

DRAPER[®]

BATTERY TESTER WITH PRINTER

92445



These instructions accompanying the product are the original instructions. This document is part of the product, keep it for the life of the product passing it on to any subsequent holder of the product. Read all these instructions before assembling, operating or maintaining this product.

This manual has been compiled by Draper Tools describing the purpose for which the product has been designed, and contains all the necessary information to ensure its correct and safe use. By following all the general safety instructions contained in this manual, it will ensure both product and operator safety, together with longer life of the product itself.

All photographs and drawings in this manual are supplied by Draper Tools to help illustrate the operation of the product.

Whilst every effort has been made to ensure the accuracy of information contained in this manual, the Draper Tools policy of continuous improvement determines the right to make modifications without prior warning.

1. TITLE PAGE

1.1 INTRODUCTION:

USER MANUAL FOR: Battery Tester with Printer

Stock No: 92445

Part No: BT-P

1.2 REVISIONS:

Date first published July 2019.

As our user manuals are continually updated, users should make sure that they use the very latest version.

Downloads are available from: <http://drapertools.com/manuals>

Draper Tools Limited

Hursley Road

Chandler's Ford

Eastleigh

Hampshire

SO53 1YF

UK

Website: drapertools.com

Product Helpline: +44 (0) 23 8049 4344

General Fax: +44 (0) 23 8026 0784

1.3 UNDERSTANDING THIS MANUALS SAFETY CONTENT:

WARNING! – Information that draws attention to the risk of injury or death.

CAUTION! – Information that draws attention to the risk of damage to the product or surroundings.

1.4 COPYRIGHT © NOTICE:

Copyright © Draper Tools Limited.

Permission is granted to reproduce this publication for personal and educational use only. Commercial copying, redistribution, hiring or lending is prohibited.

No part of this publication may be stored in a retrieval system or transmitted in any other form or means without written permission from Draper Tools Limited.

In all cases this copyright notice must remain intact.

2. CONTENTS

1. TITLE PAGE	
1.1 INTRODUCTION.....	2
1.2 REVISION HISTORY	2
1.3 UNDERSTANDING THIS MANUAL	2
1.4 COPYRIGHT NOTICE	2
2. CONTENTS	
2.1 CONTENTS	3
3. WARRANTY	
3.1 WARRANTY.....	4
4. INTRODUCTION	
4.1 SCOPE.....	5
4.2 SPECIFICATION	5
4.3 HANDLING AND STORAGE	5
5. HEALTH AND SAFETY INFORMATION	
5.1 SAFETY INFORMATION.....	6
5.2 SAFETY MESSAGE CONVENTIONS USED	6
5.3 IMPORTANT SAFETY INSTRUCTIONS.....	6
6. TECHNICAL DESCRIPTION	
6.1 IDENTIFICATION	7
7. UNPACKING AND CHECKING	
7.1 PACKAGING	8
8. BATTERY TESTER SETUP	
8.1 TESTER SETUP	9
9. BATTERY TESTER OPERATION	
9.1 BATTERY TEST.....	11
9.2 CRANKING TEST	14
9.3 CHARGING TEST.....	15
9.4 REVIEW DATA	17
9.5 PRINT.....	17
10. EXPLANATION OF SYMBOLS	
10.1 EXPLANATION OF SYMBOLS	11
11. DISPOSAL	
11.1 DISPOSAL.....	12
DECLARATION OF CONFORMITY	ENCLOSED

3. WARRANTY

3.1 WARRANTY

Draper tools have been carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship.

Should the tool develop a fault, please return the complete tool to your nearest distributor or contact

Draper Tools Limited, Chandler's Ford, Eastleigh, Hampshire, SO53 1YF. England.

Telephone Sales Desk: (023) 8049 4333 or Product Help Line (023) 8049 4344.

A proof of purchase **must** be provided with the tool.

If upon inspection it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This warranty period covering labour is 12 months from the date of purchase except where tools are hired out when the warranty period is 90 days from the date of purchase. This warranty does not apply to any consumable parts, any type of battery or normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accidents, or repairs attempted or made by any personnel other than the authorised Draper warranty repair agent.

