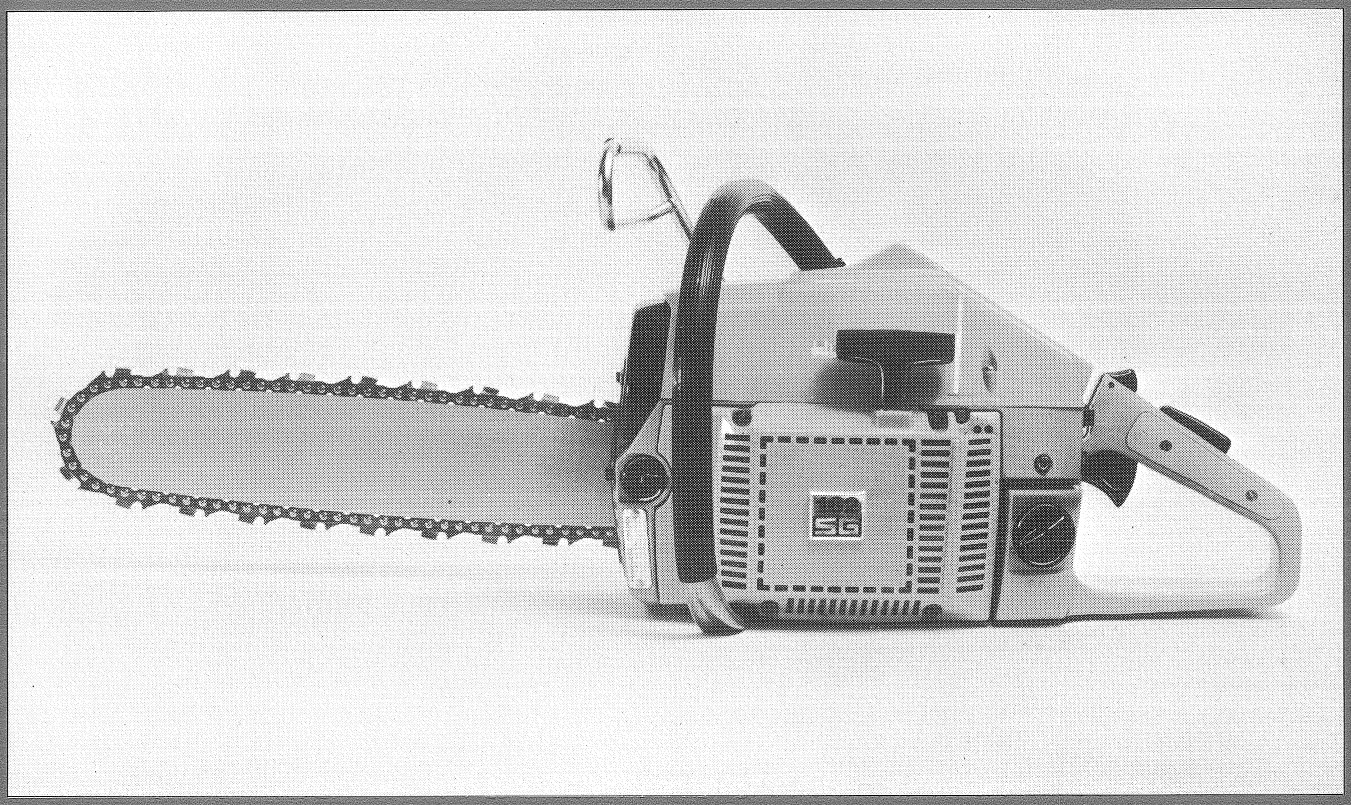
Husqvarna



Chain saw model 162

TECHNICAL SPECIFICATION

Displacement	61.5 cm^3	Fuel tank capacity	0.75 l
Bore	48 mm	Oil tank capacity	0.45 l
Stroke	34 mm	Sawing chain	3/8'' pitch
Ignition advance	25° before t.d.c. at 9.000 rpm	Guide bar	13''
Sparking plug	Bosch WSR 6F, Champion CJ 7Y, PAL P8Y	Weight, empty incl. 13'' guide bar, chain and chain brake	6.9 kg (SE) 7.1 kg (SG)
Electrode gap	0.5 mm		
Carburettor	Diaphragm type Tillotson HS 163 A		

Operator's manual

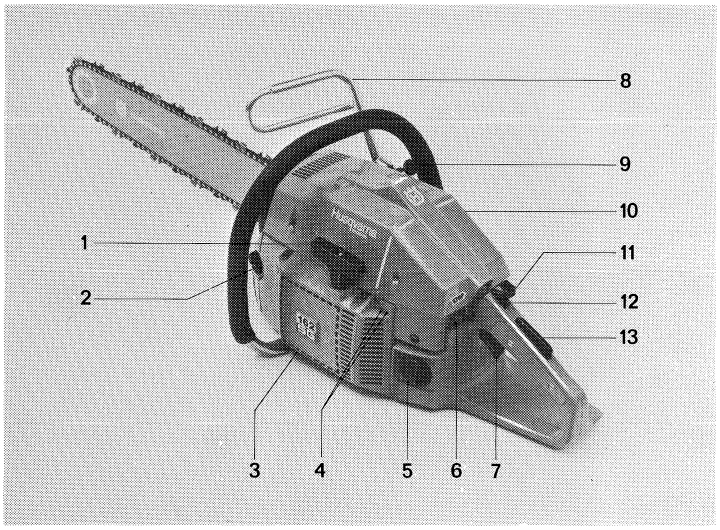


Fig. 1

1. Starter handle
2. Oil filler cap
3. Starter
4. Adjusting screws, carburettor
5. Fuel filler cap
6. Stop switch
7. Throttle control
8. Safety handle for chain brake
9. Automatic chain brake
10. Cylinder cover
11. Choke control
12. Starting throttle ratchet
13. Safety catch

Assembling guide bar and chain

A. Undo the guide bar nuts and remove the clutch cover and transport packing piece.

B. Place the guide bar into its rearmost position. Make sure that the chain tensioning stud is properly into the hole in the guide bar.

