

DC-7500

Wireless Decelerometer



USER MANUAL



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Contact Details

Boston Garage Equipment
199 New Road
Rainham
Essex
RM13 8SJ
United Kingdom

Tel: +44 (0)1708 525585 Email: info@bostonequipment.com
Fax: +44 (0)1708 525408 Web: www.bostonequipment.com

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Audience

This manual describes the functions and operations of the Boston DC-7500 Decelerometer and is intended for the end user.

Boston Garage Equipment requires that the user:

- Has sufficient technical knowledge and experience to install the equipment
- Can recognize and prevent potential hazards
- Has read and understood this manual
- Has been adequately trained
- Follow the procedure in this manual

Scope

The purpose of this manual is to:

- Describe its operating principles and general construction of the Decelerometer
- Explain safety features and safety precautions
- Highlight possible hazards
- Describe maintenance procedures
- Troubleshooting

Organisation

This manual is organised in sections:

- Safety – Describes safety features of the system and safety precautions to follow when operating the system. Read this section before operation and maintenance.
- Product Description – Contains a functional description of the system.
- Operation – Contains all the procedures necessary to operate the equipment safely.
- Troubleshooting and Maintenance – Contains procedures to solve problems encountered during installation and maintenance procedures that can be carried out by the user.

Layout Conventions

In this manual we use a number of typographical conventions to highlight particularly important information and to guide the user through the manual. This section lists these conventions.

Two types of list are used.-

- 1) Lists that are numbered (like this sentence) contain actions you must carry out in sequence.
- In lists that use arrow points (like this sentence), the sequence is not critical.

NOTE

Text with additional information, such as expanded explanations, hints or reminders.

CAUTION

Indicates situations that can be dangerous or cause damage.

Commands (such as menu items and buttons) are **bold**. Menu names are also **bold**.

Example: On the remote control press **4**.

Information that requires special attention is shown in *italic*.

Example: Use the **Emergency Stop** button *only* in emergencies.

Related Documents

- | Document Name | Document Number |
|------------------------------|-----------------|
| ➤ DC-7500 Installation Guide | BOS0606 |

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General Safety Instructions

In order to comply with your responsibilities under the Health and Safety at Work Act 1974, it is essential that this equipment and any optional accessories are sited, installed, operated, and maintained by an Boston Garage Equipment or authorised / approved distributor.

- All persons installing, operating or maintaining the equipment and any optional accessories must be familiar with the layout of the equipment, the safety precautions and the emergency shutdown procedures.
- Appropriate training is required, prior to installing, using or maintaining the equipment.
- The instructions in this manual must be strictly adhered to, to avoid injuries to personnel and damage to the equipment.
- Only a qualified technician should carry out work on the electrical system, and should follow procedures pre-described by national standards.
- Never remove or bypass any of the safety features.
- Avoid any direct or indirect electrical contact.
- The unit should be placed inside a rigid, flat and clean surface, protected against water, humidity and weather influences.
- Keep the operating environment clean and free of oil. Never leave loose objects around the internal circuitry.
- Make sure the remote control is stored safely when not in use.
- The equipment may be operated only within its rated capacity.
- The equipment should only be used when the operator has a good view of all connected items.
- During any tests, no person should stand close to any moving equipment.
- The testing area should be clear of personnel, tools and equipment before starting each stage of any test.
- Take precautions to extract exhaust in the workplace properly while testing.
- Do not test a vehicle when there is insufficient light.
- In case of an emergency, all operations can be stopped immediately by pressing any button on the remote control.
- If the equipment is not working correctly, switch off immediately and refer to the relevant user manual or contact Boston service department.
- Always isolate the equipment from the power supply before maintenance.
- Follow the maintenance specifications accurately.

Maintenance Safety

In addition to the general safety instructions, the following instructions apply when carrying out maintenance on the equipment:

- The equipment must only be operated within its rated capacity.
- Protect the electrical parts of the equipment from water and humidity.
- Only qualified technicians are permitted to do work on the electrical system of the equipment and must follow procedures prescribed by national standards.
- Only qualified service personnel are permitted to use the service section of the software.
- Any unauthorised modification or changes to the equipment will invalidate the CE-declaration and equipment warranty.

Safety Features

The DC-7500 Decelerometer offers the following standard safety features to minimise personal risk as much as possible.

- The DC-7500 is protected against reverse polarity voltage supply.
- The DC-7500 is provided with a protective storage case to enable safe storage when not in use.

