5910 890 2301 or equivalent
- Cover – 5910 890 3200
- Punch-down tool – 5910 890 4000
- Flat nose side cutting pliers
- Needle
- Pin punch, 5 mm
- STIHL OH 723 press fluid – 0781 957 9000

19.2 Testing the Ignition System

WARNING

The saw's ignition system generates high voltages. Touching live components when the rewind starter is operated can result in serious or fatal injuries. Do not touch live components while the rewind starter is being operated.

Do not operate the rewind starter if the spark plug boot has been removed or the spark plug unscrewed.

WARNING

The saw's ignition system produces sparks. Unconfined sparks may cause a fire or an explosion in an easily combustible or explosive environment. This can result in serious or fatal injuries and damage to property.

Do not operate the rewind starter if the spark plug boot has been removed or the spark plug unscrewed.

19.2.1 Checking Ignition System with MDG 1 Analyzer

The saw automatically detects that the ignition system is operating properly. This information can be read out with the MDG 1 using the STIHL diagnostic software

- Connect saw to MDG 1 analyzer.
- Start STIHL diagnostic software and follow the instructions.

19.3 Removing the Ignition Lead

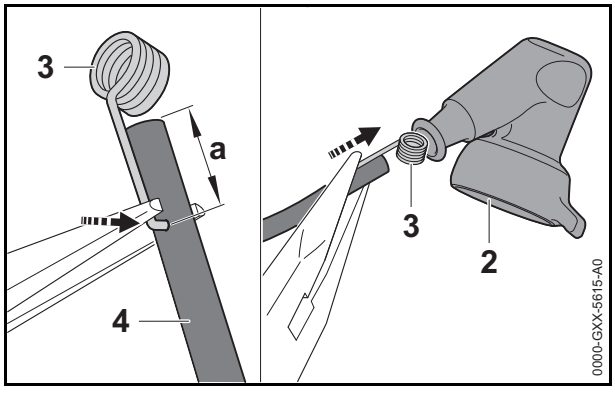
- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the shroud.
- Pull boot (2) off the spark plug.
- Unscrew ignition lead (4) counterclockwise from the ignition module (6).
- Remove ignition lead (4).
- Remove the grommet (5).

19.4 Disassembling the Ignition Lead

- Remove the ignition lead, 🕮 19.3.
- Pull the spark plug boot (2) off the ignition lead (4).
- Pull the leg spring (3) off the ignition lead (4).

19.5 Assembling the Ignition Lead

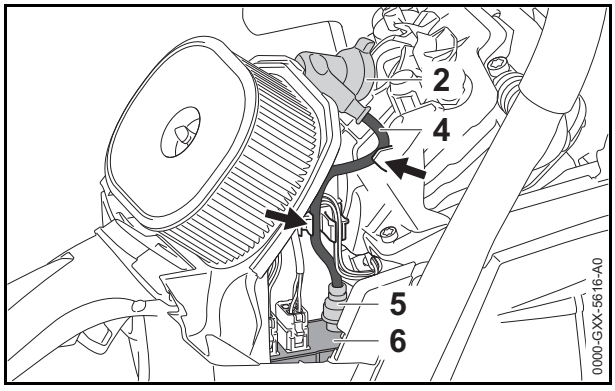
- Cut new ignition lead (4) to length of 150 mm (6 in).



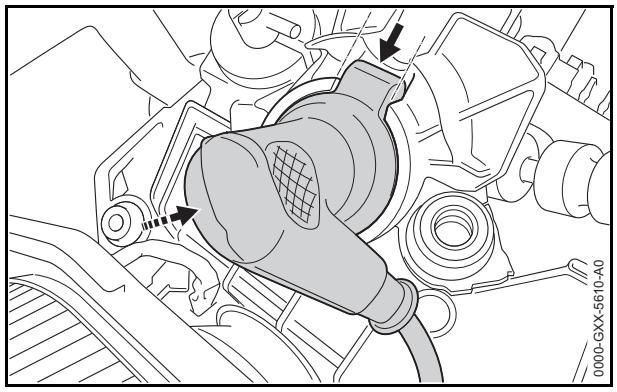
- Use a needle to pierce the center of the ignition lead's insulation at distance 'a' = 10 mm (0.35 in) from the end of the lead (4).
- Pinch the hook of the leg spring (3) into the pierced hole in the ignition lead (4) as far as stop.
- Coat inside of spark plug boot (2) with press fluid.
- Hold the ignition lead (4) and leg spring (3) together and push them into the spark plug boot (2) as far as stop.
- Install the ignition lead, 🕮 19.6.

19.6 Installing the Ignition Lead

- Assemble the ignition lead, 🕮 19.5.



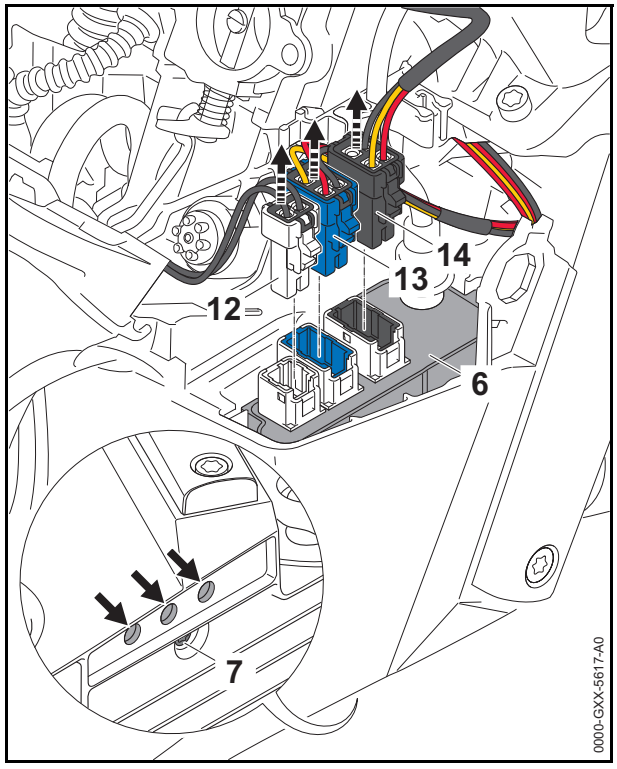
- Fit the grommet (5) on the ignition lead (4).
- Position the ignition lead (4) behind the sensor wires (arrow) and inside the guide rib (arrow).
- Screw the ignition lead (4) clockwise into the controller (6) as far as stop.
- Push the grommet (5) onto the controller (6).
- Push the ignition lead (4) into the guide (arrow).



- Fit the spark plug boot (2) so that its tab (arrow) is seated in the recess in the airflow shroud.
- Mount the shroud.
- Fit the filter cover.

19.7 Removing the Controller

- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the shroud.
- Remove the filter base, 🕮 15.2.
- Remove the throttle body and sleeve, 🕮 15.4.
- Unlock and remove the cover (8).



- If area around the connectors (12, 13, 14) on the controller (6) is dirty: Clean the controller (6) around the connectors (12, 13, 14).
- Unlock and remove the white connector (12).
- Unlock and remove the blue connector (13).

- Unlock and remove the black connector (14).
- Take out the screw (7).
- Insert a 5 mm pin punch in the holes (arrows) and pry the controller (6) out of the handle housing from below and then lift it away.
- Remove the ignition lead, 📖 19.3.

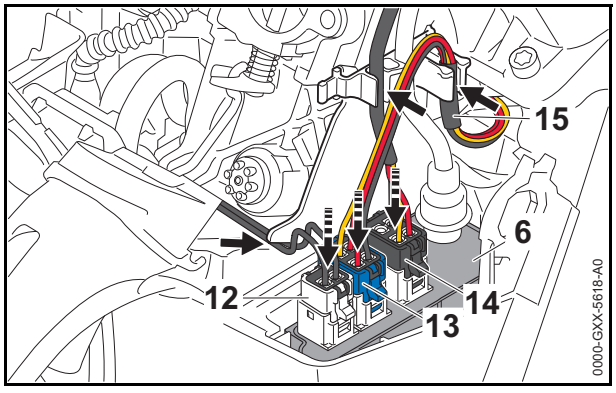
19.8 Installing the Controller

It will not be possible to tune the saw correctly if the controller is replaced without first transferring the data from the original controller to the new controller. The engine can be seriously damaged.

If the controller has to be replaced, perform the following steps:

– Connect the saw to the STIHL MDG 1 analyzer.
– Start STIHL diagnostic software.
– Carry out function “Replacing controller”.

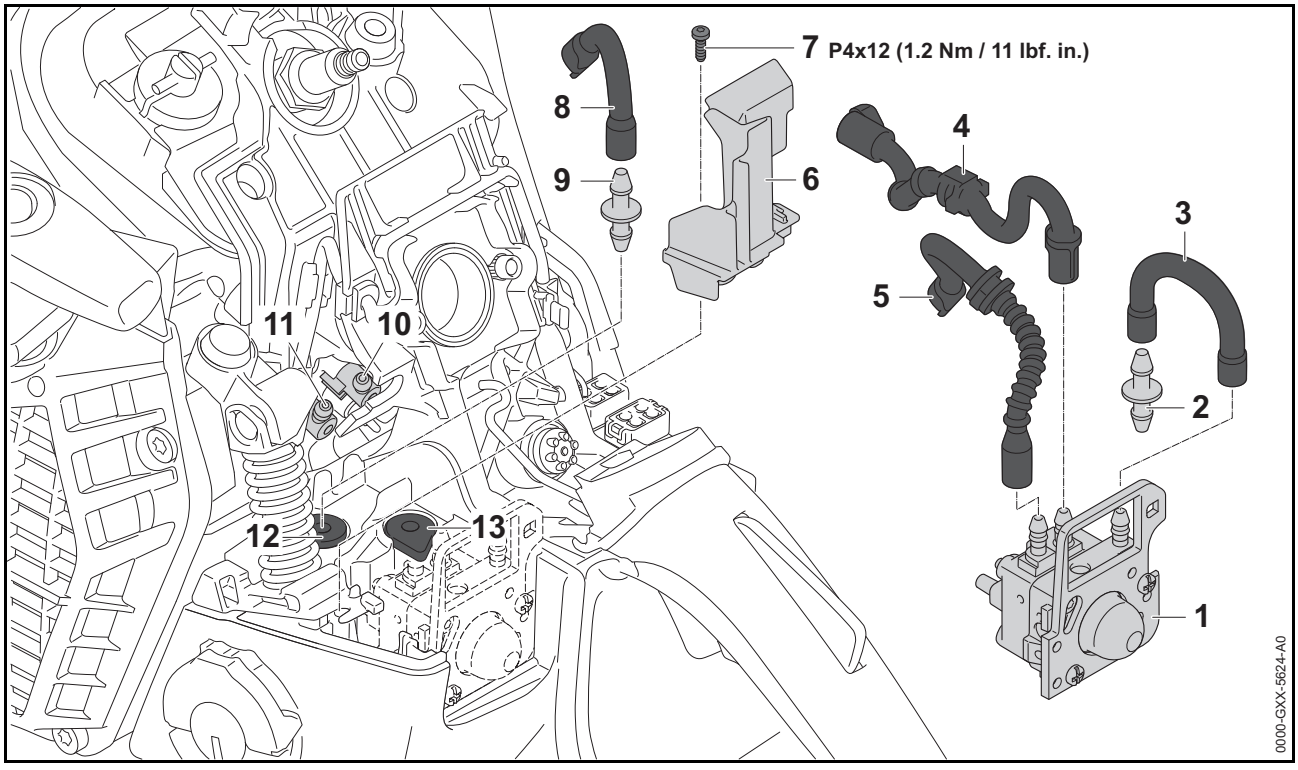
- Install the ignition lead, 📖 19.6.
- Fit the controller (6) in the handle housing.
- Insert and tighten down the screw (7).



- Insert and engage black connector (14) in black socket.
- Use punch-down tool 5910 890 4000 to push wiring harness of black connector (14) into the cable holder (arrow).
- Insert and engage blue connector (13) in blue socket.
- Position shrink-on tube (15) on wires from blue connector (13) as shown in the illustration.
- Use punch-down tool 5910 890 4000 to push shrink-on tube (15) into the cable holder (arrow).
- Insert and engage white connector (12) in white socket.
- Use punch-down tool 5910 890 4000 to push wires from white connector (12) into the guide (arrow) so that the wire loop is between the guide and connector.
- Fit cover (8) so that it snaps into place.
- Install throttle body and sleeve, 📖 15.5.
- Install the filter base, 📖 15.3.
- Mount the shroud.
- Install the air filter.
- Fit the filter cover.
- Calibrate the saw, 📖 4.

The controller is optimally adjusted to suit the mechanical and mechatronic components.

20 Fuel Hoses, Impulse Hose



20.1 Tools, Servicing Aids

- Socket, T20x125 – 0812 542 2041 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T20 – 5910 890 2301 or equivalent
- Punch-down tool – 5910 890 4000
- STIHL OH 723 press fluid – 0781 957 9000

20.2 Removing Fuel Suction Hose Outside the Tank

⚠ WARNING

The fuel suction hose (3) may be damaged during removal. Fuel may escape.

Install a new fuel suction hose (3).

- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the filter base, 🕮 15.2.
- Remove the throttle body and sleeve, 🕮 15.4.
- Take out the screw (7).
- Remove the bracket (6).
- Pull the fuel hose (3) off the injection pump (1).
- Pull the fuel hose (3) with nipple (2) out of the fuel hose in the tank(13).
- Pull nipple (2) out of the fuel suction hose (3).

20.3 Installing Fuel Suction Hose Outside the Tank

⚠ WARNING

The fuel suction hose (3) may be damaged during removal.

Install a new fuel suction hose (3).

- Coat both ends of nipple (2) with press fluid.
- Push the nipple (2) into the fuel suction hose (3) as far as stop.
- Push the nipple (7) with fuel suction hose (3) into the fuel suction hose in the tank (13) as far as stop.
- Push the fuel suction hose (3) onto nipple of injection pump (1) as far as stop.
- Fit the bracket (6).
- Insert and tighten down the screw (7) firmly.
- Install sleeve and throttle body, 🕮 15.5.
- Install the filter base, 🕮 15.3.
- Install the air filter.
- Fit the filter cover.

20.4 Removing Fuel Hose

⚠ WARNING

The fuel hose (5) may be damaged during removal. Fuel may escape.

Install a new fuel hose (5).

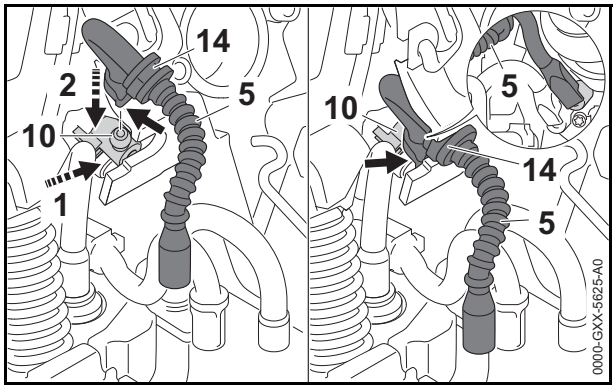
- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the filter base, 🕮 15.2.
- Remove the throttle body and sleeve, 🕮 15.4.
- Take out the screw (7).
- Remove the bracket (6).
- Pull the fuel hose (5) off the injection pump (1), .
- Remove the fuel hose (5) from the guide.
- Pull fuel hose (5) off the elbow connector (10) on the injection module.

20.5 Installing the Fuel Hose

⚠ WARNING

The fuel hose (5) may be damaged during removal. Fuel may escape.

Install a new fuel hose (5).



