AUTO TEST Products Pty Ltd®

AutoStop® Suspension Meter2

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Declaration of Conformity

We, AutoTest Products Pty Ltd. declare under our sole responsibility that the product AutoStop® Suspension Meter2 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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1. Unpacking & First Time Use

Congratulations on your choice of an AutoStop® Suspension Meter2. Please take the time to read this User Manual before using the AutoStop® Suspension Meter2 in the field. Incorrect or inappropriate use of this instrument may void the warranty.

Please complete the warranty registration card and post it to AutoTest 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® Suspension Meter2.

The packing box of your AutoStop® Suspension Meter2 should contain the following:

1. AutoStop® Suspension Meter2
2. QR Code Information Card (scan to access product manual, brochure and other information)
3. Warranty Registration Card
4. Calibration Certificate
5. Suspension Meter2 software (USB)
6. Download and Charging USB-C Cable

Optional Accessories:
- Bluetooth printer

The Suspension Meter2 is a portable, battery-powered tool that assesses shock absorber performance by measuring damping ratio and monitoring sprung-mass movement. This objective testing helps identify worn suspension components, many of which can't be detected visually. Well maintained shock absorbers can ensure safer stopping distances and reliable vehicle stability systems.

The AutoStop® Suspension Meter2 has twelve-button operation via a tactile membrane keypad with LCD display. It is lightweight (350grms) and compact (200x90x50mm) and can be installed on the body of the vehicle near the wheel that is to be tested.

1.1 Battery Charging

When you receive your new Suspension Meter2, you should charge the device to 100%. The device can be easily charged by connecting the provided USB-C cable to a suitable USB Power Adaptor (not supplied).

1.2 Self Test and Battery Check

The self-test function is activated each time the AutoStop® Suspension Meter2 is powered on. It checks the clock, the battery level and conducts other hardware checks. If the battery does not have sufficient charge to be used, then it will display "**Warning: Battery Low**".

2. For Your Safety

Read these simple guidelines and the complete user guide. Not following them may be dangerous. 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.



INTERFERENCE
All wireless devices may be susceptible to interference which could affect performance.



SWITCH OFF WHEN REFUELLING
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 when 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. Batteries can only be replaced by an Authorised Service Centre. 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 guide for detailed safety instructions. Do not connect incompatible products.

3. Operation

3.1 Set-Up on Vehicle

The vehicle must be stationary (at a complete stop) prior to commencement of the test. Mount the Suspension Meter2 to the body of the vehicle, placing it near the wheel that is to be tested. The device is equipped with rubber suction cups that attach to the vehicle's body. Be aware that any dirt on the suction cups may not only scratch the paintwork but also reduce their grip, increasing the risk of the device detaching and falling to the ground.

The AutoStop® Suspension Meter2 is self-aligning by identifying its orientation at the beginning of each test. The Suspension Meter2 can be installed at any angle facing any orientation but must be well secured for the entire duration of the test, as movement can cause erroneous readings. Before commencing the test, give the vehicle a firm shake to bring shock absorbers to their natural position.

3.2 Set-Up on Suspension Meter2 Tester

Turn on the AutoStop® Suspension Meter2 by pressing the "**ON/OFF**" button when the device is powered off. Once the button is pressed, the device and display will power on immediately; however, there will be an approximately 2-second delay before the start-up text appears on the screen. The Suspension Meter2 will then go through a start-up procedure and eventually display the Main Menu (a menu of three icons):



Before a test is started, the test parameters and methodology must be set. The AutoStop® Suspension Meter2 is able to calculate a vehicle's suspension rating using:

- Damping Ratio
- Number of Rebounds
- Both Damping Ratio and Number of Rebounds
- Comparison to a Reference Value

3.2.1 Setting the Test Calculation Method

The method used to calculate the suspension rating can be changed by entering the "**CONFIG**" menu by pressing "**2**" on the keypad. The device will show the following list of options on the screen:

1. Device Settings
2. Result Calculation
3. Device Info
4. Printer Graphs
5. Return to Main Menu

Fig 1 CONFIG menu (illustrative example)

Select "**2. Result Calculation**" by pressing "**2**" once again. The device will show the following list of options on the screen:

1. Calculation Method
2. Reference Method
3. Set Parameter Range
4. Reset Parameters
5. Return

Fig 2 Result Calculation menu (illustrative example)

3.2.2 Calculating Using Damping Ratio, Number of Rebounds, or Both

To calculate the suspension rating using Damping Ratio, Number of Rebounds, or Both, first press "**1**", then press the number corresponding to the desired method from the following list of options:

1. Use Damping Ratio
2. Using Rebounds
3. Using Both
4. Return

Fig 3 Calculation Method menu (illustrative example)

The currently selected method will be highlighted in black. Once the desired method is selected, press "**4**" to return to the previous menu (Fig 2), then press "**2**". The device will show the following list of options on the screen:

1. Enable Reference
2. Disable Reference
3. Return

Fig 4 Reference Method menu (illustrative example)

Press "**2**" to disable calculation using a Comparison to a Reference Value, then press "**3**", then "**5**" to return to the "**CONFIG**" menu in Fig 1. To set the parameters used by the calculation method that was selected, read Section 3.2.4. To run the test, press "**5**" again to return to the Main Menu, then read Section 3.2.9.