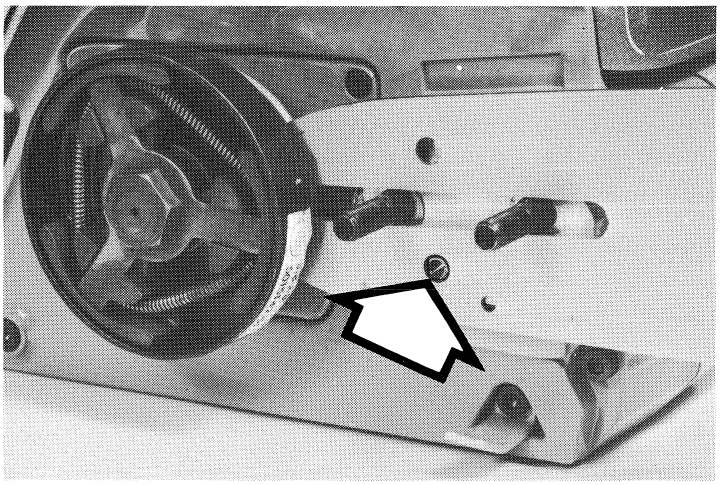


Fig. 2

C. Fit the chain around the drive sprocket and in the groove of the bar. Start on the upper side of the guide bar.

Make sure that the cutting edges of the sawing teeth along the top of the guide bar are facing towards the nose. Also check that the drive links go down properly into the drive sprocket.

ALWAYS TOP UP WITH FUEL AND CHAIN LUBRICANT AT THE SAME TIME

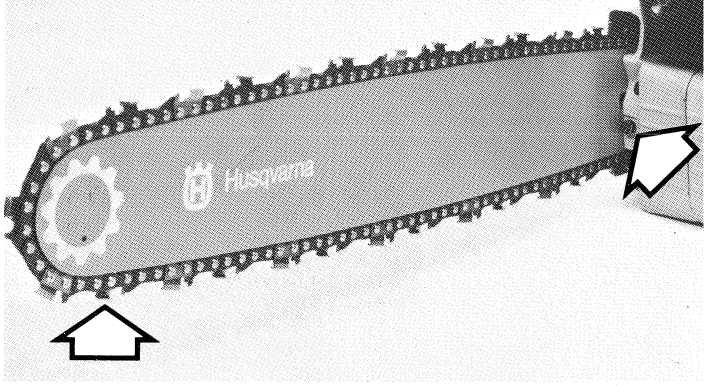


Fig. 3

D. Tension the chain so it does not sag along the bottom of the guide bar. Check that the chain and guide bar fit properly.

Fit the clutch cover and tighten the nut fingertight only.

Pull the chain a few turns around by hand and see to, that it can move freely.

E. Tension the chain while holding up the bar nose. Do not tension the chain stronger than it can be pulled around by hand.

Tighten the guide bar nuts.

NOTE!
Do not forget to "run in" the chain and guide bar. Please see the chain manufacturer's recommendation.

CHECK THE CHAIN TENSION FREQUENTLY FOR OPTIMAL PERFORMANCE AND DURABILITY

Fuel and oil

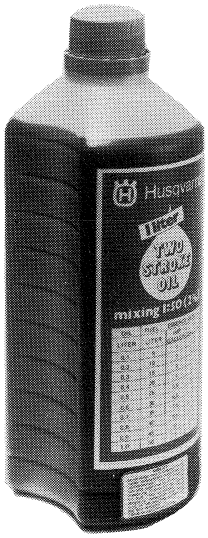


Fig. 4

The power plant of this chain saw is a twostroke engine, that is run on a petrol- and oil mixture of certain proportions acc. to the table.

Do not use but a twostroke oil of high quality, e.g. Husqvarna Twostroke Oil, that is specially developed for chain saws.

NOTE!
No extra oil is needed in the petrol during the running-in period of the chain saw.

For lubricating the chain and guide bar we recommend a chain lubricating oil with good adhesive properties.

During the wintertime at air temperatures below 0°C (32°F) some types of chain lubricating oils are viscous. This can cause overloading of the oil pump, which can result in damage of the pump drive and pump parts. Under cold weather conditions it is therefore necessary to use a "wintergrade" oil which stays fluent even when cold. Concerning the choice of oil and its suitability at different air temperatures, please refer to your Husqvarna dealer.

Mixing table		2%			4%			5%		
Litres of oil	Pints of oil	Litres of petrol	Petrol in Imp. gallon	Petrol in US gallon	Litres of petrol	Petrol in Imp. gallon	Petrol in US gallon	Litres of petrol	Petrol in Imp. gallon	Petrol in US gallon
0,2	0,35	10	2,2	2,6	5	1,1	1,3	4	0,8	1,0
0,4	0,70	20	4,4	5,2	10	2,2	2,6	8	1,7	2,1
1,0	1,76	50	11,0	13,2	25	5,5	6,6	20	4,4	5,2

On no account waste oil should be used as this can damage the oil pump.

As a rule the petrol mixture should be 1 part oil to 25 parts petrol (1:25 or 4%).

When using a so-called pre-mixed oil we recommend 1 part oil to 20 parts petrol (1:20 or 5%).

When using the special oil Husqvarna Twostroke Oil, this shall be mixed 1 part to 50 parts petrol (1:50 or 2%).

Adjusting the Swed-o-Matic

The Swed-o-Matic should release the chain brake at a certain load (10-15 kp) on the guide bar nose. This can be easily checked by pushing the guide bar nose against a spring balance. This method should always be used in the service workshops. Another testing method may be used exceptionally in the felling place to get a rough idea about the release power:

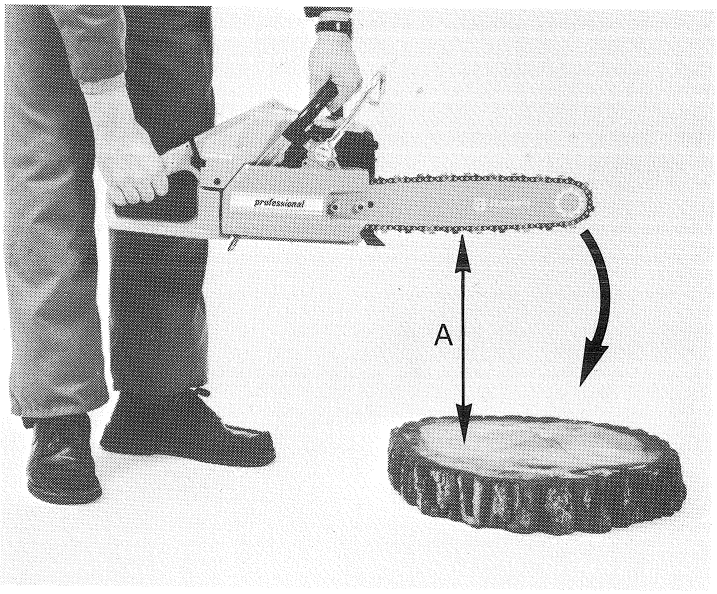


Fig. 5

Hold the saw horizontally over a trunk at a height of 25 cm (see A fig. 5).
When correctly adjusted the brake should actuate as the saw by force of its own weight swings around the rear handle and hits the trunk. Note that the engine must not be running during this test.

