MIDTRONICS

PBT-50

Battery Conductance Tester

For testing 12-volt motorcycle and recreational vehicle batteries

Deka and Yuasa

INSTRUCTION MANUAL

CAUTION: Because of the possibility of personal injury, always use extreme caution when working with batteries. Follow all BCI (Battery Council International) safety recommendations.

WARNING: (Required by California Prop. 65) Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. **Wash hands after handling.**

BATTERY TEST

Note: Batteries can be tested in-vehicle or out-of-vehicle.

Before you start the test, clean the battery terminals with a wire brush. Turn off the vehicle and all accessory loads. ***Testing with the ignition switch on or vehicle loads on may cause inaccurate readings.***

If the vehicle was running, turn on the headlights for 30 seconds to remove the surface charge. Let the battery rest for 1 minute to recover before testing.

1. Connect the tester clamps directly to the battery posts (or as close to the posts as possible): red to the positive (+) terminal, black to the negative (–) terminal. Rock each clamp back and forth for a good connection.
2. **rEF** will flash on the display. The default reference number (50) will then appear.

3. Use the **ARROW** buttons to scroll to the battery's reference number. To scroll rapidly, press and hold the **UP** or **DOWN ARROW** button. (To find the reference number for your Deka or Yuasa battery model, refer to the *Battery Reference Number Guide* on page 5.)
4. Press the **TEST** button.
5. One or more LEDs (green, green and yellow, yellow, or red) will light to indicate the battery's condition. The display will show the battery's voltage.

BATTERY TEST RESULTS

LEDs	Decision
GREEN 	The battery is good and can be returned to service.
GREEN  **YELLOW** 	Fully charge the battery and return it to service.
YELLOW 	Fully charge the battery and retest. If you get the same result after charging, replace the battery.
RED 	The battery has failed or is weak and may soon fail. Replace the battery.

VOLTMETER

The PBT-50 can function as a voltmeter with a range of 8 to 19.0 volts. For an accurate live voltage measurement, the battery must be good and fully charged.

1. Connect the tester clamps to the battery: red to the positive(+) terminal, black to the negative (–) terminal. Rock each clamp back and forth to make a good connection.
2. Press the **V** button to read the live voltage.
3. Start the engine.
4. Read the voltage while the engine is running.

Result

Volts reading is between 13.5 volts and 14.8 volts
= Charging System OK

Volts reading is greater than 14.8 volts
= Charging System Problem.
Check regulator.

Volts reading is less than 13.5 volts
= Charging System Problem.
Check connections, wiring, and alternator.

TROUBLESHOOTING

If the display flashes or shows one flashing letter, the battery is too low (less than 8 volts) to test. Fully charge the battery and retest.

A message that alternates between **bAd** and **CELL** means one or more battery cells are bad. Replace the battery.

A **conn** message means there is a bad connection. Disconnect the clamps and reconnect. Make sure to rock the clamps back and forth to make a good connection.

If the red LED lights **when you test in-vehicle**, there may be a poor connection between the battery cables and the vehicle. Disconnect the battery cables and retest at the battery posts before replacing the battery.

Excessive electromagnetic interference may cause the tester to reset during testing. Before retesting, reconnect the clamps and:

- Make sure all vehicle loads and the ignition are off.
- Move away from the noise source, which may be a charger or other high-current device.
- If you are unable to find the noise source, fully charge the battery and retest at the battery posts. If the red LED lights again, replace the battery.

BATTERY REFERENCE NUMBER GUIDE

When you connect the PBT-50 to the battery **rEF** will flash on the display, The default reference number (50) will then appear.

To help you select the correct reference number for your Deka or Yuasa battery model, which is listed on the battery label, use this guide. The tables list the model numbers in the PBT-50 database in alphanumerical order.

Deka

Model No.	Ref. No.	Model No.	Ref. No.
ETX9	75	ETX16	64
ETX12	91	ETX16L	64
ETX14	80	ETX18	74
ETX15	4	ETX18L	74
ETX15L	4	ETX20L	64

Yuasa

Model No.	Ref. No.	Model No.	Ref. No.
51814	99	12N5-3B	47
51913	99	12N5-4B	47
53030	49	12N5.5-3B	55

Yuasa

Model No.	Ref. No.	Model No.	Ref. No.
12N5.5-4A	55	12N11-3B [O]	96
12N5.5-4B [O]	55	12N12-3B [O]	68
12N5.5A-3B	55	12N12A-4A-1	68
12N7-3B	38	12N14-3A	96
12N7-4A	38	12N16-3B	83
12N7-4B	38	12N24-3	31
12N7D-3B	38	12N24-3A	31
12N9-3A	87	HYB16A-AB	31
12N9-3A-1	87	KMX14-BS [K]	83
12N9-3B	87	SY50-N18L-AT	6
12N9-4B-1	87	SYB14L-A2	49
12N10-3A	79	SYB14L-B2	49
12N10-3A-1	79	SYB16L-B	30
12N10-3A-2	79	Y50-N18A-A	6
12N10-3B	79	Y50-N18L-A	6
12N11-3A-1	96	Y50-N18L-A-CX	6

