BOMAG

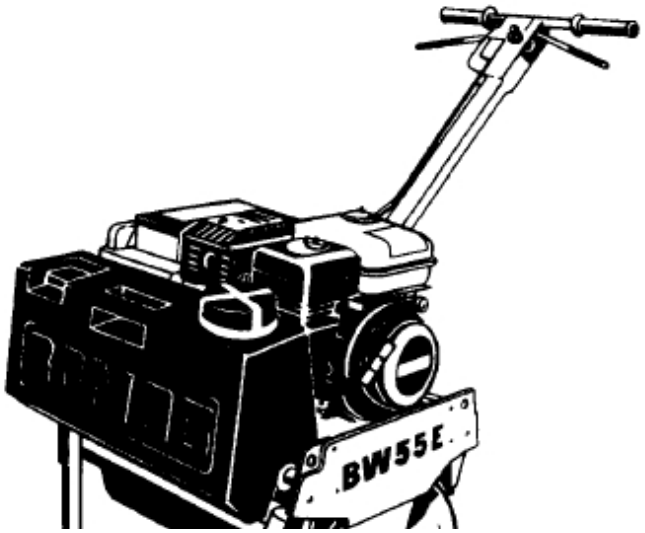
Operating instructions

Maintenance instructions

This manual is in accordance with product liability laws and safety regulations

BW 55 E

S/N 101 620 02 ....



CE

Single drum vibratory roller

Catalogue number

008 110 62

02/2006

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100%

Bookmarks Pages

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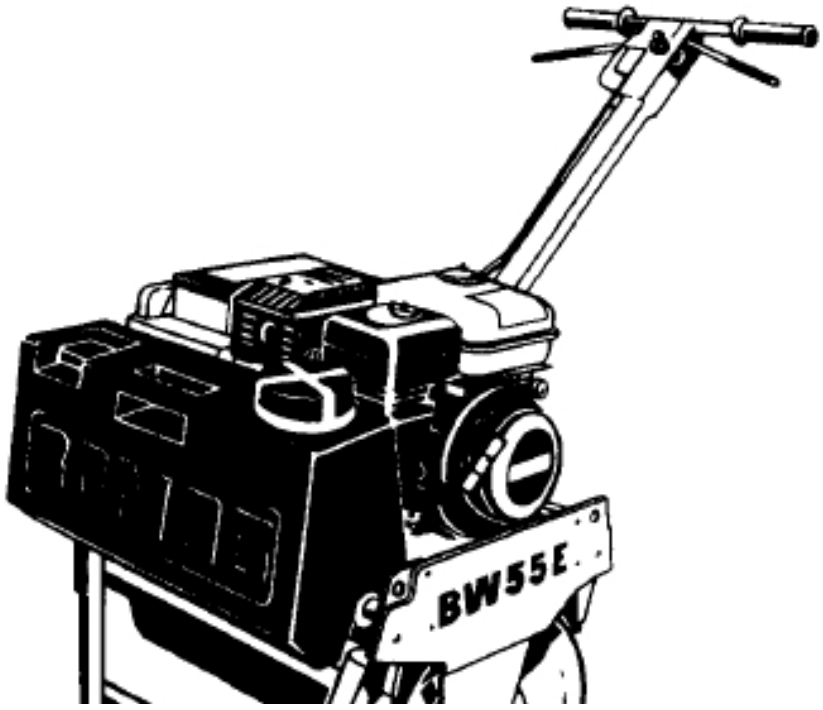


Single drum vibratory roller

Catalogue number

008 110 62

02/2006

3.6 Driving the machine

Danger

Soil conditions and weather influences impair the gradeability of the machine.

Do not drive on gradients exceeding the maximum gradeability of the machine!

Make sure that your drive range is free of obstacles and dangers.

Danger when reversing.

- Choke on engine is open.

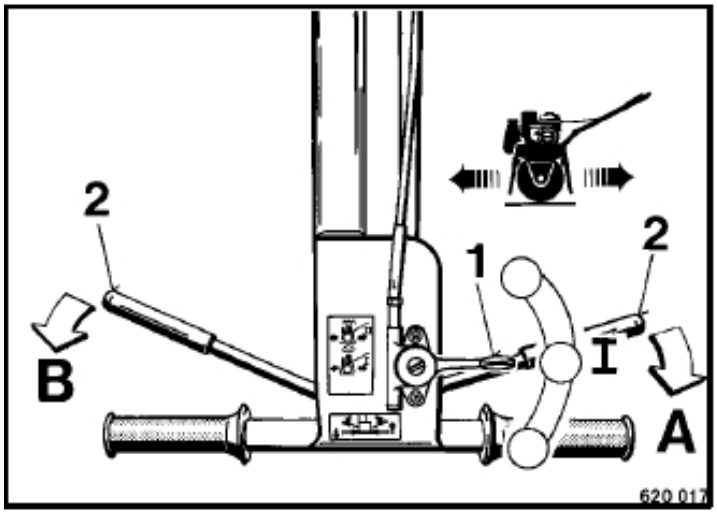


Fig. 14

- Throttle lever 1 (Fig. 14) in position "I" (detent for travel position).
- Choose the desired travel direction by means of the travel control lever (2).

Position "A" = forward(infinitely)

Position "B" = reverse (infinitely).

Danger

Operate the travel control lever only slowly, as otherwise the machine will drive jerkily and the steering rod will hit up or down.

3.7 Driving the machine with the backup protection bow

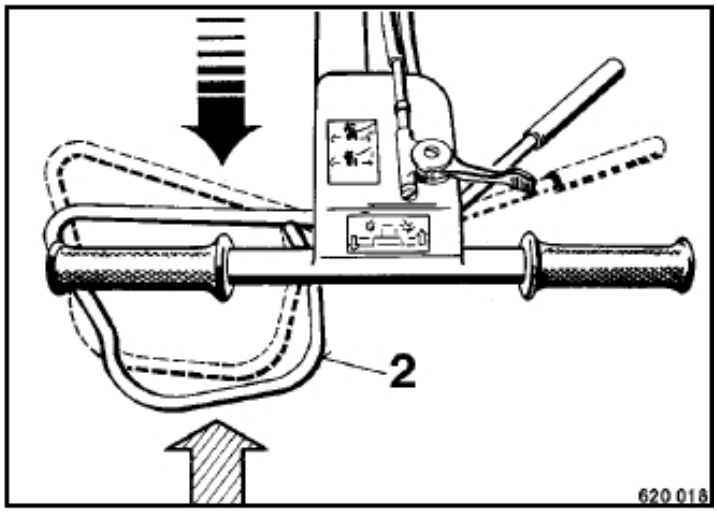


Fig. 15

- If the operator is pressed against an obstacle during reverse travel, the backup protection bow 2 (Fig. 15) is forced to forwards travel.

Danger

Do not use the machine if the safety control is defective.

- When releasing the travel control lever it will slowly return to "0"-position. The machine is braked automatically.

i Note

For short breaks always return the throttle lever to position "MIN" (idling speed).

4.1 General Notes for Maintenance

Make sure that the respective safety regulations are followed during the maintenance, especially the safety regulations stated in section 2 of these operating, maintenance and repair instructions.

Proper maintenance of the vibratory plate ensures a much higher functional safety and increases the lifetime of important parts. The necessary maintenance efforts are by no means proportional to the damages that may occur by non-observance.

- Clean the vibratory plate and the engine thoroughly before starting maintenance work.
- Place the vibratory plate on an even surface for maintenance.
- Perform maintenance only when the engine is turned off.
- Catch running out oils and fuel in a way harmless to the environment and do not allow them to seep into the ground or sewage system. Dispose of oils and fuel in a way harmless to the environment.

Frequent causes of failures

- Faulty operation
- Incorrect, insufficient maintenance.

If you cannot find the reason for a fault by following the trouble shooting chart or you cannotz eleiminate it yourself, contact one of our service stations at our branch offices or dealers.

4.2 Fuels and Lubricants

Engine oil

During operation in winter use winter engine oil!

To ensure a reliable cold start, it is important to choose the viscosity (SAE-class) of the engine oil according to the surrounding temperatures.

During operation in winter under -10 °C (14 °F), the oil change intervals must be shortened.

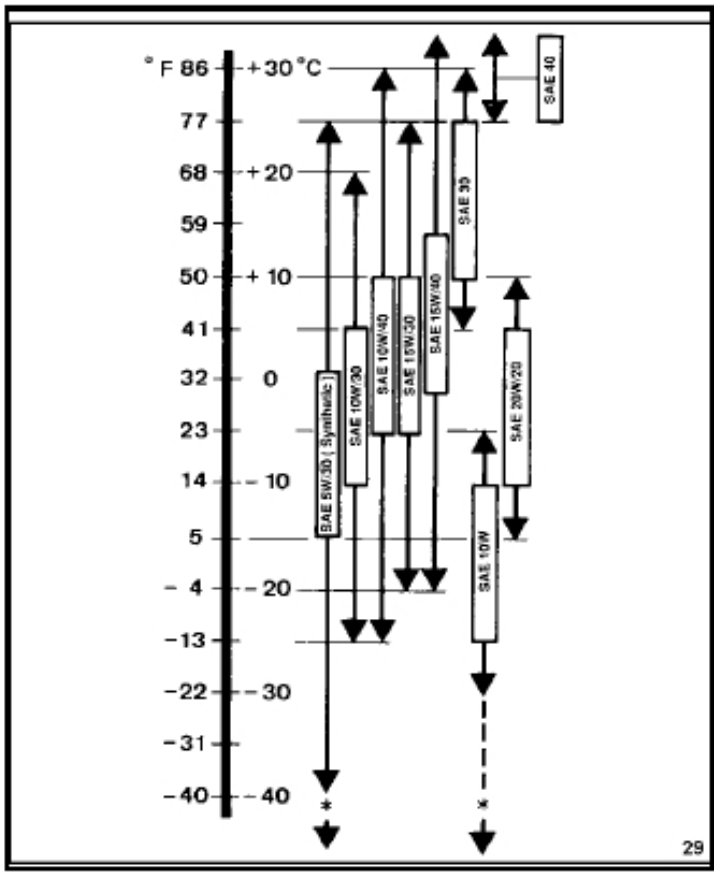


Fig. 24

Too viscous lubrication oil will cause difficulties when starting, for this reason the temperature during the engine start in winter is decisive for the viscosity choice.

Oil viscosity

Because lubricant oil changes its viscosity with the temperature, the surrounding temperature at the

operating area of the engine is decisive for the choice of the viscosity class (SAE-class) (see diagramm).

If the temperature occasionally falls below the limit (e.g. the use of SAE 15W/40 up to -15 °C), the cold start ability could be impaired, although this does not lead to any engine damage.

3.1 General notes

Please read section 3 Indicators and Control Elements thoroughly before operating the machine if you are not yet fully familiar with the indicators and control elements of the machine.

All indicators and control elements are described in detail in this chapter.