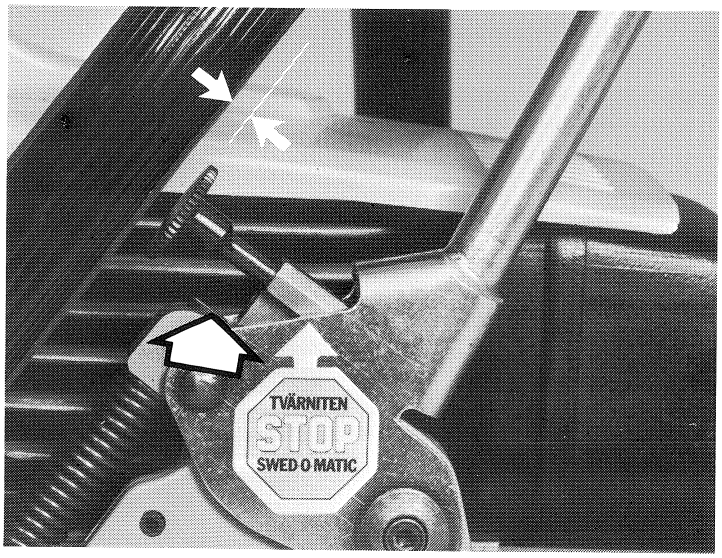


Fig. 6

A larger distance requires a greater force to make the Swed-o-Matic actuate.
Tension the brake lining of the chain brake by screwing in the nut clockwise (see fig. 6) until the chain cannot be pulled round by hand in its proper direction. Then loosen the nut approx. 4 turns. Now it shall be possible to pull the chain round easily without the brake lining being in place contact with the

Maintenance of the chain brake

Clean the brake band and the mechanism. Check that the band has at least 3/4 of its original thickness on the most worn part.

Lubricate the links and supports of the brake mechanism with twostroke oil. Release and lock the brake repeatedly to check that the mechanism works smoothly.

Check the chain brake function regularly.
A. Start the chain saw and release the brake (safety handle in forward position).
B. Open the throttle quickly. Now the chain is not supposed to rotate.

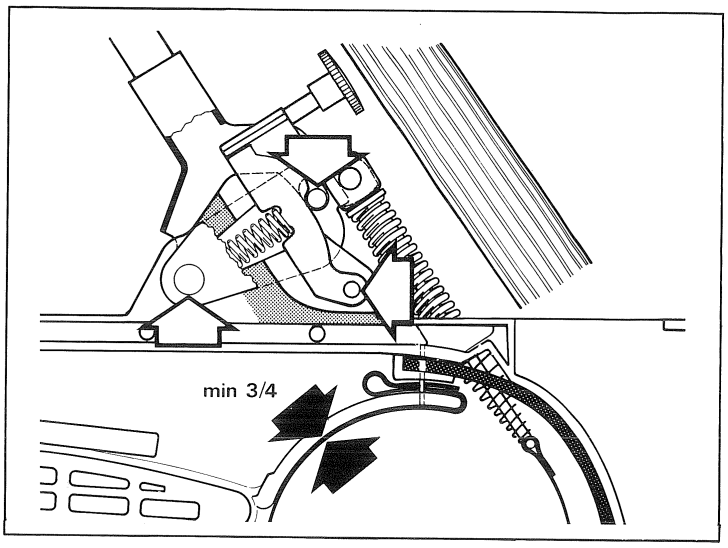


Fig. 7

Starting the chain saw

A. Cold engine

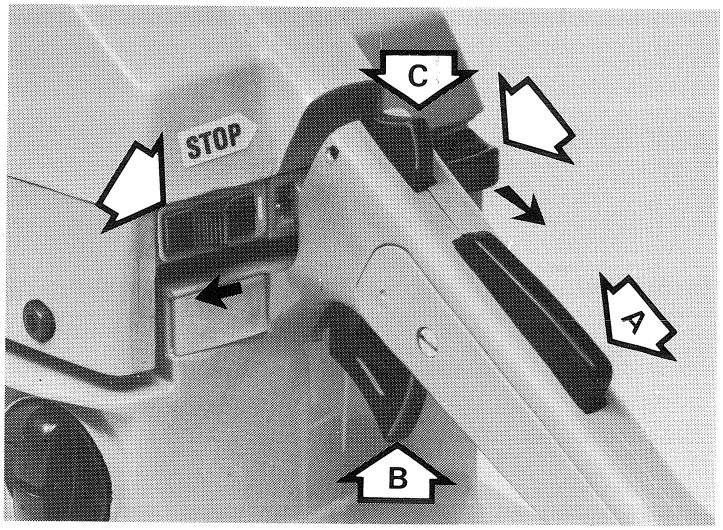


Fig. 8

1. Switch on the ignition (push the stop switch to the left so that the 1 is visible).
2. Pull out the choke control.
3. Push down the throttle safety catch (A).
4. Open the throttle fully (B).
5. Push the starting throttle ratchet backwards (C).

Now all the controls are in starting position and the chain saw is ready to be started.

6. Put your right foot on the plate beneath the rear handle.
7. Grasp the front handle with your left hand and press the saw against the ground.

