Engine

- Perkins 4-cylinder Diesel engine
- Output 35.7 kW / 49 HP at 2600 rpm
- Type 404 D – 22 water-cooled
- Capacity 2216 cm^3

Hydraulic system

- Driving hydraulics
  Flow rate 72.8 l/min
  Working pressure 450 bar
- Working hydraulics
  Flow rate 49 l/min
  Primary pressure, working pressure 210 bar

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Overlap	Adjust valve play
Cylinder 4	1 and 2
Cylinder 2	5 and 6
Cylinder 1	7 and 8
Cylinder 3	3 and 4

Requirements

Ensure the following:

- The operator's platform is tilted (see operator's manual "Tilting the operator's platform").

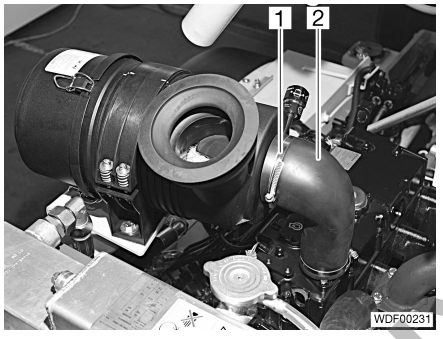


Fig. 2 Connection to the air filter

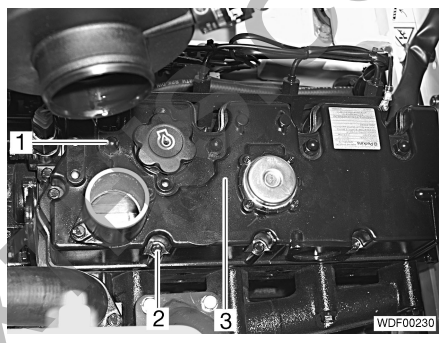


Fig. 3 Cylinder head cover attachment

Removing the cylinder head cover

- Release the 2 clamps (Fig. 2,1).
- Remove the hose (Fig. 2,2).
- Unscrew the 4 nuts (Fig. 3,1).
- Unscrew the 5 screws (Fig. 3,2).
- Remove the cylinder head cover (Fig. 3,3).

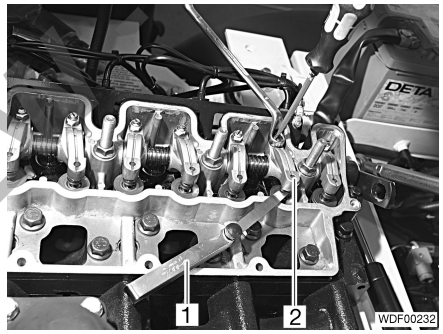


Fig. 4 Valve 7

Checking and adjusting the valve play

- Push the feeler gauge (Fig. 4,1) under the tipping lever (Fig. 4,2).
- If necessary, hold the nut with a suitable wring wrench and adjust the valve play with a screwdriver.

