

AutoStop Micro Plus

In Vehicle Brake Tester



AUSTRALIAN MADE
AND OWNED

Licence ID number: 10242

AUTO **TEST**

Products Pty Ltd®



DECLARATION OF CONFORMITY

We, AutoTest Products Pty Ltd. declare under our sole responsibility that the product AutoStop® Micro Plus is in conformity with the provisions of the following Council Directive: 1999/5/EC. A copy of the Declaration of Conformity is available from <http://www.autotest.net.au>

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User Manual Version 3

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1. UNPACKING AND FIRST TIME USE

Congratulations on your choice of an AutoStop® Micro Plus. Please take the time to read this User's Manual before using the Micro Plus Brake Meter in the field. Incorrect or inappropriate use of this instrument may void the warranty. Retain the packing materials for future shipping and transport of the unit for periodic calibration. Please complete the warranty registration card and post it to AutoStop® Products Pty Ltd, alternatively visit our website www.autotest.net.au and complete your warranty registration online. Your warranty registration ensures that you are kept up to date on any software or hardware changes to your AutoStop® Micro Plus. It also helps to provide faster services.

The packing box of your AutoStop® Micro Plus should contain the following:

1. AutoStop® Micro Plus Brake Meter
2. User Manual
3. Calibration Certificate
4. Warranty Registration Card
5. 2 x AA Batteries

Optional Accessories

1. Micro Plus Data Logger Software
2. Data Download Serial Cable
3. Rare Earth magnet motorbike kit

The Micro Plus has a simple three-button operation. It is lightweight (300grms) and compact (65 x 140 x 35mm).

1.1 Unit Activation

Initially, each meter is locked prior to its shipment. This is to ensure that you receive the full two-year calibration period from the moment you start using the Micro Plus. To activate the Micro Plus, switch on the Micro Plus by pressing the ON/OFF button. After the start-up splash screen, it will display "**Act**", press YES. The screen will display flashing "**Act**", press YES again. This activates the Micro Plus. It is recommended that when the Micro Plus is inactive for long periods, the battery be removed to prolong its continuance.

1.2 Self Test and Battery Check

The self-test function is activated each time the AutoStop® Micro Plus is powered, it checks the clock, the battery level, and the calibration due date. The sequence as follows: - after initial power up and start-up splash screen sequence the display will indicate "**tst**". If the battery does not have sufficient charge to be used, then it will display "**BAT LO**".

2. For Your Safety

Read these simple guidelines. Not following them may be dangerous. Read the complete user guide. Further detailed information is given in this manual.



SWITCH ON SAFELY

Do not switch the device on when wireless device use is prohibited or when it may cause interference or danger.



SWITCH OFF WHEN REFUELING

Do not use the device at a refuelling point. Do not use near fuel or chemicals.



SWITCH OFF NEAR BLASTING

Follow any restrictions. Do not use the device where blasting is in progress.



USE SENSIBLY

Use only in the positions as explained in the product documentation.



QUALIFIED SERVICE

Only qualified personnel may install or repair this product.



ACCESSORIES AND BATTERIES

Use only approved accessories and batteries. Do not connect incompatible products.



WATER-RESISTANCE

Your device is not water-resistant. Keep it dry.



CONNECTING TO OTHER DEVICES

When connecting to any other device, read its user's guide for detailed safety instructions. Do not connect incompatible products.

3. OPERATION

3.1 Test Conditions and Test Area

The vehicle must be stationary (at a complete stop) prior to commencement of the test. Ideal conditions are to test the vehicle at a location where no other or only few vehicles are present. However, if it is necessary to use another area, such as a public road, only commence the test if there is no danger of an accident. The test area should be a sealed, flat bitumen road. The headwind should be less than 15km/h.

The test starts with the first movement of the vehicle and concludes when the vehicle comes to a stop. The vehicle must be held in a straight line throughout the test. Please be sure to follow the brake test procedure detailed in the latest version of the relevant Inspection Manual when carrying out a statutory test.

