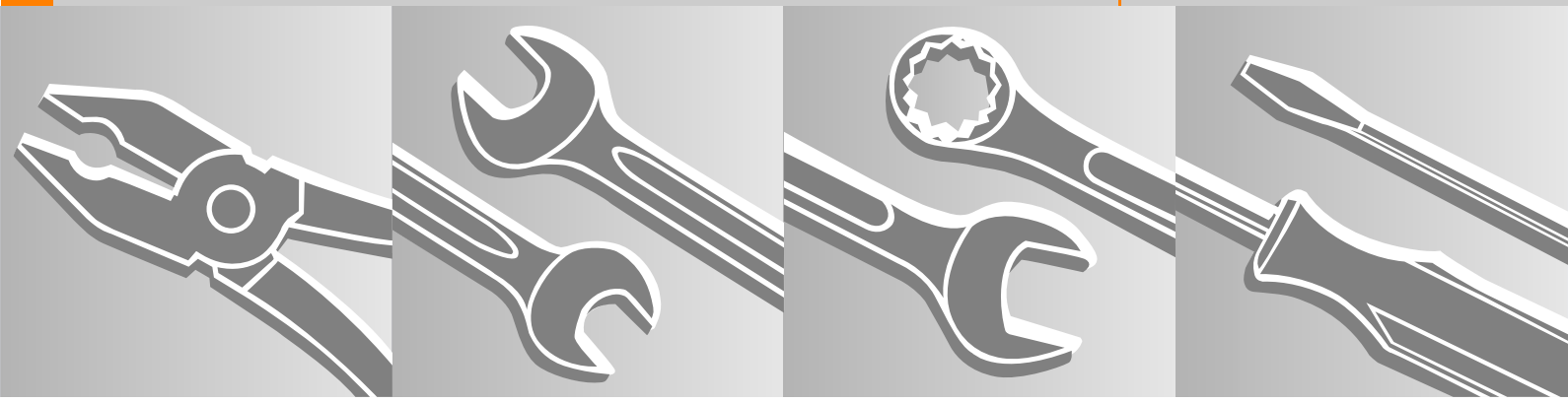
STIHL MS 240, 260

2008-07



Contents

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This service manual contains detailed descriptions of all the repair and servicing procedures specific to this power tool.

You should make use of the illustrated parts lists while carrying out repair work. They show the installed positions of the individual components and assemblies.

Refer to the latest edition of the relevant parts list to check the part numbers of any replacement parts.

A fault on the machine may have several causes. To help locate the fault, consult the troubleshooting charts for all assemblies and systems in this manual and the "STIHL Service Training System".

Refer to the “Technical Information” bulletins for engineering changes which have been introduced since publication of this service manual. Technical information bulletins also supplement the parts list until a revised edition is issued.

The special tools mentioned in the descriptions are listed in the chapter on "Special Servicing Tools" in this manual. Use the part numbers to identify the tools in the "STIHL Special Tools" manual. The manual lists all special servicing tools currently available from STIHL.

Symbols are included in the text and pictures for greater clarity.
The meanings are as follows:

In the descriptions:

● = Action to be taken as shown in the illustration above the text

– = Action to be taken that is not shown in the illustration above the text

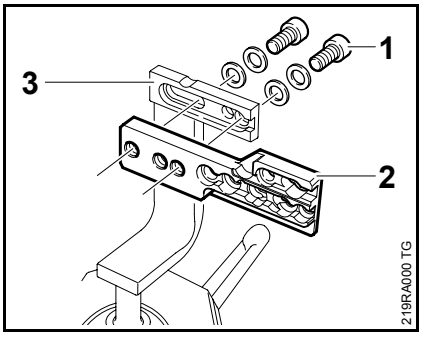
In the illustrations:

➔ Pointer

➔ Direction of movement

📖 4.2 = Reference to another chapter, i.e. chapter 4.2 in this example

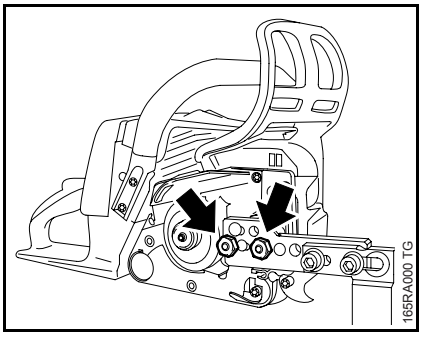
Service manuals and all technical information bulletins are intended exclusively for the use of properly equipped repair shops. They must not be passed to third parties.



Servicing and repairs are made considerably easier if the machine is mounted to assembly stand (3) 5910 890 3100. To do this, secure the mounting plate (2) 5910 850 1650 to the assembly stand with two screws (1) and washers.

The screws must not project since they, depending on the machine, may damage housings when the machine is clamped in position.

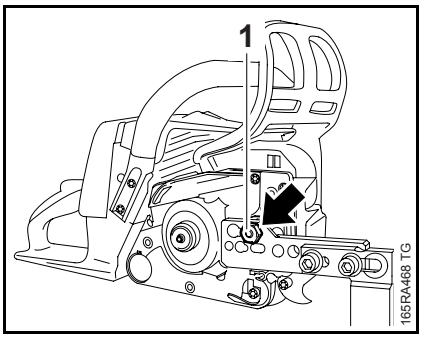
The above operation is not necessary with the new assembly stand 5910 890 3101 since the mounting plate is already fitted.



Engage the bar mounting studs in the outer bores in the mounting plate and secure the saw in position with the nuts (arrows).

The chain sprocket cover and cutting attachment have to be removed before mounting the saw to the assembly stand – pull the hand guard toward the handlebar.

Versions with Quick Chain Tensioner



There is only one bar stud on these versions. It is pushed through the upper hole (arrow) in the mounting plate and secured with the nut (1).

The machine is held in position on the mounting plate by the screw heads on the crankcase.

Always use original STIHL replacement parts.
They can be identified by the STIHL part number,
the STIHL logo and the STIHL parts symbol .
This symbol may appear alone on small parts.

Storing and disposing of oils and fuels

Collect fuel or lubricating oil in a clean container and dispose of it properly in accordance with local environmental regulations.

If the power tool is started up in the course of repairs or maintenance work, observe all local and country-specific safety regulations as well as the safety precautions and warnings in the instruction manual.

Gasoline is an extremely flammable fuel and can be explosive in certain conditions.

Always wear suitable protective gloves for operations in which components are heated for assembly or disassembly.

Improper handling may result in burns or other serious injuries.

Do not smoke or bring any fire, flame or other source of heat near the fuel. All work with fuel must be performed outdoors only. Spilled fuel must be wiped away immediately.

Always perform leakage test after working on the fuel system and the engine.

3. Specifications

3.1 Engine

	MS 240	MS 260, MS 260 C
Displacement:	41.6 cm^3	50.2 cm^3
Bore:	42 mm	44.7 mm
Stroke:	30 mm	32 mm
Engine power to ISO 7293:	2.1 kW (2.85 bhp) at 9500 rpm	2.6 kW (3.5 bhp) at 9500 rpm
Maximum permissible engine speed (with bar and chain):	13000 rpm	14000 rpm
Versions with catalytic converter Maximum permissible engine speed (with bar and chain):		13000 rpm
Idle speed:	2800 rpm	2800 rpm
Clutch:	Centrifugal clutch without linings	Centrifugal clutch without linings
Clutch engages at:	3600 rpm	3600 rpm
Crankcase leakage test		
at gauge pressure:	0.5 bar	
under vacuum:	0.5 bar	

3.2 Fuel System

Carburetor leakage test at gauge pressure:	0.8 bar
Operation of tank vent at gauge pressure:	0.5 bar
Fuel:	as specified in instruction manual

3.3 Ignition System

Air gap between ignition module and fanwheel:	0.15...0.30 mm
Spark plug (suppressed):	NGK BPMR 7 A
Electrode gap:	0.5 mm

3.4 Chain Lubrication

Speed-controlled oil pump with reciprocating piston and manual flow control

Oil pump without adjustable delivery rate:	7.5 (+/- 2.5) cm^3/min at 10000 rpm
Oil pump with adjustable delivery rate:	4.5...11.5 cm^3/min at 10000 rpm

3.5 Tightening Torquese

DG and P (Plastoform) screws are used in polymer and light metal components. These screws form a permanent thread when they are installed for the first time. They can be removed and installed as often as necessary without impairing the strength of the screwed assembly, providing the specified tightening torque is observed.
For this reason it is **essential to use a torque wrench.**

