

temperatures below 0°C

at low temperatures, it will be of advantage to return the vehicle to idle position after stopping the work.

Use a "start pilot" to facilitate starting the engine at low temperatures.

For operation, fill container with starting fuel, open valve. Remove protective cap of filling cylinder and push valve. Close container and push valve.

Simultaneously "start pilot" until the engine is running.

Applied only in filling cylinders which are available at Service Stations. Use original filling cylinders!

Highly inflammable and should not be exposed to temperatures above 50°C for extended periods. For this reason, remove filling cylinder from vehicle in warm season, store in cool surroundings and protect against

MAINTENANCE INSTRUCTIONS

To maintain the operational life of your vehicle and to up-hold your rights to warranty claims, which we deem absolutely necessary, maintenance must be carried out regularly and on time.

Maintenance intervals have been established according to the type of operation. Maintenance can be applied to UNIMOG vehicles which are worked mainly without implements.



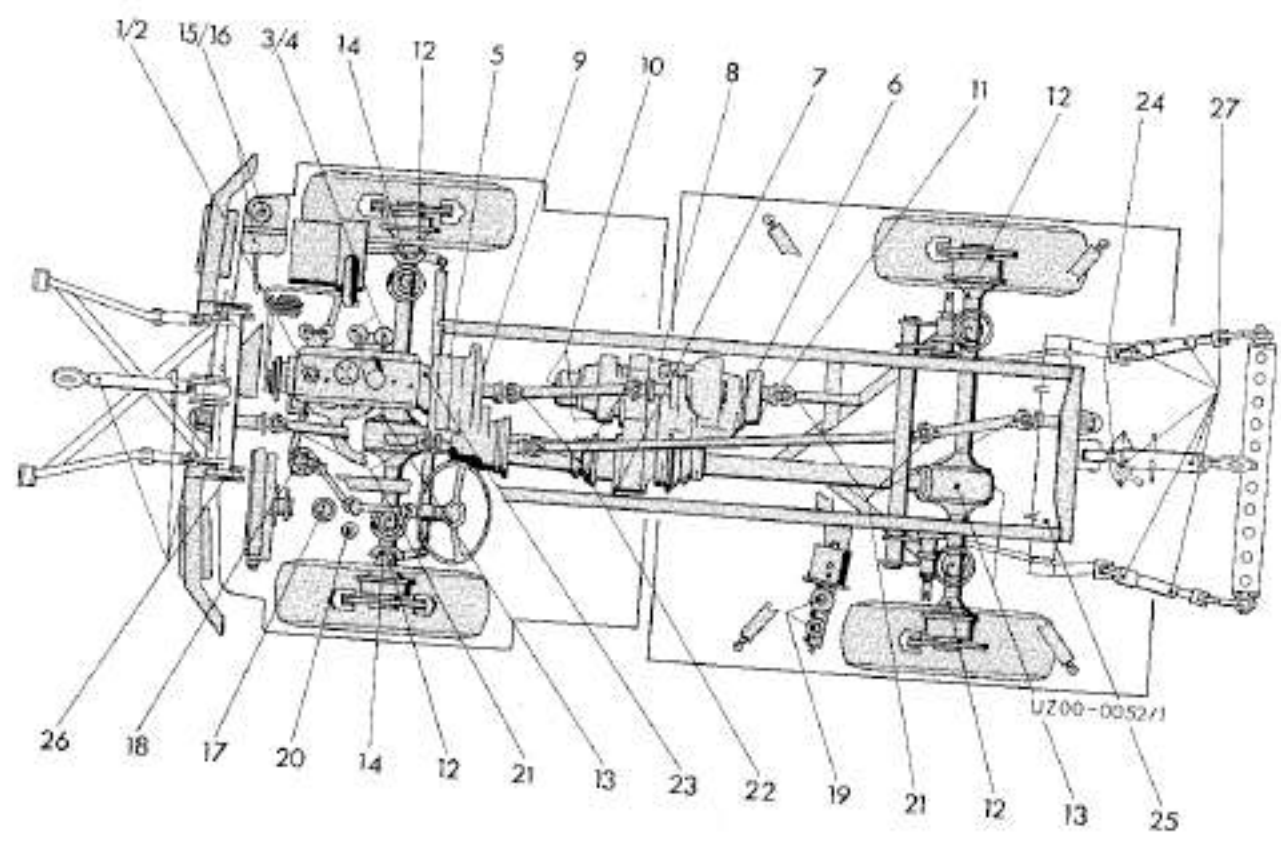
Operating hour counter at front of engine

Perform all maintenance jobs in accordance with specified maintenance intervals.

Maintenance chart			Maintenance intervals		
D	Inspection	Operat. hours	50		
		km	1000		
P	Service	Operat. hours	300	1500	2700
		km	10000	50000	90000
W	Maintenance	Operat. hours	600	1800	3000
		km	20000	60000	100000
P	Service	Operat. hours	900	2100	3300
		km	30000	70000	110000
W + Z	Maintenance plus additional jobs	Operat. hours	1200	2400	3600
		km	40000	80000	120000

This maintenance chart is only for vehicles which have an operating hour counter with red figures (formerly white figures).

LUBRICATION CHART



LUBRICATION

Life point Survey Fig. No.	50		300		600		900		1200		1500		1800		2400		
	D	P	W	P	W	P	W	P	W	P	W	P	W	P	W	Z	
1, 2, 3, 4	•	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
5																	
6, 7, 8	•																
9		○															
10, 11	•																
12, 13																	
14																	
15, 16																	
17, 18	•																
19, 20	•																
21, 22																	
23																	
24																	
25, 26	•																
27	•																

CHECKING AND CLEANING JOBS

- Tighten cylinder head nuts
- Check valve clearance, adjust
- Clean fuel filter and felt filter element, replace if necessary, and vent
- Check V-belt, tighten
- Check wheel nuts for fastening, tighten
- Tighten air compressor and retighten head bolts
- Check brake lining thickness³⁾
- Perform battery service