3.2 Set-Up in Vehicle

Attach the Micro Plus to the dashboard, front passenger seat, foot well or centre console so that the screen is clearly visible, and the buttons are accessible. The Micro Plus is self-aligning by identifying its orientation during acceleration at the beginning of each test - it can be installed at any angle facing any orientation but **MUST BE SECURE FOR THE ENTIRE DURATION OF THE TEST** as movement can cause wrong deceleration readings.

3.3 Changing the units

The resultant average deceleration and max deceleration can be viewed in different units like g, m/s² and %. The speed and stopping distance can be viewed in imperial and metric units. To select the units, press ON/OFF button to power up the unit. The display will show "tst", press 'NEXT' until it displays "opt". There are two options "Acc" for selecting units for average and maximum decelerations, and "Unt" for selecting imperial and metric units for speed and stopping distance.

The average and max decelerations have three options as follows:

Display	Units
"g"	g
"MPS"	m/s ²
"PCT"	% (where 0% = 0.00g, 100% = 1.00g)

The speed and stopping distance in both units are shown as follows:

Unit	Imperial (“IP”)	Metric (“MP”)
Speed	Miles per hour (mph)	Kilometres per hour (km/h)
Stopping distance	Feet (ft)	Meter (m)

3.4 Running the Test

Align the vehicle into the testing position; the vehicle needs to be stationary to start the test and should be conducted in a straight line. To commence the test, press the ON/OFF button on the Micro Plus. The display will show “tst”. Press ‘YES’ and the display should change to “go” for go. Accelerate the vehicle to the desired test speed and firmly apply the brakes until the vehicle is stationary. The braking duration must be within ten seconds for the Micro Plus to calculate the results. During the test, the Micro Plus display will run through a programmed series corresponding to the movement of the vehicle. Series: “Pre” - prelude, “br” - brake, “cal” - calculate. If an error occurs at anytime during the testing, the Micro will display a flashing “Err” for error. Should this occur, re-start the test.

When the vehicle has come to a halt the Micro Plus will finish the calculations and display the following results:

1. **Average Deceleration**
2. **Maximum Deceleration**
3. **Speed**
4. **Stopping Distance**

To view each result, press ‘NEXT’. After displaying the results, the display will show “SAV”, press ‘YES’ to store the results or press ‘NEXT’ to go back to the main menu and display “tst”. To perform another test at this point, simply press the ‘YES’ button again and the Micro Plus will return to its activated status. Simply repeat the test procedure to complete the testing. You can then simply compare them with the specific brake values according to your local regulations.

3.5 Test Instructions Summary

Instruction	Action	Micro+ Display
Prepare Vehicle	Position vehicle for test	
Secure the Micro Plus in vehicle	Attach the Micro Plus to the dashboard, front passenger seat, foot well or centre console so that the screen is clearly visible, and the buttons are accessible.	
Switch on Micro Plus	Press ON/OFF button	
	Self Test Complete	"tst"
Prepare to Start Test	Press YES button on Micro Plus	"go"
Test Step 1	Accelerate vehicle to desired speed	"Pre"
Test Step 2	Firmly apply the vehicle brakes until stationary	"br"
Test Step 3	Calculating the results	"Cal"
View Results	The display will show the Average acceleration Maximum deceleration Speed Stopping distance Press NEXT to view each result	<i>Results displayed</i>
Test Step 4	Save the test results. Press YES to save or NEXT to continue.	"SAV"
Test Complete		

3.6 Viewing stored data

To view the stored data on the Micro Plus, press 'NEXT' on main menu to select "**dat**". Press 'YES' and the display will show the test number. Press 'NEXT' to select the required test number. Press 'YES' to view the stored result in the selected test number. After viewing the test results, the display will show 'NEXT' to view next test result. At the end of all stored test results there is a "**CLr**" option that can be used to clear the saved data.

