BOMAG

Operating instructions

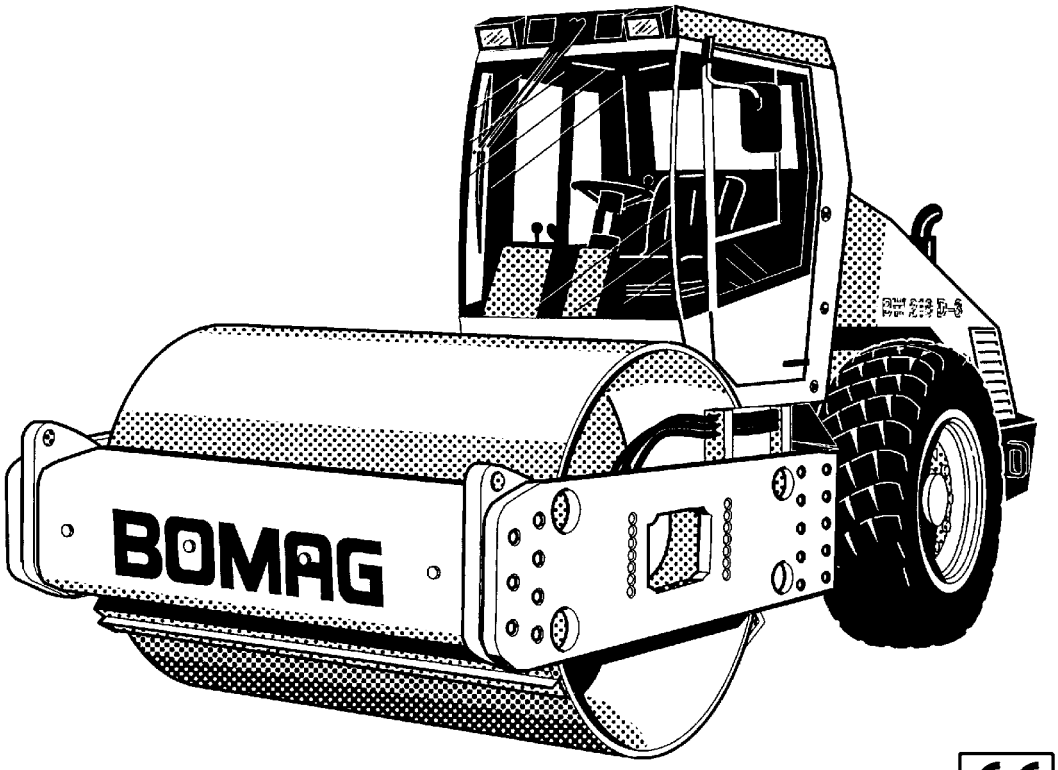
Maintenance instructions

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

BW 213 DH-3 / BW 213 PDH-3

BW 213 PDBH-3

S/N 101 580 27 .... S/N 101 580 24 ....



CE

Single drum roller

Catalogue number
008 140 11

10/2001

*		BW 213 DH-3	BW 213 PDH-3
Drive system		hydrostatic	hydrostatic
Driven axles		2	2
Brakes			
Service brake		hydrostatic	hydrostatic
Parking brake		hydro-mech.	hydro-mech.
Steering			
Steering system		articul.	articul.
Steering control		hydrostatic	hydrostatic
Vibration			
Vibrating drum		1	1
Drive system		hydrostatic	hydrostatic
Frequency	Hz	30 / 36	30 / 36
Amplitude	mm (in)	1,8 / 0,9	1,64 /0,82
Tires			
Tire size		Goodyear 23.1/18-26TL AWT, 8PR	Goodyear 23.1/18-26TL, 10PR Dyna Torque
Air pressure	bar	1,1	1,1
Filling capacities			
Engine	l (USgal)	19 (5.01)	19 (5.01)
Fuel	l (USgal)	340 (89.82)	340 (89.82)
Hydraulic oil	l (USgal)	60(15.85)	60 (15.85)
Coolant	l (USgal)	20 (5.28)	20 (5.28)

* Technical modifications reserved

Ensure good ventilation, especially when charging the battery in a closed room.

Working on the fuel system

Do not inhale fuel fumes.

No open fire, do not smoke, do not spill any fuel.

