

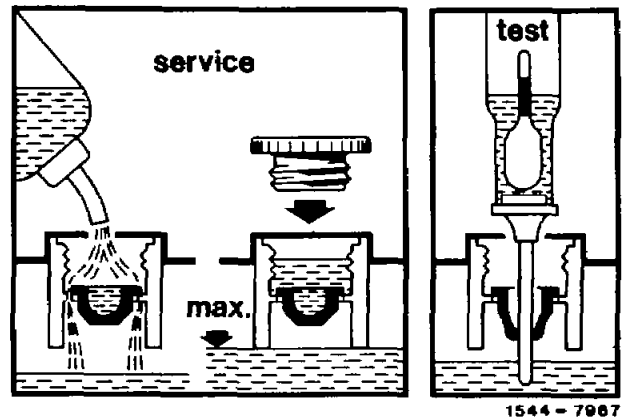
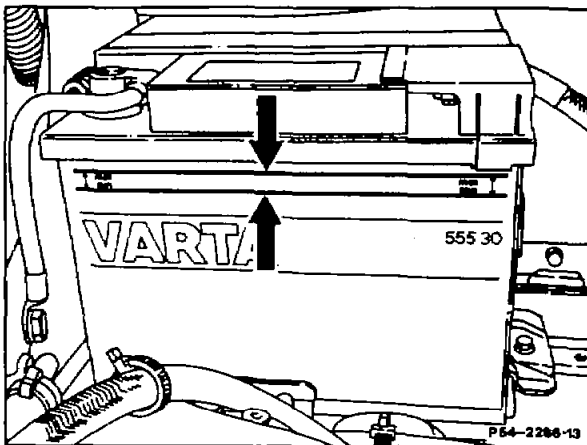
# 54-1130 Charging battery, testing state and capacity

Operation no. of operation texts and work units or standard texts and flat rates:

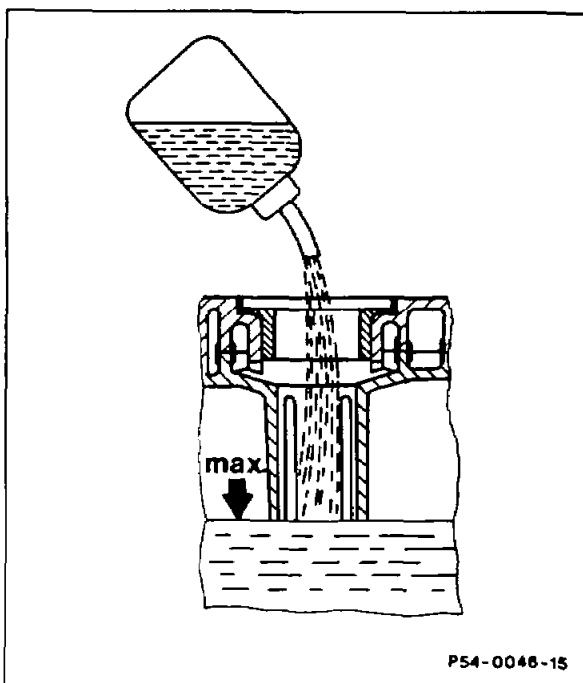
## A. Checking electrolyte level (except model 124.034/ .036)



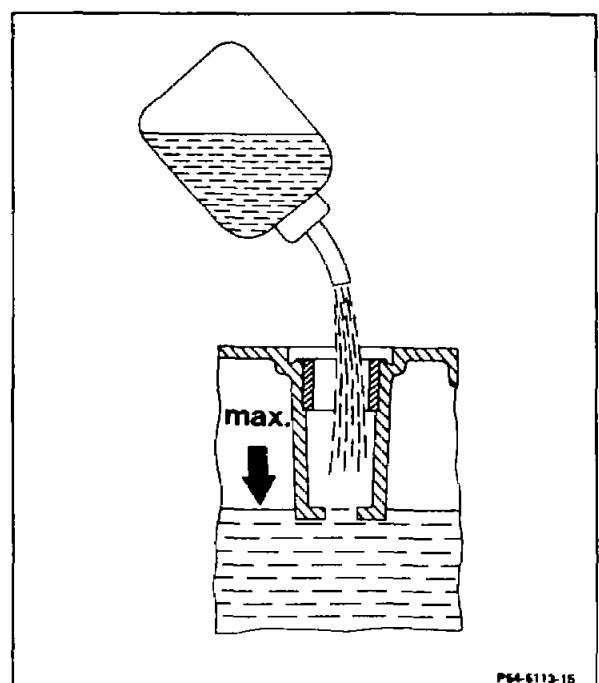
Pay attention to warning instructions and safety precautions (operation no. 54-0001, section A)