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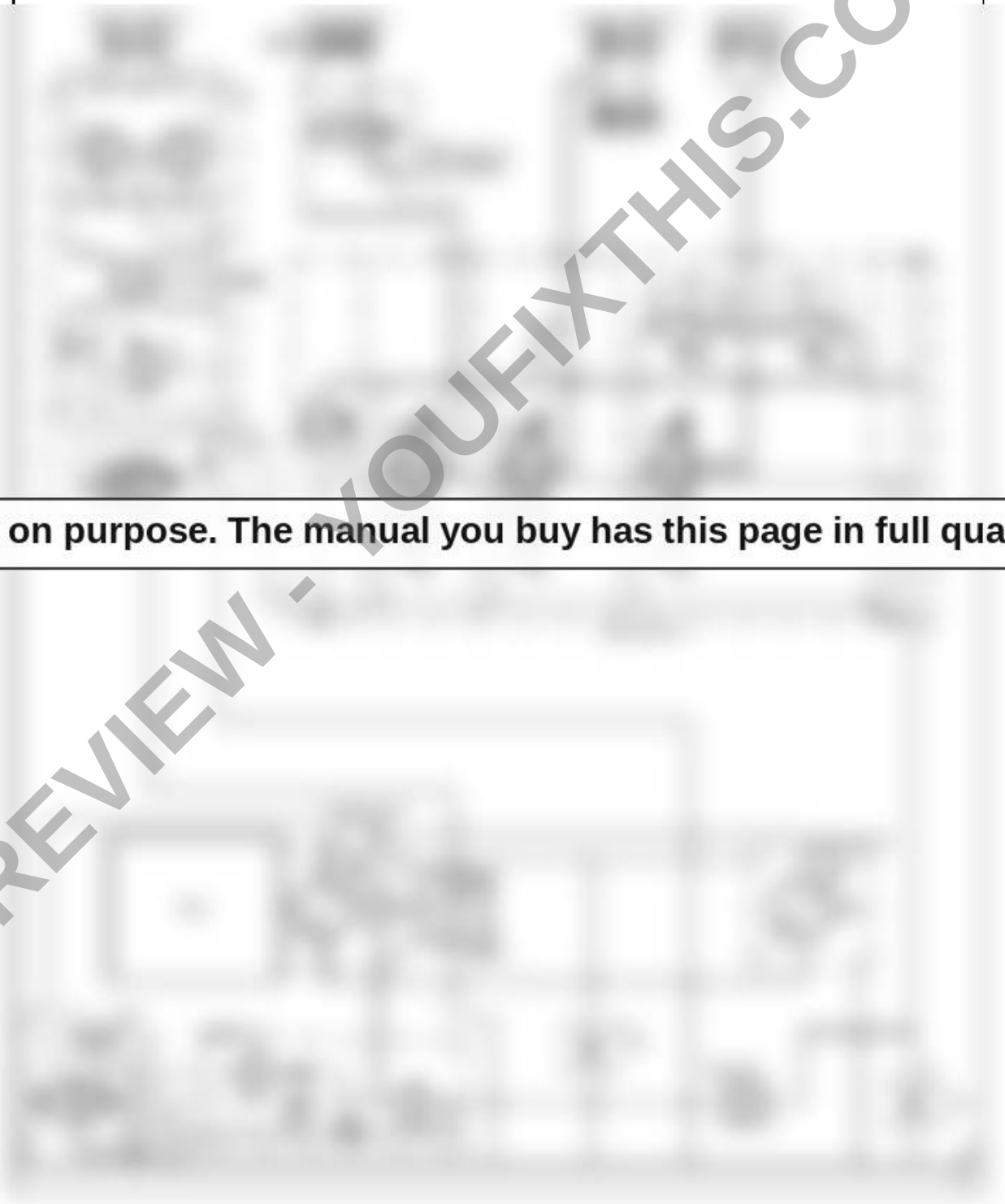
Hydraulic Schematic 1770

Date: 15.05.09

WEIDEMANN
34519 Diemelsee - Flechtdorf
Tel.: 05633/609-0
Fax: 05633/609-666

A4	Locking Cylinder	V6	Check valve 5 bar
A21	Steering Cylinder	V7	Check valve 1 bar
A22	Tip Cylinder	V22	Control block
A23	Lifting Cylinder	V30	2/2 directional valve
M4	Variable motor A6VM55	Z7	Combifilter
P7	Variable pumpe A4VG28	Z18	Cooler
P9	Pump 19ccm	Z15	Tank
S4	Steering pump OSPF 160LS/OLSA80		