Catch running out fuel, do not let it seep into the ground and dispose of environmentally.

Working on wheels and tires

Explosion like bursting of tires and parts of rims and tires can cause severe or even deadly injuries.

Assemble tires only with the appropriate knowledge and tools. If necessary have the tires assembled in a special workshop.

Ensure correct tire pressure and do not exceed the highest specified pressure.

Check wheels and tires every day for specified pressure, cuts, bulges, damaged wheel rims, missing wheel studs and nuts. Do not drive with damaged tires or wheels.

Anti-stick emulsions for tires must only be mixed using water and concentrated anti-stick agent according to the specifications of the manufacturer of the anti-stick agent. Observe the regulations for the protection of the environment.

Cleaning

Do not clean the machine while the engine is running.

Do not use gasoline or other combustible substances for cleaning purposes.

When using steam cleaning equipment do not subject electrical components and insulating materials to the direct water jet, but cover them beforehand.

- Do not guide the water jet into the exhaust or into the air filter.

After maintenance work

Reinstall all protective devices after completing the maintenance work.

Repair

Attach a warning tag to the steering wheel if the machine is defective.

Repairs must only be performed by qualified persons who have been instructed for this purpose. Use our repair instructions.

Exhaust gases are highly dangerous! Always ensure an adequate supply of fresh air when starting in closed rooms!

Test

Depending on the type of application and the operating conditions vibratory equipment has to be examined by a specialist whenever required, but at least once every year.

regulate air flow = adjust and open or close by tilting the flap

Nr. 23 = Fuse box, cabin*

(1) - = not used

(2) 7,5A = cabin light

(3) 7,5A = windscreen wiper/washer, rear

(4) 7,5A = windscreen wiper/washer, front

(5) 7,5A = flashing beacon

(6) 7,5A = heating blower, radio

⚠ Danger

Fire hazard!

Do not use fuses with a higher Ampere rating and do not bridge fuses.

Nr. 24 = Toggle switch, heating blower

Nr. 25 = Toggle switch, flashing beacon**

Nr. 26 = Toggle switch, windscreen wiper/ washer, front***

Nr. 27 = Toggle switch, windscreen wiper/ washer, rear****

Nr. 28 = Cabin light

switch on = turn lamp glass clockwise

switch off = turn lamp glass counter-clockwise

Nr. 29 = Vent for fresh air intake

to operate the slide loosen the adjustment button.

slide to the left = air circulation position

slide to the right = fresh air position

Switch on the auxiliary hot air blower

* Option
** Option
*** Option
**** Option

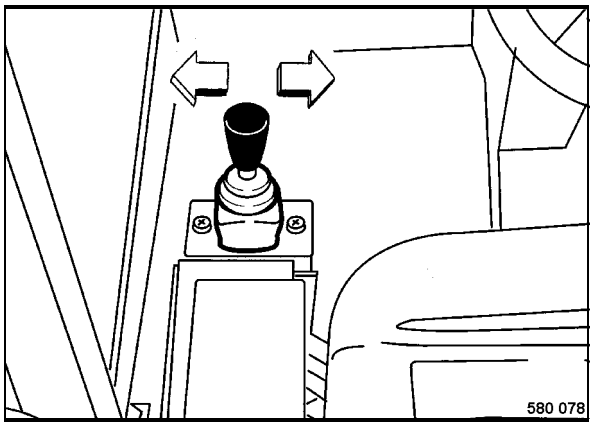


Fig. 27

Nr. 30 = Steering lever***

lever to the left = machine drives to the left

lever to the right = machine drives to the right

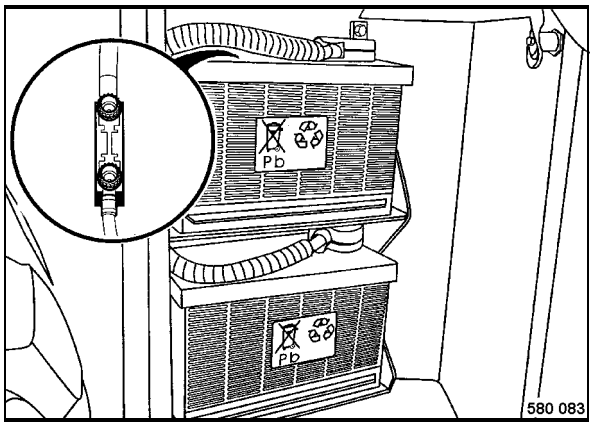


Fig. 28

Nr. 31 = Main fuse for battery

80A = (F00)

i Note

The main fuse is located in the battery compartment.