3.2.3 Calculating Using Comparison to a Reference Value

Reference Method allows results to be generated in reference to the original factory performance of the shock absorbers. Since different vehicles have different factory ratings for shock absorbers, it is impractical to have the factory-rating list for the shock absorbers of all kinds of vehicles and

models. Instead, the device groups all vehicles into three categories and assigns reference data to each category.

To calculate the suspension rating using the Reference Method, from the Main Menu select "**CONFIG**" by pressing "**2**", then press "**2**" again. The device will show the list of options from Fig **2** on the screen.

Next, press "**2**" to enter the list of options shown in Fig 4, then press "**1**" to enable calculation using a Comparison to a Reference Value. Next, press "**3**", then "**5**" to return to the menu in Fig 1. To set the value to be used as a reference, read Section 3.2.4. To instead move to running the test, press "**5**" again to return to the Main Menu, then read Section 3.2.9.

3.2.4 Setting The Test Parameters

To set the parameters used during calculation, first the list of options shown in Fig 2 must be accessed. This list can be accessed from the Main Menu by pressing "**2**", then "**2**" again.

Once the list of options in Fig 2 appears on the screen, press "**3**". The device will show the following list of options on the screen:

1. Damping Ratio Range
2. Set Rebounds Range
3. Reference Damping
4. Return

Fig 5 Set Parameter Range menu (illustrative example)

3.2.5 Setting the Damping Ratio Range

To set the Damping Ratio parameters, while the screen is showing the options in Fig 5, press "**1**". The device will show the following list of options on the screen:

1. Poor (zeta <10%)
2. Soft (zeta <15%)
3. Good (zeta <35%)
4. Hard (zeta >=35%)
5. Return

Fig 6 Damping Ratio Range menu (illustrative example)

Note: The values in the listed options may vary, as they depend on the currently set parameters. The values listed above are the default values of the device.

From this menu, the thresholds for the different suspension calculation results can be set by pressing the number next to that result. Upon doing so, the device will show the following:

Zeta upper limit for POOR suspension:
10_

Fig 7 Set damping threshold screen (illustrative example)

When in this screen, enter the desired number using the keypad. To delete numbers, press "**9/DEL**" twice quickly. Once the desired number has been entered, press "**ENTER**" to return to the previous menu (Fig 6).

3.2.6 Setting the Rebounds Range

To set the Rebounds parameters, while the screen is showing the options in Fig 5, press "**2**". The device will show the following list of options on the screen:

1. Poor (rebounds >4)
2. Soft (rebounds >3)
3. Good (rebounds >1)
4. Hard (rebounds <=1)
5. Return

Fig 8 Set Rebound Range menu (illustrative example)

Note: The values in the listed options may vary, as they depend on the currently set parameters. The values listed above are the default values of the device.

From this menu, the thresholds for the different suspension calculation results can be set by pressing the number next to that result. Upon doing so, the device will show the following:

Rebounds lower limit for POOR suspension:
4_

Fig 9 Set rebound threshold screen (illustrative example)

When in this screen, press any number on the keypad to enter it. To delete numbers, press "**9/DEL**" twice quickly. Once the desired number has been entered, press "**ENTER**" to return to the previous menu (Fig 8).

Note: The calculation results are checked in order from top to bottom. As such, if the threshold for Poor is set to be higher than the threshold for Soft, the device will never produce a Soft result, and they all will be considered Poor.

3.2.7 Setting the Reference Damping Values

To set the Reference Damping values, while the screen is showing the options in Fig 5, press "**3**". The device will show the following list of options on the screen:

Select Chassis Type:
1. Soft
2. Normal
3. Hard
4. Return

Fig 10 Reference Damping menu (illustrative example)

From this menu, the reference damping value for each chassis type can be set by pressing the number next to that chassis type. Upon doing so, the device will show the following:

Ref damp. For Front axle:
60_

Fig 11 Set front axle reference damping value screen (illustrative example)

When in this screen, press any number on the keypad to enter it. To delete numbers, press "**9/DEL**" twice quickly. Once the desired number has been entered, press "**ENTER**". Upon doing so, the device will show the following:

Ref damp. For Rear axle:
60_

Fig 12 Set rear axle reference damping value screen (illustrative example)

Note: The values shown may vary, as they depend on the currently set value. The values listed above are the default values of the device's Soft chassis.

Once the desired number has been entered, press "**ENTER**" to return to the previous menu (Fig 10).

3.2.8 Resetting the Test Parameters to Default

In the event that the test parameters have been set incorrectly, they can be reset to their default values. While the screen is showing the options in Fig 5, press "**4**" to return to the list of options in Fig 2, then press "**4**" to reset the test parameters to their default values. A message will appear on the screen to confirm that the parameters have been successfully reset.