3.7 Menu Reference

Display Main Menu	Display Sub Menu	Description	Key to press
"Act"		This is to activate the Micro Plus as the unit is locked prior to shipment. Activation has to be done only the first time. Once the unit is activated this option will disappear from the main menu.	Press YES to activate unit or NEXT to go to the next main menu item disappear from the main menu.
	Flashing "Act"	This is a confirmation for activating the Micro Plus.	Press YES to confirm or NEXT to cancel
"tst"		This will not appear until the unit is activated. This is for carrying out a test	Press YES to commence testing or NEXT to go to next item on main menu
	"go"	This is an indication to start the test. Accelerate the vehicle to the desired speed	
	"Pre"	This indicates the unit has detected forward motion of the test vehicle.	
	"br"	This indicates the unit has detected deceleration and it is sampling data	
	"cal"	This indicates that the test is complete, and the unit is calculating the results	
	The number displays Average acceleration and AVG LED glows	Value of Average deceleration	Press NEXT or YES to view the value of Maximum deceleration
	The number displays the maximum deceleration and MAX LED glows	Value of Maximum deceleration	Press NEXT or YES to view the value of Speed
	The number displays the speed and SPD LED glows	Value of Speed	Press NEXT or YES to view the value of Stopping Distance
	The number displays the stopping distance and DIST LED glows	Value of Stopping distance	Press NEXT or YES
	"SAV"	This is for saving the current test result	Press YES to save or NEXT to go to next sub menu
	Flashing "FUL"	This occurs when the memory is full, and test cannot be saved	Press YES or NEXT and display will go to next sub menu
"dat"		This is for viewing the stored data	Press YES to view stored data or Press NEXT to view next item on main menu
	Flashing "0"	This indicates that the memory is empty, and no data has been stored on Micro Plus	Press YES or NEXT to go back to main menu
	"1"	The results of the first test are stored under "1"	Press YES to view results of the first test or Press NEXT to go to next sub menu.

	"2"		The results of the second test are stored under "2"	Press YES to view results of the second test or Press NEXT to go to next sub menu.
	"3"		The results of the third test are stored under "3"	Press YES to view results of the third test or Press NEXT to go to next sub menu.
	⋮		⋮	⋮
	"Clr"		This is to clear stored data	Press YES to clear stores data or press NEXT to go back to the main menu
	Flashing "Clr"		This is for confirming that you want to clear the saved results.	Press YES to confirm or NEXT to cancel.
"opt"			This is for changing the units of average and maximum deceleration and units for speed and stopping distance	Press YES to change the unit or NEXT to go to the next item on the main menu
	"Acc"		This is for changing the units of average and maximum deceleration	Press YES to set the acceleration unit or NEXT to go to next sub menu
		"g"	This is to change acceleration units to g	Press YES to change or NEXT to select another unit
		"m/s²"	This is to change acceleration units to m/s ²	Press YES to change or NEXT to select another unit
		"PCT"	This is to change acceleration units to %	Press YES to change or NEXT to select another unit
	"Unt"		This is for changing the units of speed and stopping distance to imperial or metric	Press YES to change the units or NEXT to go to main menu
		"IP"	This is to change units of speed and stopping distance to imperial	Press YES to change or NEXT to select another unit
		"mtr"	This is to change units of speed and stopping distance to metric	Press YES to change or NEXT to select another unit

4. DOWNLOADING

The AutoStop® Micro Plus has a download facility that allows you to transfer test results from the unit onto a PC via a custom Serial Cable (optional accessory) for analysis and printing. The Micro Plus can hold at least fifteen tests numbered one to fifteen. Each memory section records the time and date of the test so you can correspond the results with each vehicle, thus it is important that you record the time and date with the vehicle registration for each test.

For customers in the UK only, the Micro Plus MTS Interface guide is in 8. Appendix.