3.2 Checks before starting

Please observe the safety regulations in section 2 of these operating and maintenance instructions.

Refer also to the detailed description under maintenance

- Top up missing fuels and lubricant according to the maintenance instructions.
- Park the machine on ground as level as possible.
- Check fuel tank and fuel lines for leakages.
- Check the condition of engine and machine.
- Check all screwed connections for tight fit.
- Neutral position of the travel control lever (the vibratory roller must not move forwards or reverse when the travel control lever is in center position).
- Check the fuel lever. Use only standard grade petrol or unleaded standard grade petrol.
- Check the water level for the water sprinkler system.
- Check the engine oil level.
- Check the scrapers, adjust if necessary.

3.3 Starting the engine

Caution

The engine is provided with a low oil level safety device. The engine cannot be started if the oil level is too low.

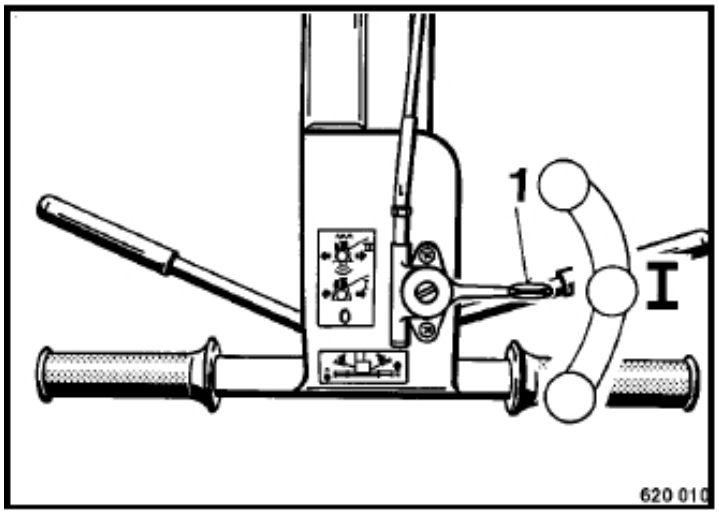


Fig. 5

- Move the throttle lever 1 (Fig. 5) to position "I" (detent).

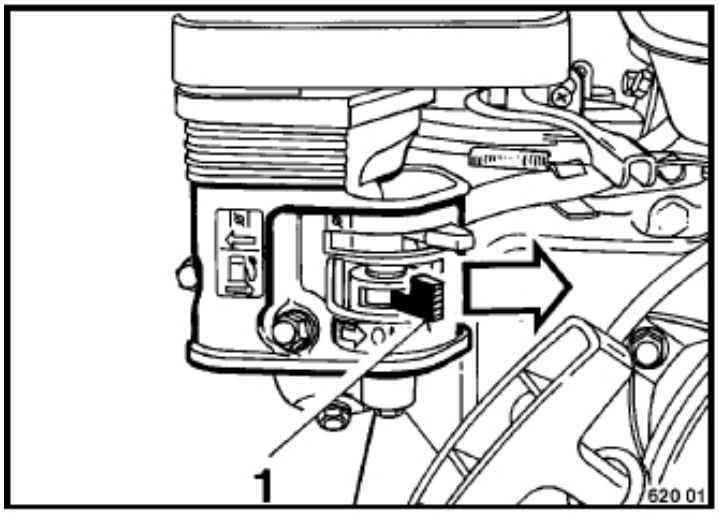


Fig. 6

- Open the fuel valve 1 (Fig. 6) by turning it in direction of arrow to the end stop.

Warm engine or warm ambient temperature

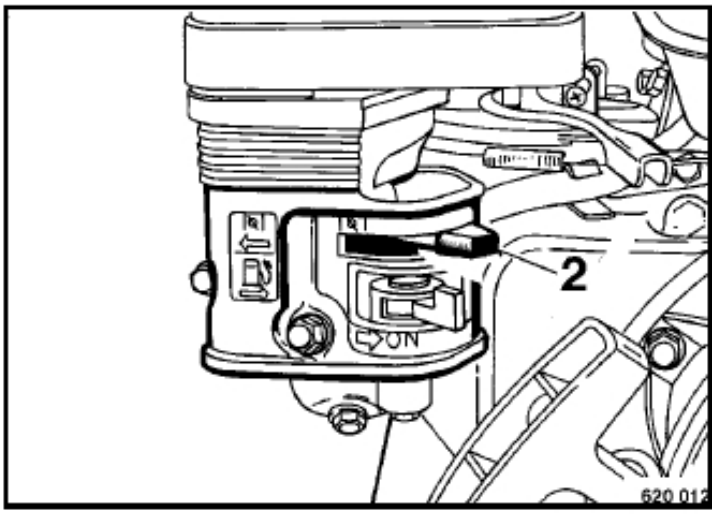


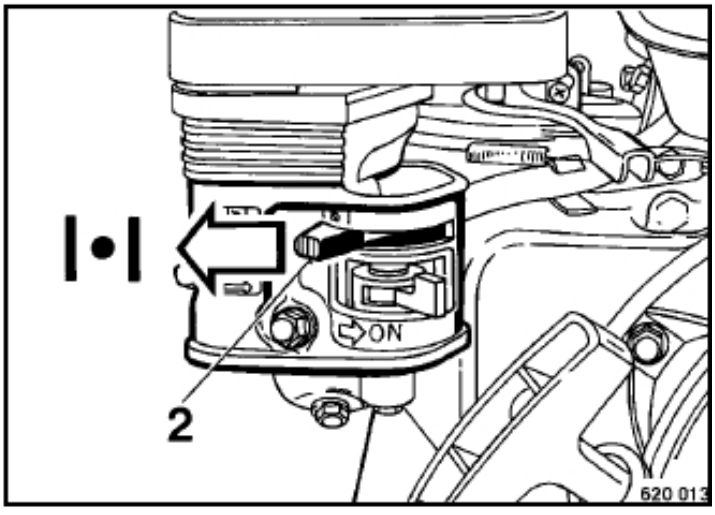
Fig. 7

- Do not operate the lever 2 (Fig. 7) for the choke as shown in. If necessary move the lever (2) to middle position according to the engine temperature resp. the ambient temperature.

Note

The choke is in operating position when it is not operated.

Cold engine or cold ambient temperature



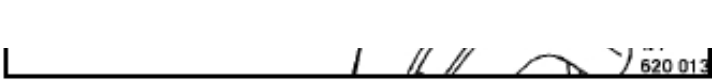


Fig. 8

- Push the lever 2 (Fig. 8) for the choke in direction of arrow to the end stop and close the choke.

3.4 Wrong starting

Engine sucked too much fuel

Note

If the choke is closed and the starter rope is pulled too often, the engine will suck too much fuel and will therefore not start.

Remedy

- Close the fuel valve.
- Open the choke.
- Set the throttle lever to full speed position.
- Operate the starter until the engine starts.

Note

If the engine does not start after 10 to 20 times then

- open the choke.
- Set the throttle lever to full speed position.
- Pull the spark plug socket off
- Unscrew the spark plug.
- Operate the starter several times.
- Dry the spark plug with a dry and clean cloth or with compressed air. Clean it with a wire brush.
- Screw the spark plug back in and push the spark plug socket back on.
- Repeat the starting procedure.

3.5 Adjusting the steering rod

Note

To achieve an optimal working position, the steering rod needs to be adjusted to the size of the operator.

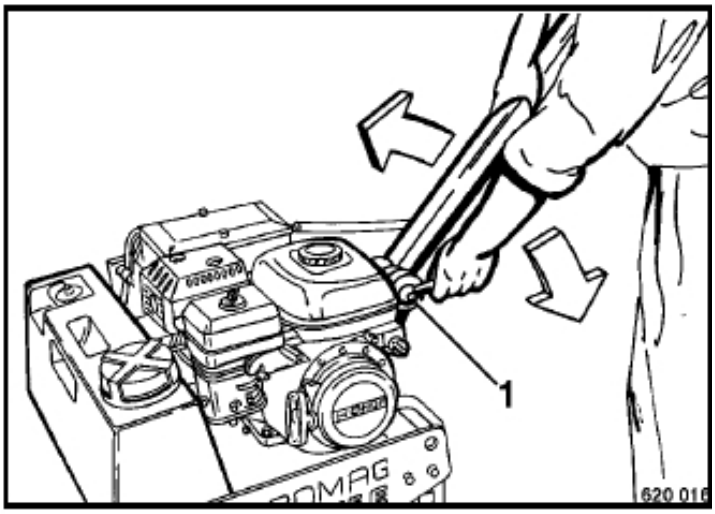


Fig. 13

- Loosen the T-bar 1 (Fig. 13) and adjust the steering rod to operating position.
- Retighten the T-bar.

3.8 Switching the vibration on resp. off

i Note

Vibration at standstill causes transverse ruts in the surface, therefore:

Switch the vibration on only when the machine drives.

Switch the vibration off before the machine stops.

⚠ Caution

Never switch the vibration on when the machine is on hard (frozen, concrete) ground.

Possible bearing failures!

Switching the vibration on

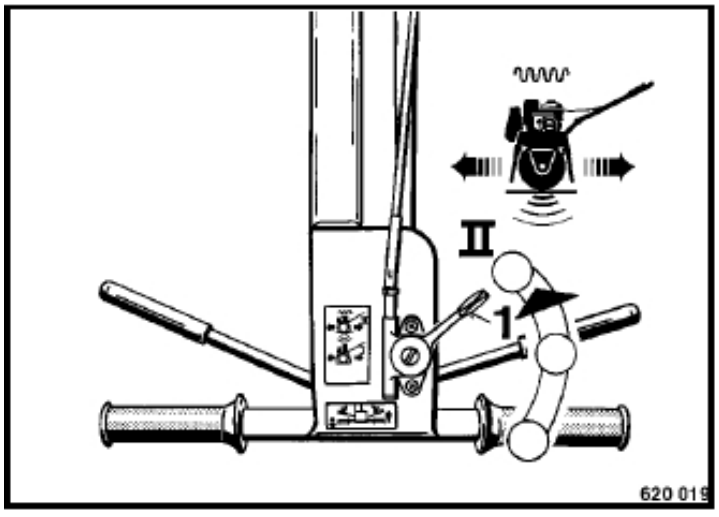


Fig. 16

- Drive the machine forwards or reverse.
- Set the throttle lever 1 (Fig. 16) to position "II", vibration.