- Push the fuel hose (5) onto the elbow connector (10) on the injection module so that the tab (arrow) is sits against the end face of the elbow connector (10).
- Push grommet (14) of fuel hose (5) into the guide on the handle housing as far as stop.
- Push the fuel hose (5) onto nipple of injection pump (1) as far as stop.
- Fit the bracket (6).
- Insert and tighten down the screw (7) firmly.
- Install sleeve and throttle body, 🕮 15.5.
- Install the filter base, 🕮 15.3.
- Install the air filter.
- Fit the filter cover.

20.6 Removing the Fuel Return Hose

⚠ WARNING

The fuel return hose (8) may be damaged during removal. Fuel may escape.

Install a new fuel return hose (8).

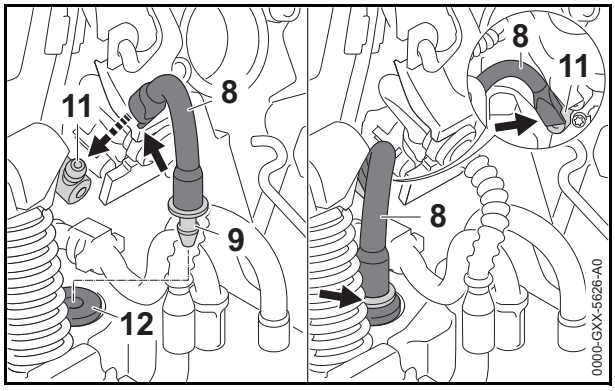
- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the filter base, 🕮 15.2.
- Remove the throttle body and sleeve, 🕮 15.4.
- Pull the fuel return hose (8) with nipple (9) out of the grommet (12).
- Pull fuel return hose (8) off the elbow connector (11) on the injection module.
- Pull nipple (9) out of the fuel return hose (8).

20.7 Installing the Fuel Return Hose

⚠ WARNING

The fuel return hose (8) may be damaged during removal. Fuel may escape.

Install a new fuel return hose (8).

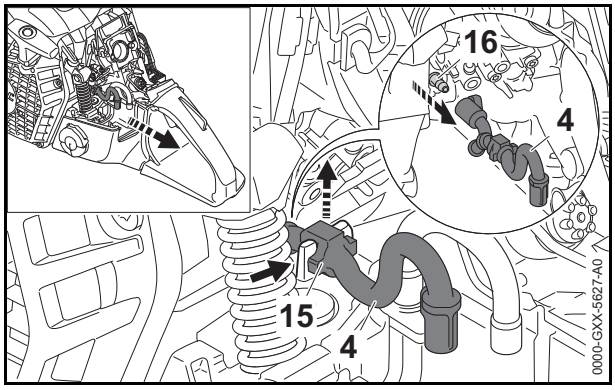


- Push the fuel return hose (8) onto the elbow connector (11) on the injection module so that the tab (arrow) is sits against the end face of the elbow connector (11).
- Coat both ends of nipple (9) with press fluid.
- Push the nipple (9) into the fuel return hose (8) as far as stop.
- Push the nipple (9) with fuel return hose (9) into the grommet (12) in the tank as far as stop.
- Install sleeve and throttle body, 🕮 15.5.
- Install the filter base, 🕮 15.3.
- Install the air filter.
- Fit the filter cover.

20.8 Removing the Impulse Hose

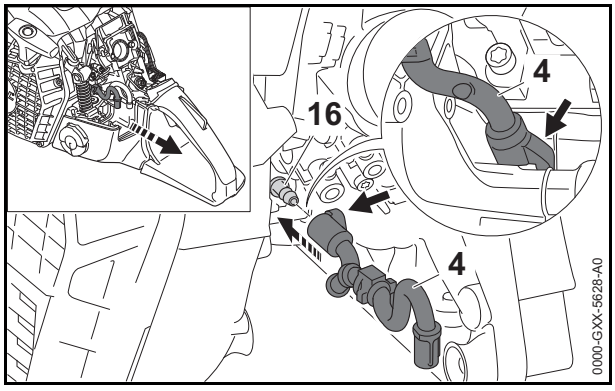
- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the filter base, 🕮 15.2.
- Remove the throttle body and sleeve, 🕮 15.4.
- Take out the screw (7).
- Remove the bracket (6).

- Remove the handlebar, 🕮 9.2.
- Remove screw from AV element between tank housing and crankcase, 🕮 17.2.
- Unlock and remove blue connector of sensor from the controller, 🕮 19.7.
- Pull sensor wires out of cable holder on the tank housing.
- Pull the impulse hose (4) off the injection pump (1).

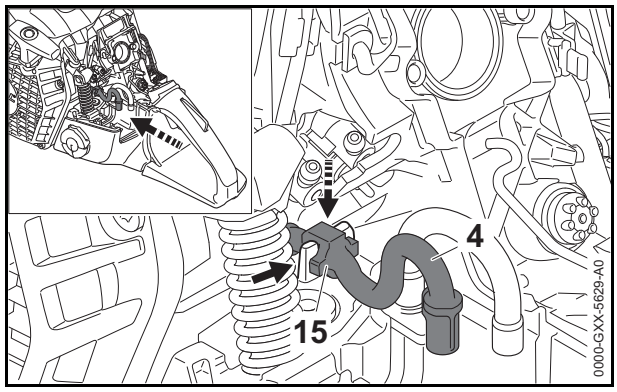


- Remove grommet (15) of impulse hose (4) from the guide (arrow) on the tank housing.
- Pull out the tank housing.
- Pull fuel hose (4) off the nipple (16) on the crankcase.

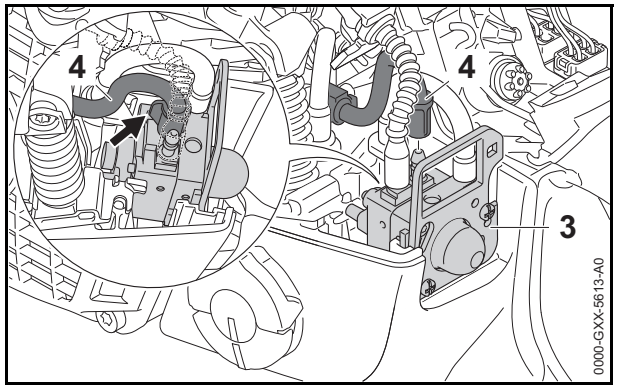
20.9 Installing the Impulse Hose



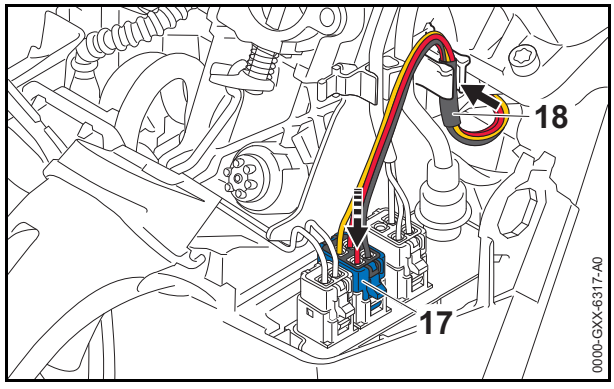
- Pull out the tank housing.
- Position the impulse hose (4) so that its molded lug (arrow) is in line with the recess in the crankcase.
- Push the impulse hose (4) onto nipple (16) on the crankcase as far as stop.



- Push the tank housing in direction of cylinder.
- Fit grommet (15) of impulse hose (4) in the guide (arrow) on the tank housing.



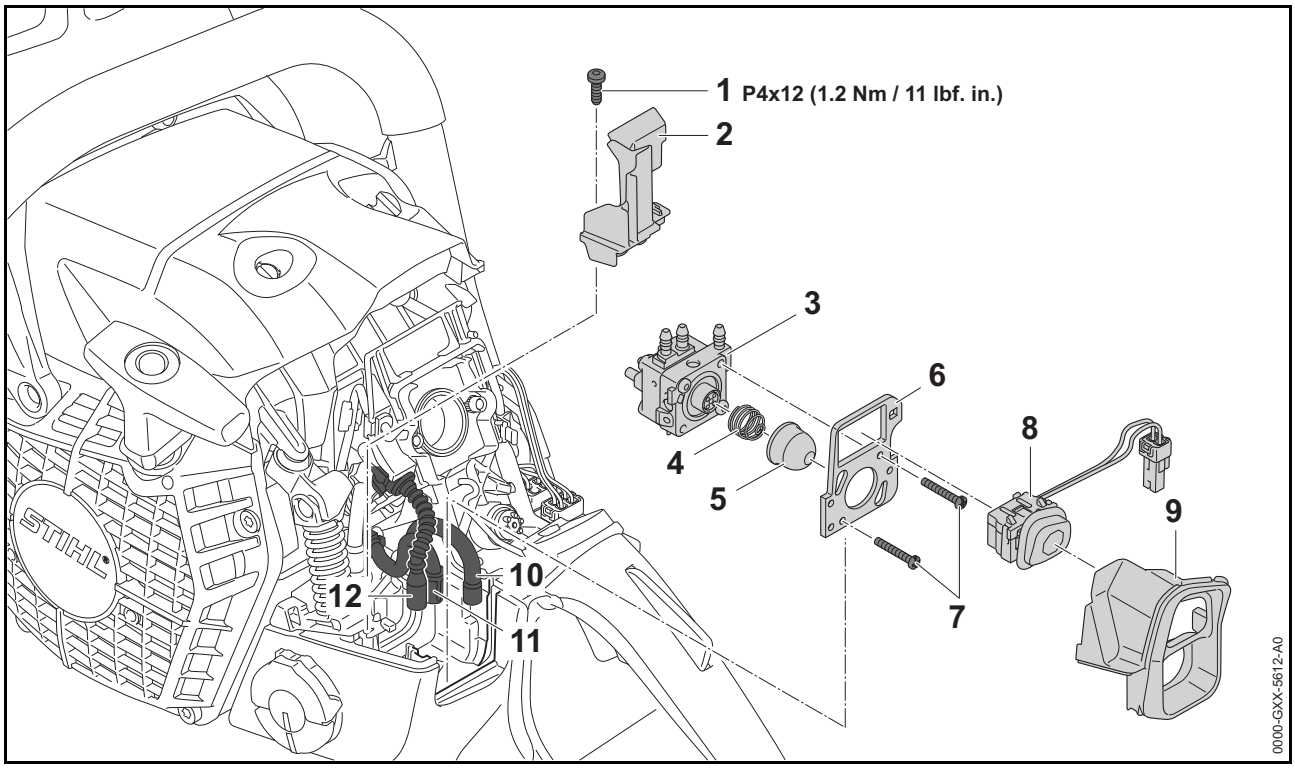
- Push impulse hose (4) onto nipple of injection pump (1) as far as stop so that the molded rib (arrow) points in direction of cylinder.



- Insert and engage blue connector (17) in blue socket on controller.
- Position shrink-on tube (18) on wires from blue connector (17) as shown in the illustration.
- Use punch-down tool 5910 890 4000 to push shrink-on tube (18) into the cable holder (arrow).
- Insert and tighten down screw on AV element between tank housing and crankcase, 🕮 17.3.
- Install the handlebar, 🕮 9.3.
- Fit the bracket (6).
- Insert and tighten down the screw (7) firmly.
- Install sleeve and throttle body, 🕮 15.5.
- Install the filter base, 🕮 15.3.

- Install the air filter.
- Fit the filter cover.

21 Injection Pump, Stop Switch



21.1 Special Servicing Tools, Servicing Aids

– Screwdriver – 0000 890 2300 or equivalent
– Socket, T20x125 – 0812 542 2041 or equivalent
– Torque wrench – 5910 890 0302 or equivalent
– Screwdriver, T20 – 5910 890 2301 or equivalent
– Punch-down tool – 5910 890 4000
– Flat nose side cutting pliers

21.2 Removing the Injection Pump

- Preparations, 📖 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the filter base, 📖 15.2.
- Remove the throttle body and sleeve, 📖 15.4.
- Take out the screw (1).
- Remove the bracket (2).
- Unlock and remove connector of stop switch (8) from controller, 📖 19.7.
- Take wires of stop switch (8) out of the guides.
- Pull out the injection pump (3) together with the stop switch (8) and cover (9).

21.3 Removing the Stop Switch

- Preparations, 📖 3.1.
- Remove the injection pump, 📖 21.2.
- Unlock and remove the cover (9).
- Unlock the retaining tabs on the stop switch (8) and pull the stop switch out of the bracket (6).

21.4 Removing Cap and Spring from Injection Pump

- Preparations, 📖 3.1.
- Remove the injection pump (3), 📖 21.2.

The injection pump (3) must be replaced if the screws with lock pins are loosened, unscrewed or tightened.

Do not loosen, unscrew or tighten the screws with lock pins.

- Take out the screws (7).
- Remove the bracket (6).
- Remove the cap (5).
- Remove the spring (4).

21.5 Removing the Injection Pump

- Preparations, 📖 3.1.
- Remove the injection pump (3), 📖 21.2.

WARNING

The fuel suction hose (10) and fuel hose (12) may be damaged during removal. Fuel may escape.

Replace the fuel suction hose (10) and fuel hose (12).

- Pull the fuel suction hose (10) off the injection pump (3), 📖 20.2.
- Pull the impulse hose (11) off the injection pump (3), 📖 20.8.
- Pull the fuel hose (12) off the injection pump (3), 📖 20.4.
- Remove the stop switch (8), 📖 21.3.

21.6 Installing the Injection Pump

- Preparations, 📖 3.1.
- Remove the stop switch (8), 📖 21.8.

WARNING

The fuel suction hose (10) and fuel hose (12) may be damaged during removal. Fuel may escape.

Replace the fuel suction hose (10) and fuel hose (12).

- Push the fuel suction hose (10) onto nipple of injection pump (3) as far as stop, 📖 20.3.
- Push impulse hose (11) onto nipple of injection pump (3) as far as stop so that the molded rib (arrow) points in direction of cylinder, 📖 20.9.
- Push the fuel hose (12) onto nipple of injection pump (3) as far as stop, 📖 20.5.
- Remove the injection pump (3), 📖 21.2.

21.7 Installing Cap and Spring on Injection Pump

- Fit the spring (4) into the guide in the injection pump (3) so that it snaps into place.
- Fit cap (5) in the groove in the injection pump (3).
- Place the bracket (6) in position.
- Insert and tighten down the screws (7).
- Install injection pump (3), 📖 21.9.