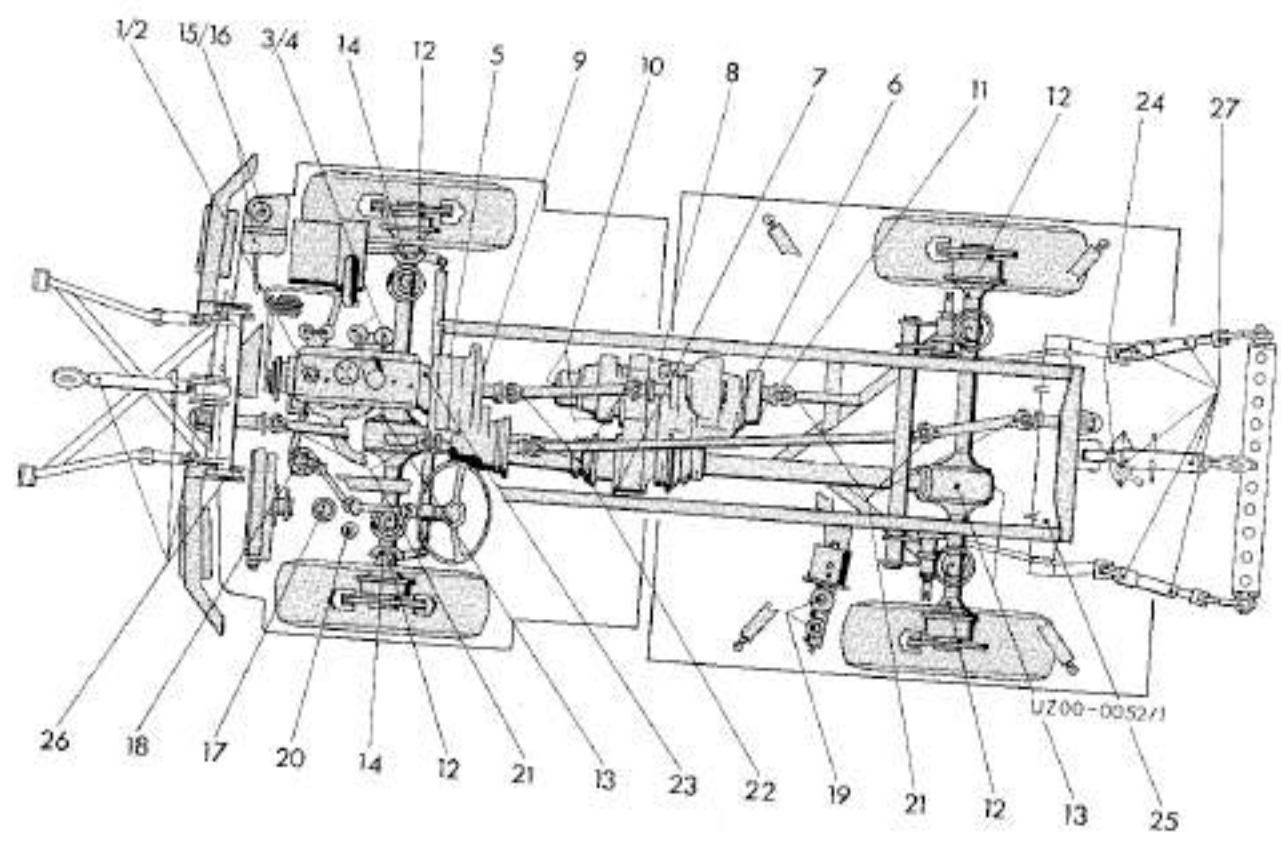
Explanations

- 1) Every 2400 operating hours
 - 2) Every 1800 operating hours
 - 3) visual check, only possible, when wheel removed
- Work to be carried out by authorized workshop only.
 - Work can be carried out by capable customer or driver at end of warranty period.
 - Z Additional work necessary at every second maintenance service (W)

Tilting of cab for maintenance jobs not required

	50	300	600	900	1200	1500	1800	2100	2400
	D	P	W	P	W +Z	P	W	P	W +Z
Tighten cylinder head nuts	•								
Check valve clearance, adjust	•								
Clean fuel filter and felt filter element, replace if necessary, and vent	•	○	○	○	○	○	○	○	○
Check V-belt, tighten	•								
Check wheel nuts for fastening, tighten	•								
Tighten air compressor and retighten head bolts		○	•	○	•	○	•	○	•
Check brake lining thickness ³⁾		○	○	○	○	○	○	○	○
Perform battery service									

