

# **mOLL**

## **BATTERIES**

### **Testing Starter Batteries**



[www.moll-batterien.de](http://www.moll-batterien.de)

**Made in Germany**

**mOLL**  
future orientated  
battery technology

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# Testing Starter Batteries

## batteries with screwed plugs



### 1. Optical Test

#### 1.1 Is the battery leaking?

yes                       no

#### 1.2 Are damages visible?

(push, punch, or pressure points around the leakage)

yes  There is a mechanical damage, therefore the complaint is not justified. Possibly check for foreign objects at the operation point of the battery, wrong mounting, etc.

Is the charge acceptance at least 1/20 of the nominal capacity? (example 95 Ah battery:  $95 \text{ Ah} \times 1/20 = 4.75 \text{ A}$ )

yes  Fully charge battery, then check the acid density.  
Is the measuring result only  $1.24 \text{ kg/dm}^3$  or below afterwards? This is normal consumption due to aging of the battery, a complaint is not justified.

no  Battery damaging due to lack of charging or deep discharging, a complaint is not justified. (Check electronics of the vehicle: generator, drive belt, regulator voltage, etc.)

### 2. Checking of Acid Density

When charging the battery, the instruction manuals of the charger and the battery have to be followed!

The acid density of an o.k. battery should be the same in all cells.

#### 2.1 Is the acid density quite lower in one cell?

(maximum allowed difference between highest and lowest measured result of all 6 cells:  $0.03 \text{ kg/dm}^3$ ). Example: measuring result of 5 cells  $1.24 \text{ kg/dm}^3$ , one cell only shows  $1.12 \text{ kg/dm}^3$ .

yes  → Replace battery.\*                      no

#### 2.2 Is the acid coloured brown along with constantly high water consumption?

yes  → Check regulator voltage in the vehicle. Complaint is not justified.                      no

#### 2.3 Do the measuring results in all cells exceed $1.25 \text{ kg/dm}^3$ ?

yes                       no  → Charge battery.

### 3. High Current Test

Only execute this test if all cells showed the same measuring results and an acid density of at least  $1.25 \text{ kg/dm}^3$ .

Please follow the instruction manual of the battery tester!

#### 3.1 Result of the high current test "Damaged" or "Replace"?

yes  → Replace battery.\*                      no  → Battery o.k.

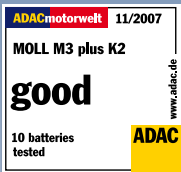
For burden testers with addable resistance please consider: burden the battery with approx. triple amount of the nominal capacity for approx. 10 seconds (e. g. battery 12 V 45 Ah corresponds with approx. 135 A burden current). The voltage may only fluctuate minimally.

Please consider the warning notes on your battery! See backside for interpretation of the symbols.

acid density at 25°C in $\text{kg/dm}^3$	state of charge of the battery	measure
1.25 and higher	charged	test possible
1.20 - 1.24	half charged	charging recommended
1.19 and below	unsatisfactory	charge immediately

\* Replacement according to the applicable warranty regulations and warranty conditions. Normal consumption as well as damages, which are caused by careless or improper handling or use, are excluded.

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Renown OE automotive producers and independent consumer tests regularly confirm MOLL's high level of quality.

All test results under:

[www.moll-batterien.de](http://www.moll-batterien.de)

To ensure environmental protection, MOLL always produces according to the latest ecological standards. All resources are used with great environmental care. MOLL takes back old batteries and guarantees recycling.

### *Please note the safety instructions on your MOLL battery:*



Follow information on the battery, the instructions for use and instructions for operating the vehicle.



Wear eye protection.



Keep children away from acid and batteries.



#### **Explosion hazard:**

- A highly-explosive oxyhydrogen gas mixture occurs when charging batteries, therefore:



#### **Fires, sparks, naked lights and smoking are prohibited:**

- Avoid causing sparks when dealing with cables and electrical equipment.  
- Avoid short-circuits.



#### **Corrosive hazard:**

Battery acid is highly corrosive, therefore:

- Wear protective gloves and eye protection.  
- Do not tilt battery, acid can escape from the degassing openings or vents.