21.8 Installing the Stop Switch

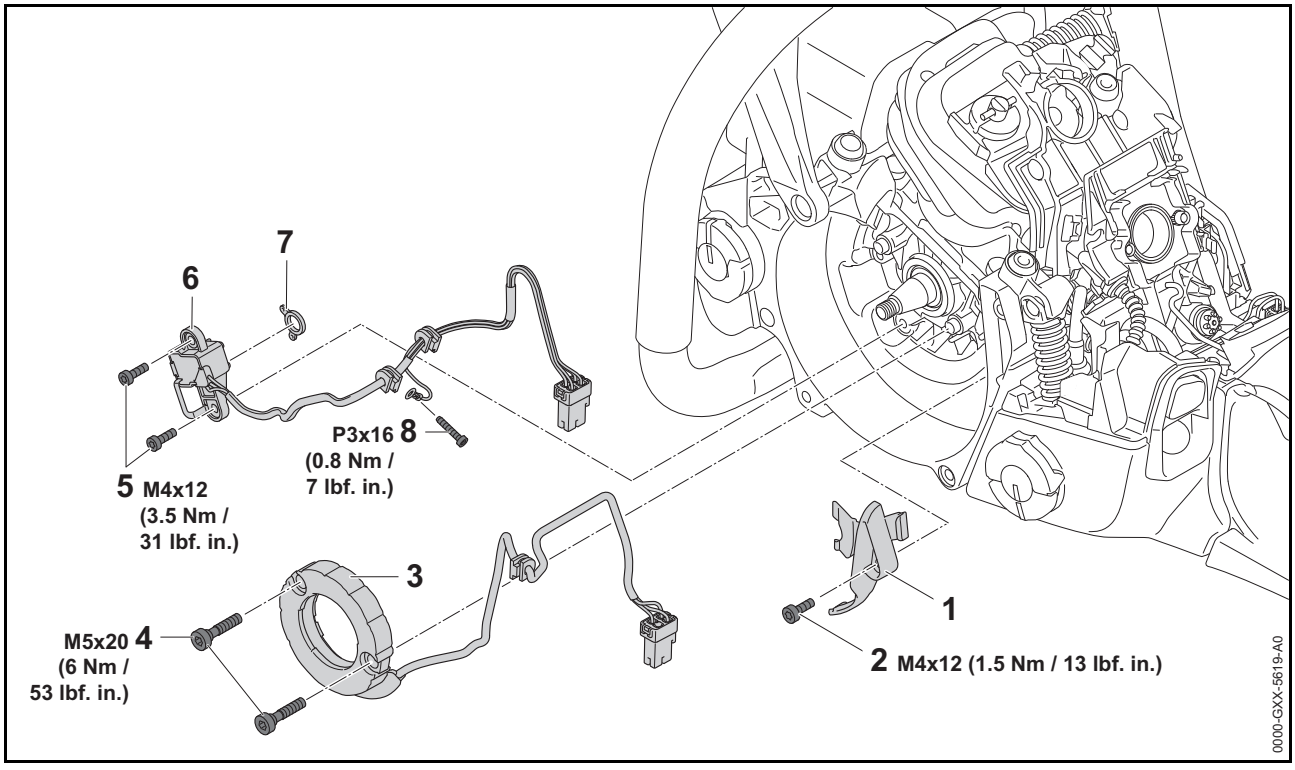
- Fit the stop switch (8) in the bracket (6) and engage it in position.
- Fit the cover (9) and engage it in position.
- Install injection pump (3), 📖 21.9.

21.9 Installing the Injection Pump

- Fit the stop switch (8), 📖 21.8.
- Fit the injection pump (3) together with the stop switch (8) and cover (9).
- Fit the stop switch wires so that they are under the throttle linkage.
- Press the stop switch wires into the guides in the handle housing, 📖 19.8.
- Insert and engage stop switch connector in controller, 📖 19.8.
- Fit the bracket (2).
- Insert and tighten down the screw (1) firmly.
- Install throttle body and sleeve, 📖 15.5
- Install the filter base, 📖 15.3.
- Install the air filter.
- Fit the filter cover.
- Calibrate the saw, 📖 4.

The controller is optimally adjusted to suit the mechanical and mechatronic components.

22 Generator, Sensor



22.1 Special Servicing Tools, Servicing Aids

- Socket, T20x125 – 0812 542 2041 or equivalent
- Socket, T27x125 – 0812 542 2104 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T20 – 5910 890 2301 or equivalent
- Screwdriver, T10 – 5910 890 2308 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent
- Punch-down tool – 5910 890 4000
- Socket, T20
- Flat nose side cutting pliers
- Loctite 242 (medium-strength threadlocking adhesive) – 0786 111 2101

22.2 Removing the Generator

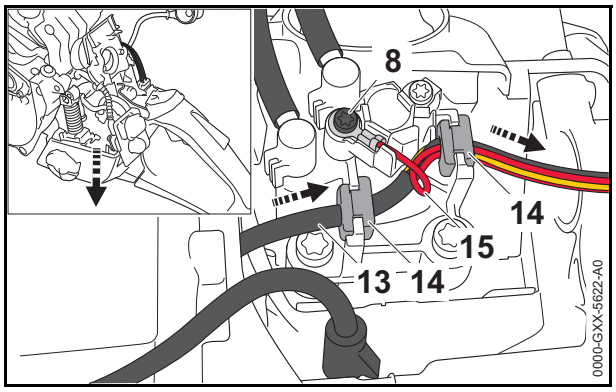
- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the shroud.
- Remove the filter base, 🕮 15.2.
- Remove the throttle body and sleeve, 🕮 15.4.
- Remove the fan housing with rewind starter, 🕮 10.2.
- Remove the flywheel, 🕮 18.2.
- Loosen the screws (4), do not remove them.

The generator (3) hangs loosely on the screws (4).

- Take out the screw (2).
- Remove the air baffle (1).
- Unlock and remove black connector of generator (3) from controller, 🕮 19.7.
- Take wires of generator (3) out of the guides.
- Take out the screws (4).
- Remove the generator (3).

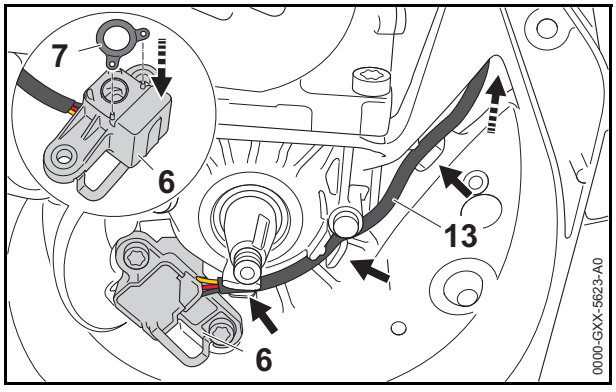
22.3 Removing the Sensor

- Preparations, 🕮 3.1.
- Remove the generator, 🕮 22.2.
- Remove the injection pump, 🕮 21.2.
- Remove the handlebar, 🕮 9.2.
- Remove screw from AV element between tank housing and crankcase, 🕮 17.2.
- Unlock and remove blue connector of sensor (6) from controller, 🕮 19.7.

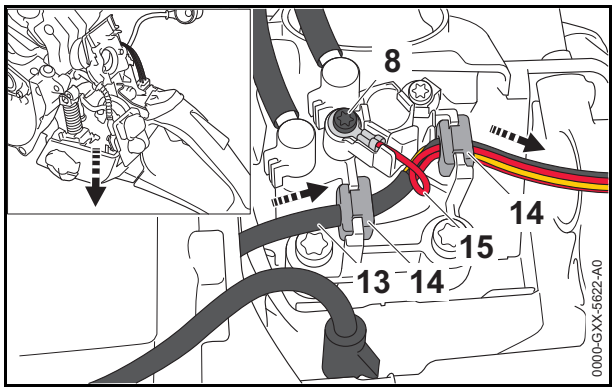


- Pull the tank housing away from the crankcase.
- Take out the screw (8).
- Remove cable lug of red wire (15).
- Take rubber grommets (14) out of the guides.
- Take wiring harness (13) of sensor (6) out of the guides.
- Take out the screws (5).
- Remove the sensor (6).
- Remove the seal (7).

22.4 Installing the Sensor



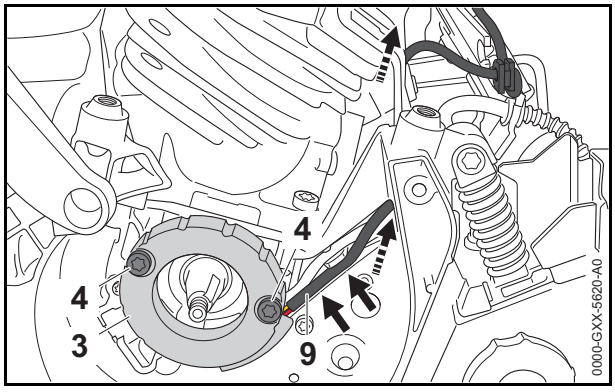
- Fit seal (7) on the sensor (6).
- Fit the sensor (6).
- If the original screws (5) are re-used: Coat threads of screws (5) with Loctite 242.
- Insert and tighten down the screws (5) firmly.
- Push wiring harness (13) of sensor (6) into the guides (arrows) on the crankcase.
- Pass the wiring harness (13) through the opening in the crankcase.



- Pull the tank housing away from the crankcase.
- Push the rubber grommets (14) into the guide.
- Pull the wiring harness (13) towards the controller so that there are no loops.
- Fit the cable lug of the red wire (15) so that its crimped side faces outwards.
- Insert and tighten down the screw (8).
- Push the red wire (15) into the guide on the injection valve.
- Insert and engage the blue connector of sensor (6) on the controller, 📖 19.8.
- Insert and tighten down screw on AV element between tank housing and crankcase, 📖 17.3.
- Install the handlebar, 📖 9.3.
- Install the stop switch and place the injection pump in position, 📖 21.9.
- Push the wiring harness (13) into the cable holder, 📖 19.8
- Install the generator, 📖 22.5.
- Calibrate the saw, 📖 4.

The controller is optimally adjusted to suit the mechanical and mechatronic components.

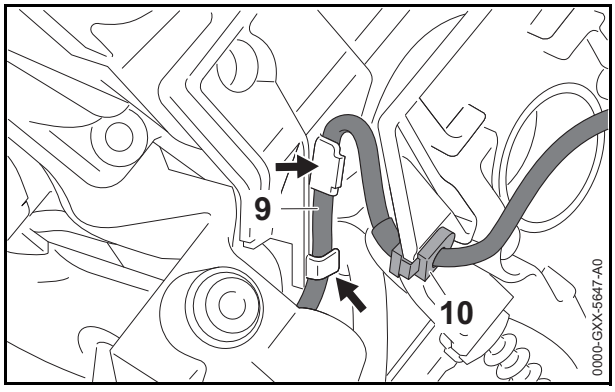
22.5 Installing the Generator



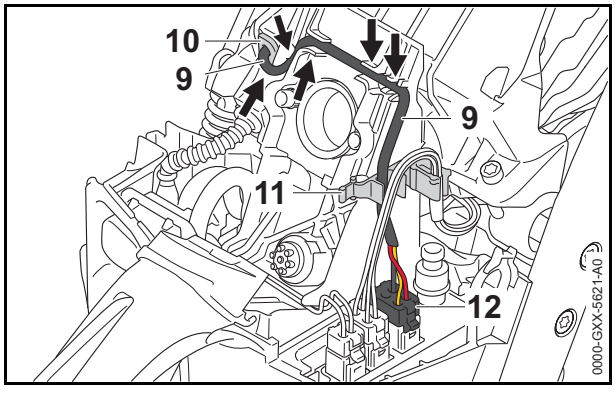
- Place the generator (3) in position.
- If the original screws (4) are re-used: Coat threads of screws (4) with Loctite 242.
- Insert the screws (4) but do not tighten them down yet.

The generator (3) hangs loosely on the screws (4).

- Push the wiring harness (9) into the guides (arrows) in the crankcase.
- Pass the wiring harness (9) through the opening in the crankcase.
- Fit the air baffle (1).
- If the original screw (2) is re-used: Coat thread of screw (2) with Loctite 242.
- Insert and tighten down the screw (2).
- Tighten down the screws (4).



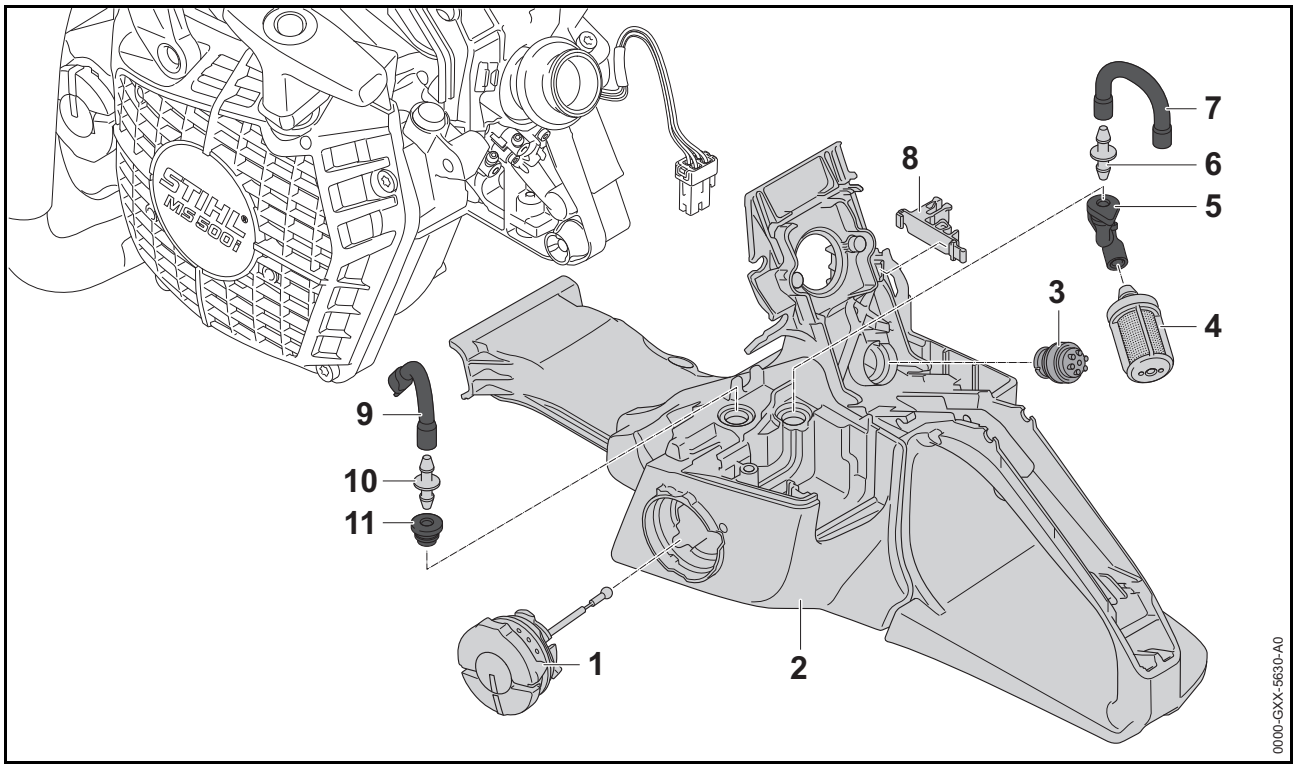
- Push the wiring harness (9) into the guides (arrows) on the airflow shroud..
- Push the rubber grommet (10) into the guide on the handle housing.
- Push the wiring harness (9) through the rubber grommet (10) until its bead is flush against the grommet.



- Push the wiring harness (9) into the guides (arrows) on the tank housing.
- Install the filter base, 📖 15.3.
- Insert and engage black connector (12) of generator (3) in controller.
- Push the wiring harness (9) into the cable holder (11).
- Install throttle body and sleeve, 📖 15.5
- Install the flywheel, 📖 18.3.
- Install the fan housing with rewind starter, 📖 10.11.
- Mount the shroud.
- Install the air filter.
- Fit the filter cover.
- Calibrate the saw, 📖 4.

The controller is optimally adjusted to suit the mechanical and mechatronic components.