Misuse

The DC-7500 is designed for use as a mobile Brake Tester for statutory vehicle testing stations.

It must NOT be used for any other purpose e.g.

- Any purpose requiring the operator to be in the danger zone, to carry out maintenance or for calibration purposes.

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DC-7500 Overview

The DC-7500 is a DVSA Connected Equipment approved MOT Decelerometer with wireless Bluetooth connectivity. It provides accurate brake test results for motorcycles, cars, trucks, and all other types of braked vehicles.

When used as Connected Equipment for MOT testing, it can receive vehicle specific information (workorders) from the MOT Testing Service (MTS) and return test results back to the MTS against the given vehicle registration number.

Operation is quick and easy; simply fix the Decelerometer to the vehicle and perform a standard brake test (windscreen attachment for cars / trucks and handlebar clamp for motorcycles). The large LCD display shows options to test the service brake or parking brake and provides clear step-by-step instructions. At the end of the test the results are displayed and saved.

All recorded data is automatically transferred to the PC control station via Bluetooth as soon as the device is within proximity. The data is then seamlessly uploaded to the DVSA's MOT Testing Service (if using the DC-7500 as Connected MOT Equipment).

The device is rechargeable and has a long off-charge operational time in excess of a whole day's testing. Auto-sleep functionality is also built-in to conserve battery life. Customised A4 printouts are possible using the available PC software and calibration is carried out every two years.

In most cases the DC-7500 will be supplied with the following items.

- Durable protective storage case
- Built-in Wireless Bluetooth control
- Mains power supply
- Windscreen suction cup
- User Manual

Keypad Layout

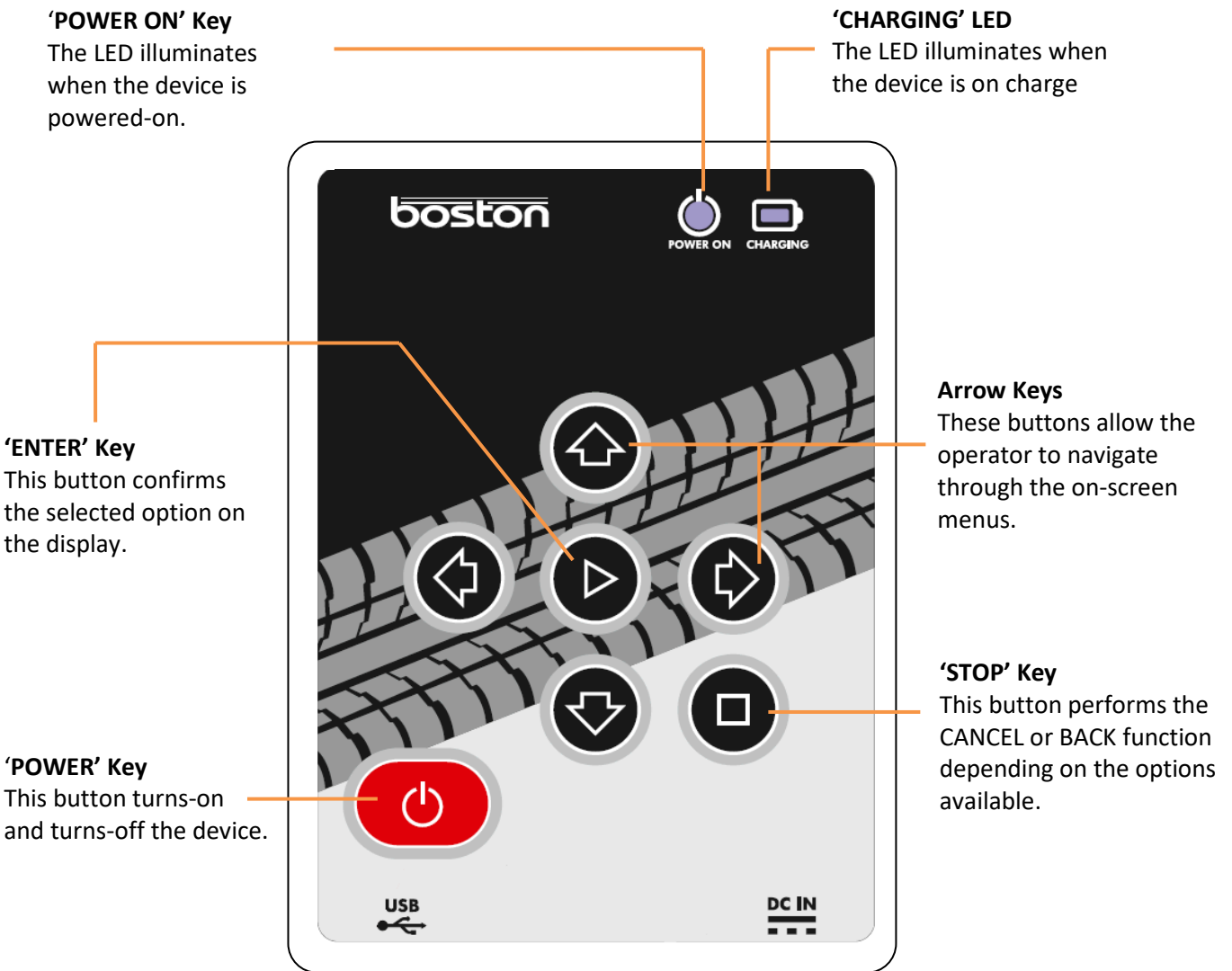
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Keypad Layout

