

# BrakeCheck Standard User Manual



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# **BrakeCheck**

## **Unit Description**

The Bowmonk BrakeCheck is a self-contained unit, incorporating an Accelerometer, which is used to determine your vehicle's braking performance. It can also be used to monitor the condition of the brake components in conjunction with normal, routine inspection.

The BrakeCheck will test the performance of both the Service Brake (foot brake) and the Hand Brake (parking brake) and will report the magnitude of any sideways pull detected during testing.

All of the BrakeCheck's functions are controlled with the three keys on the front panel. The LED's indicate the unit's status, Current Mode and Displayed Result.

The BrakeCheck has a 3-character LED display that shows the unit's status, the test to be performed and the test results. It will also display the temperature of the unit in both °C and °F.

The optional printer is Infrared (wireless) and has its own battery charger; do not use the BrakeCheck battery charger to recharge this printer.

A BrakeCheck battery charger has been provided. Lo Bat means it needs charging but it will still work, No Bat means that the battery is completely flat and the unit is not able to do a test until charged i.e. lower than lo bat. The BrakeCheck should be recharged regularly to ensure it is ready to use when required, we recommend 1 hour per week on regular use, and a full charge will accommodate around 300 tests. The unit is fully charged when the Charging Battery LED goes from flashing to solid red. (see LED charging flash codes)

There is no off switch on the unit; it will automatically power off after 5 minutes of inactivity.

The BrakeCheck should only be charged when the temperature of the unit is between 0°C and 43°C (32°F & 109°F)



Front  
of  
Vehicle

**BOWMONK**  
www.bowmonk.com

Charging  
Battery

5.6r

Calibration  
Required

**BrakeCheck**  
Series 2

**Displayed Result**

- Peak Deceleration (Front/Rear)
- Average Deceleration (Front/Rear)
- Peak Acceleration (Left/Right)
- Vehicle pulls to the Left
- Vehicle pulls to the Right
- Stopping Distance (metres)
- Test Speed (km/h)
- Brake Efficiency (%)

**Current Mode**

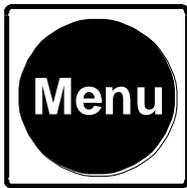
- Service Brake Test
- Hand Brake Test
- Last Test Result
- Temperature
- Setup (see manual)

Menu

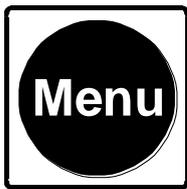
Enter

Print

## **Function Keys**



Hold the **Menu** key down for 2 to 3 seconds to turn the BrakeCheck **ON**.



Press the **Menu** key repeatedly to change the **Current Mode**.



Press the **Enter** key to change the **Displayed Result**.



Press the **Print** key to send the test results to the Printer or CabCheckS software (if purchased).

When the BrakeCheck is turned ON, the **Service Brake Test** LED will be lit and the display will show:



The unit is ready to begin the Service Brake Test routine.



Press  
show:

the **Hand Brake Test** LED will be lit and the display will



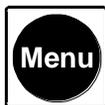
The unit is ready to begin the Hand Brake Test routine.



Press again, the **Service Brake Test** LED and the **Last Test Result** LED will be lit and the display will show:



The unit is ready to display the results of the most recent Service Brake Test.

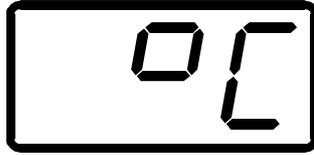


Press again, the **Hand Brake Test** LED and the **Last Test Result** LED will be lit and the display will show:



The unit is ready to display the results of the most recent Hand Brake Test.

Press  again, the **Temperature** LED will be lit and the display will show:



Press  again, the **Temperature** LED will be lit and the display will show:



Press  again, no LED's are lit and the display will show:



This function clears all stored test data from the unit's memory.

Press  again, the **Setup (see manual)** LED will be lit and the display will show:



Press  again to return to the beginning.

## **Performing a Test**

### **Setting the unit up for a Test**

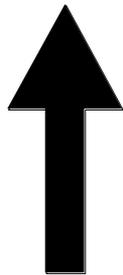
Ensure the battery is charged sufficiently.

Choose a safe test area that is as level as possible.

***The test area should be straight, flat and long enough to attain the recommended test speed and then to stop the vehicle quickly and safely. Avoid loose and wet surfaces. Avoid areas where there are other vehicles or people.***

***Vehicle should be stationary at this point.***

Place the BrakeCheck in the vehicle with the arrow pointing in the direction of travel.



***Front  
of  
Vehicle***

NB. The BrakeCheck should be placed on the vehicle seat or front floor and as close as possible to parallel with the road surface. The unit is fitted with rubber feet to help prevent it from moving around during the test.

In the UK, when carrying out a Statutory MOT Test it is essential that the brake test procedure detailed in the latest version of the MOT Inspection Manual be followed.

## To Test the Service Brake

Press  until the Current Mode is **Service Brake Test**.