3.2.9 Running the Test

Before starting a test, make sure the device has sufficient (over 20%) battery life. To run a suspension test, on the Main Menu, select "**RUN TEST**" by pressing "**1**" on the keypad. The device will show the following list of options on the screen:

1. Run New Test
2. Show Last Test
3. Print Last Test
4. Delete all Tests
5. Memory Usage
6. Return to Main Menu

Fig 13 Run Test menu (illustrative example)

Note: The AutoStop® Suspension Meter2 is capable of storing 100 tests. If a new test is attempted while the memory is full, the device will display that its memory is full and the test will not begin. In order to check the current memory usage, press "**5**" when on the menu in Fig 13. If the memory is full, it is recommended to download the tests onto a PC using the AutoStop® Suspension Meter2 Software (available on the AutoTest website), then press "**4**" on the menu in Fig 13 to clear the tests from the Suspension Meter2.

To begin the test select "**1. Run New Test**" from the menu in Fig 13 by pressing "**1**" once again. The device will ask the user to confirm if the shock absorbers are warmed up or if the vehicle has been in motion for at least 5 minutes during the last 30 minutes. Running a suspension test on a cold vehicle may lead to an erroneous result.

Has the vehicle been in motion for at least 5 min within the last 30 min?
1. Yes
2. No

Fig 14 Vehicle in motion prompt (illustrative example)

After the warm up confirmation, the device will prompt for **Examiner ID** (Operator Name). Use the device's keypad to type in the name of the person performing the test. The "**DEL**" key behaves like the Backspace key on a PC keyboard, and it can be used to erase the last character in the input field.

Enter Examiner ID:

Fig 15 Examiner ID screen (illustrative example)

After entering the **Examiner ID**, press "**ENTER**" to continue. Now the device will prompt for **Vehicle Registration**, type in the registration number of the vehicle that is to be tested. Again, use the keypad to type in the vehicle's registration number.

Enter Vehicle Registration:

Fig 16 Vehicle Registration screen (illustrative example)

After entering the V**ehicle Registration Number**, press "**ENTER**" to continue. If the registration number you just entered has been tested previously, the device will automatically load the **Customer Name** from the database. Otherwise, for a new vehicle's entry, the device will prompt for **Customer Name**. Enter the Customer's name using the keypad and press "**ENTER**".

Enter Customer Name:

Fig 17 Customer Name screen (illustrative example)

If reference method was used in the device configuration (see Section 3.2.3), the following dialogue will be displayed:

Vehicle Chassis Type
1. Soft (Comfortable)
2. Normal
3. Hard (Sporty)
4. Manuf. Defined
5. Unknown

Fig 18 Vehicle Chassis Type screen (illustrative example)

If the vehicle being inspected has a chassis system that was designed to be soft or comfortable, select option "**1**." For normal vehicles such as an average sedan vehicle, use option "**2.**" If the chassis system is designed to be hard or has characteristics of a sports car or SUV, use option "**3**." If the reference damping factor for a particular vehicle is known, user can select option "**4**." **("Manufacturer Defined")** to specify reference damping data for that vehicle (see Section 3.2.3). If the user is unsure about the chassis type, select option "**5**." By selecting option "**5. Unknown**", reference method will not be used.

The device will now prompt for wheel selection (Fig 19). Select the wheel that you are currently testing by pressing numbers from "**1**" to "**4**" using the keypad. Press "**5**" to cancel the test and return to the "**RUN TEST**" menu.

1. Front Left
2. Front Right
3. Rear Right
4. Rear Left
5. Cancel Test
6. List all wheels*

Fig 19 List All Wheels menu (illustrative example)

If the vehicle registration number you just typed in has any wheel that was recently tested, the device will not show those wheels that are already tested, instead it will only show wheels that are yet to be tested. If you want to overwrite a test for a particular wheel that is already tested, then select "**6. List all wheels***" and then select the wheel that you want to test again.

**Option #6 will only be displayed if at least one of the wheels is not displayed. Wheels that are not displayed in the list are those that have already been tested and stored.*

After selecting the wheel that is being tested, the device will prompt for a ready trigger. Press any key when ready or press "**DEL**" to abort test. Hit "**ENTER**" from the keypad when you are ready to run the suspension test.

Note: Before running a test on a wheel, give a shake to the wheel by bouncing the vehicle down a few times.

Running a Suspension Test
Securely fix the Suspension Meter2 in place. Position the meter close to the wheel being tested.

Driving Test Procedure
- **Front wheels:** drive the vehicle forward and apply the foot brake suddenly.
- **Rear wheels:** reverse the vehicle and apply the hand brake suddenly.