Note: If the tool is found not to be within the terms of warranty, repairs and carriage charges will be quoted and made accordingly.

This warranty applies in lieu of any other warranty expressed or implied and variations of its terms are not authorised.

Your Draper warranty is not effective unless you can produce upon request a dated receipt or invoice to verify your proof of purchase within the warranty period.

Please note that this warranty is an additional benefit and does not affect your statutory rights.

Draper Tools Limited.

4. INTRODUCTION

4.1 SCOPE

This battery tester and printer will measure the cold cranking amps capability of the vehicle starting battery, health state of the battery, common fault of the vehicle starting system and charging system.

4.2 SPECIFICATION

Stock No.....	92445
Part No.	BT-P
Cold Cranking Amps Measure Range:	
Measure Standard.....	Measure Range
CCA.....	100-2000
BCI.....	100-2000
CA.....	100-2000
MCA.....	100-2000
JIS.....	26A17--245H52
DIN.....	100-1400
IEC.....	100-1400
EN.....	100-2000
SAE.....	100-2000
GB.....	30-220Ah
Working Environment Temp.....	-20°C—60°C

Note: To be used on Lead acid, AGM flat plate, AGM Spiral, Gel and EFB batteries.

4.3 HANDLING AND STORAGE

Carefully remove the product from the packaging and examine it for any sign of damage that may have happened during shipping. Lay the contents out and check them against the parts shown below. If any part is damaged or missing, please contact the Draper Help Line (the telephone number appears on the Title page) and do not attempt to use the product.

The packaging material should be retained at least during the warranty period, in case the machine needs to be returned for repair.

Warning!

- Some of the packaging materials used may be harmful to children. Do not leave any of these materials in the reach of children.
- If any of the packaging is to be thrown away, make sure they are disposed of correctly, according to local regulations.

5. HEALTH AND SAFETY INFORMATION

5.1 SAFETY INFORMATION

For your own safety and the safety of others, and to prevent damage to the equipment and vehicles, read this manual thoroughly before operating your battery tester. The safety messages presented below and throughout this user's manual are reminders to the operator to exercise extreme care when using this device. Always refer to and follow safety messages and test procedures provided by vehicle manufacturer. Read, understand and follow all safety messages and instructions in this manual.

5.2 SAFETY MESSAGE CONVENTIONS USED

We provide safety messages to help prevent personal injury and equipment damage. Below are signal words we used to indicate the hazard level in a condition.

Danger: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.

Warning: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

Caution: Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

5.3 IMPORTANT SAFETY INSTRUCTIONS

And always use your battery tester as described in the user's manual, and follow all safety messages.