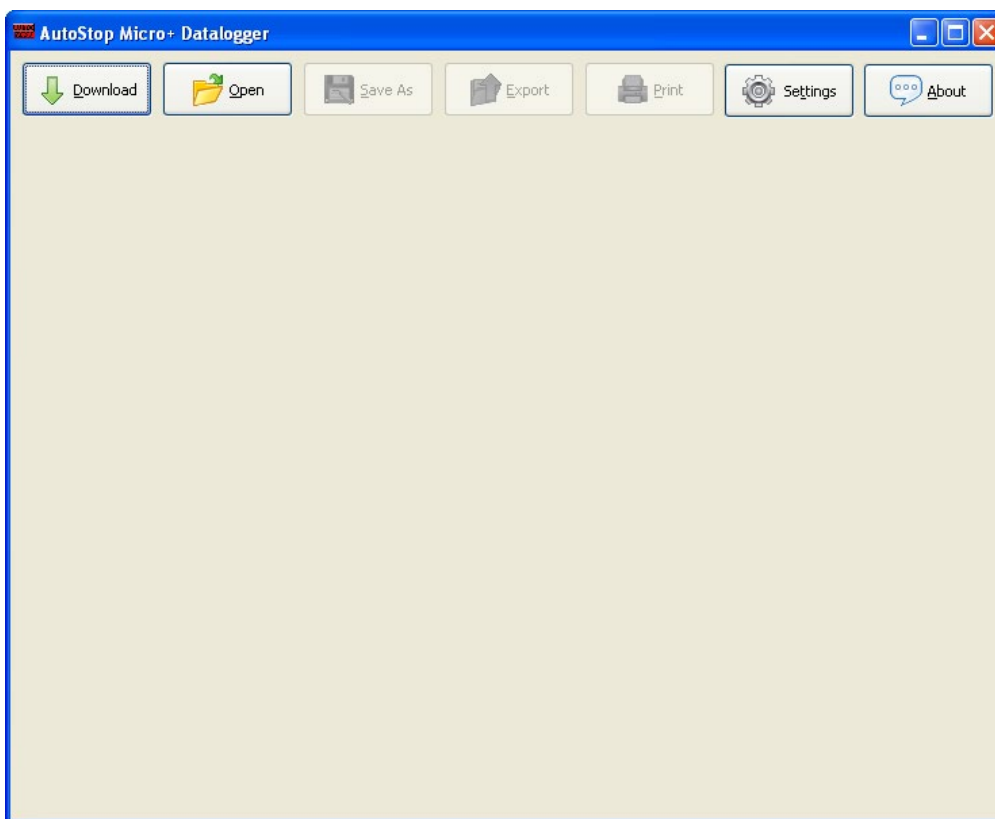
4.1 Installing the Data Logger Software (optional accessory)

Installing the Micro Plus Data logger software: (System Requirements: Windows 2000 or greater, one unused serial port, 10MB of hard disk space)

1. Insert the Micro Plus Data Logger Software USB to your drive.
2. Select and run file "setup.exe"

4.2 Downloading Test Data

Step 1: Connect the Micro Plus to your computer using the supplied serial cable. Plug the 3.5mm Stereo plug (head-phone jack) of the cable into the top of the Micro Plus. Attach the D9 connector end to a serial port on your computer. Open the Autostop Micro+ Data logger window and click on download.



Step 2: A smaller window will appear, select the serial port you have connected the serial cable to.



CLICK NEXT TO CONTINUE.

Step 3: If your Micro Plus is currently switched on – switch it off now.

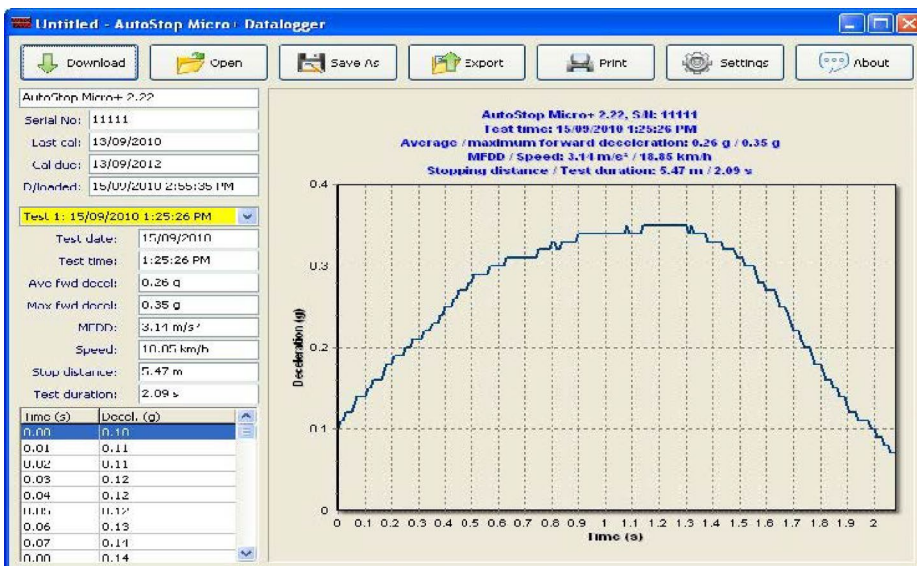
Step 4: Switch on the Micro Plus. The software will automatically commence download when a connection is detected. The Micro Plus display will show “dL..” for downloading.