*****Option

4.8 Shutting the engine down

⚠ Caution

Straighten the articulated joint to allow easy access from and to the cabin.

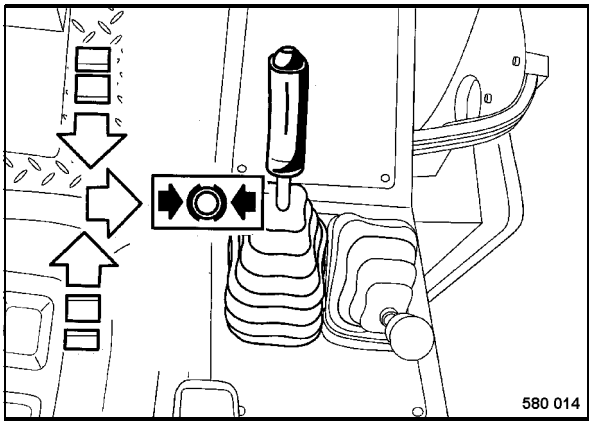


Fig. 46

- Move the travel lever (Fig. 46) slowly to "neutral"-position and lock it to the right in braking position.

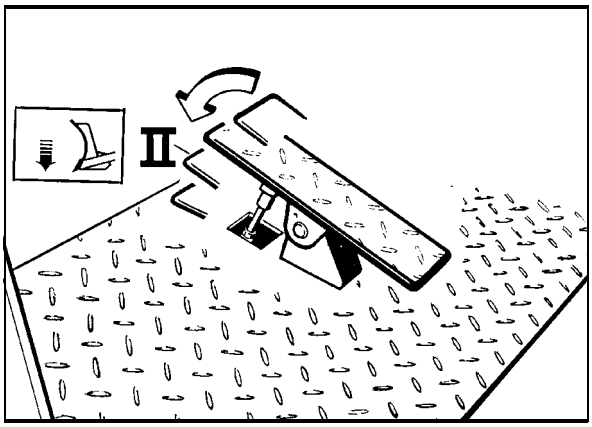


Fig. 47

- Lifting the dozer blade (BW 213 PDBH-3) (Fig. 47).

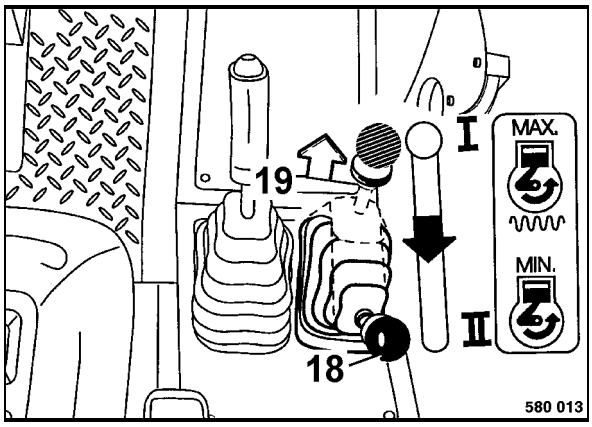


Fig. 48

- Pull the locking plate 19 (Fig. 48) up and set the throttle lever (18) to position "II" (idling speed).

i Note

Do not shut the engine suddenly down from full speed, but let it idle for a while for temperature equalization.

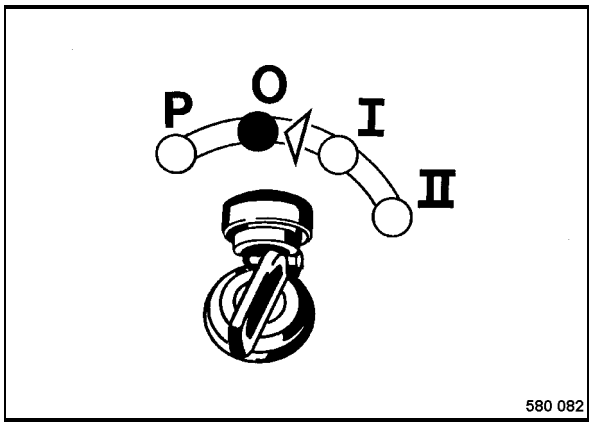


Fig. 49

- Turn the ignition switch (Fig. 49) to position "0" or "P" and pull the ignition key out.

i Note

The parking brake closes automatically after shutting the engine down.