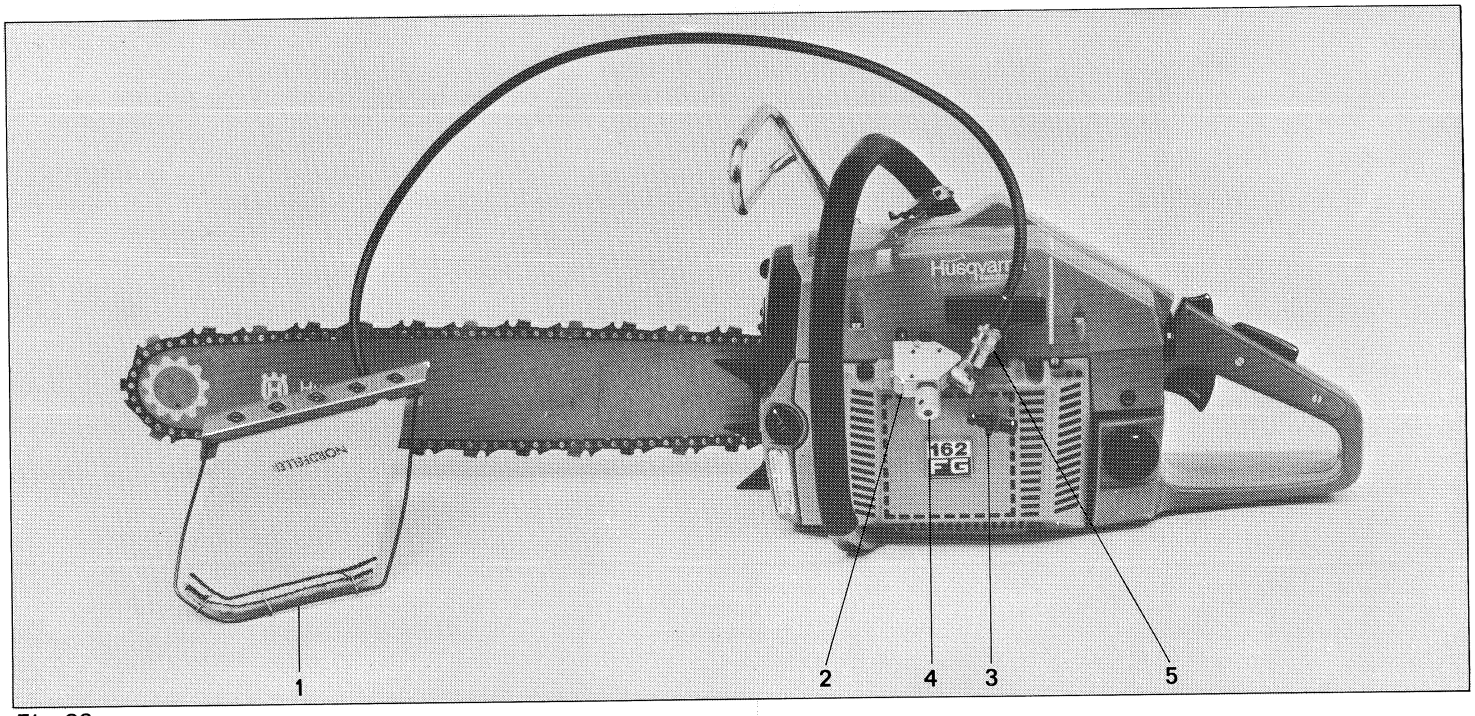


Fig. 22

Working description

The felling cushion is connected via a hose and a control valve to the combustion chamber of the engine. The connection is done by a snap-coupling (5) at the control valve (2).
When the control button (4) is pressed in, the cushion (1) is filled. Let the chain saw work under full throttle load in order to obtain a maximum pressure.

Unload the cushion by pulling the control button out to its outermost position. Then press button in again.

Note!
Never unload the cushion by detaching the snap-coupling!

Maintenance directions

Daily maintenance

If the felling cushion is not used regularly, you ought to check once a working-day that it works satisfactorily.
Inflate to a certain pressure while the cushion is inserted into a cut, e.g. in a stump. Stop the engine and examine the cushion. No leaks are allowed.
As soon the felling cushion is not being used, you ought to insert the ventilation plug(3) into the snap-coupling in order to prevent dirt from entering the coupling as well as to increase the life of this latter.

NOTE!

If the felling cushion is not used regularly, the system has to be ventilated a couple of times each day. Otherwise the system will become deposited by carbon, which means that inflation will no longer be obtained!

Ventilate the system as follows, the engine is running: Insert the ventilation plug (3) into the snap-coupling. Then press in the control button (4) during 5-10 sec.

Weekly maintenance

Check the control valve.
Remove the locking washer from the valve spindle and pull the spindle out. Clean the valve housing and spindle by means of a brush.
If the O-rings are damaged, they have to be replaced by new ones. Grease the O-rings with oil before you reinsert the valve spindle into the housing.

In case of leaking

Pencil some soapy water around the connections and the valve housing, the engine being cold.
Pull around the engine by means of the starter. In case of leakage, bubbles will appear where leaks are to be found.
Proceed as follows: Examine cushion, tube connections and O-rings as well as check the elasticity of the return spring for the control lever and that the latter does return to neutral position. Clean!

At winter use

At night, the cushion shall be kept at a warm place in order to avoid that condensation water, if any, freezes.
Prevent icing by pouring 1-2 cl of carburettor spirit into the cushion.

NOTE!
Mix up the petrol by 2% Husqvarna Twostroke Oil to prevent the valve from being deposited by carbon.

Safety reminders

Handling

1. When transporting the saw, fit the chain protection.
2. Do not smoke when filling the fuel tank.
3. Before cutting, fix the barking support properly.
4. When using the saw, keep both hands on the handles.
5. Nobody is allowed to be within the swing area of the saw.
6. Always stop the engine before checking and adjusting the chain tension for exchanging the chain.

Personal safety equipment

1. To protect the hearing organ, the operator must wear protective wad, plugs or ear caps.

Procedure

1. When felling. always step aside from the falling tree.
2. When escaping, stay alert for falling branches.
3. When cutting split wood, look out for ejecting wood pieces.
4. When bucking a felled tree on sloping ground, always stand above the tree.
5. Be calm and collected when working, eliminate the risk of injury to other persons.

2. When cutting, wear gloves of chrome leather.
3. When felling, wear a protective helmet.
4. Wear suitable cloths which do not hinder your work.

Cleaning the air filter

A clean air filter is necessary for optimal carburettor function and optimal engine power.

