MERCEDES-BENZ

Operating Instructions

UNIMOG 435

Important!

Tighten wheel nuts on new vehicles and following wheel changes after a distance of approx. 40 to 60 km!

Tightening torque

U 1300 L	400 Nm
U 1700 L/38	400 Nm

Before operating

Observe carefully the operating and safety regulations in the operating instructions! Important notes are highlighted in the corresponding sections.

Printed in Germany

Technical details of vehicle as compared with data and illustrations of the present Operating Instructions subject to change.

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MERCEDES-BENZ

Mercedes-Benz
service

Operating Instructions

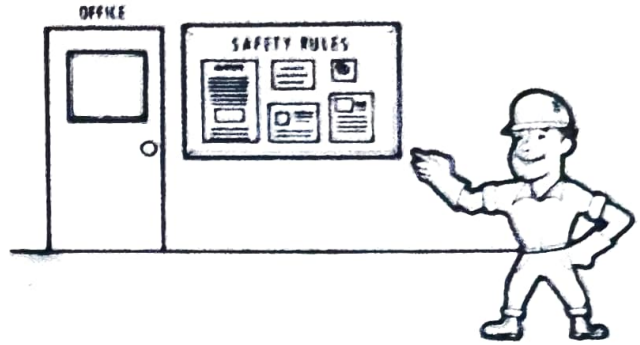
UNIMOG 435

U 1300 L
U 1700 L/38

1 GENERAL

Warranty

Warranty claims can only be made when the warranty terms contained in the General Terms of Sale have been observed. These general Terms of Sale contain several points with the necessary prerequisites for the recognition of existing claims.



Special version

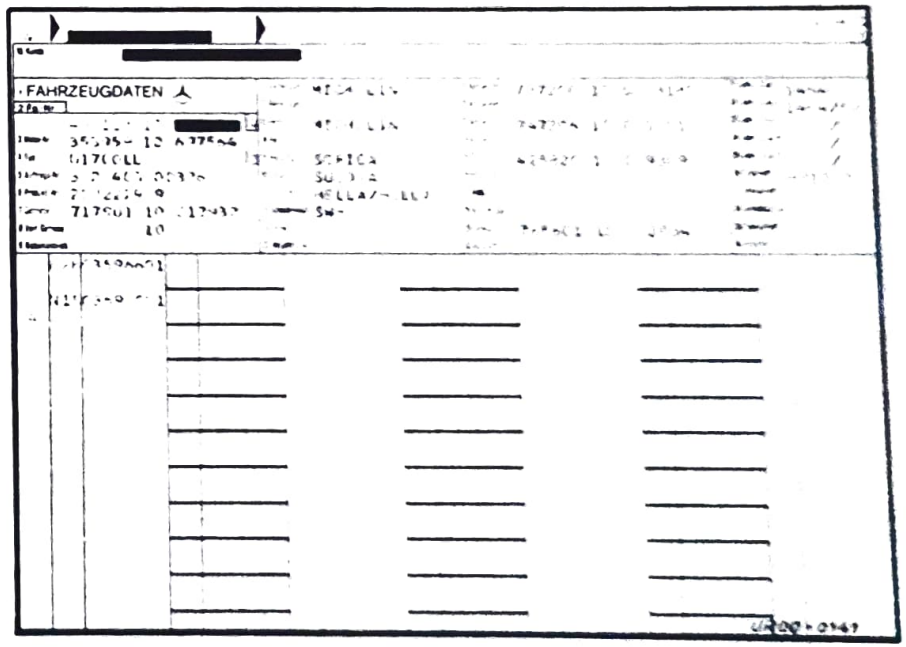
Under "special version" one understands additional items of equipment which can retroactively be installed. This includes, for example, front pto shaft, winch and drive for fast pto shaft, among other things. These are not components of the standard constructional state.

Vehicle data card

The "personnel voucher" contains all technical specifications regarding the constructional state of the vehicle, including special versions.

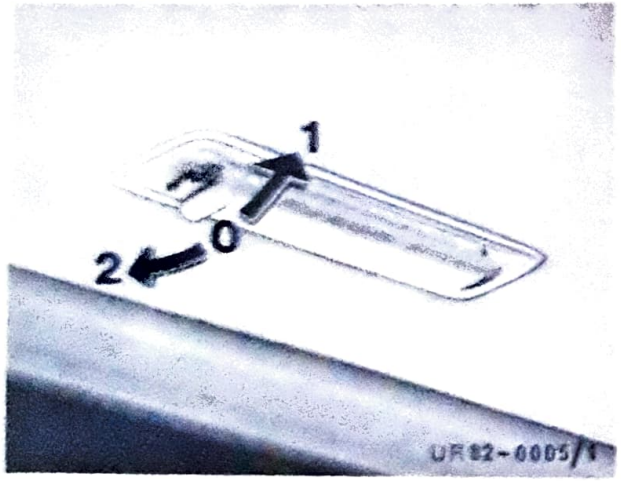
In all inquiries concerning the vehicle, as well as when ordering spare parts, always specify the type, the chassis No., engine No. or other unit numbers.

The vehicle data card is also available at the representative where the vehicle was bought.

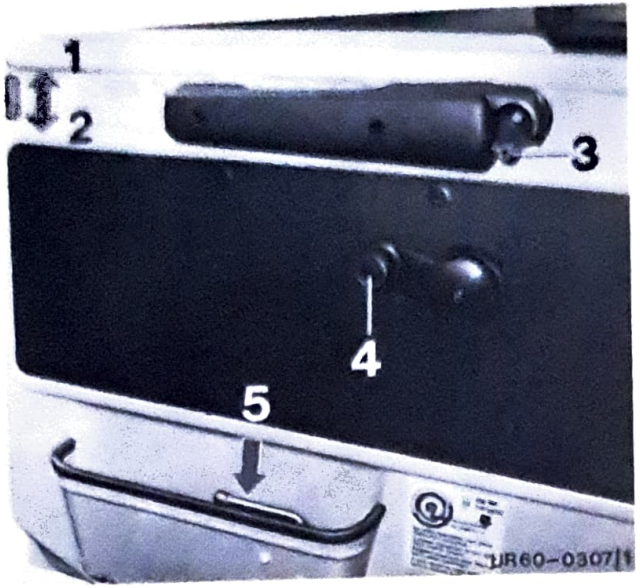


Doors and roof hatch

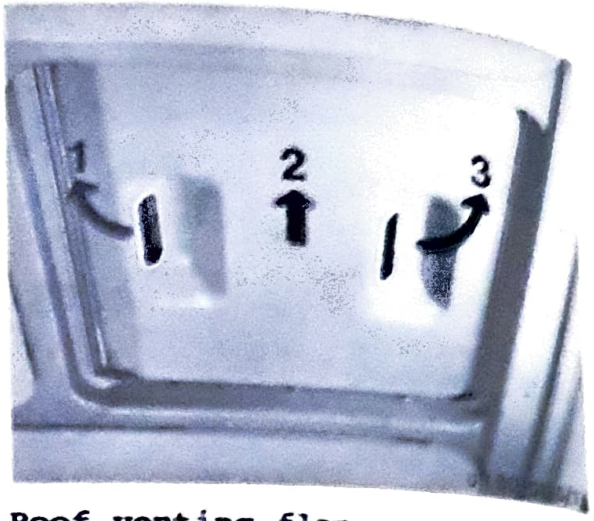
Door lock
1 Unlocked
To open, depress closing cylinder
2 Locked



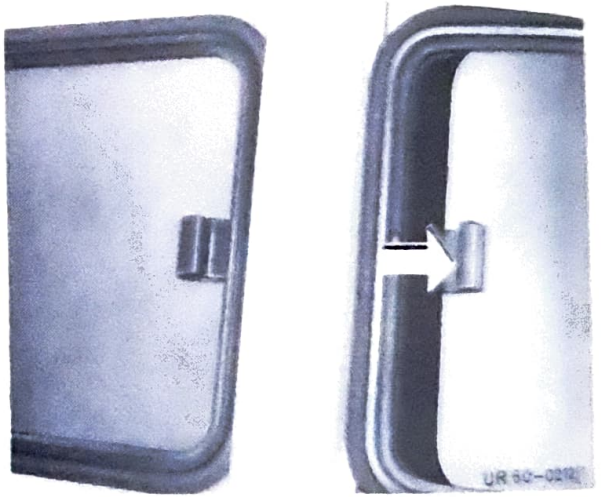
Interior lights
1 ON
0 OFF
2 Switched ON and OFF via door contact



Door and window operation
1 Door safety device unlocked
2 Door safety device locked
3 Opening lever
4 Window crank
5 Square wrench for hood and battery box

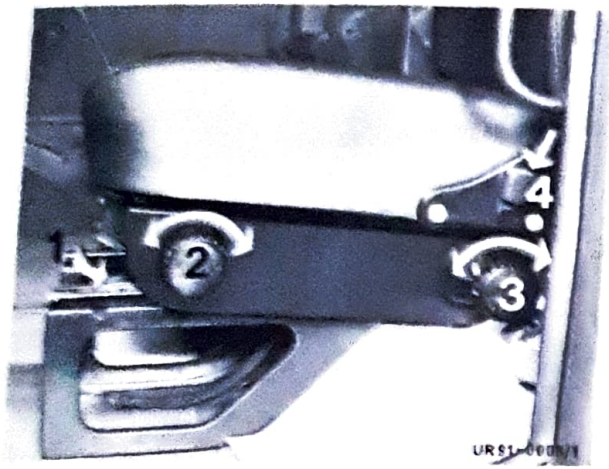


Roof venting flap
1 Open toward front
2 Completely open
3 Open toward rear



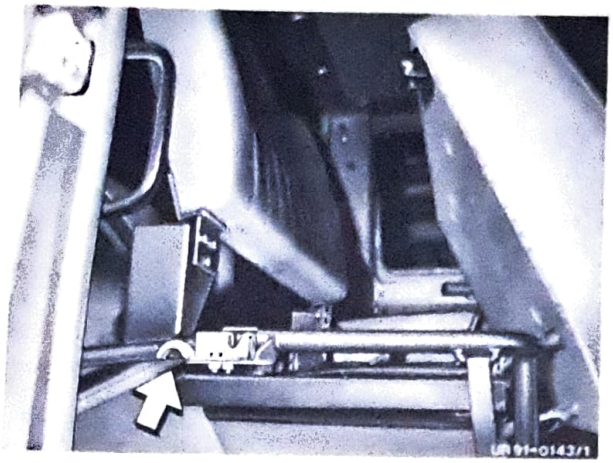
Open roof hatch
Unlock handles

Seats and vehicle tool kit

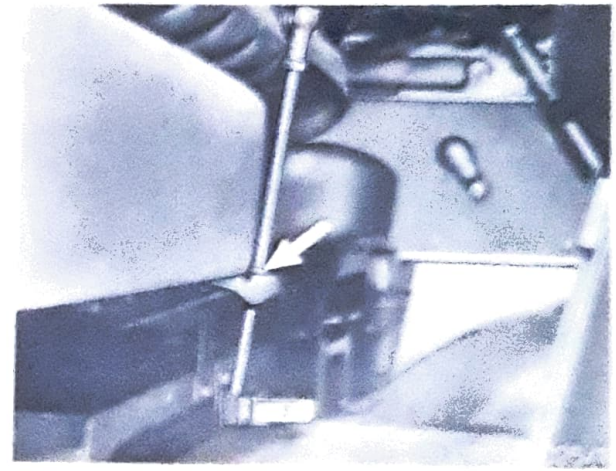


Driver's seat adjustment

1 Forward and back
2 Seat height front
3 Seat height rear
4 Backrest



Co-driver's bench seat folding

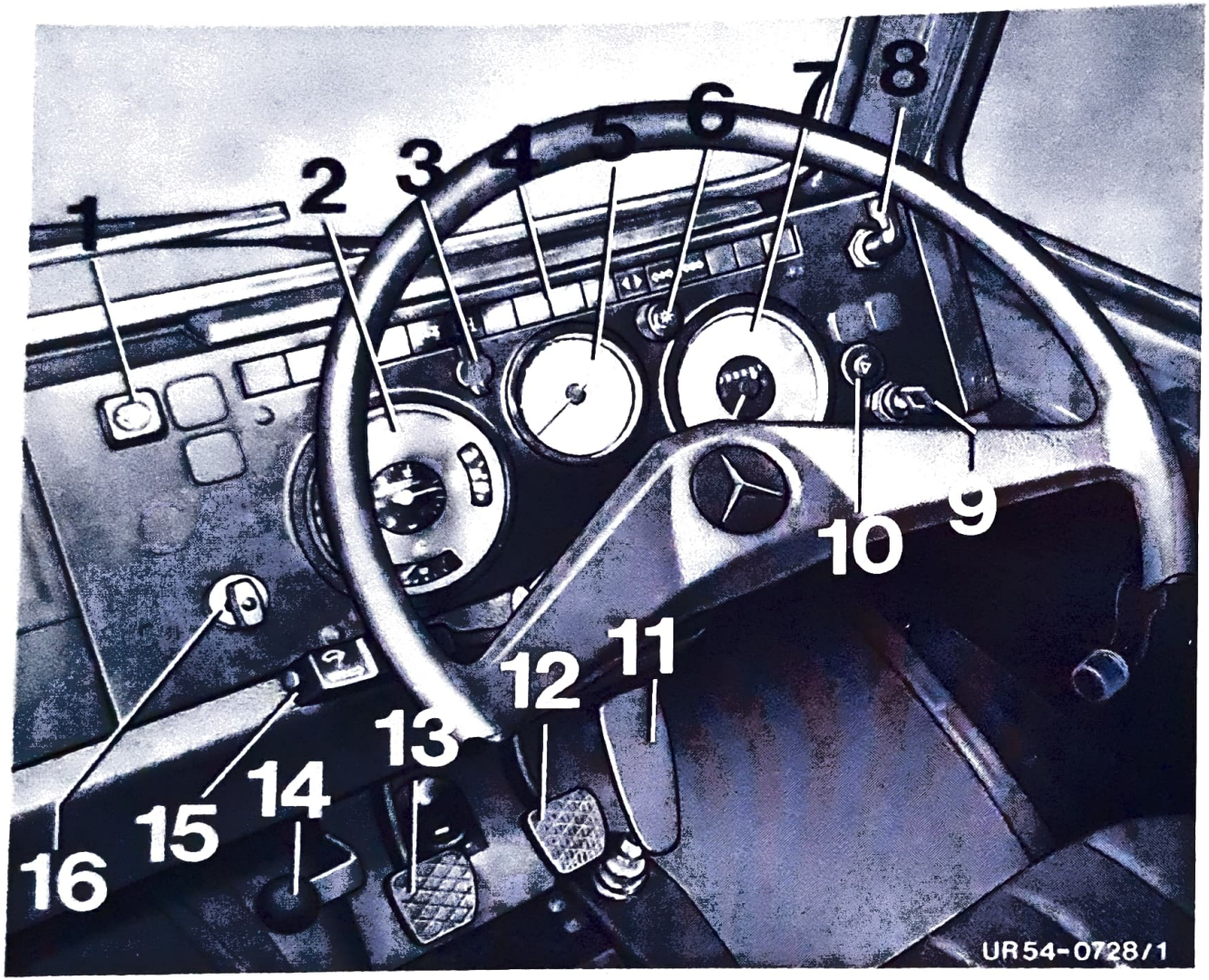


Insert support in lock.
Push rest down until support engages.

Inlock backrest for standing room

Pull handle forward to unlock

Instrument panel



Instruments, Switches and Control Levers

1 Switch for windshield washer
2 Instrument cluster
3 Socket
4 Control lights
5 Rpm counter, tachometer, engine
6 Instrument lights regulating
7 Speedometer
8 Four-wheel drive - differential lock
9 Ignition switch
10 Warning indicator switch - emergency flasher
11 Accelerator pedal
12 Brake system
13 Clutch pedal
14 Engine regulator lever
15 Combination switch:
- Flash
- Horn
- Windscreen wipers
- Hi-beam and dimmer

16 Main light switch

Symbols of Switches and Warning/Indicating Lights

Switch for instrument lights

Turn signal indicator light (flasher) motor truck

Parking brake release warning light (effektive as of 6 bar)

Warning flasher switch

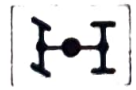
Turn signal indicator light (flasher) for trailer

Differential pressure control. Indicates defect in brake system

Switch for windshield washer

High beam indicator light

Charge indicator Lighting-up indicates defect in charge function



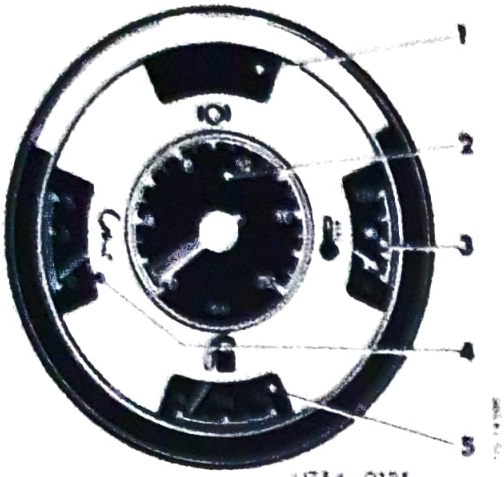
Four-wheel drive indicator light

Pto drive control (special version)

Differential lock indicator light

2 OPERATION

Instruments



UZ54-0135

Instrument cluster

1 Warning light, supply pressure
light on below 12 bar

2 Supply pressure gauge

Lower needle
= supply pressure 18 bar
1st brake circuit

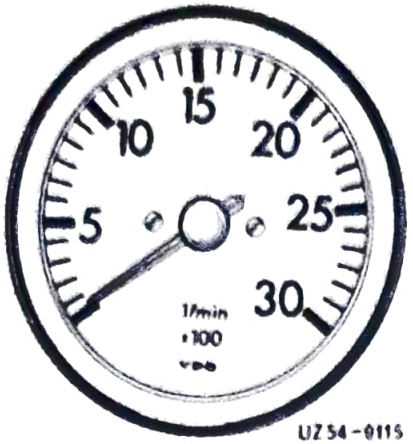
Upper needle
= supply pressure 18 bar
2nd brake circuit

3 Coolant temperature indicator 80-90° C

4 Oil pressure gauge max. 5 bar
min. 0,5 bar

5 Fuel gauge

1/1 = 160 Liters
1/2 = 80 Liters
R = Reserve approx. 5 to 10 Liters



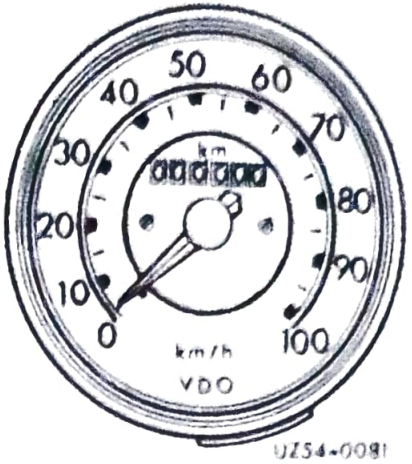
UZ54-0115

Rpm counter, engine (U 1700 L)

1/min = revolution per minute

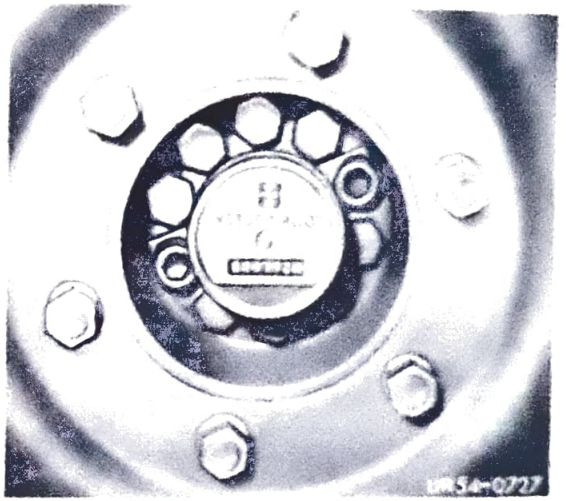
Running-in

Do not fully stress the engine during the first 1500 km, max. 2500/min.



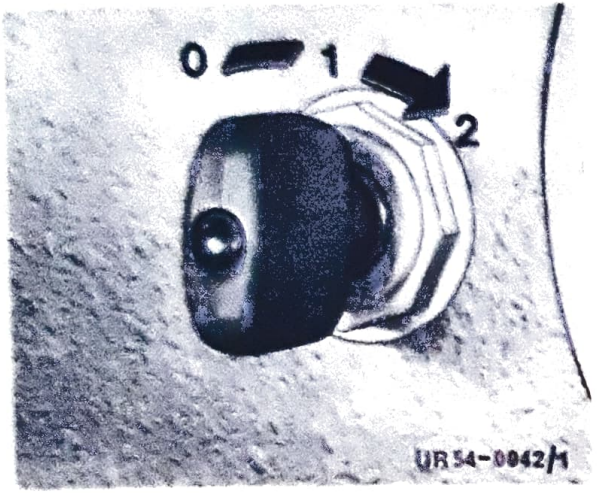
UZ54-0081

Speedometer
with kilometer counter


UZ54-0727

Odometer on rear wheel right

Switch



Main light switch

0 Shutoff

1 Parking light
Tail lights
Instrument lights

2 Additional
High beam
Low beam
High beam indicator light

Ignition start switch

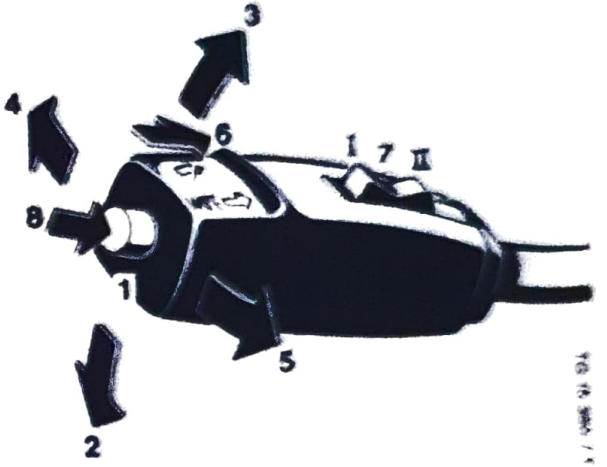
0 Insert ignition key

1 Ignition position

2 Starting position

Never pull out key when engine is running!

Blinker switch



Combination switch

1 Low beam
2 High beam
3 Headlight flasher
4 Turn signal flasher right
5 Turn signal flasher left
6 Windshield wiper
Pushing switch = On
Pushing switch
once again = Off
7 Windshield wiper rocker switch
I = slow
II = fast
8 Horn

Engine regulator throttle

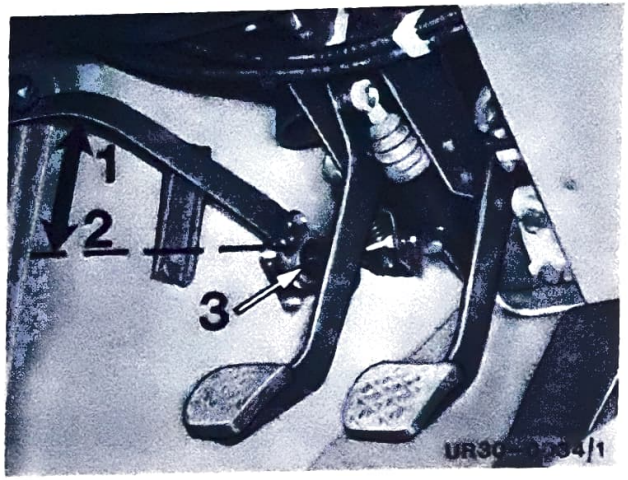
U 1300 L

Engine regulator

1 Idle speed = pull

2 Idle speed adjusting
Stop = push

U 1700 L

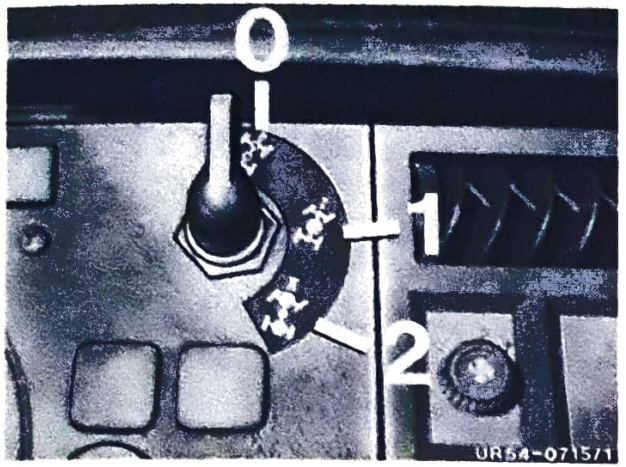


Engine regulator

1 Stop - idle position

2 Part load - full load

3 Locking



Switch for four-wheel drive and differential lock

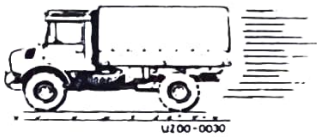
Four-wheel drive and differential lock

Note:

Operable as of 7,0 bar supply pressure!