23 Tank Housing



23.1 Tools, Servicing Aids

- Pump – 0000 850 1300
- Nipple – 0000 855 9201
- Screwdriver – 0000 890 2300 or equivalent
- Punch-down tool – 5910 890 4000
- Hook – 5910 893 8800
- STIHL OH 723 press fluid – 0781 957 9000

23.2 Removing Pickup Body from Fuel Tank

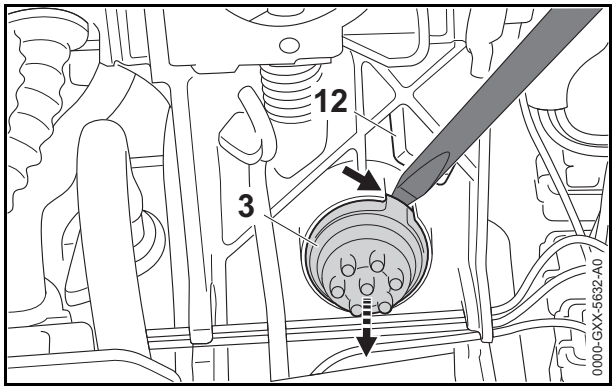
- Preparations, 📖 3.1.
- Open the tank cap (1).
- Use hook 5910 893 8800 to pull pickup body (4) out of the tank housing (2), making sure the fuel suction hose inside the tank (5) is not overstretched.
- Pull the pickup body (4) off the fuel suction hose (5).

23.3 Installing Pickup Body In Fuel Tank

- Coat connector on pickup body (4) with press fluid.
- Push the pickup body (4) fully into the fuel suction hose inside the tank (5)
- Push the pickup body (4) into the tank housing (2).
- Close the tank cap (1).

23.4 Removing Tank Vent from Fuel Tank

- Remove the filter cover
- Remove the air filter.
- Remove the filter base, 📖 15.2.



- Apply screwdriver 0000 890 2300 to recess (arrow) and support (12) to pry out the tank vent (3).

23.5 Installing Tank Vent in Fuel Tank

- Coat sealing ring on tank vent (3) with press fluid.
- Press tank vent (3) into tank housing as far as stop.
- Install the filter base, 📖 15.3.
- Install the air filter.
- Fit the filter cover.

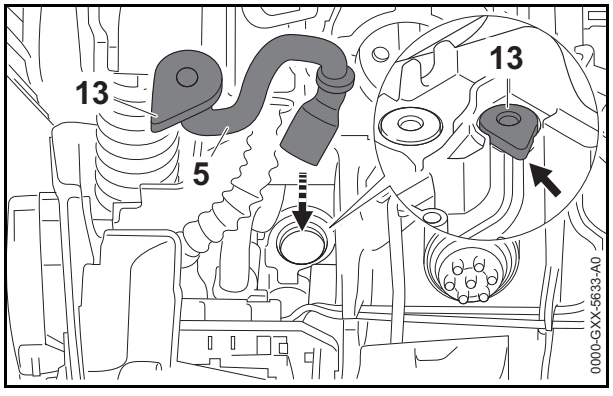
23.6 Removing Fuel Suction Hose Inside the Tank

- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the filter base, 🕮 3.1.
- Pull the fuel suction hose outside the tank (7) with nipple (6) out of the fuel suction hose inside the tank (5), 🕮 20.2.

Fuel suction hose outside the tank (7) remains on the injection pump.

- Grip the fuel suction hose inside the tank (5) by the flange and pull it out of the tank housing (2).

23.7 Installing Fuel Suction Hose Inside the Tank



- Push the fuel suction hose (5) into the tank housing (2).
- Press home flange (13) as far as stop so that its contour matches that of the guide on the tank housing (2) (arrow).
- Push the fuel suction hose (7) with nipple (6) into the fuel suction hose (5) as far as stop, 🕮 20.3.
- Install the filter base, 🕮 15.2.
- Install the air filter.
- Fit the filter cover.

23.8 Removing Fuel Return Hose Grommet

- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the filter base, 🕮 15.2.
- Pull the fuel return hose (9) with nipple (10) out of the grommet (11), 🕮 20.6.

The fuel return hose (9) remains on the injection module.

- Pry the grommet (11) out of the tank housing (2).

23.9 Installing Fuel Return Hose Grommet

- Push grommet (11) into tank housing (2) as far as stop.
- Push the fuel return hose (9) with nipple (10) into the grommet (11) as far as stop, 🕮 20.7.
- Install the filter base, 🕮 15.3.
- Install the air filter.
- Fit the filter cover.

23.10 Removing the Tank Housing

- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the air filter.
- Remove the shroud.
- Remove spark plug boot and pull ignition lead out of the guides, 🕮 19.3.
- Remove the filter base, 🕮 15.2.
- Remove the throttle body and sleeve, 🕮 15.4.
- Remove the controller, 🕮 19.7.
- Pull generator's wiring harness out of the guides in the tank housing and airflow housing, 🕮 22.2.
- Remove trigger lockout, throttle trigger and throttle linkage, 🕮 16.2.
- Remove the injection pump, 🕮 21.2.
- Remove the handlebar, 🕮 9.2.
- Remove screw from AV element between tank housing (2) and crankcase, 🕮 17.2.
- Pull the fuel suction hose outside the tank (7) with nipple (6) out of the fuel suction hose inside the tank (5).

Fuel hose (7) remains on the injection pump.

- Remove fuel hose from guide in the tank housing, 🕮 20.4.
- Pull the fuel return hose (9) with nipple (10) out of the grommet (11), 🕮 20.5.

The fuel return hose (9) remains on the injection module.

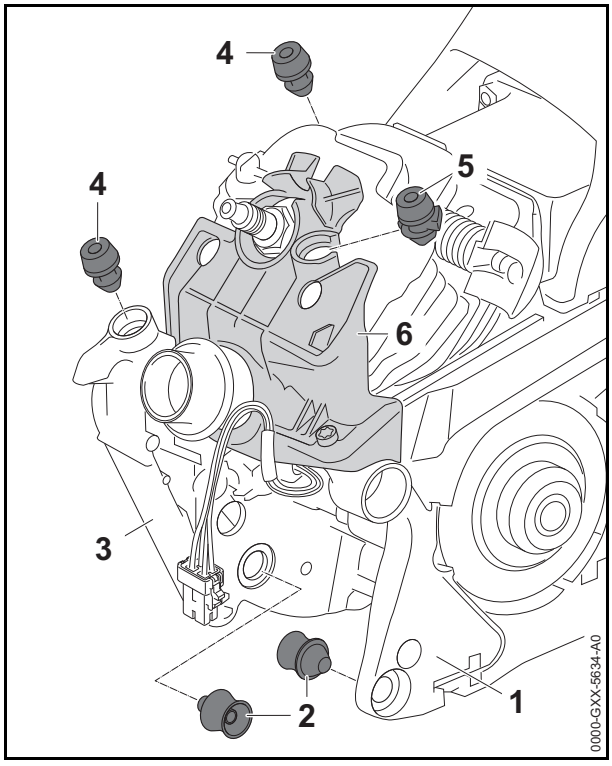
- Remove impulse hose from guide in the tank housing, 🕮 20.4.
- Lift away the tank housing (2).

23.11 Installing the Tank Housing

- Place the tank housing (2) against the crankcase.
- Fit impulse hose in the guide in the tank housing, 🕮 20.8.
- Install the fuel return hose (9) with nipple (10), 🕮 20.7.
- Fit fuel hose in the guide in the tank housing, 🕮 20.5.
- Install the fuel suction hose (7) with nipple (6), 🕮 20.3.

- Insert and tighten down screw on AV element between tank housing and crankcase, 🕮 17.3.
- Install the handlebar, 🕮 9.3.
- Install the injection pump, 🕮 21.9.
- Install trigger lockout, throttle trigger and throttle linkage, 🕮 16.3.
- Push generator’s wiring harness into the guides in the tank housing, 🕮 22.5.
- Install the controller, 🕮 19.8.
- Install sleeve and throttle body, 🕮 15.5.
- Install the filter base, 🕮 15.3.
- Fit the ignition lead and spark plug boot, 🕮 19.6.
- Mount the shroud.
- Install the air filter.
- Fit the filter cover.

24 Stop Buffer, Grommets



24.1 Tools, Servicing Aids

- Combination wrench – 1129 890 3401
- Extension – 4180 893 4400
- Punch-down tool – 5910 890 4000
- STIHL multipurpose grease – 0781 120 1110
- STIHL OH 723 press fluid – 0781 957 9000

24.2 Removing Grommet from Airflow Shroud

- Preparations, 🕮 3.1.
- Remove the filter cover
- Remove the shroud.
- Remove the decompression valve, 🕮 8.2.
- Remove the grommet (5) sideways out of the airflow shroud (6).

24.3 Installing Grommet in Airflow Shroud

- Fit the grommet (5) into the guide in the airflow shroud (6) as far as stop.
- Install the decompression valve, 🕮 8.3.
- Mount the shroud.
- Fit the filter cover.

24.4 Removing Grommets from Crankcase

- Preparations, 🕮 3.1.
- Remove the filter cover.
- Remove the shroud.
- Use extension 4180 893 4400 to pry out the grommets (4).

24.5 Installing Grommets in Crankcase

Grommets may be damaged during removal. The shroud and crankcase may be damaged If a damaged grommet is re-installed.

Always install new grommets.

- Coat tapered ends of grommets (4) with press fluid.
- Use extension 4180 893 4400 to push grommets (4) into their seats in the crankcase, making sure they engage in position.
- Mount the shroud.
- Fit the filter cover.

24.6 Removing Crankcase Stop Buffers

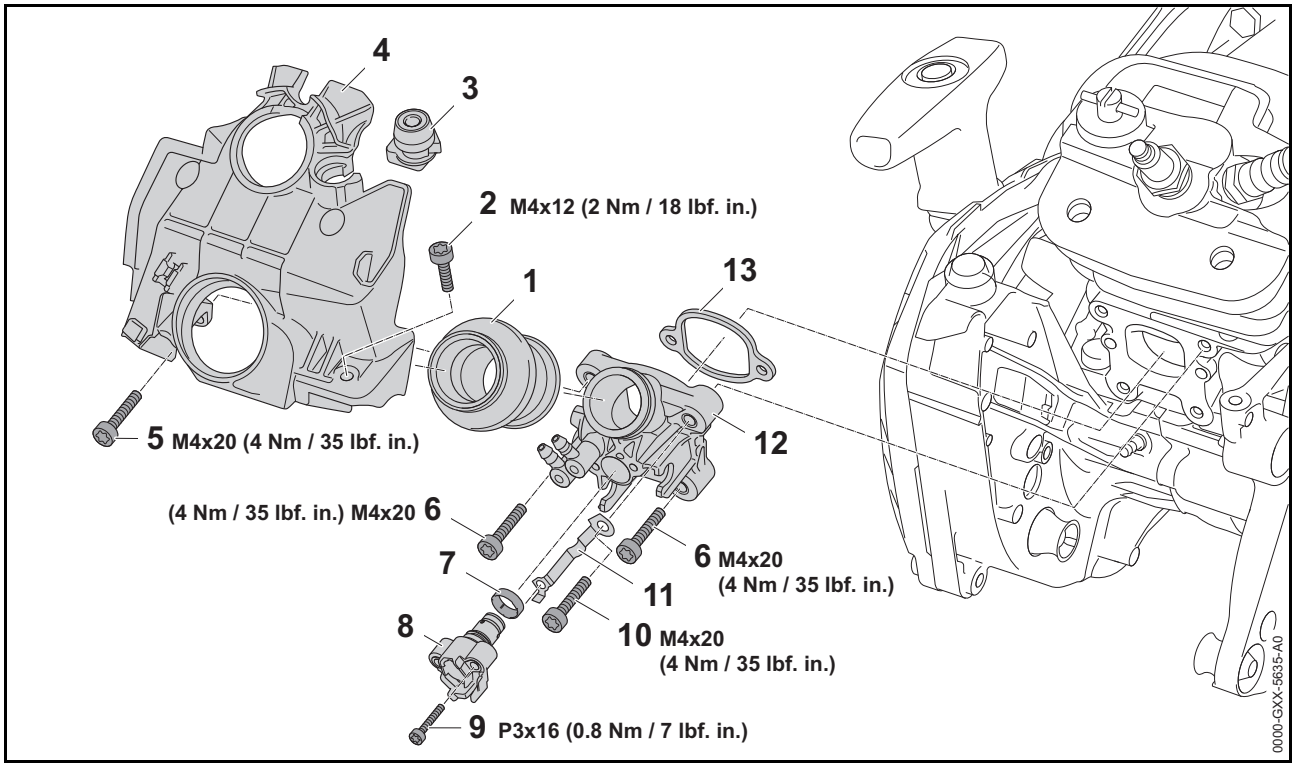
- Preparations, 🕮 3.1.
- Remove the filter cover.
- Remove the air filter.
- Remove the shroud.
- Remove spark plug boot and pull ignition lead out of the guides.
- Remove the fan housing with rewind starter, 🕮 10.2.
- Remove the filter base, 🕮 15.2.
- Remove the throttle body and sleeve, 🕮 15.4.
- Remove the injection pump, 🕮 21.2.
- Remove the stop switch, 🕮 21.3.
- Remove the handlebar, 🕮 9.2.
- Remove screw from AV element between tank housing (2) and crankcase, 🕮 17.2.
- Unlock and remove blue connector of sensor from the controller, 🕮 19.7.
- Pull sensor wires out of cable holder on the tank housing.
- Remove fuel suction hose outside the tank with nipple, 🕮 20.2.
- Remove fuel hose from guide in the tank housing, 🕮 20.4
- Remove the fuel return hose with nipple, 🕮 20.6.
- Remove impulse hose from guide in the tank housing, 🕮 20.8.

- Lift away the tank housing.
- Use punch down tool 5910 890 4000 to push out the stop buffers (2) from the outside inwards.

24.7 Installing Crankcase Stop Buffers

- Coat tapered ends of stop buffers (2) with press fluid.
- Use punch down tool 5910 890 4000 to push the stop buffers (2) into the bores in the two halves of the crankcase (1 and 2) from the inside outwards so that the housing wall is firmly seated in buffer groove.
- Coat lips of stop buffers (2) with multipurpose grease.
- Place the tank housing against the crankcase.
- Fit impulse hose in the guide in the tank housing, 🕮 20.9.
- Install the fuel return hose with nipple, 🕮 20.7.
- Fit fuel hose in the guide in the tank housing, 🕮 20.5.
- Install fuel suction hose outside the tank with nipple, 🕮 20.3.
- Insert and engage the blue connector of sensor on the controller, 🕮 19.8.
- Push sensor wires into cable holder on the tank housing, 🕮 19.8.
- Insert and tighten down screw on AV element between tank housing and crankcase, 🕮 17.3.
- Install the handlebar, 🕮 9.3.
- Install the stop switch, 🕮 21.8.
- Install the injection pump, 🕮 21.9.
- Install sleeve and throttle body, 🕮 15.5.
- Install the filter base, 🕮 15.3.
- Install the fan housing with rewind starter, 🕮 10.11.
- Fit the ignition lead and spark plug boot, 🕮 19.6.
- Mount the shroud.
- Install the air filter.
- Fit the filter cover.

25 Manifold, Injection Module



25.1 Tools, Servicing Aids

- Screwdriver – 0000 890 2300 or equivalent
- Socket, T27x125 – 0812 542 2104 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T10 – 5910 890 2308 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent
- Hook – 5910 890 2800
- Socket, T10
- Pin punch, 5 mm
- STIHL OH 723 press fluid – 0781 957 9000

25.2 Removing the Airflow Shroud

- Preparations, 🕮 3.1.
- Remove the filter cover.
- Remove the air filter.
- Remove the shroud.
- Remove spark plug boot and pull ignition lead out of the guides.
- Remove the filter base, 🕮 15.2.
- Remove the throttle body and sleeve, 🕮 15.4.
- Remove the injection pump, 🕮 21.2.
- Remove the handlebar, 🕮 9.2.
- Remove screw from AV element between tank housing and crankcase, 🕮 17.2.
- Unlock and remove blue connector of sensor from the controller, 🕮 19.7.
- Pull sensor wires out of cable holder on the tank housing.
- Unlock and remove generator's black connector from controller, 🕮 19.7.
- Pull generator's wiring harness out of the guides in the tank housing and airflow housing, 🕮 22.2.
- Remove fuel suction hose outside the tank with nipple, 🕮 20.2.
- Remove fuel hose from guide in the tank housing, 🕮 20.4.
- Remove the fuel return hose with nipple, 🕮 20.6.
- Remove impulse hose from guide in the tank housing, 🕮 20.8.
- Lift away the tank housing.
- Take out the screws (2) and (5).
- Grip the top edge of the airflow shroud (4) and pull it off of the manifold (1).
- If the grommet (3) is damaged: Remove the grommet (3) from the airflow shroud (4).