Switching the vibration off

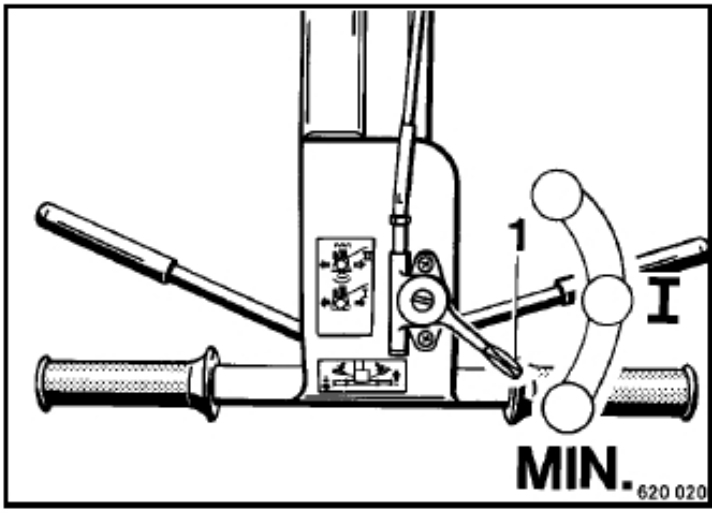


Fig. 17

- Set the throttle lever 1 (Fig. 17) to position "I" or "MIN". The vibration stops after a short time.

i Note

For short breaks always set the throttle lever to position "MIN" (idling speed).

3.9 Switching the gravity sprinkler system on resp. off

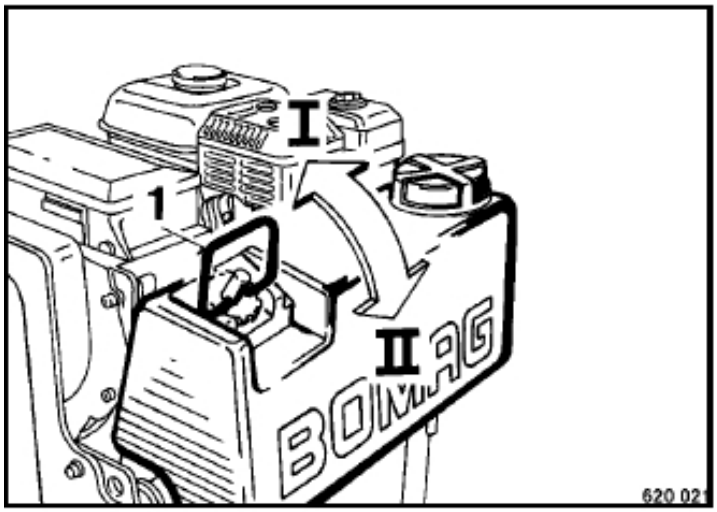


Fig. 18

- Lever 1 (Fig. 18)

Position "I" = sprinkler system switched on

Position "II" = sprinkler system switched off

3.10 Stopping the engine

Danger

When parking on a slope place a suitable chock in front of or behind the drum.

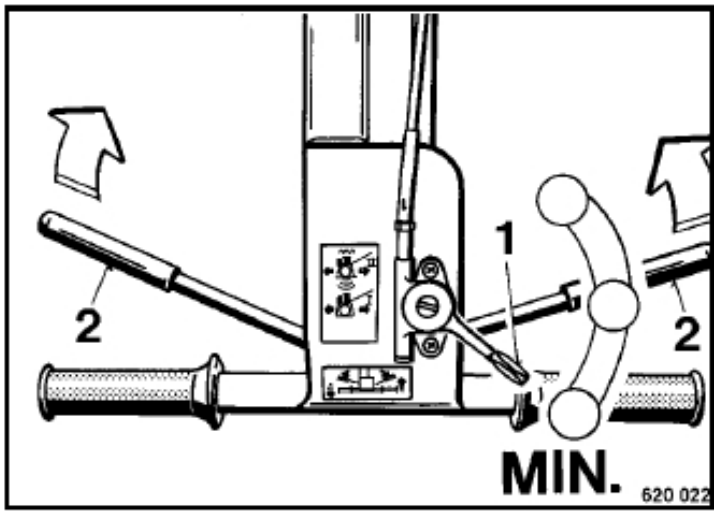


Fig. 19

- Release the travel control lever 2 (Fig. 19) slowly.
- Set the throttle lever (1) to "MIN" (idling speed) and let the engine idle for a while for temperature equalisation.

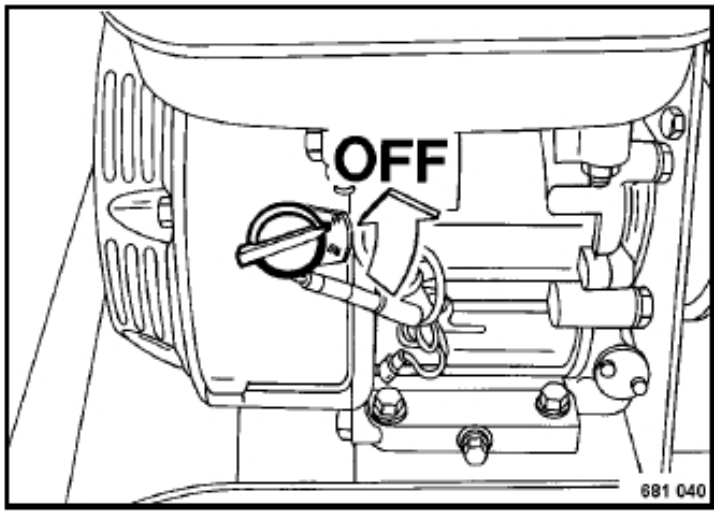


Fig. 20

- Switch the ignition switch (Fig. 20) to position

"OFF", the engine will stop.

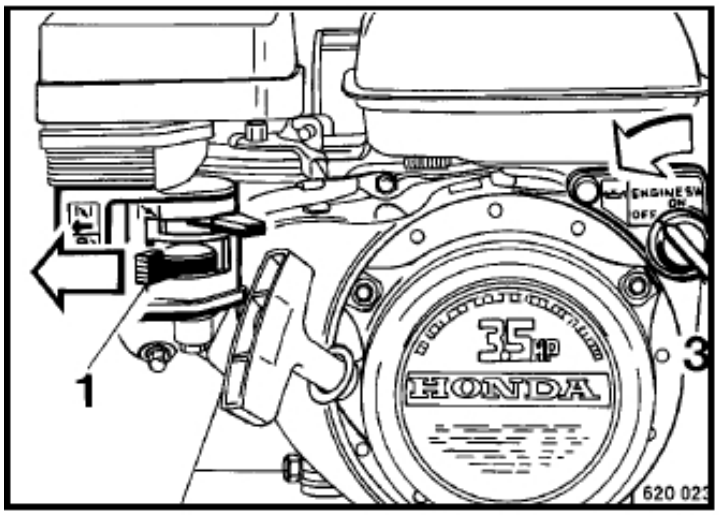


Fig. 21

- Close the fuel valve 1 (Fig. 21) in direction of arrow.

3.11 Loading and transport

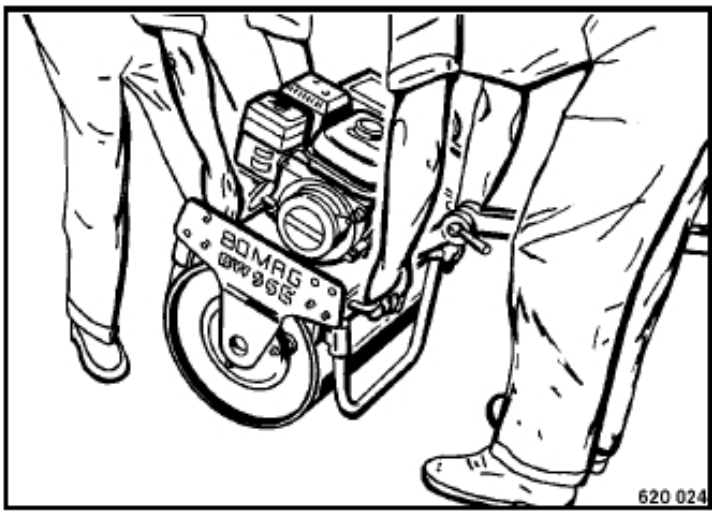


Fig. 22

- Loading the machine. If necessary fold the steering rod up.

Danger

Lash the machine down, so that it is secured against rolling, slipping and turning over.

For loading, lashing and lifting use always shackles at the lifting points.

When lifting the machine do not step under loads being lifted.

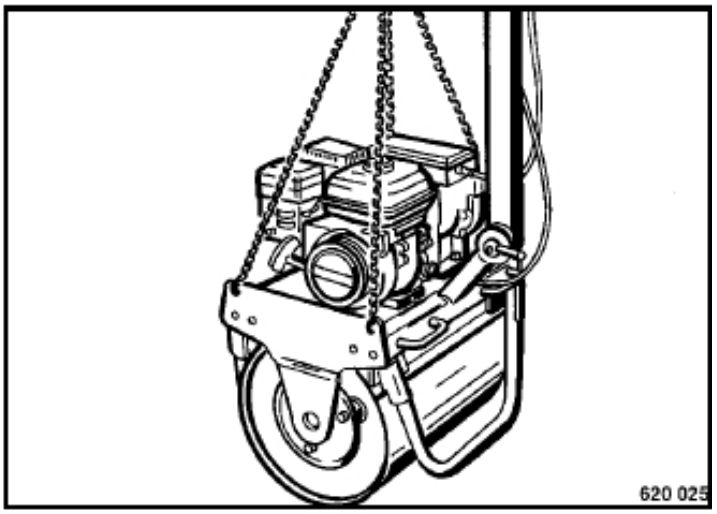


Fig. 23

- For loading attach the lifting tackle to the lifting hooks on the frame.

For weights refer to the technical data.

4.3 Fuels, Lubricants and Filling Capacities

Assemblies	Fuels, Lubricants		Approx. quantity
	Summer	Winter	Attention Observe level marks
Engine	Engine oil API:CD/SE bzw. CD/SF		ca. 0,6l (0.16 USgal)
	SAE 10W/40 (-20°C to +30°C) (-4°F to +86°F)		
	SAE 15W/40 (-10°C to +40°C) (+14°F to +104°F)		
	SAE 30 (+5°C to +30°C (+41°F to +86°F)	SAE 10 W (-5°C to -30°C) (+23°F to -22°F)	
	SAE 40 (+25°C to +40°C) (+77°F to +104°F)	SAE 20W/20 (+10°C to -10°C) (+50°F to +14°F)	
- Air filter	as engine oil		as required
- Fuel	Petrol (unleaded or standard grade)		2,5l (0.66 USgal)
Gear box	ATF		approx. 1l (0.26 USgal)
Leaf spring, drive chain	EP - high pressure grease		as required

4.4 Running-in instructions

Machine

- Check the chain and the V-belt for vibration and travel system, tension them if necessary.
- Check and if necessary tighten all screwed connections.
- Check for leakages.

4.5 Maintenance chart

With each maintenance interval perform also the work for shorter preceeding intervals.

