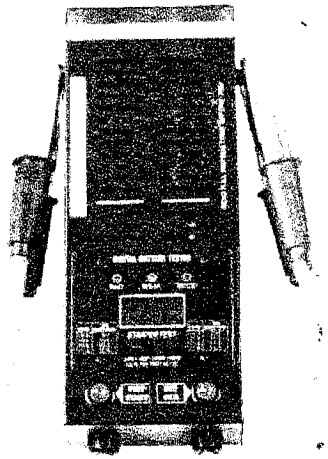
Portable Digital Battery Tester

Owner's Manual

Item # 717200



Distributed by
Northern Tool + Equipment Co.,Inc.
Burnsville.MN 55306-6939
Made in China

⚠ WARNING:
Read carefully and understand all INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

1. SPECIFICATIONS:

Capability	12 VDC battery tester with charging system output
Load Test Capacity	125Amps; 200-1000 cold cranking Amps
Digital LED Display	Analog, 0-16 VDC (maximum)
Test Cycle	5 seconds per test with 1 minute cool down; up to 3 tests in 5 minutes
Overall Dimensions	11-1/2 " L x 7 " W x 3-1/4" D
Features	5S auto cut off and CCA set

Save This Manual

You will need the manual for the safety warnings and precautions, operating and maintenance procedures. Keep your invoice with this manual in a safe and dry place for future reference.

SAFETY PRECAUTIONS

⚠ **WARNING!**

READ AND UNDERSTAND ALL INSTRUCTIONS. Failure to follow all instructions listed below may result in electric shock, fire, and /or serious injury.

SAVE THESE INSTRUCTIONS

1.Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents.
2.Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes.
3.Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control. Protect others in the work area from debris such as chips and sparks. Provide barriers or shields as needed.
4.Do not force the tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.
5.Do not use the power tool if the Power Switch does not turn it on or off. Any tool that cannot be controlled with the Power Switch is dangerous and must be replaced.
6.Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.
7.Maintain tools with care. Keep clean. Do not use a damaged tool . Tag damaged tools Do no t use until repaired.
8.Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury.
9.Maintain labels and nameplates on this tool. These carry important information. If unreadab le or missing, contact us for a replacement.
10.Always wear ANSI approved safety impact eye goggles and heavy work gloves when using this tool. Using personal safety devices reduce the risk for injury. Safety impact eye goggles and heavy work gloves are available from us.
11.Maintain a safe working environment. Keep the work area well lit. Make sure there is adequate surrounding workspace. Always keep the work area free of obstructions, grease,

oil, trash, and other debris. Do not use this tool in areas near flammable chemicals, dusts, and vapors. Do not use this product in a damp or wet location.

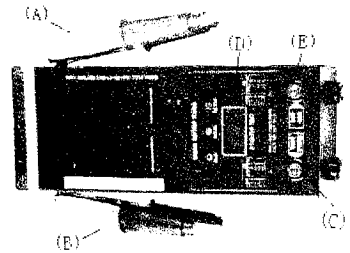
12. People with pacemakers should consult their physicians before using this product. Electromagnetic fields in close proximity to a heart pacemaker could cause interference to or failure of the pacemaker. Caution is necessary when near the coil, spark plug cables, or distributor of a running engine. The engine should always be off if adjustments are to be made of the distributor.
13. When connecting the Battery Cables to the battery, avoid creating sparks (always connect and disconnect clamps exactly as described in rule number 14, below, and on page 3), especially when the battery is being charged. Explosive gases are created during charging. Sparking could also damage the vehicle electrical system.
14. Be certain of the test battery polarity before connecting the test Cable Clamps. The red Cable Clamp (A) goes to the positive terminal of the battery. The black Cable Clamp (B) goes to the negative terminal of the battery.
15. When placing the Battery Tester in the vehicle (on the frame, engine, or fender), take special care that the metal housing of the Battery Tester does not come in contact with either terminal of the battery or other electrical connections.
16. Do not drop the Battery Tester as it may affect proper operation.
17. Do not smoke or have open flames near the battery.
18. Reversing Battery Tester Cable Clamps on the battery will damage the tester.
19. Do not connect the Battery Tester to the battery while the battery is being charged. Turn the engine off before connecting.
20. Do not touch the cooling vents on the Battery Tester immediately after testing the battery. They become very hot.

UNPACKING

When unpacking, check to make sure that the product is intact and undamaged. If any parts are missing or broken, please call us as soon as possible.

OPERATING INSTRUCTIONS

⚠Caution! This Battery Tester becomes very hot during use. Touching it will result in serious burns.



Testing the Battery

Note: The temperature of the battery will affect the testing data. It will test lower when cold than when warm. Never test or charge a frozen battery.

⚠ **Caution! Wear rubber gloves (not included) whenever working with the Battery Tester or batteries.**

Note: Before any testing, make sure to clean the battery contacts.