Fastener	Thread size	For component	Torque Nm	Letter
Countersunk screw	P 4x12	Cover plate/sprocket cover (quick chain tensioner)	2.5	
Screw	M 4x8	Cover plate/chain tensioner	3.0	4)
Collar screw	M 8x21.5	Bar mounting	23.0	1)
Collar screw	M10/M 8	Bar mounting/quick chain tensioner	30.0	1)
Screw	M 4x12	Cover, chain brake/crankcase	3.0	4)
	M 10x1	Decompression valve (MS 260)	14.0	
Screw	B 4.9x9.5	Spark arresting screen/muffler	2.0	
Screw	M 3.5x12	Generator/crankcase	2.0	1)
Screw	P 6x32.5	Handlebar, top (polymer)/tank housing	5.0	
Screw	P 6x21.5	Handlebar, bottom (polymer)/tank housing	5.0	
Screw	P 6x19	Handlebar, top and bottom/tank housing (version with handle heating)	7.0	
Screw	P 4x19	Handle molding	1.6	
Screw	M 5x12	Retaining plate/annular buffer	8.0	4)
Screw	M 4x16	Hand guard/crankcase (micro-encapsulated)	4.0	4)
Nut	M 5	Slotted nut, shroud/stud, cylinder	3.5	
Screw	P 6x19	Chain catcher/plug	2.8	
Screw	M 5x12	Spiked bumper (with self-locking nut)	 7.5	4)
Screw	M 5x20	Crankcase	9.0	
Collar nut	M 5	Air filter/tank housing	2.0	
Screw	M 4x16	Fan housing	4.0	4)
	M 12x1L	Carrier (clutch)	50.0	
Screw	M 4x12	Oil pump/crankcase	3.0	4)
Screw	P 6x26.5	Annular buffer, tank housing/crankcase (ignition side)	5.0	
Screw	M 5x12	Annular buffer plate/crankcase (ignition side)	8.0	4)
Screw	P 6x19	Annular buffer, tank housing/crankcase (clutch side)	5.5	
Screw	M 5x16	Muffler/crankcase/cylinder (version with catalytic converter and MS 260)	10.0	1), 4)

Fastener	Thread size	For component	Torque Nm	Remarks
Screw	M 5x12	Muffler/crankcase/cylinder (MS 240)	10.0	1), 4)
Nut	M 8x1	Flywheel	33.0	3)
Screw	M 4x8	Side plate/crankcase	3.0	4)
Screw	M 4x16	Side plate/crankcase (quick chain tensioner)	3.0	
Screw	M 3x20	Clamp/manifold	0.5	
	M 5x8.5	Stud/cylinder	1.4	2)
Nut	M 5	Carburetor	3.5	
Screw	M 5x20	Cylinder/crankcase	11.0	2), 4)
	M 14x1.25	Spark plug	25.0	
Screw	M 5x20	Ignition module/crankcase (micro-encapsulated)	7.0	4)

Remarks:

1) Loctite 242 or 243, medium strength
2) Loctite 270, high strength
3) Degrease crankshaft/flywheel and mount oil-free
4) Screws with binding head

Use the following procedure when refitting a DG or P screw in an existing thread:

Place the screw in the hole and rotate it counterclockwise until it drops down slightly.
Tighten the screw clockwise to the specified torque.

This procedure ensures that the screw engages properly in the existing thread and does not form a new thread and weaken the assembly.

Coat micro-encapsulated screws with medium strength Loctite 242 or 243 before reinstalling.

Power screwdriver setting for polymer: DG and P screws max. 500 rpm
Do not use an impact wrench for releasing or tightening screws.

Do not mix up screws with and without binding heads.

4. Troubleshooting

4.1 Clutch

Condition	Cause	Remedy
Saw chain stops under load at full throttle	Clutch shoes badly worn	Install new clutch
	Clutch drum badly worn	Install new clutch drum
Saw chain rotates at idle speed	Engine idle speed too high	Readjust with idle speed screw **LA** (counterclockwise)
	Clutch springs stretched or fatigued	Replace the clutch springs or install new clutch
	Clutch spring hooks broken	Replace the clutch springs
Loud noises	Clutch springs stretched or fatigued	Replace all clutch springs
	Needle cage damaged	Fit new needle cage
	Clutch shoe retainer broken	Fit new retainer
	Clutch shoes and carrier worn	Install new clutch

Condition	Cause	Remedy
Chain sprocket wears rapidly	Chain not properly tensioned	Tension chain as specified
	Wrong chain pitch	Fit chain of correct pitch
	Insufficient chain lubrication	Check chain lubrication
	Chain sprocket worn	Fit new chain sprocket
Saw chain stops under load at full throttle	Clutch shoes badly worn	Install new clutch
	Clutch drum badly worn	Install new clutch drum
	Brake band blocked	Check freedom of movement and operation of brake band
Saw chain rotates at idle speed	Engine idle speed too high	Readjust with idle speed screw **LA** (counterclockwise)
	Clutch springs stretched or fatigued	Replace the clutch springs or install new clutch
	Clutch spring hooks broken	Replace the clutch springs
Saw chain does not stop immediately when brake is activated	Brake spring stretched or broken	Fit new brake spring
	Brake band stretched or worn	Fit new brake band
	Clutch drum worn	Install new clutch drum

4.3 Chain Lubrication

In the event of trouble with the chain lubrication system, check and rectify other sources of faults before disassembling the oil pump.

Condition	Cause	Remedy
Chain receives no oil	Oil tank empty	Fill up with oil and check setting of oil pump if necessary
	Oil inlet hole in guide bar is blocked	Clean oil inlet hole
	Intake hose or pickup body clogged or intake hose ruptured	Fit new intake hose and pickup body
	Valve in oil tank blocked	Clean or replace valve
	Teeth on worm worn	Install new worm
	Oil pump damaged or worn	Install new oil pump
Machine losing chain oil	Oil pump body damaged	Install new oil pump
	Oil pump damaged or worn	Install new oil pump
	Oil suction hose connection damaged	Install new oil intake hose
Oil pump delivers insufficient oil	Oil pump worn	Install new oil pump
	Oil pump delivery rate set too low	Adjust oil pump (only on version with adjustable oil pump)

Condition	Cause	Remedy
Starter rope broken	Rope pulled out too vigorously as far as stop or over edge, i.e. not vertically	Fit new starter rope
	Normal wear	Fit new starter rope
Starter rope does not rewind	Very dirty or corroded	Clean or replace rewind spring
	Insufficient spring tension	Check rewind spring and increase tension
	Rewind spring broken	Fit new rewind spring
Starter rope cannot be pulled out far enough	Spring overtensioned	Check rewind spring and reduce tension
Starter rope can be pulled out almost without resistance (crankshaft does not turn)	Guide peg on pawl or pawl itself is worn	Fit new pawl
	Spring clip on pawl fatigued	Fit new spring clip
Starter rope is difficult to pull or rewinds very slowly	Starter mechanism is very dirty	Thoroughly clean complete starter mechanism
	Lubricating oil on rewind spring becomes viscous at very low outside temperatures (spring windings stick together)	Coat rewind spring with a little standard solvent-based degreasant (containing no chlorinated or halogenated hydrocarbons), then pull rope carefully several times until normal action is restored
	Decompression valve is not open	Open, check and replace decompression valve if necessary

4.5 Ignition System

Exercise extreme caution while carrying out maintenance and repair work on the ignition system. The high voltages which occur can cause serious or fatal accidents.

Condition	Cause	Remedy
Engine runs roughly, misfires, temporary loss of power	Spark plug boot is loose	Press boot firmly onto spark plug and fit new spring if necessary
	Spark plug sooted, smeared with oil	Clean the spark plug or replace if necessary. If sooting keeps recurring, check air filter
	Ignition lead loose in ignition module	Secure ignition lead properly
	Fuel/oil mixture – too much oil	Use correct mixture of fuel and oil
	Incorrect air gap between ignition module and flywheel	Set air gap correctly
	Flywheel cracked or has other damage or pole shoes have turned blue	Install new flywheel
	Ignition timing wrong, flywheel out of adjustment, key in flywheel has sheared off	Fit key if necessary and secure flywheel properly or install new flywheel
	Weak magnetization in flywheel	Install new flywheel
	Irregular spark	Check operation of switch shaft/ contact springs and ignition module. Faulty insulation or break in ignition lead or short circuit wire. Check ignition lead/ignition module and replace ignition module if necessary. Check operation of spark plug. Clean the spark plug or replace if necessary.
	Crankcase damaged (cracks)	Install new crankcase

Condition	Cause	Remedy
No spark	Spark plug faulty	Install new spark plug
	Faulty insulation or short in short circuit wire	Check short circuit wire for short circuit to ground
	Break in ignition lead or insulation damaged	Check ignition lead and replace if necessary
	Ignition module faulty	Install new ignition module