[O] obsolete

[K] available at Kawasaki dealers

Yuasa

Model No.	Ref. No.	Model No.	Ref. No.
Y50-N18L-A3	6	YB9L-A2	68
Y60-N24-A	43	YB9L-B	68
Y60-N24AL-B	43	YB10A-A2	67
YB2.5L-C	66	YB10L-A2	67
YB2.5L-C-1	66	YB10L-B	67
YB3L-A	60	YB10L-B2	67
YB3L-B	60	YB12A-A	94
YB4L-A	37	YB12A-B	94
YB4L-B	37	YB12AL-A	94
YB5L-B	55	YB12AL-A2	94
YB7-A	68	YB12B-B2	94
YB7B-B	87	YB12C-A	94
YB7C-A	68	YB14-A2	49
YB7L-B	68	YB14-B2	49
YB9-B	68	YB14A-A1	49
YB9A-A	68	YB14A-A2	49

Yuasa

Model No.	Ref. No.	Model No.	Ref. No.
YB14L-A1	49	YB30L-B	43
YB14L-A2	49	YHD-12	78
YB14L-A2 W/S	49	YIX30L	9
YB14L-B2	49	YMF14-L2*	4
YB16-B	78	YT12A-BS	46
YB16-B-CX	6	YT12B-BS	13
YB16AL-A2	83	YT14B-4	13
YB16B-A	31	YT4B-BS	84
YB16B-A1	31	YT4L-BS	84
YB16C-B	78	YT5L-BS	20
YB16CL-B	78	YT7B-BS	12
YB16HL-A-CX	6	YT9B-4	75
YB16L-B	78	YTR4A-BS	20
YB18-A	78	YTR9-BS	75
YB18L-A	78	YTX4L-BS	20
YB30CL-B	43	YTX5L-BS	36

*superceded by YTX14AHL-BS

Yuasa

Model No.	Ref. No.	Model No.	Ref. No.
YTX7A-BS	12	YTX20-BS	64
YTX7L-BS	12	YTX20H-BS	65
YTX9-BS	75	YTX20HL-BS	65
YTX12-BS	91	YTX20L-BS	64
YTX14-BS	80	YTX24HL-BS	74
YTX14AH-BS	4	YTX50L-BS	22
YTX14AHL-BS	4	YTZ7S	33
YTX14L-BS	80	YTZ10S	80
YTX15L-BS	10	YTZ12S	95
YTX16-BS	10	YTZ14S	18
YTX16-BS-1	10		

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QS - 9000 CERTIFIED

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Patents

This tester is made in the U.S.A. by MIDTRONICS, INC. and is protected by one or more of the following U.S. Patents: 6,323,650; 6,316,914; 6,304,087; 6,249,124; 6,163,156; 6,091,245; 6,051,976; 5,831,435; 5,821,756; 5,757,192; 5,592,093; 5,585,728; 5,572,136; 4,912,416; 4,881,038; 4,825,170; 4,816,768; 4,322,685; Canadian patents: 1,280,164; 1,295,680; United Kingdom patents: 0,417,173; 0,672,248; German patents: 689 23 281.0-08; 693 25 388.6; 93 21 638.6; and other U.S. and Foreign patents issued and pending. This product may utilize technology exclusively licensed to Midtronics, Inc. by Johnson Controls, Inc. and/or Motorola, Inc.

Service

For service, contact Midtronics for a Return Authorization number, and return the unit to Midtronics freight prepaid, Attention: RA#. Midtronics will repair or replace the tester and reship, the next scheduled business day following receipt, using the same type carrier and service as received. If Midtronics determines that the failure was caused by misuse, alteration, accident, or abnormal condition of operation or handling, purchaser will have the option of purchasing a replacement tester or the unit will be returned freight collect. Battery testers beyond the warranty period are subject to the repair charges in effect at that time.

Limited Warranty

This battery tester is warranted to be free of defects in materials and workmanship for a period of one year from the date of purchase. Midtronics will, at our option, repair the unit or replace the unit with a remanufactured tester. This limited warranty applies only to Midtronics battery testers and does not cover any other equipment, static damage, water damage, overvoltage, dropping unit or damage resulting from extraneous causes including owner misuse. Midtronics is not liable for any incidental or consequential damages for breach of this warranty. The warranty is void if owner attempts to disassemble the unit, or to modify the cable assembly.

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