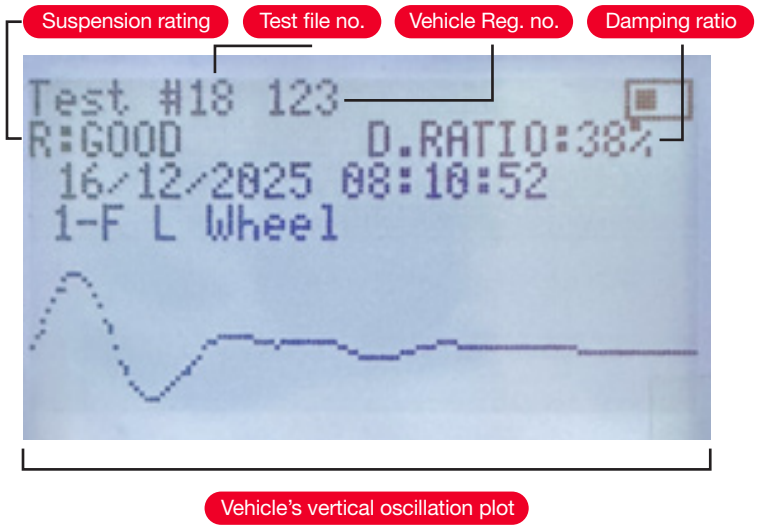
If the vehicle's suspension was not depressed enough, or the Suspension Meter2 finds a problem with the result, the device will display the following error message:

Abnormal results obtained!
1. Run test again
2. Abort Test

Fig 20 Abnormal Results screen (illustrative example)

Select "**1. Run test again**" to redo the test with harder push down force.

Results will be displayed on the screen after each test. The meter will ask the user whether the result should be saved. The user can save the test and continue to the next wheel, or redo the test for the selected wheel.



**Suspension rating is evaluated based on damping ratio, number-of-rebounds, and reference method used (see section 3.2.3 - 3.2.7 for more information).*

The graph will remain on the screen until the user presses any key from the keypad. Once a key is pressed, the device will display the following menu:

1. Save test
2. Don't save
3. Redo Test

Fig 21

Press "**1**" to save the results obtained for the current wheel. Press "**2**" to discard and erase results and return to the "**RUN TEST**" Menu. In case of odd results, press **"3**" to redo the test.

Must:

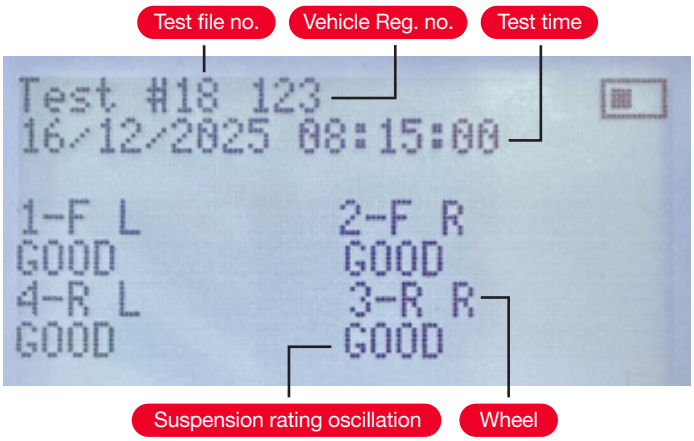
- Fix Suspension Meter2 securely
- Install on a stationary vehicle
- Place it close to the wheel that is being tested
- **For front wheels:** drive the vehicle forward and use the foot brake
- **For rear wheels:** drive the vehicle backward and use the hand brake

3.3 Test Instructions Summary

Screen Display	Instruction	Keys to Press
Blank Screen	Switch On	"**ON/OFF**"
Initial menu screen		Press any key to skip
Run Test 1 + steering wheel icon	Open Test Menu	Press **"1**" from the keypad
Examiner ID:	Enter Examiner ID or Operator's name	Use keypad to type Examiner ID. When done, press "**ENTER**"
Enter Vehicle Registration:	Enter the Registration Number	Use keypad to type Vehicle Registration Number and press "**ENTER**"
Enter Customer Name:	Enter customer name	Use keypad to type customer name and press "**ENTER**"
Select Chassis type (only if reference method is used)	Select vehicle chassis type	Press a key from "**1**" to "**5**" to select an option
Wheel to test:	Select a wheel to run a test on	Press a key from "**1**" to "**4**" to select a wheel
Press any key when ready or press **DEL** to abort test	Press any key to commence the test or "**DEL**" to cancel test and return to Test Menu	Press any key to commence the test
Waiting for a trigger…	Drive the vehicle	
Sampling…	Wait for the result	
Processing…	Wait for the result	
Graph screen	Displays results from the suspension test just conducted	Press "**ENTER**"
1. Save Test?	To save test result	Press "**1**" to save
2. Don't Save?	To discard results and abort test	Press "**2**" to abort test and results
3. Redo Test?	To redo the test	Press "**3**" to repeat the test

3.4 Display Last Test Result

After running a successful suspension test on a vehicle, the results for that vehicle can be retrieved and a summary of all four wheels can be displayed on the Suspension Meter2's screen. To view the results for all four wheels of the last tested vehicle, select "**RUN TEST**"" from the Main Menu by pressing "**1**". The device will then display the Test Menu. Select "**2. Show Last Test**" from the Test Menu.



The above screen displays a brief summary of all four wheels of the latest vehicle that is tested. If "**N/A**" or "**Not available**" is displayed this indicates that no test was conducted or stored for that wheel.