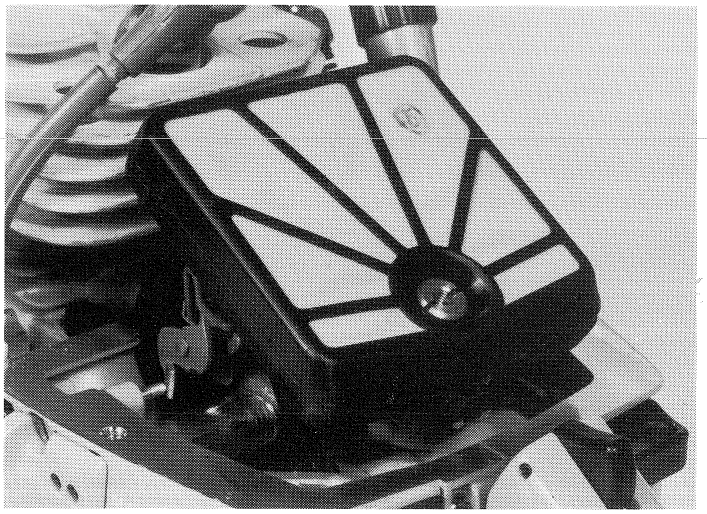


Fig. 12

In order to get at the air filter, remove the cylinder cover by undoing the retaining screws and lifting the cover off upwards-backwards.

Remove the heaviest dirt from the air filter. Undo the screw and lift the filter off carefully to avoid dirt from falling down into the carburettor.

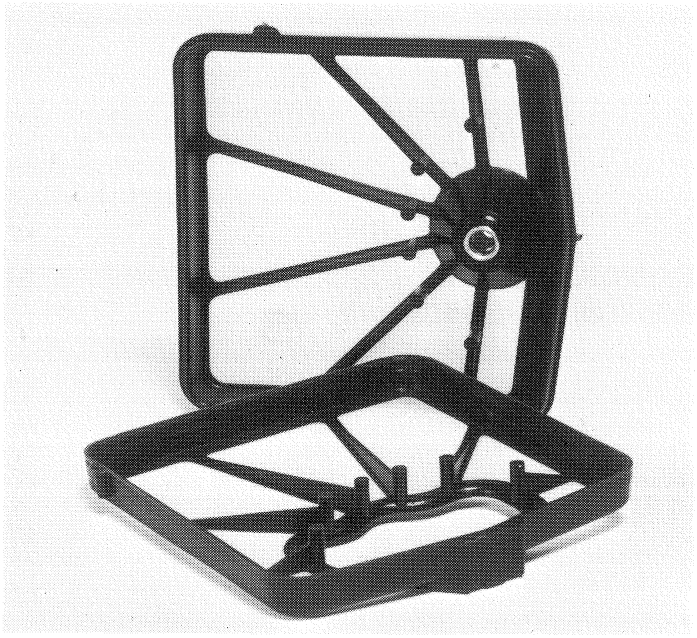


Fig. 13

Separate the two filter halves by means of a screwdriver or a knife.

Clean the filter halves carefully in warm soapy water.

Avoid cleaning them in chain saw petrol.

You preferably dry the filter by blowing it with compressed air.

Reassemble the filter and make sure, that it lies close to the carburettor.

Use two airfilters alternately.

Clean the filter each day!

Changing starter cord and return spring

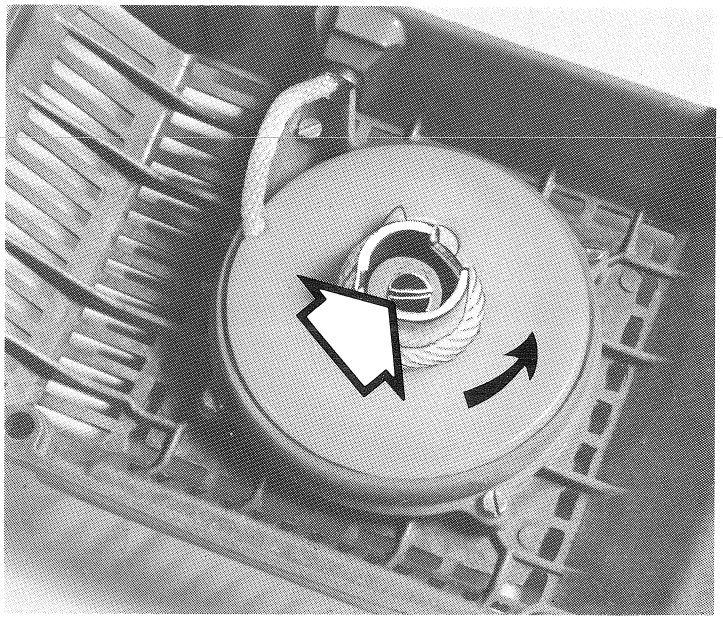


Fig. 14

Loosen the four screws that retain the starting device. Remove the starting device.

Pull out the cord approx. 30 cm and lift it up into the notch in the periphery of the pulley.

Zero-set the return spring by carefully permitting the pulley to rotate backwards.

Undo the screw in the centre of the pulley and remove the latter.

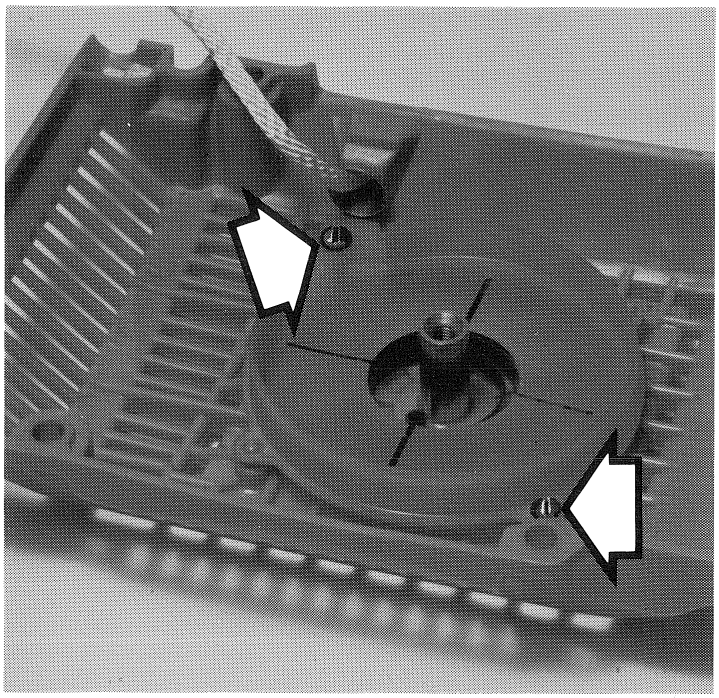


Fig. 15

In case you change the return spring as well, undo the screws that retains the plastic cassette, which then can be removed.