25.3 Removing the Manifold

- Remove the airflow shroud (4), 🕮 25.2.
- Remove the manifold (1).
- If the muffler (1) or sealing faces of the injection body (12) are damaged: replace the damaged parts.

25.4 Installing the Manifold

- Push the manifold (1) onto the injection body (12) as far as stop.

25.5 Installing the Airflow Shroud

- Fit the grommet (3) into the guide in the airflow shroud (4) as far as stop.
- Install the manifold (1), 🕮 25.4.
- Coat outside of manifold (1) at cylinder side with press fluid.
- Position the airflow shroud (4) on the cylinder and push the manifold (1) through the opening in the airflow shroud (4) at the same time.
- Push the airflow shroud (4) onto the manifold (1) as far as stop.
- Insert and tighten down the screws (2 and 5) firmly.
- Push generator's wiring harness into the guides in the airflow shroud, 🕮 22.5.
- Place the tank housing against the crankcase.
- Push generator's wiring harness into the guides in the tank housing, 🕮 22.5.
- Insert generator's black connector in the controller, 🕮 22.5.
- Fit impulse hose in the guide in the tank housing, 🕮 20.9.
- Install the fuel return hose with nipple, 🕮 20.7.
- Fit fuel hose in the guide in the tank housing, 🕮 20.5.
- Install fuel suction hose outside the tank with nipple, 🕮 20.3.
- Insert and engage the blue connector of sensor on the controller, 🕮 19.8.
- Push sensor wires into cable holder on the tank housing, 🕮 19.8.
- Insert and tighten down screw on AV element between tank housing and crankcase, 🕮 17.3.
- Install the handlebar, 🕮 9.2.
- Install the injection pump, 🕮 21.9.
- Install sleeve and throttle body, 🕮 15.5.
- Install the filter base, 🕮 15.3.
- Fit the ignition lead and spark plug boot, 🕮 19.6.
- Mount the shroud.
- Install the air filter.
- Fit the filter cover.

25.6 Removing the Contact Strip

- Preparations, 🕮 3.1.
- Remove the airflow shroud (4), 🕮 25.2.
- Take out the screw (9).
- Take out the screw (10).
- Remove the contact strip (11).

25.7 Installing the Contact Strip

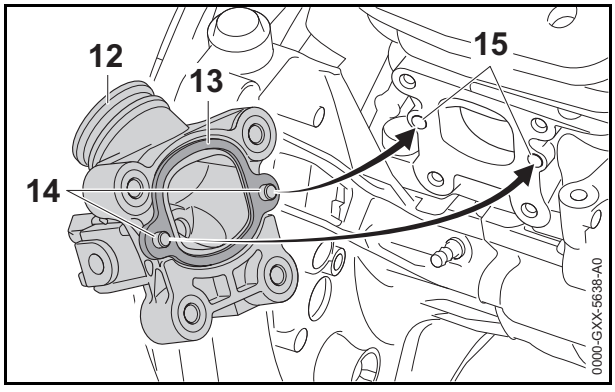
- Preparations, 🕮 3.1.
- Place contact strip (11) against the injection body (12).
- Fit the screw (10).
- Fit the screw (9).
- Tighten down the screw (10).
- Tighten down the screw (9).
- Install the airflow shroud (4), 🕮 25.5.

25.8 Removing the Injection Module

The injection module consists of the injection body (12) and the injection valve (8).

- Preparations, 🕮 3.1.
- Remove the airflow shroud (4), 🕮 25.2.
- Pull fuel return hose off the injection module's elbow connector, 🕮 20.6.
- Pull fuel hose off the injection module's elbow connector, 🕮 20.4.
- Remove cable lug of sensor's red wire, 🕮 22.3.
- Take out the screws (6).
- Remove the injection module (12 and 8).
- Remove the gasket (13).
- If necessary: Remove the manifold, 🕮 25.3.

25.9 Installing the Injection Module



- Fit the gasket (13) in the groove in the injection body (12).
- Place the injection module (12 and 8) against the cylinder so that the pegs on the injection body (12) engage the holes (15) in the cylinder.
- Insert and tighten down the screws (6) firmly.
- Fit cable lug of sensor's red wire, 🕮 22.4.
- If the manifold (1) has been removed: Install the manifold (1), 🕮 25.4.

WARNING

The fuel hose (3) and fuel return hose may be damaged during removal. Fuel may escape.

Install a new fuel hose and fuel return hose.

A replacement injection module (12 and 8) comes with a new fuel hose and new fuel return hose.

- Push the fuel hose onto elbow connector of injection module (12 and 8) as far as stop, 📖 20.5.
- Push the fuel return hose onto elbow connector of injection module (12 and 8) as far as stop, 📖 20.7.
- Install the airflow shroud (4), 📖 25.5.
- Test the fuel system for leaks and correct operation, 📖 4.
- Calibrate the saw, 📖 4.

The controller is optimally adjusted to suit the mechanical and mechatronic components.

25.10 Removing the Injection Valve

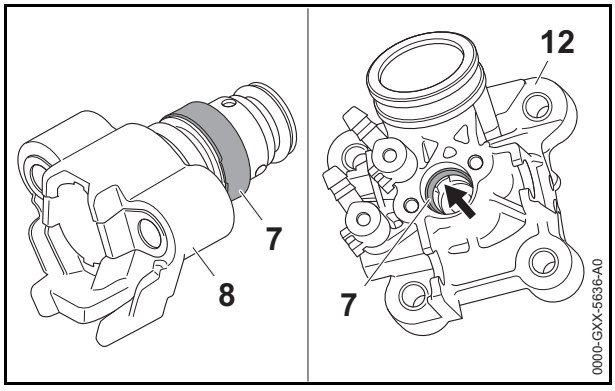
The injection valve (8) can be removed without removing the injection body (12).

- Preparations, 📖 3.1.
- Remove the airflow shroud (4), 📖 25.2.
- Remove cable lug of sensor's red wire, 📖 22.3.
- Remove the contact strip (11), 📖 25.6.
- If necessary: Remove the injection module (12 and 8), 📖 25.8.

The injection valve (8) may be damaged during removal if screw (9) and the cable lug's screw on the injection valve are not removed.

Take out the screw (9) and cable lug's screw on the injection valve before removing the injection valve (8).

- If the injection module (12 and 8) has been removed: Use a 5 mm pin punch to carefully push the injection valve (8) out of the injection body (12).
- If the injection module (12 and 8) has not been removed: Pull out the injection valve (8).



The sleeve (7) may remain on the injection valve (8) or get stuck in the injection body (12) during removal.

The sleeve (7) or the injection valve (8) may be damaged if the sleeve (7) is stuck in the injection body (12) and an injection valve (8) with a new sleeve (7) is installed.

If the sleeve (7) is stuck in the injection body:(12): apply hook 5910 890 2800 to recess (arrow) in injection body (12) and pull out the sleeve.

If the sleeve (7) is still on the injection valve (8): Remove the sleeve (7).

If the O-rings on the injection valve are damaged: Install new O-rings on injection valve (8).

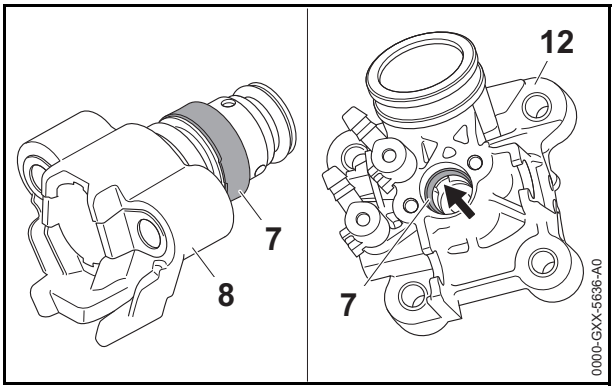
If the injection valve (8) is damaged: Install a new injection valve (8).

Install a new sleeve (7).

Engine running behavior can be detrimentally affected If the sleeve (7) is missing and the injection valve (8) is installed without the sleeve.

Install a new sleeve (7).

25.11 Installing the Injection Valve



The sleeve (7) may remain on the injection valve (8) or get stuck in the injection body (12) during removal.

Engine running behavior can be detrimentally affected If the sleeve (7) is missing and the injection valve (8) is installed without the sleeve.

Install a new sleeve (7).

The sleeve (7) or the injection valve (8) may be damaged if the sleeve (7) is stuck in the injection body (12) and an injection valve (8) with a new sleeve (7) is installed.

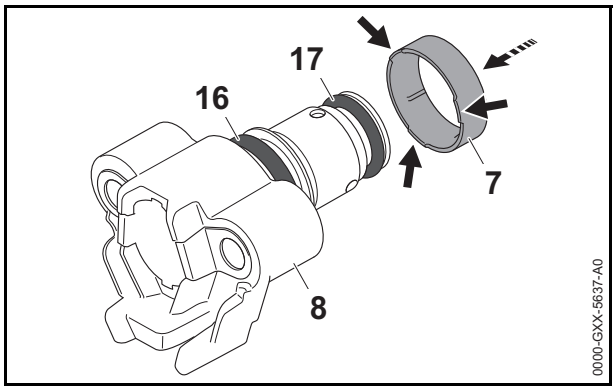
If the sleeve (7) is stuck in the injection body:(12): apply hook 5910 890 2800 to recess (arrow) in injection body (12) and pull out the sleeve.

If the sleeve (7) is still on the injection valve (8): Remove the sleeve (7).

If the O-rings on the injection valve are damaged: Install new O-rings on injection valve (8).

If the injection valve (8) is damaged: Install a new injection valve (8).

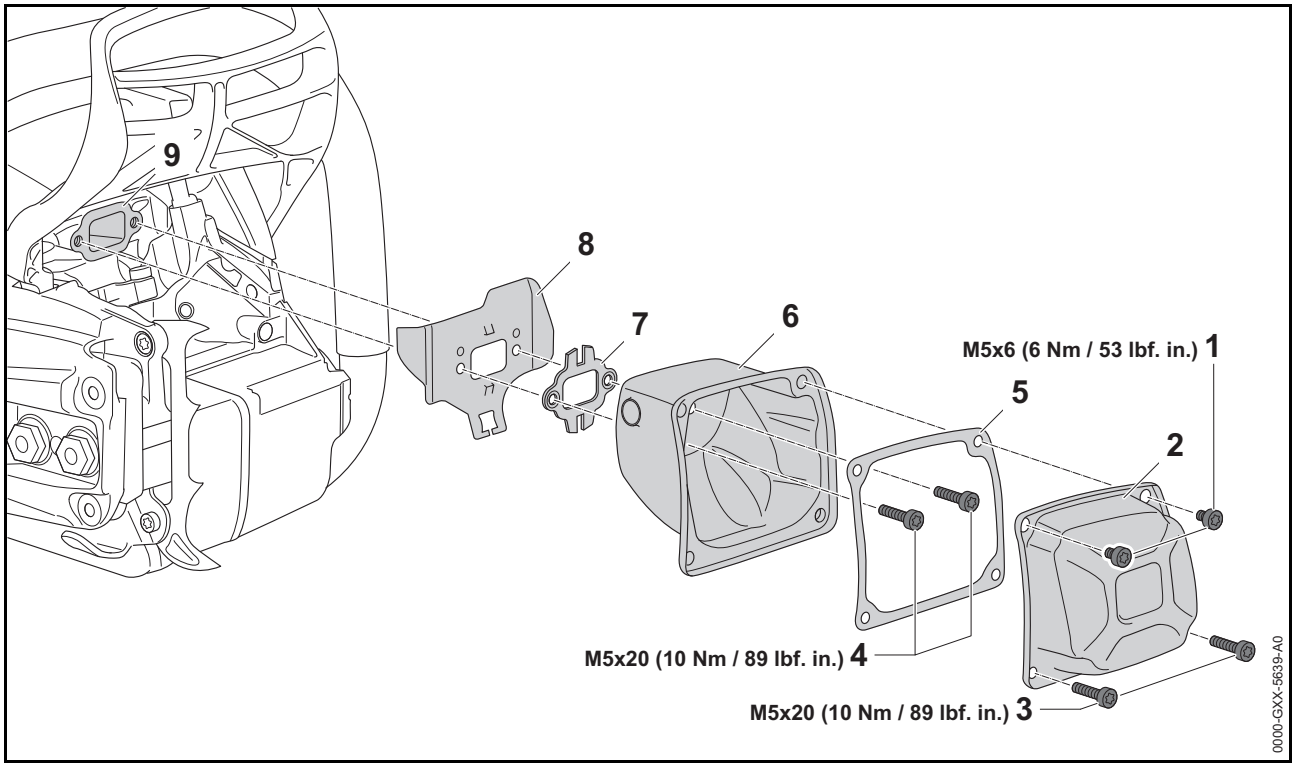
Install a new sleeve (7).



- Coat O-rings (16 and 17) with press fluid.
- Position the sleeve (7) so that the spacers (arrows) face the shoulder on the injection valve (8).
- Push the sleeve (7) onto the injection valve (8) as far as stop.
- Push injection valve (7) into injection body (12) as far as stop.
- If the injection module (12 and 8) has been removed: Install the injection module (12 and 8), 🕮 25.9.
- Install the contact strip (11), 🕮 25.7.
- Fit cable lug of sensor's red wire, 🕮 22.4.
- Install the airflow shroud (4), 🕮 25.5.
- Test the fuel system for leaks and correct operation, 🕮 4.
- Calibrate the saw, 🕮 4.

The controller is optimally adjusted to suit the mechanical and mechatronic components.

