2 Technical data

2.1 Chassis

Sturdy steel sheet chassis, rubber-mounted engine

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3.3 Maintenance plan (overview)

Work description

For servicing and maintenance on the attachment, please refer to the operation and maintenance manual of the attachment manufacturer.

	Maintenance plan/operating hours (o/h)								
	Maintenance (once a day)	50 o/h service	Every 250 o/h	Every 500 o/h	Every 1000 o/h once a year	Every 1500 o/h	Every 2000 o/h	Customer	Wacker Neuson service center
Fluid and filter changes ( ):									
Perform the following oil and filter changes (check oil levels after test run):									
• Engine oil[1]		●		●					●
• Engine oil filter[2]		●		●					●
• Fuel filter[3]		●		●					●
• Air filter element as indicated by indicator light – *see chapter 3.11 Air filter* on page 3-30		●			●			●	
• Coolant							●		●
• Hydraulic oil filter insert [4]		●		●					●
• Hydraulic oil					●				●
• Hydraulic oil reservoir breather					●				●
• Drain condensation water from hydraulic oil reservoir				●					●
• Water separator					●				●
• Cabin air filter					●			●	●
• Air conditioning refrigerant									●
• Air conditioning compressor oil [5]						●			●
• Drive gearbox oil [6]				●	●				●
• Swivel unit gearbox oil [7]				●	●				●
Inspection work ( ):									
Check the following material. Refill if necessary:									
• Engine oil	●							●	
• Engine coolant	●							●	
• Fuel	●							●	
• Hydraulic oil	●							●	
• Drive gearbox oil		●						●	
• Swivel unit gearbox oil		●						●	
Check radiator for engine and hydraulic oil for dirt. Clean if necessary	●							●	

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Changing engine oil

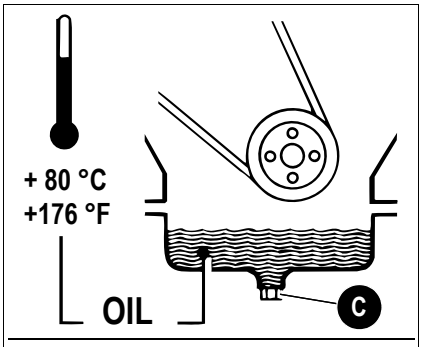


Fig. 1: Optimum engine oil temperature

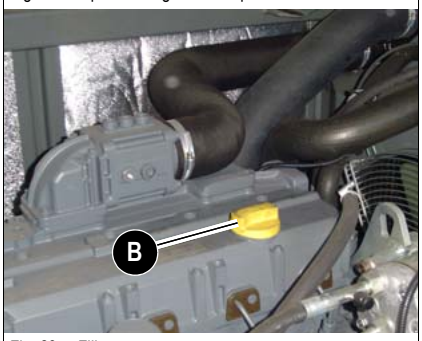


Fig. 23: Filler cap

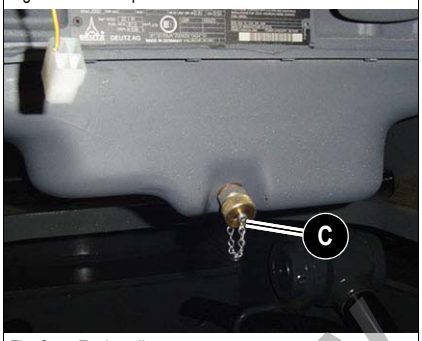


Fig. 2: Engine oil sump



Fig. 1: Checking the oil level

Danger!

Caution when draining hot engine oil –

Burn hazard!

☞ *Wear protective gloves*

☞ *Use suitable tools*

Environment!