If possible, do not drive with four-wheel drive and differential locks engaged on firm road surfaces, as when turning there is no compensation between right and left wheels.

0 Rear-wheel drive



Street

1 Four-wheel drive

Uphill - downhill - cross country

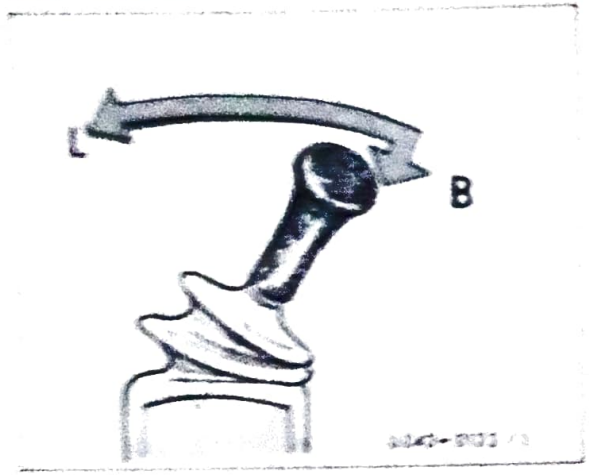
2 Four-wheel drive and differential lock

Difficult terrain

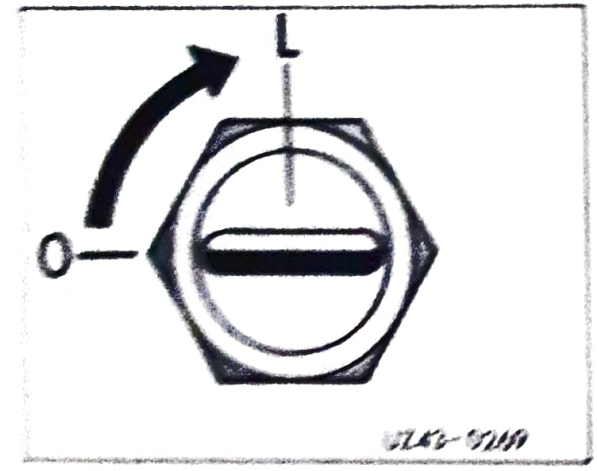
Travelling through water

Parking brake - parking vehicle - checking parking brake - emergency release of parking brake

Solo operation



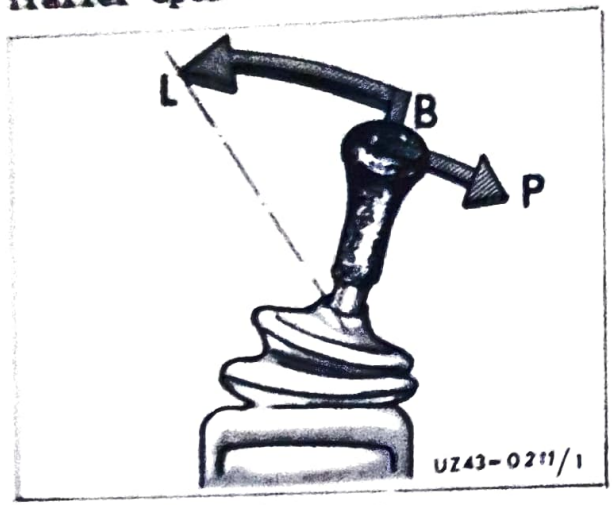
Parking brake valve
L release position
B fully braked position



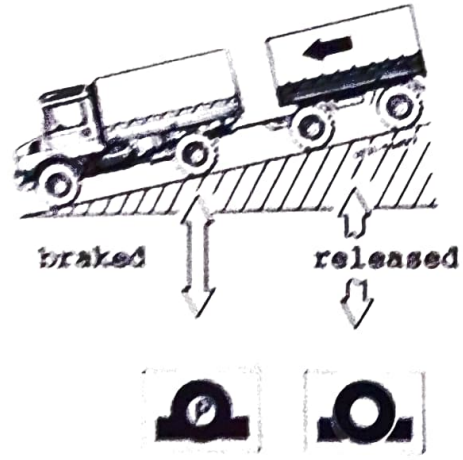
Shift valve for emergency release *
0 Off
L Release position

* refer page 47

Trailer operation



Checking parking brake
P check position



P switched on in check position

UNIMOG with trailer
(Trailer with air pressure brake system)

General

In position P a possible failure of the trailer brake is simulated, i. e. the spring-type brake must hold the combination.

Functional check

Hold brake lever a few seconds in position P.

Important

Combination must not move when parking brake (spring type) functions satisfactorily!

Shifting the gears

Compressed air supply min. 6 bar

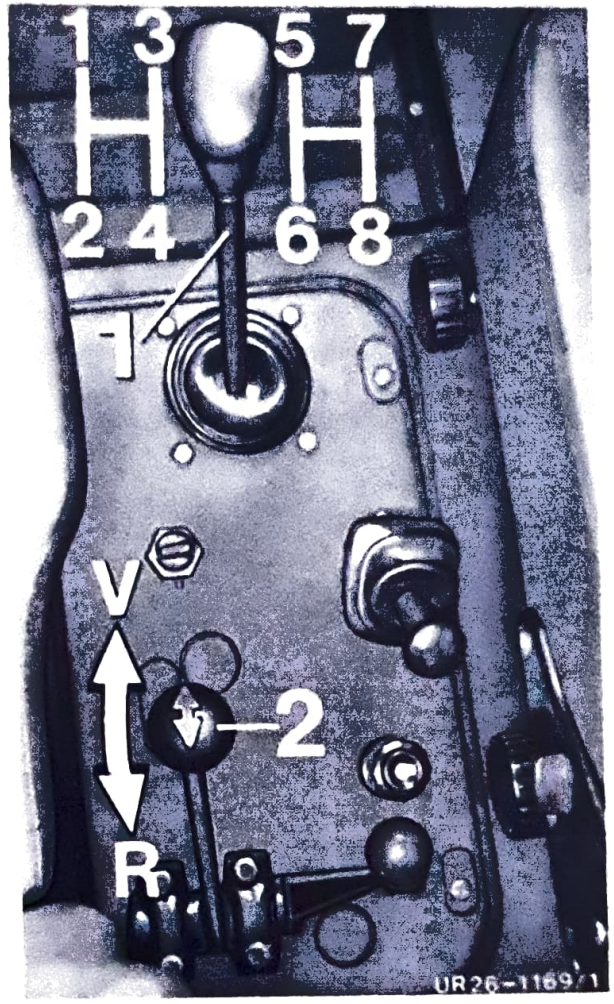
Forward gears 1 to 8
Shift only with actuated clutch.

When vehicle unladen **move off in third gear.**

When vehicle heavily laden **move off in first gear.**

Reverse gears 1 to 4
Shif lever (2) forward and reverse only with stationary vehicle and after actuating clutch.

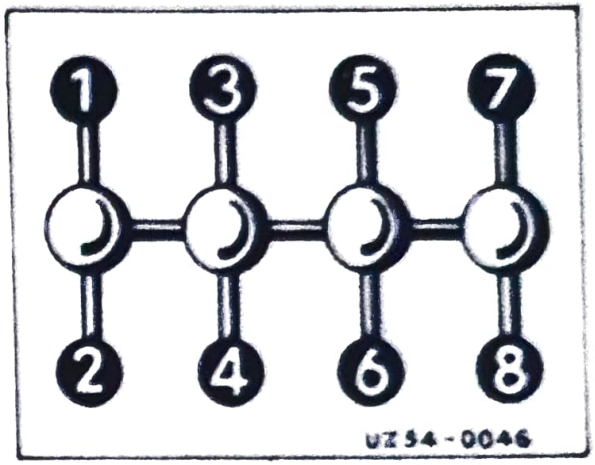
The indicator acts as a shift monitor and helps the driver to avoid incorrect shifts, especially when driving off.



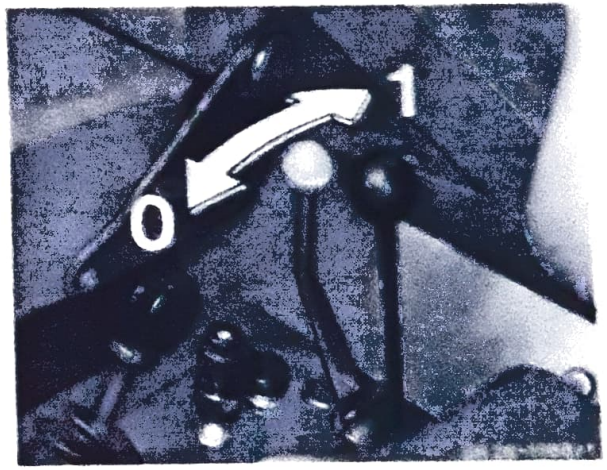
Transmission shifting
1 Main shift lever
2 Forward-reverse-lever
V Forward, 1 to 8
R Reverse, 1 to 4

Important! Lock shift

Gears may only be operated **one after another.**



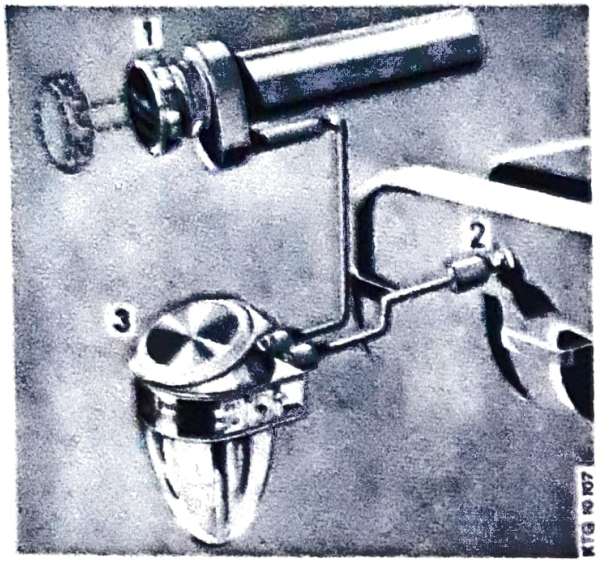
Gear shifting diagram with electrical indication of neutral position



Pto shift lever
0 Off 1 On

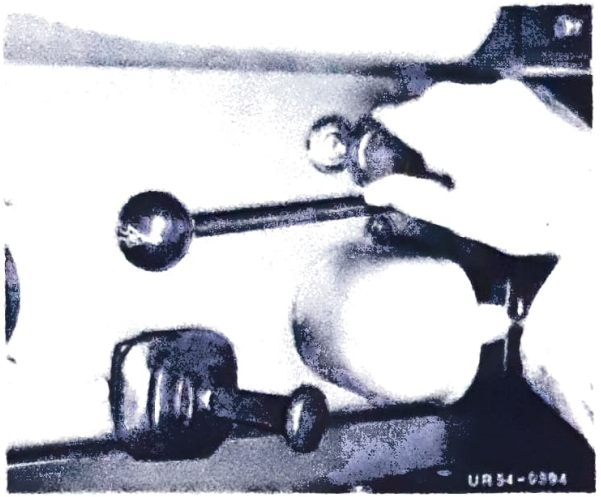
To switch on and off, actuate clutch.

Start pilot - cold start

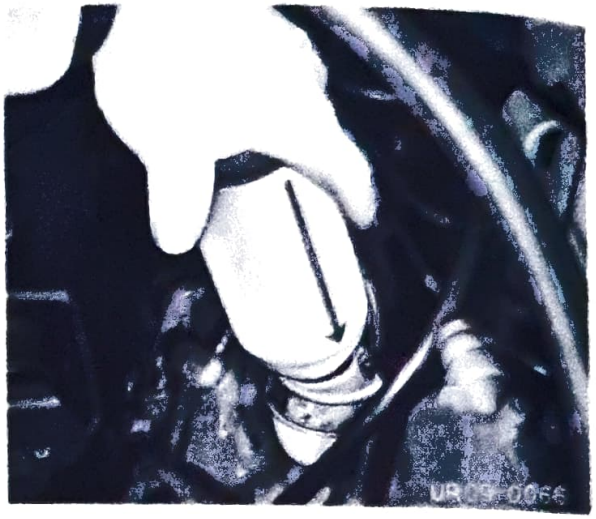


Operating diagram

1 Air pump
2 Injection nozzle
3 Container for starting fuel



When starting, repeatedly actuate start pilot until engine starts

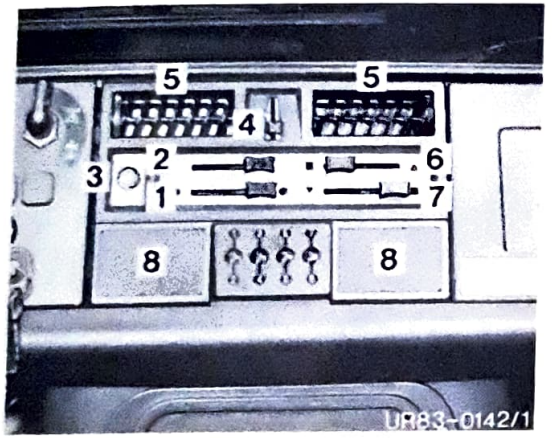


Fill with starting fuel

Starting fuel is flammable

Observe filling instructions on container!

Heating and venting



1 Heater

Warm air

Lever position:
Left = cold ● (blue)
Right = warm ● (red)

2 Leg room venting

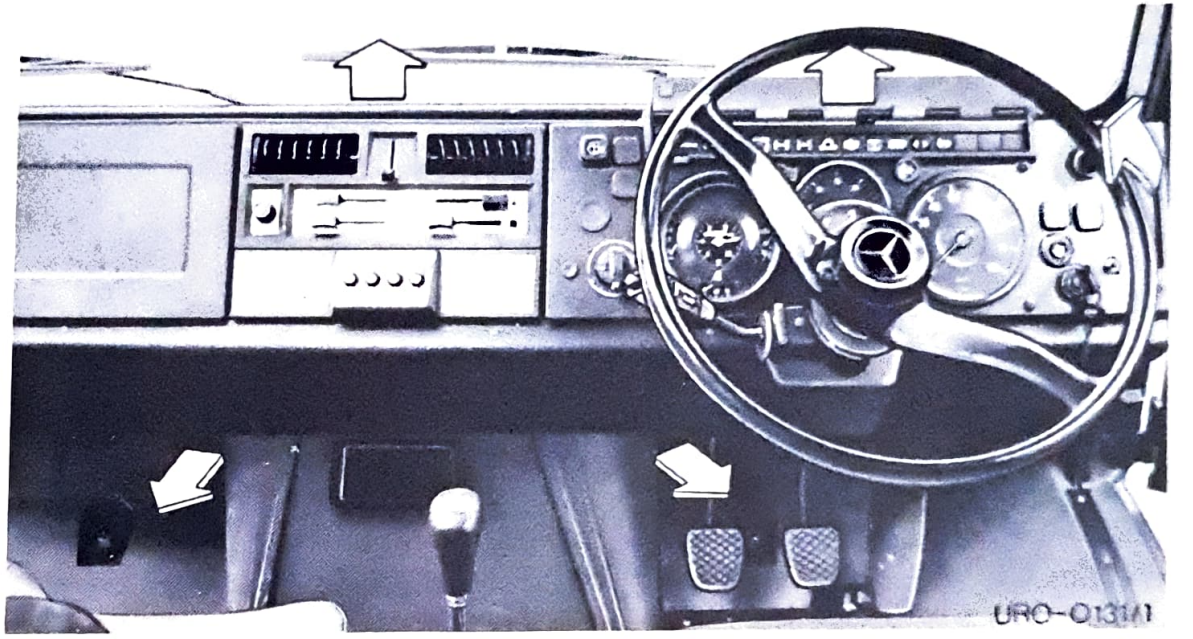
Fresh air

Lever position: Right = closed
Left = open

3 Blower 3-stage control

4 Venting and defroster windows

Lever position:
Top = closed
Bottom = open



Venting nozzles in cab

5 Pivoting nozzles

Fresh air

6 Defroster/heater

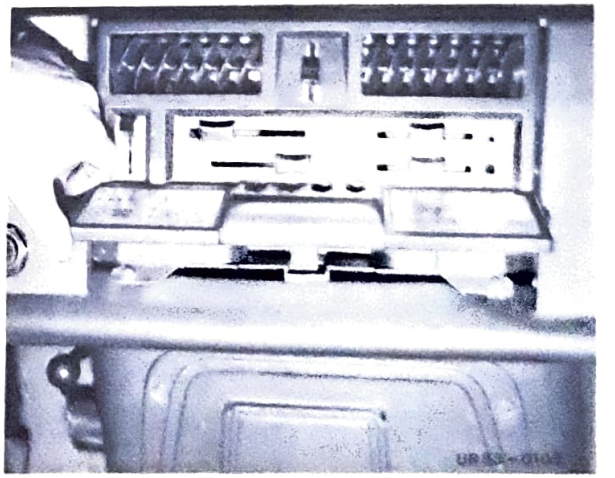
For windshield and side windows

Lever position:
Left = top closed ■
Right = top open ▲

7 Heating and venting

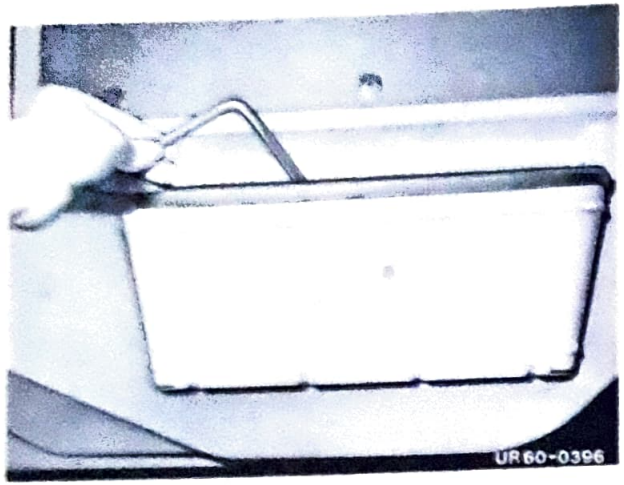
For leg room right and left

Lever position:
Left = bottom open ▼
Right = bottom closed ■

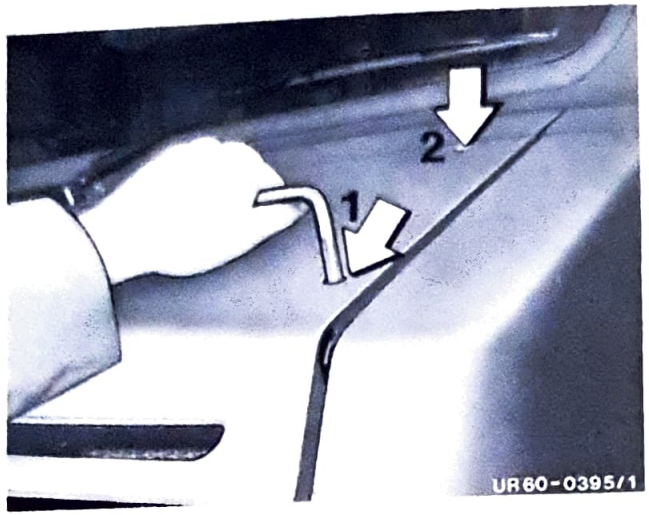


8 Open venting flap

Access to engine - hood

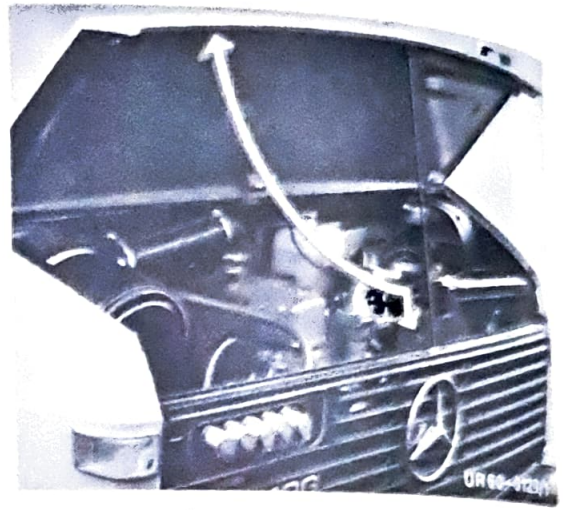


Square wrench



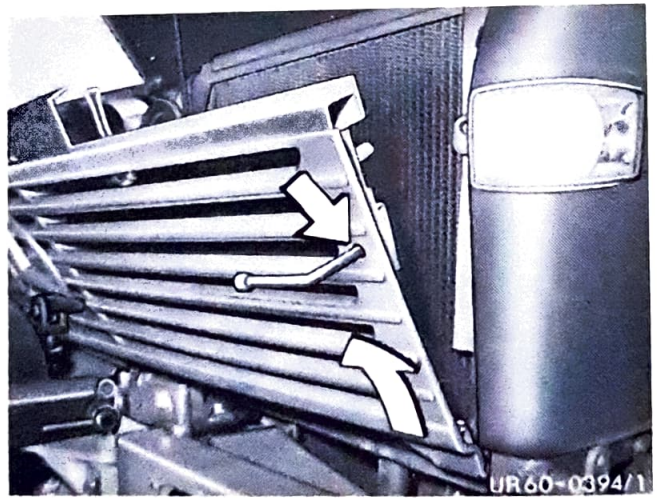
Unlocking engine hood

1 Unlock to raise
2 Unlock to remove

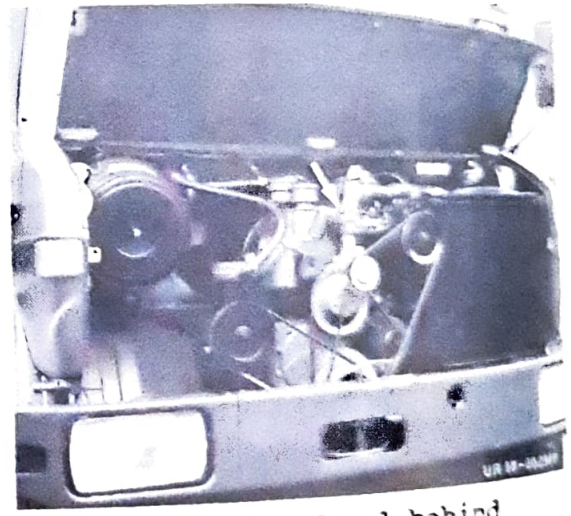


Open engine hood and support

Withdraw step bar



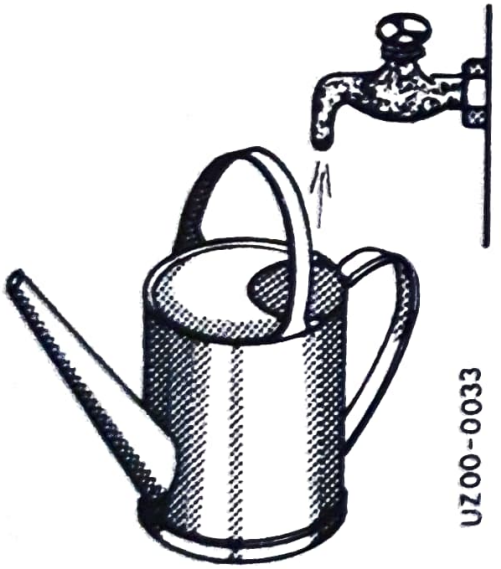
Unlock and detach front grille



Prop up engine hood behind coolant regulator

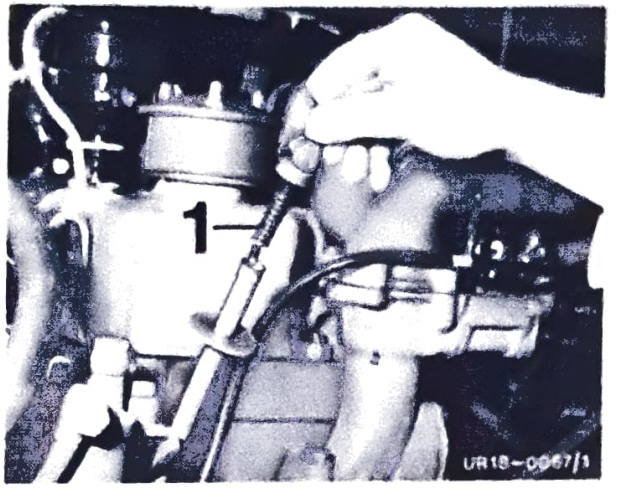
Check daily before driving vehicle

Coolant reservoir



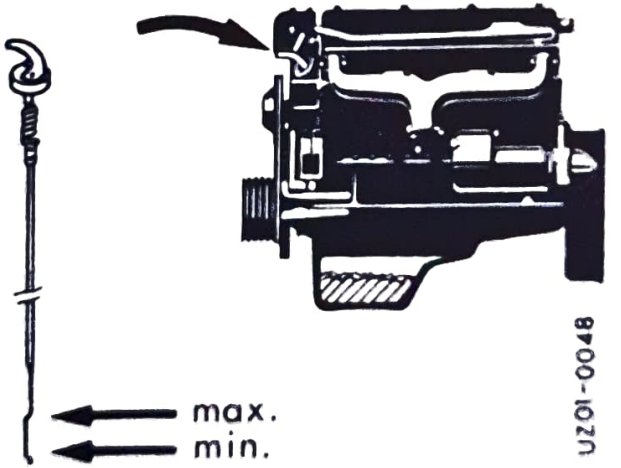
Only top up with clean water.

