

BB00.40-P-0381-00A	Preservation instructions	Measures to be taken if vehicles or engines taken out of and restored to service	Sheet 381.0
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1 Vehicle preservation

1 Thoroughly clean the vehicle, the underbody, the engine and the engine compartment.

2 The engine compartment must be treated with preservative following engine cleaning.

i See Specifications for Operating Fluids Sheet 385.4.

3 Rectify paint damage and treat the paintwork with MB-polish and MB-gloss preserver.

4 Treat dull spots, discoloration, spots, etc. on the paintwork.

i Depending on the severity, treat with either MB-paint cleaner, MB-fine polishing paste or MB-polish and MB-gloss preserver. MB-chrome care products (if necessary, also MB-polish or MB-gloss preserver) are provided for chrome and anodized parts. Order number for microfilm Z12501..07/Z12502..07.

5. Mask window, soft top.

6 Treat paintwork and chrome parts with exterior wax.

i The exterior preservation must be removed again after six months for standard paint and after 11 months for metallic paint, otherwise matting of the paintwork may occur. At average daytime temperatures of more than 30 °C the preservation must be removed earlier: with standard finish paint after 2...3 months and with metallic finish paints after 8...9 months. The times specified relate to vehicles parked in the open air and not under a roof.

For approved wax preservatives see Sheet 385.2/.3/.5/.

7 Spray underfloor with underbody seal.

i See Specifications for Operating Fluids Sheet 385.1.

8 Before parking the vehicle, warm up the service brake so that any moisture at the brake disks and brake pads is evaporated.

9 Whenever possible, park vehicle in a sheltered area.

10 Secure vehicle using chocks. Release parking brake / spring brake reservoir to prevent the brake linings from rusting solid.

11 Drain condensation at the compressed air system.

i Vehicles without compressed air drier.

12 Apply prescribed lubricant to all lubrication points.

i See maintenance sheet.

13 Initiate intermediate lubrication on control unit.

i Commercial vehicles with central lubrication system. See WIS, FG 57.

14 Fill grease containers to the top and cover to protect against the sun.

i Commercial vehicles with central lubrication system.

15 Increase the tire pressure (approx. 2 bar above the standard pressure) to prevent the tires from becoming flat, or jack up the vehicle to relieve the load on the tires.

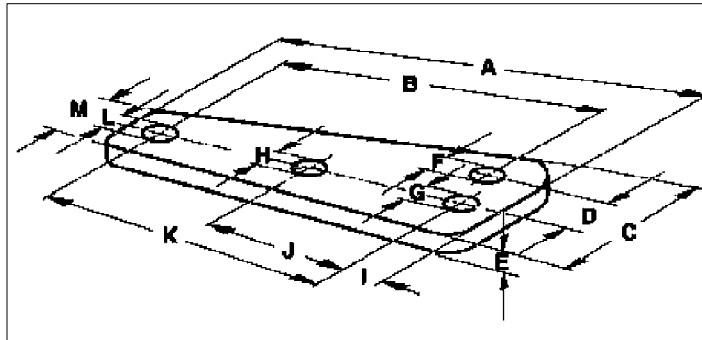
16 Cover the tires to protect from sunlight.

17 Disconnect the negative terminal of the battery to prevent discharging by closed-circuit accessories.

18 Fully charge the battery and recharge every 3 months or trickle charge with 0.06 A.

Bracket for clutch release mechanism

A	80 mm
B	57.2 mm
C	35 mm
D	12.7 mm
E	10 mm
F	9 mm
G	9 mm
H	M 8
I	10 mm
J	30 mm
K	60 + 0.2 mm
L	9 mm
M	20 mm



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i A pressure screw M 8 x 65 is required for this.

19 Disengage clutch so that the clutch lining does not stick.

i With mechanical clutch operation, a strip must be clamped between the seat frame and the clutch pedal. With hydraulic clutch operation, secure the release lever, and not the pedal, at the clutch housing/bearing bracket of the slave cylinder. If it is not possible to secure the release lever from outside, then the device shown in the following figure must be made for passenger vehicles. Remove slave cylinder and install the device.

i Not on vehicles with central release bearing.

2 Engine preservation

Engines in temporary storage are those that are not operated for more than one month.