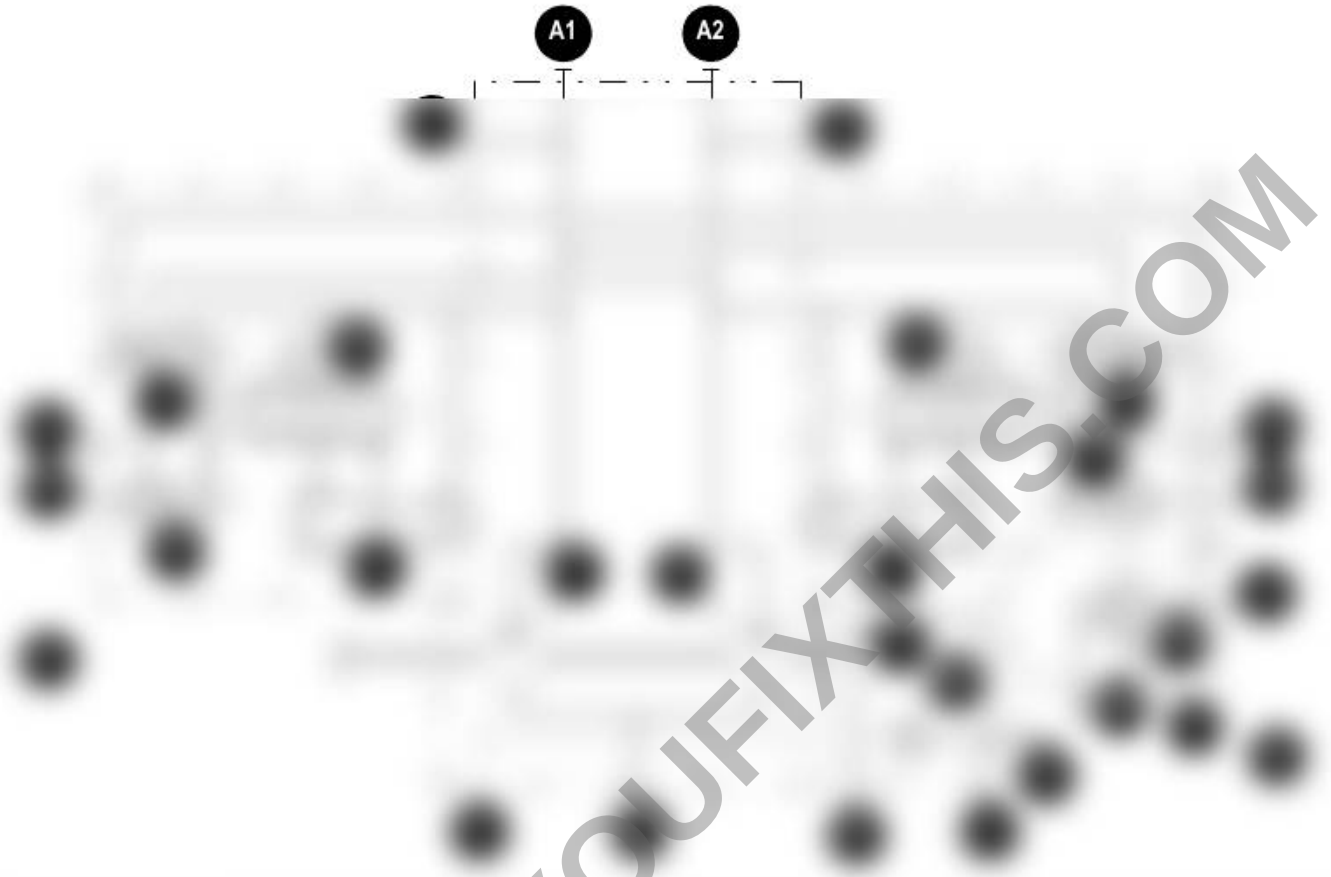
Use a suitable container to collect the engine oil as it drains and dispose of it in an environmentally friendly manner!