Pos.	Description	Note
Maintenance every day		
4.6	Clean machine/engine	
4.7	Clean the air filter	
4.8	Check the engine oil level	
4.9	Check the fuel level	
4.10	Check the sprinkler system water level	
Maintenance every month		
4.11	Clean cooling fins and cooling air intakes	
4.12	Check the transmission oil level	
4.13	Clean, grease the leaf spring on the transmission	
Maintenance every 6 months		
4.14	Changing the engine oil	(1x per year)
4.15	Clean, check the spark plug	
4.16	Clean the fuel sludge filter	
4.17	Check the rubber buffers	
4.18	Check the V-belt	
4.19	Check, grease the drive chain	
4.20	Tension, change the V-belt/chain	
Dim. mm (inch)		
4.21	Change the air filter	
4.22	Check, adjust the valve clearance	
4.23	Clean the fuel strainer	
4.24	Change the transmission oil	
As required		
4.25	Water sprinkler system, maintenance in case of frost	
4.26	Adjust the scrapers	
4.27	Adjust the scrapers	Observe tightening torques
4.28	Preserving the engine	

4.6 Cleaning machine/engine

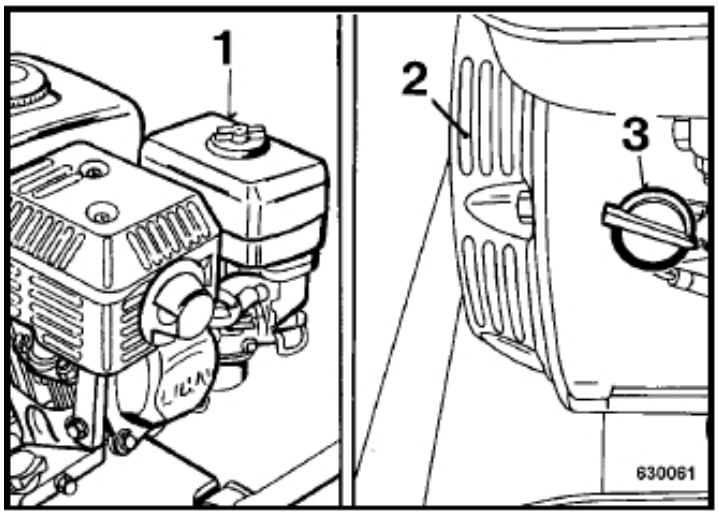


Fig. 25

- Do not hold the water jet directly into the air filter/carburettor 1 (Fig. 25), the starter/air intake (2) and the oil warning light/start switch (3).
- Run the engine after each cleaning to evaporate all water and to avoid corrosion.

4.7 Cleaning the air filter

i Note

The condition of the air filter depends on the dust in the combustion air. It must be cleaned several times per day, if necessary.

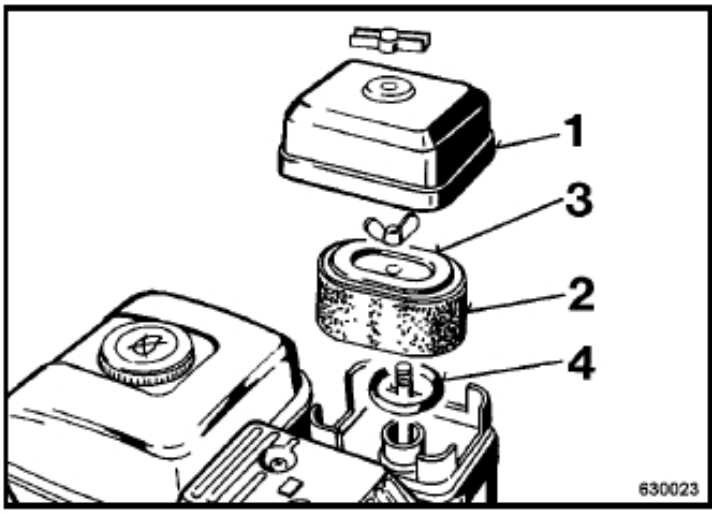


Fig. 26

- Remove the cover 1 (Fig. 26) and pull the foam insert (2) from the paper insert (3).

Caution

Make sure, that no dust falls into the carburettor.

Visual inspection/cleaning

- Check both inserts thoroughly for holes and cracks and replace them if necessary.

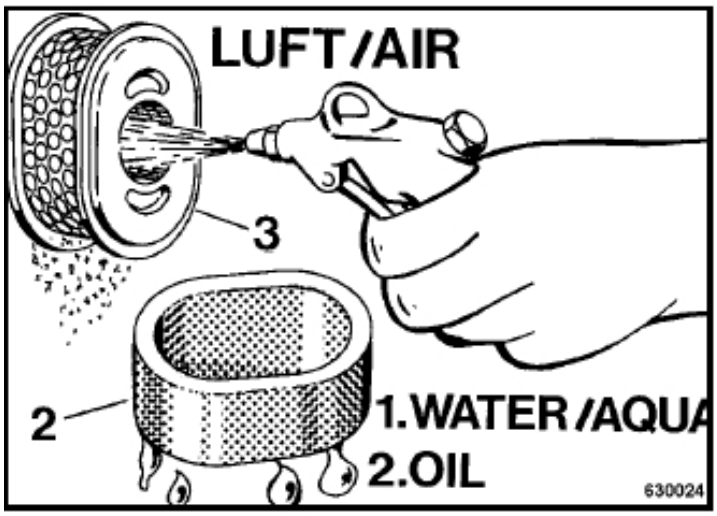


Fig. 27

Cleaning the filter

- Clean the paper insert 3 (Fig. 27) by tapping it lightly or blowing it carefully out from inside to outside with dry, clean compressed air.
- Wash the foam insert (2) in warm soapy water, rinse it and let it dry thoroughly.
- Soak the foam insert in clean engine oil, press excess oil out.
- Check the seal ring 4 (Fig. 26), use a new one if necessary.

4.8 Checking the engine oil level

i Note

Park the machine on level ground, so that the engine is in a horizontal position.

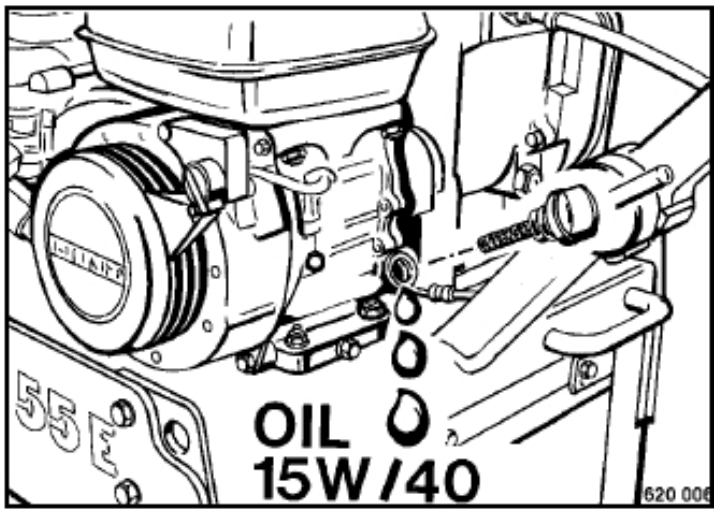


Fig. 28

- Stop the engine.
- Unscrew the oil filler plug 1 (Fig. 28).
- The oil level must reach to the edge of the filler bore, top up oil if necessary.

For quality of oil refer to the table of fuels and lubricants.

- Check the seal ring on the filler plug, use a new one if necessary.
- Screw the filler plug back in.

4.9 Checking the fuel level

Danger

When working on the fuel system do not spill any fuel, no open fire, do not smoke. Fire hazard.

Do not refuel in closed rooms.

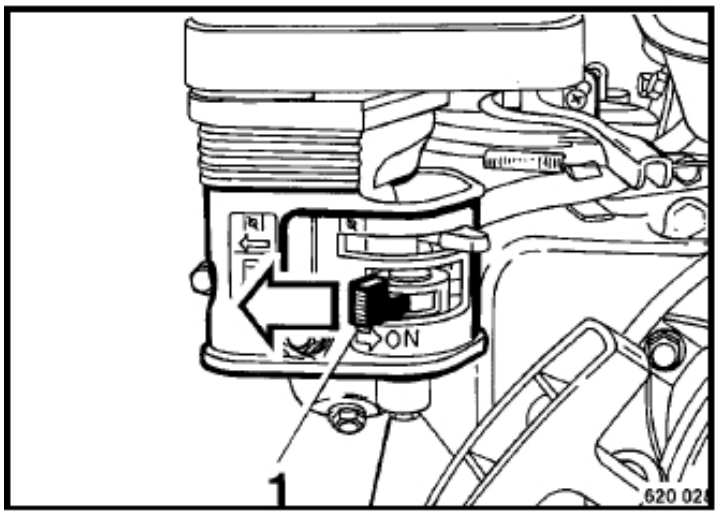


Fig. 29

- Close the fuel valve 1 (Fig. 29).

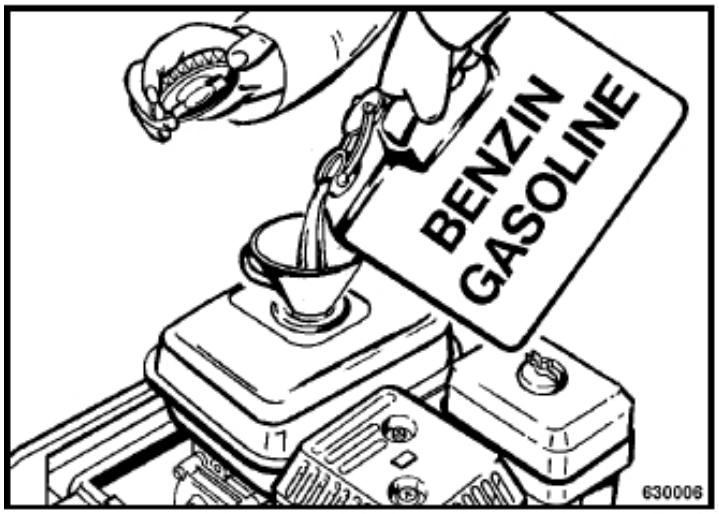


Fig. 30

- Clean the area around the filler cap, remove the filler cap.

For quality of fuel refer to the table of fuels and lubricants.

- Fill in fuel through a funnel with strainer (Fig. 30).
- Close the tank tightly.

Caution

Dirty fuel can cause engine failures.