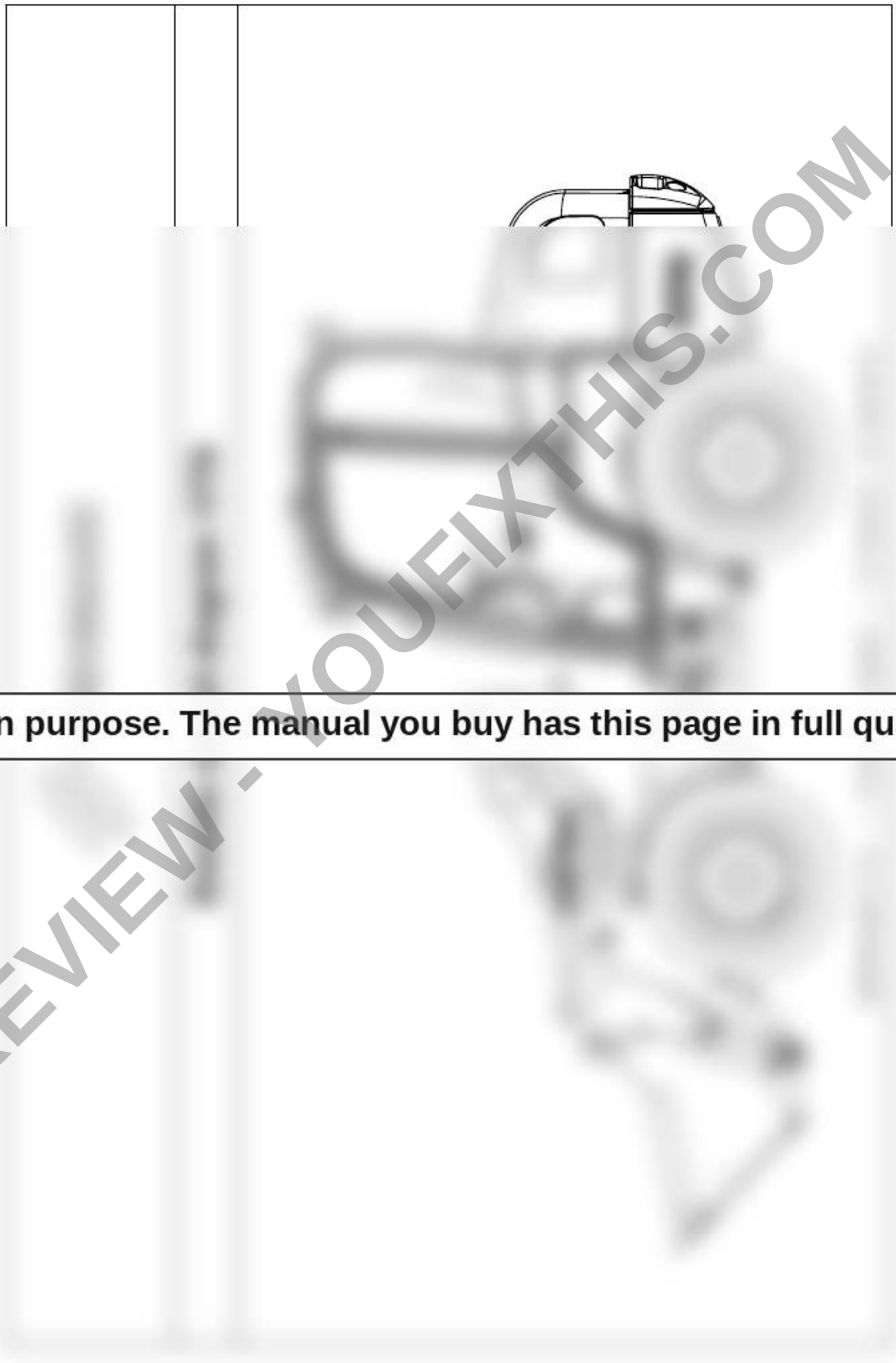
A	Drive units
M	Drive motors
P	Pumps
S	Signal transmitter
V	Valves
Z	Other parts



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Part 1 Safety

1 Repair work (complete vehicle) 1-7

2 Engine 1-9

3 Hydraulic system 1-11

4 Drive and axles 1-13

5 Brake system 1-15

6 Vehicle frame and load arm 1-17

7 Electrical system 1-19

Part 2 Technical data, testing equipment and special tools

1 Technical data 2-7

2 Filling quantities 2-9

3 Tightening torques 2-11

4 Pressure values 2-13

5 Flow rates 2-15

6 Safety stickers 2-17

7 Testing equipment 2-23
7.1 Test pressure gauge 2-23
7.2 Flow meter 2-23
7.3 Test pump 2-24

8 Special tools 2-25
8.1 Insertion tool 2-25
8.2 Sealing plate (2 x) 2-25
8.3 Expulsion and driving sleeves 2-25
8.4 Driving bolts 2-26
8.5 Electrical contact key 2-27
8.6 Generator tester 2-27
8.7 Half-shells and pull-off fixture 2-28

9 Hose book 2-29

Part 3 Inspections, maintenance work and troubleshooting

1 Complete vehicle 3-7
1.1 Inspection log 3-7

2 Engine 3-9
2.1 Checking and adjusting the valve play 3-9
2.2 Inspecting the exhaust system for leaks 3-11
2.3 Checking the radiator installation 3-12
2.4 Inspect the radiator for leaks 3-13
2.5 Troubleshooting on the engine 3-14