See page 53 for information on anti-freeze and anti-corrosion additive.



Check oil level in engine

1 Pull out oil dipstick



Do not top up above max. mark!

Fill engine with oil

Use only HD engine oil in S3 quality!

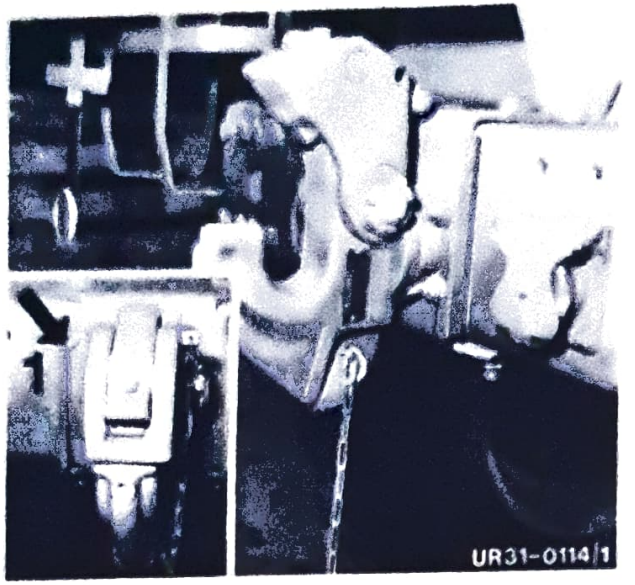
Capacity: page 52

Check daily before driving vehicle

Compressed-air tank

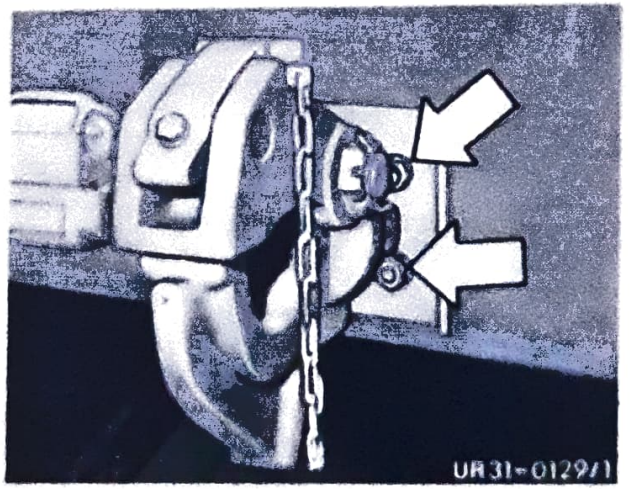
Pull cord to drain condensate.

Caution, high pressure 16 bar.



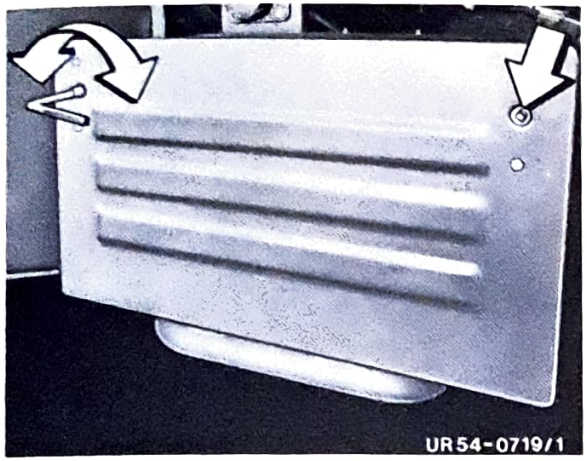
Check trailer coupling for condition

1 Fold locking pin



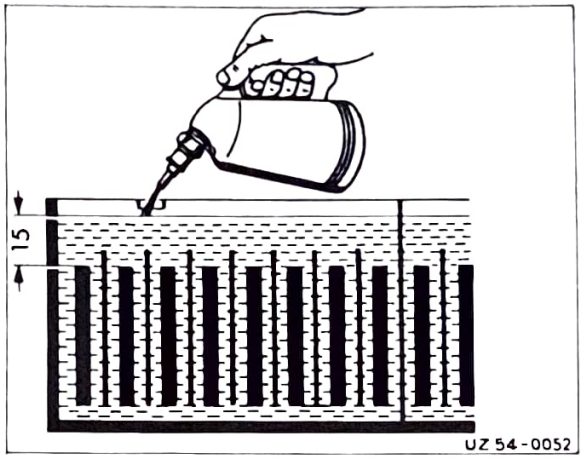
Check fastening bolts for tightness.

Regulator checking

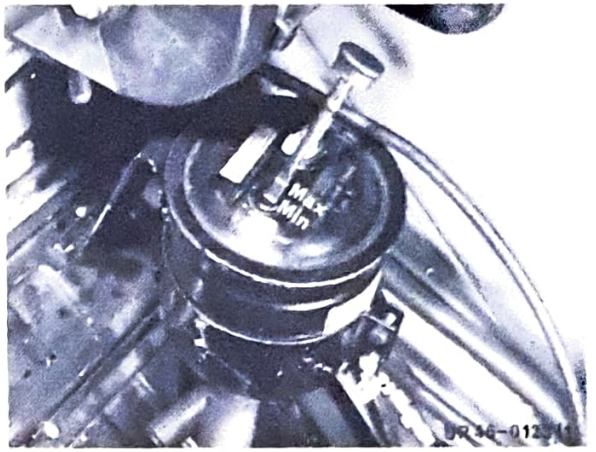


Open battery box

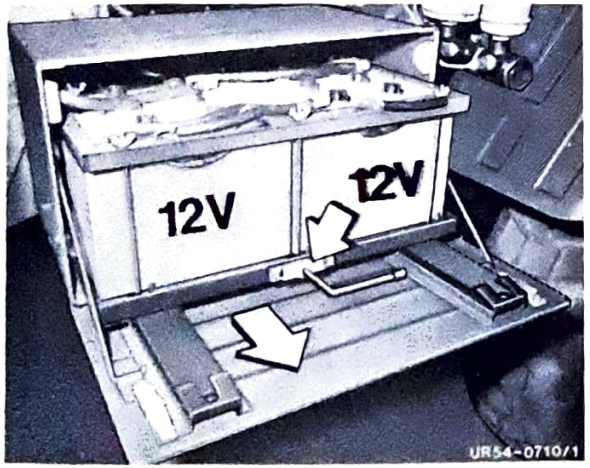
Open battery box with square key



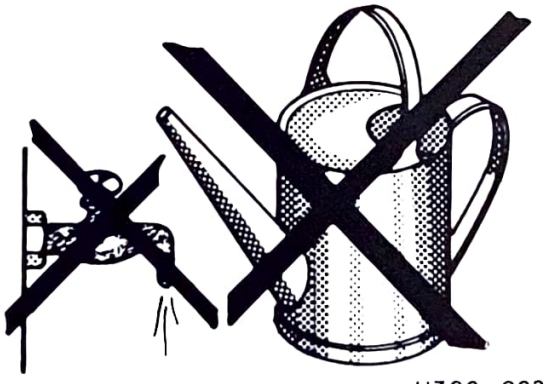
Fill only with distilled water

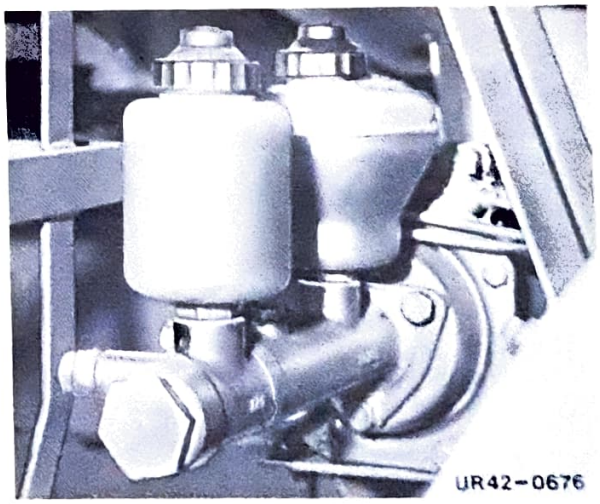


Check oil level in steering reservoir



Unlock and withdraw





Check brake fluid level

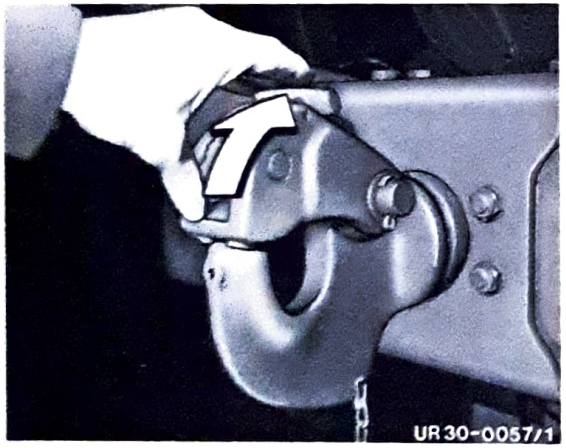
Do not top up - first check brake pads for wear!

Trailer operating

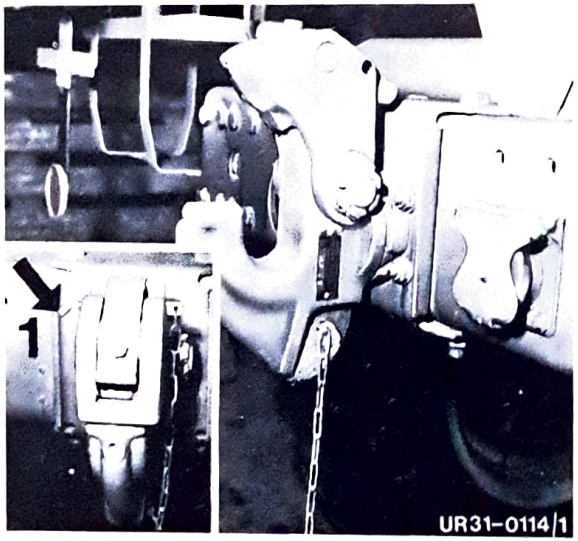
Minimum supply pressure in tractor unit 12 bar

1. Operating trailer is only permissible when trailer coupling is in normal position, e.e. actuating lever in upper position.
2. When handling heavy trailer loads, charge UNIMOG to full payload.
3. Switch on four-wheel drive.
4. Going down hill shift into lower gear.
5. Observe max. permissible trailer load U 1300 L = 10.500 kg *
   U 1700 L = 12.000 kg *

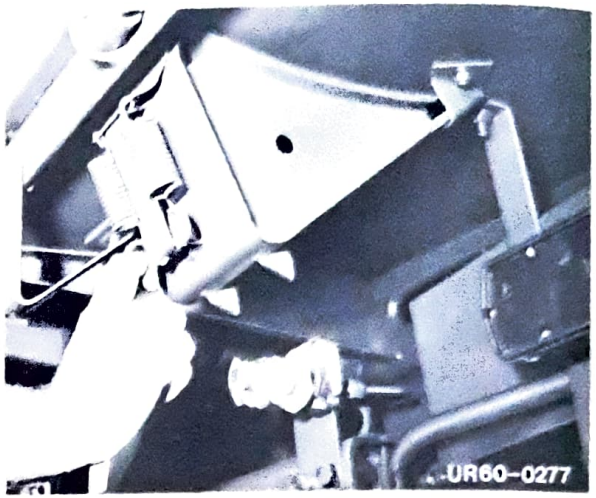
* On trailer with continuous brake system, refer page 64.



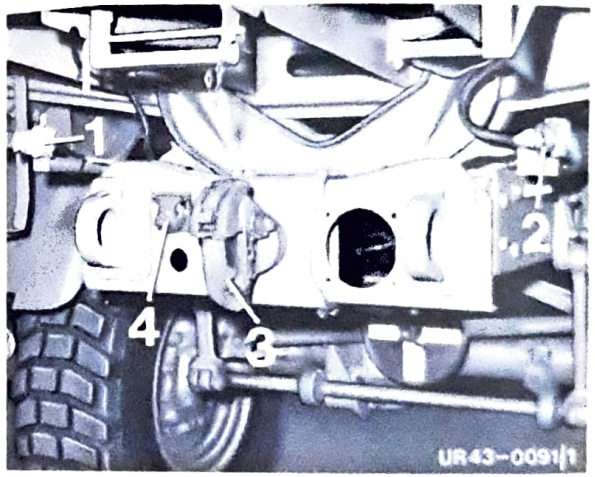
Hook-type trailer coupling
To open raise latch bar



Coupling opened
After closing insert (1) pin and fold



Chock under platform



Connecting trailer
1 Coupling head, brake (yellow)
2 Coupling head, supply (red)
3 Trailer coupling
4 Trailer socket

Maintenance intervals

Mercedes-Benz service

Complete all maintenance jobs in accordance with specified maintenance intervals.

In order to maintain the operation safety of the vehicle and to uphold the right to warranty claims, the work which we deem absolutely necessary must be carried out regularly and on time.

General

1. **Maintenance according to fuel consumption, lts.**

   If fuel consumption is recorded maintenance can be executed according fuel consumption.

2. **Maintenance according to kilometres, km**

   If fuel consumption is not recorded maintenance must be executed on driven kilometres or on time.

3. **Maintenance according to time, months**

   Vehicles which has after a certain period have not reached fuel consumption or kilometre service then maintenance must be executed to space of time.

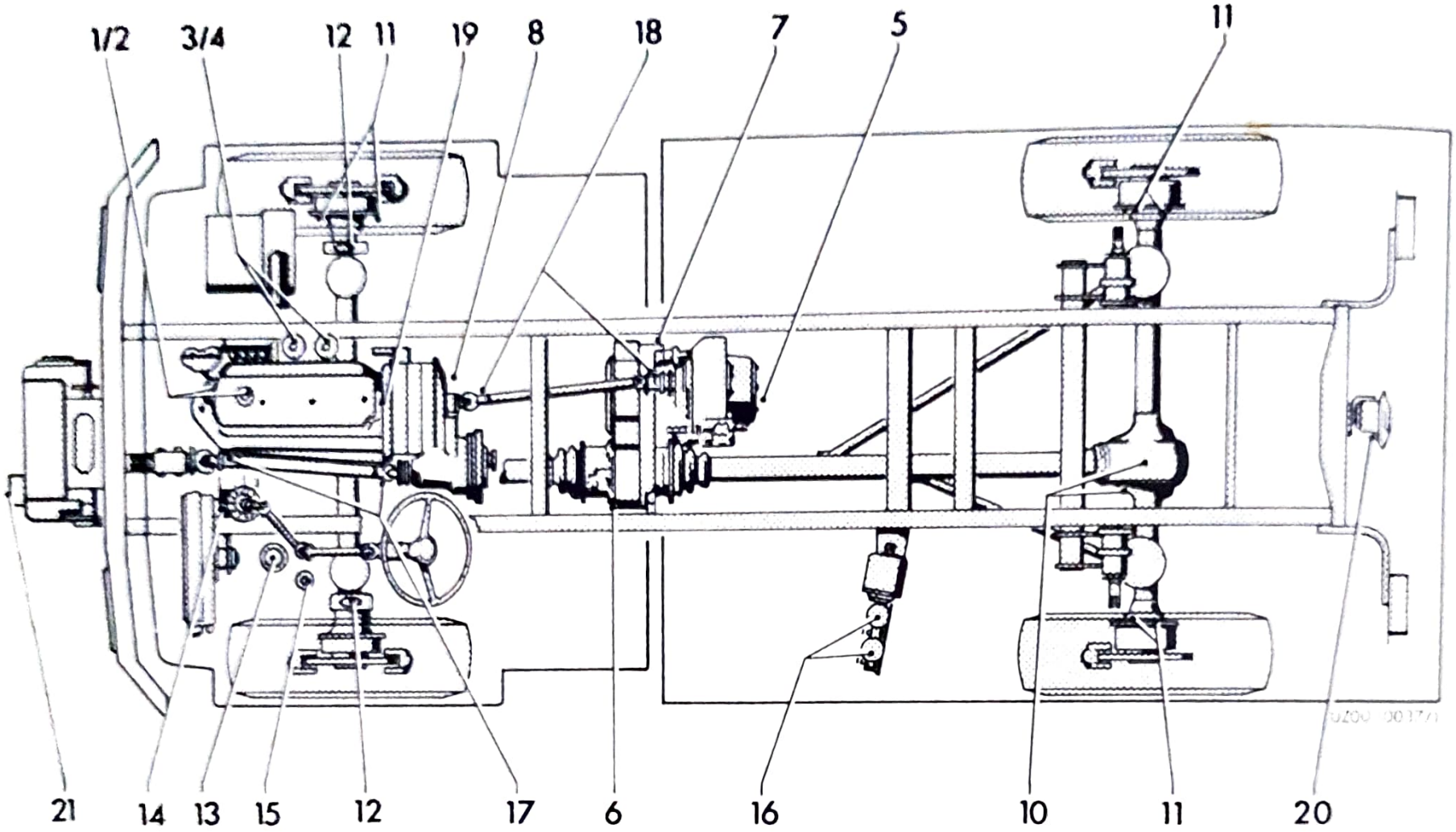
Maintenance schedule	Fuel consumption lts.	or	km	or	Months
E 1	300		-		once
F 1	-		-		monthly
F 2 + F1	-		-		6 months
F 3 + F1 + F2	2000		8000		12 months
F 4 + F1 + F2 + F3	4000		16000		24 months

Job Survey		E 1	F 1	F 2	F 3	F 4
Lubrication jobs 	Fig.No.	after 300 l – once	each – months	after – 6 months	after 2000 l 8000 km 12 months	after 4000 l 16000 km 24 months
Change oil in engine, complete oil filter care	1 to 4	●			●	●
Check oil level in transmission, correct	5, 6, 7			●	●	●
Check oil level in pto transmission, correct	8			●	●	●
Check oil level in axle drive and hub reduction of front and rear axle, correct	10,11,12			●	●	●
Check oil level in steering, correct	13, 14			●	●	●
Check brake fluid level	15, 16			●	●	●
Change oil in transmission	5,6,7 (9)	●				●
Change oil in pto transmission	8				●	●
Change oil in axle drive and hub reduction	10,11,12	●			●	●
Change oil in steering, replace oil filter element	13, 14	●				●
Lubricate joints on shaft from clutch to transmission	18	●		●	●	●
Lubricate steering knuckle bearings	17	●		●	●	●
Lubricate trailer coupling	20			●	●	●
Lubricate pto shaft joints	17			●	●	●
Lubricate intermediate shaft on engine	19			●	●	●
Lubricate winch and shift knob right	21			●	●	●

Maintenance schedule		E 1	F 1	F 2	F 3	F 4
Job survey	Page	after 300 l - once	each - months	after - 6 months	after 2000 l 8000 km 12 months	after 4000 l 16000 km 24 months
Tighten cylinder head nuts		●				
Check valve clearance, adjust		●				●
Clean fuel filter and felt filter element, replace if necessary, and bleed	29				●	●
Check V-belt, tighten	30	●		●	●	●
Check wheel nuts for fastening, tighten	32	●		●	●	●
Tighten air compressor and retighten head bolts	32	●				
Check brake lining thickness (visual inspection)	32			●	●	●
Complete battery care	22		●	●	●	●
Drain condensate from differential lock (U 1300 L)	33				●	●
Change brake fluid	27 (16)				●	●
Replace filter element in air cleaner	32					●
Replace engine vent filter [1)]	29					●
Change brake fluid in clutch system	27 (15)					●
Retighten control arms, strutbar and drive train connecting bolts of steering system		●		●	●	●
Replace filter element in heating and venting system	32				●	●

1) Observe hint on page 29

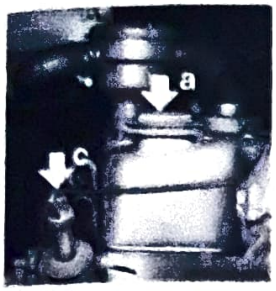
Lubrication chart



Lubrication point survey

Lubrication point survey

a Add engine oil
b Add gear 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)



1

2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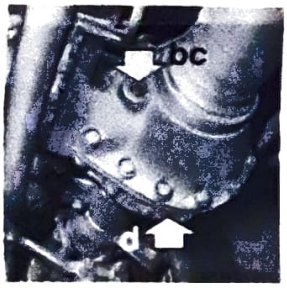

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12

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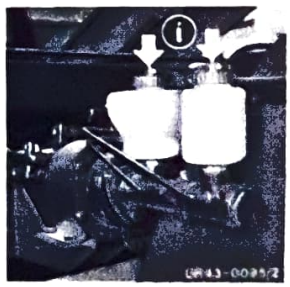
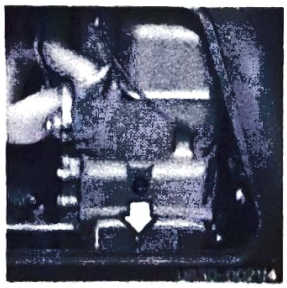


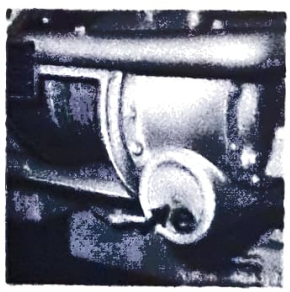
16

17

18


19

20



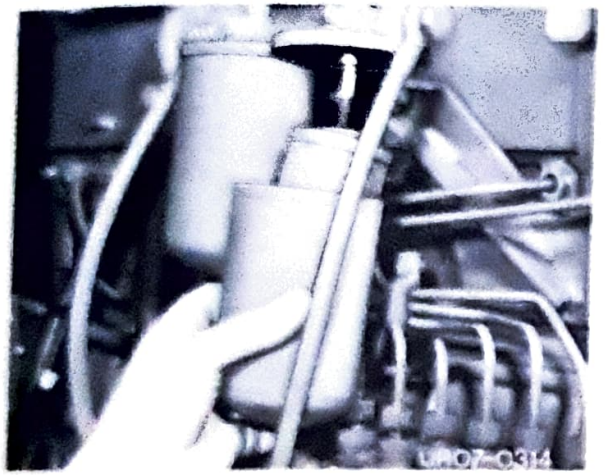
21

Additional maintenance jobs

Daily	Check oil level in engine, top up.
Weekly	Check maintenance indicator of air cleaner, clean.
Fall inspection	Check anti-freeze in cooling water, top up.
Every 24 months	Check coolant hoses, replace if necessary. Replace anti-freeze in cooling water.

Some Maintenance jobs -

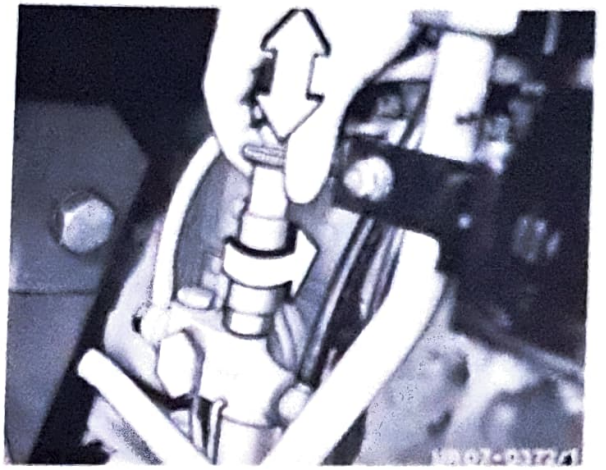
Clean fuel filter



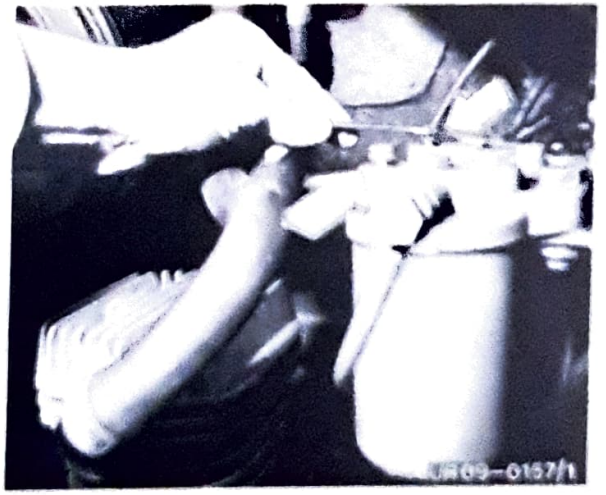
Remove both filter bowls

Blow out fuel filter element
with compressed air.
Max. approx. 3 bar!