4.6 Carburetor

Condition	Cause	Remedy
Carburetor floods; engine stalls	Inlet needle not sealing – foreign matter in valve seat or cone	Remove and clean the inlet needle, clean the carburetor
	Inlet control lever sticking on spindle	Check inlet control lever, replace if necessary
	Helical spring not located on nipple of inlet control lever	Remove the inlet control lever and refit it correctly
	Perforated disc on diaphragm is deformed and presses constantly against the inlet control lever	Fit a new metering diaphragm
	Metered diaphragm deformed	Fit a new metering diaphragm
Poor acceleration	Setting of low speed screw too lean	Check basic carburetor setting, correct if necessary
	Setting of high speed screw too lean	Check basic carburetor setting, correct if necessary
	Inlet needle sticking to valve seat	Remove inlet needle, clean and refit
	Diaphragm gasket leaking	Fit new diaphragm gasket
	Metering diaphragm damaged or shrunk	Fit a new metering diaphragm
	Impulse hose damaged or kinked	Install new impulse hose
	Tank vent faulty	Replace tank vent
	Leak on fuel hose from tank to carburetor	Seal connections or install new fuel hose

Condition	Cause	Remedy
Engine will not idle, idle speed too high	Throttle shutter opened too wide by idle speed screw **LA**	Reset idle speed screw **LA** correctly
	Oil seals/crankcase leaking	Seal or replace oil seals/crankcase
Engine stalls at idle speed	Idle jet bores or ports blocked	Clean the carburetor
	Setting of low speed screw too rich or too lean	Reset low speed screw **L** correctly
	Setting of idle speed screw **LA** incorrect – throttle shutter completely closed	Reset idle speed screw **LA** correctly
	Tank vent faulty	Replace tank vent
	Leak on fuel hose from tank to carburetor	Seal connections or install new fuel hose

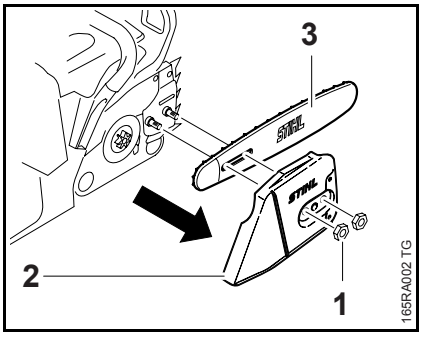
Condition	Cause	Remedy
Engine speed drops quickly under load – low power	Air filter dirty	Clean air filter or replace if necessary
	Throttle shutter not opened fully	Check throttle cable and rod
	Tank vent faulty	Replace tank vent
	Fuel pickup body dirty	Install new pickup body
	Fuel strainer dirty	Clean fuel strainer in carburetor, replace if necessary
	Leak on fuel hose from tank to carburetor	Seal connections or install new fuel hose
	Setting of high speed screw **H** too rich	Check basic carburetor setting, correct if necessary
	Main jet bores or ports blocked	Clean the carburetor
	Pump diaphragm damaged or fatigued	Fit new pump diaphragm
	Impulse hose damaged or kinked	Install new impulse hose
	Ignition timing wrong, flywheel out of adjustment, key in flywheel is missing or has sheared off	Fit key if necessary and secure flywheel properly or install new flywheel

4.7 Engine

Always check and, if necessary, repair the following parts before looking for faults on the engine:

- Air filter
- Fuel system
- Carburetor
- Ignition system

Condition	Cause	Remedy
Engine does not start easily, stalls at idle speed, but operates normally at full throttle	Oil seals in crankcase damaged	Replace the oil seals
	Crankcase leaking or damaged (cracks)	Seal or replace the crankcase
Engine does not deliver full power or runs erratically	Piston rings worn or broken	Fit new piston rings
	Muffler / spark arresting screen carbonized	Clean the muffler (inlet and exhaust), replace spark arresting screen, replace muffler if necessary
	Air filter dirty	Replace air filter
	Fuel/impulse hose severely kinked or damaged	Fit new hoses or position them free from kinks
	Decompression valve is not closed	Close, check and replace decompression valve if necessary
Engine overheating	Insufficient cylinder cooling. Air inlets in fan housing blocked or cooling fins on cylinder very dirty	Thoroughly clean all cooling air openings and the cylinder fins

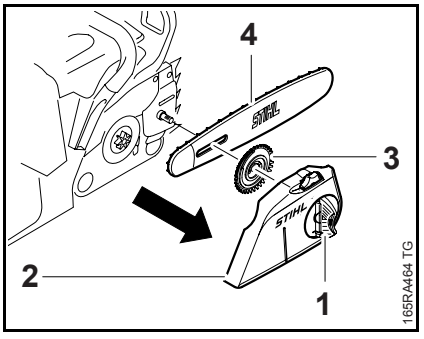


Wear gloves to protect your hands from injury.

- Unscrew the hex nuts (1).
- Remove the chain sprocket cover (2).
- Remove the guide bar (3) with chain.

– Reassemble in the reverse sequence.

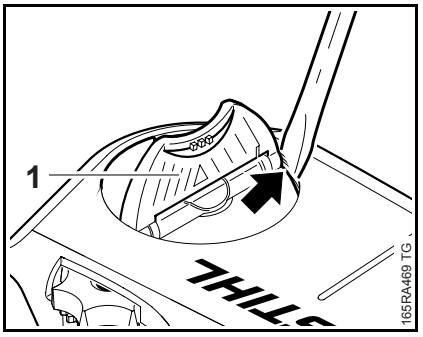
Versions with Quick Chain Tensioner



Wear gloves to protect your hands from injury.

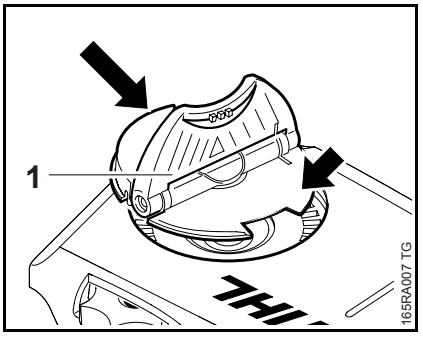
- Swing the wing nut (1) upright and loosen it counterclockwise.
- Remove the sprocket cover (2) and tensioning gear (3) with guide bar (4).

– Reassemble in the reverse sequence.



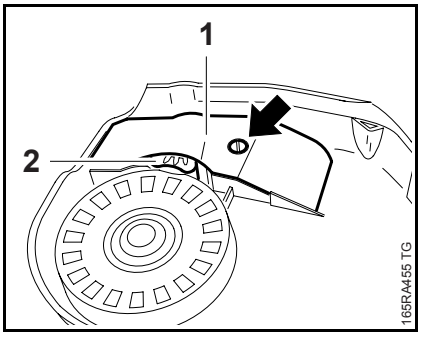
- Carefully pry the wing nut (1) out of the sprocket cover (arrow).

– Check the wing nut (1) and replace if necessary



– Swing the wing nut (1) upright.

- Push the wing nut (1), thin side first (see arrow), into the opening and press it down until it snaps into positon.



- Take out the screw (arrow).

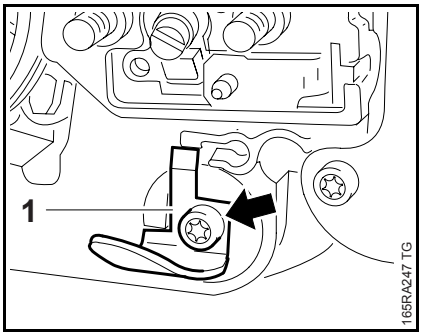
– Remove the cover plate (1) and adjusting wheel (2).

When installing the adjusting wheel, make sure its teeth point inboard.

– Reassemble in the reverse sequence.

5.1 Chain Catcher

– Remove the sprocket cover and cutting attachment, 🕮 5



- Take out the screw (arrow) and remove the chain catcher (1).

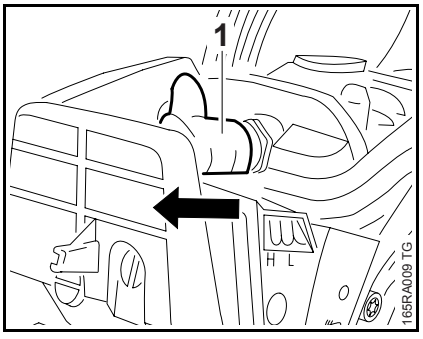
– Reassemble in the reverse sequence.