26 Muffler, Heat Shield



26.1 Tools, Servicing Aids

- Socket, T27x125 – 0812 542 2104 or equivalent
- Torque wrench – 5910 890 0302 or equivalent
- Screwdriver, T27x200 – 5910 890 2415 or equivalent
- Loctite 242 (medium-strength threadlocking adhesive) – 0786 111 2101

26.2 Removing Muffler and Heat Shield

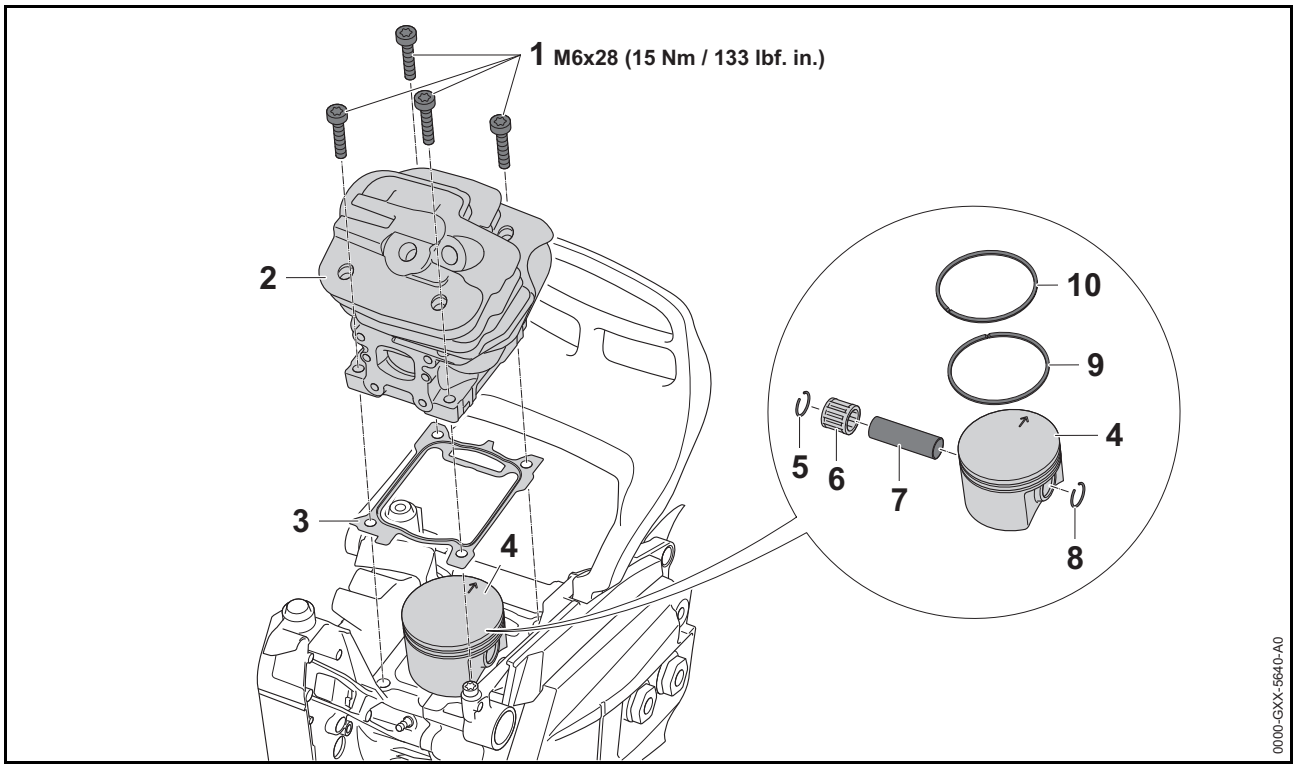
- Preparations, 🕮 3.1.
- Remove the spark arrestor (if fitted).
- Take out the screws (1).
- Take out the screws (3).
- Remove the muffler upper casing (2).
- Remove the gasket (5).
- Take out the screws (4).
- Remove the muffler lower casing (6).
- Remove the muffler gasket (7).
- Remove the heat shield (8).

26.3 Installing Muffler and Heat Shield

- If the sealing faces on the exhaust port, heat shield (8) and muffler (6 and 2) are damaged: replace the damaged parts (cylinder (9), heat shield (8), muffler lower casing (6), muffler upper casing (2)).
- Place the heat shield (8) on the cylinder (9).
- Fit the muffler gasket (7).
- Fit the muffler lower casing (6).
- If the original screws (4) are re-used: Coat threads of screws (4) with Loctite 242.
- Insert and tighten down the screws (4) firmly.
- Fit gasket (5) on muffler lower casing (6).
- Fit the upper casing (2).
- If the original screws (3) are re-used: Coat threads of screws (3) with Loctite 242.
- Insert and tighten down the screws (3) firmly.
- If the original screws (1) are re-used: Coat threads of screws (1) with Loctite 242.
- Insert and tighten down the screws (1).
- Install the spark arrestor (if fitted).
- Calibrate the saw, 🕮 4.

The controller is optimally adjusted to suit the mechanical and mechatronic components.

27 Cylinder, Piston



27.1 Tools, aids

- Screwdriver – 0000 890 2300 or equivalent tool
- Clamping strap – 0000 893 2600
- Socket T27x125 – 0812 542 2104 or equivalent tool
- Torque wrench – 5910 890 0302 or equivalent tool
- Screwdriver T27x200 – 5910 890 2415 or equivalent tool
- Piston support – 5910 893 5301
- Assembly drift – 1108 893 4700
- Assembly tool - 5910 890 2212
- STIHL press-in fluid OH 723 – 0781 957 9000
- Two-stroke engine-oil

27.2 Removing the cylinder

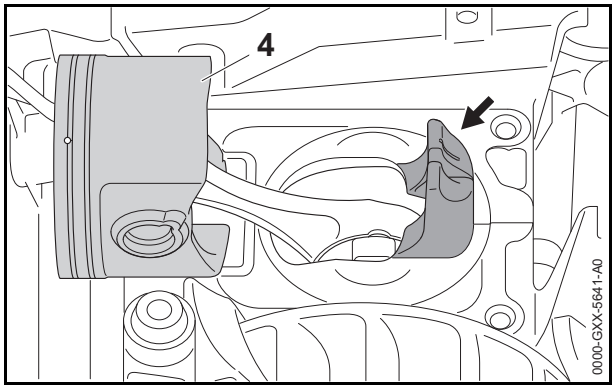
- Prepare for repair, 📖 3.1.
- Remove the filter cover.
- Remove air filter.
- Remove shroud.
- Unplug spark plug boot and pull ignition lead out of the guides.
- Remove the spark plug.
- Remove starter, 📖 10.2.
- Remove filter base, 📖 15.2.
- Remove throttle shutter housing and sleeve, 📖 15.4.
- Detach injection pump,📖 9.2.
- Remove the front handle, 📖 9.2
- Unscrew the AV element screw between the tank housing (2) and the crankcase, 📖 17.2.
- Insert black plug of the generator on the control unit and engage, 📖 19.7.
- Pull the generator wiring harness out of the guides on the tank housing and on the air guide hood,📖 22.2.
- Insert blue plug of the sensor on the control unit and engage, 📖 19.7.
- Pull the sensor cables out of the cable holder on the tank housing.
- Remove the sensor wiring harness from the injection module, 📖 22.3.
- Remove fuel hose, 📖 20.4.
- Remove fuel return hose, 📖 20.6.
- Remove the impulse hose from the guide in the tank housing and pull it off the crankcase, 📖 20.8.
- Remove tank housing.
- Remove manifold, 📖 25.3.
- Remove air guide shroud, 📖 25.2.
- Remove injection module,📖 25.8.
- Remove muffler and heat shield,📖 26.2.
- If necessary, remove the hood lock, 📖 7.6.
- If necessary, remove the decompression valve, 📖 8.2.

- If necessary, remove the antivibration element from the cylinder, 🕮 17.2.
- Remove screws (1).
- Remove cylinder (2).
- Remove gasket (3).

27.3 Removing the piston

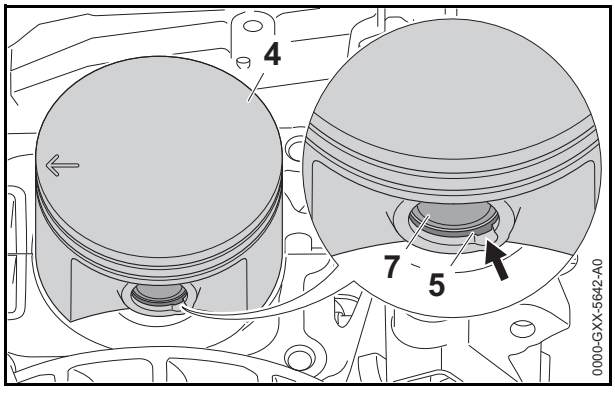
To remove the compression rings (9 and 10), the piston (4) does not have to be removed.

- Remove cylinder, 🕮 27.2.



When removing the piston (4), the scavenging ramp (arrow) on the crankcase may be damaged. A damaged scavenging ramp can result in a serious damage to the engine.

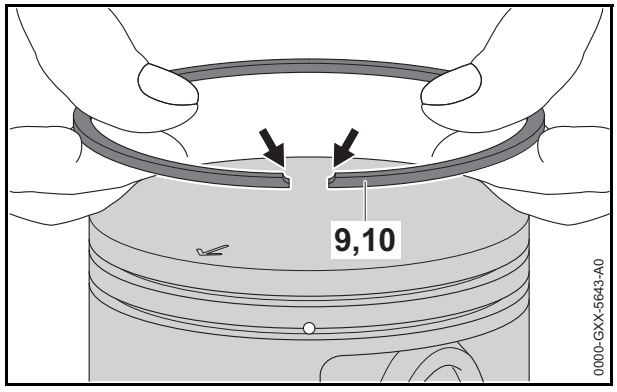
Remove the piston (4) so that the scavenging ramp (arrow) on the crankcase is not damaged.



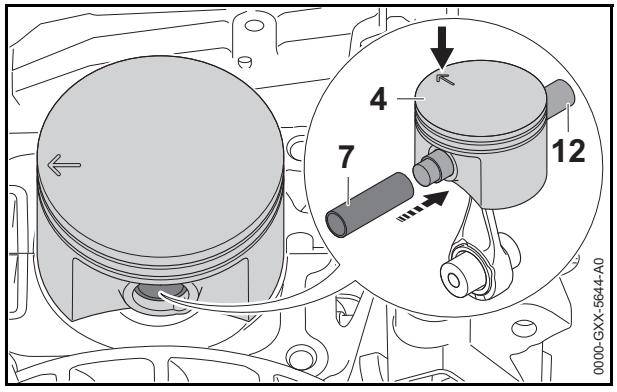
- Prize the snap ring (5) out at the recess (arrow).
- Drive the piston pin (7) out of the piston (4) with the mounting bolt 1108 893 4700.
- If the piston pin (7) cannot be pressed out: Hold piston (4) against it and knock out piston pin (7) with slight blows on the mounting bolt 1108 893 4700.
- Remove piston (4).
- Pull needle cage (6) out of connecting rod.
- Remove compression rings (9 and 10).
- If the compression rings (9 and 10) are damaged: Replace compression rings (9 and 10).

The snap ring (8) does not need to be removed.

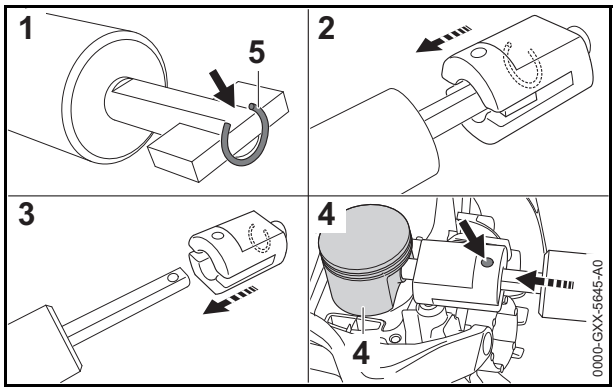
27.4 Installing the piston



- Install compression rings (9 and 10).
- Wet the needle cage (6) with oil and push it into the connecting rod.



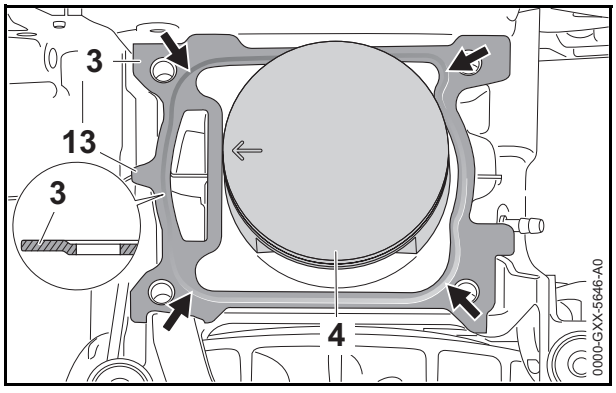
- Place the piston (4) on the connecting rod so that the arrow on the piston crown (arrow) points in the direction of the bumper spike.
- Push the mounting bolt 1108 893 4700 (12) through the hole in the piston (4) and the needle cage (6) in the connecting rod.
- Coat the piston pin (7) with oil.
- Place the piston pin (7) on the pin of the mounting bolt 1108 893 4700 (12) and push it into the piston (4) as far as it will go (arrow).



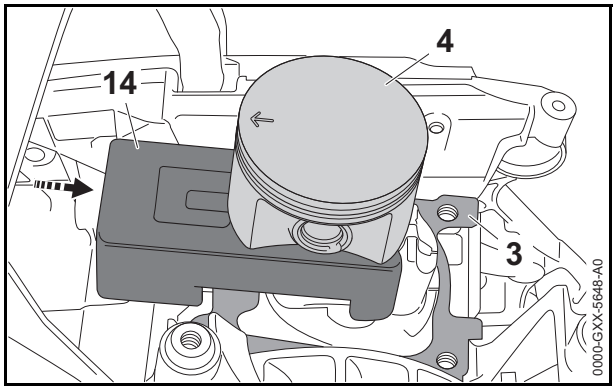
- Insert snap ring (5) into the assembly tool 5910 890 2212 (Figs. 1 - 3).
- Align the assembly tool 5910 890 2212 so that the assembly tool 5910 890 2212 points in the axial direction of the piston pin (7) and that the marking (arrow) points upwards (Fig. 4).
- Hold piston (4) in place and insert snap ring (5) into piston (4) using assembly tool 5910 890 2212.

27.5 Installing cylinder

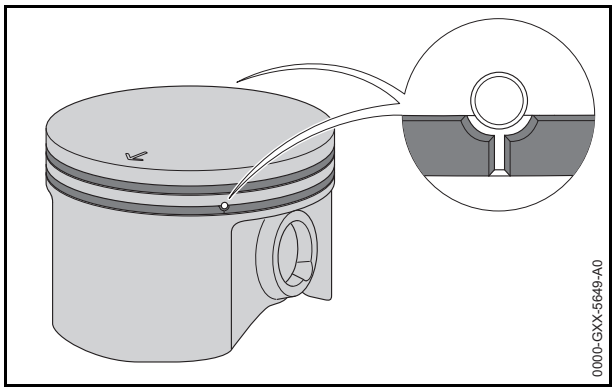
- Install piston, 📖 27.4.



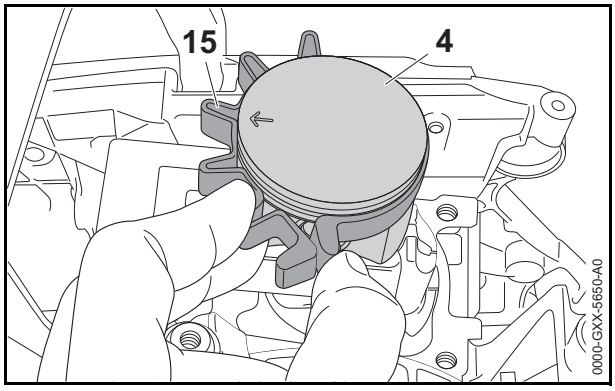
- Place the gasket (3) over the piston (4) so that the lug (13) points in the direction of the bumper spike and the curvature (arrows) points towards the piston.



- Push the piston support 5910 893 5301 (14) under the piston (4) so that the gasket (3) is not damaged.
- Turn the crankshaft counterclockwise until the piston (4) is firmly seated on the piston support 5920 893 5301 (14).



- Align the compression rings (9 and 10) so that the dowel pins are located in the middle of the radii of the compression rings (9 and 10).
- Wet the compression rings (9 and 10), piston (4) and inside of the cylinder (2) with oil.



- Use the clamping strap 0000 893 2600 (15) to enclose and hold the piston (4) and the compression rings (9 and 10) so that the compression rings (9 and 10) do not project beyond the piston wall.

If one of the compression rings (9 and 10) protrudes when the cylinder (2) is pushed on, the compression ring may be damaged. A damaged compression ring can lead to a loss of compression.