⚠ Danger

Danger of accident!

Secure the machine properly against unauthorized use, pull the ignition key out, lock the cabin door.

Notes on the cooling system

On high performance diesel engines the preparation and control of the coolant is of special importance, since the non-observance may cause engine damage as a result of corrosion, cavitation or freezing.

The coolant is prepared by mixing the cooling water with a cooling system protection agent (ethylene glycol / propylene glycol).

Mixing of cooling system protection additives to the cooling water is necessary in all climatic zones. It prevents corrosion, lowers the freezing point and raises the boiling point of the coolant.

5.2 Fuels and lubricants

Engine oil

The use of high quality brand HD-oils in connection with the specified filter and oil change intervals prolongs the lifetime of the engine and increases its performance.

Do not use any running-in oil for new or overhauled engines.

Oil viscosity

It is recommended by CUMMINS to use preferably oils of the viscosity class SAE 15W-40.

To ensure perfect cold starting it is important to choose the viscosity (SAE grade) of the engine oil with respect to the ambient temperature.

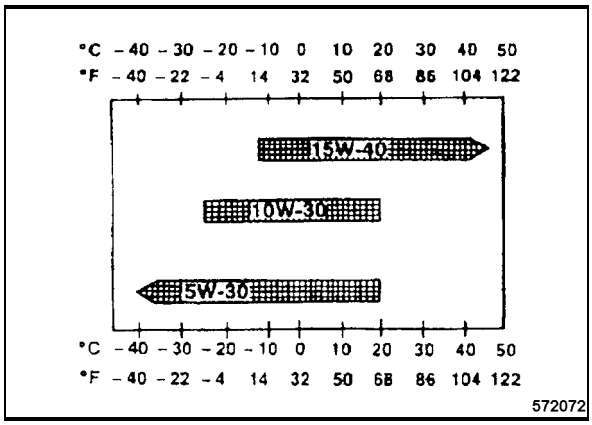


Fig. 68

Although cold starting abilities may be impaired if the temperature occasionally drops below the limit (e.g. use of SAE 15W/40 down to -15°C), this will not cause any damage to the engine.

Having to change the lubrication oil due to changes in temperature can be avoided by using multigrade oils. The oil change intervals given below are also valid for multigrade oils.

Oil quality

Lubrication oils are differentiated according to their performance and quality class. The commonly used specifications are those according to API (American Petroleum Institute) and CCMC (Committee of Common Market Automobile Constructors).

5.11 Checking the V-belt

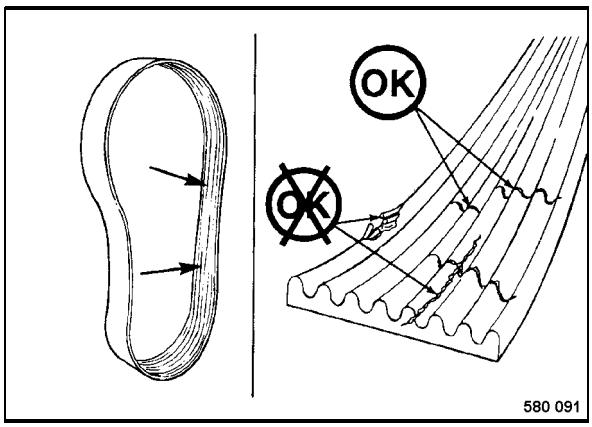


Fig. 75

- Check the condition of the V-belt (Fig. 75).

Small cracks in transverse direction are permitted.

Crack in longitudinal direction are not permitted.

- Replace the V-belt in case of broken out material, intersecting cracks in longitudinal and transverse direction or fraying.