The next screen should read: **Download Completed.**

NOTE: If you remain on the same screen after step 4, try switching the Micro Plus off and then on again and/or go back to step 2 and ensure that you have selected the correct serial port.

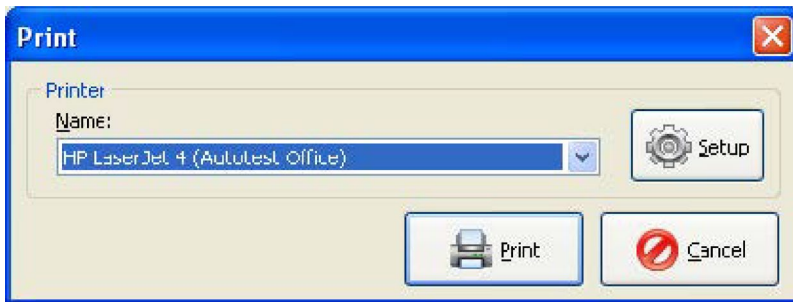
4.3 Using the Data logger

The Data logger will display all the saved tests and you can view the results of the particular test and view corresponding graph for each test.

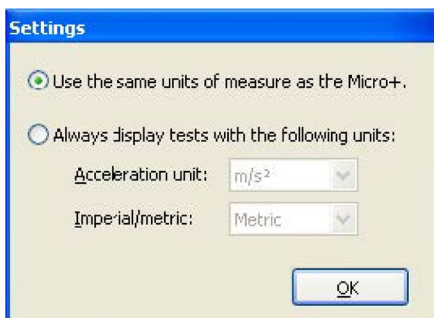


There are options such as:

1. **Open:** to open a saved file on your PC
2. **Save:** to save the results onto your PC
3. **Export:** this option can be used to view and save the test result in Microsoft Excel compatible format.
4. **Print:** this option can be used to print the test result.



5. **Setting:** this option can be used to view the test results in the units set by the Micro Plus or select a different unit to view the test results.



6. **About:** to view information about Data logger.

5. SPECIFICATIONS

5.1 Hardware Specifications

Measurement Range: -2.0 to +2.0g with accuracy 2.5%

Temperature Range: -10 to +700C

Power Range: 9 to 27 volts

5.2 Features

- Determines tri-axial deceleration.
- Calculates the MFDD (Means Fully Developed Deceleration) in accordance with ECE R13 can be viewed on Data logger.
- Simple three-button operation
- Can be installed anywhere in the vehicle.
- Self-calibrating by identifying its orientation at the beginning of each test. Lightweight (< 500grms), compact (65 x 140 x 35mm)
- 7-segment display
- Automatic start function
- Automatic shut-off after 5 minutes to preserve battery life.
- Built-in integrity check
- Built-in real time clock
- Calibration is internationally traceable through NATA.
- Interval of calibration: 2 years
- 12 months warranty
- Internet support hotline for diagnostics
- Comprehensive after-sales service and assistance
- EIA RS-232c
- Memory storage: At least fifteen tests
- PC download capability and graph.