Press a key from "**1**" to "**4**" to view the results for an individual wheel. Alternatively, press "**ENTER**" to sequentially view results for all wheels. Keep pressing the "**ENTER**" key to switch to the next screen. At the end of each cycle, the device will prompt "Print Results?". Results can be printed out using an optional Bluetooth printer. For more information regarding the printing process, see Section 3.5. To return to the Test Menu screen, select "**3. Return**" once the print dialogue appears on the screen. Alternatively, by pressing any key from "**5**"-"**9**" and "**0**" during an individual result the screen will return to the Test Menu.

3.5 Printing Last Test

Results for all four wheels for the latest tested vehicle can be printed out on a paper slip using an optional Bluetooth printer (upgrade).

In order to print the latest test results using a Bluetooth printer, first switch on the printer and then place the device close to the Bluetooth printer.



Turn on the Suspension Meter2 if it's switched off. From the Main Menu, select "**RUN TEST**" by pressing "**1**" from the keypad. When the Test Menu appears, select "**3. Print Last Test**". The device will display "**Printing Test #n**", where n is the test number for the latest test.

Note: If the Bluetooth printer fails to print, please check the printer battery level.

3.6 Menu Reference

Section	Sub Menu	Sub Menu 2	Description	Keys to Press
MAIN MENU				
RUN TEST			Suspension Test Menu containing all options related to running and viewing suspension tests	Press “1”
	1. Run New Test		Starts a new suspension test	Press “1”
		Warm suspension check	Prompts user to check if the vehicle was in motion for at least 5 mins in the last 30.	“1-Yes” “2-No”
		Examiner ID	Prompts for Examiner ID	Type then press “ENTER”
		Vehicle Registration Number	Prompts for vehicle Registration Number	Type then press “ENTER”
		Customer Name	Prompts for customer name	Type then press “ENTER”
		Chassis Type	Prompts for vehicle chassis type (only if reference method is used)	Press “1”-”4”
		Ready?	Prompts for ready trigger	Press “ENTER”
		Graph Screen	Displays the current test’s result	Press “ENTER”
		Save?	Prompts for save/discard results	“1-Save” “2-Discard” “3-Redo”
	2. Show Last Test		Displays the results for the latest test	Press “2”
		Summary Page	Displays the summary of all four wheels for the last tested vehicle	Press “1”-”4” or “ENTER”
		Print Results?	Prompts user to print the current (latest) results using Bluetooth printer	“1-Yes” “2-No” “3-Return”
	3. Print Last Test		Prints the latest results using optional Bluetooth printer	Press “3”
	4. Delete all Tests		**Warning!** Clears the user memory deleting all existing stored tests. Users should upload data prior to deleting all tests	Press “4”
		Delete all Tests?	Confirms if user really wants to delete all stored tests	“1-Delete” “2-Cancel”
	5. Memory Usage		Displays the number of stored tests	Press “5”
		Memory Usage page		Any key to exit
	6. Return to Main Menu		Returns to the Main Menu	Press “6”

Section	Sub Menu	Sub Menu 2	Description	Keys to Press
			MAIN MENU	
CONFIG			Displays settings and result calculation options	Press “2”
	1. Device Settings		Allows the user to configure basic device preferences and display options	Press “1”
		1. Contrast	Adjusts the display brightness level	Press “1”
		2. Date/Time	Displays the current date and time	Press “2”
		Set time and date	Prompts the year, month, date, hour, and minute to be entered	Press “1”
		3. Language Selection	Enables the user to choose the preferred language for the device interface	Press “3”
		4. Exit	Returns to the Main Menu -> Setup	Press “4”
	2. Result Calculation		Allows result calculation parameter adjustments	Press “2”
		1. Calculation Method	Displays suspension rating calculation methods	Press “1”
			1. Using Damping Ratio 2. Using Rebounds 3. Using Both 4. Return	Select “1”-“4”
		2. Reference Method	Enables or disables reference method.	Press “2”
			1. Enable Reference	Press “1”
			2. Disable Reference	Press “2”
			3. Return	Press “3”
		3. Parameter Range	Allows suspension rating parameter alteration	Press “3”
			1. Set Damping Ratio Range	Press “1”
			2. Set Rebounds Range	Press “2”
			3. Reference Damping	Press “3”
			4. Return	Press “4”
		4. Reset Parameters	Resets Parameter Range values. Also sets “1. Calculation Method” to “3. Using Both” (i.e. using Damping ratio and Rebounds method)	Press “4”
		5. Return	Return to the CONFIG menu	Press “5”
	3. Device Info		Displays device information such as version, serial number, calibration date, test count, battery life, date and time	Press “3”
		Device Information Page		Press any key to exit
	4. Printer		Displays printing options	Press “5”
		1. Print Graphs	Enables printing of graphs of suspension tests.	Press “1”
		2. Disable Graphs	Disables printing of graphs. This option can be used to save printer roll.	Press “2”
		3. Return	Return to the CONFIG menu	Press “3”
	5. Return to Main Menu		Returns to the Main Menu	
TRANSFER			This menu option allows the device to upload suspension test results and to update firmware to a connected PC. The device must be connected to the PC using the optional serial cable.	Press “3”

4. Uploading Test Data

The AutoStop® Suspension Meter2 has an upload facility that allows users to transfer test results from the unit onto a PC via a custom USB Cable for analysis and printing. The Suspension Meter2 can hold up to 100 tests numbered one to one hundred. To upload all tests stored in the Suspension Meter2, AutoStop® Suspension Meter2 software must be installed and running on the PC.