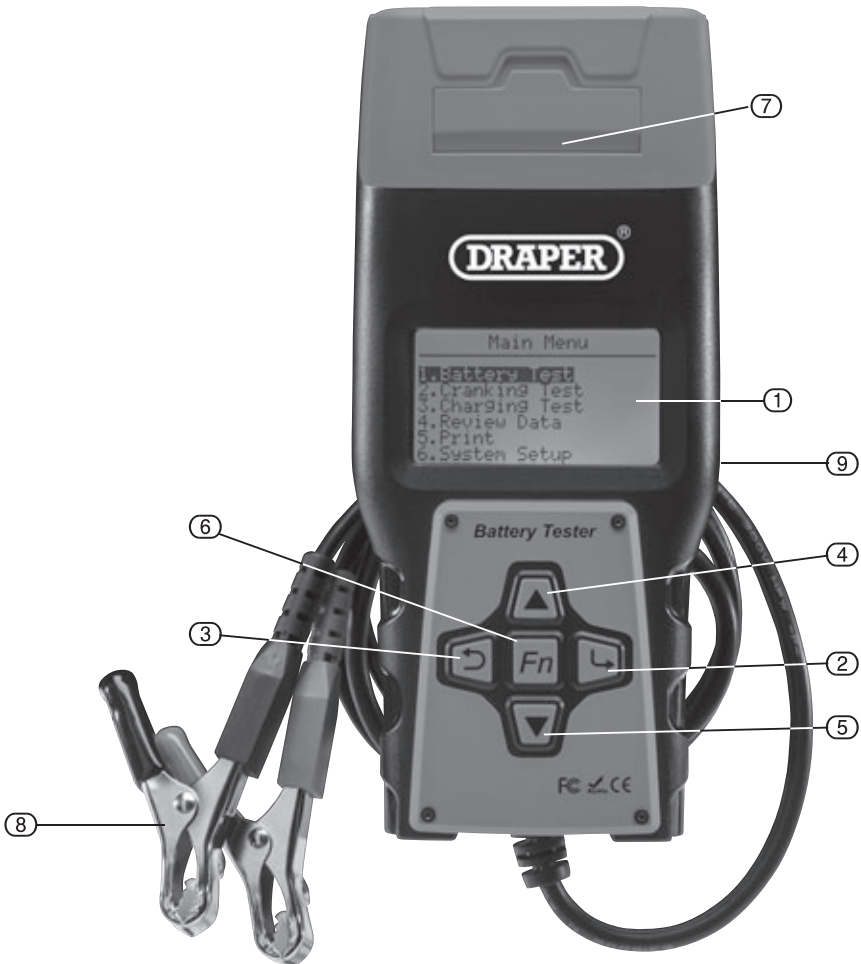
WARNING:

- Do not route the test cable in a manner that would interfere with driving controls.
- Do not exceed voltage limits between inputs specified in this user's manual.
- Always wear ANSI approved goggles to protect your eyes from propelled objects as well as hot or caustic liquids.
- Fuel, oil vapours, hot steam, hot toxic exhaust gases, acid, refrigerant and other debris produced by a malfunction engine can cause serious injury or death. Do not use the code reader in areas where explosive vapour may collect, such as in below-ground pits, confined areas, or areas that are less than 18 inches (45 cm) above the floor.
- Do not smoke, strike a match, or cause a spark near the vehicle while testing and keep all sparks, heated items and open flames away from the battery and fuel / fuel vapours as they are highly flammable.
- Keep a dry chemical fire extinguisher suitable for gasoline, chemical and electrical fires in work area.
- Always be aware of rotating parts that move at high speed when an engine is running and keep a safe distance from these parts as well as other potentially moving objects to avoid serious injury.
- Do not touch engine components that get very hot when an engine is running to avoid severe burns.
- Block drive wheels before testing with engine running. Put the transmission in park (for automatic transmission) or neutral (for manual transmission). And never leave a running engine unattended.
- Do not wear jewellery or loose fitting clothing when working on engine.

6. TECHNICAL DESCRIPTION

6.1 IDENTIFICATION

- ① LCD Display
- ② Enter key
- ③ Exit key
- ④ Up key
- ⑤ Down key
- ⑥ Fn key
- ⑦ Printer
- ⑧ Battery clips
- ⑨ Mini-USB socket



7. UNPACKING AND CHECKING

7.1 PACKAGING

Carefully remove the machine from the packaging and examine it for any sign of damage that may have happened during shipping. If any part is damaged; please contact the Draper Helpline (the telephone number appears on the Title page) and do not attempt to use the machine.

The packaging material should be retained at least during the guarantee period: in case the machine needs to be returned for repair.

Warning! Some of the packaging materials used may be harmful to children. Do not leave any of these materials in the reach of children.

If any of the packaging is to be thrown away, make sure they are disposed of correctly; according to local regulations.

8. BATTERY TESTER SETUP

8.1 TESTER SETUP

The tool allows you to make the following adjustments and settings:

- Language:** Selects desired language.
- Fn Setup:** Set the One-Click-Key function.
- Contrast adjustment:** Adjusts the contrast of the LCD display.
- Time Settings:** Set the time based on your location.
- Tool information:** Show the software and hardware version.

System setup:

- From main menu, select the System Setup, and press Enter.