6. CALIBRATION PROCEDURE

The Micro Brake Meter must be re-calibrated every two years. The reason for this is to maintain creditability in tests and acceptance of data according to international standards. Each time the results are printed, the printout will include the day and month that the re-calibration is due. The unit will also display "**CAL DUE**" if the calibration is due. At the time, the unit is due for re-calibration, the unit will disallow any further testing. There are two ways of calibrating the Brake Meter - either via your local authorised service centre or by returning the unit to *AUTOTEST* Products (See Section 6.1).

6.1 Returning the AutoStop® Micro Plus for Calibration

6.1.1 Packaging

Please remember that you are shipping an electronic instrument. Bubble pack or foam should surround the Brake Tester and should be inserted into a sturdy cardboard box.

6.1.2 Shipping

Labelling - A label noting "Electronic Device - Fragile" should be placed on the box.

Freight Carrier – Container should be sent freight prepaid. Auto Test Products has no preference on freight carriers. However, we prefer companies such as TNT, IPEC, UPS, or Federal Express forward units, if a prompt delivery is required.

Ship to: The Service Department at our Authorised Distributor in the United Kingdom:
Tecalemit Garage Equip. Co. Ltd. Phone: (+017) 5221 9150 Unit 2, Eagle Road, Langage Bus Pk., Plympton, Plymouth, Devon, PL7 5JY

Or our Service Department Head Office:
AutoTest® Products Pty Ltd, 69 Parsons St, Kensington, VIC 3207, Australia.
Phone: (+61 3) 8840 3016, or to your nearest service distributor.

7. TROUBLESHOOTING

Problem	Potential Cause and Action Necessary
Micro Plus turns off	Battery flat. Replace the batteries with two new AA batteries
Micro Plus displays flashing "CF"	The in-built clock has failed. It might be an electronic fault, or the unit needs to be recalibrated.
Micro Plus displays "BAT LO"	Battery is low and must be replaced by two new AA batteries in near future.
Micro Plus displays "CAL dUE"	The calibration is due, and the unit must be re-calibrated
Micro Plus displays flashing "Err"	The test is not carried out correctly and the test procedure must be repeated

Or call: The Service Department at our Authorised Distributor in the United Kingdom:

Tecalemit Garage Equip. Co. Ltd.