Change the spring and lubricate it with some drops of engine oil.

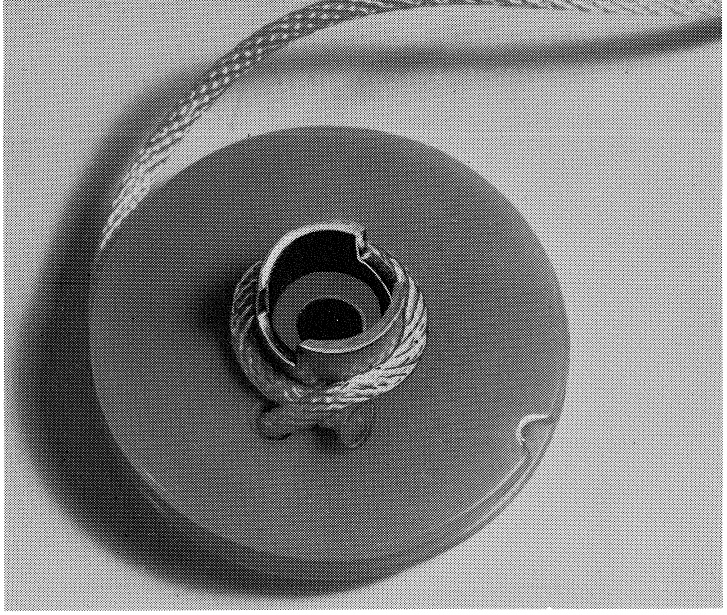


Fig. 16

Assemble the remaining parts in reverse order of removal.

Lift up the starter cord into the notch on the pulley. Tension the return spring by turning the pulley clockwise about two turns.

NOTE!
Make sure, that it is possible to turn the pulley at least 1/4 of a turn further when the cord is fully pulled out.

Heated handles

The handle heating is regulated through a thermostat which means that the handles always have the right temperature for the hands.
The wirings are fed from one in the ignition system enclosed generator. The power of the heating system is 76 watts at 8.500 rpm. The temperature of the handles at different outer temperatures could be seen in the diagram.

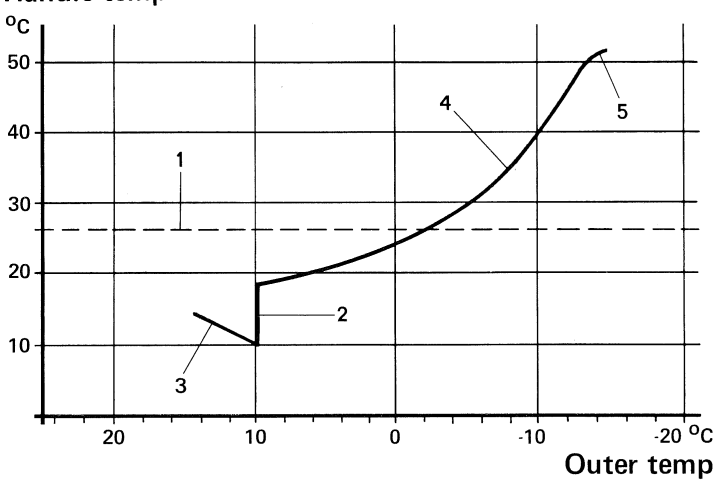


Fig. 18

1. The hands feeling of the temperature.
2. Thermostat closes at $+10^{o}$ C.
3. The outer temperature and the temperature in the handles correspond.
4. Temperature in the handles.
5. Thermostat closed all the times.

Adjusting the oil pump capacity

The oil pump is adjustable for four different capacities. Adjustment is to be done after disassembling chain, guide bar, clutch cover, centrifugal clutch and clutch drum.

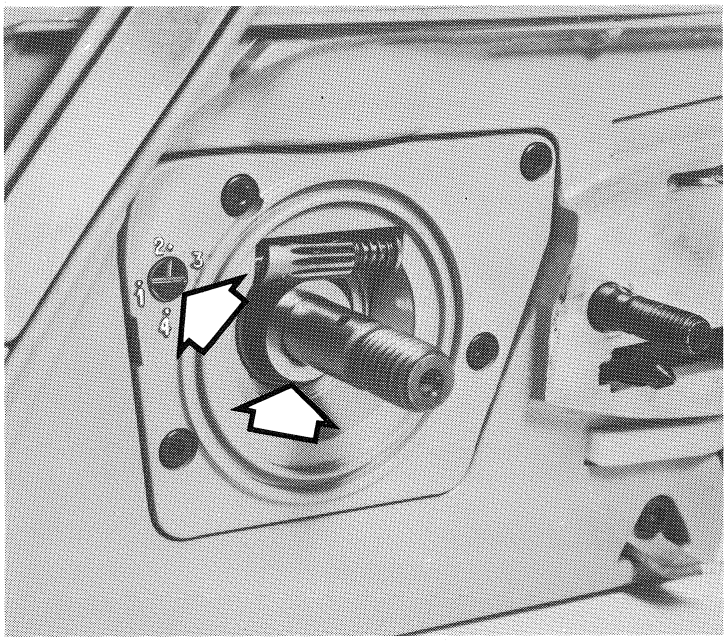


Fig. 17

With a screwdriver the oil capacity can be adjusted by turning the screw in one or another direction. The index on the screw should face towards the wanted adjustment. Figure 17 shows the adjustment for capacity 2.

Recommended positions:
Bar 13'' and 15'': Pos. 2.
Bar 18'' and more: Pos. 3-4.

Before assembling the clutch drum check that the washer be-

Winter use

In winter, extreme cold and powdery snow can cause running problems.