– Tightening torques, 🕮 3.5

– Troubleshooting, 🕮 4.1

– Remove the sprocket cover and cutting attachment, 🕮 5

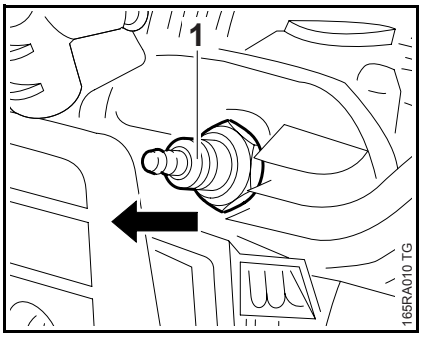
– Remove the clutch drum, 🕮 6.1



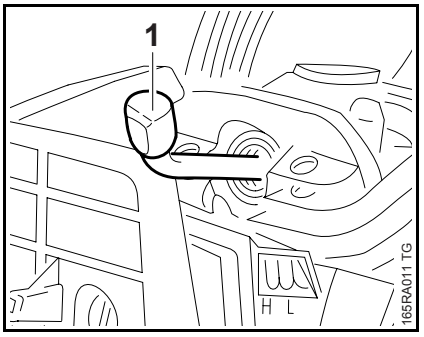
– Remove the air filter, 🕮 14.1

– Remove the shroud, 🕮 8.4

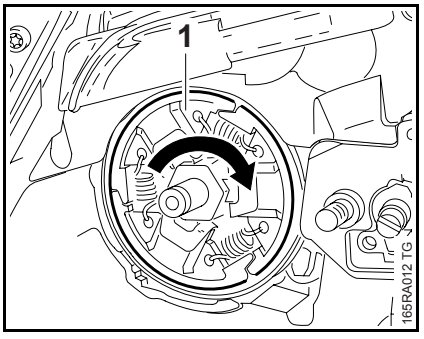
● Pull boot (1) off the spark plug.



● Unscrew the spark plug (1).

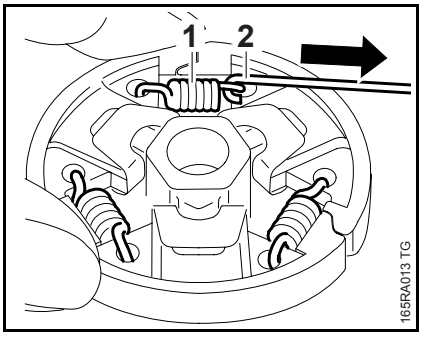


● Push the locking strip (1) 0000 893 5903 into the cylinder so that "OBEN-TOP" is visible.



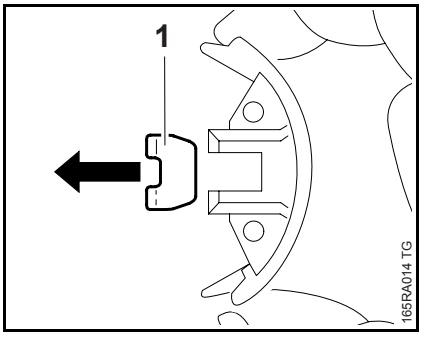
● Unscrew the clutch (1).

Note that the clutch has a left-hand thread.



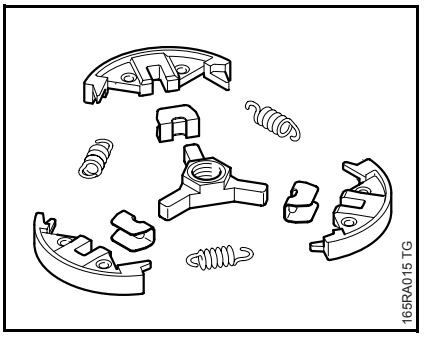
Disassembling

● Use hook (2) 5910 890 2800 to remove the clutch springs (1).



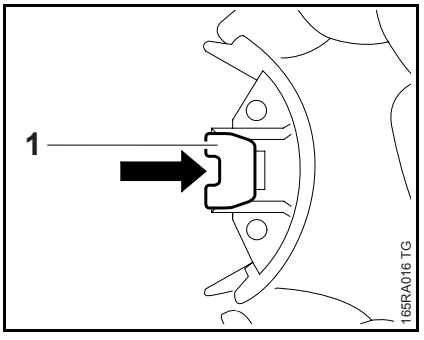
– Pull the clutch shoes off the carrier.

● Remove the retainers (1).

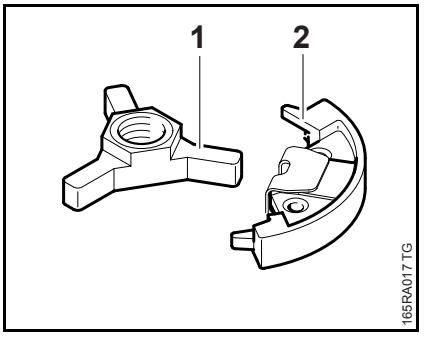


– Clean all parts..

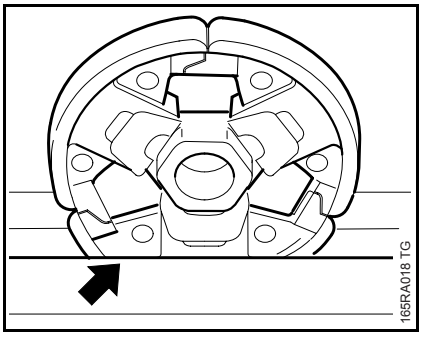
– Replace any damaged parts.



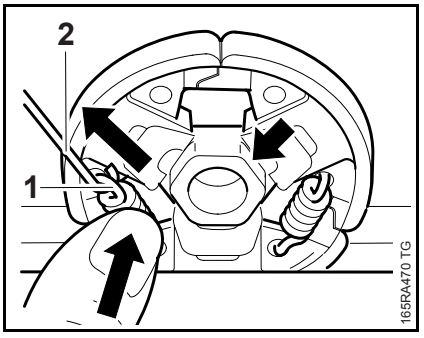
● Fit the retainers (1).



- Fit the clutch shoes (2) over the arms (2).



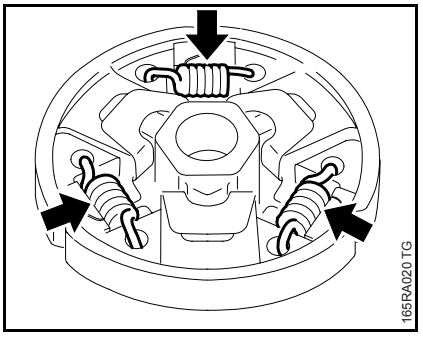
- Clamp the clutch in a vise (arrow).



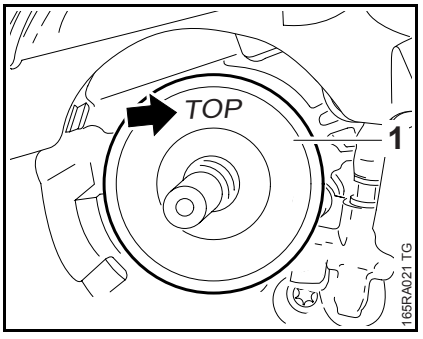
Attach the springs on the side with the raised hexagon (arrow).

- Attach one end of each spring (1) to the clutch shoes.

- Use the hook (2) 5910 890 2800 to attach the other ends of the springs and press them firmly into the clutch shoes.

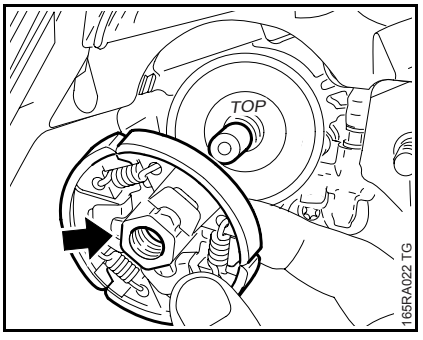


- Check the clutch – all springs (arrows) must be properly attached.

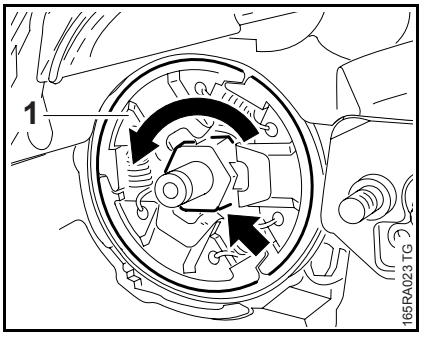


– Make sure the washer (1) is in place.

Installed position is correct when "TOP" (arrow) faces outwards.



- Position the clutch on the crankshaft stub so that the raised hexagon (arrow) faces outwards.



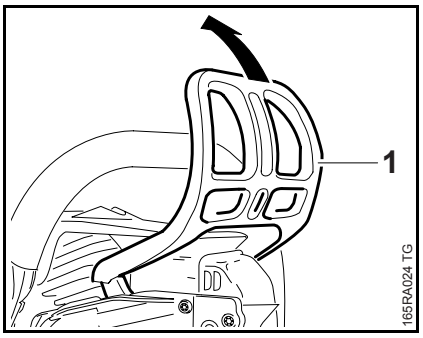
- Screw the clutch (1) on to the crankshaft stub and tighten down the hexagon (arrow) firmly – left-hand thread.

