



## INSTRUCTIONS FOR USE

### WARNING - RISK OF EXPLOSIVE GASES

- Working in the vicinity of a lead acid battery is dangerous. Batteries generate explosive gases during normal battery operation. For this reason, it is of utmost importance that each time before using your tester, you read these instructions carefully and follow instructions by battery maker as well.
- To reduce risk of battery explosion, follow these instructions and those published by the battery manufacturer and manufacturer of any equipment you intend to use in the vicinity of the battery. Observe cautionary markings on these items.

### BATTERY ANALYSIS – METER REACTION AFTER 10 SECONDS OF LOAD

LOAD TEST	BATTERY CONDITION
OK (GREEN BAND ). After 10 seconds of load.	Battery capacity is good. May or may not be full charged. Determine state of charge by checking specific gravity ( use hydrometer). If gravity is less than full charge, check for possible charging system trouble or electrical drain. Recharge battery to full charge.
WEAK OR BAD, BUT STEADY (meter reading steady after 10 seconds of load).	Battery capacity is unsatisfactory. Battery may be either : (1) defective or (2) partly discharged. To determine which, check specific gravity. If gravity is over 1.225, battery is considered defective. If gravity is under 1.225, recharge battery and re-test. If cell-to-cell gravity varies more than 0.025 (25 points), cell trouble may exist. If charging does not bring gravity to full charge level, the battery is either sulfated or has lost active material.
WEAK OR BAD AND FALLING (meter continues to fall after 10 seconds of load).	Battery may be defective (e.g. a bad cell ). For a quick check, release load switch and note volt meter reaction. If voltage recovers to 12.0 volts or more in a few seconds battery is probably defective. If voltage recovers slowly, battery may be only very run down. For more accurate results, check gravity and follow above procedure.

### TEMPERATURE COMPENSATION

**1 STEP = 50 cranking amps.**

BATTERY TEMPERATURE	+20°F	0°F	-20°F
DECREASE BATTERY RATING BY:	1 STEP	2 STEP	3 STEP

If the load indicates poor battery condition, allow the battery to stabilize for a few minutes and check the open circuit voltage by voltmeter. This is a good measure of the percent charge in the battery. The battery is considered charged if it measures 75% or more. If it failed the load test with 75% charge, it should be replaced. If the battery charge measures less than 75%, it should be charged and load tested again. Replace the battery if it fails again. The values in the following charge are for a 12 volt battery; divide these in half for 6 volt batteries.

OPEN CIRCUIT VOLTS*	PERCENT OF CHARGE
11.7 Volts or lower	0
12.0	25
12.2	50
12.4	75
12.6 or higher	100

### TESTING THE CHARGING SYSTEM

- Connect the tester the same as for battery testing.
- Start the engine and allow it to reach normal operating temperature.
- Run engine at 1200 to 1500rpm. CAUTION: Stay clear of moving engine parts. Do not press the load switch.
- Read the meter. A reading in the red band area indicates a problem in the charging system that will undercharge a battery; if the meter is beyond the OK area, the charging system is likely to overcharge the battery.

### STARTER MOTOR TEST (12VOLT VEHICLES)

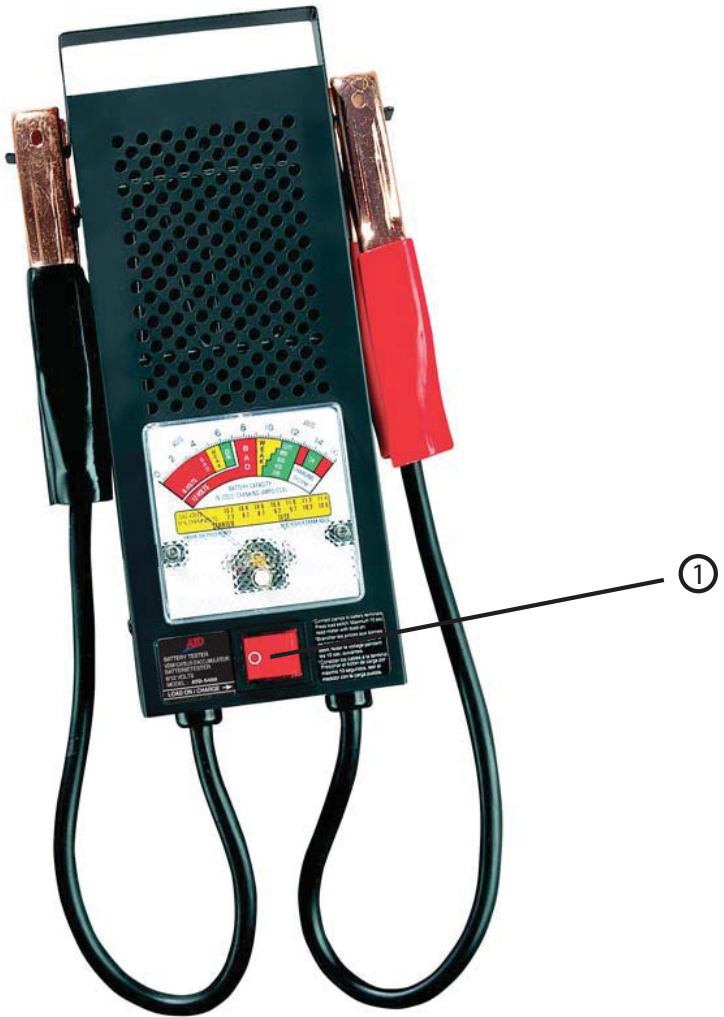
This test identifies excessive starter current draw, which makes starting difficult and shortens battery life. Perform battery load test-proceed to make sure if battery is GOOD.

### ENGINE MUST BE AT NORMAL OPERATING TEMPERATURE

- Connect negative (black) clamp to the negative (NEG, N, -) battery post. Connect positive (red) clamp to the positive (POS, P, +) battery post. ROCK clamps back and forth to ensure a good electrical connection.
- Disable the system ignition so the car will not start.
- Crank the engine and note the voltage reading during cranking.
- A meter reading of 9 volts or less indicates excessive current draw. This may be due to bad connections or a failing starter motor, or the battery is too small for the vehicle's requirements.



**ATD-5488**



ITEM#	ORDERING PART#	PART DESCRIPTION
1	246-299-000	ROCKER SWITCH

Shop for other automotive tools on our website.