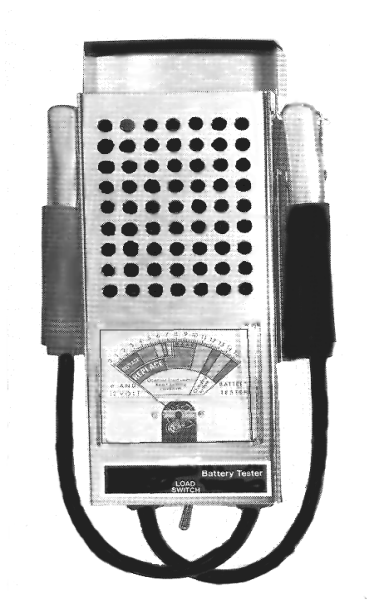


BATTERY POWER TESTER

Model BPT12



HANDBOOK

**ALSO TESTS
VEHICLE CHARGING SYSTEM**

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Safety Precautions

While working with electrical measurement & test equipment is aware that:

- Electrical supplies over 40 Volts are potentially hazardous as are all supplies which are capable of delivering a high current. High voltage produces a risk of electric shock and high current in a conductor or component produces risk to eyesight as well as the risk of burns. Circuit breakers and fuses only offer limited protection. Use approved eye protection where appropriate.
- where appropriate seek advice and follow the guidance of a suitable publication.
- Keep children, pets and others who do not appreciate the hazards well away from the work area.
- testing of vehicles is potentially hazardous. Take every precaution to avoid injury and ensure that you have sufficient understanding of the task being undertaken. Seek advice or follow the guidance of a comprehensive vehicle manual. Always follow vehicle manufacturers' warnings, cautions and service procedures.
- using this product can involve working on a car while the engine is running. This is a potential hazard and the user should take every precaution to avoid any possibility of damage or injury. Never wear loose clothing that can catch in moving engine parts and always tie-up or cover long hair. Do as much of the work as possible with the engine not running.
- Always operate the vehicle in a well-ventilated area. Do not inhale exhaust gases. They are very poisonous. Always make sure the vehicle is in park (Automatic transmission) or neutral (manual transmission) and that the parking brake is firmly set.
- Always keep yourself, tools and test equipment away from all moving or hot engine parts, remember that thermostatically controlled fans may suddenly start with no warning. Treat high tension ignition components with respect, remembering that electrical shocks can cause involuntary movement that may result in secondary injury.
- Never lay tools on a vehicle battery. You may short the terminals together causing harm to yourself, the tools or the battery. When carrying out tests on a motor vehicle, remember that you should NEVER run the engine with the car battery disconnected (either + or -) since the alternator would then run at a damaging over-voltage.
- Never smoke or have open flames near the vehicle. Vapours from gasoline and a charging battery are highly flammable and explosive. Always keep a suitable fire extinguisher handy.
- ALWAYS insure that the tester's black grounding clip is connected FIRST during hookups, and that it is disconnected LAST when testing is completed.
- When the load switch is operated, the unit **WILL BECOME HOT**.
BEWARE of touching the metal casing for several minutes following a load test.

GENERAL NOTE ABOUT BATTERY POWER TESTER (When first used)

When performing a Load Test for the first time the internal resistor coil will smoke. THIS IS ENTIRELY NORMAL as the resistor operates at high temperatures.

INTRODUCTION

The BPT12 Professional Battery Power Tester is designed to provide THREE alternative tests. (1) Battery Voltage Test, (2) Battery Power Test, and (3) Charging System Test. Please refer to the appropriate section of this manual for details.

1. BATTERY TEST- voltage test

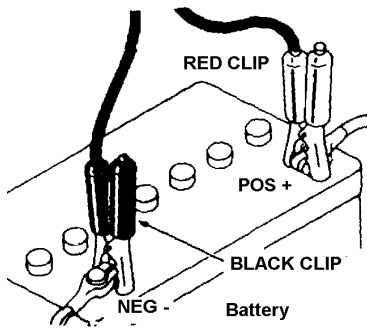


Fig.1

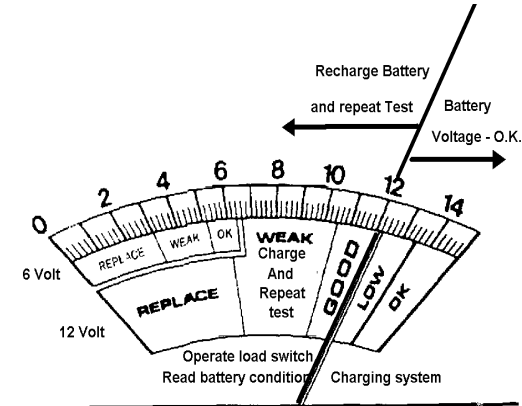


Fig.2

Connect the tester leads to the vehicle battery terminals. Ensure that the Black test clamp is connected to the battery - (negative) terminal, and the Red test clamp to the battery + (positive) terminal (fig.1). **DO NOT OPERATE THE LOAD SWITCH.**

The voltmeter will now display the battery's stored voltage (fig.2). A reading of **12 volts or more** indicates the battery is charged. A reading of below this. May indicate the battery requires charging. In this case recharge the battery according to the manufacturer's specification.