5.12 Checking the dust separator on the oil bath air filter*

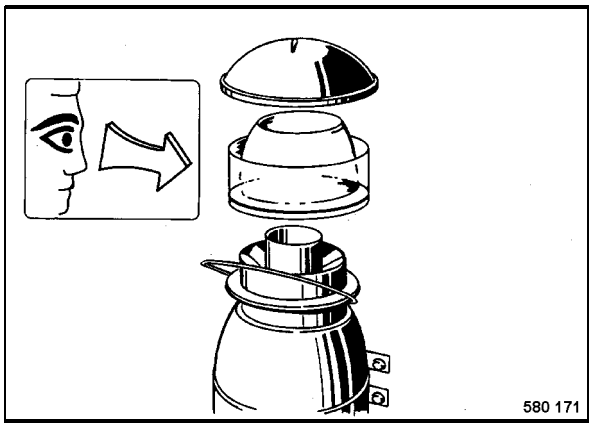


Fig. 76

- If the dust reaches the mark loosen the clamp (Fig. 76), take the cover off and clean the bowl.

* Option

5.25 Changing the fuel filter cartridges

⚠ Danger

Fire hazard!

When working on the fuel system do not use open fire, do not smoke, do not spill any fuel.

Catch running out fuel, do not let it seep into the ground.

Do not inhale any fuel fumes.

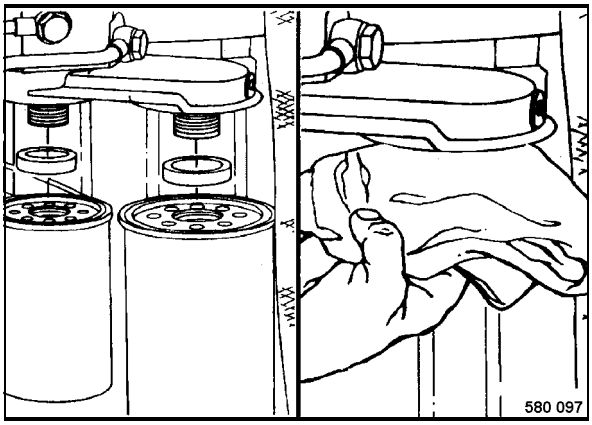


Fig. 95

- Unscrew both filter cartridges (Fig. 95) with a suitable filter wrench.
- Clean the sealing faces on the filter carrier from all dirt.

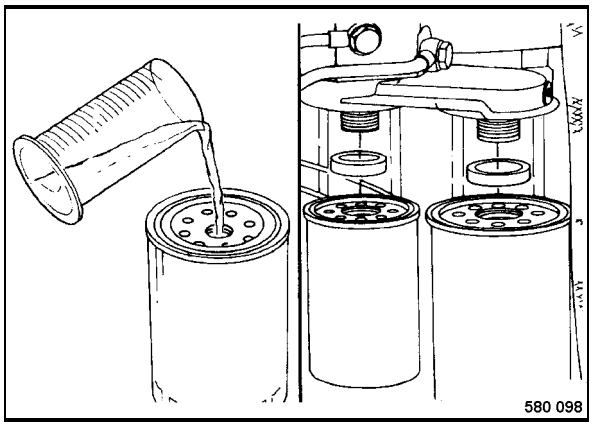


Fig. 96

- Fill the new filter cartridges (Fig. 96) with clean fuel according to the table of fuels and lubricants.
- Cover the seal rings lightly with oil.

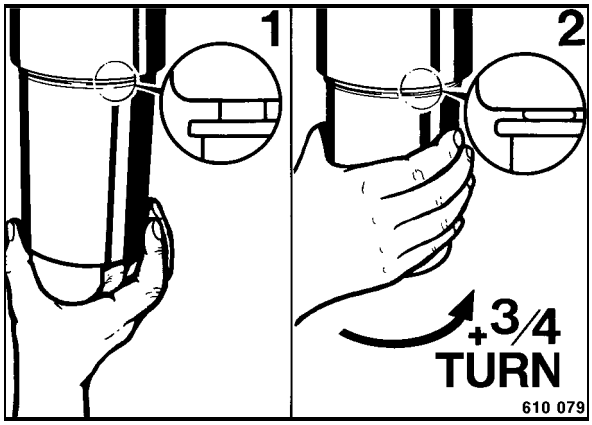


Fig. 97

- Screw the filter cartridges on by hand until the seal touches the filter head 1 (Fig. 97).
- Tighten for a 3/4 turn (2).

i Note

Small amounts of air, which enter the fuel system when changing the filter, are automatically discharged through the return line.