4.10 Checking the water level

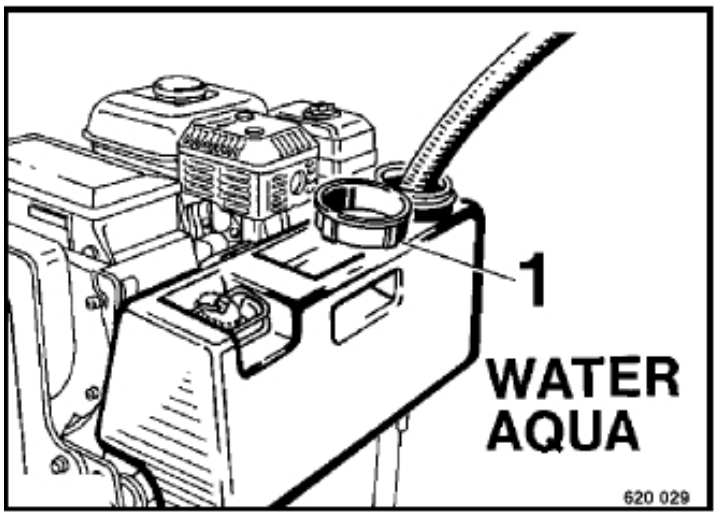


Fig. 31

- Open the cover 1 (Fig. 31) and check the water level.
- Top up water if necessary and close the cover again.

i Note

In case of frost observe the special notes "water sprinkler system, maintenance in case of frost" (section 4.25).

Make sure, that the breather bore in the cover is free.

The water tank can be removed.

4.11 Cleaning the cooling fins and the cooling air intakes

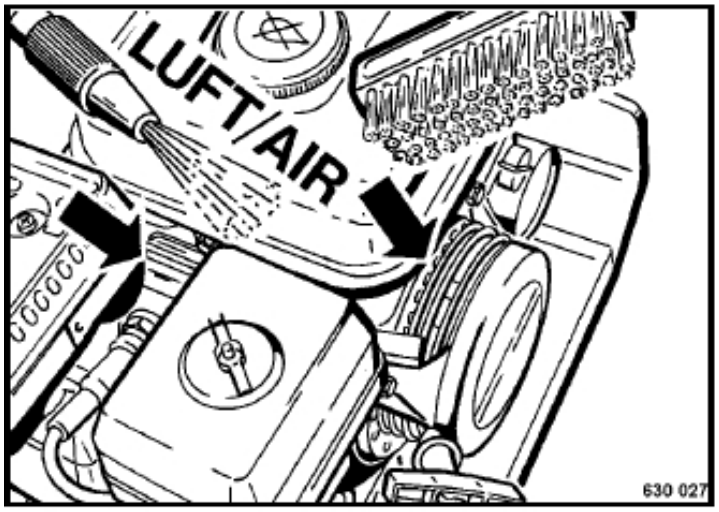


Fig. 32

- Brush off dry dirt from the cooling fins and the cooling air intake openings with a suitable brush and blow it out with compressed air (Fig. 32).
- Use cold cleansing agent if the engine is covered with oily dirt.
- Let it soak in for a while, clean it off with water or a steam jet and blow it out with compressed air.
- Run the engine warm to avoid corrosion.

Danger

Do not hold the water jet directly into the air filter/carburettor, starter/air intake and oil warning light/starter switch.

4.12 Checking the transmission oil level

Note

Park the machine on level ground, so that the engine is in horizontal position.

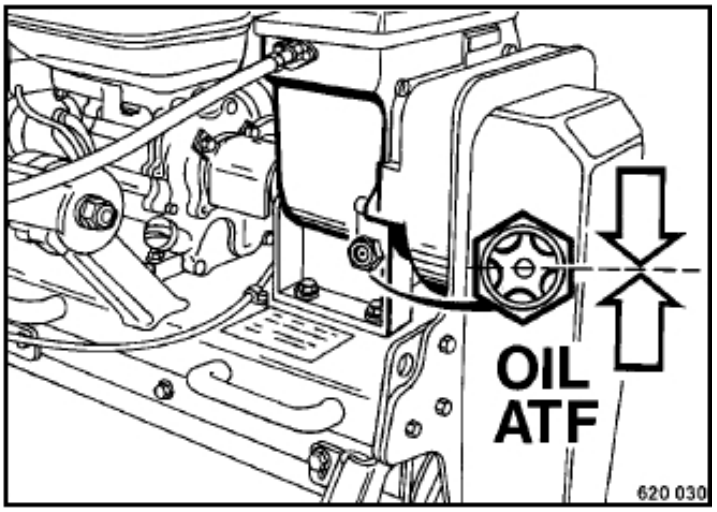


Fig. 33

- Check the oil level in the sight glass (Fig. 33).
- Top up transmission oil if necessary.

For quality of oil refer to the table of fuels and lubricants.

4.13 Cleaning, greasing the leaf spring on the transmission

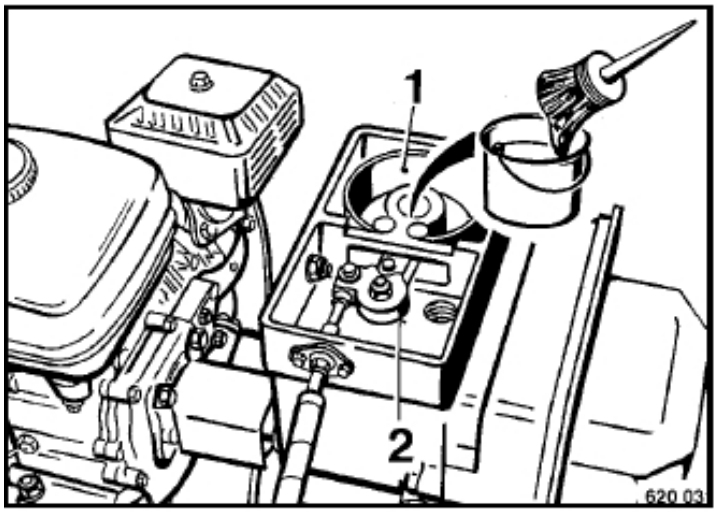


Fig. 34

- Unscrew the cover from the transmission.
- Clean and grease the leaf spring 1 (Fig. 34) and the control 2.

For quality of grease refer to the table of fuels and lubricants.

4.14 Changing the engine oil

i Note

Drain the engine oil only when the engine is warm.

⚠ Danger

There is a danger of scalding when draining hot engine oil.

⚠ Caution

Catch draining oil and dispose of in a way harmless to the environment. Environmental hazard!

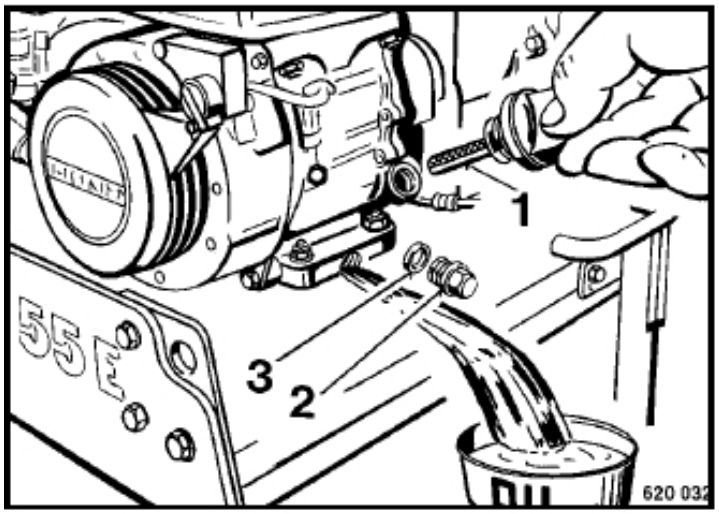


Fig. 35

- Unscrew the oil filler plug 1 (Fig. 35).
- Unscrew the oil drain plug (2), tilt the machine back, drain all oil and catch it.
- Reinstall the oil drain plug with a new seal ring (3).

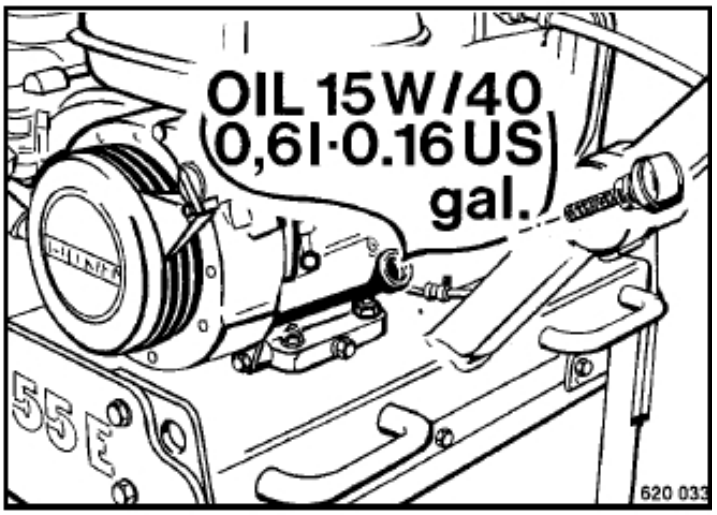


Fig. 36

- Place the engine horizontally and fill in oil through the filler opening (Fig. 36).

For quality and quantity of oil refer to the table of fuels and lubricants.

- Check the oil level with the engine in horizontal position after a short test run.

The oil level must reach the edge of the filler bore.

4.15 Cleaning, checking the spark plug

Danger

There is a danger of burning when the engine is hot!

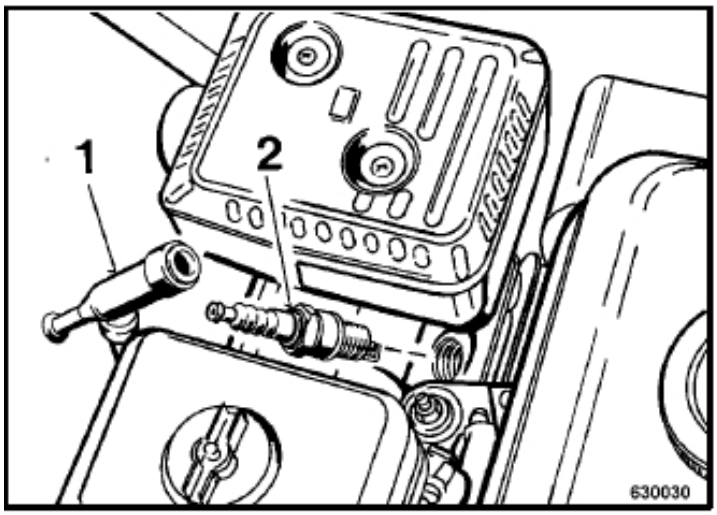


Fig. 37

- Pull the spark plug socket 1 (Fig. 37) off and unscrew the spark plug.

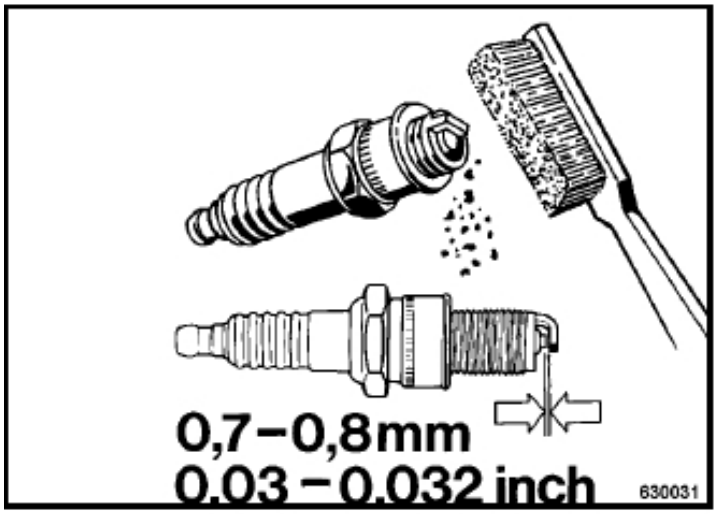


Fig. 38

- Check the spark plug visually and clean it if necessary (Fig. 38).

