

# BrakeCheck TT

## 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 all 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. Low Bat means it needs charging but it will still work, NoB means that the battery is completely flat and the unit is not able to do a test until charged. ie lower than low 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 light 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

56r

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

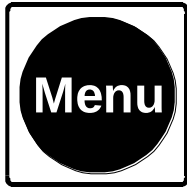
- Service Brake Test
- Hand Brake Test
- Last Test Result
- Temperature
- Setup (see manual)

Menu

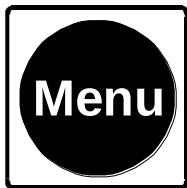
Enter

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 (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  the **Hand Brake Test** LED will be lit and the display will show:



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:



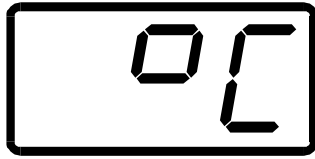
The unit is ready to display the results of the most recent Service Brake Test.

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, the unit will display “**CLr**” the clear all function and will erase any stored tests (only for units with multiple test 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**

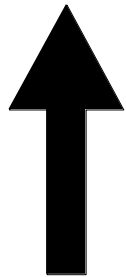
Ensure the battery is charged sufficiently.

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.

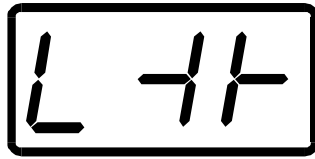
## To Test the Service Brake



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 10-15 mph or 15 –20 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.

If you have BrakeCheck *Plus* the display will indicate at what number the test will be stored, press ENTER to review the results.

## 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:



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



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:





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



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 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 20kph or 15mph.

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:

0.54



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

0.46



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:

0.02

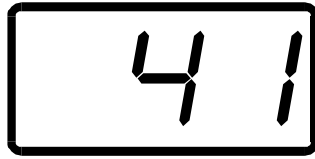


Press again, the **Stopping Distance (metres)** LED will be lit and the display will show a value, eg:

15.1



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.

## **Brakecheck Truck & Trailer Version Manual brief descriptions**

Sbr – Truck Service brake Test  
Hbr – Hand brake Test  
Trb – Trailer brake Test  
Sbr – Recall Service/Truck brake Test Result  
Hbr – Recall Hand Brake Test Result  
Trb – Recall Trailer brake Test Result  
oC – Current Temperature in degree Celsius  
oF – Current Temperature in Fahrenheit  
Clr – Clear all Stored Test Result  
Set – Printer Setup

If you enter one of the brake test (Sbr, Hbr or Trb), you need to choose ground conditions (C1, C2, C3 or C4).

C1 – Wet Ground  
C2 – Dry Ground  
C3 – Snow/Ice Ground  
C4 – Tarmac Ground

Press Enter you will enter Levelling and test starts after Levelling.

### **Trailer Brake Test (Trb)**

After a Trailer brake test, the test result will store in memory and it also link to most recent Truck service brake test. If you print the trailer test result out, a trailer test result and a truck service brake test result also print out.

For example,

A TruckA's brake has been tested by using Sbr. Test has been stored in SbrT1.

The Trailer1's brake is tested by using Trb. Test has been stored in TrbT1. If you print that out, the result contains the result of SbrT1 and TrbT1.

Trailer1 – SbrT1 and TrbT1

If you test another trailer – Trailer2, the result will be in TrbT2.

Trailer2 – SbrT1 and TrbT2

Then a TruckB test with Trailer3 and Trailer4. The result will store like:

Trailer3 – SbrT2 and TrbT3

Trailer4 – SbrT2 and TrbT4

Note:

After you have 99 truck tests, the next truck test will go back to test 1 and overwrite test 1. The trailer tests that link to truck test 1 will be erased.