NB. If after recharging, the meter still displays less than 12 volts, THEN IT IS LIKELY THE BATTERY IS OF NO FURTHER USE.

2. BATTERY TEST- power test

This test should NEVER be conducted while the battery is being charged OR when the vehicle's engine is running.

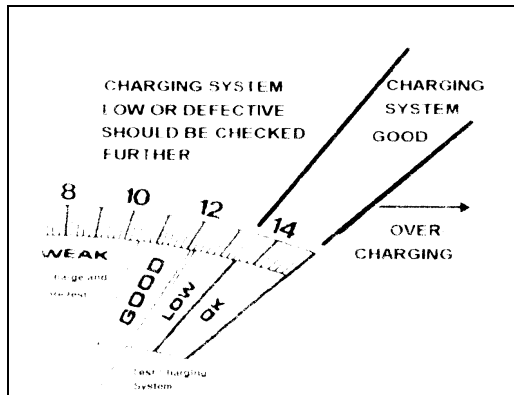
Connect the Power Tester leads to the battery terminals. Ensure that the Black clamp is connected to the battery - (negative) terminal, and the Red test clamp to the battery + (positive) terminal (fig.1). Note the battery's stored voltage reading on the meter, which should indicate **12 volts or more** (fig.2). (If lower than **12 volts**, refer to section 1, Battery-voltage test).

Now operate the load switch for approximately 10 seconds. You should observe an immediate voltage drop, but the needle on the meter should remain within the **GOOD** region. The needle should then remain stationary at this position for the remainder of the 10 seconds. If this is the case, then this would indicate a healthy battery. If, however a further voltage drop is observed, the battery is in a low state of charge and should be recharged, then re-tested. If the needle drops into the **REPLACE** section (possibly followed by a slight rise), it is very likely the battery has one (or more) defective cells, and the battery is near the end of its life.

CAUTION: THE POWER TESTER WILL BECOME HOT DURING THE BATTERY POWER TEST, AND WILL REMAIN HOT FOR SOME TIME AFTER. DO NOT OPERATE THE LOAD SWITCH FOR MORE THAN 10 SECONDS. DO NOT REPEAT TEST FOR 2 MINUTES.

3. CHARGING SYSTEM TEST

Fig.3



BPT12 Battery Power Tester can also be used to test the condition of the charging system. Connect the tester leads to the battery terminals. Ensure that the Black clamp is connected to the battery - (negative) terminal, and the Red test clamp to the battery + (positive) terminal (fig.1). Note the battery's stored voltage reading on the meter. Before starting the vehicle's engine, **ENSURE** that the tester and leads are well away from any of the engine parts that can

Comment [AJH1]: Have changed text to Richards suggested.

Comment [REB2]: drops into the replace section(possibly followed by a light rise)it is probably thatetc

Comment [REB3]:To test charging you must test at just above idle and ensure the battery voltages INCREASES. With no electrical loads even a battery in a low state of charge should climb towards a regulated 13.8 to 14.5 voltage. When electrical loads are switched on the alternator should not fall below the stored voltage level as this indicates a battery which is discharging.

Comment [AJH4]: Text has been changed.

move. Now start the engine and let it idle. Increase the engine speed to above idle (about 2000 rpm). The alternator should be able to provide near its maximum current at this engine speed. The battery voltage should **INCREASE**. Now switch on some of the vehicle's electrical equipment, i.e. the headlights and heated rear windscreen, to create a load. If the voltage falls below the noted battery's stored voltage reading, this indicates the battery is discharging and not charging, and a fault is present within the vehicles charging system (suspect the alternator). If in the RED (above 15 volts), the alternator is overcharging, once again suspect a fault with the alternator.

CAUTION :

a) DO NOT OPERATE THE LOAD SWITCH FOR MORE THAN TEN SECONDS.

b) DO NOT REPEAT TEST FOR 2 MINUTES

THE TESTER WILL BECOME HOT DURING THE BATTERY POWER TEST, AND WILL REMAIN HOT FOR SOME TIME AFTER.