Bleeding

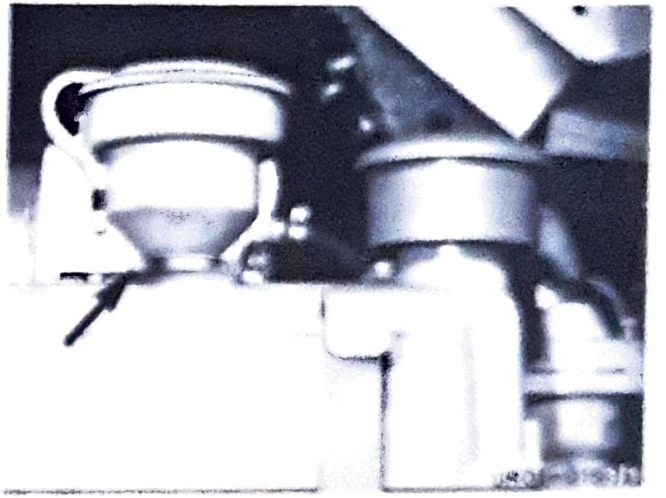


Screw on fuel handpump
an pump



Vent fuel filter
Open vent screw, pump until
fuel flows out free of
bubbles.

Vent filter, engine



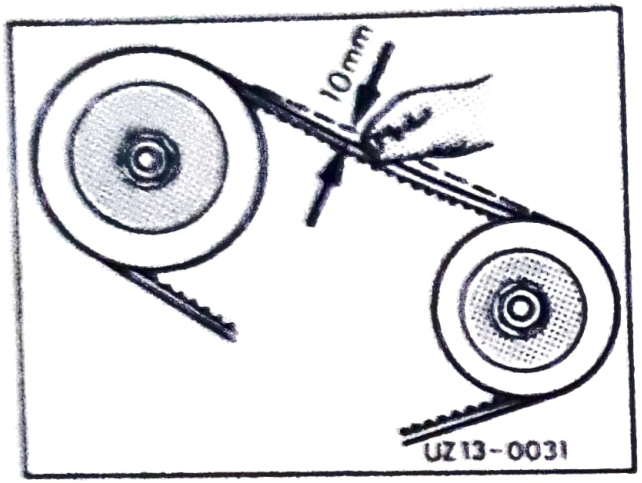
Vent filter, engine
Replace filter each
two years

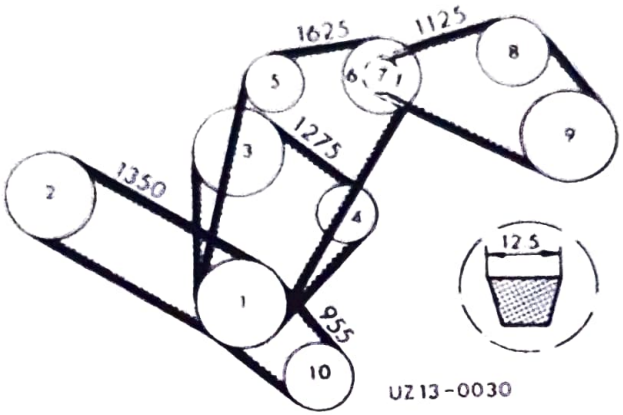
Hint:

Vent filter marked "E"
replacing not to be
necessary, **service-free!**

Tension V-belt

Tension V-belt so that it can be depressed about 10 mm with the thumb (depending on the length of V-belt). V-belts which are too tights or too loose are destroyed prematurely.

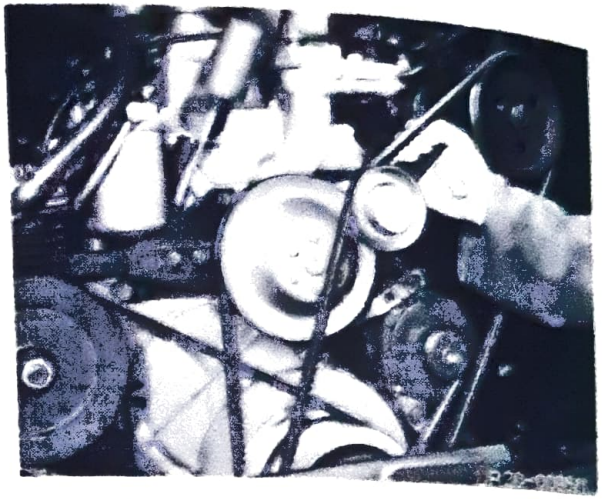




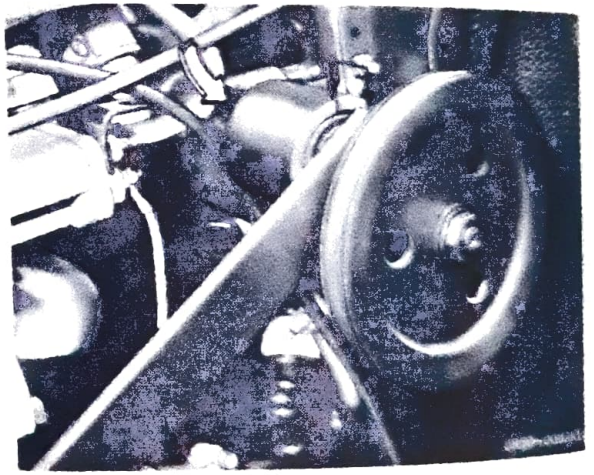
Dimensions in mm

V-belts

1 Crankshaft
2 Air compressor
3 Coolant pump
4 Alternator
5 Tensioning roller
6/7 Intermediate bearing
8 Tensioning roller
9 Fan
10 Steering pump
11 Hydraulic pump

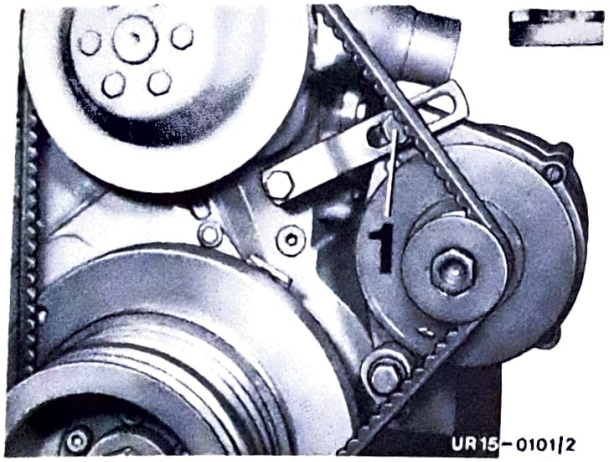


Checking fan drive tension by hand



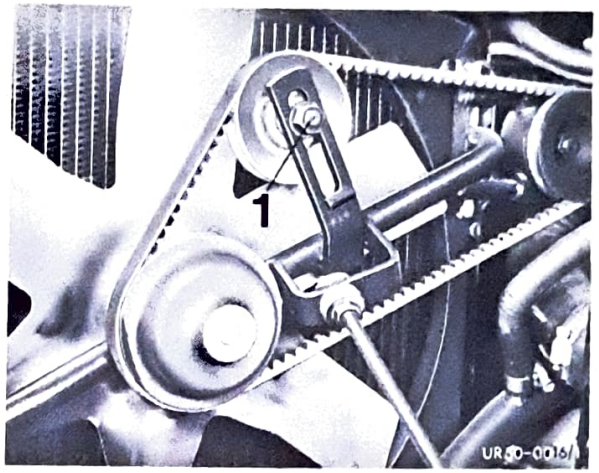
Adjust tensioning roller
(Both arrows = basic adjustment)
Release tension screws

Tension V-belt



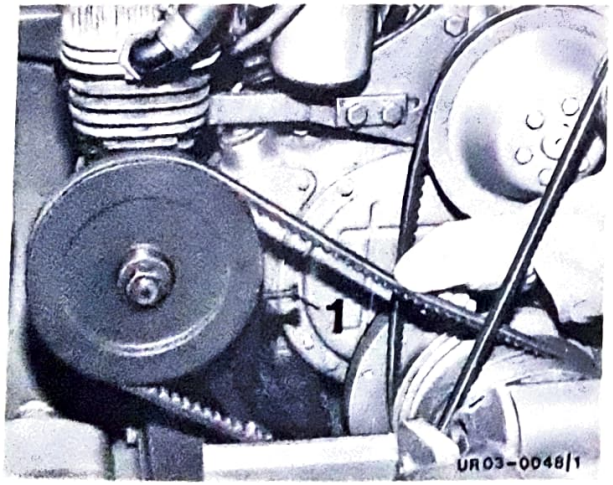
Alternator - coolant pump drive

1 Tensioning screw



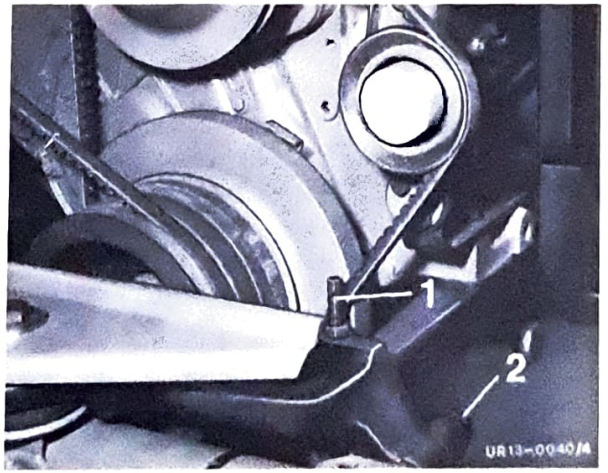
Fan drive and tensioning roller behind the radiator

1 Tensioning screw



Air compressor drive

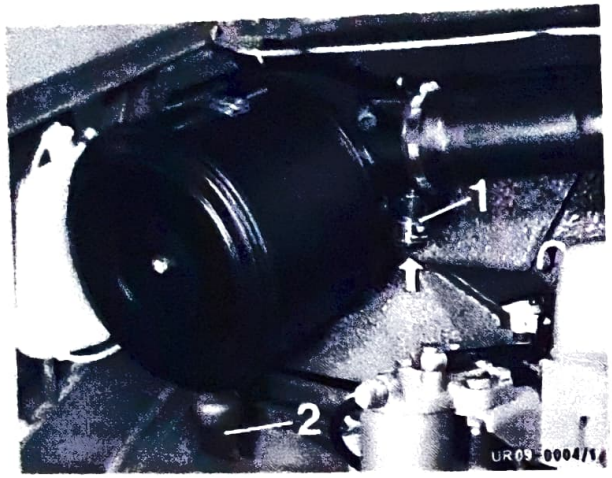
1 Tensioning screw



Steering pump drive

1 Tensioning screw
2 Fastening screw

Clean air filter



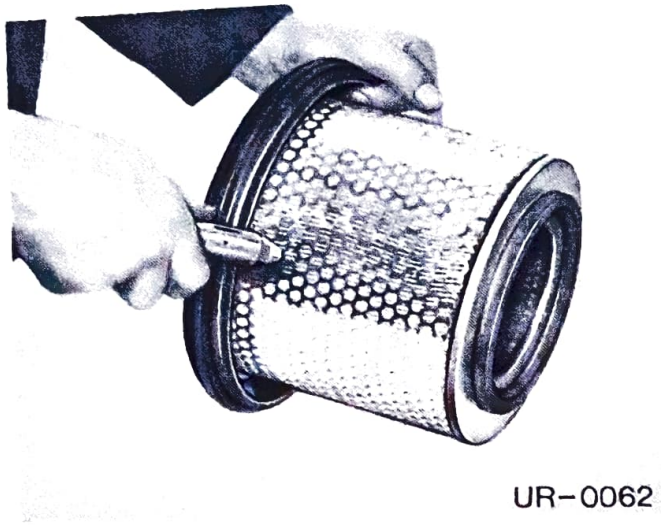
Dry air filter

1 Maintenance indicator
2 Dust descharge valve

Note: Check **weekly**, under severe dust conditions **daily.**

Only clean if maintenance indicator showing (red colored area)!

Afterwards again disengage maintenance indicator, press knob!



Blowing-out air filter paper element

Compressed air max. 5 bar

Important!

Never run engine without air filter element.

Replace after cleaning five times, however, at least every 2 years!

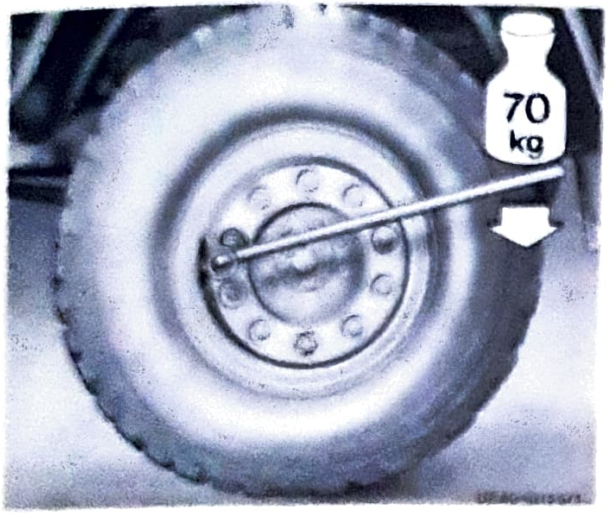
Filter element of venting system

Replacing filter element

1 Filter element
2 Venting grille

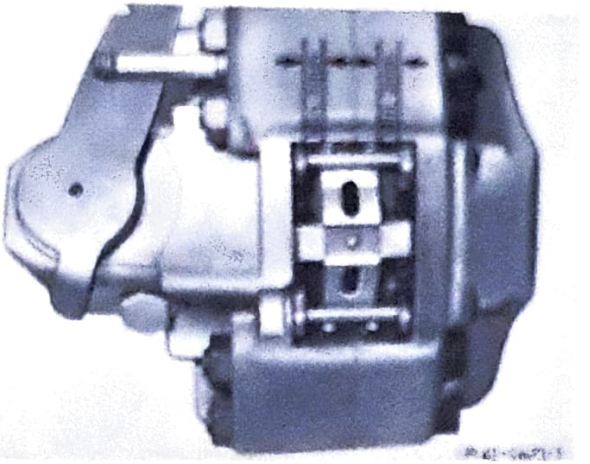
If required, but at least once a year, unscrew venting grille and replace filter element.

Check wheel nuts



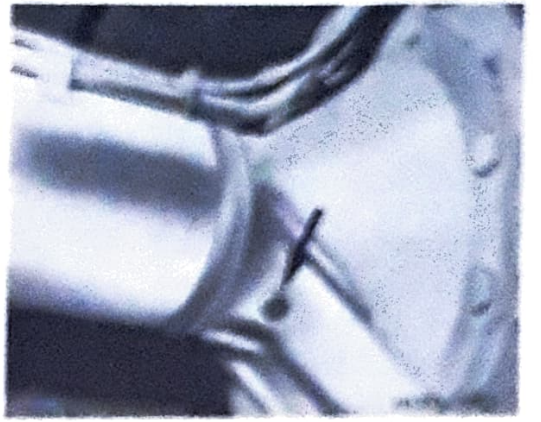
Check wheel nuts for tight seat 400 Nm (40 kpm)

Check brake pads



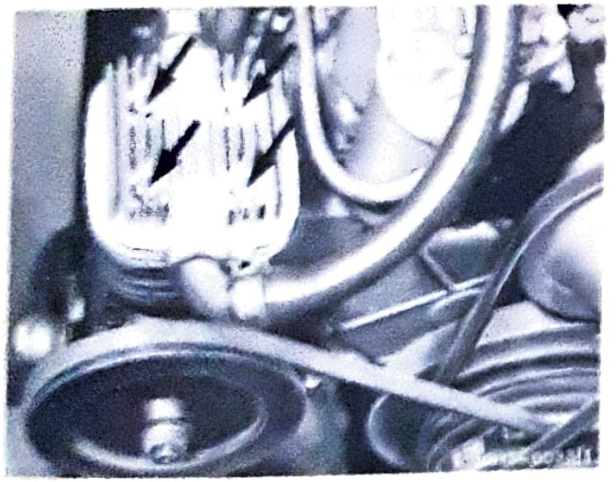
Lining thickness at least 2 mm

Differential lock ∅ 1300 G

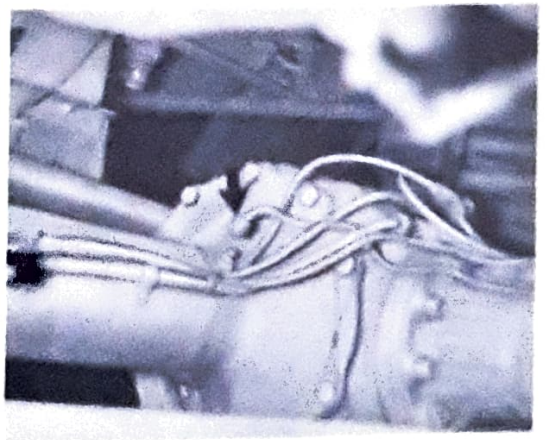


Drain condensate, before filling anti-corrosion oil

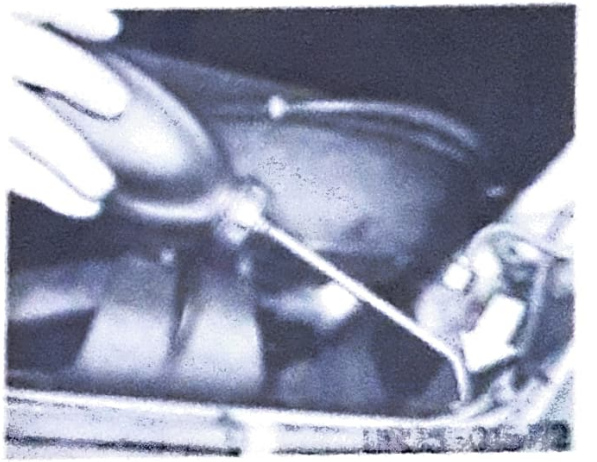
Air compressor



Tighten air compressor, cylinder head bolts to 35 Nm (3,5 kpm)

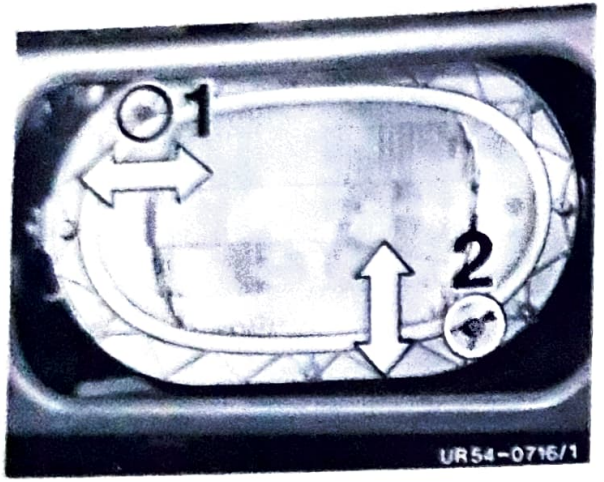


Unscrew pipe on front and rear axle housing



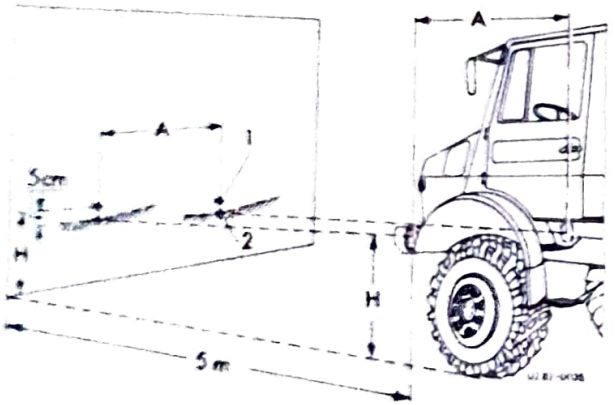
Fill in approx. 1 to 2 ccm anti-corrosion oil

Adjusting headlights



Adjust screws of water-tight headlights

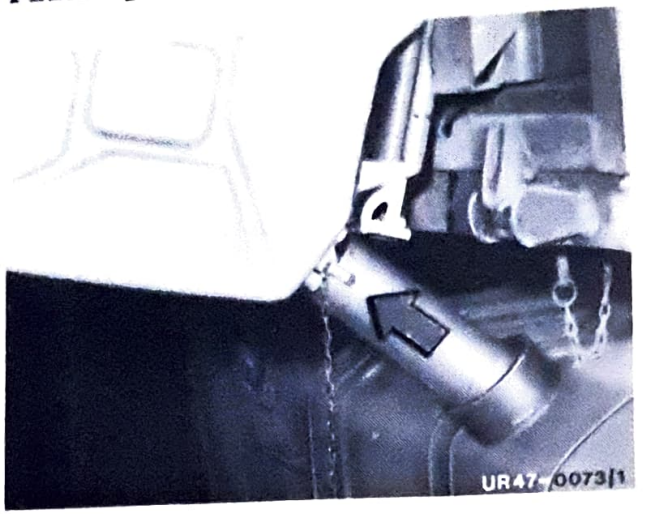
1 Horizontal adjustment
2 Vertical adjustment



Adjusting headlights

1 Main beam middle
2 Low beam middle
A Headlight center spacing
H Headlight center height

Filling with fuel

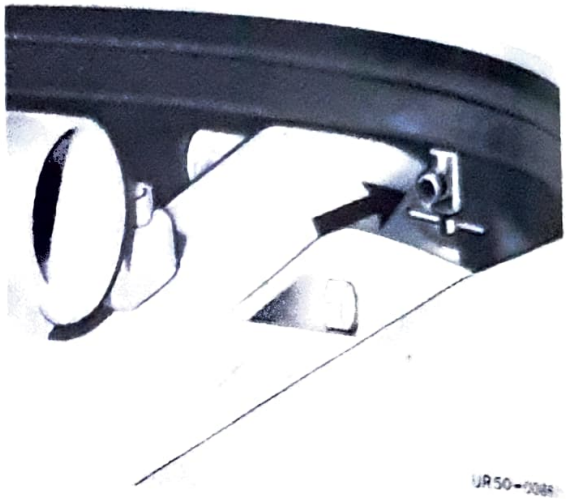


Withdraw and turn filler pipe

Important!

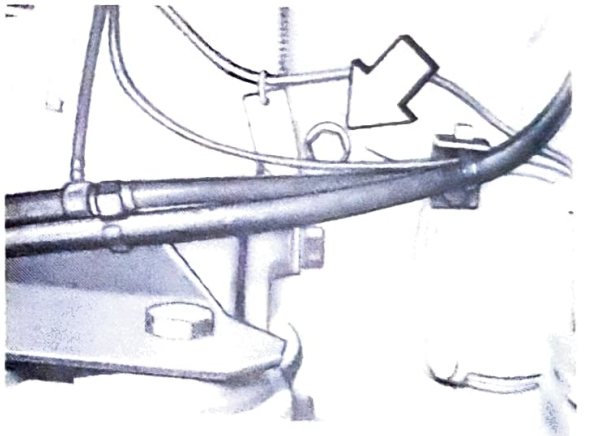
Never fill with fuel from a container without a strainer.

Draining coolant



Drain valve on radiator

Collect coolant in a container, because of antifreeze factor up to -25° C!