4.16 Cleaning the fuel sludge filter

Danger

When working on the fuel system do not spill any fuel, no open fire, do not smoke. Fire hazard.

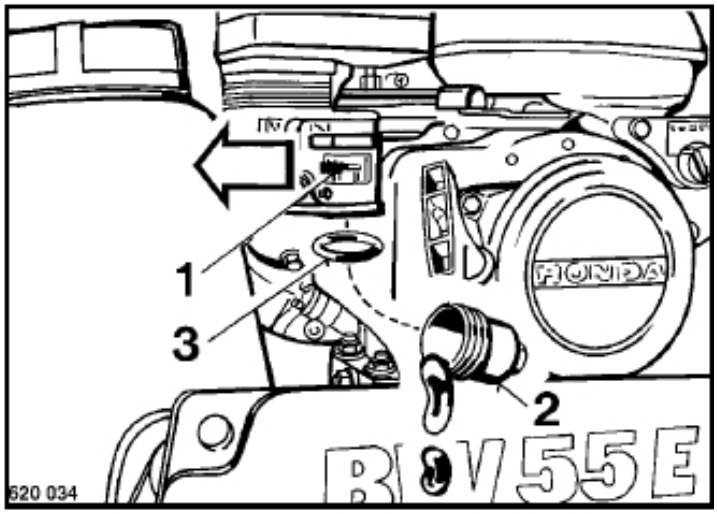


Fig. 39

- Close the fuel valve 1 (Fig. 39).
- Unscrew the fuel sludge filter (2) and clean it with petrol.
- Screw the fuel sludge filter tightly in with a new seal ring (3).

i Note

Change the spark plug in case of extreme combustion residuals or burned-off electrode. Make sure that the heat value of the spark plug is correct.

- Check the electrode gap with a feeler gauge, if necessary adjust the gap to 0.7 - 0.8 mm.

4.17 Checking the rubber buffers

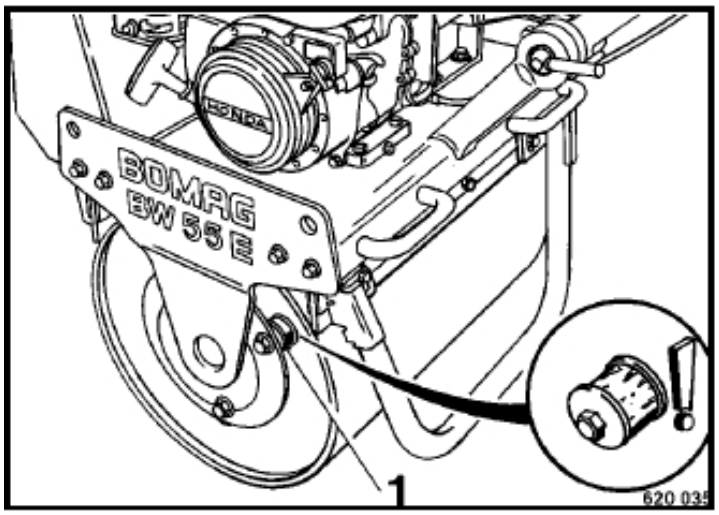


Fig. 40

- Check the condition and tight fit of all rubber buffers 1 (Fig. 40), replace if necessary.

4.18 Checking the vibration system V-belt

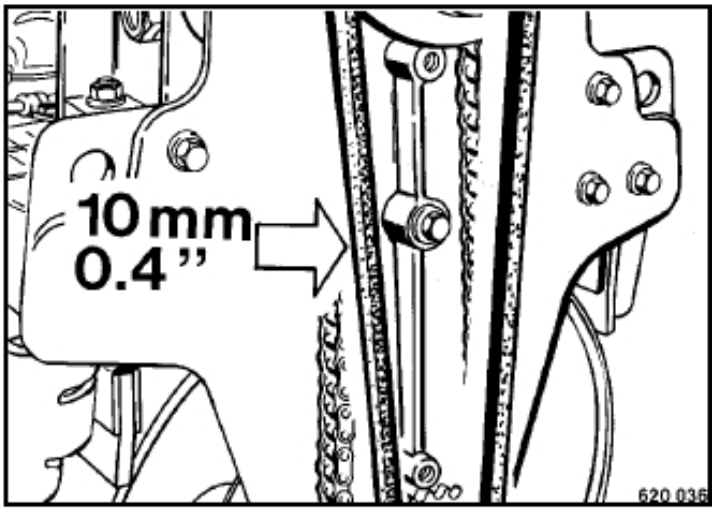


Fig. 41

- Remove the protective cover.
- Check the condition and tension of the V-belt, change the V-belt if it is damaged (Fig. 41).

Check the depressing measurement of approx. 10 mm

Maintenance every 6 months

4.19 Check, grease the drive chain

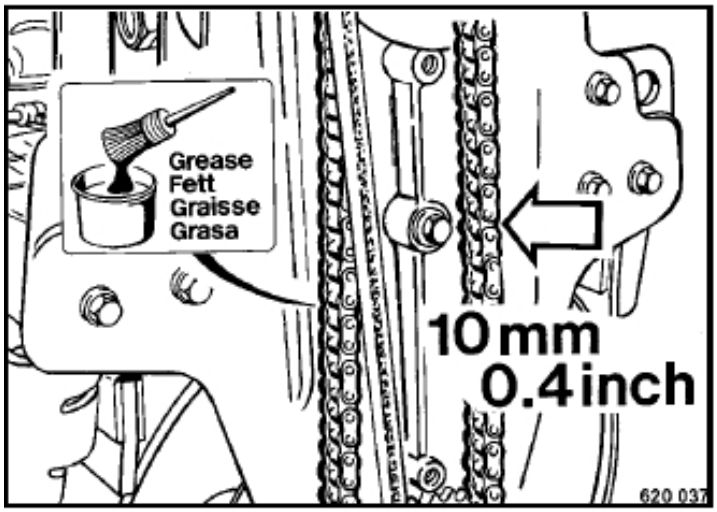


Fig. 42

- Remove the protective cover.
- Check the condition and tension of the chain (Fig. 42).

The depressing measurement on the longest free section must not exceed 10 mm.

- Remove all old grease and apply new grease.

For quality of grease refer to the table of fuels and lubricants.

- Reinstall the protective cover.

4.20 Tensioning, changing V-belt/chain

Tensioning V-belt/chain

Danger

When lifting the machine do not step under loads being lifted.

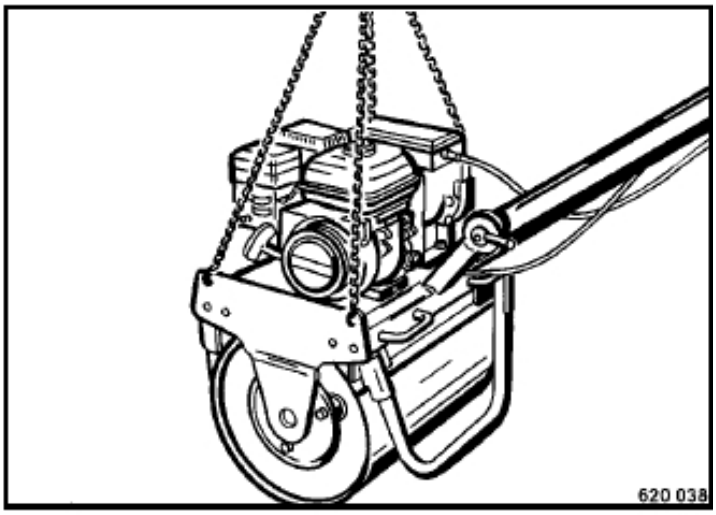


Fig. 43

- Lift the machine slightly up as shown in (Fig. 43).
- Remove the gear cover.

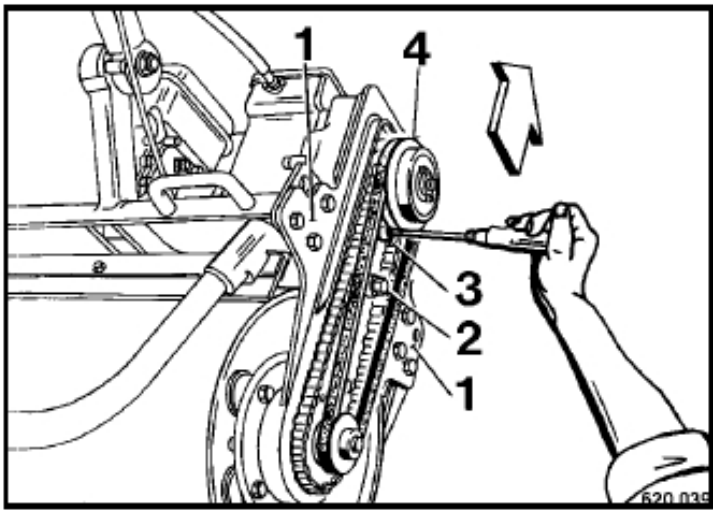


Fig. 44

- Loosen all fastening screws 1 (Fig. 44).
- Loosen the fastening screw (2).

i Note

V-belt and chain will be tensioned by the weight of the drum.

4.21 Changing the air filter

i Note

The condition of the air filter depends decisively on the amount of dust in the air.

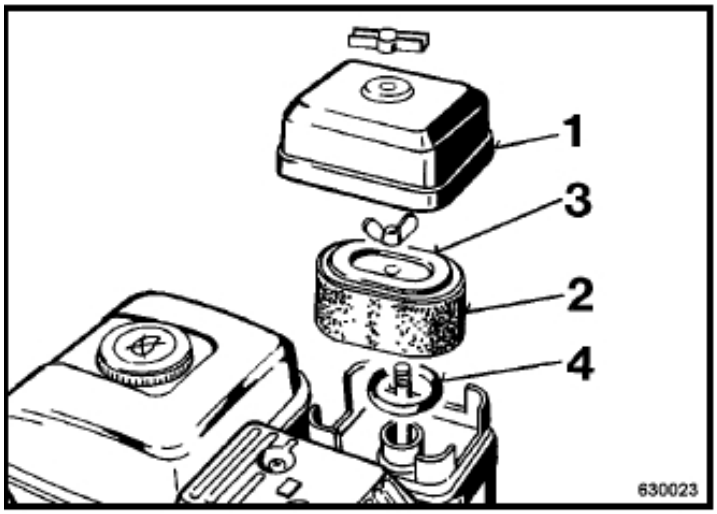


Fig. 45

- Remove the cover 1 (Fig. 45).
- Dispose of the foam insert (2) and the paper filter (3).