The DC-7500 has a membrane keypad that allows the operator to navigate the on-screen menus. See below:



Button Operation

The following table shows the button presses and their default associated operation.

BUTTON	ASSOCIATED FUNCTION
ARROW UP	ARROW UP
ARROW DOWN	ARROW DOWN
ARROW LEFT	ARROW LEFT
ARROW RIGHT	ARROW RIGHT
CENTRE 'PLAY' BUTTON	ENTER
SQUARE	CANCEL / BACK
RED	POWER ON / OFF

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Power-on / Power-off

To power-on the device, press power button (⏻) once.

To power-off the device, press power button (⏻) for two seconds.

NOTE

If the device fails to start ensure there is sufficient charge. Charge for a minimum of 30 minutes

Manual Testing

The DC-7500 can be used manually to test the brake performance of multiple axles.

To carry out the test follow the procedure below:

- Using the windscreen suction cup, attach the device safely to the windscreen of the vehicle. Ensure it does not obscure the driver's view of the road.
- Select PERFORM TEST from the main menu and then select either SERVICE BRAKE or PARKING BRAKE test as required.
- If the fixing position is correct it will be indicated on the display. If not, then correct the position before continuing.
- Select ENTER to begin the test. The message GO will be displayed.
- Accelerate the vehicle to approximately 20mph and progressively apply the desired brake to maximum. The device will record the test data automatically and show the results on the display.
- Press ENTER to store the result.
- Add the vehicle registration number in the NOTE box if required.
- Press ENTER to continue. The data will be saved automatically and its memory location will be displayed.
- Press ENTER again and the option to PRINT the data is shown.
 - If the device is paired with a mobile Bluetooth printer then press ENTER to print the results.
 - If the device has not been paired with a mobile printer then press the CANCEL button to continue.
- The test is now complete and the device will return back to the test selection menu.
- Select the next type of test and repeat the above.

Official Testing

When used for official testing, the DC-7500 receives vehicle information automatically (and wirelessly) from the MTS. The data received is known as a 'workorder'.

To carry out the test using the workorder from the MTS, follow the procedure below:

- Keeping the decelerometer within proximity of the control PC, register the vehicle for test on the MOT MTS computer. The vehicle information will automatically be transferred to the decelerometer and shown on the display.
- Check that the vehicle specific data shown is correct and press the ENTER key to confirm.
- Using the windscreen suction cup, attach the device safely to the windscreen of the vehicle. Ensure it does not obscure the driver's view of the road.
- Select either the SERVICE BRAKE or PARKING BRAKE test as required.
- If the fixing position is correct it will be indicated on the display. If not, then correct the position before continuing.
- Select ENTER to begin the test. The message GO will be displayed.
- Accelerate the vehicle to approximately 20mph and progressively apply the desired brake to maximum. The device will record the test data automatically and show the results on the display.
- Press ENTER to store the result.
- Add any notes in the NOTE box if required.
- Press ENTER to continue. The data will be saved automatically and its memory location will be displayed.
- Press ENTER again and the option to PRINT the data is shown. Press the STOP button to cancel the print as this option is available on the PC at the end of the test.
- Press ENTER when asked to save the data against the workorder.
- The test is now complete and the device will return back to the test selection menu.
- Select the next type of test and repeat the above.