LUBRICATION CHART

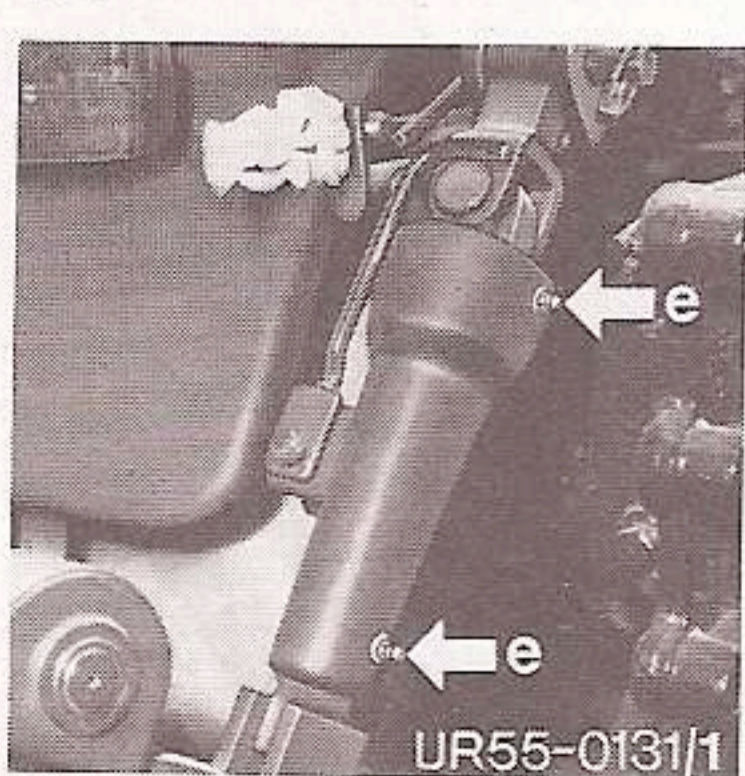
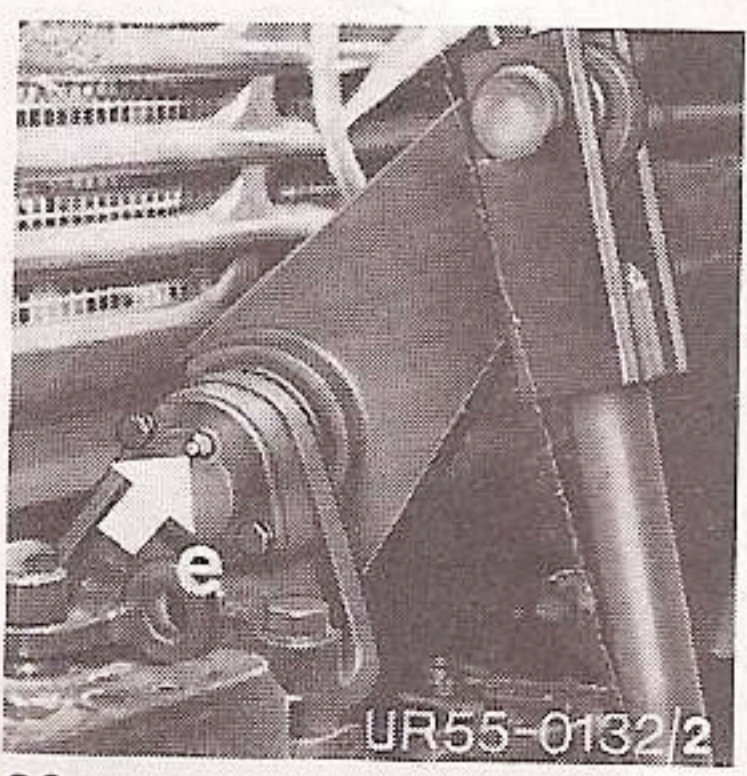
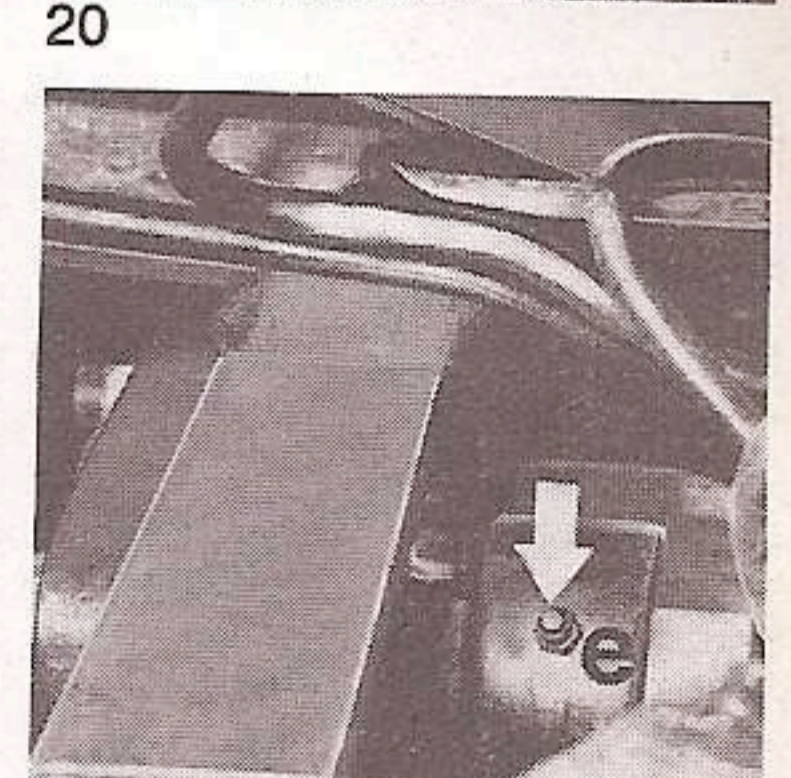
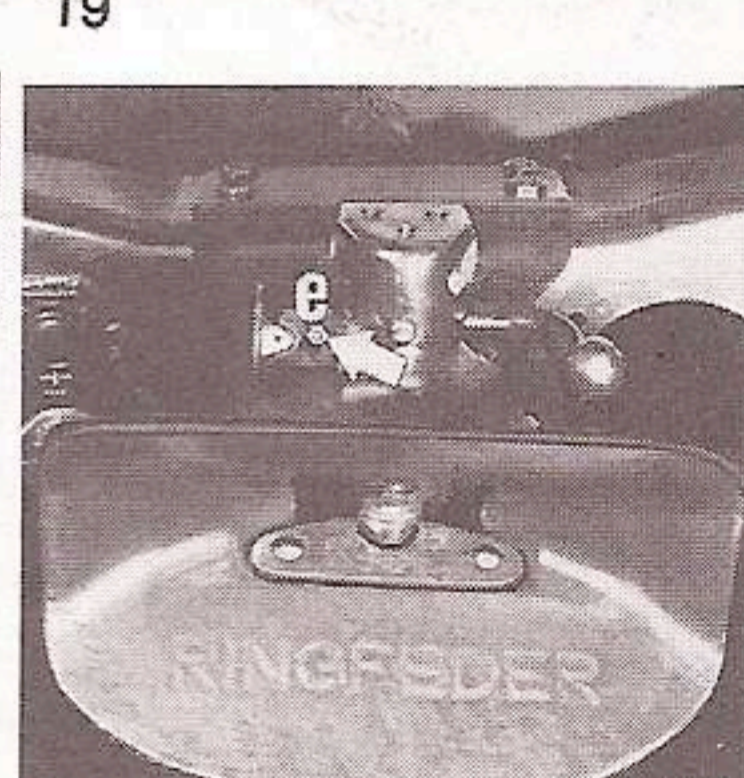
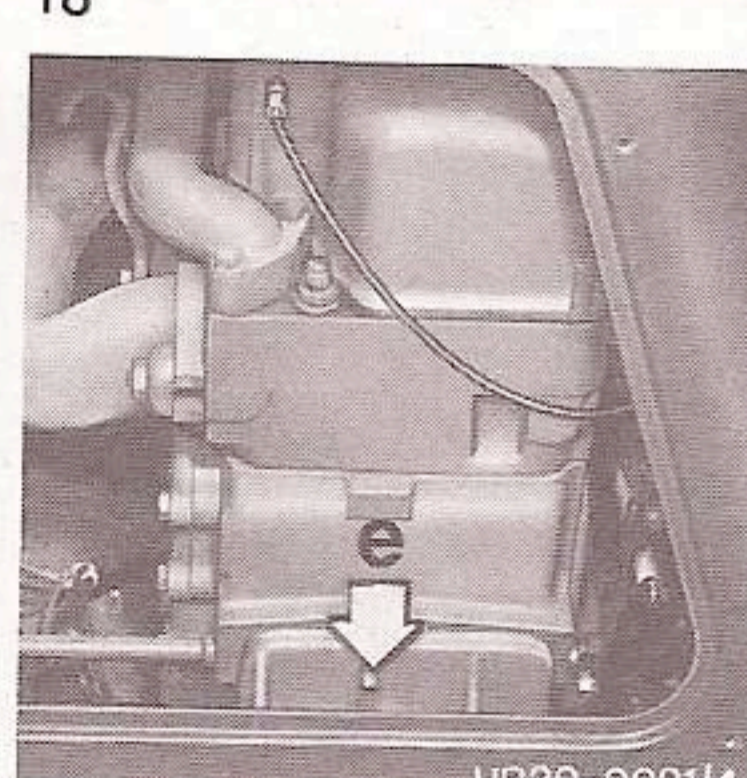