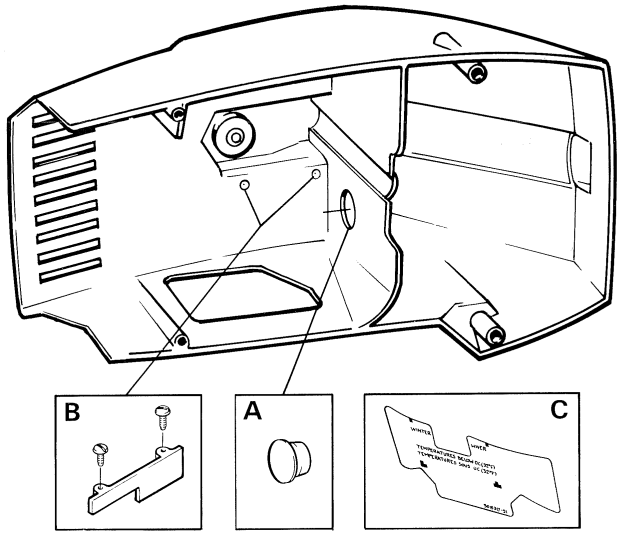


Fig. 19

The cylinder cover is prepared to be changed for extreme cold working conditions. In the partitioning wall of the cover there is a hole, that is covered by a cap (A) when operating at normal temperatures.
In case of extreme cold, this cap shall be removed and a guide plate (B) be mounted so that heated air from the cylinder can flow into the carburettor space in order to prevent eg the air filter from being iced up.

You can also use a self-adhesive decal (C) to cover part of the air intake. Clean the starter carefully before mounting the decal.

NOTE!
Under normal temperature conditions the cap has to be mounted and the guide plate as well as the decal shall be removed. Otherwise there is a certain risk of over-heating

9. Give the starting cord a short sharp tug.

   NOTE!
   Do not pull the starting cord entirely out or release the starting handle in pulled out position, as this can cause damages on the chain saw.

10. Normally the engine will start after 2-3 starting attempts. Push the choke control as soon the engine starts. Open rapidly the throttle wide and the catch will disengage.

B. Warm engine

Use the same starting procedure as for cold engine but without pulling out the choke control.

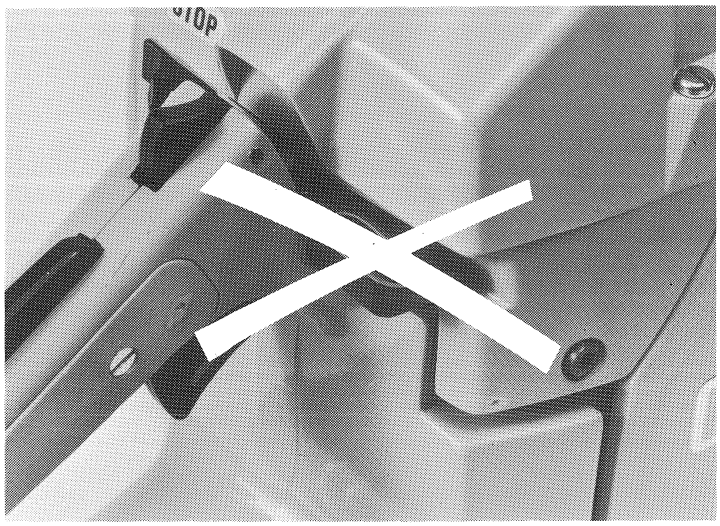


Fig. 9

NOTE!
One of the most common causes of starting difficulties is, that too many starting attempts have been made with a closed choke flap. If this is the case, remove the sparking plug and wipe it dry. Open the choke flap fully.

Before you reassemble the sparking plug, we recommend you to pull the starting handle several times to ''ventilate the cylinder'', the stop switch in 0-position.

Assemble the sparking plug and make a new starting attempt with open choke flap and full throttle.

CAUTION!

GUIDE BAR, CHAIN AND CLUTCH COVER MUST BE MOUNTED BEFORE THE ENGINE IS STARTED, OTHERWISE THE CLUTCH MAY COME LOOSE AND CAUSE INJURIES.

Adjusting the carburettor

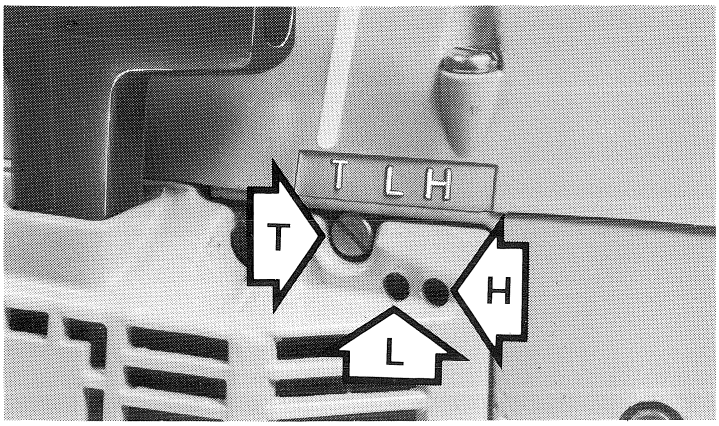


Fig. 10

The carburettor has three adjusting screws:

L = Low speed needle

A. Basic setting

Clean the air filter.
Check the spark plug and its electrodes.
Check that the fuel filter is not clogged.
Screw the needles H and L carefully right in.
Then screw the needles out to recommended basic position:

H = 3/4 turn out, L = 1 turn out

Start the engine and warm it up. Adjust the idling speed by means of the throttle adjusting screw to that rpm, at which the chain just starts rotating.

B. Adjustment of L-needle

1. Screw in the L-needle slowly and the speed will increase. Screw in the needle a little further and the speed will slow down again as the fuel supply becomes too ''lean''. Notice the position of the needle at the highest speed.
2. Open the L-needle again and notice the highest position. Note that the speed slows down at ''richer'' supply.
3. Adjust the L-needle to the highest speed position. Then open it equivalent to 10 min on a clock-face to obtain a somewhat ''richer'' supply to aid acceleration.
4. By means of the T-needle, adjust the idling speed to 2.300 - 2.500 r/min, ensuring that the chain does not rotate when engine is idling.
5. Give full throttle a couple of times to check that the engine ''responds''. If not, open the L-needle by abt 3 min. Check again.