This relates to all installed and removed vehicle, industrial and OEM engines as well as new engines, ET and CBU engines.

i (ET = replacement or spare engines, CBU = completely built-up vehicles from factory)

Engines should be stored in dry, well-ventilated areas. If this is not possible, then these are **severe conditions**, and the specified **measures must be carried out after half the time**, i.e. after six months instead of twelve, for example.

2.1 Temporary storage up to 12 months

24 Clean engine.

i Removed and industrial engines.

25.1 Check engine oil level, correct as required.

i Only if break-in oil as defined by Specifications for Operating Fluids Sheet 223.1 is in engine.

25.2 Engine - oil and filter change.

i Only if service oil is in engine. Refill with break-in oil according to Specifications for Operating Fluids Sheet 223.1.

26 Check coolant level, correct as required.

i Fill with coolant according to Specifications for Operating Fluids Sheet 310. For removed engine, drain coolant completely.

20 Check coolant for antifreeze protection, correct as required.

21 Check window and headlamp cleaning systems for antifreeze protection, correct as required.

22 Install rubber emergency bumper.

i Vehicles with hydropneumatic suspension.

23 Empty water containers, pumps and hoses to prevent freezing.

i Vehicles with kitchen and lavatory facilities.

Removed engines must always be protected from direct moisture (rain or splash water) by special measures.

When the engine is installed, it is expedient to perform the preservation operations at the storage location, because afterwards the engine may no longer be started.

27 Remove catalytic converter and replace with a catalytic converter test pipe.

i Engine with catalytic converter.

28 Fuel system preservation.

i To diesel fuel add approx. 10 % break-in oil and to gasoline add approx. 5 % break-in oil. In accordance with Specifications for Operating Fluids Sheet 223.1. On German military vehicles, kerosene may be used instead of diesel fuel.

29 Warm up engine at a moderate rpms and allow to run for approx. five to ten minutes at operating temperature.

30 Shut off engine.

31 Fill oil-bath air filter to maximum fill level.

i Engines with oil-bath air filter only.

- 32 Preserve combustion chambers and air compressors as described under **2.2** .
i For marine transport or preservation in tropical countries.
- 33 Remove rust spots from engine.
- 34 Grease all treated exterior surfaces and those surfaces that where preservation was not applied.
i Such as the flywheel, belt pulleys, keyway.
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Preservation of the combustion chambers in gasoline engines.

- 38.1 Detach fuel line running between the fuel tank and the fuel pump.
i On carburetor engines.
- 38.2 Remove fuel pump relay.
i Engines with CFI-M, CFI-E and LH-SFI injection systems.
- 38.3 Disconnect main relay for the power supply to the control unit.
i Engines with electronic injection.
- 39 Start engine and run carburetor empty.
i On carburetor engines.
- 40.1 Detach a cable at the bolt connections of the ignition coil.
i Engines with coil ignition.
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- 45 Pour 5...8 cm³ of break-in engine oil into each cylinder and operate starter for approximately 5 s.
i All engines except carburetor engines.
- 46 Clean and install air cleaner.
- 47 Attach fuel line.
- 48 Screw in spark plugs.
- 49 Connect cable to ignition coil / Plug electrical connector into ignition control unit/ignition coil.
- 50 Insert fuel pump relay / Insert main relay for control unit power supply.

Preservation of air compressors:

- 51 Spray or pour a maximum of 5 cm³/cylinder of break-in engine oil via the air intake side.
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2.2 Temporary storage for 12 to 36 months

All measures listed in Sections **2.** and **2.1.** must be carried out.

Preservation of the combustion chambers in diesel engines.

- 35.1 Remove glow plugs.
i On prechamber engines.
- 35.2 Remove injectors.
i On direct-injection engines.
- 36 Pour the following quantity of break-in engine oil into each cylinder and operated the starter for approx. 5 s.
i Passenger car engines BR 600 = 5...8 cm³
Commercial vehicle engines BR 600 = 8...10 cm³
BR 300 = 8...10 cm³
BR 400 and all other diesel engines = 15...20 cm³
- 37 Install glow plugs / injectors.
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- 40.2 Separate electrical connection on ignition control unit.
i Engines with transistorized ignition.
- 40.3 Separate electrical connection on ignition coils.
i Engines with electronic injection.
- 41 Remove air cleaner.
i On carburetor engines.
- 42 Fill carburetor with break-in engine oil.
i Except Stromberg carburetors.
- 43 Operate starter for approx. 5 s at full throttle.
i For Stromberg carburetors, inject corresponding quantity of break-in engine oil from oil can into the carburetor.
- 44 Unscrew spark plugs.
i All engines except carburetor engines.
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- 52 Crank air compressor for approx. 10 revolutions.
i Do not start engine.