– Tightening torques, 🕮 3.5

– Remove the locking strip from the cylinder.

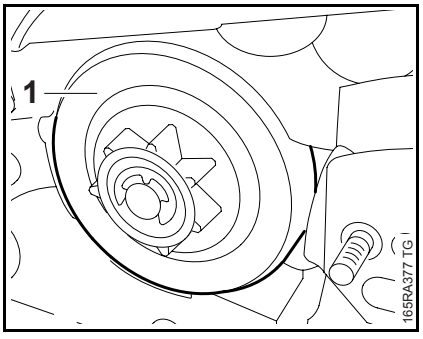
– Reassemble all other parts in the reverse sequence.

6.1 Clutch Drum

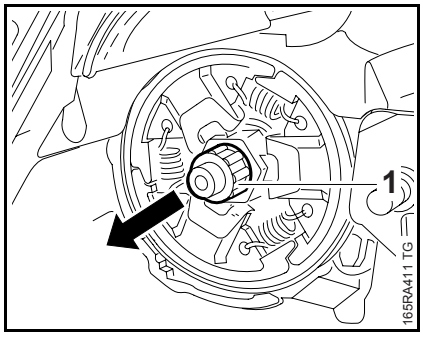


– Remove the sprocket cover and cutting attachment, 🕮 5

● Pull the hand guard (1) towards the handlebar.



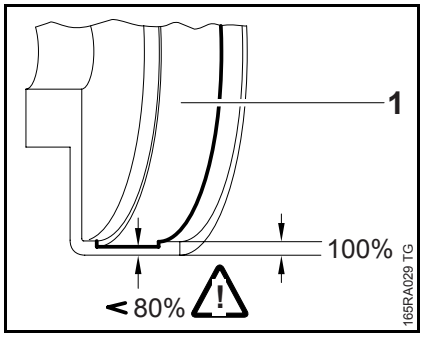
Remove and install the clutch drum (1), see instruction manual.



● Pull off the needle cage (1).

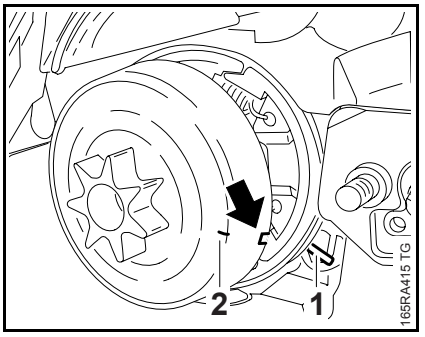
– Clean the needle cage (1) and crankshaft stub, 🕮 17

– Lubricate the needle cage (1) and crankshaft stub, 🕮 17



– Inspect the clutch drum (1) for signs of wear.

If there are signs of serious wear on the inside diameter of the clutch drum (1), check the remaining wall thickness. If it is less than about 80% of the original thickness, install a new clutch drum.



The notch (arrow) in the clutch drum must engage the worm gear's driver (1).

Use the mark (2) for orientation.

– Apply thin coating of oil to outside diameter of clutch drum and the brake band.

– Reassemble all other parts in the reverse sequence.

7.1 Checking Operation

The chain brake is one of the most important safety devices on the chain saw. Its efficiency is measured in terms of the chain braking time, i.e. the time that elapses between activating the brake and the saw chain coming to a complete standstill.

Contamination (with chain oil, chips, fine particles of abrasion, etc.) and smoothing of the friction surfaces of the brake band and clutch drum impair the coefficient of friction, which prolongs the braking time. A fatigued or stretched brake spring has the same negative effect.

– Start the engine.

– With the chain brake activated (locked), open the throttle wide for a brief period (max. 3 seconds) – the chain must not rotate.

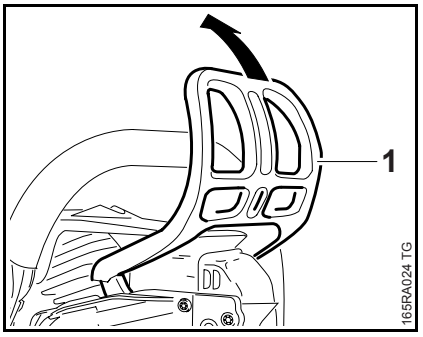
– With the chain brake released, open the throttle wide and activate the brake manually – the chain must come to an abrupt stop.

The braking time is in order if deceleration of the saw chain (less than a second) is imperceptible to the eye.

The chain must come to a standstill in less than a second.

If the chain brake does not operate properly, refer to troubleshooting, 🕮 4.2.

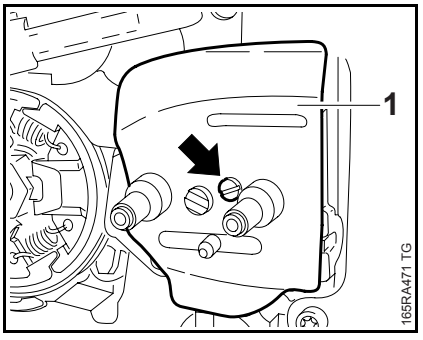
7.2 Removing and Installing the Brake Band



● Disengage the chain brake by pulling the hand guard (1) towards the front handle.

The brake band is no longer under tension.

– Remove the clutch drum, 🕮 6.1

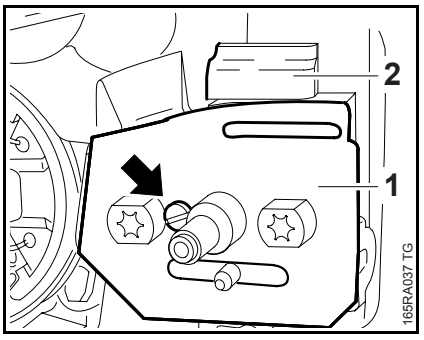


– Troubleshooting, 🕮 4.2

– Remove the sprocket cover and cutting attachment, 🕮 5

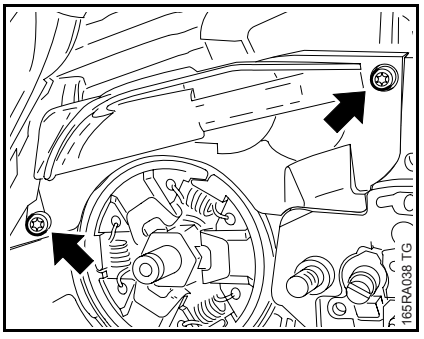
● Take out the screw (arrow) and remove the side plate (1).

Versions with Quick Chain Tensioner



● Take out the screw (arrow) and remove the side plate (1).

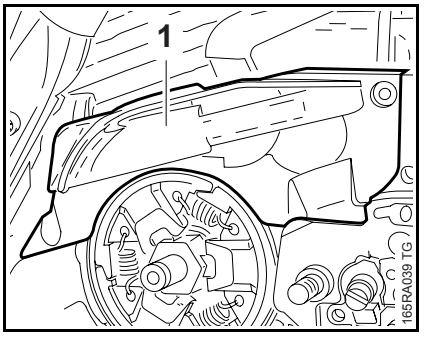
● Remove the upper bumper strip (2).



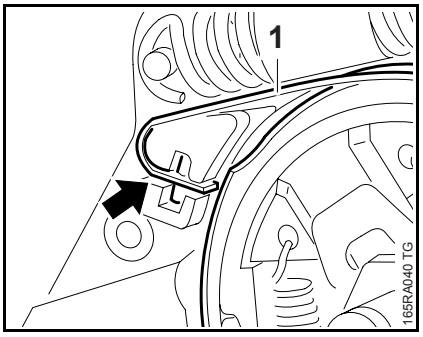
● Take out the screws (arrows).

On versions with handle heating

– Remove the ground wire, 🕮 15.4.1.



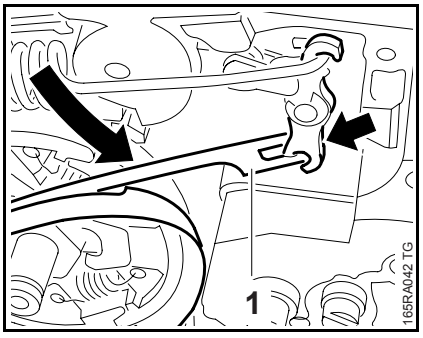
● Remove the cover (1).