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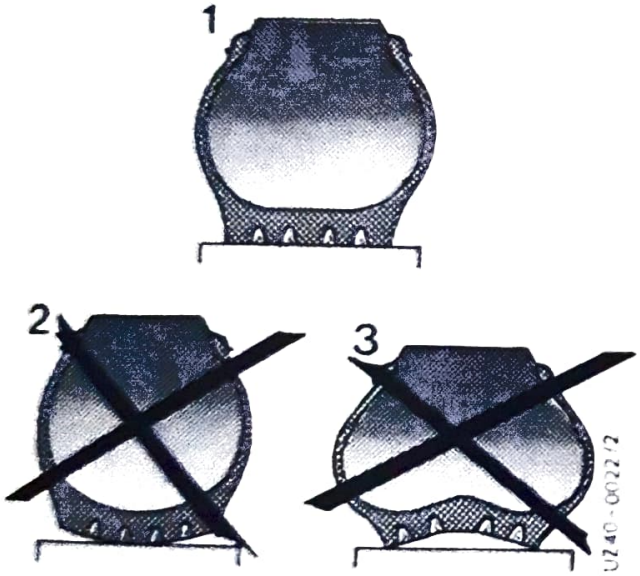
Drain plug on engine

Checking tire pressure

1 Check tire pressure

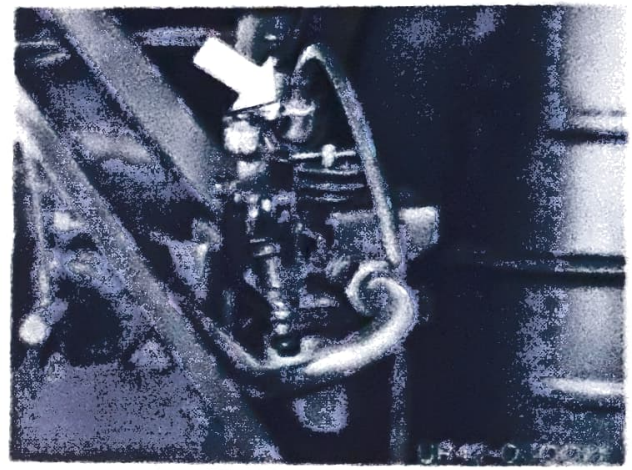


1 **Normal tire pressure**
2 Increased tire pressure *
3 Reduced tire pressure *

* **Tire wear!**

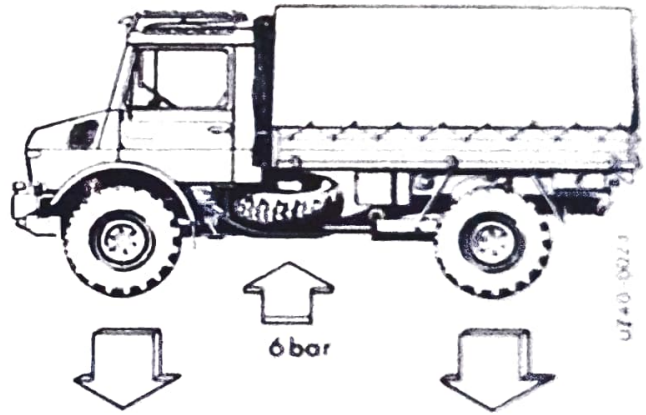
Filling tires

Reduce to 6 bar to inflate tires



Connect tire inflating hose at pressure regulator

When inflating tires run engine!



Tires	Front	Rear	Type
12,5R20 XL	4,0 bar	4,0 bar	U 1300 L
13,00-20 XL	5,0 bar	5,0 bar	U 1700 L

Note: Minimum tire pressure in cross country driving 1,5 bar

Wheels - Changing Tires

Change tires at least every 10000 km.

Note direction of tread!

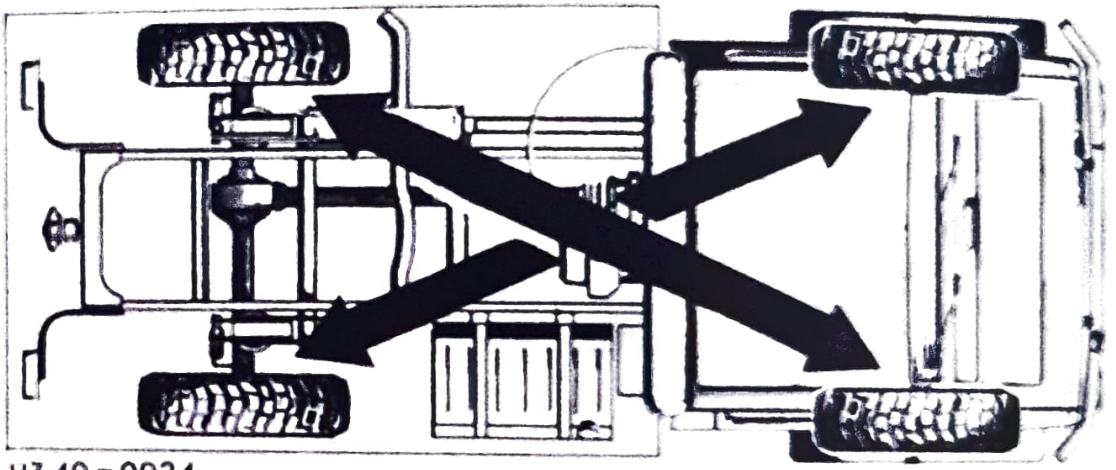
Tires are installed with opposed tread direction, thereby obtaining improved steering capability and quieter driving.

Important

Tighten wheel nuts on new vehicles and following wheel changes after a distance of approx. 40 to 60 km!

Tightening torque 400 Nm

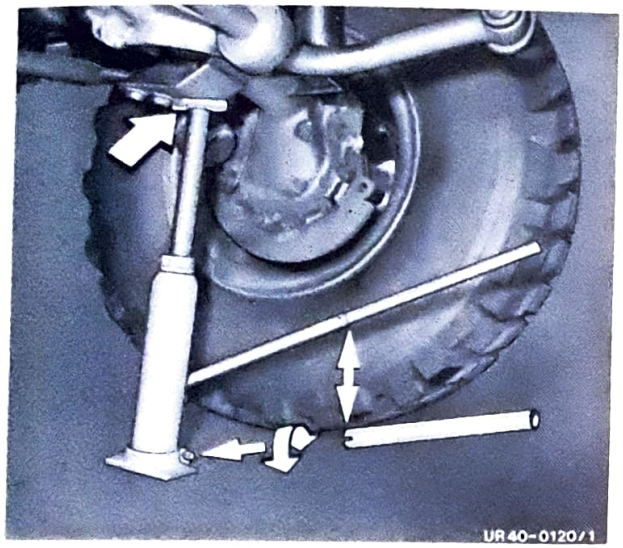
UNIMOG with tires Michelin pilot XL Tread installed in opposed direction



UZ 40-0024

Only change tires crosswise!

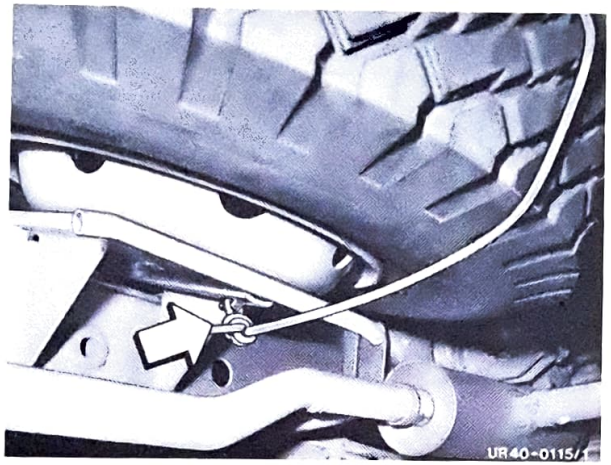
Spare wheel - wheel change



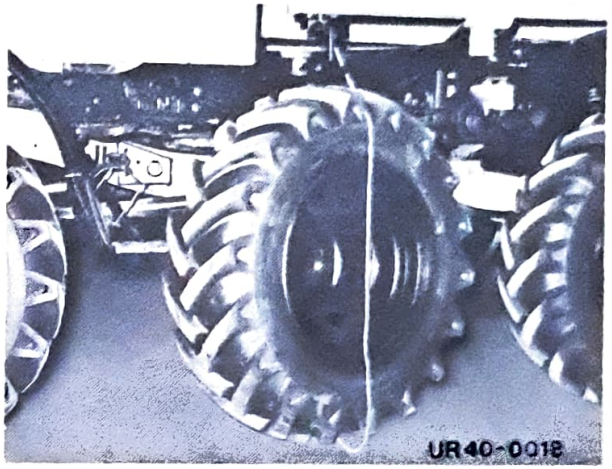
Jack 10 t

Only position at end of axle tube!

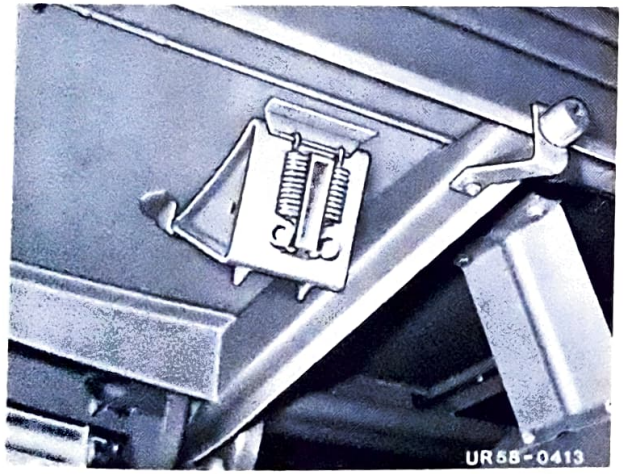
Fitting and removing spare wheel U 1700 L



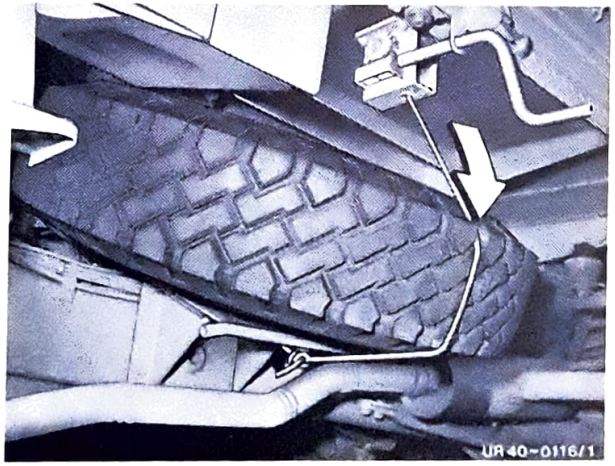
Attach rope on hook under bracket



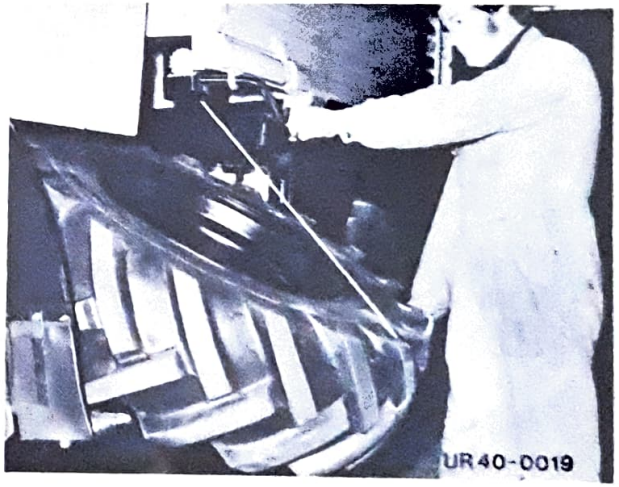
Run rope across center of wheel



Chocks under platform



Release spare wheel and lower with crank



Raise and fasten spare wheel

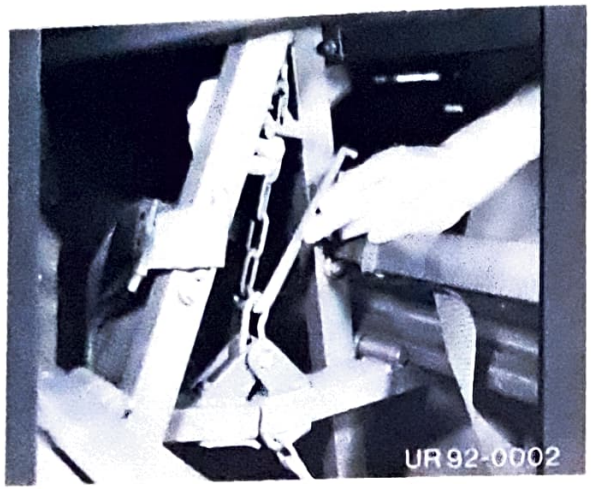
Platform

Centre bench
for 8 persons (U 1300 L)
for 16 persons (U 1700 L)

Centre bench installed

1 Turnbuckle
2 Chain tightener

Centre bench stowing away

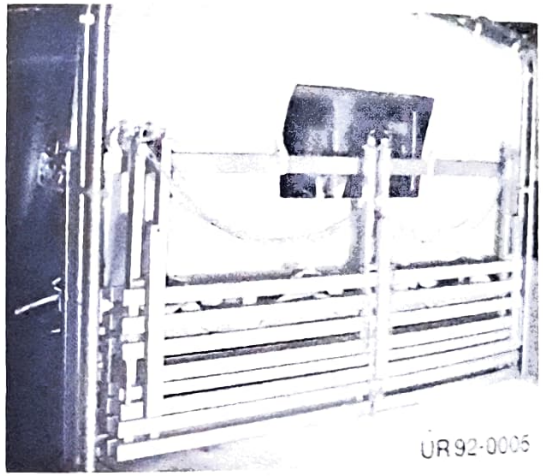


Open turnbuckle

Fold seat upwards

Each seat belt must be used for 2 persons

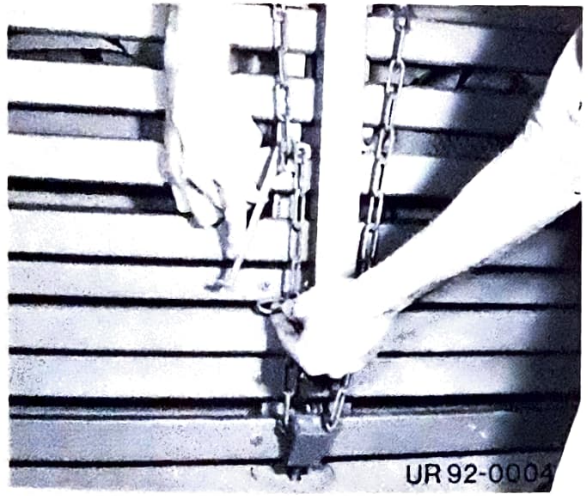
Fold seat upwards
Lift bench on one side first



Bench stowed on front of platform

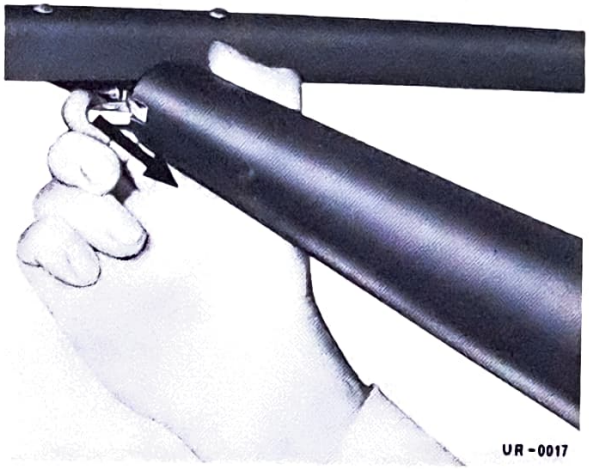
Platform

Insert tensioning chain in platform hole

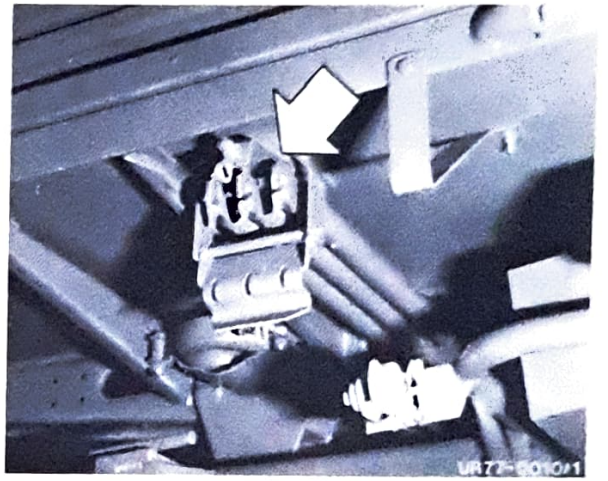


Fasten bench seat with turnbuckle

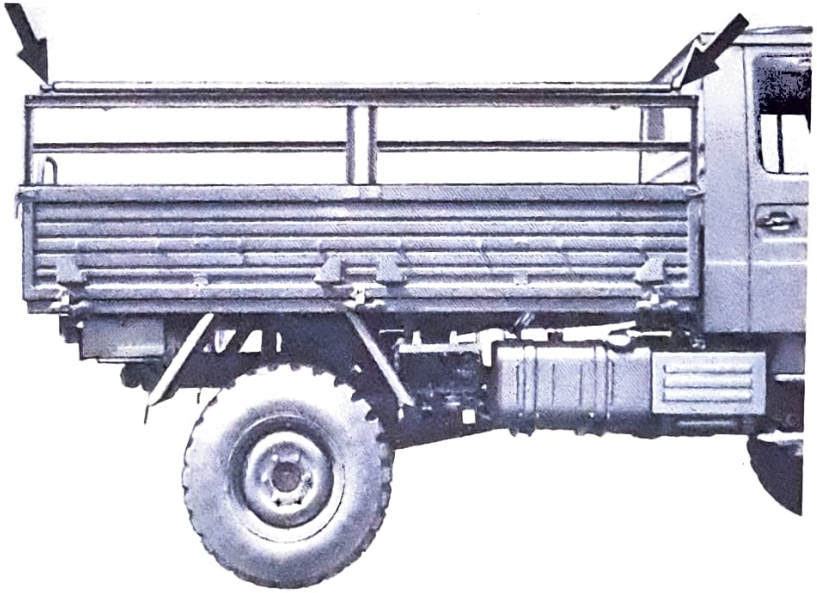
Stake to be stowed



Unlock stake



Three stakes stowed in bracket under platform



UR60-0271/1

Two stakes to be fitted on the extension of side boards

Cable winch

The winch is only to be used for recovery purpose and not for lifting or lowering loads.

Roll-off cable

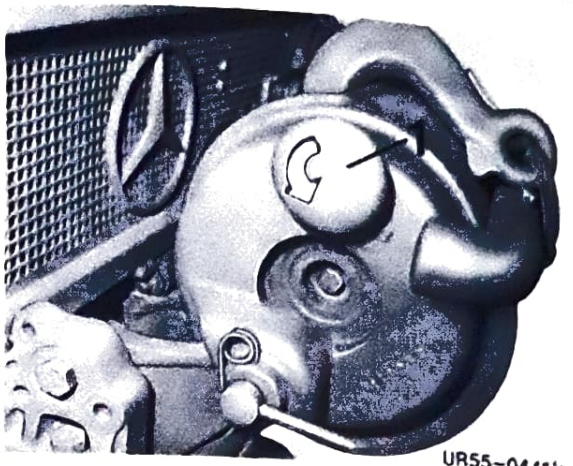
Loose friction (1) brake as that the cable drum remains ligth braked.

Pull cable outwards and fasten on appropriate place.

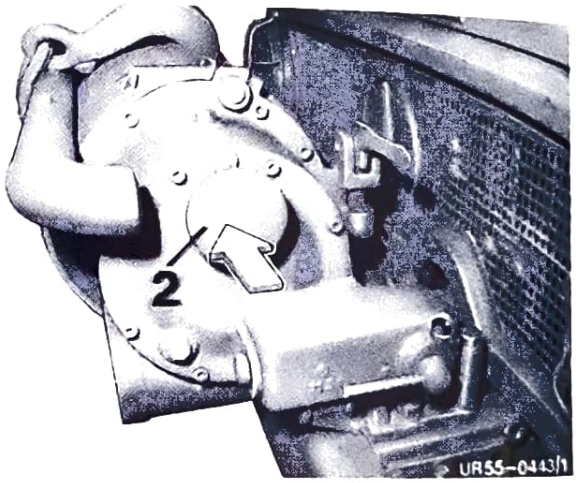
Brake lever must be in vertical position, i.e. the band brake is functioning, pos. a.

Remove safety spring and push-in coupling knob. Winch is engaged.

Actuate clutch, engage Pto, release clutch pedal slowly and accelerate.



Loosen friction brake (1) pull cable outwards



Engage cable winch push botton coupling knob (2)

Caution

With winch in operation, do not leave driver's cab.

A second person should guid and instruct the operator on all recovery procedures.

Danger!

To stop winch, actuate clutch pedal again and disengage PTO shift lever.

Roll-off cable

Loosen band brake (3) slowly, pos. (b).

Caution!

The hand must remain on the brake lever.

Bring lever back into vertical position, pos. (a).

Disengage winch.

Slacken cable

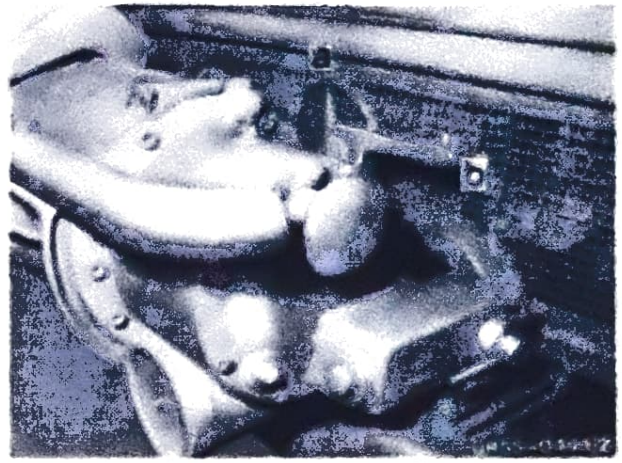
Loosen band brake (3), pos. (b).

Move cable up and down to relieve tension. After procedure disengage winch - pull out coupling knob (2).

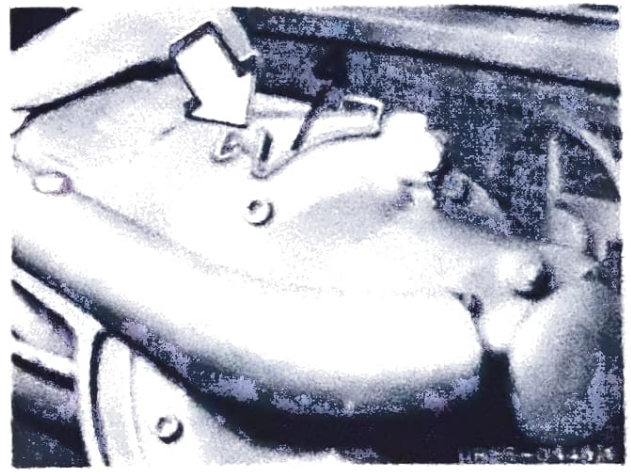
Return motion lock:

A mechanical lock to hold winch drum in a certain position.

Required e.g. for pulling or recovering on other vehicle with the winch cable.



3 Band brake
a Brake position
b Loosening position



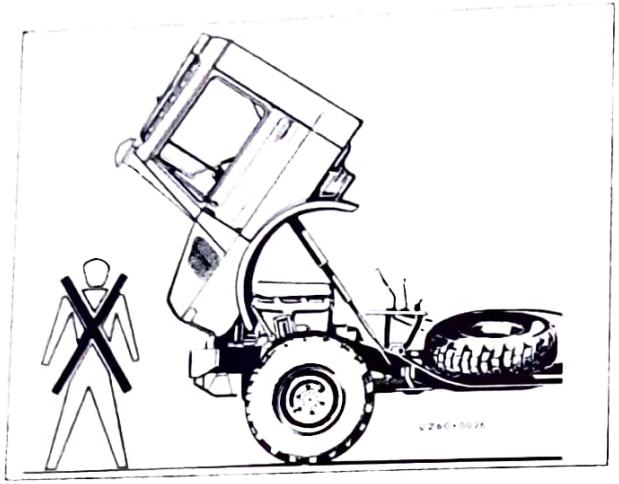
4 Reverse locking lever

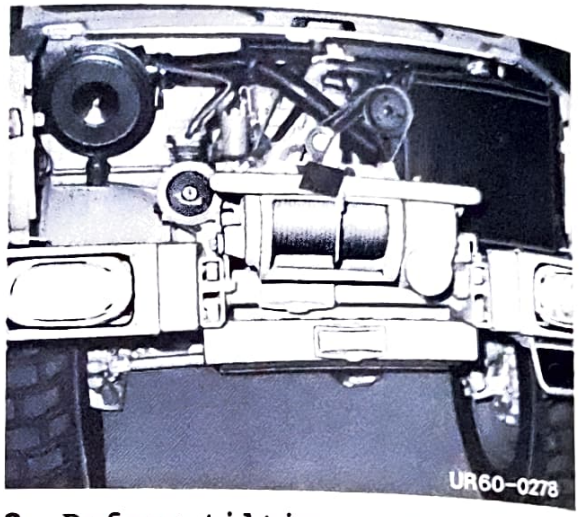
Tilting driver's cab

Safety regulation!