Language:

- From System Setup menu, use Enter button to select Language
- Use UP and DOWN button to select the desired language and press Enter button to save your selection and return to previous menu.

System Setup	
1. Language	←
2. Fn Setup	
3. Contrast	
4. Time Setting	
5. Tool Information	

Language	
1. English	
2. German	
3. Spanish	
4. French	
5. Italian	
6. Dutch	

Fn Setup:

- From System Setup menu, use Enter button to select.
- Use UP and DOWN button to select the desired one-click quick function. Quick Test Mode is suitable for using the same parameters batteries test. That means, after inputting the battery parameters during first test, the user can then press the Fn button to quickly access the same test procedure using the same parameters, as long as the Quick Test Mode is selected.

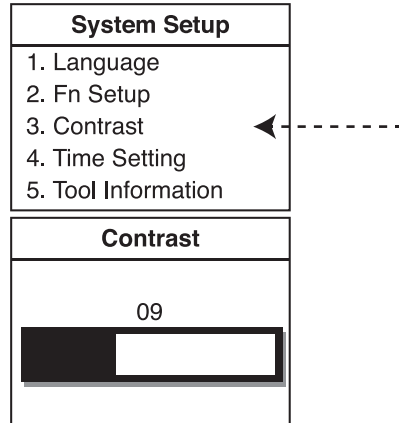
System Setup	
1. Language	
2. Fn Setup	←
3. Contrast	
4. Time Setting	
5. Tool Information	

Fn Setup	
1. Voltmeter	
2. Quick Test Mode	

8. BATTERY TESTER SETUP

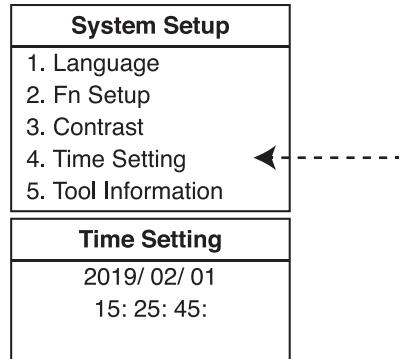
Contrast:

- From System Setup menu, use Enter button to select contrast.
- Use UP and DOWN button to select the contrast value and press Enter button to save your selection setting and return to previous menu.



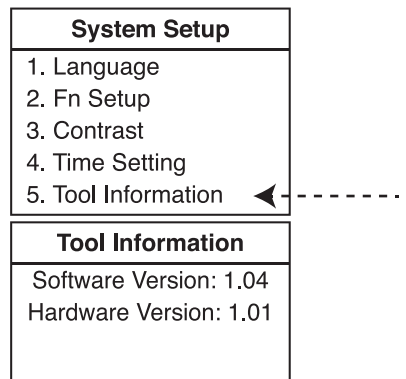
Time Setting:

- From System Setup menu, use Enter button to select time setting.
- Use UP and DOWN and Enter button to set the time based on your location, press exit button to return to previous menu.



Tool Information:

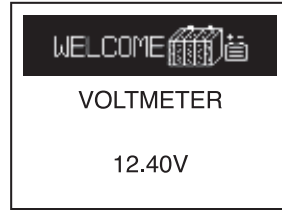
- From System Setup menu, use Enter button to select Tool Information.
- Press exit to return the previous menu.



9. BATTERY TESTER OPERATION

OPERATION AND TEST

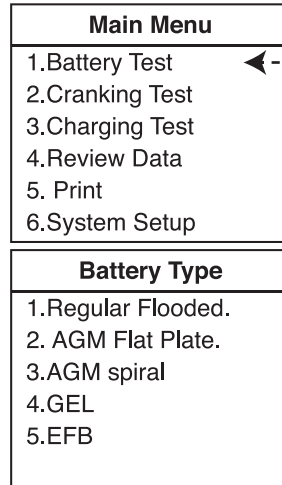
- After connecting the tool to vehicle battery, the tester displays the batteries real-time voltage.
- The tester will display the following contents in a sequence, select accordingly.