3 Hydraulic system 3-17
3.1 Checking and adjusting the starting speed 3-17
3.2 Checking and adjusting the inching pedal 3-17
3.3 Checking and adjusting the pressure cut-off 3-18
3.4 Adjusting the driving speed 3-19
3.5 Checking the variable displacement pump supply pressure 3-20
3.6 Checking the variable displacement pump high pressure 3-21
3.7 Checking the variable displacement pump positioning pressure 3-23
3.8 Checking and adjusting the control commencement of the variable displacement motor 3-24
3.9 Testing the steering hydraulics 3-25
3.10 Checking the gear pump 3-27
3.11 Checking the control valve function 3-29
3.12 Troubleshooting on the hydraulic system 3-30

4 Drive and axles 3-33
4.1 Inspecting the differential lock 3-33
4.2 Checking the water filling of the wheels 3-34
4.3 Troubleshooting on the drive 3-35

5 Vehicle frame and load arm 3-37
5.1 Checking and adjusting the curling to load and dumping stops 3-37

6 Cab 3-39
6.1 Checking the heater 3-39
6.2 Troubleshooting in the cab 3-40

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This part of the repair manual contains special safety instructions relating to the loader's individual assemblies.

Warning notices

Warning notices are identified by a symbol, and differ in terms of the type and severity of the hazard described. The various types are shown below.



▶ **DANGER**

Identifies a hazard that will result in death or serious, irreversible injury if it is not prevented.

Follow the instructions in order to prevent the hazard.



▶ **WARNING**

Identifies a hazard that can result in death or serious, irreversible injury if it is not prevented.

Follow the instructions in order to prevent the hazard.



▶ **CAUTION**

Identifies a hazard that can result in minor reversible injury.

Follow the instructions in order to prevent the hazard.



▷ Identifies possible damage to the loader or to other property.

Notices

The following notices point out important items of information:



▷ Identifies a special item of information that is required for effective and efficient working.



▷ Identifies an environmental notice.

Do not start working until you have read and understood all safety instructions.

Sequence

The sequence of the described work is binding. Keep to the defined sequence in order to avoid hazards.

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Abbreviations and units

%	Percent
A	High-pressure connection on the variable displacement pump
as req.	As required
B	High-pressure connection on the variable displacement pump
bar	Unit of pressure

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Safety instructions for working on the vehicle frame and load arm

- Fit the support provided for the lift frame before commencing work on the raised lift frame, so that the lift frame does not descend suddenly and unintentionally. This fixture must conform to ISO 10533.
- When carrying out repair work in the articulation crush zone, always block the articulated link with the articulation frame lock.
- Remove the block after completing the repair work.

Welding work

- Welding work may only be done by persons with the necessary training.
- Containers that contain or have contained materials that are combustible, promote combustion, are explosive or can produce harmful vapor, gas, mist or dust during welding work: Only authorized persons under the supervision of a competent expert may carry out welding work on these containers. Always consult the manufacturer's Service Department if you have any problems or queries.
- Disconnect the battery before commencing welding work (see "Disconnecting and connecting the battery/changing the battery" in the operator's manual).
- Protect bare terminals and connections against short circuits!
- Attach the welding grounding terminal in the immediate vicinity of the welding location. The welding current must not pass through gears, bolts, articulated joints or hydraulic cylinders.
- Connect the battery after welding (see "Disconnecting and connecting the battery/changing the battery" in the operator's manual).

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7.3 Test pump

Purpose

The test pump checks the pressure resistance of the cooling system and that it is free of leaks.

Configuration

- Pressure range up to 1.6 bar
- Hand pump
- Connection for cooler opening



Fig. 7 Test pump

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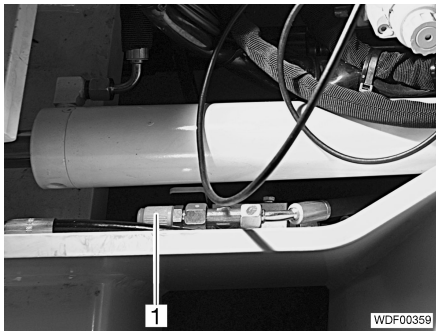


Fig. 17 Test connection

- Connect the test pressure gauge to the test connection (Fig. 17,1) of the solenoid valve.
- Tilt the operator's platform back (see operator's manual "Tilting the operator's platform").
- Start the engine.
- Read off the supply pressure "G" on the test pressure gauge (setpoint value: 25 bar).
- Switch off the engine.
- If the supply pressure does not reach the setpoint value, the supply pump is probably faulty.