Press  once, the display will indicate whether or not the unit is level enough to perform the test. Before an accurate test can be performed the display must show:



**Do NOT tilt the unit to achieve level. Find a more level vehicle test area and ensure the unit is parallel with the road.**

Press  again, the unit is now ready to perform the test and the display will show:



Accelerate the vehicle smoothly to approximately 20 mph or 32 kph.

Without causing the vehicle to skid, apply heavy and consistent pressure to the Service Brake until the vehicle comes to a complete stop as quickly as possible.

The Test is now complete, move the vehicle off the roadway if necessary.

## Service Brake Test Results

If the unit powers down, go to the **Service Brake Test / Last Test Result** mode and press



Then, (or if the unit did not power down), the **Peak Deceleration (Front/Rear)** LED will be lit and the display will show a value, eg:

A rectangular digital display with a black border showing the value "0.86" in a seven-segment font.



Press and the **Average Deceleration (Front/Rear)** LED will be lit and the display will show a value, eg:

A rectangular digital display with a black border showing the value "0.62" in a seven-segment font.



Press again, the **Peak Acceleration (Left/Right)** LED will be lit and either the **Vehicle pulls to the Left** OR the **Vehicle pulls to the Right** LED will be lit. The display will show a value, eg:

A rectangular digital display with a black border showing the value "0.07" in a seven-segment font.



Press **Enter** again, the **Stopping Distance (metres)** LED will be lit and the display will show a value, eg:

10.5



Press **Enter** again, the **Test Speed (km/h)** LED will be lit and the display will show a value, eg:

41



Press **Enter** again, the **Brake Efficiency (%)** LED will be lit and the display will show a value, eg:

0.86



Press **Enter** again, the **Peak Deceleration (Front/Rear)** is displayed again.

These results will be retained until the next Service Brake test is performed.

## To Test the Hand Brake

Press  until the Current Mode is **Hand Brake Test**.

Press  once, the display will indicate whether or not the unit is level enough to perform the test. Before an accurate test can be performed the display must show:



**Do Not tilt the unit to achieve level. Ensure the unit is parallel with the road surface and then, if necessary, locate a more level vehicle test area.**

Press  again, the unit is now ready to perform the test and the display will show:



Accelerate the vehicle smoothly to approximately 20 mph or 32 kph.

Without causing the vehicle to skid, apply the Hand Brake firmly and consistently until the vehicle comes to a complete stop as quickly as possible.

The Test is now complete, move the vehicle off the roadway if necessary.

## Hand Brake Test Results

If the unit powers down, go to the **Hand Brake Test / Last Test Result** mode and press



then, (or if the unit did not power down),

the **Peak Deceleration (Front/Rear)** LED will now be lit and the display will show a value, eg:

A rectangular digital display with a black border showing the value "0.54" in a seven-segment font.

Press and the **Average Deceleration (Front/Rear)** LED will be lit and the display will show a value, eg:

A rectangular digital display with a black border showing the value "0.46" in a seven-segment font.

Press again, the **Peak Acceleration (Left/Right)** LED will be lit and either the **Vehicle pulls to the Left** OR the **Vehicle pulls to the Right** LED will be lit. The display will show a value, eg:

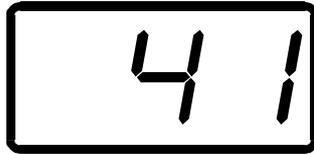
A rectangular digital display with a black border showing the value "0.02" in a seven-segment font.

Press again, the **Stopping Distance (metres)** LED will be lit and the display will show a value, eg:

A rectangular digital display with a black border showing the value "15.1" in a seven-segment font.



Press again, the **Test Speed (km/h)** LED will be lit and the display will show a value, eg:



Press again, the **Brake Efficiency (%)** LED will be lit and the display will show a value, eg:



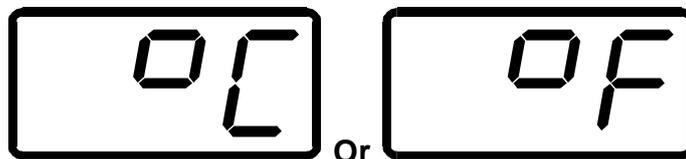
Press again, the **Peak Deceleration (Front/Rear)** is displayed again.

These results will be retained until the next Hand Brake test is performed.

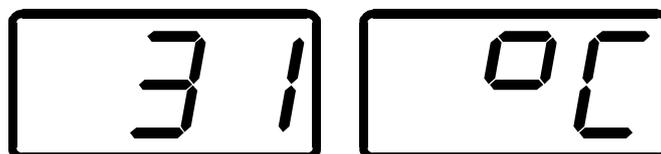
## To display the Temperature of the Unit



Press  until the Current Mode is **Temperature** and the display shows the desired temperature scale. i.e.



Press  once, the display will alternate between the measured temperature and the selected scale, for example:



To now display the temperature in Fahrenheit, or to select another Mode,



Press  until the display and LED indicate the desired Mode.