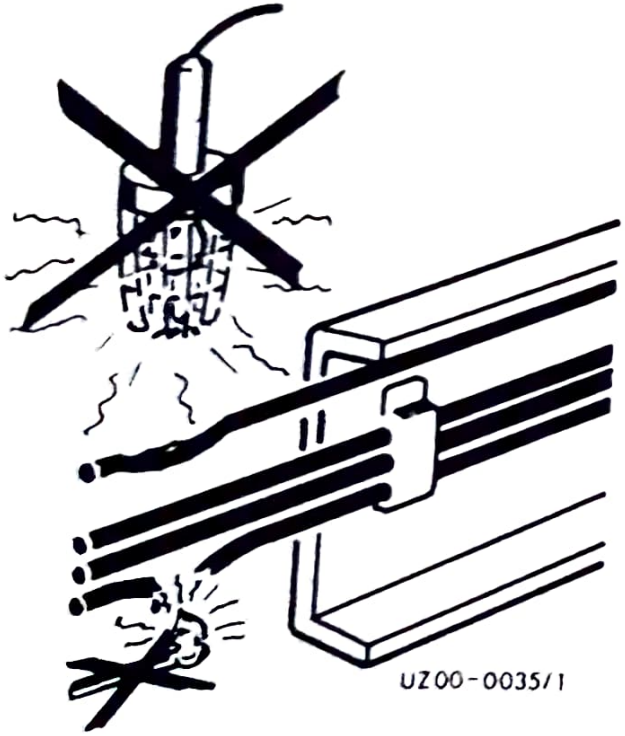
Keep clear of cab fore and aft when cab tilted!

Close doors before tilting cab!

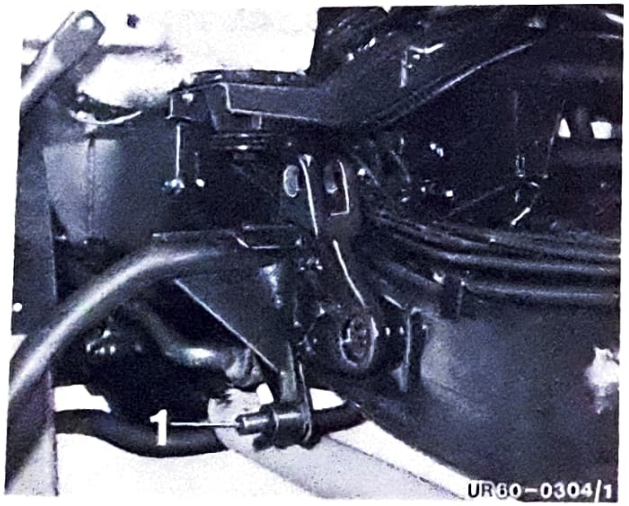




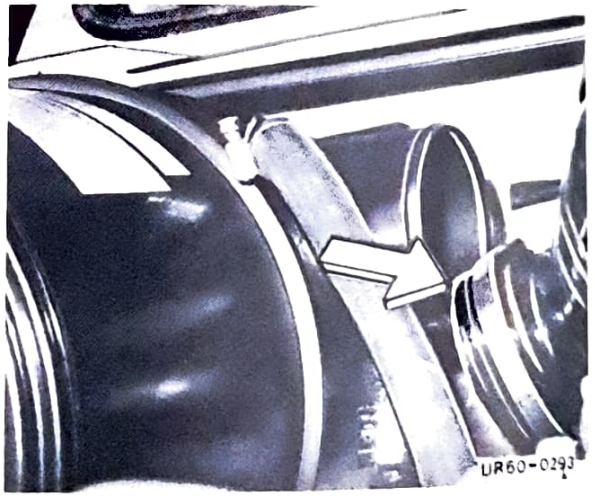
2 Before tilting, remove front grille and engine hood. Set wheels in straight-forward direction.



Caution when repairing - plastic cables!

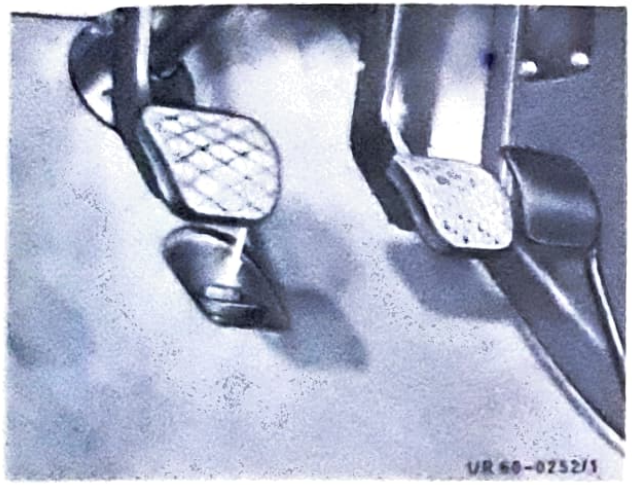


1 Locating pin (1) for telescopic cylinder

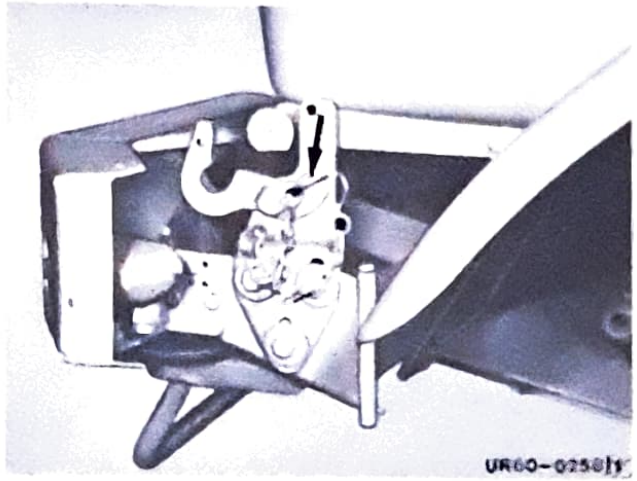


3 Release intake hose between engine and air cleaner

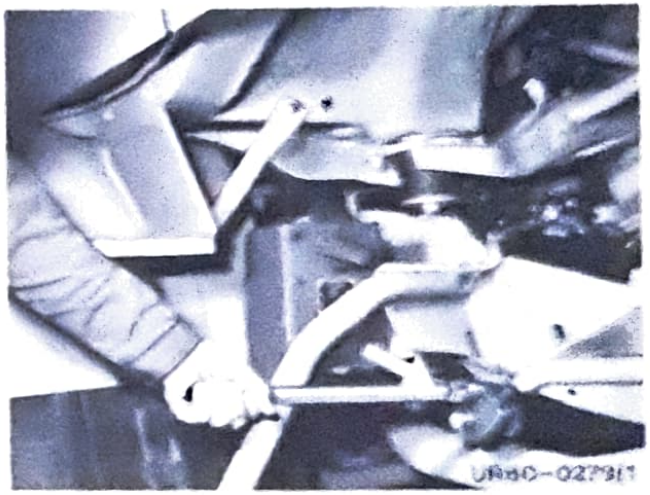
Tilting driver's cab



4 Unscrew mounting screws (2) of driver's cab front

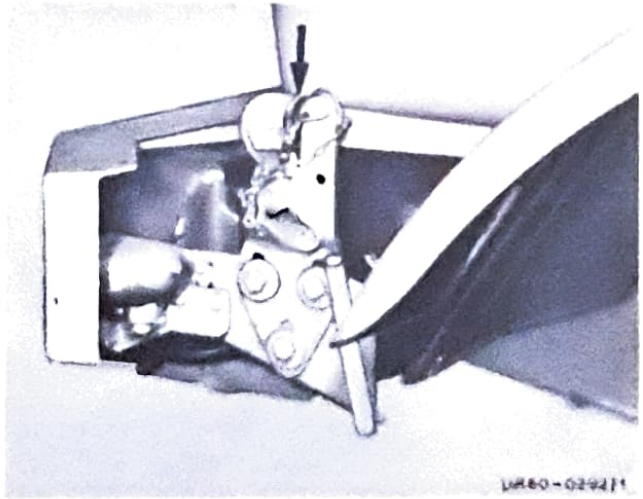


6 Unlock tilting device right and left

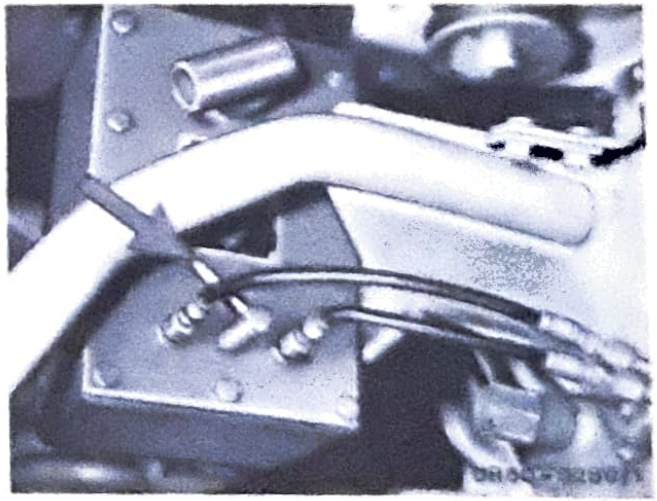


8 Close lock valve with pump on cylinder (turn right)

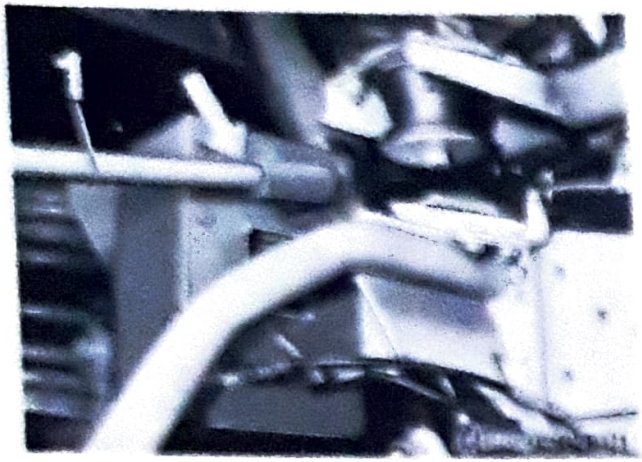
5 Unscrew mounting screws (2) of driver's cab rear



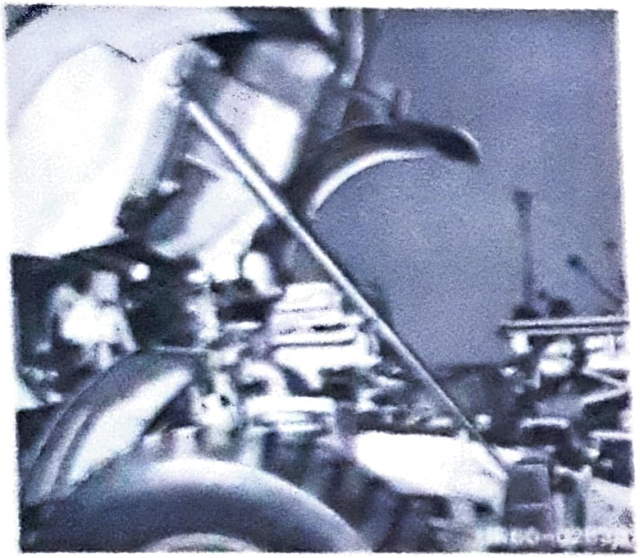
7 Turn tilting device upwards, lock and secure



9 Control lever in position lift "Heben"



10 Insert handle in pump socket (1)
Pump cab upwards

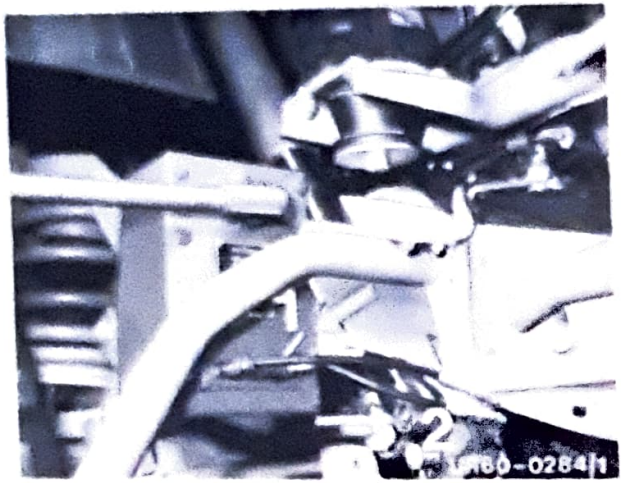


11 Driver's cab in end position

Lowering driver's cab

Lowering the driver's cab is also executed by pumping. The locking valve (2) may not be opened.

Risk of accident!



Set control lever (1) to position down ("Senken"). Open lock valve (2) after lowering the driver's cab (turn left).

Important!

Valve must always be open when driver's cab is in normal position in order to maintain the necessary pressure compensation in twisting.

Insert steering shaft into sliding sleeve when lowering the cab, in doing so observe punch markings.

Fuel system

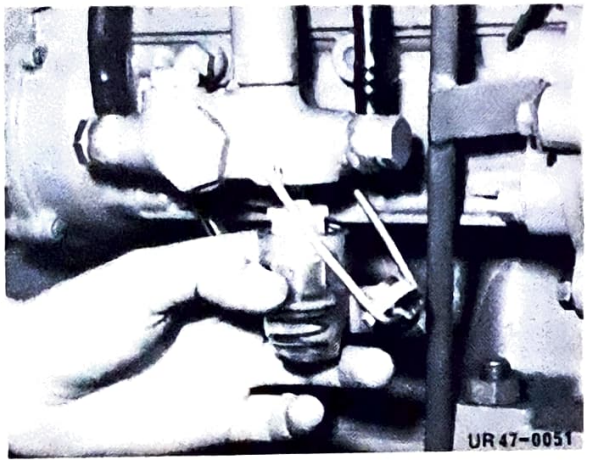
Engine does not start

Engine fails

Possible fault

No fuel

Prefilter dirty

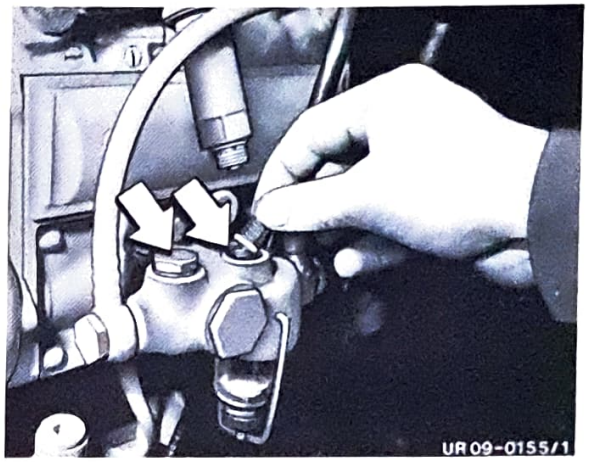


Remove filter and clean element

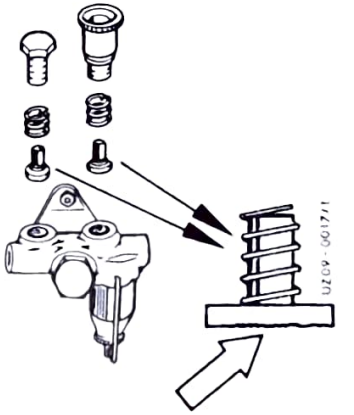
Prefilter draws-in air

Check gasket, replace!

Dirty valves



Remove valves



Check valves, clean underside and smoothen

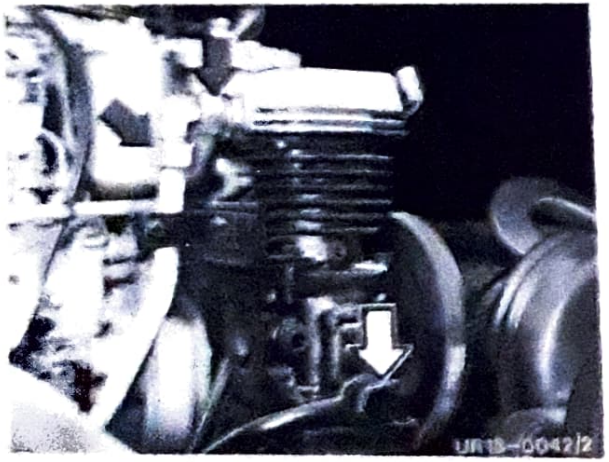
Compressed air system

No compressed air

No supply pressure

Possible fault

System leaking



Air pressure lines

- Connections
- Tighten connection

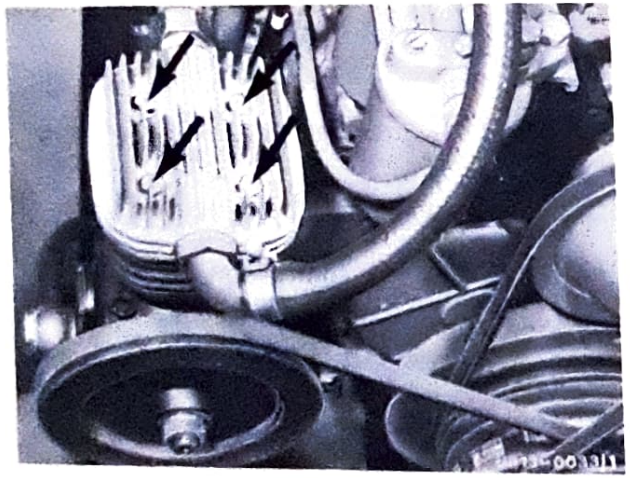
Wheels - Front axle

High tire wear

Uneven tire wear

Possible fault

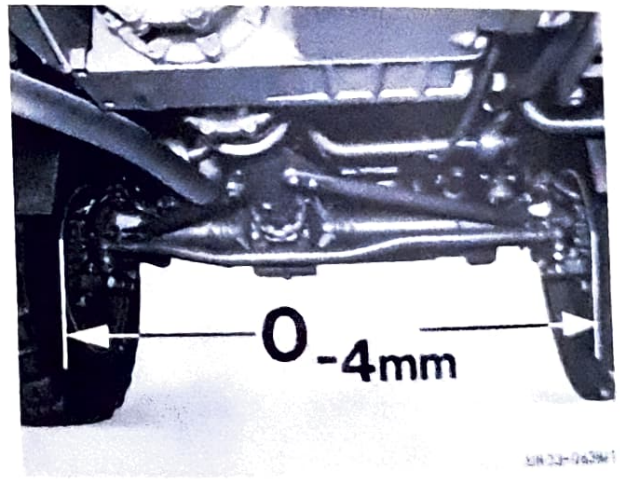
No air compressor delivery



Tighten V-belt

Tighten cylinder head

Toe-out wrongly adjusted
Tire pressure too high
or too low
Tie rod bend



Adjusting track

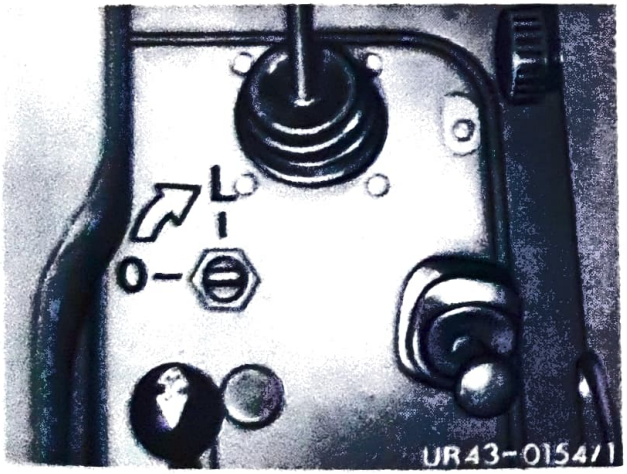
Perm. track 0 to −4 mm
(toe-out)

Emergency release of spring-loaded cylinders

Caution when manoeuvring the vehicle!
The vehicle cannot be braked without compressed-air supply.

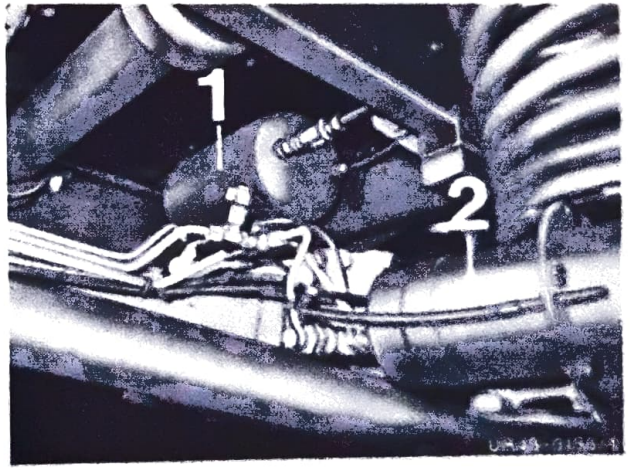
Operational instruction for spring-loaded cylinder

The spring-loaded brake cylinder brakes with spring force and releases with compressed air!



Shift valve for emergency system

0 Off
L Release position



Emergency release of parking brake

1 Compressed-air reservoir
2 Spring-loaded cylinder at rear axle, left side

Operation

In case of defective air-pressure system - leakage, defective compressor or defective engine - the vehicle can be towed for repair. The spring loaded parking brake cylinder can be released through a separate reservoir.

Turn knob into "L" position and hold - spring loaded cylinder remains in released position.

Towing

When towing leave engine running, if possible, so that the steering is operating and the brake system is supplied with compressed air.

Max. towing speed is 40 km/h.

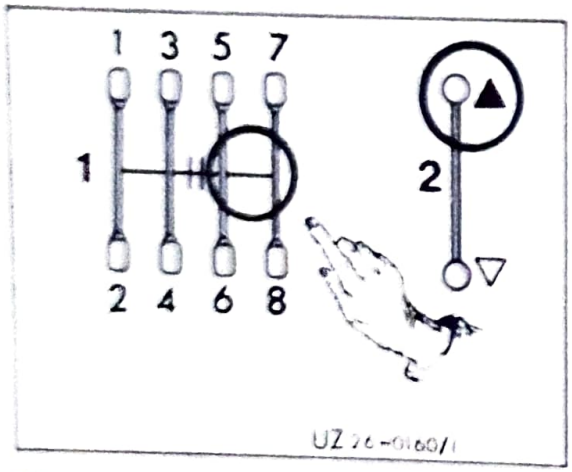
Important note:

Do not tow or push with battery disconnected! Alternator damage.

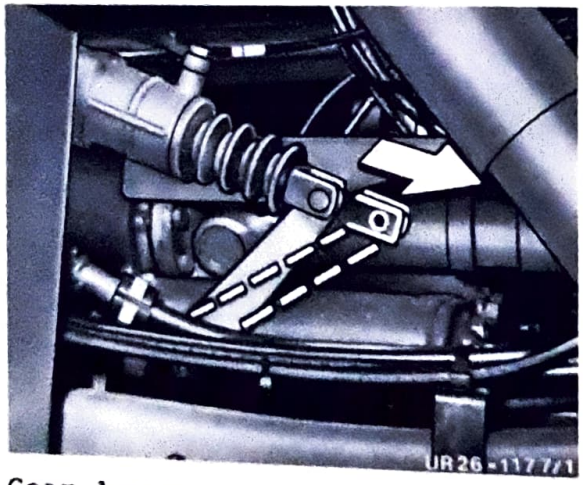
To avoid transmission damage

Important, when vehicle has **no** compressed air **note:**

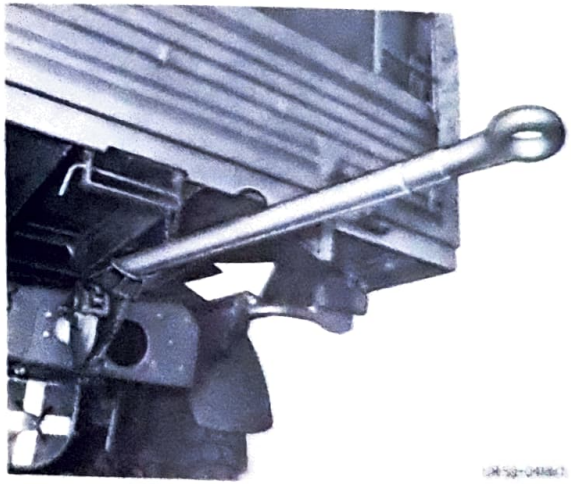
The vehicle may only be towed with towbar.