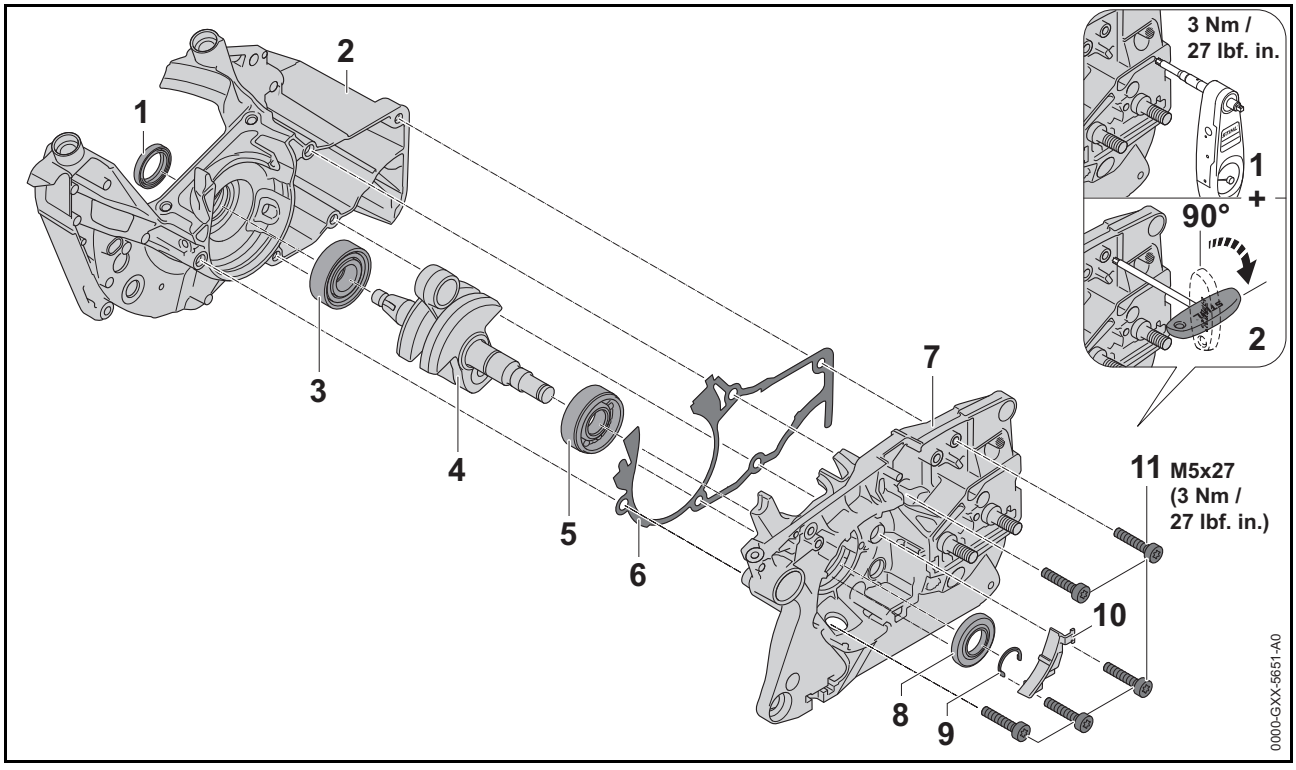
When pushing on the cylinder (2), make sure that the clamping strap 0000 893 2600 (15) firmly surrounds the piston (4) and the compression rings (9 and 10).

- Push the cylinder (2) together with the clamping strap 0000 893 2600 (15) over the piston (4).
- As soon as the cylinder (2) encloses both compression rings (9 and 10): Remove clamping strap 0000 893 2600 (15).
- Remove piston support 5910 893 5301 (14) so that the gasket (3) is not damaged.
- Align the gasket (3) so that the screw holes are aligned with the holes in the crankcase.
- Push cylinder (2) in as far as it will go.
- Insert screws (1) and tighten.
- Attach antivibration element to the cylinder, 📖 17.3.
- Install the decompression valve, 📖 8.3.
- Install hood lock, 📖 7.7.

- Install muffler and heat shield,🕮 26.3.
- Install injection module, 🕮 25.9.
- Install manifold, 🕮 25.4.
- Install air guide shroud, 🕮 25.5.
- Fit tank housing.
- Push the impulse hose onto the crankcase and hook it into the guide in the tank housing, 🕮 20.9.
- Install fuel return hose,🕮 20.7.
- Install fuel hose,🕮 20.5.
- Remove sensor wiring harness from the injection module, 🕮 22.4.
- Press the sensor cables into the cable holder on the tank housing, 🕮 22.4.
- Plug the blue plug of the sensor into the control unit, 🕮 19.8.
- Press the generator wiring harness into the guides on the air guide hood and tank housing, 🕮 22.5.
- Connect the black plug of the generator to the control unit, 🕮 19.8.
- Screw in and tighten the screw of the anti-vibration element between the tank housing (2) and the crankcase,🕮 17.3.
- Install handlebar, 🕮 9.3.
- Install throttle housing and sleeve,🕮 15.5.
- Install the spark plug.
- Check engine for leaks, 🕮 4.
- Install filter base, 🕮 15.3.
- Install starting device, 🕮 10.11.
- Press ignition cable into the guides and plug in the ignition cable plug.
- Install shroud.
- Install air filter.
- Attach filter cover.
- Calibrate the chain saw, 🕮 4.

The control unit is optimally adjusted to the mechanical and mechatronic components.

28 Crankcase, Crankshaft, Oil Seals



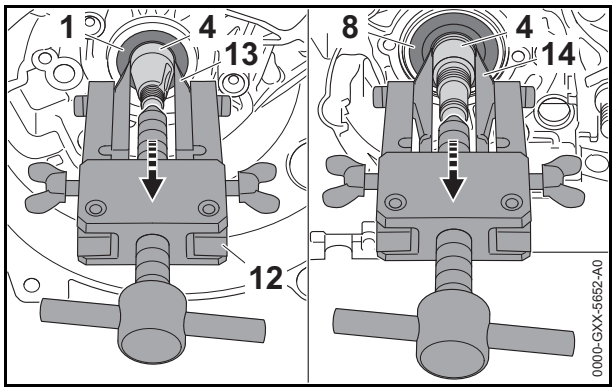
28.1 Tools, Servicing Aids

- Screwdriver – 0000 890 2300 or equivalent
- Jaws (No. 3.1 + 4) – 0000 893 3706
- Jaws (No. 6) – 0000 893 3711
- Snap ring pliers, DIN5254-A10 – 0811 611 8200 or equivalent
- Socket, T27x125 – 0812 542 2104 or equivalent
- Press sleeve – 1113 893 4600
- Press sleeve – 1141 893 2400
- Installing sleeve – 1141 893 4600
- Press sleeve – 1143 893 2400
- Press sleeve – 4119 893 2400
- Torque wrench – 5910 890 0302 or equivalent
- Service tool AS – 5910 890 2222
- Screwdriver, Q-4x150 – 5910 890 2405
- Screwdriver, T27x200 – 5910 890 2415 or equivalent
- Puller – 5910 890 4400
- Puller – 5910 890 4505
- Guide – 5910 895 0901
- Socket, DIN3124, 13mm – 5910 893 5608 or equivalent
- Socket, 17 mm – 5910 893 5610 or equivalent
- Socket, DIN3124-S19x12.5L – 5910 893 5613 or equivalent
- Hot air blower
- 2 M8 nuts
- Pin punch, 3 mm
- STIHL multipurpose grease – 0781 120 1110
- Solvent-based degreasant containing no chlorinated or halogenated hydrocarbons

28.2 Removing Oil Seals

- Preparations, 🕮 3.1.
- Remove the shroud.
- Remove the spark plug.
- Remove the chain sprocket cover.
- Remove the clutch, 🕮 11.2.
- Remove the worm, 🕮 14.4.
- Remove the oil pump, 🕮 14.5.
- Remove the E-clip (9).
- Remove the rewind starter, 🕮 10.2.
- Remove the flywheel, 🕮 18.2.
- Remove the generator and put it to one side, 🕮 22.2.

The generator's wiring harness need not be removed.



Ignition side

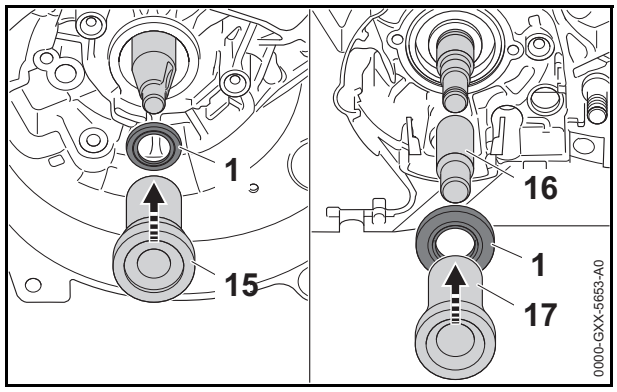
- Fit jaws (No. 6) 0000 893 3711 (13) on puller 5910 890 4400 (12).
- Loosen the arms of puller 5910 890 4400 (12).
- Push jaws (No. 6) 0000 893 3711 (13) of puller 5910 890 4400 (12) between the oil seal (1) and crankshaft (4).
- If the jaws 0000 893 3711 (13) cannot be pushed into place: Squeeze the jaws 0000 893 3706 (13) together and carefully drive home the puller 5910 890 4400 (12) with light taps on the end of the spindle.
- Clamp the arms of puller 5910 890 4400 (12).
- Screw home the spindle of puller 5910 890 4400 (12) until the oil seal (1) comes out.

Clutch side

- Use a 3 mm punch to free off the oil seal (8) in its seat.
- Fit jaws (No. 3.1) 0000 893 3706 (14) on puller 5910 890 4400 (12).
- Loosen the arms of puller 5910 890 4400 (12).
- Push jaws (No. 3.1) 0000 893 3706 (14) of puller 5910 890 4400 (12) between the oil seal (8) and crankshaft (4).
- If the jaws 0000 893 3706 (14) cannot be pushed into place: Squeeze the jaws 0000 893 3706 (14) together and carefully drive home the puller 5910 890 4400 (12) with light taps on the end of the spindle.
- Clamp the arms of puller 5910 890 4400 (12).
- Screw home the spindle of puller 5910 890 4400 (12) until the oil seal (8) comes out.

28.3 Installing the Oil Seals

- Degrease the crankshaft stub and sealing faces.
- If the seating faces are not flat and free from burrs: Replace the crankcase (4, 9) or the crankshaft (6).
- Lubricate lips of oil seals (3 and 11) with multipurpose grease.



Ignition side

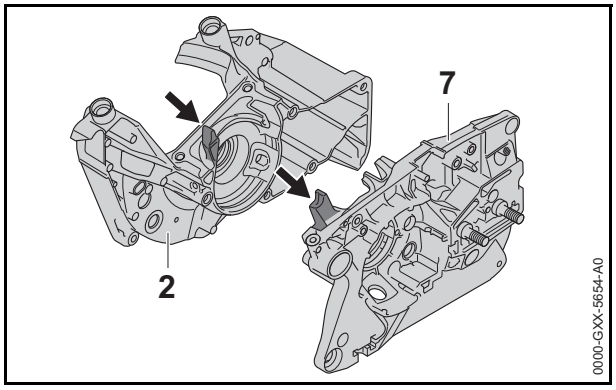
- Push oil seal (1) onto the crankshaft stub with its open side facing the crankcase (2).
- Use press sleeve 1141 893 2400 (15) to install the oil seal (1).

Clutch side

- Push the installing sleeve 1141 893 4600 (16) onto the crankshaft.
- Push oil seal (8) over installing sleeve 1141 893 4600 (16) with its open side facing the crankcase (7).
- Remove the installing sleeve 1141 893 4600 (16).
- Use press sleeve 1143 893 2400 (17) to install the oil seal (8).
- Fit the E-clip (9).
- Install the generator, 🕮 22.5.
- Install the flywheel, 🕮 18.3.
- Install the rewind starter, 🕮 10.11.
- Install the oil pump, 🕮 14.10.
- Install the worm gear, 🕮 14.4.
- Install the clutch, 🕮 11.6.
- Fit the chain sprocket cover.
- Install the spark plug.
- Mount the shroud.
- Calibrate the saw, 🕮 4.

The controller is optimally adjusted to suit the mechanical components.

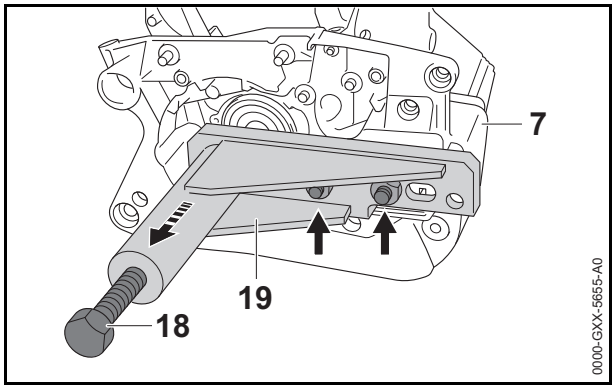
28.4 Disassembling Crankcase and Removing Crankshaft



The scavenging ramp on the crankcase can be damaged during disassembly. A damaged scavenging ramp can result in serious engine damage.

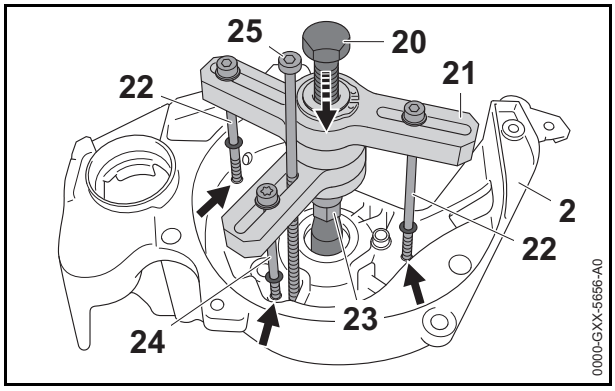
Carefully disassemble the crankcase so that the two halves of the scavenging ramp (arrows) on the two halves of the crankcase (2 and 7) are not damaged.

- Preparations, 📖 3.1.
- Remove the filter cover.
- Remove the air filter.
- Remove the shroud.
- Pull off the spark plug boot.
- Remove the spark plug.
- Remove the chain sprocket cover.
- Remove the chain catcher, 📖 5.2.
- Remove the spiked bumper, 📖 5.4.
- Remove the chain tensioner, 📖 12.2.
- Remove the chain brake, 📖 13.2.
- Remove the clutch, 📖 11.2.
- Remove the worm, 📖 14.4.
- Remove the oil pump, 📖 14.5.
- Remove the flywheel, 📖 18.2.
- Remove the rewind starter, 📖 10.2.
- Remove the filter base, 📖 15.2.
- Remove the throttle body and sleeve, 📖 15.4.
- Remove the handlebar, 📖 9.2.
- Remove the antivibration elements, 📖 17.2.
- Remove the generator, 📖 22.2.
- Remove the sensor, 📖 22.3.
- Remove the controller, 📖 19.7.
- Remove the fuel hose, 📖 20.4.
- Remove the fuel return hose, 📖 20.6.
- Remove impulse hose from guide in tank housing and pull it off the crankcase, 📖 20.8.
- Remove the tank housing, 📖 23.8.
- Remove the manifold, 📖 25.3.
- Remove the airflow shroud, 📖 25.2.
- Remove the injection module, 📖 25.8.
- Remove the muffler and heat shield, 📖 26.2.
- Remove the cylinder, 📖 27.2.
- Remove the piston, 📖 27.3.
- Removing grommets from crankcase, 📖 24.4.
- Remove stop buffer, 📖 24.6.
- Unlock and remove the cover (10).
- Remove the oil seals (1 and 8), 📖 28.2.
- Take out the screws (11).