## Printing Stored Tests

BrakeCheck has a 1 TEST MEMORY on the Service Brake and the Hand Brake Test

### Printing to the Infra-Red Printer

If the BrakeCheck has powered-down due to inactivity:



Press  until the Current Mode indicates the test results to be printed: ie, **Last Service Brake Test** or **Last Hand Brake Test**



Press  once, (this is not necessary if the unit has not powered-down) the **Peak Deceleration (Front/Rear)** LED will be lit and the display will show a value, eg:



**With the BrakeCheck's top edge pointing at the front of the printer!**



Press  once, the BrakeCheck will emit a long beep sound; keep the unit pointed at the Printer until a second, short beep is heard. The display will show:



And the printer will print the results for the last test performed. **DO NOT** move printer or BrakeCheck while PRT is showing on the LED.

## **Explanation of Terms**

### **Peak Deceleration (Front/Rear):**

**This is the figure to be used in the UK for Statutory MOT Testing.**

This is the maximum-recorded G force expressed as a percentage one G.

### **Average Deceleration:**

This refers to the average G Force over the duration of the test, in the front to rear direction.

### **Peak Acceleration (Left/Right):**

This is the maximum-recorded G Force detected during the test, in the left or right direction.

*NOTE: This feature is included for reference only. There may not be any regulatory data available to determine if a test result should be considered a Pass or Fail result.*

*Road camber, tyre condition, driver action and so on may cause a test vehicle to pull off centre under heavy braking. If the pull is noticeable, it is suggested that the brake components be checked for signs of wear or leaks etc.*

### **Vehicle pulls to the Left (or Right):**

This is an indication of the direction from centre the vehicle is deviating toward during the test.

### **Stopping Distance (metres):**

This is an estimate of the distance the vehicle travels from commencement of braking to complete stop. It is calculated from Average Deceleration and the test time.

### **Test Speed (km/h):**

This is an estimate of the speed at which the vehicle was travelling when braking was commenced. It is calculated from Average Deceleration and Stopping Distance.

### **Brake Efficiency:**

**This is the figure to be used in the UK for Statutory MOT Testing.**

This is the maximum-recorded G force expressed as a percentage one G.

# INTERPRETING PRINT OUT RESULTS

BrakeCheck  
=====  
Serial No: BRK20855  
S/W Version: 1.1.15

Company ID:  
BOWMONK LTD

Log memory: 1

Test Performed:  
15:10:12 14/12/2017  
Timezone: GMT ( 0000 )

Service Brake Test  
=====  
Front-Back Deceleration  
Peak: 77 %g  
Average: 43 %g  
Left-Right Acceleration  
Peak: 8 %g  
Vehicle pulls: LEFT  
Test Speed: 35 km/h  
Stopping Dist: 11.3 m

Brake Efficiency: 77 %  
(Peak)

Calibration Ok  
Due: 31/01/2020  
.....  
Trailer ID  
.....  
Vehicle Registration  
.....  
Ground Condition  
.....  
Inspector Name  
.....  
Signature

Designated serial number of the unit  
Version of software

Company name programmed

Saved test number

Time & date stamp of when test was  
performed

Shows type of test performed Service or  
Hand brake



Refer to Explanation of  
Terms Section

Shows next calibration date.



Area to write relevant details.

**WARRANTY:** The warranty is 12 months from date purchased.

**PLEASE NOTE:** Deliberate or unintentional damage of the unit may result in the warranty becoming void. Likewise, if the unit is interfered with by anyone other than an authorized service agent, the unit will not be covered under this warranty.

**CALIBRATION:** BOWMONK recommends that the unit be calibrated every 24 months to ensure accurate operation. Calibration is to be done by Bowmonk Ltd at our approved laboratory in Norwich.

## **Charging the Battery LED Flash Codes**

The BrakeCheck should only be charged when the temperature of the unit is between 0°C and 43°C (32°F & 109°F)

The “Charging Battery” LED gives a visual indication of the charging mode status.

### **For BrakeCheck with USB model:**

<b><i>Charging Battery LED</i></b>	<b><i>Description</i></b>
Off	The charger is off
On	The battery is charged
Blink 5 times every two second	Normal charging
One short blink every two second	Battery temperature too high, unplug the charger and allow unit to cool before trying again *
Three short blinks every two second	Battery is cold, charger will warm up the batteries before normal charging can start *
One short flash and One long flash every two seconds	Battery has failed to charge *

\* If this happens repeatedly the BrakeCheck should be returned for servicing.

**For other BrakeCheck units with serial number  
BRK02200 or later:**

<i>Charging Battery LED</i>	<i>Description</i>
Off	The charger is off
On	Fast charge mode
Blink, on 1sec, off 1sec	Battery ready to use
Blink 5 times per second	Normal charging
One short blink per second	Battery temperature too high, unplug the charger and allow unit to cool before trying again *
Two short blinks per second	Battery voltage too high, or battery disconnected *
Three short blinks per second	Battery is cold, charger will warm up the batteries before normal charging can start *
Four short flashes every two seconds	Battery has failed to charge *

\* If this happens repeatedly the BrakeCheck should be returned for servicing.

**For units with serial number prior to BRK02200:**

<i>Charging Battery LED</i>	<i>Description</i>
Blink	Battery ready to use <b>OR</b> At power-up or insertion, Battery is cold as topping charge is applied
On	Soft-Start/Fast charge
Off	Power down or over/under voltage shut down