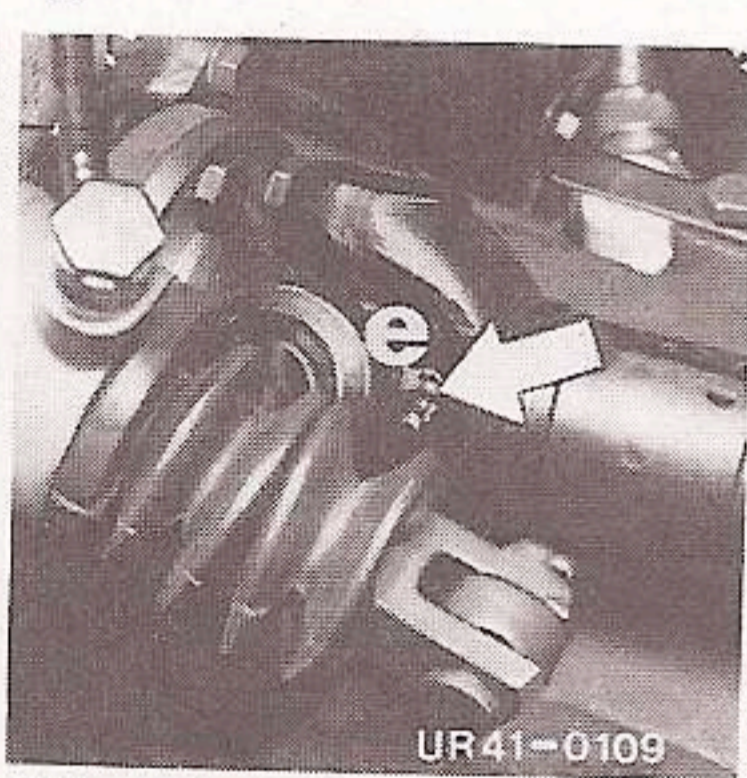
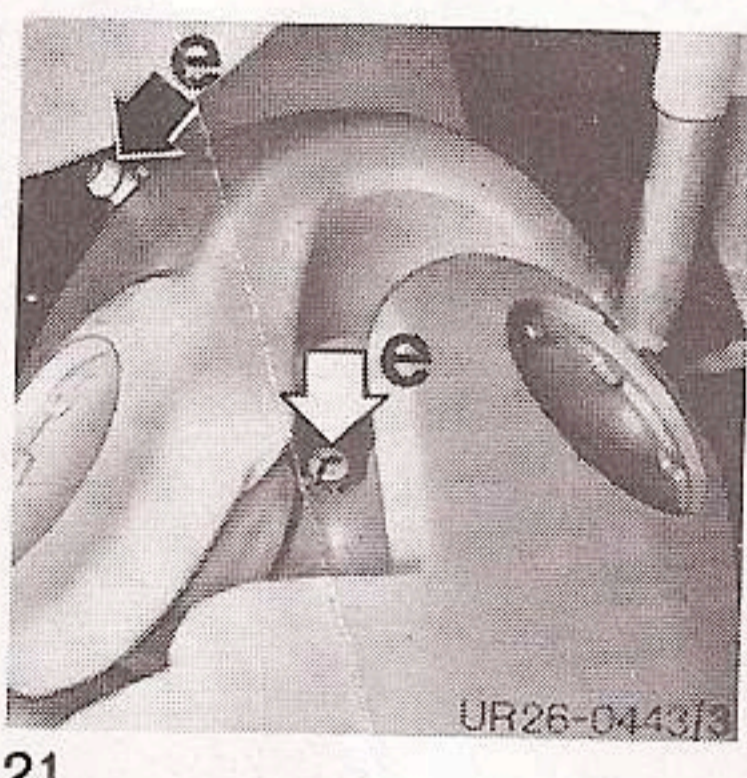
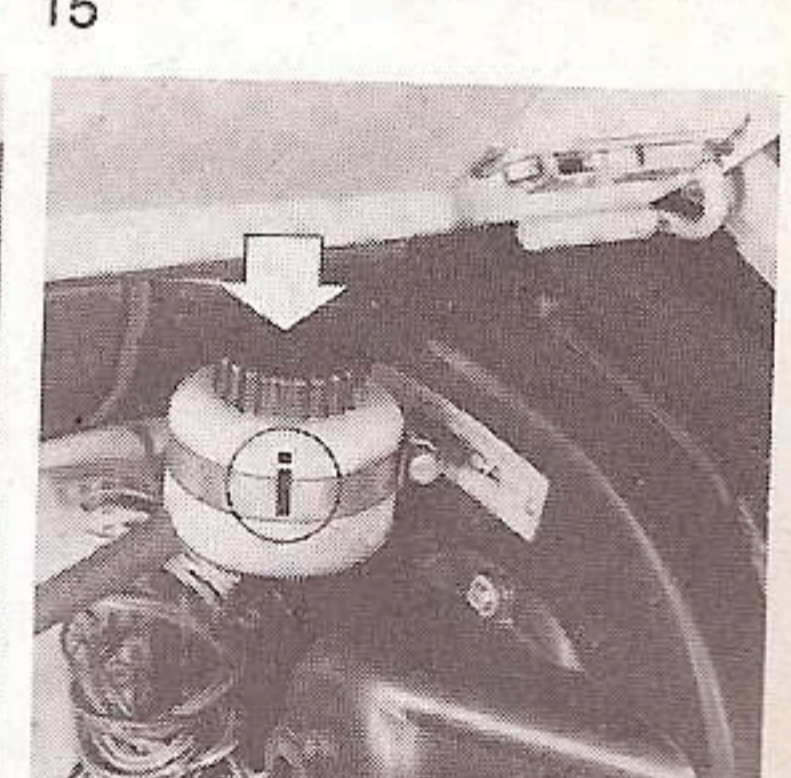
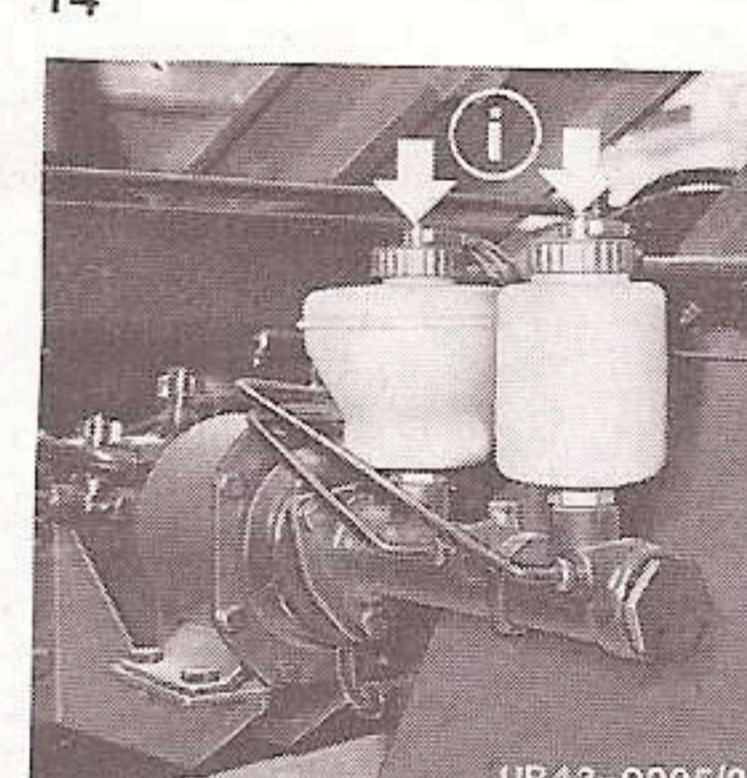
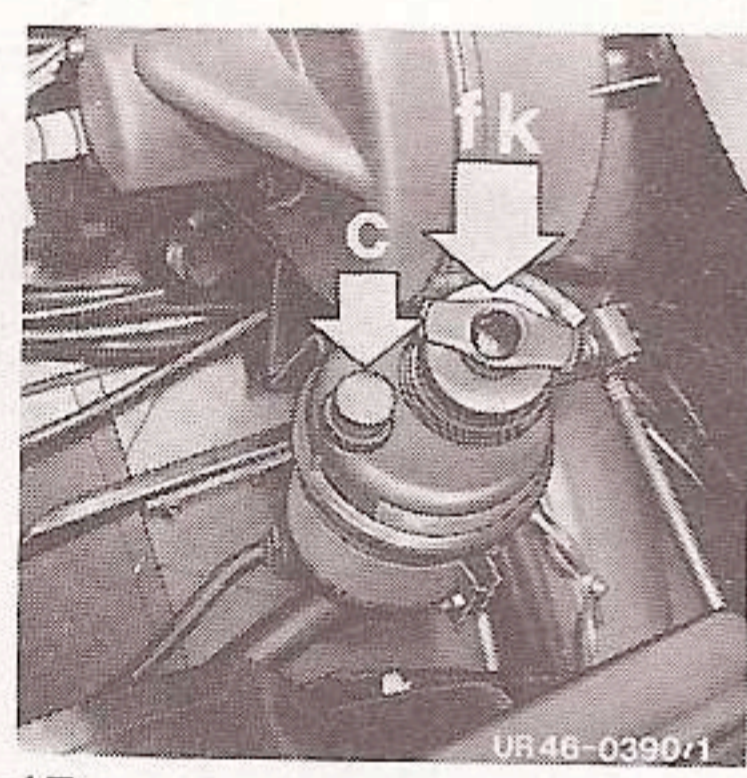