- Push the service tool 5910 890 2222 (19) onto the collar studs (arrows) as far as stop, and back off the spindle (18) at the same time so that it no longer butts against the crankshaft stub.
- Fit and tighten down the nuts.
- Turn the spindle (18) clockwise until the crankshaft (4) is pushed out of the ball bearing (5).
- Remove the service tool 5910 890 2222 (19).
- Remove crankcase (7) from crankcase (2).
- Remove the gasket (6).

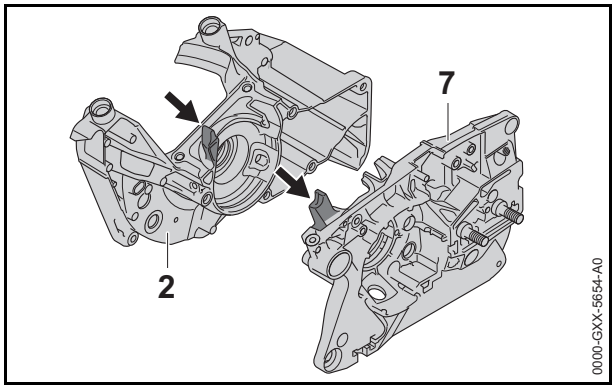
The crankshaft (4) is removed from outer side of crankcase (2) with puller 5910 890 4505.



- Screw guide 5910 895 0901 (23) onto spindle (2) of puller 5910 890 4505.
- Back off the spindle (20) of puller 5910 890 4505.

- Position arm (21) so that the spindle (20) lines up with the crankshaft stub (4) and the screws (22 and 24) fit squarely in the tapped holes (arrows) in the crankcase (2).
- Fit screw (24) in the M4 tapped hole (arrow) in the crankcase (2).
- Fit screws (22) in the M5 tapped holes (arrows) in the crankcase (2).
- Fit the screws (22 and 24) so that the spindle (20) is in line with the crankshaft stub.
- Turn the spindle (20) clockwise until the crankshaft (4) is pushed out of the crankcase (2).
- Take out the screws (22 and 24) and remove the puller 5910 890 4505.

28.5 Removing the Ball Bearings



The scavenging ramp on the crankcase can be damaged while removing the ball bearings. A damaged scavenging ramp can result in serious engine damage.

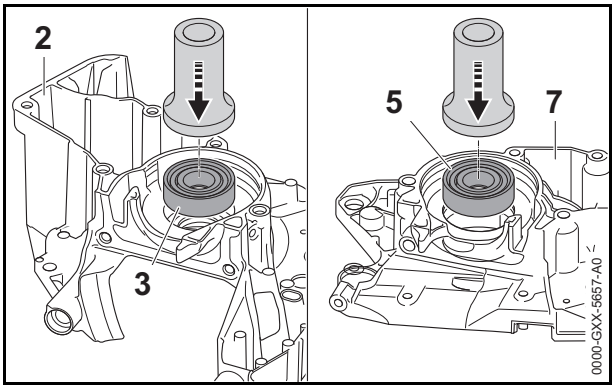
Remove ball bearings so that the two halves of the scavenging ramp (arrows) on the two halves of the crankcase (2 and 7) are not damaged.

- Disassemble crankcase and remove crankshaft, 🕮 28.4.
- If the two halves of the scavenging ramp or the two halves of the crankcase (2 and 7) are damaged, replace the crankcase (2 and 7).
- Put the two halves of the crankcase (2 and 7) down so that the ball bearings (3 and 5) can drop out.
- Heat the two halves of the crankcase (2 and 7) in bearing seat area to about 180°C (350°F).
- If the ball bearing (3) does not drop out of its own accord: Use press sleeve 1113 893 4600 to remove the ball bearing (3).
- If the ball bearing (5) does not drop out of its own accord: Use press sleeve 4119 893 2400 to remove the ball bearing (5).

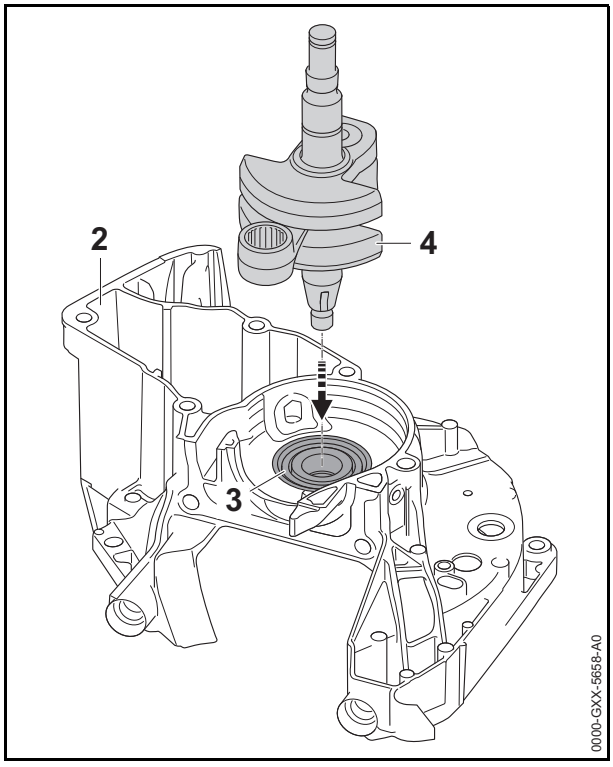
28.6 Installing the Ball Bearings

- If the two halves of the scavenging ramp in the crankcase (2 or 7) are damaged, replace the crankcase (2 or 7), 🕮 28.5.
- Install the oil pump, 🕮 14.10.

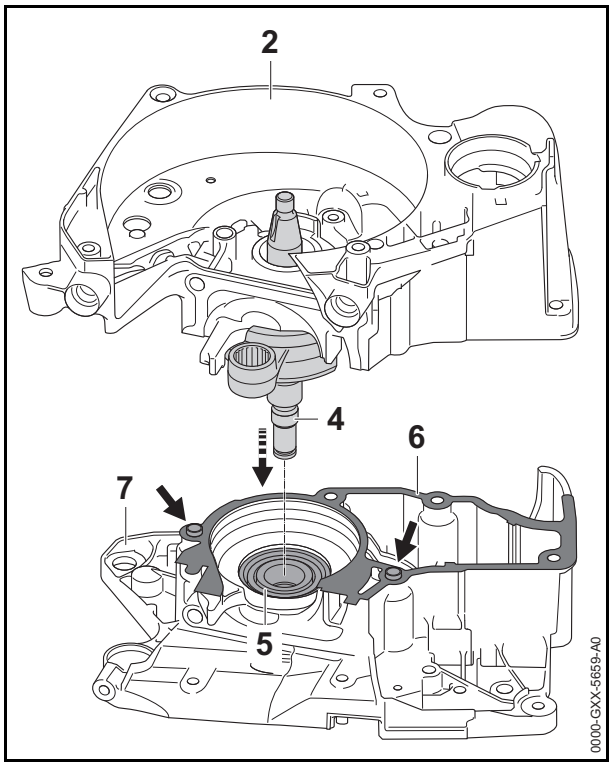
The oil pump serves as a stop when installing the ball bearing (5).



- Line up the ball bearing (3) so that its closed side (balls not visible) faces the crankcase (2).
- Line up the ball bearing (5) so that its open side (balls visible) faces the crankcase (7).
- Heat the two halves of the crankcase (2 and 7) in bearing seat area to about 180°C (350°F).
- Push home the ball bearings (3 and 5) as far as stop.
- If the ball bearings (3 and 5) cannot be pushed home: Use press sleeve 4119 893 2400 to press home the ball bearings (3 and 5).
- If ball bearing (5) does not butt against the oil pump: Use press sleeve 4119 893 2400 to press home ball bearing (5) until it butts against the oil pump.
- Remove the oil pump, 🕮 14.5.



- Position crankshaft (4) so that its tapered stub faces the ball bearing (3).
- Heat inner race of the ball bearing (3) to about 150°C (300°F).
- Push the crankshaft stub home as far as stop.



- Check that the two guide sleeves (arrows) are in position on the crankcase (7).
- Place the gasket (6) on the crankcase (7) so that the holes line up and the gasket (6) is held in position by the sleeves (arrows).
- Heat inner race of the ball bearing (5) to about 150°C (300°F).
- Hold crankcase (2) so that the holes are in alignment.
- Push crankcase (2) together with crankshaft (4) into place as far as stop, making sure that the gasket (6) is neither pinched or kinked.
- Insert and tighten down the screws (11).
- Turn the screws (11) another 90°.
- Install the oil seals, 🕮 28.3.
- Fit the cover (10) so that it snaps into place.
- Install the stop buffer, 🕮 24.7.
- Install grommets in crankcase, 🕮 24.5.
- Install the piston, 🕮 27.4.
- Install the cylinder, 🕮 27.5.
- Install the muffler and heat shield, 🕮 26.3.
- Install the injection module, 🕮 25.9.
- Install the manifold, 🕮 25.4.
- Install the airflow shroud, 🕮 25.5.
- Install the tank housing, 🕮 23.8.
- Install the impulse hose, 🕮 20.9.
- Install the fuel return hose, 🕮 20.7.
- Install the fuel hose, 🕮 20.5.
- Install the controller, 🕮 19.8.
- Install the sensor, 🕮 22.4.

- Install the generator, 🕮 22.5.
- Install the AV elements, 🕮 17.3.
- Install the handlebar, 🕮 9.3.
- Install throttle body and sleeve, 🕮 15.5.
- Install the filter base, 🕮 15.3.
- Install the rewind starter, 🕮 10.11.
- Install the flywheel, 🕮 18.3.
- Install the oil pump, 🕮 14.10.
- Install the worm gear, 🕮 14.11.
- Install the clutch, 🕮 11.6.
- Install the chain brake, 🕮 13.3.
- Install the chain tensioner, 🕮 12.3.
- Install the spiked bumper, 🕮 5.5.
- Install the chain catcher. 🕮 5.3.
- Fit the chain sprocket cover.
- Install the spark plug.
- Fit the spark plug boot.
- Mount the shroud.
- Install the air filter.
- Fit the filter cover.
- Calibrate the saw, 🕮 4.

The controller is optimally adjusted to suit the mechanical and mechatronic components.

29 Tools, Servicing Aids

29.1 Tools, aids

Part number	Designation	Use
0000 890 2201	Assembly tool	Installing rope guide bushing
0000 890 2300	Screwdriver	
0000 890 2800	Assembly hook	Disassembling, assembling clutch
0000 893 3706	Jaws (with profile 3.1 + 4)	Removing oil seals
0000 893 3711	Jaws (with profile 6)	Removing oil seals
0000 893 5904	Locking strip	Blocking the piston
0811 611 8200	Circlip pliers DIN5254-A10 or equivalent tool	Removing, installing circlip
0812 542 2041	Insert T20x125 or similar tool	Removing and installing hexagon socket head screws with electric or pneumatic screwdrivers, tightening with torque wrench
0812 542 2104	Insert T27x125 or similar tool	Removing and installing hexagon socket head screws with electric or pneumatic screwdrivers, tightening with torque wrench
1108 893 4700	Assembly drift	Removing, installing piston pins
1113 893 4600	Press sleeve	Pressing out ball bearing
1117 890 0900	Assembly tube	Installing chain brake spring
1141 893 4600	Assembly sleeve	Installing the oil seal
1142 890 3400	Combination wrench	
1142 893 2600	Clamping strap	Installing the cylinder
1143 893 2400	Press sleeve	Installing the oil seal
4119 893 2400	Press sleeve	Removing, installing ball bearing
4180 893 4400	Extension piece	Removing, installing crankcase half grommets
5910 840 0210	Analyzer MDG 1	Calibrating the chain saw; testing the chain saw, replacing control unit
5910 840 0405	Diagnosis cable, fuel injection	Calibrating the chain saw; testing the chain saw, replacing control unit
5910 890 0302	Torque wrench with optical/acoustic signal or equivalent tool	Screw connections (1 to 18 Nm / 9 to 159 lbf. in.)
5910 890 0312	Torque wrench with optical/acoustic signal or equivalent tool	Screw connections (6 to 80 Nm / 5 to 59 lbf. in.)
5910 890 2212	Assembly tool	Fitting snap ring on piston
5910 890 2222	Service tool AS	Disassembling crankcase
5910 890 2301	Screwdriver T20 or equivalent tool	Removing, installing hexagon head socket screws
5910 890 2308	Screwdriver T10 or equivalent tool	Removing, installing hexagon head socket screws
5910 890 2405	Screwdriver Q-4x150	
5910 890 2415	Screwdriver T27x200 or equivalent tool	Removing, installing hexagon head socket screws
5910 890 2420	Screwdriver Q-SW 8x200 or equivalent tool	Removing, installing hexagon head socket screws
5910 890 2800	Assembly hook	
5910 890 3000	Stud puller, M8-7.5	Screwing in collar screws
5910 890 3101	Assembly stand	
5910 890 3200	Cover	Covering chain saw
5910 890 4000	Wiring tool	Pressing wires into the guides
5910 890 4400	Puller	Removing oil seals
5910 890 4504	Puller	Removing the flywheel
5910 890 4505	Puller	Remove crankshaft
5910 893 0501	Stud driver M8	Unscrewing collar screws
5910 893 2804	Insert 13 mm long or equivalent tool	Removing, installing decompression valve

Part number	Designation	Use
5910 893 5301	Piston support	Installing the cylinder
5910 893 5608	Insert DIN3124 SW 13 or equivalent tool	Removing, installing the flywheel; removing, installing hexagon bolts and nuts
5910 893 5610	Insert SW 17 or equivalent tool	Removing, installing hexagon bolts and nuts
5910 893 5613	Insert DIN3124-S19x12.5L or equivalent tool	Removing, installing clutch
5910 893 8800	Assembly hook	Removing pickup body
5910 895 0901	Guide piece	Remove crankshaft
	Snipe nose pliers	Pulling off blade receptacles, pulling out hoses
	Hot-air blower	Removing, installing ball bearing; removing, installing crankshaft
	Open end wrench 8 mm	Holding nut steady on bumper spike
	Open end wrench 14 mm	Removing, installing handle heater switch
	Nut M8	Disassembling crankcase
	Needle	Assembling ignition lead
	Flat screwdriver 1.0x5.5x125	Fitting, removing shroud
	Screwdriver PH1x80 mm	Disassembling, assembling injection pump
	Protective gloves	
	Drift 2 mm	Knocking out segment of the starter; installing rewind spring
	Drift 3 mm	Removing the oil seal
	Drift 5 mm	Removing, installing throttle trigger; removing control unit; removing injection valve
	Drift 6 mm	Removing, installing tank vent valve
	Flex ratchet wrench	Removing clutch
0781 120 1110	STIHL multi-purpose grease	Greasing pivot pin and brake lever; greasing sealing lips of the oil seal; greasing starter stub; greasing chain tensioner
0781 417 1315	STIHL special lubricant	Installing rewind spring
0781 957 9000	STIHL press fluid OH 723	Installing rubber elements
0786 111 2101	Loctite 242 (thread-locking adhesive, medium strength)	Securing screw on chain catcher; pivot pin in gearbox
0786 111 2109	Loctite 270 (thread-locking adhesive, high strength)	Securing collar screws on crankcase
	CFC and HFC-free solvent-based degreasing agent	
	Saw chain lubricant	

* complete part number depending on the country

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