Version A



Version B



Version C

**Version A**

Battery with overfill protection

Identification feature: sticker "overfill protection" on battery

- Electrolyte level . . . . . check against housing marking (arrows).
- If distilled water has to be added or if electrolyte level is not visible from outside, cell caps . . . . . unscrew, screw in.
- Distilled water . . . . . top up if necessary until water no longer flows out in overflow protection.

**Note**

Do not pierce the membrane of the diaphragm protection when topping up.

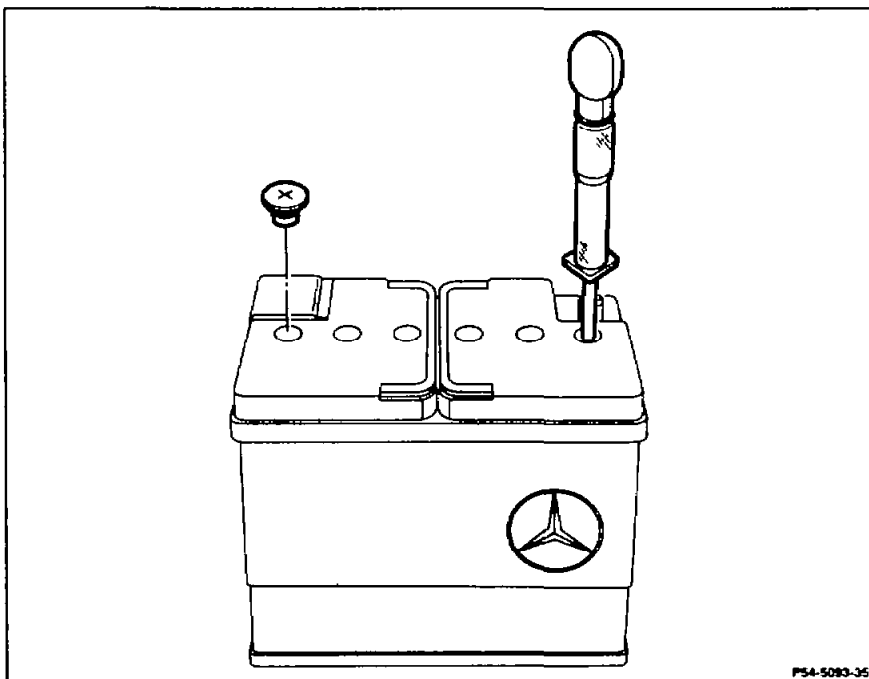
**Versions B and C**

- Electrolyte level . . . . . check against housing marking (arrows).
- If distilled water has to be added or if the electrolyte level is not visible from the outside, cell caps . . . . . unscrew, screw in.
- Distilled water . . . . . top up if necessary.  
Version B: Up to bottom edge of filler pipe  
Version C: Up to top edge of web

## B. Checking battery state



Pay attention to warning instructions and safety precautions (operation no. 54-0001, section A)!



- Visual check ..... for signs of leaks on outside.
- Cell caps ..... unscrew, screw in.
- Electrolyte density ..... measure, min. 1.24 kg/dm<sup>3</sup>.
- If the electrolyte density in one or several cells differs > 0.04 kg/dm<sup>3</sup> from the others, replace battery.
- Electrolyte density < 1.24 kg/dm<sup>3</sup>, charge battery, perform section C.

### Test data

Electrolyte density in kg/dm <sup>3</sup> at 20 °C	charged	1.28
	semi-charged	1.20
	discharged	1.12



## C. Charging

Preceding work  
Section B. Checking battery state

Electrolyte level .....	check, add distilled water if necessary. No fault can be found, perform load test, section D.
Battery .....	remove, install.
Cell caps .....	unscrew.
Electrolyte level .....	check, add distilled water if necessary.
Cell caps .....	screw in.
Positive terminal (+) of charger .....	connect to positive terminal (+) of battery, disconnect.
Negative terminal (-) of charger .....	connect to negative terminal (-) of battery, disconnect.
Charger .....	switch on, switch off. The charging current should not exceed 10 % of the battery capacity, e.g. charging current max. 6.2 A for 62 Ah battery.