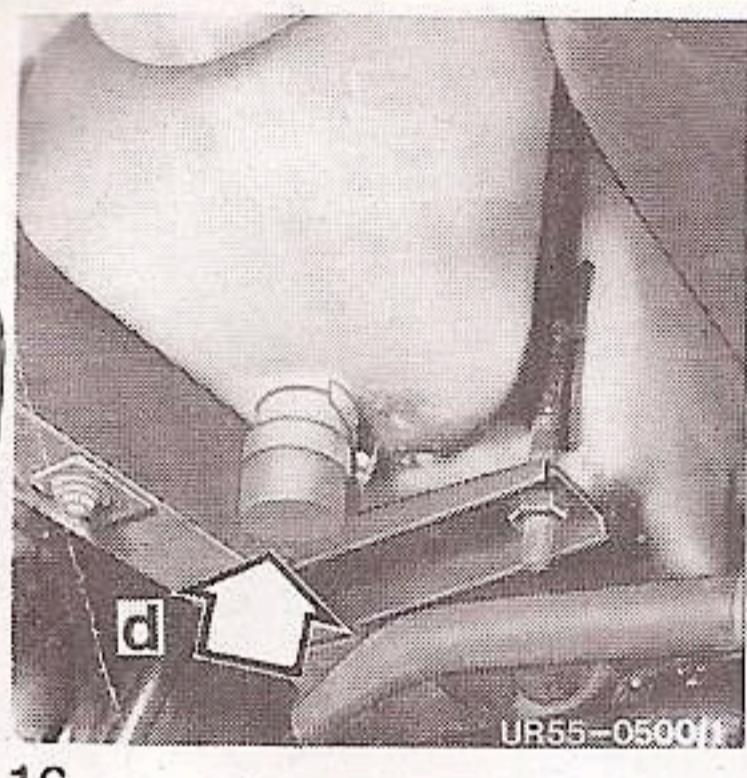
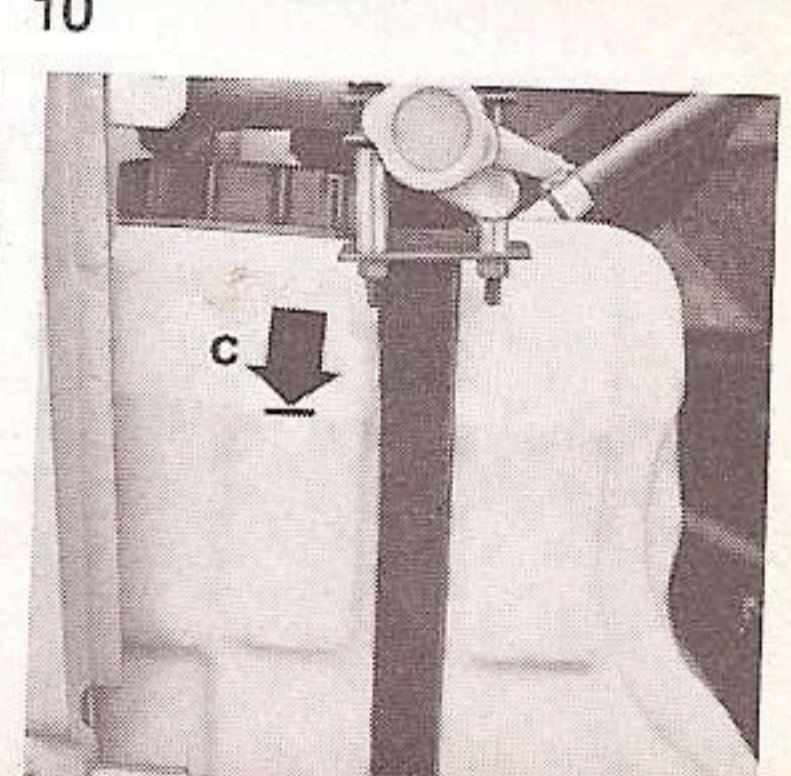
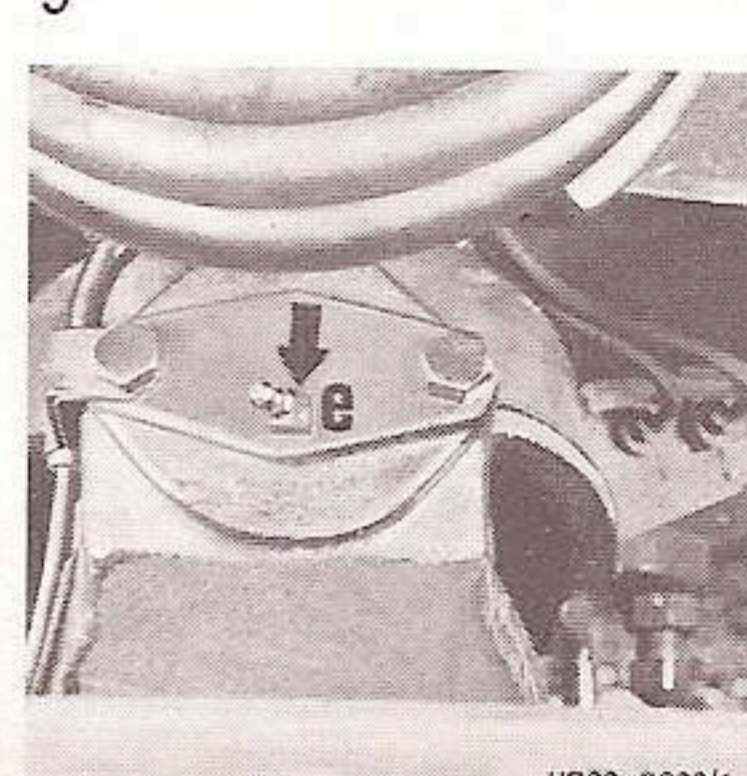
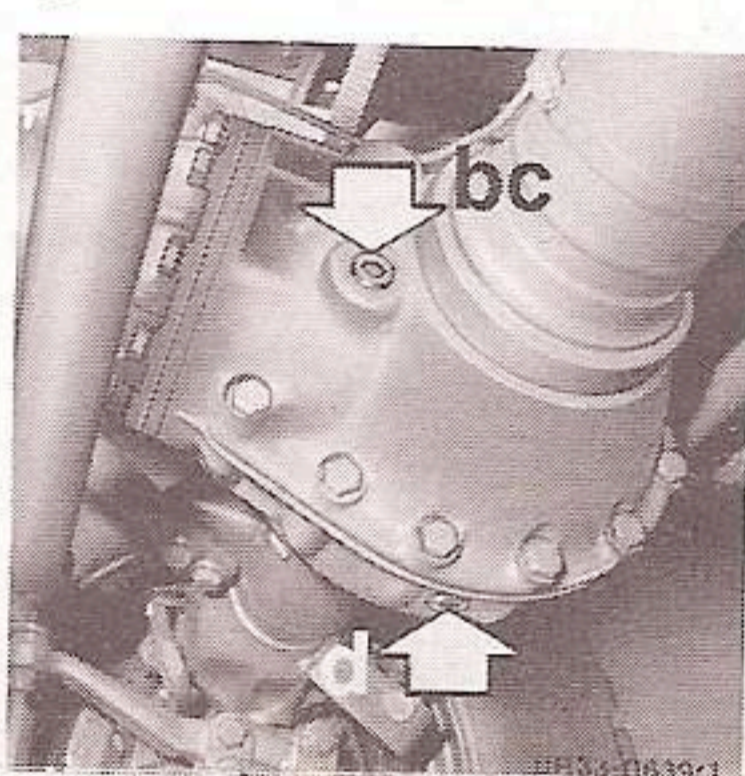
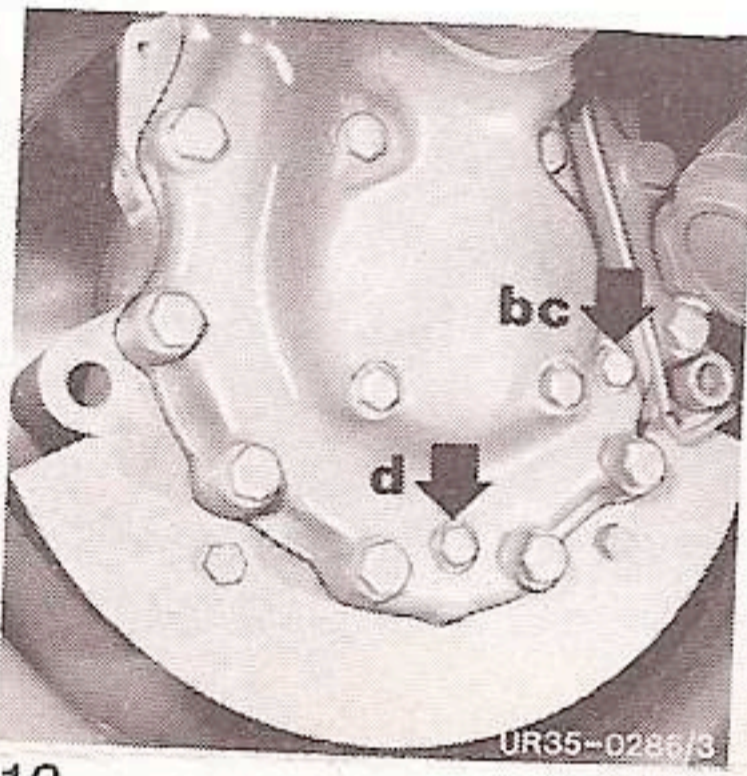