9.1 BATTERY TEST

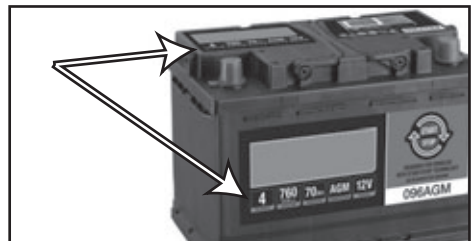
Select battery type:

- After entering Battery Test, the tester will prompt to select battery type, i.e. Regular Flooded, AGM Flat Plate or AGM Spiral, Gel and EFB battery. Press UP/DOWN key to select battery type, then press Enter key to confirm



Battery System Standard and Rating

- The tester will test each battery according to the selected system and rating.
Use UP/DOWN key to select according to the actual system standard and rating marked on the battery. See in picture, the arrow indicates normal locations.



(Please note each battery manufacture is different and the location of the marking may change, if unsure please contact the manufacturer of the battery).

9. BATTERY TESTER OPERATION

- ➔ **CCA:** Cold Cranking Amps, specified by SAE&BCI, most frequently used value for starting battery at 0°F (-18°C).
- BCI:** Battery Council International standard.
- CA:** Cranking Amps standard, effective starting current value at 0°C.
- MCA:** Marine Cranking Amps standard, effective starting current value at 0°C.
- JIS:** Japan Industrial Standard, displayed on the battery as combination of the numbers and letters, e.g. 55D23,80D26.
- DIN:** German Auto Industry Committee Standard.
- IEC:** Internal Electro technical Commission Standard.
- EN:** European Automobile Industry Association Standard.
- SAE:** Society of Automotive Engineers Standard.
- GB:** China National Standard.

Select Input
CCA

Rating range as following:

➔

Measure Standard	Measure Range
CCA	100-2000
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17--245H52
DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000
GB	30-220Ah

Setting Rate
500A CCA

Input correct test standard and rating, press Enter key, tester starts to test, and dynamic interface "TESTING" prompted

Note: It takes around 5 seconds to display the battery test result.

9. BATTERY TESTER OPERATION

9.3 BATTERY TEST RESULT

Battery test result includes 5 types as following:

1) Good Battery

- The battery is without any problem.

Health:96%	490A
Charge:100%	12.64V
Internal R=6.1mΩ	
Rated: 500A	CCA
GOOD BATTERY	

2) Good, Recharge

- Good battery but low power, recharge before using.

Health:78%	440CCA
Charge:30%	12.20V
Internal R=7.2mΩ	
Rated: 500A	
GOOD, RECHARGE	

3) Replace

- The battery is near to or already reached the end of the using life, replace battery.

Health:46%	490A
Charge:80%	12.68V
Internal R=18.1mΩ	
Rated: 500A	CCA
REPLACE	

4) Bad Cell, Replace

- Battery interior damaged, bad cell or short circuit, replace battery.

Health:0%	0A
Charge:20%	10.64V
Internal R=45.2mΩ	
Rated: 500A	CCA
BAD CELL, REPLACE	

5) Charge, Retest

- Unstable battery recharge and retest. If same test result appears after recharge and retest, the battery is regarded as damaged, replace the battery.

Health:39%	310A
Charge:20%	12.08V
Internal R=30.1mΩ	
Rated: 500A	CCA
CHARGE-RETEST	

Note: Once the test is complete the user will be prompted to print results - press enter to confirm or to continue testing press the return button to go back to previous menu.

PRINT TEST RESULTS?

9. BATTERY TESTER OPERATION

9.2. CRANKING TEST

Tester prompts as following:

- Start the engine when prompted, the tester will automatically complete the cranking test and display the result.
- When the RPM is detected this will display on the screen.
- Normally a cranking voltage value lower than 9.6V is regarded as abnormal.
- The test result of the tester will include actual cranking voltage and actual cranking time.
- This is for the convenience of the maintenance personnel to quickly know the whole state of the starting system according to the data.