- Park the machine on level ground
- Let the engine run until it reaches its operating temperature (oil temperature about 80 °C/176 °F)
- Stop the engine
- Place a container under the opening to collect the oil as it drains
- Open filler cap **B**
  ➥ The oil drains more quickly
- Unscrew oil drain plug **C** on the oil sump
- Completely drain the oil
- Retighten the oil drain plug with a (new) sealing ring
  ➥ Tightening torque 55 Nm (41 ft lbs)
- Add engine oil – *see Adding engine oil* on page 3-22
- Checking the oil level – *see Checking the oil level* on page 3-21
- Completely remove all oil spills from the engine
- Start the engine and let it warm up at low speed for about 5 minutes
- Stop the engine
- Wait about 3 minutes until all the oil has run into the oil sump
- Check the oil level again
- Add oil if necessary and check again

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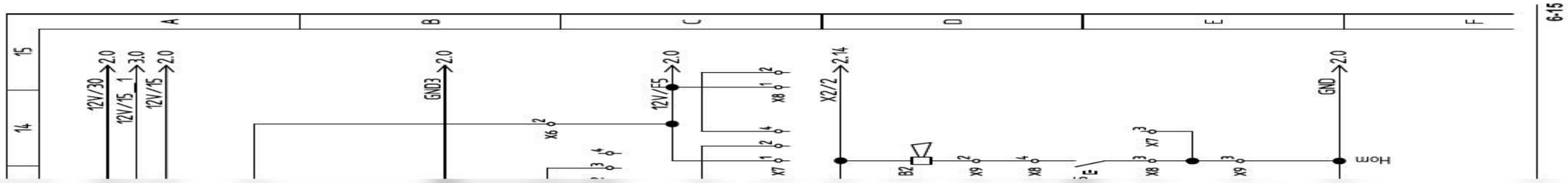
Diagram



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2.11 Model-specific tightening torques

14504	Nm (ft.lbs.)	
Live ring	---	---
Track roller	---	---



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11 Malfunctions

The information given in this chapter is provided for maintenance personnel, for fast and reliable detection of malfunctions and their appropriate repair.

Repairs must be performed by a Wacker Neuson service center only.

11.1 Engine malfunctions

Problem	Possible causes	See chapter/page
Engine does not start or is not easy to start	Wrong SAE grade of engine lubrication oil	*3.1 „Fluids and lubricants”*/3-2
	Fuel grade does not comply with specifications	*3.1 „Fluids and lubricants”*/3-2
	Malfunctioning or empty battery	*3.21 „Battery”*/3-54
	Loose or oxidized cable connections in starter circuit	
	Malfunctioning starter, or pinion does not engage	
	Wrong valve clearance	*4.5 „Checking and adjusting valve clearance”*/4-6
	Malfunctioning fuel injector	*4.8 „Checking the fuel injectors”*/4-9
	Malfunctioning cutoff solenoid	
	Malfunctioning fuse	
Engine starts, but does not run smoothly or faultless	Fuel grade does not comply with specifications	*3.1 „Fluids and lubricants”*/3-2
	Dirty fuel filter	*„Replacing the fuel filter”*/3-19
	Wrong valve clearance	*4.5 „Checking and adjusting valve clearance”*/4-6
	Air in fuel system	*„Bleeding the fuel system”*/3-16
	Injection line leaks	
	Malfunctioning fuel injector	*4.8 „Checking the fuel injectors”*/4-9
Engine overheats. Temperature warning system responds	Oil level too low	*„Checking the oil level”*/3-21
	Oil level too high	*„Checking the oil level”*/3-21
	Dirty air filter	*3.11 „Air filter”*/3-30
	Dirty radiator fins	
	Coolant level too low	
	Cooling system leaks	
	Malfunctioning fan, torn or loose V-belt	*3.13 „V-belt”*/3-35
	Resistance in cooling system too high, flow capacity too low	
	Malfunctioning fuel injector	*4.8 „Checking the fuel injectors”*/4-9