Once the decelerometer has data for both the SERVICE BRAKE and the PARKING BRAKE, the message "WAITING FOR DATA TRANSFER..." will be shown. Bring the decelerometer back into range of the control PC and the test data will automatically be transferred to the PC and shown on the monitor.

Follow the on-screen instructions to complete the test and upload the data to the MOT MTS. The option to print the results is also available.

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Calibration

The calibration procedure should be carried out every 24 months to ensure accuracy and correct operation of device.

Calibration can only be carried out by authorised personnel. Please contact the Boston Service Department or your local agent to arrange for this service.

Boston Service Department: service@bostonequipment.com - +44 (0)1708 525585

Troubleshooting and Maintenance

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Troubleshooting

If the DC-7500 does not function as it should, check the following.-

- Battery power is sufficient – charge if necessary
- Power and Charge LED illumination
- Reset unit by powering-off then on
- Re-pair the Bluetooth to the PC (see installation manual)

If problems persist then contact the Boston service department for further assistance.

Maintenance

The DC-7500 requires no ongoing maintenance but it is recommended to be kept clean and stored in the protective case when not in use.

- Only use water based substances when cleaning the control keypad, the buttons and other parts of the device.
- Always store the device in the protective storage case when not in use
- Never subject the device to sudden impact

Caution

Clean the keypad with a lukewarm soap solution. Do not use any aggressive or abrasive detergents. Do not spray the unit with water.

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Warranty / Guarantee

We guarantee this product to be free from defects due to faulty material or bad workmanship for a period of 12 calendar months. The period of the guarantee commences from the date of delivery to the Purchaser or a delivery address requested by the Purchaser. Our liability is limited to the repair or replacement at our option, of parts found defective within the prescribed period arising solely from faulty material or bad workmanship, in products properly used solely for the purpose for which they were intended, and not due to wear and tear, misuse, neglect, improper adjustment or water ingress under any circumstances, and maintained in line with the maintenance instructions and/or service recommendations, and/or calibration requirements. Any damage arising from external forces or liquid contamination is entirely excluded from this guarantee.

Any product alleged to be defective should be reported immediately. If liability is accepted the product will be repaired or replaced. We are in no circumstances liable for any consequential or other loss or damage arising through any defect in our product, in lieu of any express or implied statutory or other warranties, guarantees, conditions or liabilities (whether as to fitness, quality, standard or workmanship or otherwise) which are excluded, the following provisions shall apply:

- The Purchaser shall not be entitled to rescind the contract or claim damages on any grounds whatsoever as to the suitability of the goods for any particular purpose, and the Purchaser assumes responsibility for the capacity and performance of the goods being sufficient and suitable for his purpose. The Purchaser agrees and confirms that no statement or representation has been made by Boston relating to the goods to be supplied under the contract, or, if any has been made, has not relied on it.
- Boston's liability in respect of any defect whether of quality, suitability or performance or otherwise in any goods supplied or for any loss, injury or consequential damage attributable thereto is limited to the terms of this guarantee and the Purchaser hereby acknowledges this to be a condition of purchase.
- This guarantee does not apply should equipment be operated or stored under adverse conditions unless specified in the relevant equipment leaflet/manual. The above guarantee is given in lieu of all other terms, conditions, warranties, guarantees, undertakings and representations.

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DC-7500 Decelerometer Specifications

- Product Code: DC-7500
- Power Supply: Rechargeable Internal Lion Battery
- Operation Time: 8hrs
- Chassis: ABS Plastic
- Clock: Real Time Clock (Internal)
- Weight (inc. batteries): 400g
- Dimensions (ABS body): 210 x 100 x 35 mm (L x W x D)
- Communication: USB / Wireless Bluetooth
- Range: 15m (approx)
- Operating Temperature: 0-40°C with humidity 0-95% without condensation
- User Interface: 3.5" TFT LCD display (240x320 16bpp) / Membrane Keypad
- Sensing Principle: Internal Accelerometer, triple axis (XYZ) MEMS +/- 20ms/s²
- Range Efficiency: 100%
- Resolution: 0.1%
- Memory: Internal μSD card (non-removeable)
- Calibration: Recommended every 2 years





Boston Garage Equipment, 199 New Road, Rainham, Essex, RM13 8SJ, United Kingdom
T: +44 (0)1708 525585 F: +44 (0)1708 525408 info@bostonequipment.com www.bostonequipment.com