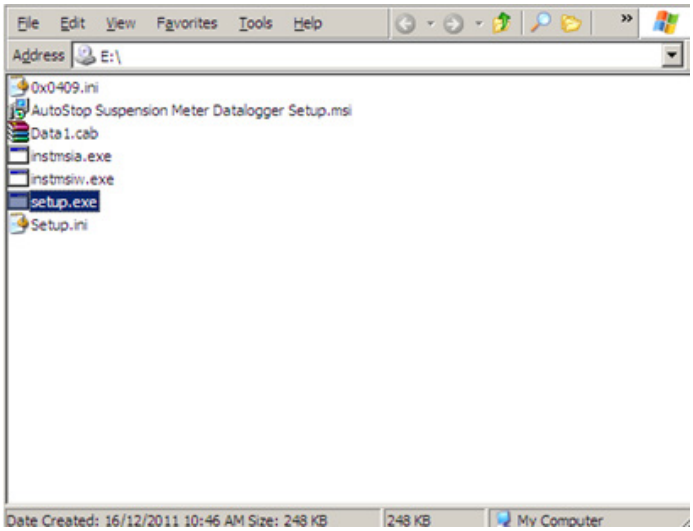
4.1 Installing the Suspension Meter2 Software

Before installing the AutoStop® Suspension Meter2 software, make sure your computer meets the minimum system requirements:

- Microsoft Windows 11 or greater
- One unused USB port
- At least 50 MB of hard disk space

To install the Suspension Meter2 software from the USB stick, please follow the below steps:

1. Insert the Suspension Meter2 Software USB stick into your device.
2. If the Suspension Meter2 software setup does not run automatically, then open the USB contents in Windows File Explorer.
3. Select and run file “setup.exe”.
4. Follow setup prompts.



Note: If you already have a copy of an older version of the Suspension Meter2 software installed, you may have to uninstall it first.

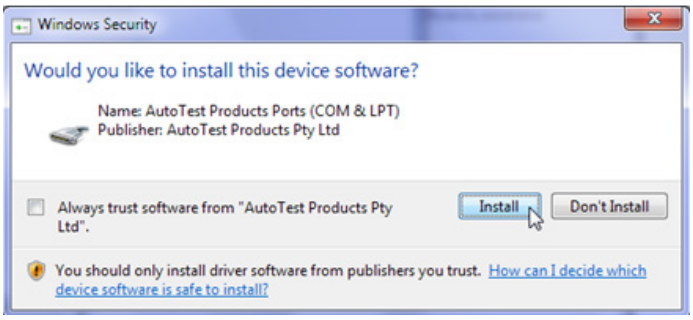
The latest version of the Suspension Meter2 software for AutoStop® Suspension Meter2 can be obtained from the Internet by going to the AutoTest website: https://www.autotest.net.au/ and navigating to the Suspension Meter2 product page.

4.2 Uploading Tests Using the Suspension Meter2 Software

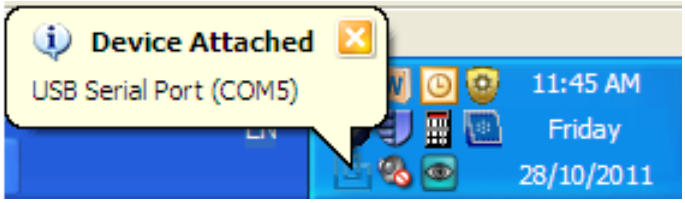
After successfully installing the Suspension Meter2 software, run the Suspension Meter2 software from the desktop or from the start menu, and perform the following steps:

Step 1: Use the supplied USB cable and connect one end of the cable to the meter and the other end to your PC. Turn on the Suspension Meter2.

When the Suspension Meter2 is first connected, Windows will try to install drivers for it. Please wait until Windows has finished installing drivers. You might see the following message box during the installation of the USB drivers. Please select “**Install**” to install the USB drivers.

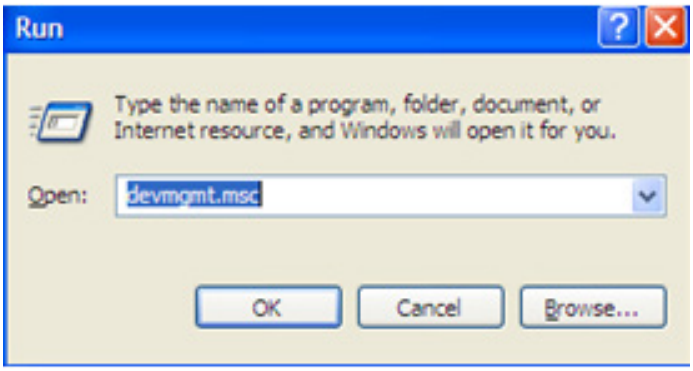


Step 2: Once the drivers have been installed, you may see the following pop-up screen near the system clock. The message box will display the COM port that the Suspension Meter2 is connected to. You need to know this COM port number (for example COM5 in the following image) when communicating and downloading data from the Suspension Meter2.