Observe gear position when towing!



Gear lever must be positioned forward, if necessary shift with vehicle tool kit (extension-rod)



Withdraw towbar from under platform

Electrical system

Lighting

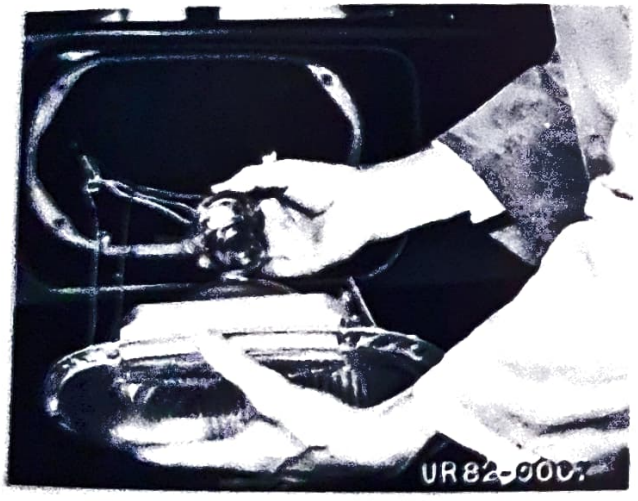
Lighting defective

Possible fault

Fuse blown due to

- Short circuit
- Loose contact

Bulb defective

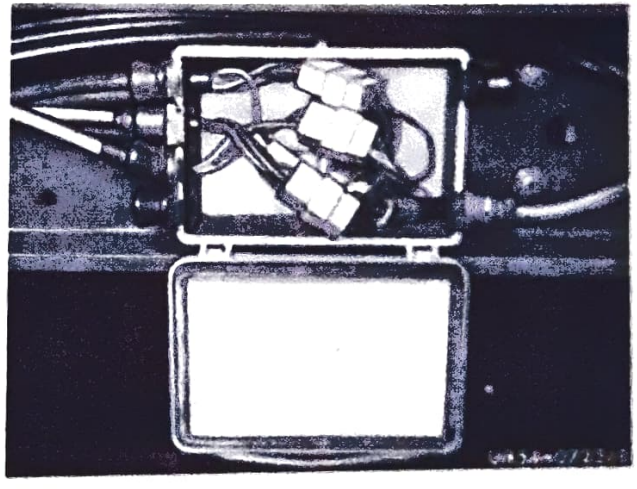


Change bulb

Large bulb	55/50 W
Small bulb	4 W

Cable connections

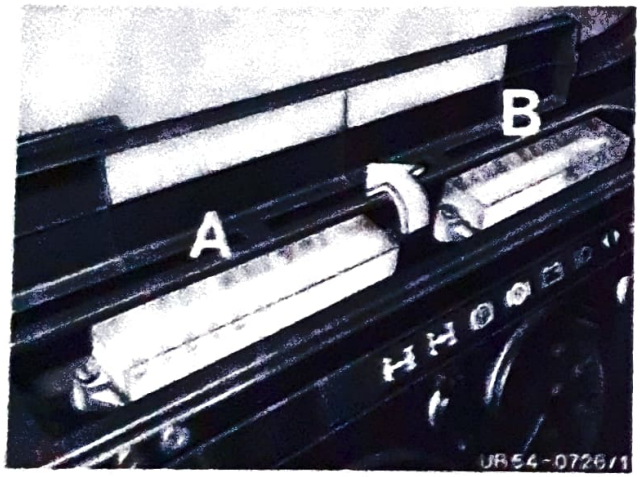
Corrosion at cable connector or other connections



Check cable connector on frame

Electrical system

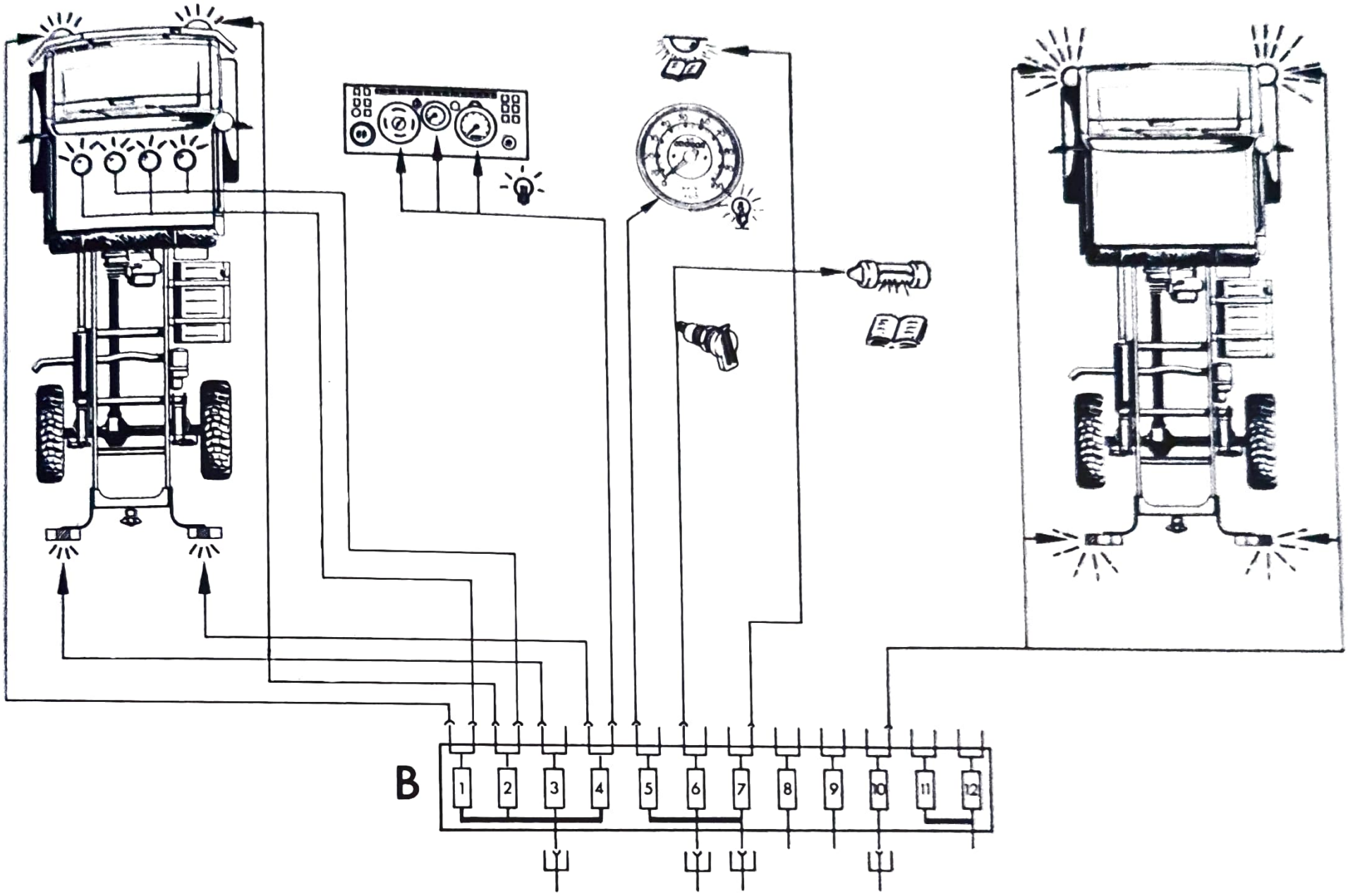
Fuses and electrical connections



Open fuse boxes

50 Remove plastic cover

Fuse box left A



UZ54-0137

Fuse box right B

6 OPERATING MATERIALS

Filling capacities

Assembly or unit	Operating material	SAE class	Season / ambient temperature	Capacity in liters U 1300 L	Capacity in liters U 1700 L
Engine Oil filter	Engine oil HD *	30 [2] 40 [2]	all seasons summer	14,5 in oil filter 1,5	15 2 x 1,0
Transmission with power take-off (special version)	Engine oil HD	30 [2] 20 W 20	all seasons winter	10,5 11,0	
Front and rear axle axle drive housing	Gear oil, hypoid	90	all seasons	each 2,5	
Front and rear axle planetary hub drive	Gear oil, hypoid	90	Pto bearing front (special version)	0,25	0,6
Pto bearing, front (special version)	Gear oil [1] Gear oil, hypoid	80	all seasons [1]	each 0,08	
Pto transmission (special version)	Engine oil HD	30 [2] 20 W 20	all seasons winter	5,75	

1) Constant use 2) only single grade oil

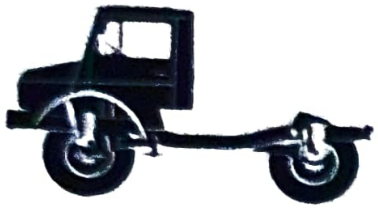
* Use Engine oil SJ quality only (for engine with turbocharging U 1700 L)
See Operating Materials specifications sheet 227,0/227,1

Filling capacities

Assembly or unit	Operating material	SAE class	Season / ambient temperature	Capacity in liters U 1300 L	Capacity in liters U 1700 L
Hydraulic steering, reservoir and steering	Engine oil HD 3)	10 W	all seasons	2,25	
Hydraulic brake system Hydr. clutch control linkage	Brake fluid Brake fluid	DOT 3	all seasons all seasons	approx. 1,0 approx. 0,2	
Cooling system	Water with - Anticorrosive agent		summer / all seasons only in tropical zones	approx. 20,0 approx. 1 % = 0,2	
	- Antifreeze to -25° C 4)		winter / all seasons	approx. 8,0	
Windshield washer reservoir	Water, MB-windshield washer concentrate		all seasons	approx. 7,0	
Fuel tank	Diesel fuel	as per DIN		160	
Cable winch	Gear oil Gear oil, hypoid	80 90	all seasons	2,0	
Grease nipple	Grease/multi-grade grease		all seasons	as required	
Battery terminals	Anti-acid grease		all seasons	as required	

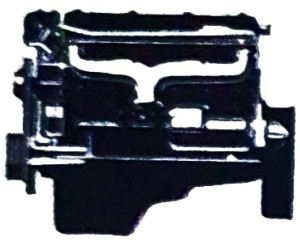
3) Or transmission fluid (ATF) Type A
4) Factory filling, standard. If no anti-freeze is required, use 1 % (approx. 10 cc/l.) approved treating agent in cooling water.

Chassis



	UNIMOG 435
Sales designation	**U 1300 L**
Model	**435.115**
Design of vehicle	Military-cross country vehicle
Special version	Right hand drive, exhaust system right side

Engine

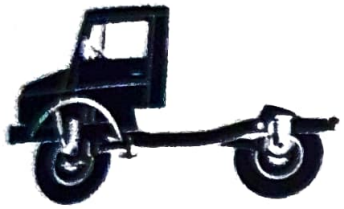


Type		352
Type/sales designation		OM 352.X/1
Model		353.961
Operation		Diesel four-stroke with direct injection (RQV-regulator)
Arrangement of cylinders		6 cylinders in line
Bore	mm ∅	97 dia.
Stroke	mm	128
Total displacement	cc.	5675
Compression ratio	i	17,0 : 1
Start of delivery BTDC		18°
Compression pressure	min. bar	20 (warm engine)
Injection order		1 - 5 - 3 - 6 - 2 - 4
Output according to DIN	kW (HP)	96 (130) at 2800/min
Torque max.	Nm	363 at 1700/min
Torque rise	%	11,3
Nominal speed	1/min	2800
Valve arrangement		overhead
Valve clearance (cold)	intake mm	0,20
	exhaust mm	0,30
Operating temperature	° C	80° to 90° (coolant temperature)
Oil gauge pressure normal	bar	2 to 5
Oil gauge pressure at idle	bar	min. 0,6
Cooling system		water cooled
Special version		tropicalized thermostat (as of 71° C)

54	**Fuel consumption**	As per DIN 70030	1/100 km	22,0

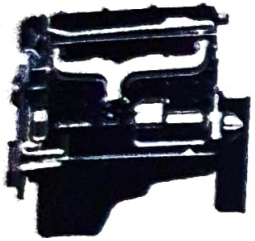
U 1700 L

Chassis



Sales designation	**UNIMOG 435**
Model	**U 1700 L**
Design of vehicle	**435.113**
Special version	Military-cross country vehicle Right hand drive, exhaust system right side

Engine



Type		352 A (with exhaust gas turbocharger)
Type/sales designation		OM 352.A LII/1
Model		353.959
Operation		Diesel four-stroke with turbocharger and direct injection (RSV-regulator)
Arrangement of cylinders		6 cylinders in line
Bore	mm ⌀	97 dia.
Stroke	mm	128
Total displacement	cc.	5675
Compression ratio	i	16,0 : 1
Start of delivery BTDC		19°
Compression pressure	min. bar	20 (warm engine)
Injection order		1 - 5 - 3 - 6 - 2 - 4
Output according to DIN	kW (HP)	124 (168) at 2800/min
Torque max.	Nm	520 at 1800/min
Torque rise	%	23,0
Nominal speed	1/min	2800
Valve arrangement		overhead
Valve clearance	intake mm	0,25
(cold)	exhaust mm	0,40
Operating temperature	° C	80° to 90° (coolant temperature)
Oil gauge pressure normal	bar	2 to 5
Oil gauge pressure at idle	bar	min. 0,6
Cooling system		water cooled
Special version		tropicalized thermostat (as of 71° C)

Fuel consumption

As per DIN 70030	1/100 km	20,8

Clutch

Design		Single-plate dry clutch
Model		GFM 330 K
Clutch pressure	approx. N	11500 to 13100
Actuation		hydraulic
Adjustment		automatic

Transmission

Main transmission

Design	Synchromesh spur gear transmission with planetary group
Manufacturer	Daimler-Benz
Type and designation	UG 3/40-8/13,01 GPA
Model	717.901
Number of speeds	8 forward - 4 reverse

Ratio	Forward	Reverse
1st gear	13,01	12,60
2nd gear	9,01	8,74
3rd gear	5,96	5,78
4th gear	4,38	4,24
5th gear	2,97	
6th gear	2,06	
7th gear	1,36	
8th gear	1,00	

PTO drive

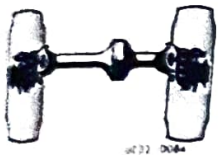
Fast pto

(special version)		fast pto to rear
Translation either	i =	1,0 or 0,7
Max. speed	1/min	2800 3940

Pto transmission

Design		Getriebezapfwelle
Designation		UNA 3/40
Max. speed	1/min	540
Connection		at front
	Size	1 3/8" (splined profile as per DIN 9611)
Front PTO		
Perm. power load	kW	33

Axles

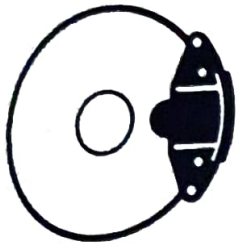


Rear axle		**U 1300 L**	**U 1700 L**
Type/designation		HU 2/14 S-4,0	HU 3/1 S-6,8
Model		747.111	747.206
Stabilizer		-	stabilizer reinforced
Front axle			
Type/designation		AU 2/14 S-4,0	AU 3/1 S-5,3
Model		737.111	737.202
Translation			
Total	i =	5,307 (100 km/h)	6,38 (90 km/h)
Axle drive	i =	23 : 9	24 : 11
Wheel hub drive	i =	27 : 13	38 : 13
Track	mm	0 to -4 (toe-out)	
Camber		1°45	
Inclination		10°	
Caster		7°	
Steering angel		40°	
Stabilizer		Stabilizer	Stabilizer, reinforced

7 TECHNICAL DATA

			U 1300 L	U 1700 L
Steering				
	Design		Ball nut power steering	
	Manufacturer		Daimler-Benz	
	Designation		LS 3 B	
	Model		765.601	
	Steering pump	Type	ZF 7672	
	Operating pressure	bar	130	
Wheels and tires				
	Tire	Size	12,5R20 (radial)	13,00-20
	Manufacturer		Michelin	Michelin
	Designation		Pilote XL / tubeless	
	Rim	Size	11 x 20	10.00V-20
	Tire pressure front/rear	bar	4,0/4,0	5,0/5,0
Electrical system				
	Rated voltage	V	24, RFI suppression	
	Alternator		Three-phase, Bosch (with installed regulator)	
	Output	W	1540	
	Volt x amp.	V x A	28 x 55	
	Starter motor	kW	2,9 (splashproof)	
	Battery	V	24 (2 x 12)	
	Capacity	Ah	2 x 125	
	Electrolyte density		1,23 (tropical version)	
	Head lights		Left hand traffic	

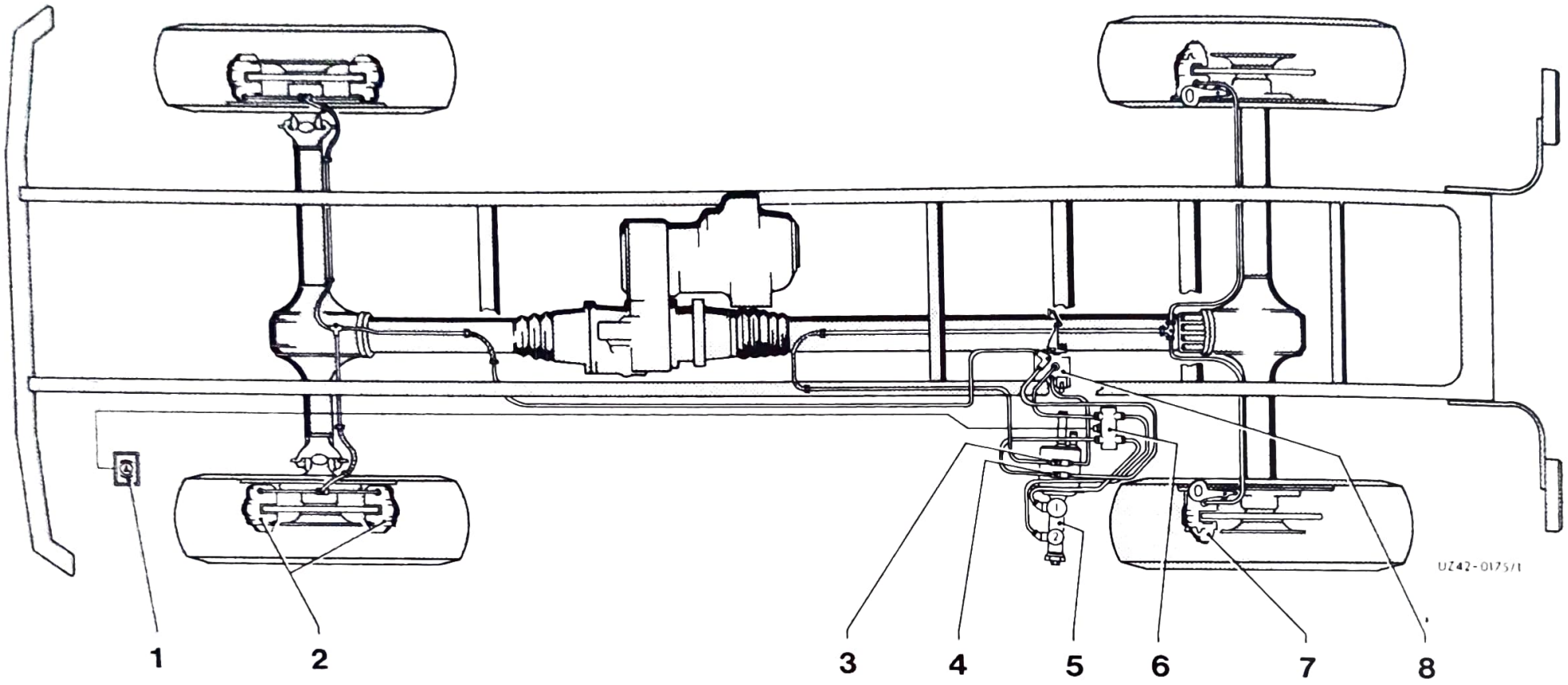
Brakes



Hydraulic brake system		
Design		Hydraulic dual-circuit brake system, disk brake, aire pressure actuated axle-load, dependent regulating
Parking brake system		Linkage-less spring-loaded parking brake with separate emergency release system
Release pressure	bar	5,5 to 6,0
Compressed air brake system		
Design	according to EEC	Dual-circuit compressed air brake system
Supply pressure	bar	18,0 (min. 12,0)
Operating pressure	max. bar bar	9,5 (single operation) 7,35 (trailer operation)
Trailer brake system		
Design	according to EEC connections	Two-line trailer brake system front [1] and rear
Operating pressure	bar	7,35 at trailer operation

EG = EEC European Economic Commission Regulations

1) Only U 1700 L



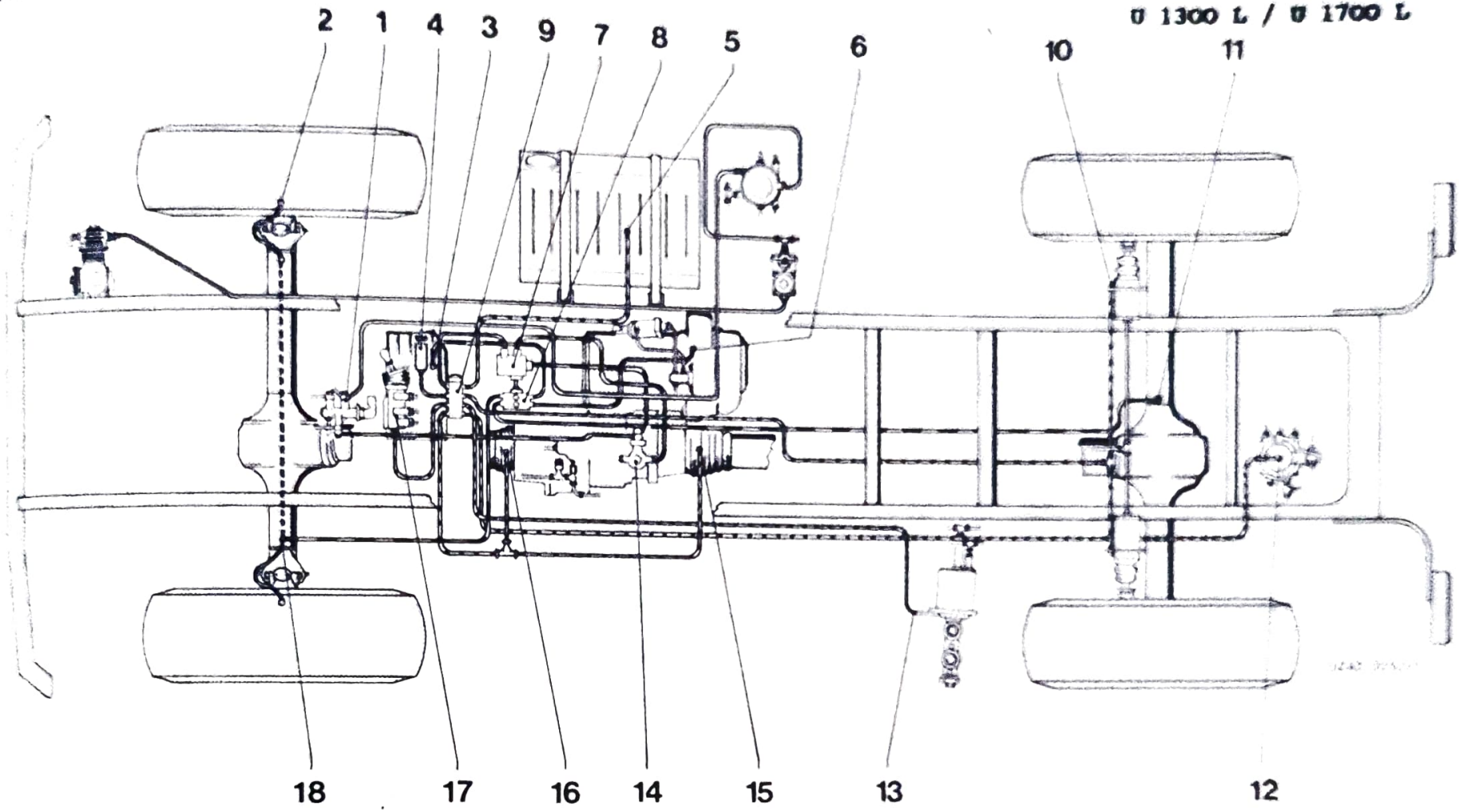
Hydraulic two-circuit brake system with load dependent regulation via rear axle

1 Warning lamp - brake pressure drop
2 Brake calipers
3 Test connection - load-sensing, rear axle
4 Test connection - no load-sensing, front axle
5 Main brake cylinder
6 Differential pressure sender unit
7 Combined brake caliper
8 ALB-regulator *