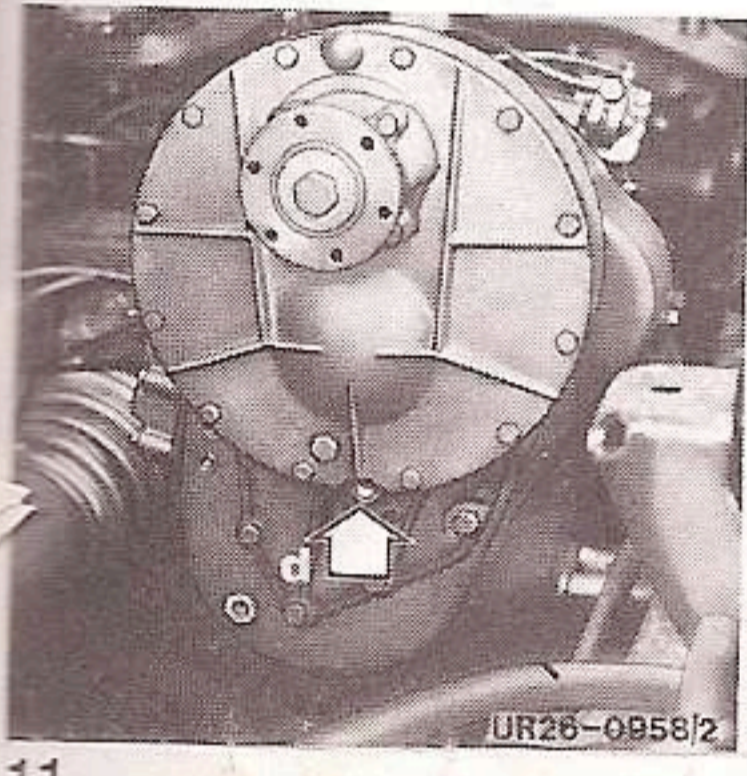
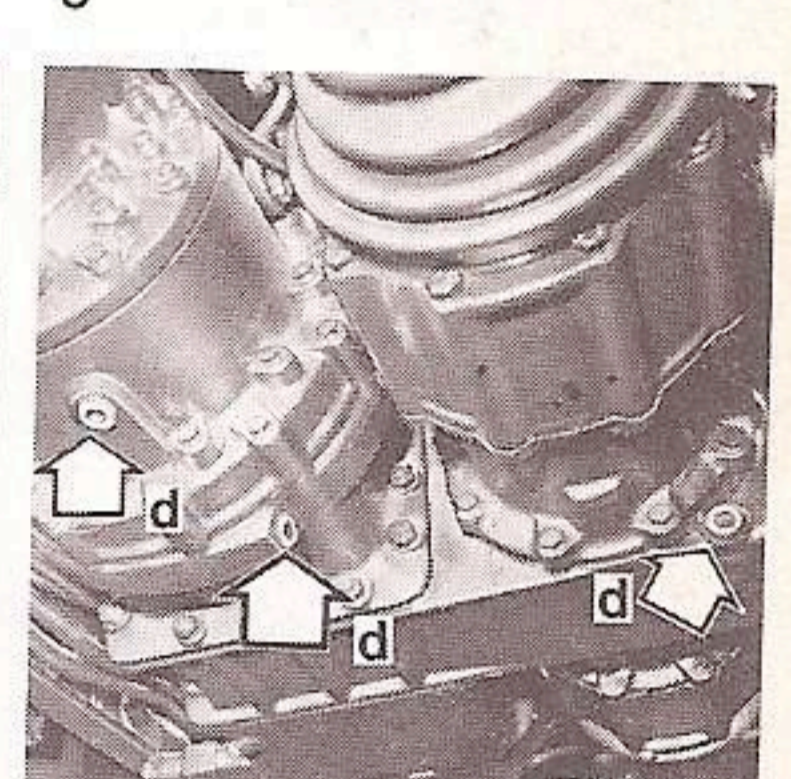
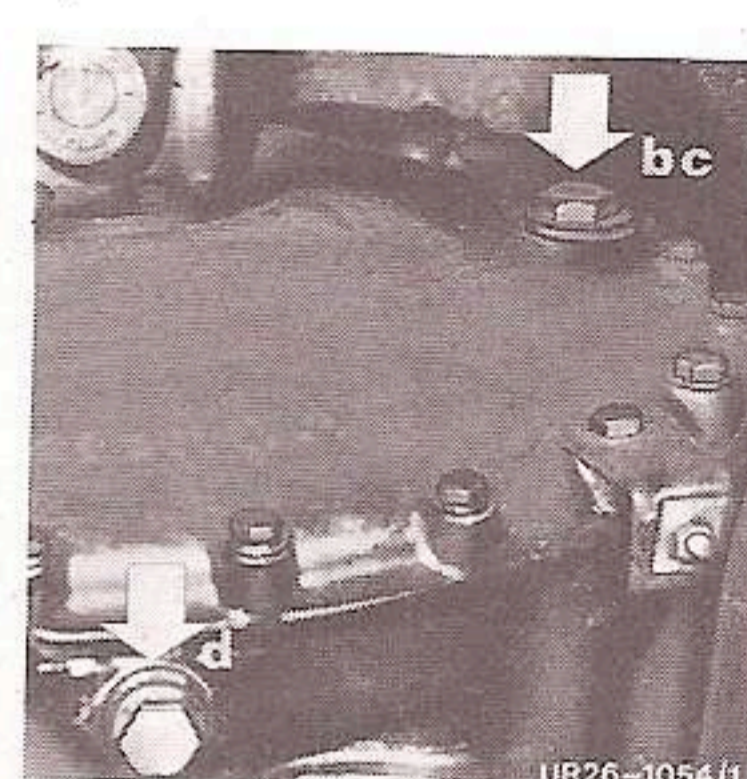
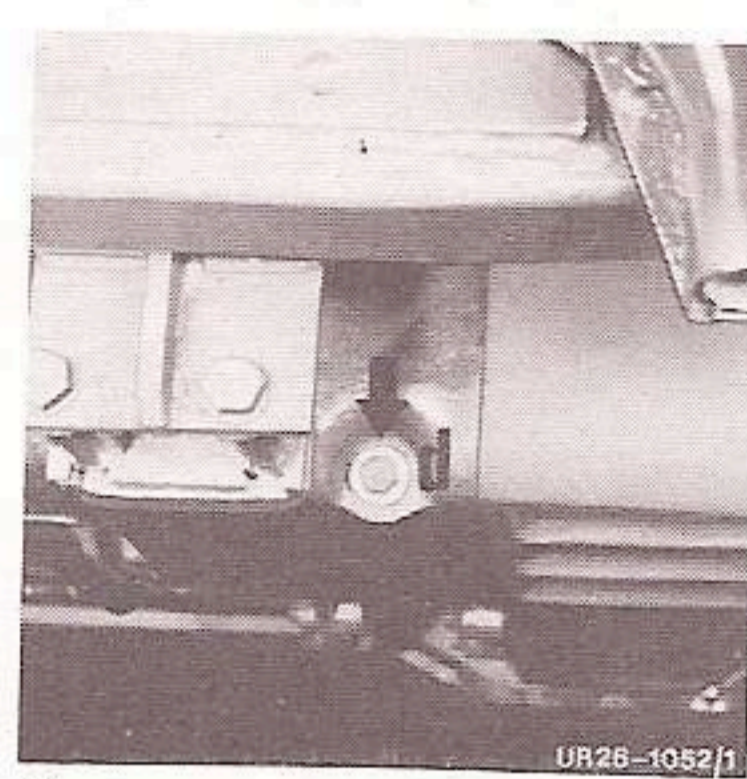
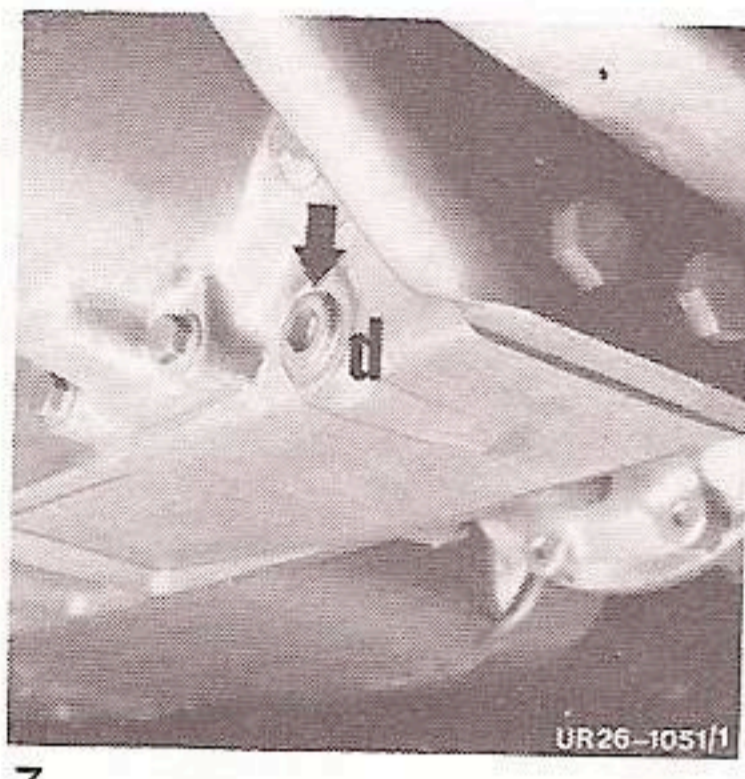