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Threaded fittings with various seals for hydraulic applications Light execution					
Thread	Straight pipe fitting with thread and screwed plug			Non-return valve with elastic seal	Identification aid outside Ø
	Sealing washer	Elastic seal	O-ring		
	Nm (ft lbs)	**Nm (ft lbs)**	**Nm (ft lbs)**	**Nm (ft lbs)**	**mm (")**
M10X1.0	9 (7)	18 (13)	15 (11)	18 (13)	10 (0.4)
M12X1.5	20 (15)	25 (18)	25 (18)	25 (18)	12 (0.5)
M14X1.5	35 (26)	45 (33)	35 (26)	35 (26)	14 (0.6)
M16X1.5	45 (33)	55 (41)	40 (30)	50 (37)	16 (0.6)
M18X1.5	55 (41)	70 (52)	45 (33)	70 (52)	18 (0.7)
M22X1.5	65 (48)	125 (92)	60 (44)	125 (92)	22 (0.9)
M27X2.0	90 (66)	180 (133)	100 (74)	145 (107)	27 (1.0)
M33X2.0	150 (111)	310 (229)	160 (118)	210 (155)	33 (1.3)
M42X2.0	240 (177)	450 (332)	210 (155)	360 (266)	42 (1.7)
M48X2.0	290 (214)	540 (398)	260 (192)	540 (398)	48 (1.9)
G1/8A	9 (7)	18 (13)	15 (11)	18 (13)	9.73 (0.4)
G1/4A	35 (26)	35 (26)	30 (22)	35 (26)	13.16 (0.5)
G3/8A	45 (33)	70 (52)	45 (33)	50 (37)	16.66(0.7)
G1/2A	65 (48)	90 (66)	55 (41)	65 (48)	20.96 (0.8)
G3/4A	90 (66)	180 (133)	100(74)	140 (103)	26.44 (1.0)
G1A	150 (111)	310 (229)	160 (118)	190 (140)	33.25 (1.3)
G1 1/4A	240 (177)	450 (332)	210 (155)	360 (266)	41.91 (1.6)
G1 1/2A	290 (214)	540 (398)	360 (266)	540 (398)	47.80 (1.9)

Torque tolerance: – 10 %; countermaterial: steel/aluminum

Threaded fittings with various seals for hydraulic applications Heavy execution					
Thread	Straight pipe fitting with thread and screwed plug			Non-return valve with elastic seal	Identification aid outside Ø
	Sealing washer	Elastic seal	O-ring		
	Nm (ft lbs)	**Nm (ft lbs)**	**Nm (ft lbs)**	**Nm (ft lbs)**	**mm (")**
M12X1.5	20 (15)	35 (26)	35 (26)	35 (26)	12 (0.5)
M14X1.5	35 (26)	55 (41)	45 (33)	45 (33)	14 (0.6)
M16X1.5	45 (33)	70 (52)	55 (41)	55 (41)	16 (0.6)
M18X1.5	55 (41)	90 (66)	70 (52)	70 (52)	18 (0.7)
M20X1.5	55 (41)	125 (92)	80 (59)	100 (74)	22 (0.8)
M22X1.5	65 (48)	135 (100)	100 (74)	125 (92)	27 (1.0)
M27X2.0	90 (66)	180 (133)	170 (125)	135 (100)	12 (0.5)
M33X2.0	150 (111)	310 (229)	310 (229)	210 (155)	33 (1.3)
M42X2.0	240 (177)	450 (332)	330 (243)	360 (266)	42 (1.7)
M48X2.0	290 (214)	540 (398)	420 (310)	540 (398)	48 (1.9)
G1/8A	35 (26)	55(41)	45 (33)	45 (33)	13.16 (0.5)
G1/4A	45 (33)	80 (59)	60 (44)	60 (44)	16.66 (0.7)
G3/8A	65 (48)	115 (85)	75 (55)	100 (74)	20.96 (0.8)
G1/2A	90 (66)	180 (133)	170 (125)	145 (107)	26.44 (1.0)
G3/4A	150 (111)	310 (229)	310 (229)	260 (192)	33.25 (1.3)
G1A	240 (177)	450 (332)	330 (243)	360 (266)	41.91 (1.6)
G1 1/4A	290 (214)	540 (398)	420 (310)	540 (398)	47.80 (1.9)

Torque tolerance: – 10 %; countermaterial: steel/aluminum

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Checking/filling up coolant

Danger!