2.3 Temporary storage for more than 36 months

All measures described in Sections **2.**, **2.1.** and **2.2.** must be repeated after 3 years or after 18 months.

2.4 For any temporary storage

- 53 Air-seal all engine openings.
- 54 Loosen the V-belt and the poly-V-belt.
i V-belt and poly-V-belt may, however, remain in position. The engine must no longer be started after this.
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3 Engine dewaxing

- 55 Remove all the sealing caps.
 - 56 Remove preservative.
 - 57 Tension V-belt/poly-V-belt according to specifications.
 - 58 Install removed engines and restore connections.
 - 59 Fill with approved operating fluids or top up to the maximum level.
 - 60 Empty fuel tank or run tank empty.
 - 61 Engines which have already undergone the inspection or running in on the test bench (300 km =6 h) must be topped up with approved service oils.
i Engines that have not been run in on the test bench or have not undergone inspection must be topped up with approved break-in oil.
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- 70 Remove rubber emergency bumper on vehicles with hydropneumatic suspension.
 - 71 Check oil level in steering system, engine, transmission and drive axles.
 - 72 For vehicles that were out of operation for more than 12 months, replace brake fluid.
 - 73 Check hoses and lines for cracks.
 - 74 Check air conditioning/automatic air conditioning for proper operation.
 - 75 Check refrigerant level. To do this, allow the engine to run beforehand for approx. 4 min with the air conditioning switched on.
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- 77 When dewaxing by hand, first spray the waxed surfaces with cleaning agent (dosage: 5...10 %). Wait 5...10 min, then thoroughly spray off the layer of dirt on the wax with a warm powerful jet of water (40...50 °C). The layer of dirt must be removed completely, otherwise the paint may be scratched during further treatment. Rub cleaning agent into the surfaces still coated with wax, painted surfaces must be rubbed with a sheepskin glove or a soft sponge. Using a warm, powerful jet of water (40...50 °C) spray off the dissolved wax.
- 78 Vehicles that were not preserved with wax must always be pre-cleaned with hot-water high-pressure cleaning equipment. This will remove large particles of dirt that may cause severe scratches.

- 62 Warm up the engine to normal operating temperature while monitoring pressure and temperature readings.

- 63 Replace catalytic converter test pipe with a catalytic converter.

4 Vehicle dewaxing

- 64 Remove the securing means for the clutch release mechanism/make the clutch operational.
 - 65 Correct tire inflation pressure.
 - 66 Lower vehicle and secure with chocks.
 - 67 Check the charge level of the battery, recharge the battery if necessary. Install or reconnect battery.
 - 68 Check operation of electrical system.
 - 69 Check coolant level. If it needs to be topped up, bleed auxiliary heater and check antifreeze mixture ratio.
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- 76 If the paintwork is coated with exterior wax, remove the wax using a hot-water high-pressure cleaner (at least 85 °C, distance of 20...25 cm) with a biodegradable cleaning agent added. Washing shampoos based on alkyl sulfonate or alkyl aryl sulfonate, for example, are suitable for hot-water high-pressure washing (pH 6...8, dosage: 2...3 %). The tenside/water emulsion must not be disposed of via oil separators, but must be disposed of via an appropriate wastewater pretreatment (e.g. ultrafiltration).
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- 79 If after thorough washing, a rough film, droplets, etc. remain on the paintwork or the trim parts, first try to remove these with MB paint cleaners according to specifications. Dissolve stubborn dirt by carefully washing off with pure benzine, silicone or tar removers (avoid contact with rubber parts, do not use aggressive solvents such as commercially available thinners). Then treat with MB-polish and MB-gloss preserver.
- 80 If it is not possible to remove coatings as described, treat the paintwork with polishing paste and buffer.
- 81 Test drive vehicle to check the function of the brake system and the steering system.