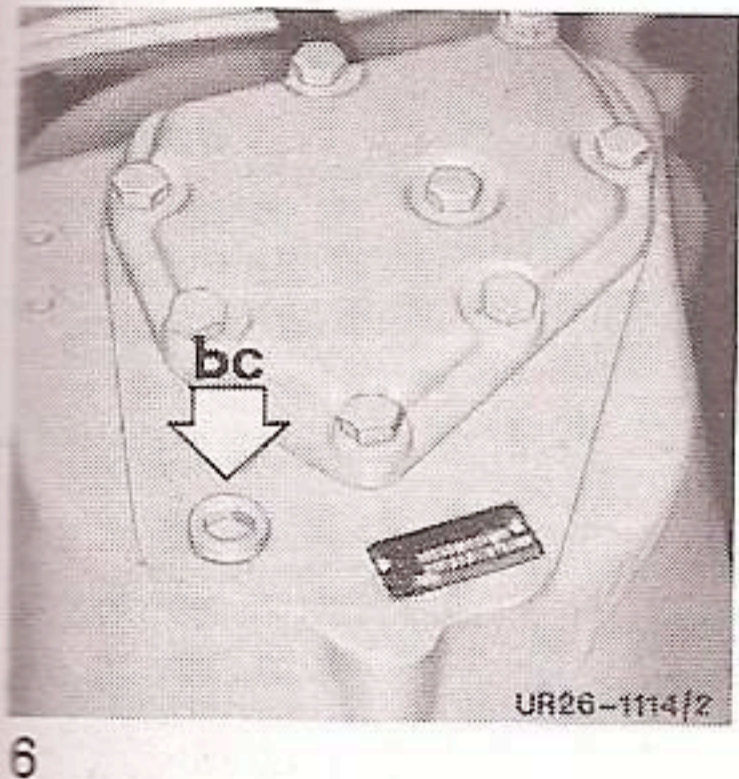
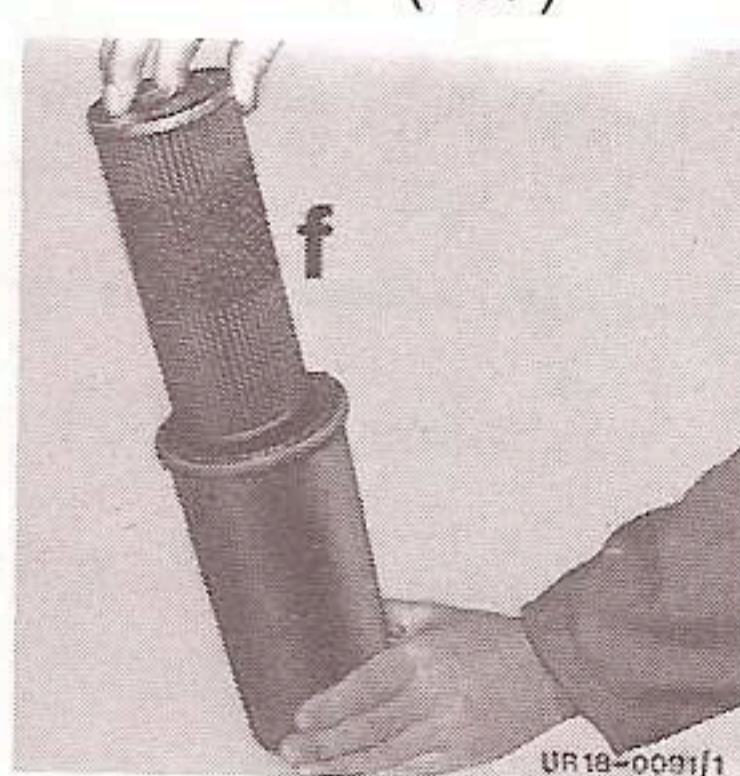
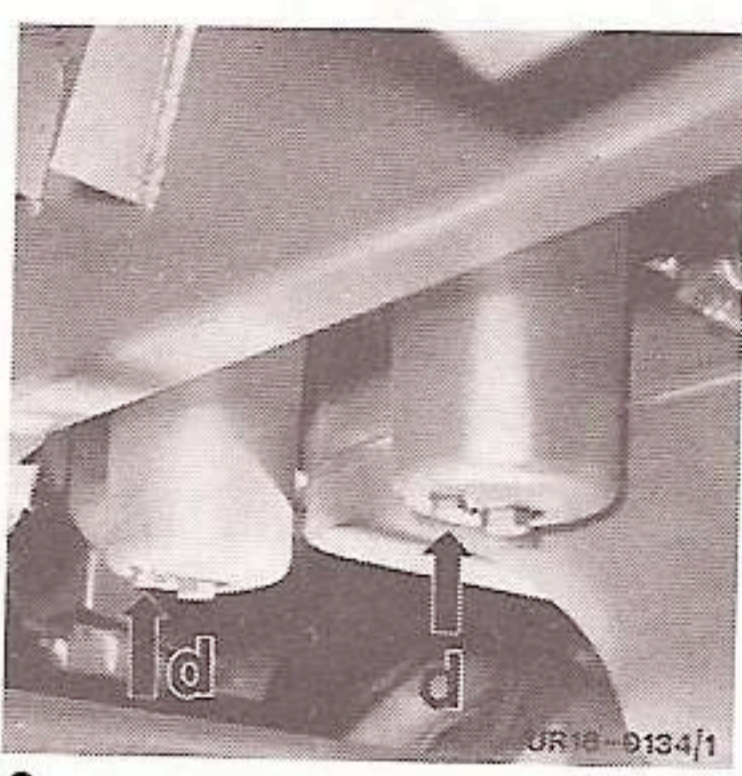
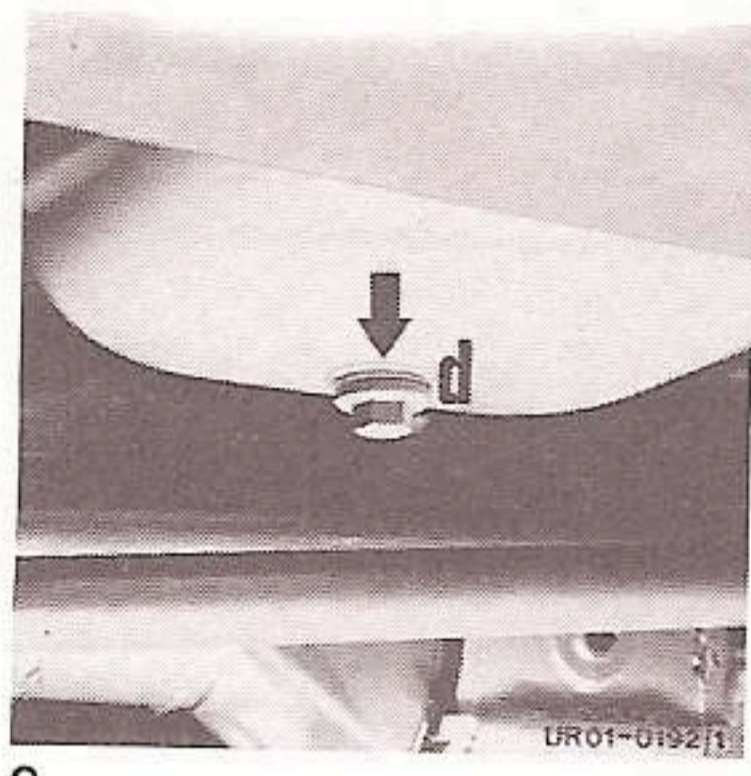
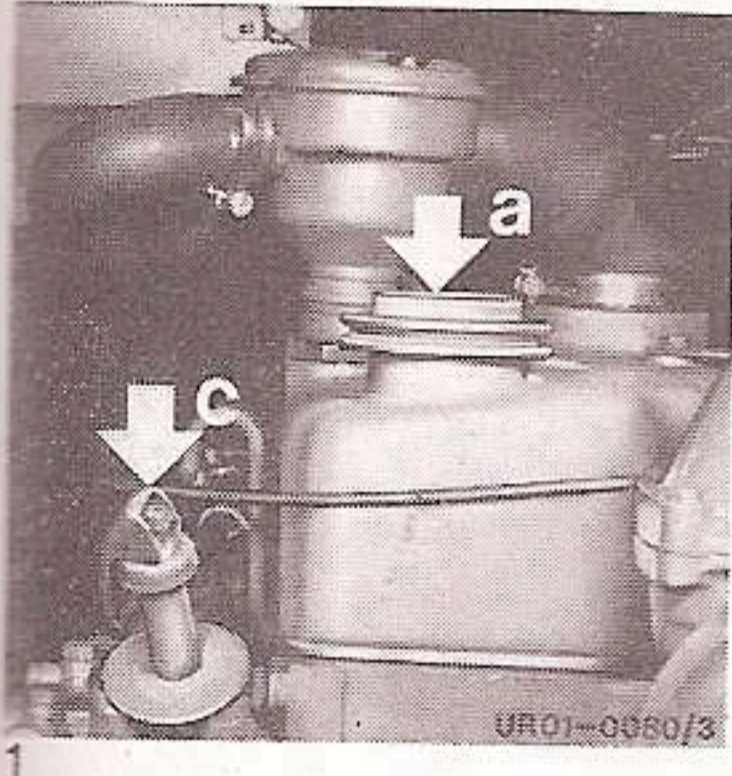