Never open the coolant reservoir and never drain coolant if the engine is warm since the cooling system is under high pressure –

Burn hazard!

☞ *Wait at least 15 minutes after stopping the engine!*

☞ *Wear protective gloves and clothing.*

☞ *Open filler cap B to the first notch and release the pressure.*

☞ *Ensure that the coolant temperature is sufficiently low so you can touch the radiator with your hands.*

Danger!

Antifreeze is flammable and poisonous.

Accident hazard!

☞ *Keep away from flames.*

☞ *Avoid eye contact with antifreeze.*

- If antifreeze does come into contact with the eyes:

➥ Immediately rinse with clean water and seek medical assistance!

Checking the coolant level

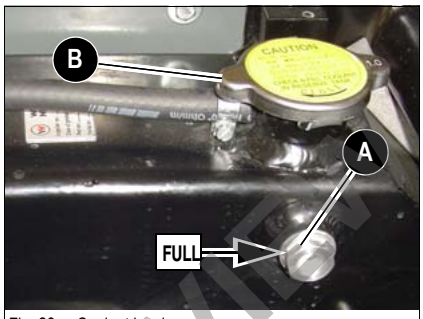


Fig. 29: Coolant level

- Park the machine on level ground
- Stop the engine
- Raise the control lever base
- Remove the key and carry it with you
- Let the engine and the coolant cool down
- Open the engine cover
- Check the coolant level on sight glass **A**
- If the coolant level is below the **FULL** mark:

➥ Add coolant

Notice!

Check the coolant level once a day.
We recommend checking it before starting the engine.

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3.24 General maintenance

Cleaning

Cleaning the machine is divided into 3 separate areas:

- Inside the cabin
- Exterior of the machine
- Engine compartment

The wrong choice of cleaning equipment and agents can impair the operating safety of the machine on the one hand, and on the other undermine the health of the persons in charge of cleaning the machine. It is therefore essential to observe the following instructions.

General instructions for all areas of the machine

Cleaning with washing solvents

- Ensure adequate room ventilation
- Wear suitable protective clothing
- Do not use flammable liquids, such as gasoline or diesel

Cleaning with compressed air

- Work carefully
- Wear safety glasses and protective clothing
- Do not aim the compressed air at the skin or at other people
- Do not use compressed air for cleaning your clothing

Cleaning with a high-pressure cleaner or steam jet

- Electrical components and damping material must be covered and not directly exposed to the jet
- Cover the vent filter on the hydraulic oil reservoir and the filler caps for fuel, hydraulic oil, etc.
- Protect the following components from moisture:
  - Engine
  - Electrical components such as the alternator, etc.
  - Control devices and seals
  - Air intake filters, etc.

Cleaning with volatile and easily flammable anticorrosion agents and sprays

- Ensure adequate room ventilation
- Do not use unprotected lights or open flames
- Do not smoke!

Cleaning the seat belt

- Clean the seat belt (which remains fitted in the machine) with a mild soap solution. Do not use chemical agents as they can destroy the fabric!