* ALB load dependent brake

Compressed air system

ø 1300 L / ø 1700 L



Aggregat pressurize and venting for fording ability

Pressurize

1 Switch valve, four-wheel drive, differential lock
2 Ventilation hub reduction
3 Ventilation pto transmission
4 Venting start pilot
5 Venting fuel tank
6 Ventilation main transmission

Venting

7 3/2-way valve
8 Distributor
9 Central release filter
10 Venting spring loaded cylinder
11 Ventilation rear axle
12 Venting trailer control valve

Pressure 0,35 - 0,2 bar

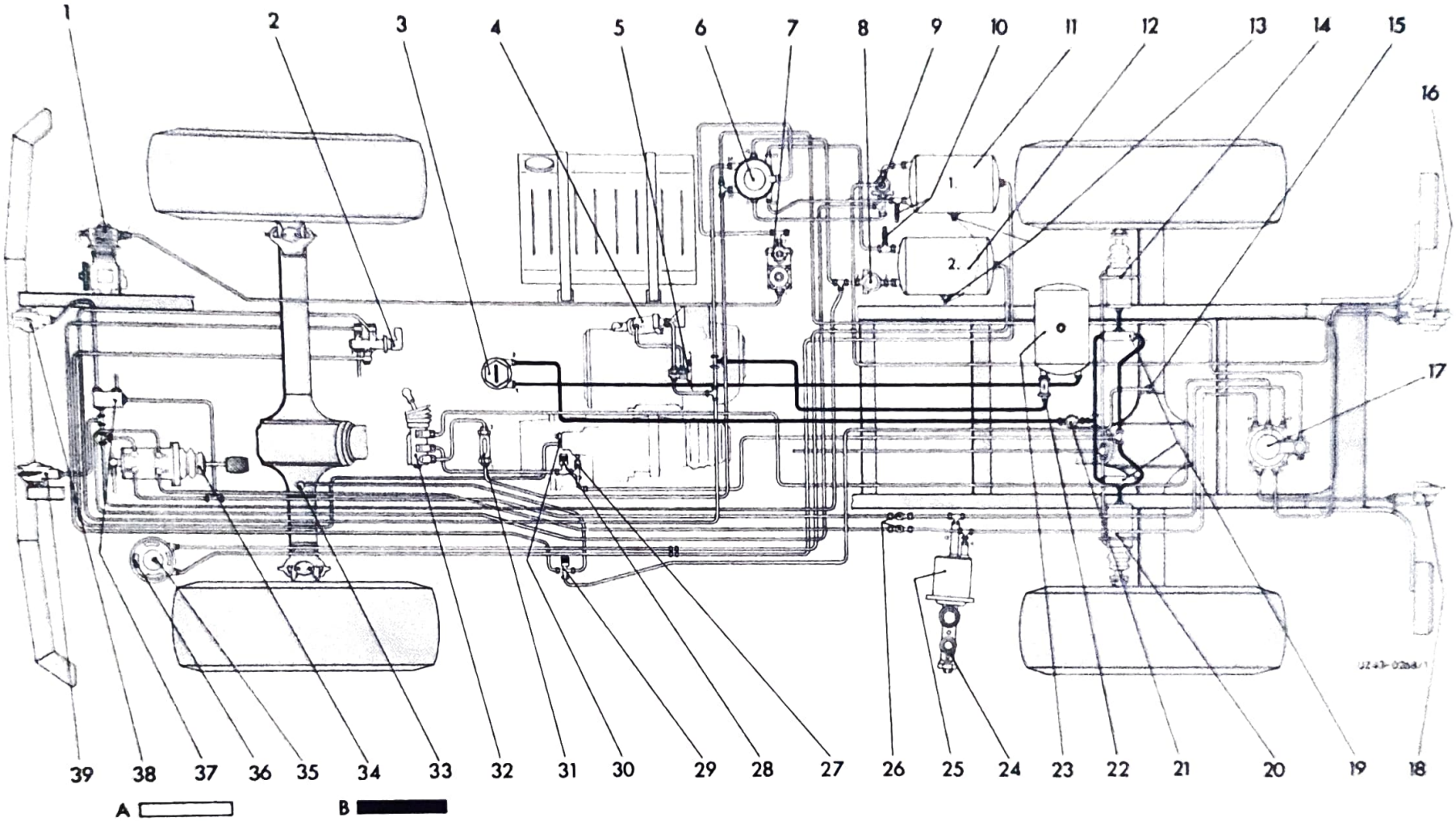
13 Venting primary cylincer
14 Pressure regulation valve
15 Venting rear axle
16 Venting front axle
17 Venting hand brake vehicle
18 Ventilation front axle

Compressed air brake system

A Compressed air brake system

B Emergency release system for spring loaded cylinders

1 Air compressor
2 Switch valve, four-wheel drive differential lock
3 Shift valve, emergency release system
4 Shift cylinder, planetary drive
5 Shift valve, transmission
6 Four-circuit protective valve
7 Pressure regulator with tire fill-in connection
8 Pressure reducing valve (9,5 bar)
9 Pressure reducing valve, switchable (7,35 bar)
10 Test connections, supply pressure circuit 1 and 2
11 Compressed-air tank circuit 1 (18 bar)
12 Compressed-air tank circuit 2 (18 bar)
13 Water separator
14 Spring loaded brake cylinder right
15 Connection differential lock rear
16 Coupling head, supply (red)
17 Trailer control valve with break-away valve
18 Coupling head, brake (yellow)
19 Lock valve
20 Spring-loaded brake cylinder left
21 Test connection, fill-in connection
22 Non-return valve
23 Compressed air tank, emergency system
24 Main brake cylinder dual circuit
25 Primary cylinder dual circuit
26 Test connections, brake circuit 1 and 2
27 Test connections, parking brake
28 Pressure switch, parking brake
29 Pressure switch, differential lock
30 Connection four-wheel drive
31 Non-return valve
32 Parking brake valve
33 Connection differentail lock front
34 Operating brake valve, dual circuit
35 Double pressure gauge, circuit 1 and 2
36 Control light red, supply (below 12 bar)
37 Relais valve (control valve) only
38 Coupling head, brake U 1700 L
39 Coupling head, supply



Dual-circuit compressed-air brake system with double-line trailer brake, spring-loaded parking brake with emergency release system

7 TECHNICAL DATA

Platform

			U 1300 L	U 1700 L
Model			435.614	435.632
Measurements		mm	3150x2200x500	4250x2375x500
Container lock ISO/ASA		Type feet/inch	Twist-Lock TL 109 6'8"	 6'8"/10'/13'4"
Equipment	Centre bench Seating capacity Tarpaulin frame		1 8 persons removable	2 16 persons

Driver's cab

Model			425.820	425.820
Version			Safety cab, mounted at three points, OECD tested, tilting-type, right hand drive	

Weights

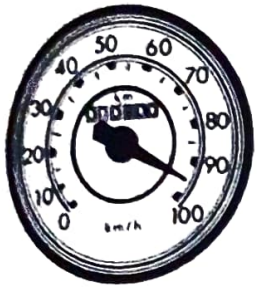
Permissible gross vehicle weight		kg	7500	12000
Permissible axle load	front rear	kg kg	4000 4000	5300 6800
Dead weight	approx.	kg	5400	7000
Payload		kg	2500	5000
	cross country	max. kg	2000	4000
	with container	max. kg	2500	4000

Trailer loads

Perm. trailer				
	with continuous brake	kg	10500	12000
	without brake	kg	2300	2500
Trailer coupling	optional		Hook type coupling / or automatic coupling	
Perm. support load	approx.	N (kp)	12500 (1250)	15000 (1500)

Maximum speeds

Engine speed 2800/min



U 1300 L

Tires
12,5R20

Maximum speed km/h

Gears	forward	reverse
1	7,7	8,1
2	11,1	11,5
3	16,9	17,5
4	22,9	23,7
5	33,8	
6	48,8	
7	73,9	
8	**100,0**	

Max. climbing capacity
without trailer — approx. 70 %

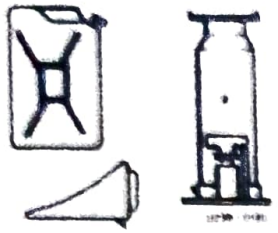
U 1700 L

Tires
13,00-20

Gears	forward	reverse
1	7,0	7,2
2	10,1	10,4
3	15,2	15,7
4	20,7	21,3
5	30,6	
6	44,1	
7	66,7	
8	**91,0**	

Max. climbing capacity
without trailer — approx. 70 %

Equipment and tools



Towbar

Chock

Safety belt on rear sideboard

Spare wheel

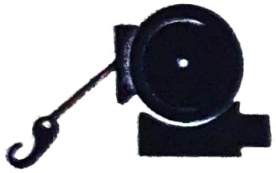
Tool

Hydraulic jack 4 t / 10 t

Hand lamp

Paintwork	Bronze green according	NSN 8010-98-106-0859 MIL-E-52798 A ME

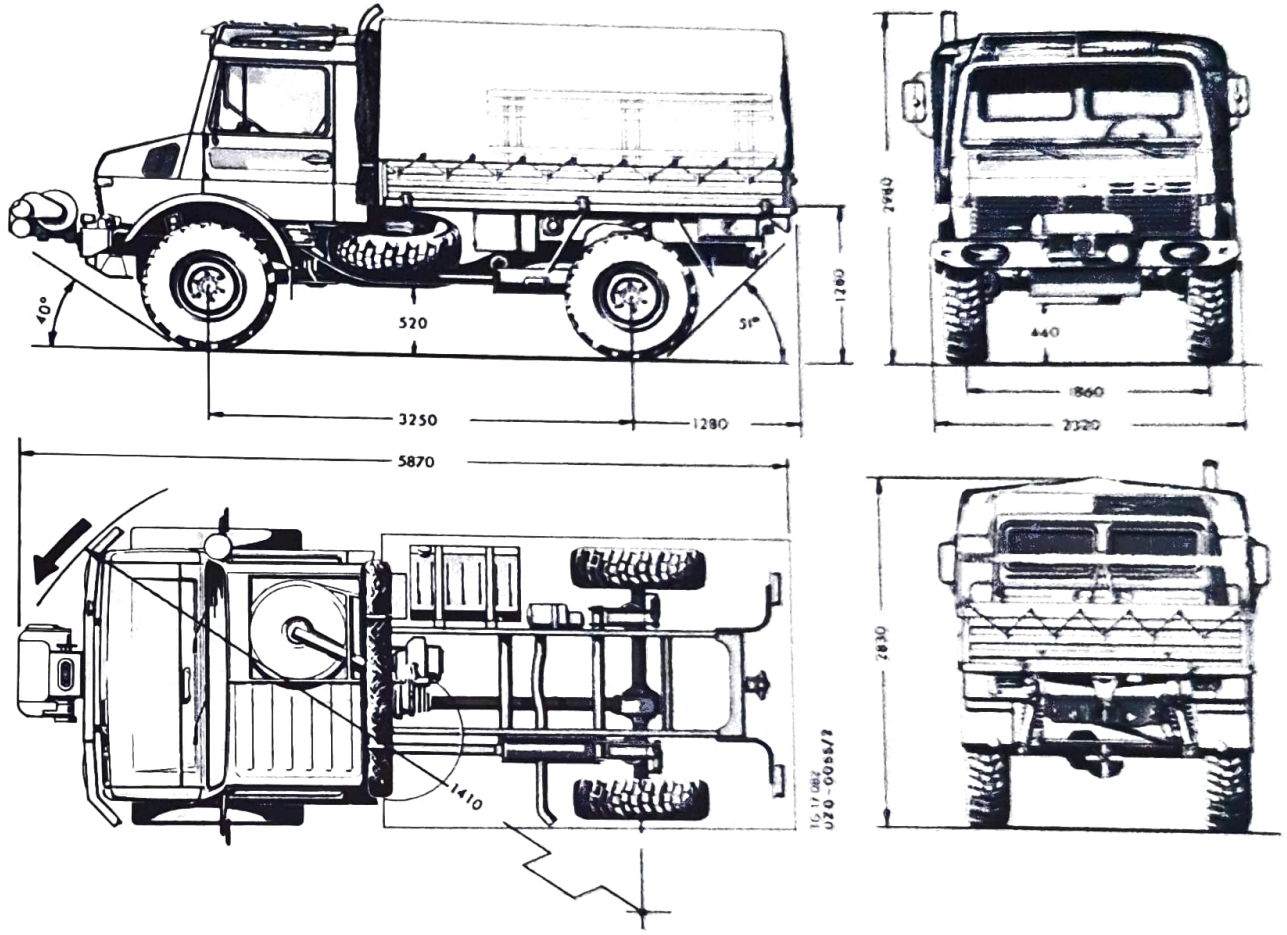
Cable winch



Model		Recovery-cable winch
Manufacturer		Firma Werner, Trier-Ehrang
Type		F 64.1 M1 SE with overload protection
Tractive power	approx. kp approx. kp approx. kp	6297 inner cable position 5200 middle cable position ± 15 % 3760 outer cable position
Cable	dia. mm ø	12
Rope length	m	40
Weight	kg	125

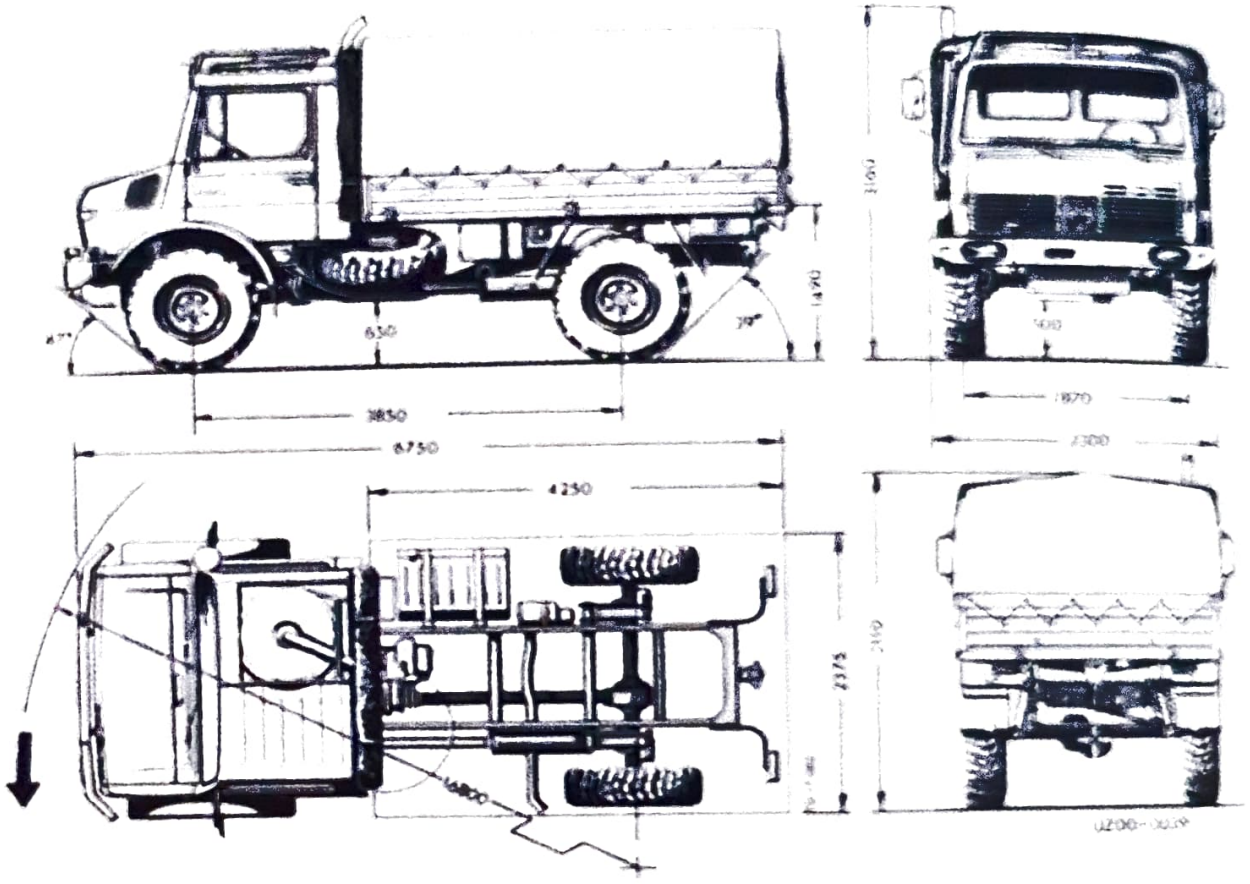
Dimensions mm

Fording depth	approx.	1000 mm
Max. height		2980 mm
Height of canvas		1280 mm
Turning circle		14,10 m

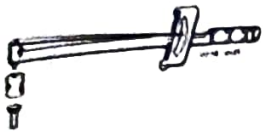


Dimensions mm

Fording depth	approx.	1200 mm
Max. height		3160 mm
Height of canvas		1280 mm
Turning circle		16,80 m



Important tightening torques



Torque wrench

Designation	Threads	U 1300 L Nm	U 1700 L Nm
Engine			
Engine mount front and rear	M 14 x 1,5	200	200
Center bolt, oil filter bowl		40	40
Cylinder head cover	M 8	25	25
Cylinder head	M 12	100 - 110	100 - 110
Air compressor (cylinder head)		35	35
Transmission			
Transmission bearing			
left	M 16 x 1,5	380	380
right	M 12 x 1,5	150	150
left and right to frame	M 36 x 1,5	180	180
Axles			
Control arm frame to axle	M 14 x 1,5	275	
	M 16 x 1,5		300
Steering arm to steering knuckle	M 18 x 1,5	400	400
Fastening caliper to axis	M 16 x 1,5	250	
	M 20 x 1,5		600
Wheels			
Wheel nuts	M 20 x 1,5	400	400
Steering (LS 3 B)			
Steering gear on frame	M 18 x 1,5	400	400
Nut on pitman arm	M 42 x 1,5	530	530
Drag link to pitman arm	M 20 x 1,5	230	230
Platform			
Container locks		750	750

Electrical Wiring diagram

1a Turn signal right
1b Turn signal left
2a Main headlight right
2b Main headlight left
3a Parking light right
3b Parking light left
4a Marker light right
4b Marker light left
5 Switch on door
6 Cab-dome light
7 Horn
8 Protection switch (current supply)
9 Switch, fog light [1])
10 Switch, windshield washer
11 Regulating switch instrument lights
12 Reading lamp
13 Socket
14 Ignition-start switch
15 Tachometer, tachograph [1])
16 Instrument cluster
17 Revolution counter
18 Main light switch
19 Connection for control PTO [1])
20 Turn signal (flasher, for 2nd trailer)
21 Turn signal (flasher, for 1st trailer)
22 Turn signal (flasher) indicator light
23 Indicator light, high beam
24 Indicator light, charge control
25 Indicator light, differential pressure, brake
26 Indicator light, parking brake
27 Indicator light, four-wheel drive
28 Indicator light, differential lock
29 Transmission shift indicator
30 Relais current supply [1])
31 Relais current supply [1])
32 Blower switch
33 Heating ventilation blower
34 Windshield wiper
35 Windshield washer
36 Combination switch
37 Brake light switch
38 Fuse box A
39 Fuse box B
40 Warning flasher switch
41 Warning flasher transmitter
42a Connection, cab
42b Connection, cab (not connected)
43 Battery (2 x 12 V)
44 Alternator
45 Socket current supply
46 Transmitter for temperature (coolant)
47 Transmitter for oil pressure
48 Transmitter for fuel supply
49 Switch differential pressure [1])
50 Switch for engine brake [1])
51 Switch for reverse light
52 Switch for differential lock
53 Switch for four-wheel drive
54 Switch for parking brake
55 Switch for shift gate indicator
56 Starter switch
57 Cable connecting box rear
58a Turn signal right
58b Turn signal left
59a Tail light right
59b Tail light left
60a Brake light right
60b Brake light left
61 Licence plate light
62 Fog tail light [1])
63 Trailer socket (7pole)
64 Back up light [1])

Ground connection

m = Engine
X = Instrument panel
Y = Frame
Z = Cab

Wire color code

bl = blue
br = brown
ge = yellow
gn = green
gr = grey
li = lilac
rs = pink
rt = red
sw = black
ws = white

[1]) Subsequent installation possible special version

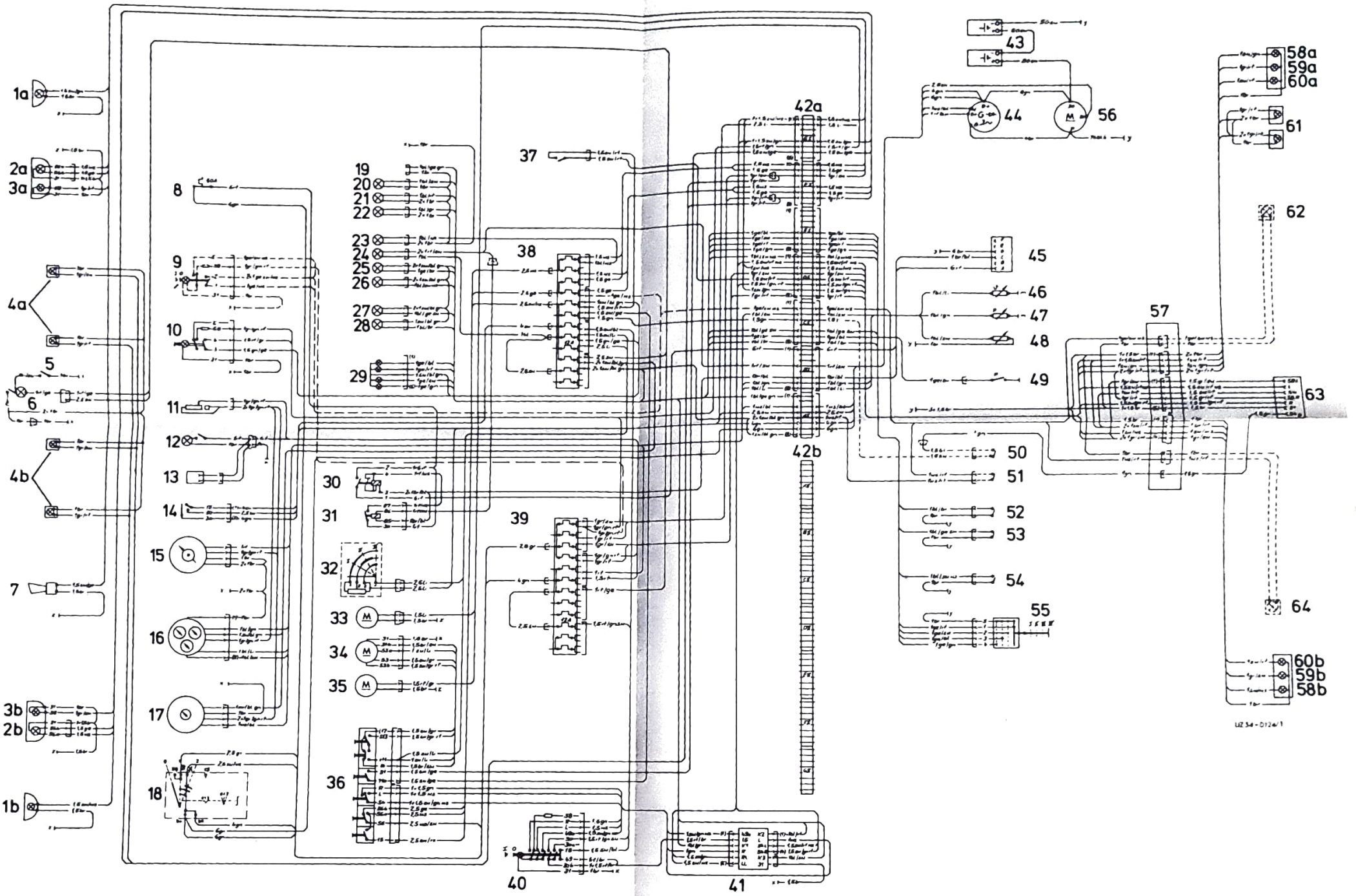
Technical Wiring Diagram 24 Volt

U 1300 L / U 1700 L

Explanations to Circuit Diagram

The line layout is showed in a simplified manner for the sake of clarity.

Please remember the following points:
The code color and cross-sectional area of a wire together form an aid helping you to following the course of a line. The direction of the slanting stroke at corners and branches indicates how the line continues.
Several wirings (cable-set) are only shown as one line.


1a
2a
3a
4a
5
6
4b
7
3b
2b
1b
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42b
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60a
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63
64
60b
59b
58b
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