If a fault is found:

Remedying the problem

- Inspect the supply pressure valve.
- Inspect the supply pump and replace it if necessary (see the variable displacement pump manufacturer's repair instructions).

▷ If the supply pump shows no visible signs of wear, the variable displacement pump may be seriously damaged.

Replace the variable displacement pump or have it repaired.

Final work

- Remove the inspection tools.
- Tilt the operator's platform back (see operator's manual "Tilting the operator's platform").

3.6 Checking the variable displacement pump high pressure

▷ Pay attention to the "Safety instructions for working on the hydraulic system" (see Part 1 "Safety").

Requirements

Ensure the following:

- The operator's platform is tilted (see operator's manual "Tilting the operator's platform").

Spare parts and auxiliary equipment

Designation	Quantity
Test pressure gauge 0 ... 600 bar	2

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2.5 Exhaust system

2.5.1 Replacing the flue

▶ **WARNING**

Risk of injury by moving parts.

Do not open the engine hood when the engine is running, unless this manual expressly instructs you to do so.

Requirements

Ensure the following:

- The loader is secured (see operator's manual "Securing the loader").
- The engine hood is open (see operator's manual "Opening the engine hood").

Spare parts and auxiliary equipment

Designation	Quantity
Flue	1

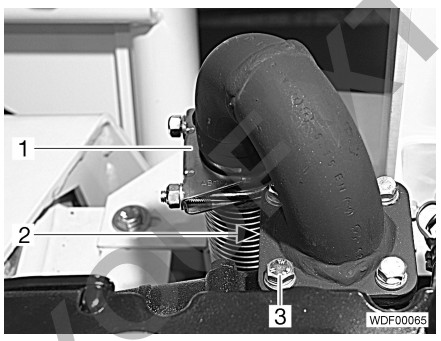


Fig. 48 Flue

Removing the flue

- Undo the bolt clamp (Fig. 48,1).
- Unscrew the 4 screws (Fig. 48,3).
- Remove the flue and seal (Fig. 48,2).
- If necessary, secure the seal loosely to the engine with 4 screws in order to prevent loss of the seal.
- Close off the uncovered openings (e.g. with cloths).

Installing the flue

- Uncover the openings if necessary (e.g. remove the cloths).
- Place the flue with the seal (Fig. 48,2) onto the engine.
- Tighten the 4 screws (Fig. 48,3) with spring lock washers and disks.
- Tighten the bolt clamp (Fig. 48,1).

Final work

- Close the engine hood.

2.5.2 Replacing the muffler and flexi-pipe

▶ **WARNING**

Hot parts can cause burns.

Never work on the exhaust when it is at operating temperature.

Allow the exhaust to cool down or wear protective gloves.

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Fig. 107 Bearing seal

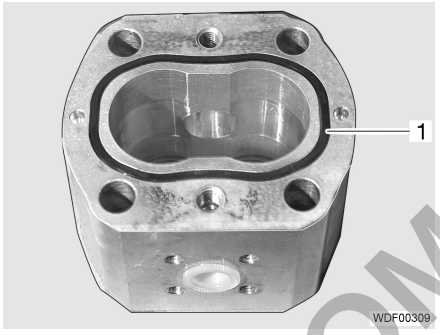


Fig. 108 Housing seal

Replacing the seals

- Remove 1 support ring (Fig. 107,2) on each of the two bearings.
- Remove 1 spectacle seal (Fig. 107,1) on each of the two bearings.
- Clean the bearing.
- Insert 1 new support ring into each of the two bearings.
- Insert 1 new spectacle seal into each of the two bearings.
- Remove 1 seal (Fig. 108,1) on each side of the housing.
- Clean the housing.
- Insert 1 new seal on each side of the housing.

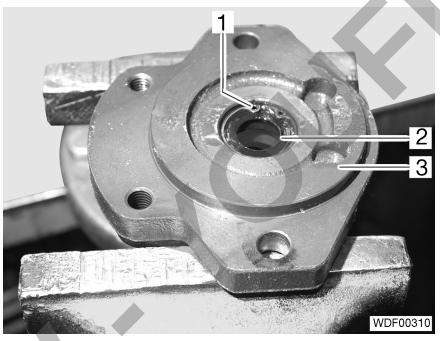


Fig. 109 Annular shaft seal

Replacing the annular shaft seal

- Remove the locking ring (Fig. 109,1).
- Drive out the shaft seal (Fig. 109,2) outwards.
- Clean the flange (Fig. 109,3) thoroughly.
- Drive in the new annular shaft seal from the outside sufficiently far so that the locking ring can engage.
- Insert the locking ring.