Exterior of the machine

The following articles are generally suitable:

- High-pressure cleaner
- Steam jet

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Stabilizer blade pilot valve

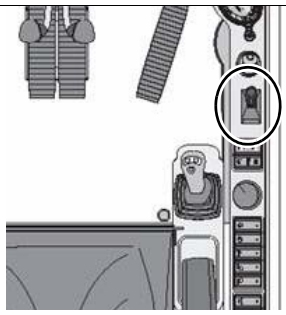
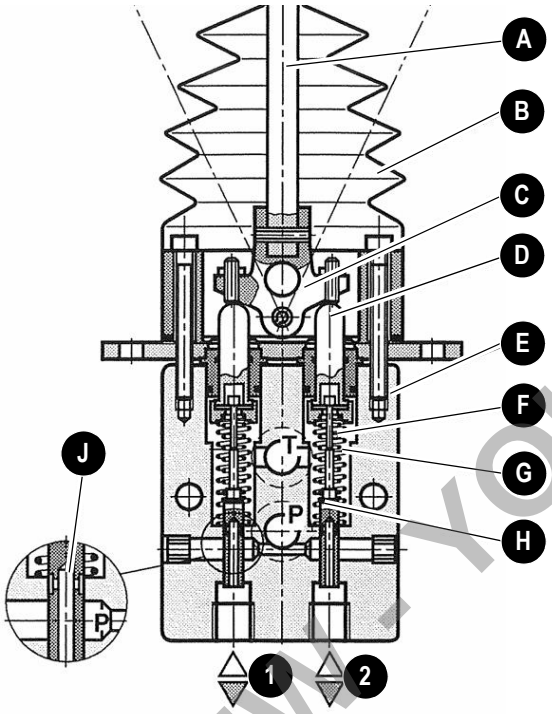
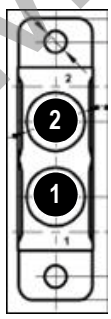


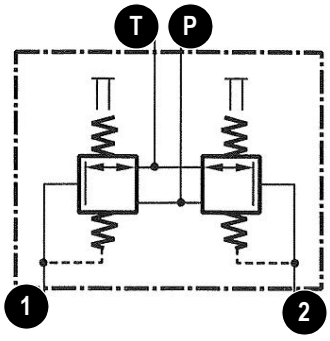
Fig. 31: Stabilizer blade pilot valve

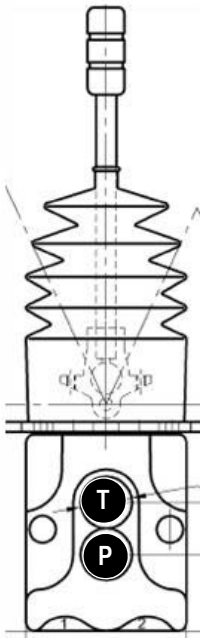
The stabilizer blade pilot valve is located in the instrument panel in the cabin (D2).



Pos.	Designation	Remarks
1	Connection	To control block 13
2	Connection	To control block 13
P	Pressure connection	
T	Reservoir	
A	Control lever	
B	Bellows	
D	Tappet	
E	Housing	
F	Control spring	
G	Reset spring	
H	Control piston	
J	Hole	







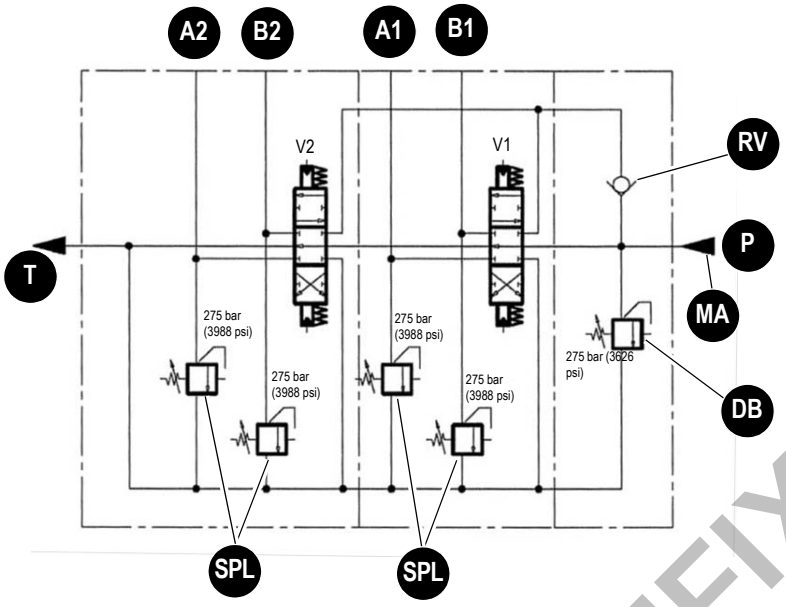
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5.24 3rd control circuit control block/Powertilt