## The sample printout for Trailer Test:

```
BrakeCheck
=====

Serial No:   BRK00000
S/W Version: 1.1.4

Company ID:
???????

Log memory:  1

Timezone: NZT (+1200 )

Test Performed:
18:14:06 22/01/2000

Truck Service
Brake Test
=====
Front-Back Deceleration
Peak:          24 %g
Average:       18 %g
Test Speed:    2 km/h
Stopping Dist: 0.1 m
Brake Efficiency: 15 %

.....
Vehicle Registration

Tarmac Ground
Ground Condition

Test Performed:
18:30:58 22/01/2000

Truck & Trailer
Service Brake Test
=====
Front-Back Deceleration
Peak:          19 %g
Average:       15 %g
Test Speed:    2 km/h
Stopping Dist: 0.1 m
Brake Efficiency: 15 %

.....
Trailer ID

Wet Ground
Ground Condition

Calibration Ok
Due: 10/01/2013

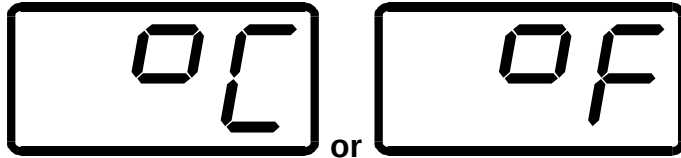
.....
Inspector Name

.....
Signature
```

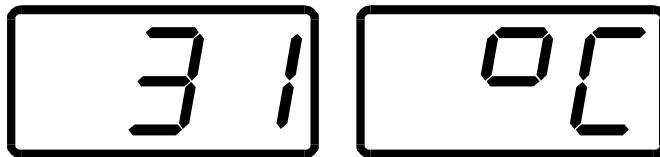
## To display the Temperature of the Unit



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 99 TEST MEMORY on the Service Brake and the Hand Brake Test**

The tests are stored in the memory, indicated by the number at the end of the test.



To review the results bring up on the BrakeCheck display,



Press three times you should now have two lights indicating Service Brake and Last Test Result,



Press the display will always show you



This option will only print tests that have not already been printed,



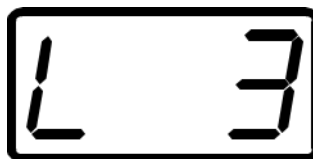
Press and display will show



This option will print all tests saved in the unit's memory,



press again and display will show



use to increase the test number,



if you hold down the  button the test numbers will increment rapidly.

Once you have decided which test you would like to review or print press



You can then press ENTER to review all tests results such as the average performance, the left / right pull and stopping distance.

The BrakeCheck can output test results to either a portable printer or our purpose built CabCheckS software (both are purchased separately)

## To Print using 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**



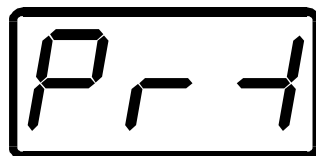
Press  once, (this is not necessary if the unit has not powered-down) the **Peak Deceleration (Front/Rear)** LED will be lit and the display will show a value, eg:



With the BrakeCheck pointing at the front part of the Infra-Red 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 result corresponds to the Peak 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.#

### **Average Deceleration:**

This refers to the average G Force (m/s<sup>2</sup>) over the duration of the test, in the front to rear direction.

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

This is the maximum-recorded G Force (m/s<sup>2</sup>) 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 Average Brake Efficiency figure. It should not be used in the UK for The Statutory MOT Testing (refer to Peak Deceleration at the top of page).**

It is calculated from Test Speed and Stopping Distance.

## INTERPRETING PRINT OUT RESULTS

BrakeCheck

=====

Serial No: BRK29554

S/W Version: 3.1.1

Company ID:

BOWMONK LTD

Log memory: 3

Test Performed:

13:48:49 19/12/2023

Service Brake Test

=====

Front-Back Deceleration

Peak: 60 %g

Average: 36 %g

Left-Right Acceleration

Peak: 4 %g

Vehicle pulls: RIGHT

Test Speed: 7 km/h

Stopping Dist: 0.5 m

Brake Efficiency: 38 %

-----

Vehicle Registration

Wet Ground

Ground Condition

Calibration Ok

Due: 05/02/2025

-----

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

Selected ground condition

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 12 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<sup>0</sup>C and 43<sup>0</sup>C (32<sup>0</sup>F & 109<sup>0</sup>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.