Phone: (+017) 5221 9150

Unit 2, Eagle Road, Langage Bus Pk., Plympton, Plymouth, Devon, PL7 5JY

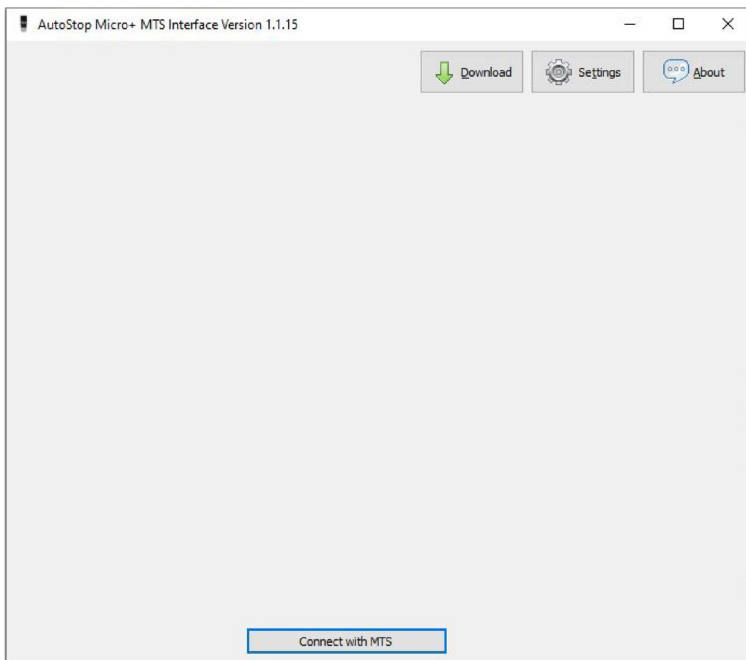
8. Appendix

8.1 MTS Interface (UK Only)

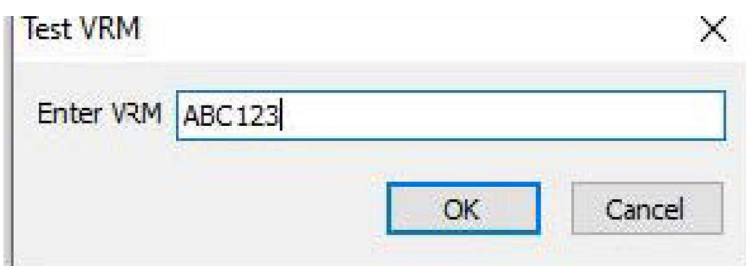
The Micro PLUS MTS Interface software (installation guide available on our Website or contact our office - Micro Plus Software Installation guide v1.1.8.pdf) allows the user to directly upload brake testing results from the AutoStop® Micro Plus.

To upload tests follow the steps below:

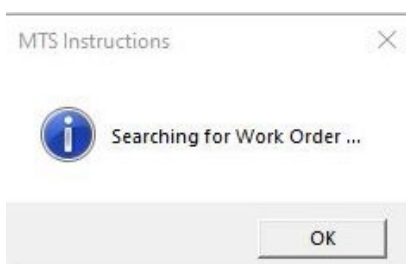
1. Open the Micro Plus MTS Interface software and click 'Connect with MTS'.



2. Enter the VRM for tests to upload and click 'OK'.

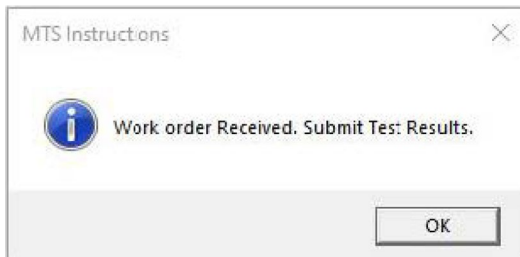


3. A prompt will appear while searching for the work order.



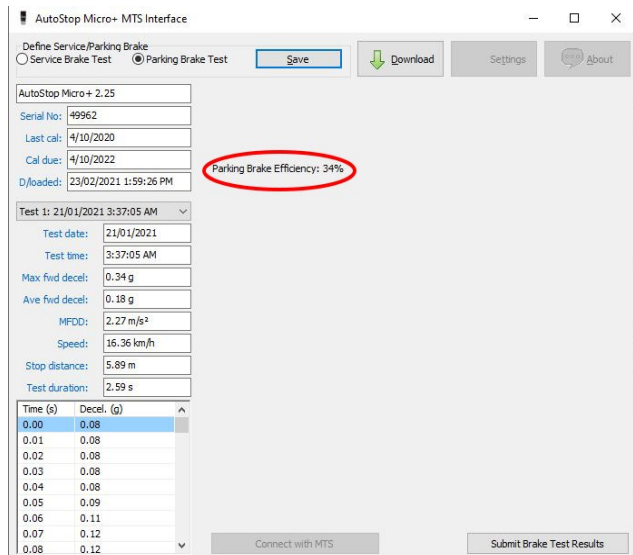
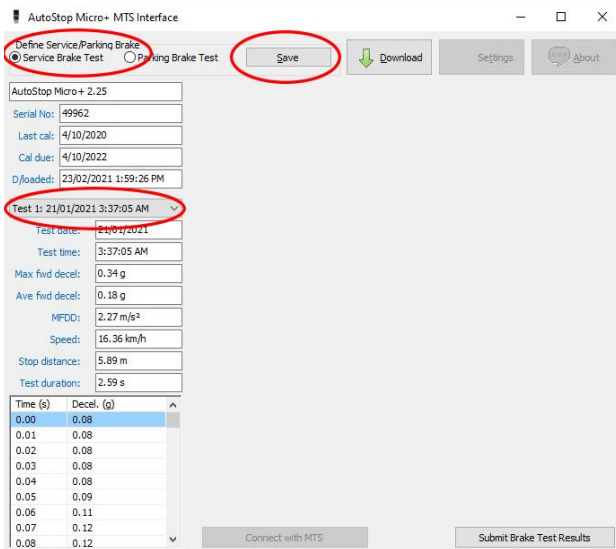
4. If a matching workorder is found the below prompt on the left will appear, proceed to step 5.