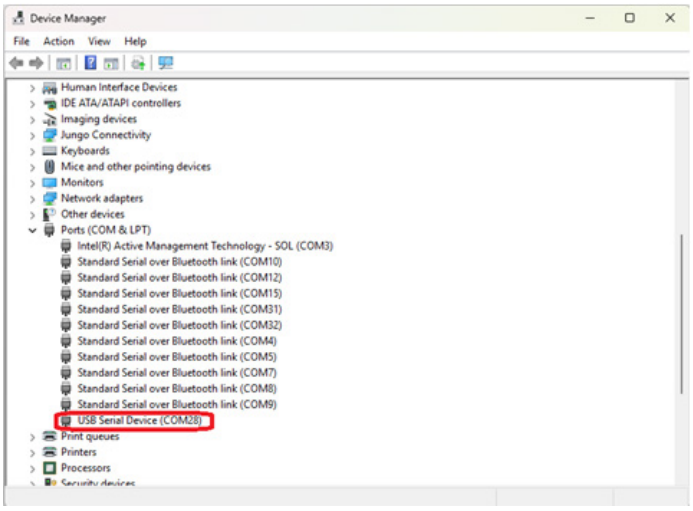


Alternatively, if you did not see the above ‘Device attached’ pop-up screen, you can check the COM port number by taking the following steps:

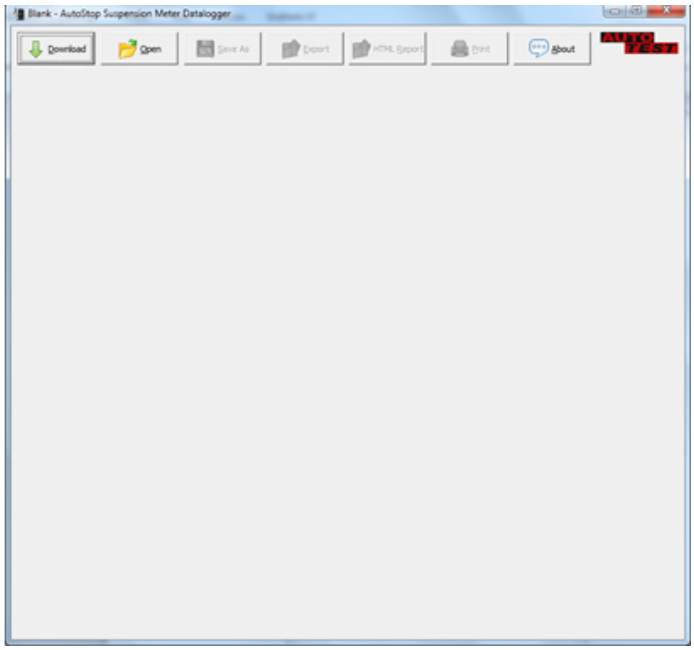
- Open “**Device Manger**” by going to Start -> Run -> Type “**devmgmt.msc**” and click “**OK**”.



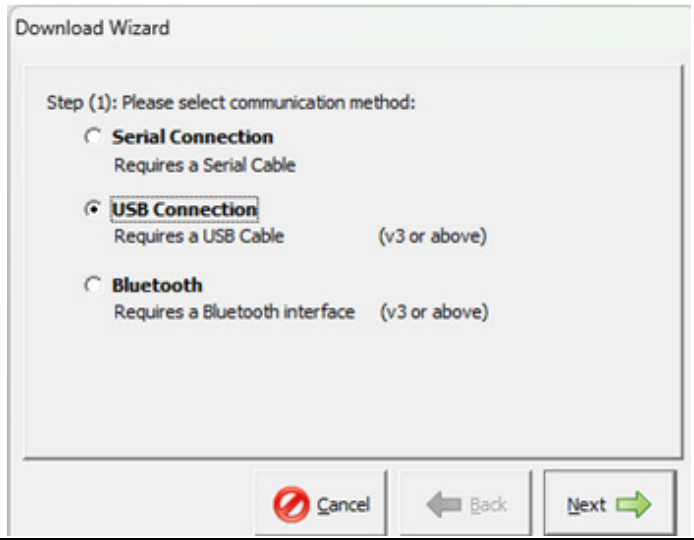
- Then in the Device Manger window, open the Ports (COM & LPT) node and find “**USB Serial Port**” in the list. Note the COM port number appended next to “**USB Serial Port**”.