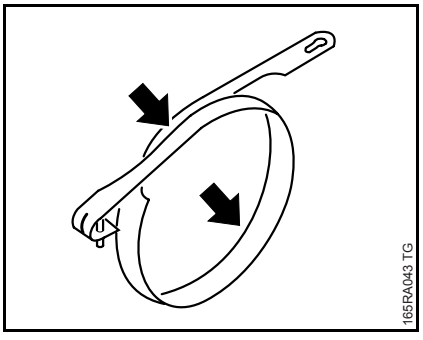
- Pry the brake band (1) out of its seat (arrow).

– Remove the brake band (1).

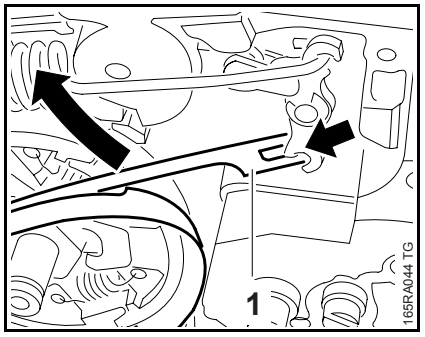
Do not over-stretch the brake band.



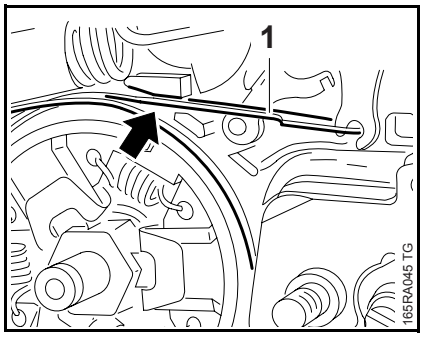
- Turn the brake band (1) to one side and disconnect it from the brake lever (arrow).



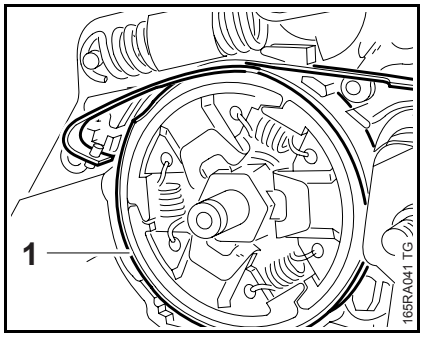
Install a new brake band if there are noticeable signs of wear (large areas on inside diameter and/or parts of outside diameter – arrows) and its remaining thickness is less than 0.6 mm.



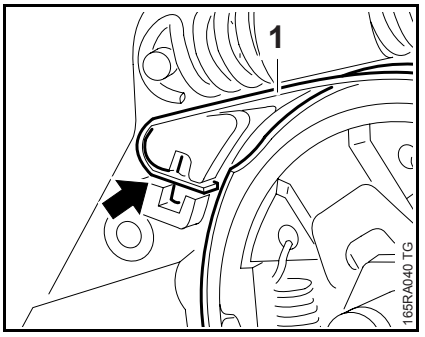
- Hold the brake band (1) sideways, attach it to the brake lever (arrow) and then swing it in the direction of its seat.



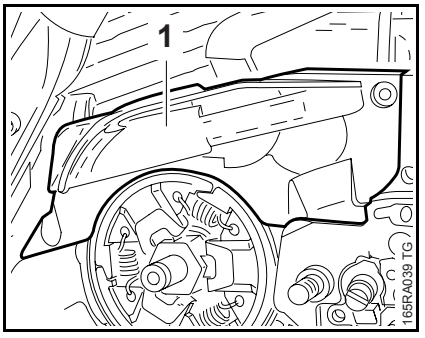
- Position the brake band (1) it the guide (arrow) first.



- Push the brake band (1) into its seat.



- Push the brake band (1) into its guide (arrow) as far as stop.



- Place the cover (1) in position.

– On versions with handle heating, fit the ground wire, 🕮 15.4.1

– Insert screws and tighten them down firmly.

– Tightening torques, 🕮 3.5

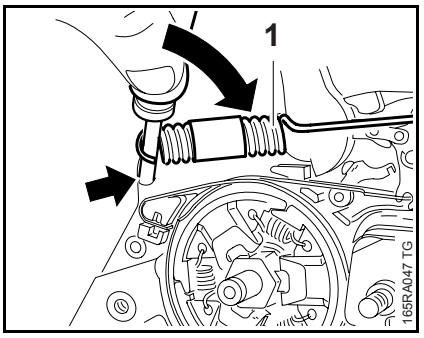
– On versions with quick chain tensioner, install the upper bumper strip.

– Install the clutch drum, 🕮 6.1

– Check operation.

– Reassemble all other parts in the reverse sequence.

7.3 Brake Lever



– Troubleshooting, 🕮 4.2

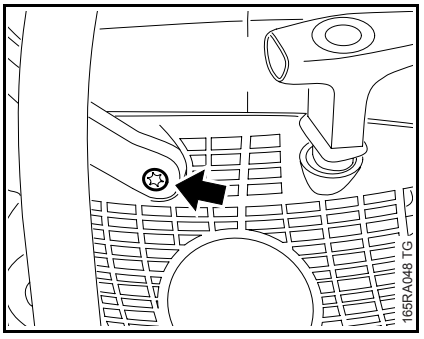
– Push the hand guard towards the guide bar.

The brake spring (1) is now relaxed.

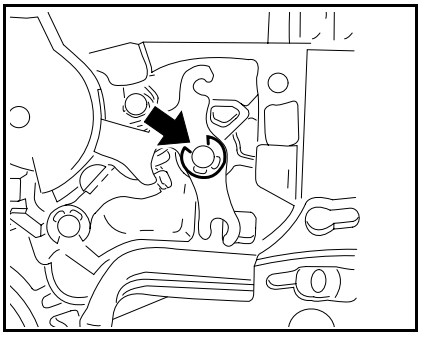
– Remove the brake band, 🕮 7.2

● Use the assembly tool 117 890 0900 to disconnect the brake spring (1) from the anchor pin (arrow).

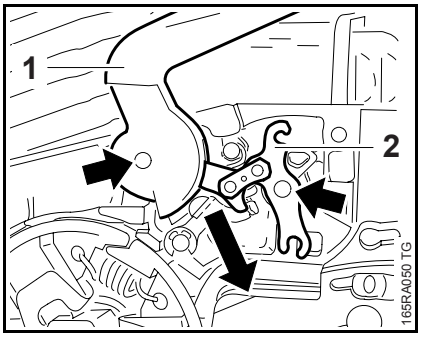
– Disconnect the brake spring (1) from the brake lever.



● Take out the screw (arrow).

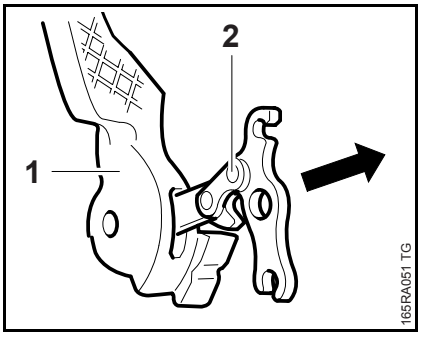


● Remove the E-clip (arrow).



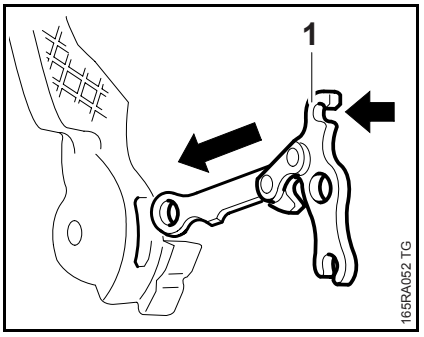
● Pull the hand guard (1) and brake lever (2) off the pivot pins (arrows) together.

– Remove the hand guard (1) and brake lever (2).



● Take the brake lever (2) out of the hand guard (1).

– Inspect the brake lever (2) and hand guard (1) and replace if necessary.



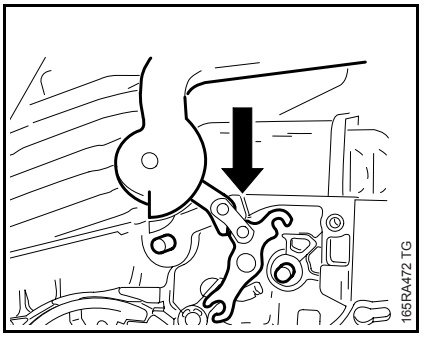
– Inspect the pivot pins and replace if necessary, 🕮 7.5

– Inspect the cam lever and replace if necessary, 🕮 7.4

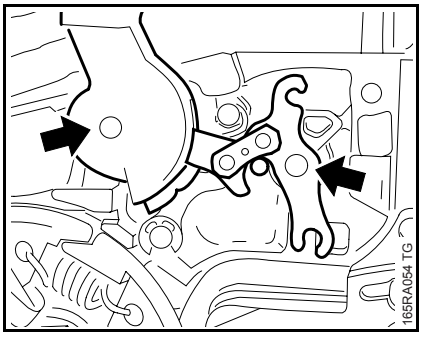
Clean all disassembled parts with a little standard commercial solvent-based degreasant containing no chlorinated or halogenated hydrocarbons.