The control block of the 3rd control circuit/Powertilt is located in the valve compartment (A2)

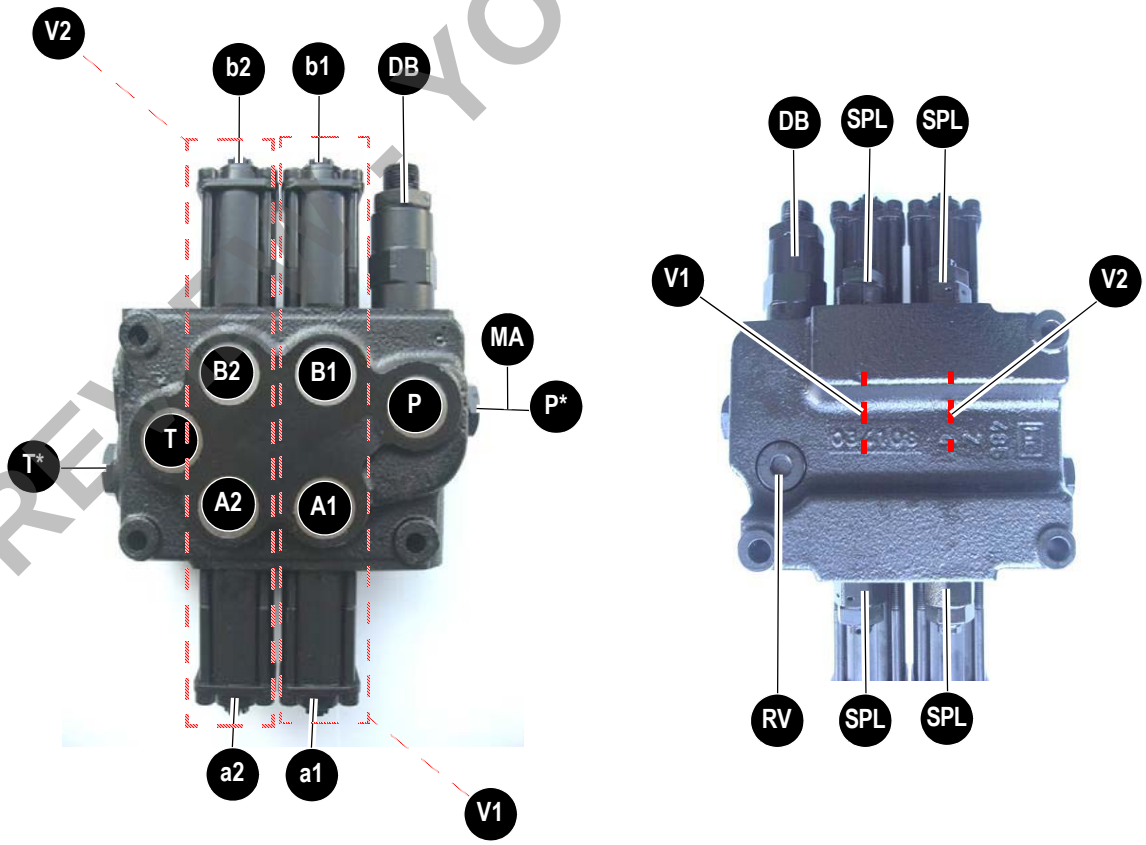
Diagram



Pos.	Designation
DB	Pressure limiting valve
MA	Measurement connection
RV	Non-return valve
SPLV	Secondary pressure limiting valve
V1	Directional valve 1
V2	Directional valve 2