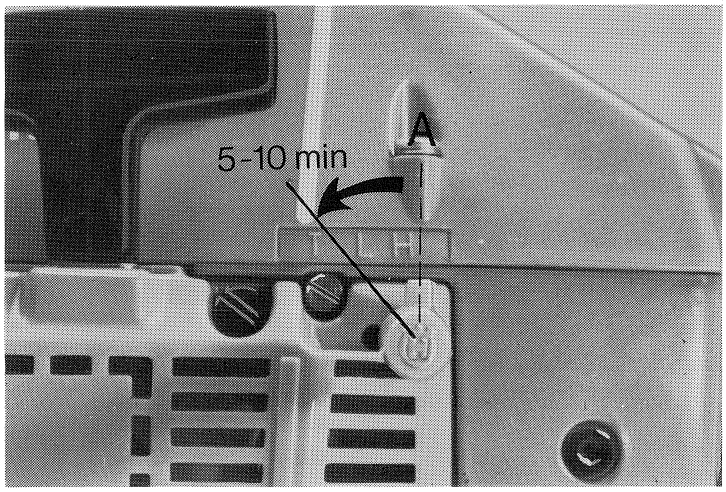


Fig. 11

C. Adjustment of H-needle

At correct adjustment of the H-needle the engine should be fourstroking.
Screw in the H-needle slowly until there is no more fourstroking (position A, fig. 11).
Then screw the needle out equivalent to 10 min on a clock-face.
Check by means of a revolution counter that the high idle speed does not exceed 11.500 r/min.
Now the carburettor adjustment is completed and you may release your hold of the throttle trigger.

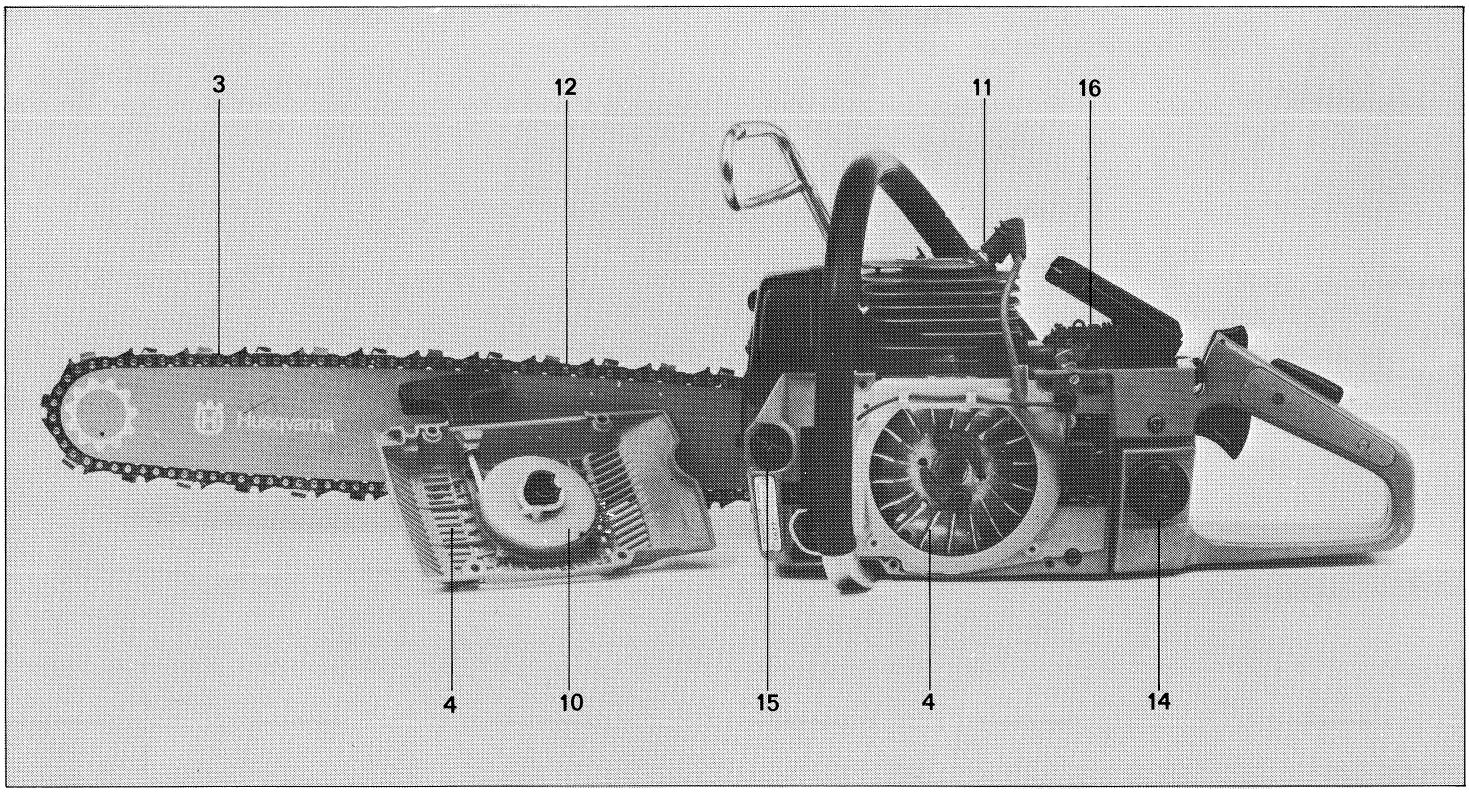


Fig. 20

Daily maintenance

1. Clean the saw body from the outside.
2. Clean the air filter. Change if necessary.
3. Turn around the guide bar, lower edge up. Clean the bar groove.
4. Clean the fan and air intakes in the starter cover.
5. Clean the cooling fins on the cylinder.
6. Clean the space under the clutch cover.
7. Sharpen the chain and check its tension.
8. Check the oiling system for the chain and the guide bar.
9. Clean the chain brake. Make it a habit to lock the chain brake during pauses and transports.

Weekly maintenance

10. Check the starting device, its cord and return spring.
11. Clean the sparking plug from the outside and check the gap. Adjust the gap or change the plug if necessary.
12. File off burrs if any on the sides of the guide bar.
13. Lubricate the bearings of the clutch drum.

Monthly maintenance

14. Wash out the fuel tank with petrol.
15. Wash out the oil tank with petrol.
16. Clean the carburettor.
17. Clean the sparking plug.