1. **Make sure the vehicle is not running.** Connect the red (+) Clamp to the positive (+) terminal post on the battery. Connect the black (-) Clamp to the negative (-) terminal post on the battery. If it is less than 12V on a 12V battery, disconnect the battery and recharge before testing. Adjust the Set CCA button to correspond with the CCA of the battery. Push the CCA button (increments of 100) until the CCA that matches your battery appears. After reaching 999CCA , into the charging system mode with "AAA" display. **See photo above Round your Battery CCA number DOWN.**
2. Check the Battery Tester Led Window (D) to determine effectiveness of charge. If the Battery Tester does not register and no display is seen, double check that the Clamps are connected to the proper terminal posts. Make certain a clean connection has been made between the Clamps and terminal posts.
3. Push and release the Test Start button(C), a solid and consistent measurement is indicated by the Battery Tester. Within five seconds, read the LED Window display. Do not test more than three times in a five minute period. Allow one minute for cool down between tests.

Note: If a battery does not have the charge expected, have a qualified technician check the specific gravity. There may be an electrical drain or charging system trouble. If charging does not raise the specific gravity, you may have a defective battery.

Operation (Continued)

Analyzing test results by color display: The Battery Tester will measure battery output / charge in two ways. The three lights above the LED Window (D) will indicate a color telling you the general condition of the battery.

Red = Bad, No Charge, or Completely Discharged
Yellow = Weak, Needs Recharging
Green = Good or Normal Has Existing Charge

4. If the battery is without significant charge, charge it and check it again under load. The battery should measure 75% of Open-Circuit Voltage. 75% can be considered fully charged. If the charging rate reaches at least 75%, but fails to reach 75% during the load test, it needs replacing. Refer to the table below for 12 Volt battery percentages:

Open Circuit Voltage (V): Less than 11.7V	12V	12.2V	12.4V	12.4V +
Battery Charge Percentage 0%	20%	50%	75%	100%

5. When test is complete, remove Black Clamp (-) from battery first; then remove Red Clamp (+).

Testing the Charging System-Alternator/ Regulator Output:

⚠**Warning:** When testing a system in a car/truck, the vehicle must be on a flat, dry surface. The transmission must be in park and the emergency brake engaged.

1. Connect the red (+) Clamp to the positive (+) terminal post on the battery. Connect the black (-) Clamp to the negative (-) terminal post on the battery.
2. With the engine off, check the Battery Tester LED Window (D) to determine

effectiveness of charge. Without using the Test Start Button. If the Battery Tester does not register and no display is seen, double check that the Clamps are connected to the proper terminal posts. Make certain a clean connection has been made bet ween the Clamps and terminal posts.

3.Start the engine and let it run. Without using the Test Start Button, observe the voltage readout when the engine speed reaches between 1200 to 1500 RPM (normal idle speed). Once you push the Test Start Button, then will into charging system mode and meantime the Test Start Button is disabled.

4.Note meter reading with all electrical accessories off. One of three conditions will apply:
a)Voltage less than 13.5 volts indicates faulty alternator.
b)Voltage between 13.5 volts and 15 volts indicates charging system is good.
c)Voltage over 15 volts indicates faulty voltage regulator.

5.When charging system test is complete, remove Black Clamp (-) from battery first; then remove Red Clamp (+).

Testing the Starter

This Test identifies excessive starter current draw, which makes starting difficult and shortens battery life. Perform battery load test and proceed only if the battery tests good.

Engine should be at normal operating temperature.

1.Connect Clamps to battery posts and run the basic load test (push and release Test Start Button). Note the exact voltage with the load test on. If voltage continues to fall after 5 seconds, this test will not be available.

2.Apply the voltage obtained above to the starter tester table (below).
Use the next to lower minimum cranking volts for engines with less than 300 inches of cubic displacement (CID). For example, if the load voltage is 11 volts, use 10.3 for minimum cranking voltage.

STARTER TEST TABLE

LOAD VOLTS	10.4	10.6	10.8	11.0	11.2	11.4	11.6	11.8
MIN CRANK VOLTS	9.7	10.0	10.3	10.6	10.9	11.2	11.4	11.6

3.Disable the ignition system so the car will not start, crank the engine and note the voltage during cranking.

4.If cranking voltage of step 3 is below the minimum cranking voltage in the starter test table (above), the starter current draw is excessive. If the starter cranks slowly, check for high resistance and poor connection. A meter reading of 9 volts or less indicates exc essive current draw. This may be due to bad connections a falling starter motor or the battery is too small for the vehicle requirements.

DISPLAY CODES

Code	Situation	Possible Meanings/Causes
Beep keep sounding	Load test	Tester/relay defective. Discontinue use and have a qualified technician service
-L-	Start of test	Battery voltage less than 12 volts.