Functions:
V1... 3rd control circuit
V2... Powertilt (optional)

Design



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6.8 Relays in the machine

Relay no.	
K5	Preheating high-current relay
K11	Automatic air conditioning
K34	Time-lag relay for pressure reduction
K47	Working light



Fig. 6: K5 preheating high-current relay

- K5 preheating high-current relay

Installed on partition wall near the engine

– *see chapter 6.17 Wiring diagram (1) version 1* on page 6-15

– *see chapter 6.25 Engine wiring harness A4* on page 6-24

- K11 automatic air conditioning

– *see Connecting plan* on page 8-2

- K34 time-lag relay for pressure reduction

On wiring harness behind side trim of instrument panel

- K47 working lights

On wiring harness behind side trim of instrument panel

– *see chapter 6.29 Switch wiring harness* on page 6-28

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Air conditioning

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Fitting the shaft seal and the bearing

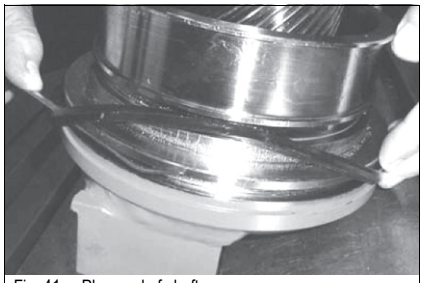


Fig. 41: Plug seal of shaft

☞ *Fit plug seal **A8** on the shaft.*

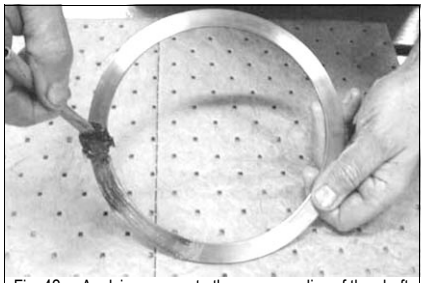


Fig. 42: Applying grease to the pressure disc of the shaft

☞ *Apply a little lithium grease to either side of pressure disc **B5**, and place the pressure disc on shaft **2**.*

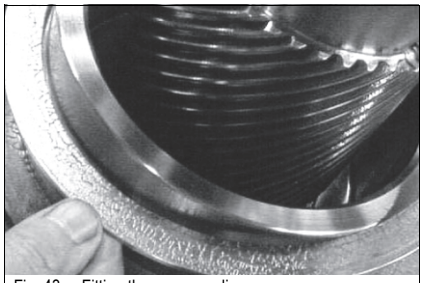


Fig. 43: Fitting the pressure disc

☞ *Install the second pressure seal **A9** with the lip showing inside.*

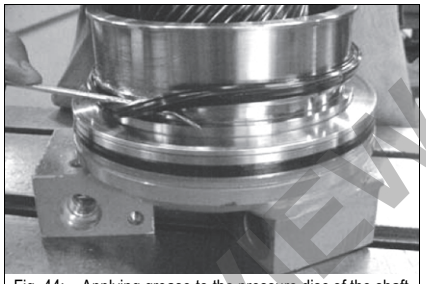


Fig. 44: Applying grease to the pressure disc of the shaft

☞ *Fit wear indicators **B1** and **B2**.*

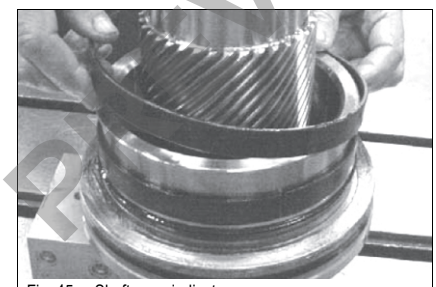


Fig. 45: Shaft wear indicators

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