Main Menu
1.Battery Test
2.Cranking Test ←
3.Charging Test
4.Review Data
5. Print
6.System Setup

Cranking Test
START ENGINE

Cranking Test
RPM Detected

Cranking Test	
Time	780ms
Cranking	Normal
Voltage	10.13V

PRINT TEST RESULTS?

After the test is finished, do not shut down the engine, the next step is the charging test.

9. BATTERY TESTER OPERATION

9.3. CHARGING TEST

Tester prompts as following:

- Select "Charging Test" and press Enter key to start the charging test.

Note: Do not shut down the engine during the test. Follow the steps according to the on screen instructions.

Main Menu	
1. Battery Test	
2. Cranking Test	
3. Charging Test	←
4. Review Data	
5. Print	
6. System Setup	

Unloaded Test
Turn off all devices, increase RPM to 2500-3000r/min and keep 10 seconds. Press ENTER continue

Loaded Test
Turn on headlights and air conditioner to the maximum, keep RPM idle for 10 seconds. Press ENTER continue

Note: If no increase of RPM is detected the tester will try a further 3 times to detect, if the RPM increase is still not detected the tester will skip this test and display "NO OUTPUT".

Ripple Test
Turn off headlights and air conditioner, keep 10 seconds. Press ENTER continue

- After the test has finished, the tester displays the effective charging voltages, ripple voltage and charging test result.

Charging Test	
Unloaded	14.39V
Loaded	14.16V
Ripple	15mV
Charging	Normal

This will indicate there is an issue with the charging system/battery.

9. BATTERY TESTER OPERATION

9.4. REVIEW DATA

Choose the function of Review Data

Main Menu	
1. Battery Test	
2. Cranking Test	
3. Charging Test	
4. Review Data	←
5. Print	
6. System Setup	

Health:96%	490A
Charge:100%	12.64V
Internal R=6.1mΩ	
Rated: 500A	CCA
GOOD BATTERY	

9.5. PRINT

1. Choose the function of Print and press Enter.

Main Menu	
1. Battery Test	
2. Cranking Test	
3. Charging Test	
4. Review Data	
5. Print	←
6. System Setup	

Print time, Year/Month/Day

2019/02/01 16:14:20.

Battery Test:
GOOD BATTERY
Charge: 100%
Voltage:12.64V
Health: 96%
Measured: 490CCA
Selected Input: CCA
Rated: 500A
Internal R: 6.1mΩ
Cranking Test:
Time: 780ms
Cranking: NORMAL
Cranking Volt: 10.13V
Charging Test
Loaded: 14.16 V
Unloaded: 14.39V
Ripple: 15mV
Charging volt: NORMAL

2. The Printer will print the test result as below:

Print Data	
1. Print Battery	
2. Print Cranking	
3. Print Charging	
4. Print All	

3. Press exit button to return the previous menu.

10. EXPLANATION OF SYMBOLS

10.1 EXPLANATION OF SYMBOLS



Warning!

Read the instruction manual.



Do not dispose of WEEE*
unsorted municipal waste.



11. DISPOSAL

11.1 DISPOSAL

- At the end of the machine's working life, or when it can no longer be repaired, ensure that it is disposed of according to national regulations.
- Contact your local authority for details of collection schemes in your area.

In all circumstances:

- Do not dispose of power tools with domestic waste.
- Do not incinerate.
- Do not abandon in the environment.
- Do not dispose of WEEE* as unsorted municipal waste.



* Waste Electrical & Electronic Equipment.

CONTACTS

Draper Tools Limited, Hursley Road,
Chandler's Ford, Eastleigh, Hampshire. SO53 1YF. U.K.

Helpline: (023) 8049 4344

Sales Desk: (023) 8049 4333

Internet: drapertools.com

E-mail: sales@drapertools.com

General Enquiries: (023) 8026 6355

Service/Warranty Repair Agent:

For aftersales servicing or warranty repairs, please contact the Draper Tools Helpline for details of an agent in your local area.

YOUR DRAPER STOCKIST

DBMC0719

©Published by Draper Tools Limited.

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical photocopying, recording or otherwise without prior permission in writing from Draper Tools Ltd.