### Note on quick charging

Use battery charging room due to development of explosive gas.

Max. charging current for 30 minutes 50 % of battery capacity.

Example: 12 V 62 Ah battery. Charging current for quick charging for 30 minutes **max.**

**31 amperes**, then continue charging normally.

Acid density .....	measure, specified value 1.28 kg/dm <sup>3</sup> .
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### Charge state

Charge state with electrolyte density in kg/dm <sup>3</sup> and at 20 °C	charged	normal Tropics	1.28	(in order)
			1.23	
	semi-charged	normal Tropics	1.20	(recharging necessary)
			1.16	
	discharged	normal Tropics	1.12	(recharge immediately)
			1.08	

### Note

The electrolyte density varies with temperature and alters by 0.01 kg/dm<sup>3</sup> for each 15 °C.

Examples:

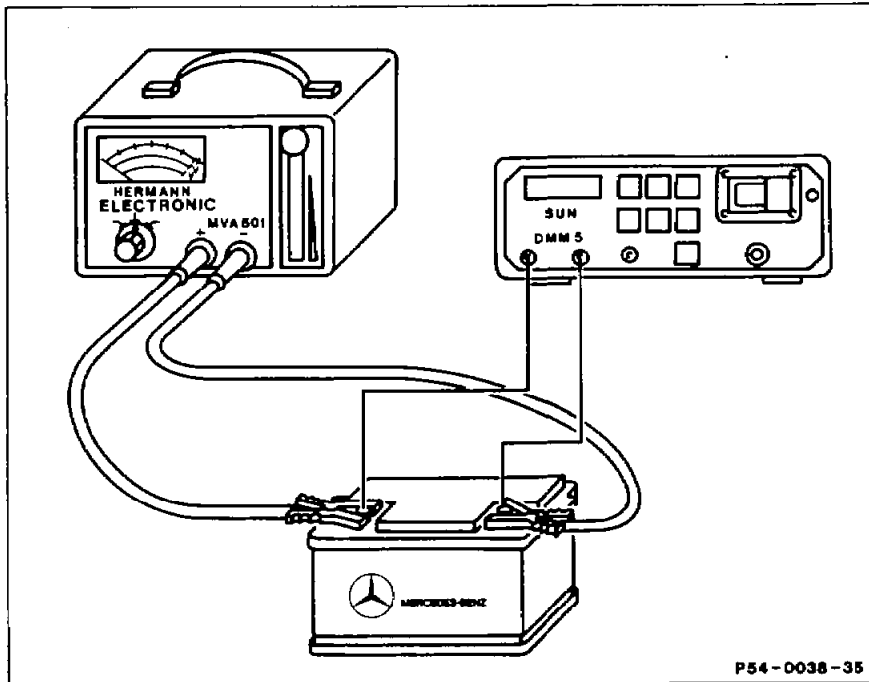
Electrolyte density at 20 °C 1.28 kg/dm<sup>3</sup>

Electrolyte density at 35 °C 1.29 kg/dm<sup>3</sup>

Electrolyte density at 5 °C 1.27 kg/dm<sup>3</sup>

## D. Load test

Preceding work:  
Section B. Checking battery state



Battery .....	remove, install.
Electrolyte density .....	measure, min. 1.24 kg/dm <sup>3</sup> ; if electrolyte density < 1.24 kg/dm <sup>3</sup> , charge battery.
Load test .....	perform at approx. 20 °C (see table).
Minimum battery voltage .....	test. Specification after 10 seconds approx. 10 V or > 10 V.

If the specification is not achieved, replace battery.

If the specification is achieved, charge battery.

Electrolyte density .....	measure, specification 1.28 kg/dm <sup>3</sup> .
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### Battery test under load

Capacity	Ah	62	72/74	92	100
Load current	A	190	265	280	300
Minimum voltage in volts after 10 s at electrolyte density in kg/dm <sup>3</sup>	1.28	10	10	10	10
	1.24	9	9	9	9