LUBRICATION

3.2 LUBRICATION SURVEY

- a Add engine oil
- b Add transmission oil
- c Check oil level
- d Drain oil

- e Lubricate with grease
- f Replace oil filter element
- i Check brake fluid
- k Add automatic transmission fluid (ATF)



5 OPERATIVE MATERIALS

5.1 Filling capacities

Units	Fluid	SAE Class	Season/ ambient temperature	Capacity in liters	
				U 1000 U 1200	U 1500
Engine OM 352/352 A with oil filter	Engine oil HD ¹⁾	10 W 20 30	winter summer	max. 14,5 proportion in oil filter 1,5	15,0 2 x 1,0
Transmission, standard with fast special drive with working group	Gear oil Gear oil	80 80 W 85	all-season		10,5 11,0 11,5
with working and crawler gear group	Gear oil	85 W 90 90	in hot zones		12,5
Front and rear axles Axles drive housing	Gear oil, hypoid	90	all-season		each 2,5
Front and rear axles each planetary hub drive	Gear oil, hypoid	90	all-season	0,25	0,6
Pto bearings	front rear	80	all-season		each 0,1
Pto transmission 540/1000 3500	Gear oil	80	all-season		5,75 8,0
Hydraulic system - complete refill - at oil change - Perm. use capacity	Engine oil ⁴⁾	10 W 5 W-10/20 30	all-season severe cold at high ambient temperatures		approx. 30,0 ¹⁾ approx. 31,0 approx. 26,0
Converter clutch - at oil change	Engine oil HD	10 W 5 W-10 W	all-season below -15° C		approx. 17,5 approx. 19,0

1) For engine with turbocharger U 1200/U1500 use engine oil of S-3 grade only according to specifications for service sheet 227.0/227.1 - 2) Constant capacity - 3) Depending on scope of system, differences up to 5 liters - 4) Oil hydraulic HLP/HLP-D46 (ISO-VG)

Units	Fluid
Power steering	engine oil ⁵⁾
Hydr. brake system	brake fluid
Hydr. clutch actuation	brake fluid
Cooling system engine, radiator and heater	coolant - water - corrosion inhibitor - antifr. up to 25° C
Reservoir for windshield washer	water, MB windshield washer concentrate
Fuel tank	diesel fuel
Compressed air system/ antifreeze unit	ethyl alcohol
Grease nipple	grease/multi-grade grease
Battery terminals	anti-acid grease
Engine, transmission, axles	initial operation oil anti-corrosion oil
Fuel tank	anti-corrosion oil
Chassis	protective wax

Automatic transmission fluid (ATF type A)
Hydraulic type LS 7

Season/ ambient temperature	Capacity in liters	
	U 1000	U 1500
winter	max. 14,5 proportion in oil filter 1,5	10,0
summer		2 x 1,0
all-season		10,5
		11,0
in hot zones		11,5
		12,5
all-season		each 2,5
all-season	0,25	0,6
all-season		each 0,1
all-season		5,75
all-season		8,0
10/20 severe cold		approx. 35,0 ³⁾ approx. 31,0 approx. 26,0
at high ambient temperatures		
10 W all-season below -15° C		approx. 17,5 approx. 9,5

grade only according to specifications for service products
system, differences up to 5 liters - 4) Or hydraulic oil

Units	Fluid	SAE class	Season/ ambient temperature	Capacity in liters	
				U 1000	U 1500
Power steering	engine oil ⁵⁾	10 W	all-season	2,25	2,25 3,25 ⁶⁾
Hydr. brake system	brake fluid	DOT 3,4	all-season	approx. 1,0	
Hydr. clutch actuation	brake fluid		all-season	approx. 0,2	
Cooling system engine, radiator and heater	coolant - water - corrosion inhibitor - antifr. up to 25° C	-	summer all-season winter/all-season	approx. 20,0 approx. 8,0	
Reservoir for windshield washer	water, MB windshield washer concentrate	-	summer all-season	approx. 9,5 as required	
Fuel tank	diesel fuel	acc. to DIN 51 601	all-season	90/130	160
Compressed air system/ antifreeze unit	ethyl alcohol	-	all-season	approx. 0,2	
Grease nipple	grease/multi-grade grease	-	all-season	as required	
Battery terminals	anti-acid grease	-	all-season	as required	
Preservation (laying up)	Engine, transmission, axles	20 W	during inoper- ative period	according to specifications for service products sheet 381	
	Fuel tank				
	Chassis	protective wax	-	spring and fall inspection	as required

5) Or automatic transmission fluid (ATF type A)
6) With steering type LS 7