Assembling the gear pump

- Place the inner bearing (Fig. 106,4) onto the flange.
- Insert the gear wheel (Fig. 106,1) through the bearing and the flange.
- Insert the gear wheel (Fig. 106,3) into the inner bearing.
- Connect the outer bearing (Fig. 106,2) onto the gear wheels.
- Pull the housing (Fig. 105,3) over the internal components.
- Place the cover (Fig. 105,2) onto the housing.
- Screw in the 4 screws (Fig. 105,1) with washers and tighten.

Final work

- Install the gear pump (see the section 3.5.1 "Replacing the gear pump").

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4.3 Rear axle

4.3.1 Removing the rear axle

▷ Pay attention to the "Safety instructions for working on the hydraulic system" (see Part 1 "Safety").

▷ Rest the axle on a suitable support (e. g. a jack with a pallet) to prevent it from tipping over and to prevent damage.

Requirements

Ensure the following:

- The parking brake has been applied and the loader secured against rolling away (e.g. with chocks).
- The articulated link is blocked (see operator's manual "Blocking the articulated link").
- The hydraulic system is depressurized (see the section 3.1.1 "Depressurizing the hydraulic system").
- The drive shaft has been removed on the rear axle (see the section 4.1 "Replacing the drive shaft").
- The lift frame has not been fully lowered.

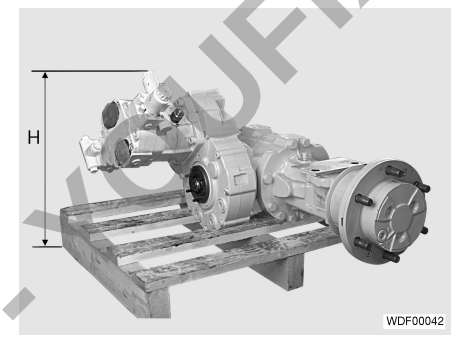


Fig. 181 Rear axle with support



Fig. 182 Rear carriage support

Relieving the load on the rear axle

- Raise the rear carriage to the height of the rear axle with the support (Fig. 181, H).
- Support the rear carriage with suitable chocks to prevent it from tipping over.
- If necessary, secure the loader with suitable lifting gear.
- Remove the wheels (see operator's manual "Changing wheels").

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- Unscrew 1 nut (Fig. 253,1) on both rear attachments.
- Carefully lift off the operator's platform upwards with lifting gear.

6.4.2 Installing the operator's platform



▷ Pay attention to the "Safety instructions for working on the hydraulic system" (see Part 1 "Safety").

Spare parts and auxiliary equipment

Designation	Quantity
Step plate	1
Driver's canopy	1
or ROPS bar	1



Fig. 254 Rear attachment (left)

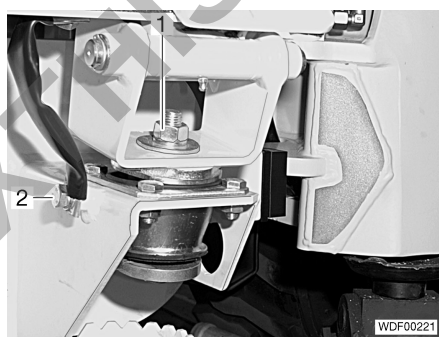


Fig. 255 Front attachment (right)

Placing the operator's platform into position

- Secure the operator's platform with suitable lifting gear (e.g. a crane).
- Carefully place the operator's platform onto the rear carriage from above so that the attachments are lined up.
- On each of the two rear attachments, screw 1 nut (Fig. 254,1) onto the bolt with a spring lock washer and disk.
- On each of the two front attachments, screw 1 nut (Fig. 255,1) onto the bolt with a spring lock washer and disk.
- Tighten the 4 nuts.
- Screw in and tighten the screw (Fig. 255,2) on the grounding strip with a spring lock washer and disk.