– Hold the brake lever (1) so that the brake spring attachment point (arrow) is at the top.

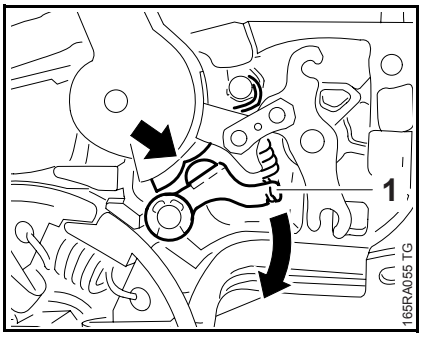
● Push the brake lever (1) into the hand guard recess and line up the holes.



● Push the hand guard with brake lever over the machine until it is positioned against the pivot pin.

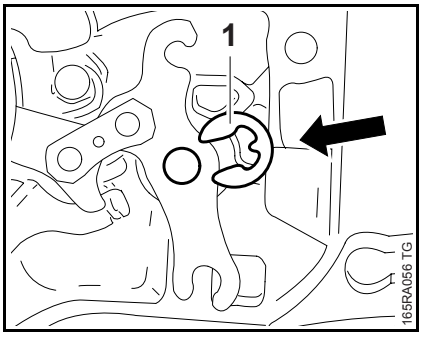


- Lift the bearing boss of the hand guard and the brake lever a little and position them over the pivot pins (arrows).

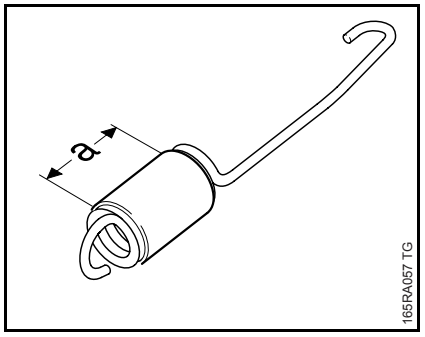


- Turn the cam lever (1) to one side until the cam of the hand guard (arrow) slips passed it.

– Push the hand guard bearing boss and the brake lever on to the pivot pins.



- Fit the E-clip (1).

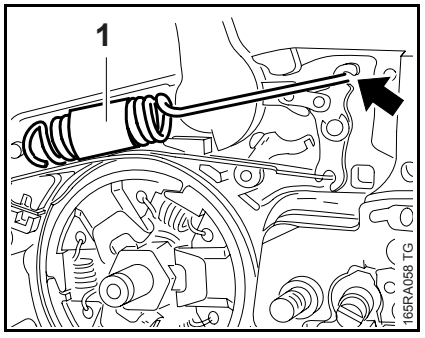


- The turns of brake spring must be tightly against one another in the relaxed condition. If this is not the case, replace the brake spring.

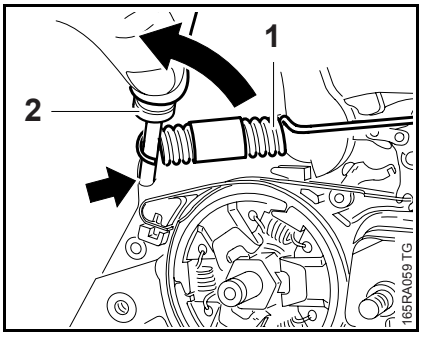
Check the correct position of the protective hose – it must be centered in the spring.

a = 20 mm

If the groove in the brake spring anchor pin is worn, install a new pin, 🕮 7.5



- Attach the brake spring (1) to the brake lever (arrow).



- Use the assembly tool (2) 1117 890 0900 to attach the brake spring (1) to the anchor pin (arrow).

– Reassemble all other parts in the reverse sequence.

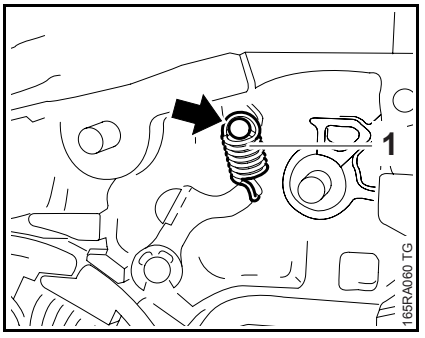
– Tightening torques, 🕮 3.5

– Lubricate the brake lever, 🕮 17

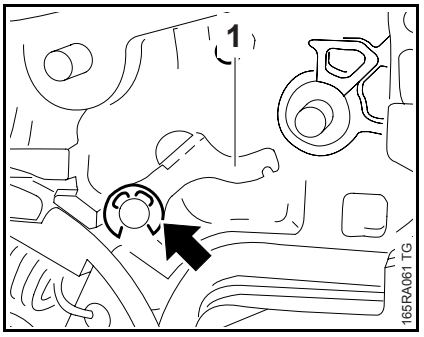
7.4 Cam Lever

The cam lever defines the locked position of the hand guard.

– Remove the brake lever, 🕮 7.3

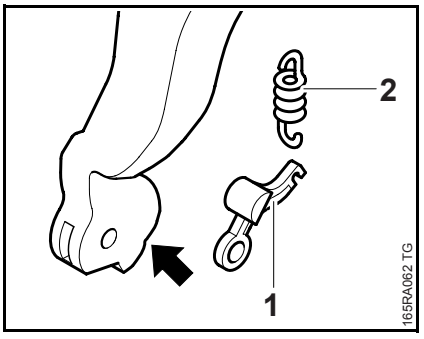


- Disconnect the spring (1) from the anchor pin (arrow).



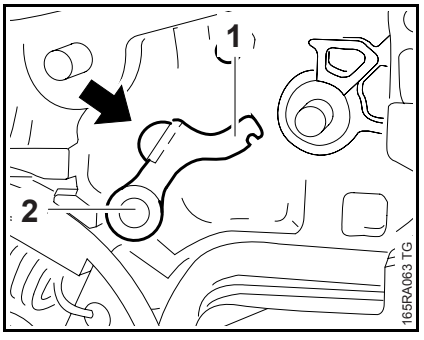
● Remove the E-clip (arrow).

– Pull the cam lever (1) off the pivot pin.



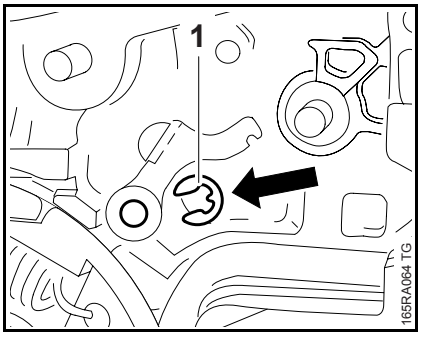
– Check the cam lever (1) and spring (2) and replace if necessary.

– Check the condition of the cam contour (arrow) and replace the hand guard if necessary.

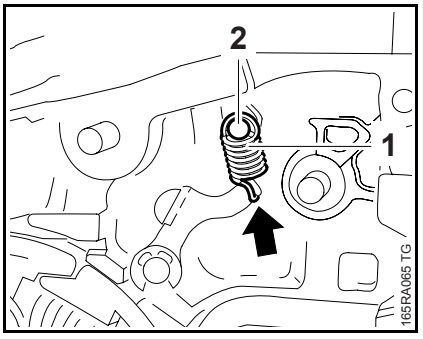


– Position the cam lever (1) so that its cam (arow) faces the cam on the hand guard.

● Push the cam lever (1) on to the pivot pin (2).



● Fit the E-clip (1).



● Attach the spring (1) to the cam lever so that the open side of the spring hook (Pfeil) points toward the housing.

If the groove in the spring's anchor pin is worn, install a new pin, 🕮 7.5

– Attach the spring (1) to the anchir pin (2).

The cam lever is not yet under tension – the spring may become detached.

– Reassemble all other parts in the reverse sequence.

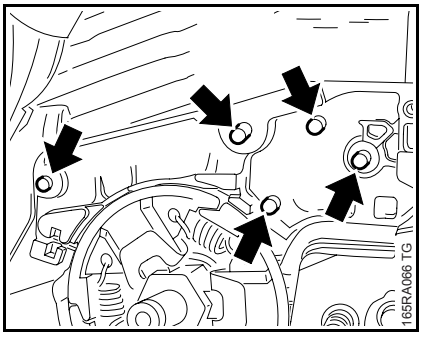
– Tightening torques, 🕮 3.5

– Lubricate the cam lever, 🕮 17

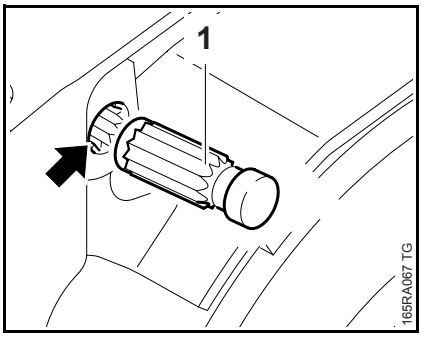
7.5 Pins

The anchor pins secure the springs. Worn pins must be replaced – the springs may otherwise become detached and pop out.