Manual bleeding

- if the filter has not been filled with fuel before removal,
- if the injection pump has been changed,
- if injection lines were changed
- if the fuel tank has been driven empty.

5.37 Checking, adjusting the valve clearance

⚠ Caution

Let the engine cool down for at least 30 minutes before checking the valve clearance. The engine temperature must be lower than 60 °C.

Perform a short test run and check the engine for leaks.

- Remove the air filter.

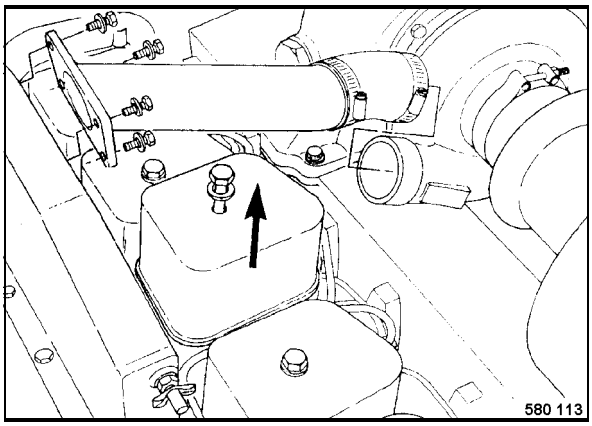


Fig. 116

- Disassemble all cylinder head covers 1 (Fig. 116).

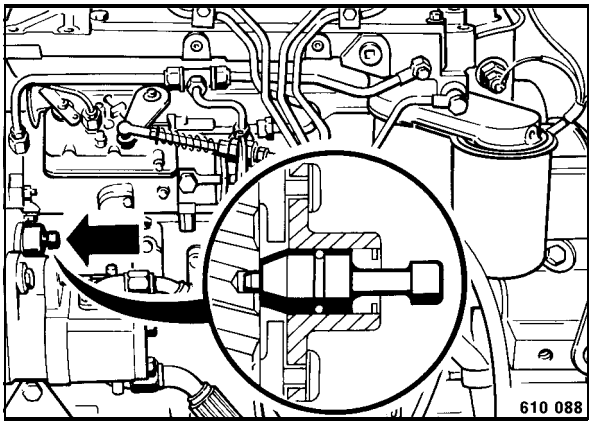


Fig. 117

- Press the adjustment pin (Fig. 117) in and turn the engine crankshaft until the pin clicks into place.

⚠ Caution

Loosen the pin again after the adjustment.

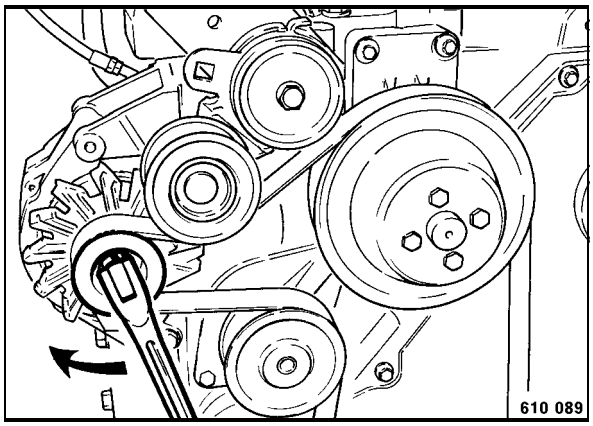


Fig. 118

The locking position (Fig. 118) of the adjustment pin is exactly in accordance with the upper dead center of the first cylinder during the compression stroke.

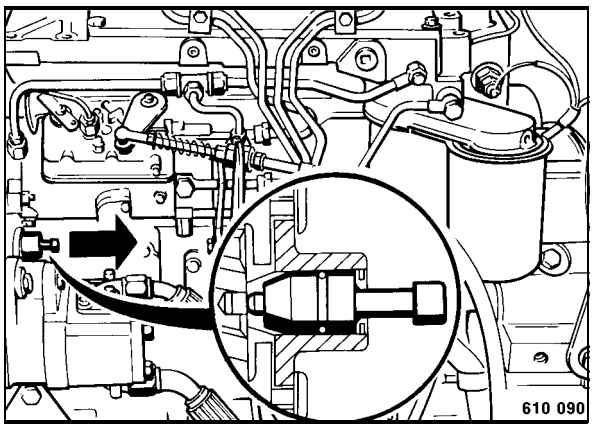


Fig. 119

⚠ Caution

Loosen the pin (Fig. 119) again after the adjustment, as otherwise the engine may be damaged.