⚠ Caution

No dust must fall into the carburettor.

- Install a new filter.
- Insert a new seal ring (4).
- Reinstall the cover (1).

4.22 Checking, adjusting the valve clearance

i Note

Check and adjust the valve clearance only when the engine is cold.

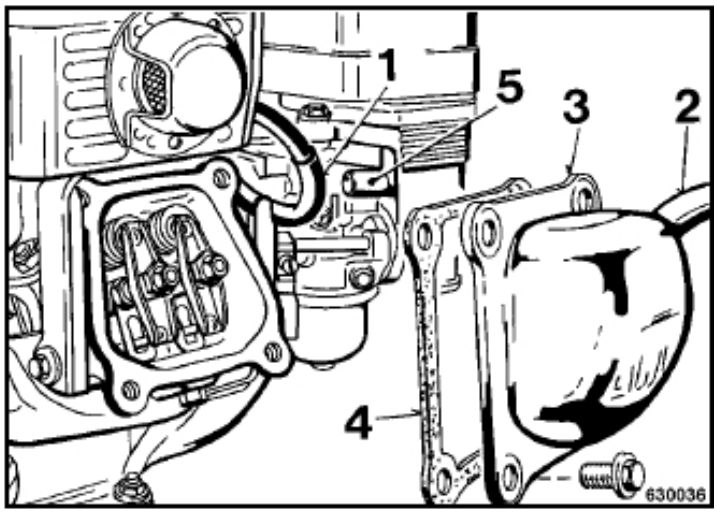


Fig. 46

- Pull the spark plug socket 1 (Fig. 46) off.
- Pull the ventilation hose (2) off.
- Remove the valve cover with gasket (4).
- Move the piston to the upper dead center of the compaction stroke.

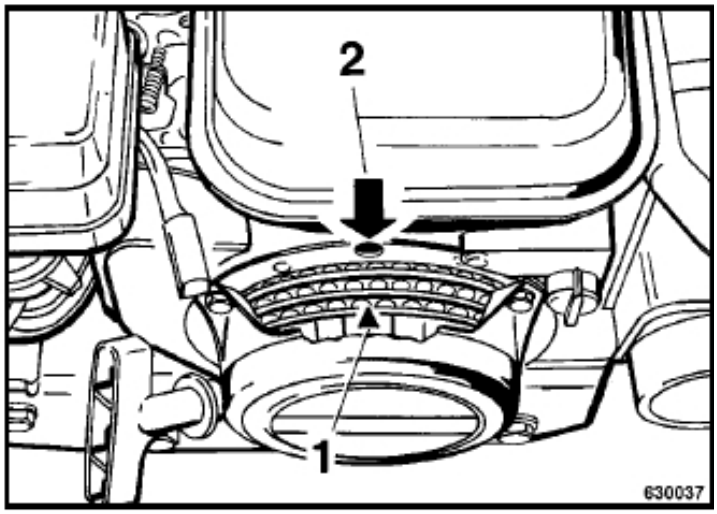


Fig. 47

- Therefore adjust the triangular mark 1 (Fig. 47) on the starter pulley to the upper bore (2).

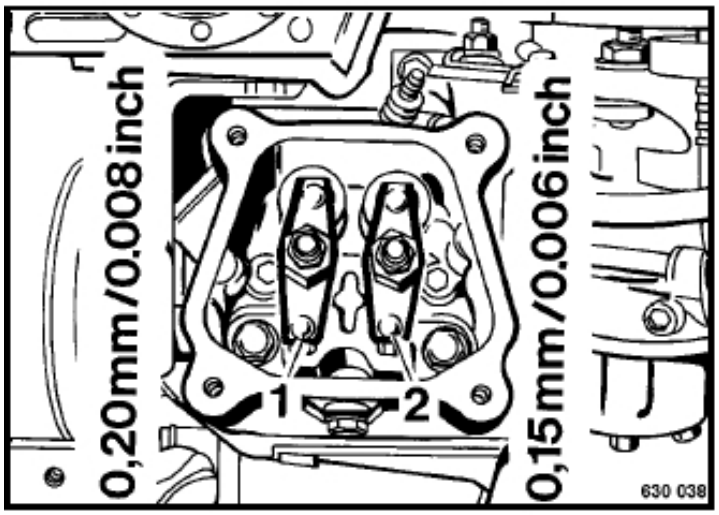


Fig. 48

i Note

Outlet valve 1 (Fig. 48) = valve clearance 0.20 mm
Inlet valve = valve clearance 0.15 mm

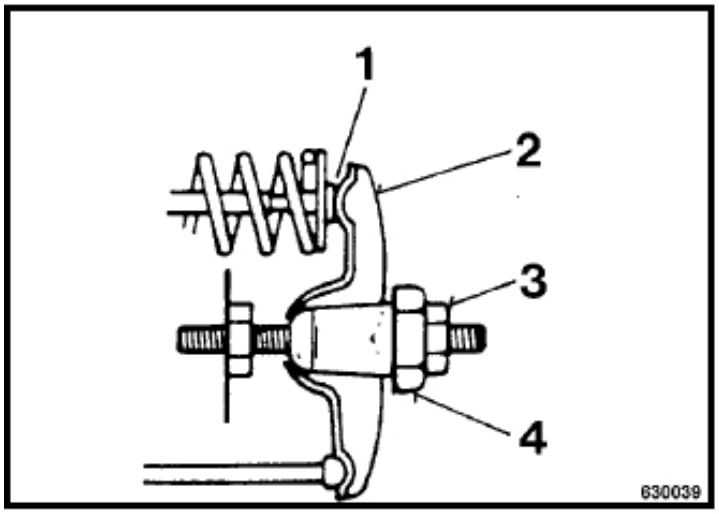


Fig. 49

- Check the valve clearance 1 (Fig. 49) with a feeler gauge. For adjusting hold the hexagon nut (4) on the rocker arm and loosen the counter nut (3).
- Adjust the hexagon nut (4) on the rocker arm so that the feeler gauge fits through the gap between rocker arm and valve with only little resistance after retightening the counter nut (3).

4.23 Cleaning the fuel strainer

Danger

When working on the fuel system do not spill any fuel, no open fire, do not smoke. Fire hazard.

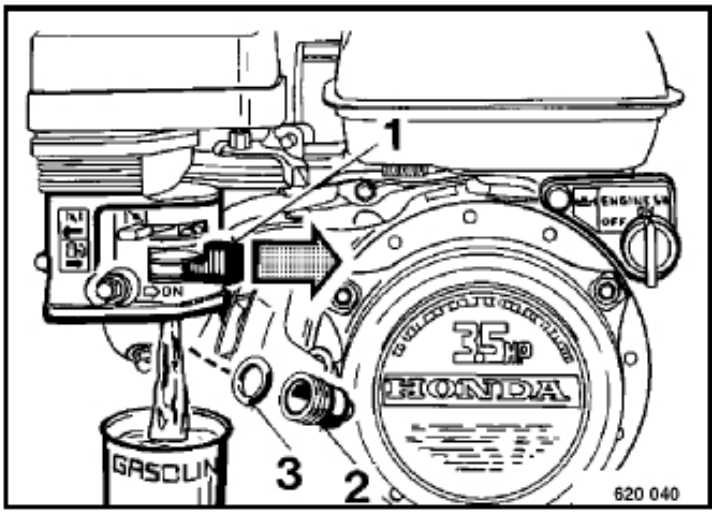
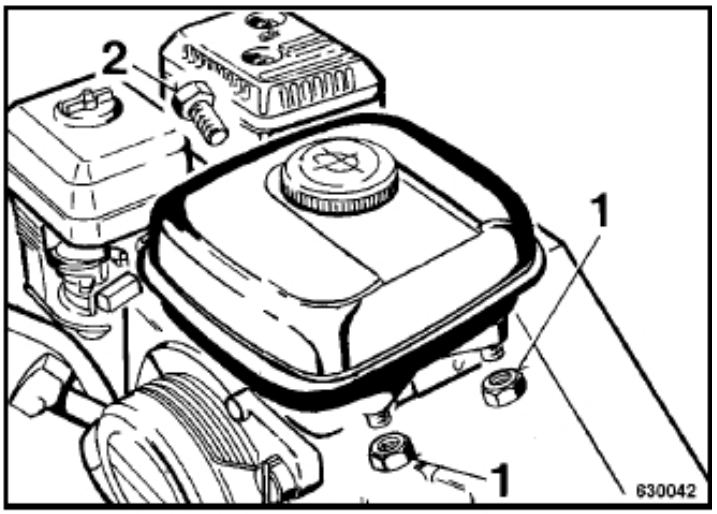


Fig. 50

- Open the fuel valve 1 (Fig. 50).
- Unscrew the fuel sludge filter (2), drain and catch all fuel.
- Clean the fuel sludge filter (2) with petrol.
- Reinstall the fuel sludge filter with a new seal ring (3) tightly.



- Insert a new gasket 4 (Fig. 49), push the ventilation hose (2) into the socket (5) and fasten the valve cover evenly.

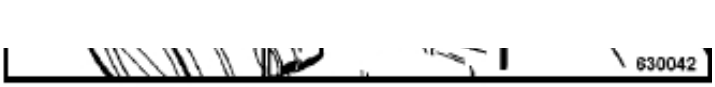


Fig. 51

- Remove the fuel tank.
- Unscrew the hexagon nut 1 (Fig. 51) and the hexagon screw (2).

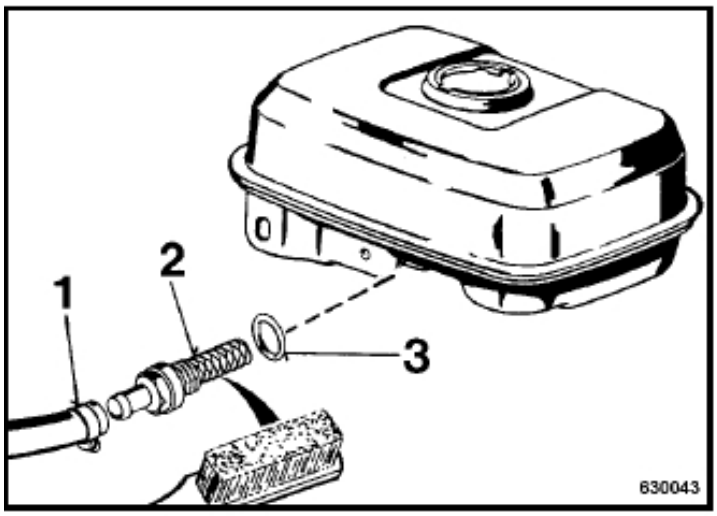


Fig. 52

- Open the hose clamp 1 (Fig. 52), pull the hose off.
- Unscrew the fuel strainer (2).
- Clean the fuel strainer, check the condition of the strainer screen (holes). Use a new one if necessary.
- Insert a new seal ring (3).
- Screw the fuel strainer (2) in tightly, fasten the hose (1) and reinstall the fuel tank.