All parts have been removed from the pins in the following illustrations for greater clarity.



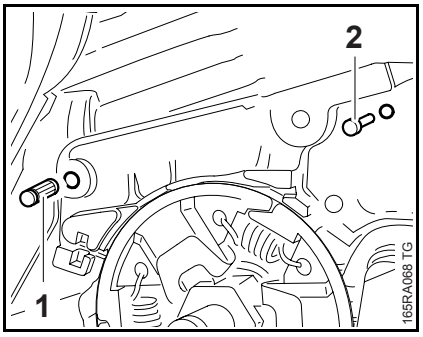
● Use a suitable tool to pull out the pins (arrows).



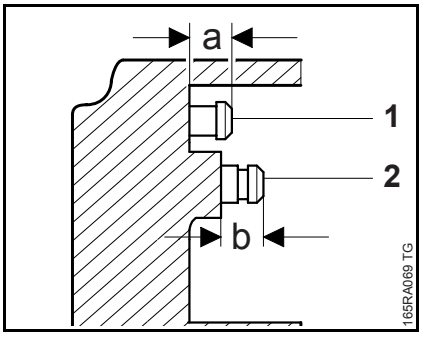
– Before installing the new pin (1), coat its knurled shank with Loctite, 🕮 17

● Position the new pin (1) in the bore (arrow) so that the knurling on the pin meshes with the existing knurling in the bore.

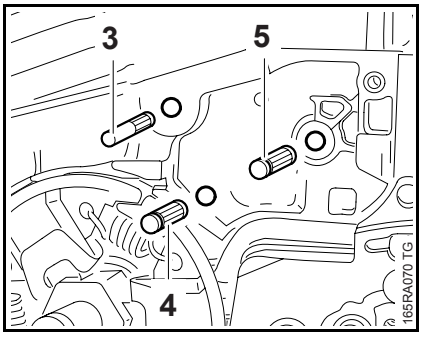
Turn the pin (1) back and forth as necessary.



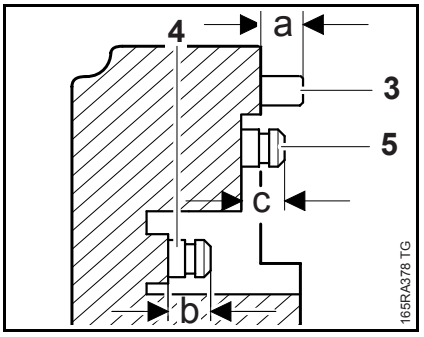
● Drive home the pins (1 and 2) as shown in the illustrations.



● Carefully tap home the pins to obtain the following dimensions:
Pin (1) a = 4.3 – 4.7 mm
Pin (2) b =. 3.0 – 3.4 mm



● Drive home pins (3, 4 and 5) as specified below.



● Carefully tap home the pins to obtain the following dimensions:
Pin (3) a = 4.3 – 4.7 mm
Pin (4) b = 3.0 – 3.4 mm
Pin (5) = 3.0 – 3.4 mm

The pins must be driven home squarely.

– Reassemble all other parts in the reverse sequence.

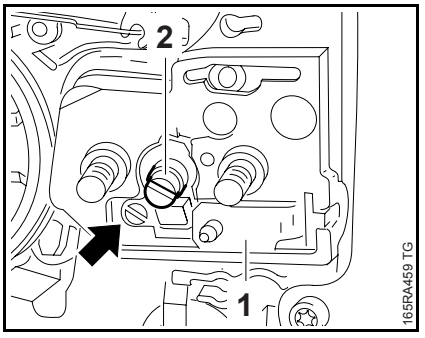
– Tightening torques, 🕮 3.5

– Lubricate the brake and cam levers, 🕮 17

7.6 Side Chain Tensioner

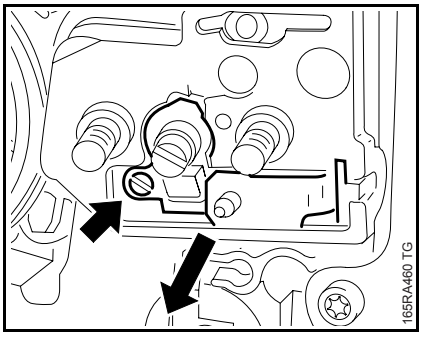
– Remove the sprocket cover and cutting attachment, 🕮 5

– Troubleshooting, 🕮 4.2



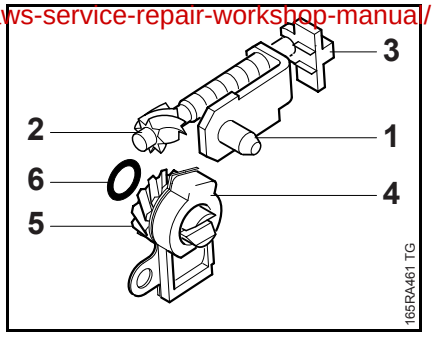
– Remove the side plate.

● Turn the spur gear (2) clockwise until the tensioner slide (1) butts against the right-hand end and the screw (arrow) is visible.

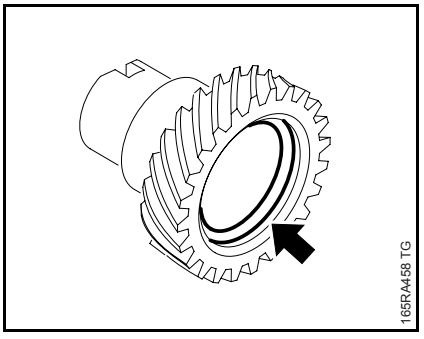


● Take out the screw (arrow).

– Pull out the tensioner side with adjusting screw, thrust pad and spur gear.



- Inspect the thrust pad (1), adjusting screw (2), tensioner slide (3), cover plate (4), spur gear (5) and O-ring (6) and replace as necessary.



- Fit the O-ring in the spur gear recess (arrow).

– Clean all disassembled parts with a little standard commercial solvent-based degreasant containing no chlorinated or halogenated hydrocarbons.

Always replace the adjusting screw and spur gear as a matching pair.

– Lubricate the threads, gears and O-ring with STIHL multipurpose grease, 🕮 17

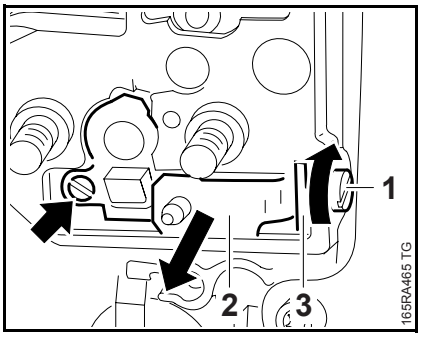
– Reassemble in the reverse sequence.

7.6.1 Front Chain Tensioner

– Remove the sprocket cover and cutting attachment, 🕮 5

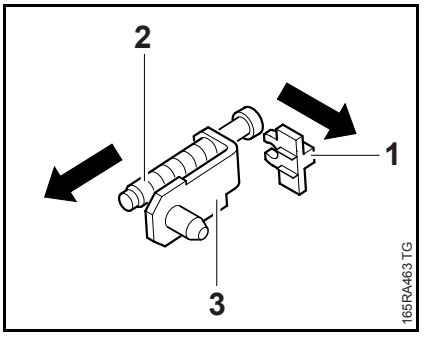
– Troubleshooting, 🕮 4.2

– Remove the side plate, 🕮 7.2



- Turn the adjusting screw (1) clockwise until the tensioner slide (2) butts against the right-hand end and the screw (arrow) is visible.

- Pull out the tensioner slide (2) with thrust pad (3).



- Pull off the thrust pad (1) and unscrew the adjusting screw (2) from the tensioner slide (3).

– Check the individual parts and replace if necessary.

– Reassemble in the reverse sequence.

– Clean all disassembled parts with a little standard commercial solvent-based degreasant containing no chlorinated or halogenated hydrocarbons.

– Lubricate thread with STIHL multipurpose grease, 🕮 17

– Reassemble all other parts in the reverse sequence.

7.6.2 Quick Chain Tensioner

The quick chain tensioner is installed in the chain sprocket cover. See chapter on cutting attachment, 🕮 5