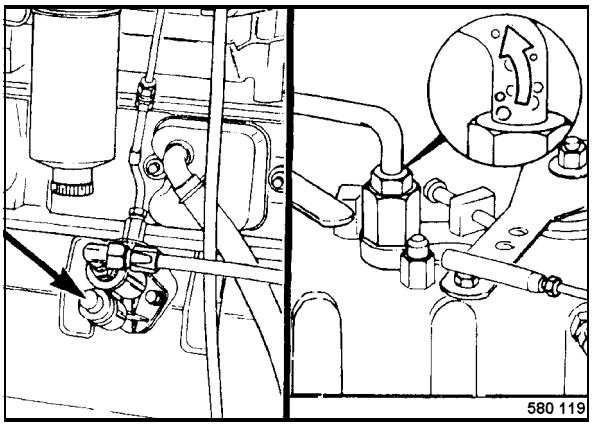


Fig. 142

- Loosen the bleeding screw (Fig. 142).
- Operate the fuel lift pump until the emerging fuel is free of air bubbles.
- Retighten the bleeding screw.

Bleeding the high pressure fuel lines

⚠ Danger

High pressure can damage the skin. Do not bleed when the engine is hot - fire hazard.

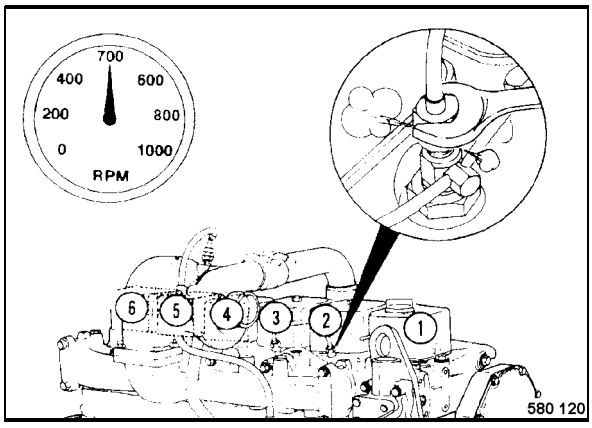


Fig. 143

- Loosen the fuel line slightly on the injection nozzle (Fig. 143).
- Crank the engine with the starter to force the air out.
- Start the engine and run it at idling speed.
- Bleed all lines, one after the other, until the engine runs regularly.

5.44 Changing the tires

⚠ Danger

Danger of accident!

Observe all safety notes for the lifting of loads.

- Place a jack (min. 5 t bearing capacity) under the rear frame and jack the machine up so that the wheel can turn freely.
- Unscrew the wheel nuts and take the wheel off.

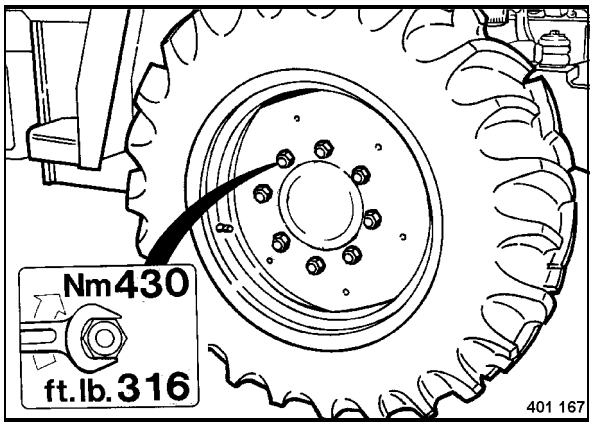


Fig. 144

- Attach the new wheel (Fig. 144) and tighten the wheel nuts crosswise with a torque of 430 Nm (316 ft. lb.)anziehen.
- Check the tire pressure, see technical data.