If a matching workorder cannot be found. After a short time, if a matching workorder cannot be found the below message on the right will appear, and the program will close automatically and need to be reopened and the steps followed from step 1 again, making sure a matching workorder for the entered VRM is available.

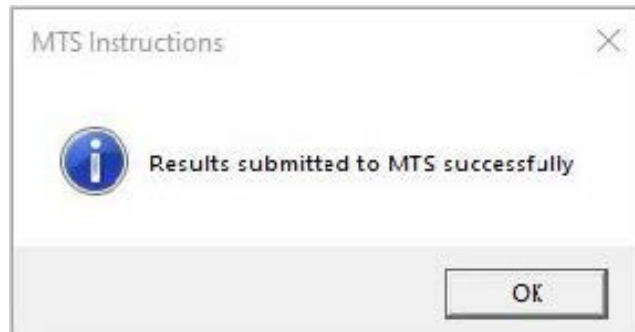
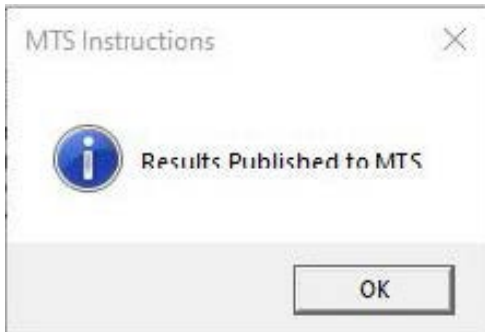


5. Tests must now be downloaded from your device prior to submitting to MTS. Downloading instructions are available in [4.2 Downloading Test Data](#).

6. After download, tests can now be selected from the drop-down menu on the left. Find the desired 2 tests and individually select whether they are parking or service brake tests. Make sure to click save to confirm the tests to be submitted. When clicked the interface will show the braking efficiency that will be sent in the middle of the software.



-
7. Once two tests have been selected, click 'Submit Brake Test Results' to submit to the MTS.
 8. The below prompt on the left will appear as the results have been Published to MTS, and the right prompt after will pop up showing successfully submitted results and the software will close. Further tests can be submitted by reopening the software.



9. WARRANTY

AutoTest® Products Pty Ltd or any Authorised AutoTest® Service Centre warrants this product against defects in material and workmanship for a period of 12 months from the original date of purchase. This warranty applies only to products and components supplied by AutoTest® Products which can be identified by the trade name or logo affixed to them or by other documents. AutoTest® Products does not warrant any products not supplied by AutoTest® Products.

During the warranty period, AutoTest® Products or any Authorised Service Centre will repair (or at its option replace) any defective component(s) without charge for parts or labour, provided the product is returned freight prepaid to an authorised AutoTest® Service Centre. Transit insurance and return freight will be at the owner's expense.

In order to obtain calibration, warranty or non-warranty service, ship the product, freight and insurance prepaid to your nearest AutoTest® Service Centre. Attach to the product your name, address, contact phone numbers, description of the problem and if a warranty claim, proof of purchase (dated sales receipt or invoice).

AutoTest® Products or any Authorised AutoTest® Service Centre reserves the right to refuse warranty repair if accident, abuse, misuse, or misapplication has damaged the product. In transit or because of service or modification by other than an Authorised Service Centre, nor are any other warranties expressed or implied, including any regarding merchantability or fitness for any other particular purpose.

AutoTest® Products or any Authorised Service Centre is not responsible for incidental or consequential damages resulting from the breach of any express or implied warranty, including damage to property and, to the extent permitted by law, damages for personal injury.

9. AUTHORISED SERVICE AGENTS:

UNITED KINGDOM

Tecalemit Garage Equip. Co. Ltd

Unit 2, Eagle Road, Langage Bus Pk., Plympton, Plymoth, Devon, PL7 5JY

PH: (+017) 5221 9150

AUSTRALIA

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