4.24 Changing the transmission oil

Caution

Catch running out oil and dispose of in a way harmless to the environment.

Environmental hazard!

- Remove the water tank.

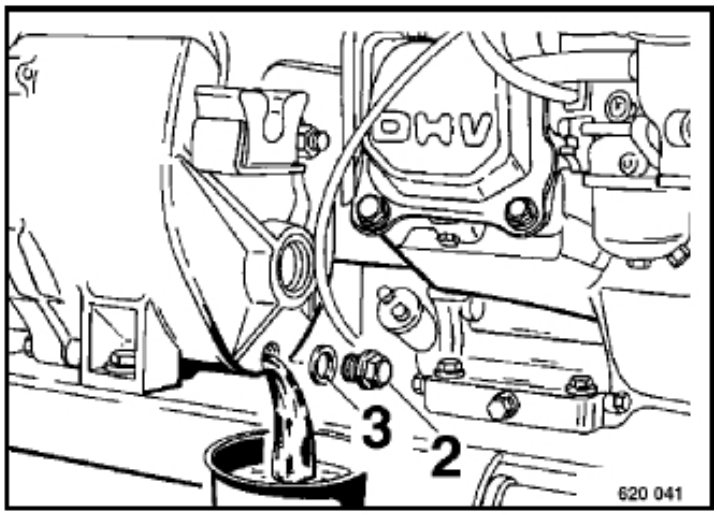
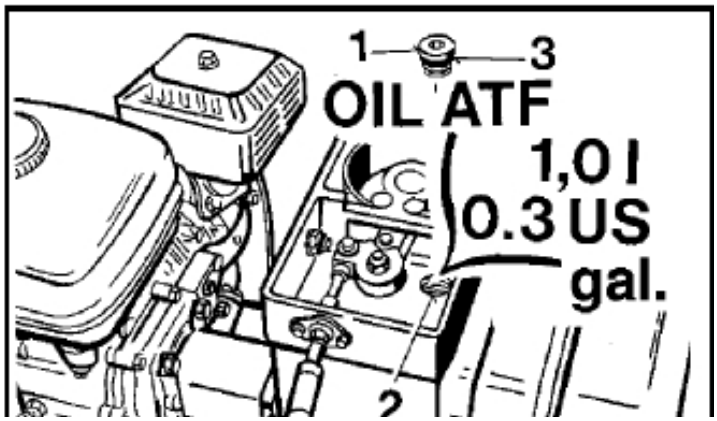


Fig. 53

- Remove the cover from the transmission and unscrew the filler plug 1 (Fig. 54).
- Unscrew the drain plug 2 (Fig. 53), tilt the machine to the front and catch running out oil.
- Reinstall the drain plug with a new seal ring (3).



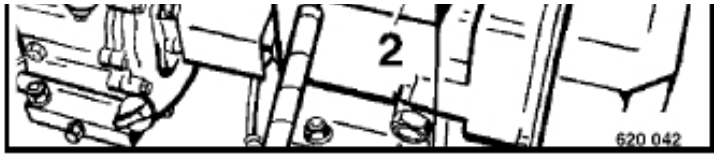


Fig. 54

- Fill in new transmission oil through the filler bore 2 (Fig. 54).

As required

4.25 Water sprinkler system, maintenance in case of frost

Caution

The water sprinkler system must be emptied or filled with an antifreeze mixture if there is a risk of frost.

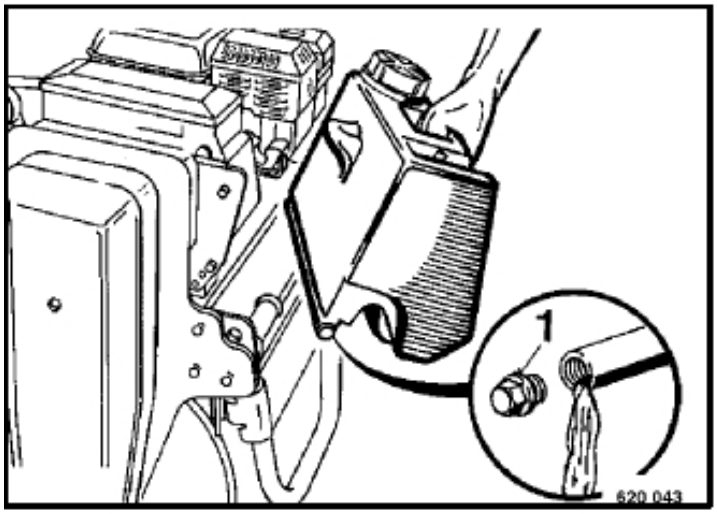


Fig. 55

- Remove the water tank.
- Drain all water out of the tank by removing the plastic plug 1 (Fig. 55).
- Push the plastic plug back on.
- Fill the antifreeze mixture (water and anti-freeze agent, e. g. glysanthene) into the tank.

4.26 Adjusting the scrapers

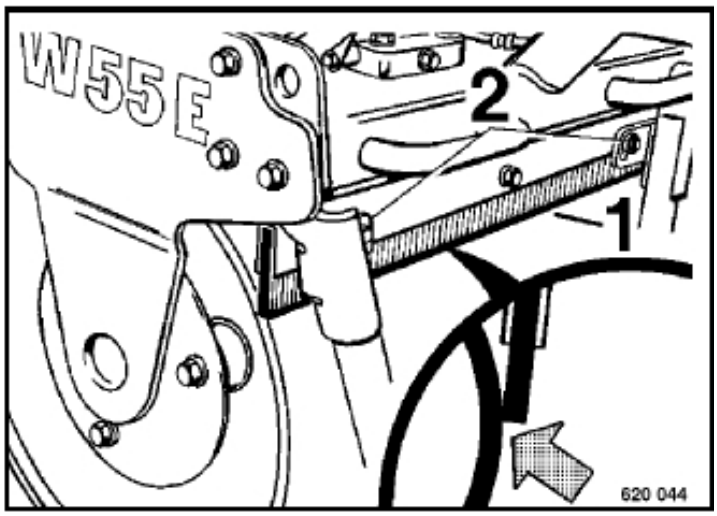


Fig. 56

- Loosen the fastening screws 2 (Fig. 56).
- Adjust the scrapers (1) until they touch the drum lightly (slight bending of the plastic in-sert).
- Retighten the fastening screws.

4.27 Tightening torques for screws with metric unified thread

Tightening torques * in Nm (ftlb).

Bolt dimensions	Tightening torques* ft - lb		
	8.8	10.9	12.9
M4	2	3	4
M5	4	7	7
M6	7	11	13
M8	18	26	33
M10	37	55	61
M12	65	91	108
M14	101	145	173
M16	156	221	264
M18	213	303	361
M20	304	426	513
M22	413	559	695
M24	524	738	885
M27	774	1092	1308
M30	1047	1482	1770

Fig. 57

* Strength class for screws with untreated, non-lubricated surface. The quality designation of the screw is marked on the screw heads.

8.8 = 8 G

10.9 = 10 K

12.9 = 12 K

The values result in a 90% utilization of the screws yielding point at a coefficient of friction of total = 0.14.

The tightening torques are checked with torque wrenches.

The above mentioned tightening torques do not apply when using MoS_2 lubricants.

i Note

Self locking nuts must always be replaced after they have been loosened.

4.28 Preserving the engine

Danger

When working on the fuel system do not spill any fuel, no open fire, do not smoke. Fire hazard.

If the engine is to be shut down for a longer period of time (e.g. during the winter) we recommend the following preserving measures for the engine to avoid corrosion:

Clean the engine:

- With cold cleansing agent or, even better, with a steam cleaner.
- Run the engine to warm it up and shut it down.
- Drain the still warm engine oil and fill in new engine oil.
- Drain all fuel from the tank.

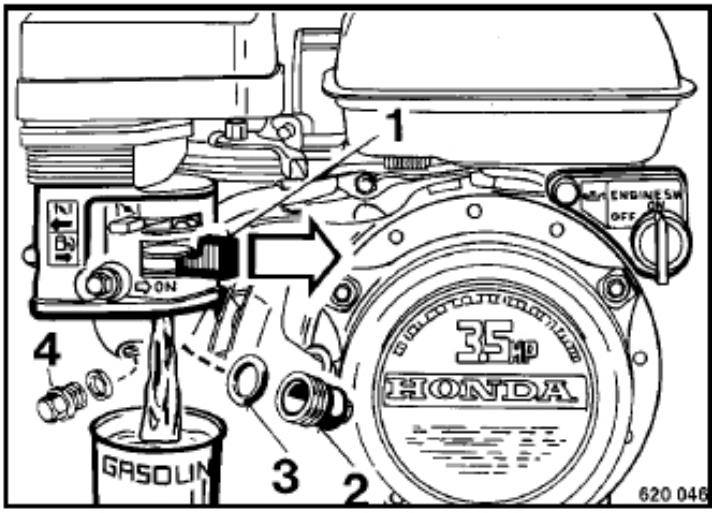


Fig. 58

- Open the fuel valve 1 (Fig. 58).
- Unscrew the fuel sludge filter (2), empty it and reinstall it with a new seal ring (3).
- Unscrew the carburettor drain plug (4), drain all fuel from the carburettor and reinstall the screw.

Danger

There is a danger of burning when working on a hot engine!

5.1 General notes

The following work must only be carried out by qualified and trained personnel or by the BOMAG sales service.

Please observe strictly the safety regulations in chapter 2 of these operating and maintenance instructions.

Faults occur frequently due to the fact, that the machine has not been properly operated or serviced. Therefore, whenever a fault occurs, read through these instructions on correct operation and maintenance. If you cannot locate the cause of the fault or eliminate it yourself by following the trouble shooting charts, you should contact our customer service departments at our branch office or dealers.

On the following pages you will find a selection of fault remedies. It is quite obvious that we were not able to list all possible causes for faults.

5.2 Engine trouble shooting

Faults	Possible cause	Remedy
Engine does not start	Fuel tank empty	top up fuel
	Fuel system blocked	Clean the fuel strainer in the carburettor
	Fuel nozzle blocked	Clean the fuel nozzle
	No ignition spark	Change the spark plug, have the fault corrected
	Starter switch defective	Change the starter switch
Engine does not turn when actuating the starter	Starter defective	Change the starter
Engine stops frequently	Fuel strainer in carburettor blocked	Clean
Engine will not run with full speed	Throttle control defective	Have fault corrected
	Air filter blocked	Clean or replace the filter insert
	Engine defective	Change the engine/have engine repaired
	Carburettor defective	Change the carburettor
Engine runs with high speed but no vibration	Centrifugal clutch defective	Change the centrifugal clutch
	V-belt broken	Change the V-belt