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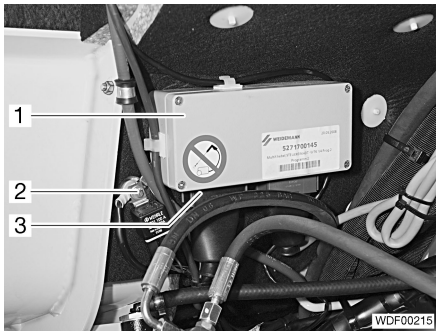


Fig. 329 Control unit

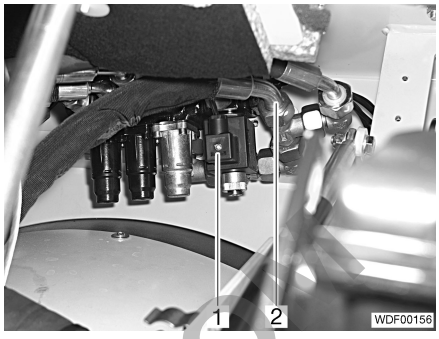


Fig. 330 Underside of the control valve

Connecting lines

- Insert the bolt (Fig. 329,2) with the spring lock washer and disk through the relay and grounding cable, screw it in and tighten it.
- Plug in the plug (Fig. 329,3) on the control unit (Fig. 329,1).
- Screw the hydraulic lines (Fig. 330,2) onto the connection on the control valve and tighten.

Final work

- Adjust the parking brake (see the section 5.2.1 "Replacing the Bowden cable of the parking brake").
- Vent the service brake (see the section 3.4.4 "Replacing the brake fluid").
- Vent the heater system (see operator's manual "Checking the coolant level/refilling the coolant")
- Tilt the operator's platform back (see operator's manual "Tilting the operator's platform").

7.3.3 Replacing the windshield wiper arms

Spare parts and auxiliary equipment

Designation	Quantity
Windshield wiper arm	1
or windshield wiper arm, parallel	1

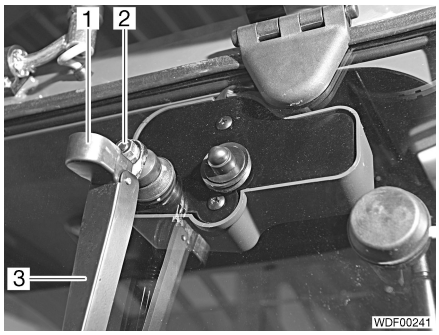


Fig. 331 Rear windshield wiper arm

Removing the rear windshield wiper arm

- Mark the position of the windshield wiper arm.
- Fold the cap (Fig. 331,1) away from the fastening.
- Undo the nut (Fig. 331,2).
- Press the windshield wiper arm (Fig. 331,3) against the nut with a lever.
- Remove the nut and windshield wiper arm.

Fitting the rear windshield wiper arm

- Fit a new windshield wiper arm onto the bolt.
- Screw the nut (Fig. 331,2) onto the bolt and tighten it.

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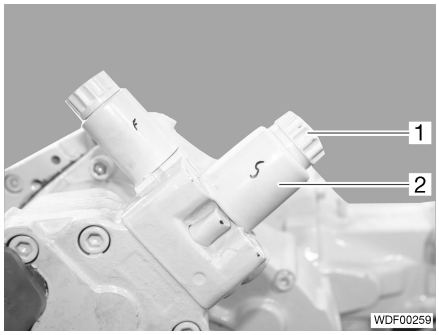


Fig. 394 Coil attachment



Fig. 395 Drives

Removing the drives

- Unscrew the 2 nuts (Fig. 394,1).
- Pull off the 2 coils (Fig. 394,2).
- Unscrew the 2 drives (Fig. 395,1).

Installing the drives

- Screw in and tighten the 2 drives (Fig. 395,1).
- Connect the 2 coils (Fig. 394,2) onto the drives.
- Screw the 2 nuts (Fig. 394,1), each with an O-ring, onto the drives and tighten hand-tight.

Final work

- Install the variable displacement motor (see the section 3.2.4 "Replacing the variable displacement motor").

8.3.3 Replacing the solenoid valve of the variable displacement pump



▷ Pay attention to the "Safety instructions for working on the hydraulic system" (see Part 1 "Safety").

Requirements

Ensure the following:

- The hydraulic system is depressurized (see the section 3.1.1 "Depressurizing the hydraulic system").
- The operator's platform is tilted (see operator's manual "Tilting the operator's platform").

Spare parts and auxiliary equipment

Designation	Quantity
Solenoid valve	1

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