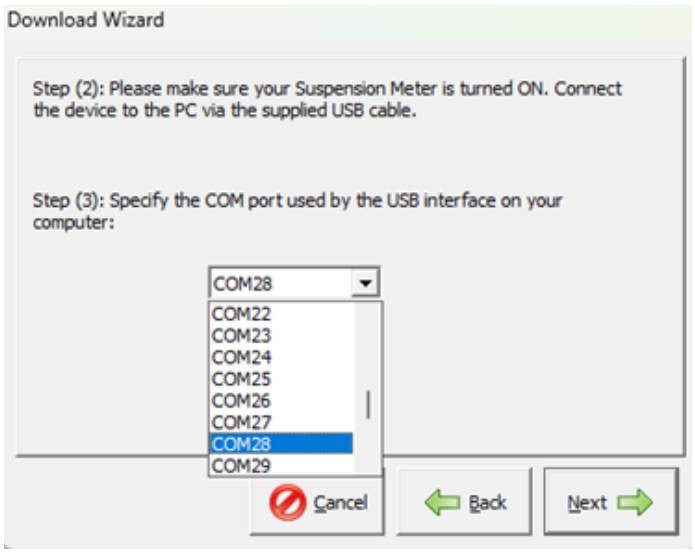
Step 3: Open the Suspension Meter2 software window and click on “**DOWNLOAD”**. A Download Wizard window will appear. Follow the download prompts.

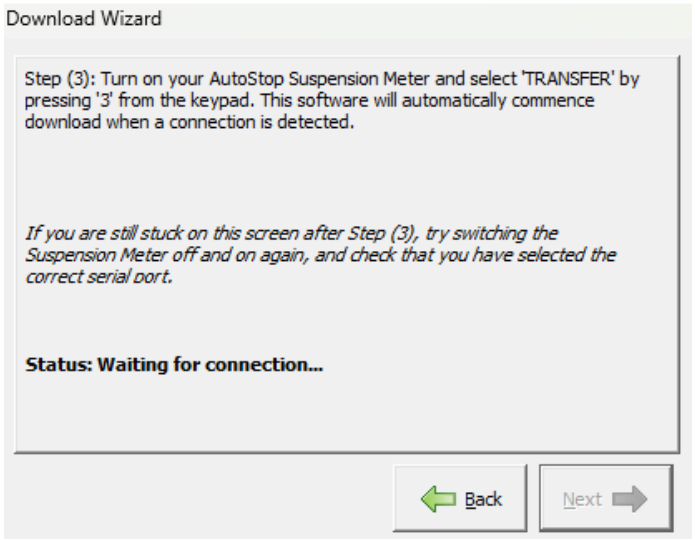


Step 4: Select USB connection and then press “**Next**”.



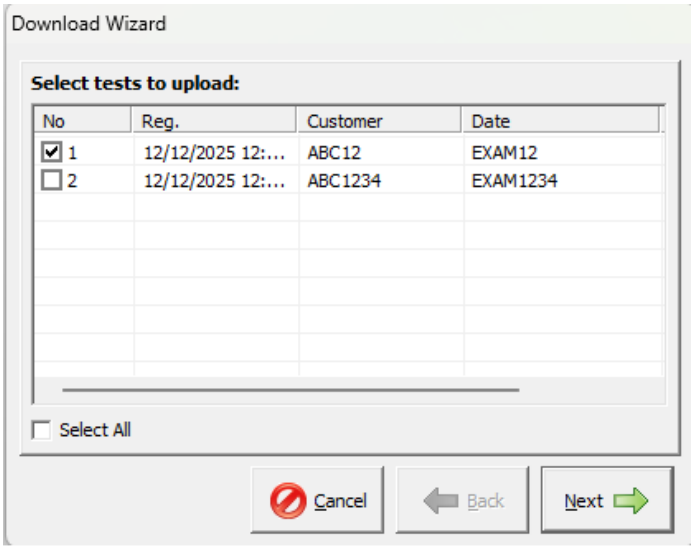
Step 5: Select the right COM port to which the Suspension Meter2 is connected. The software will display a list of detected COM ports. Select the appropriate COM port and click on “**NEXT**”.



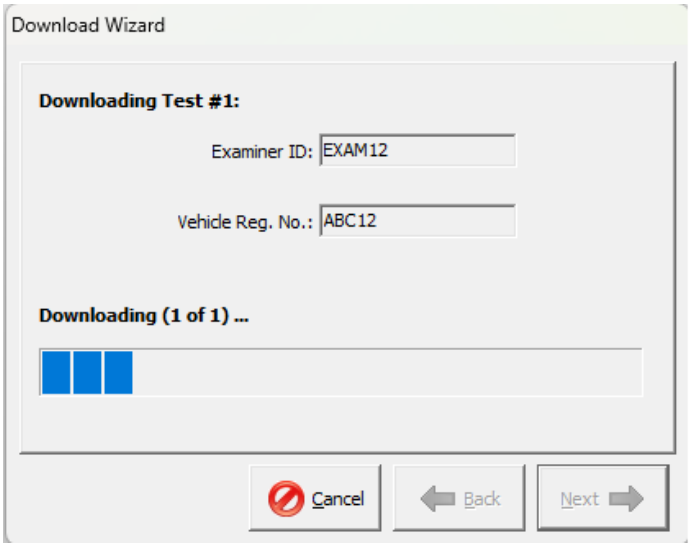


Step 6: When you see the above screen on your PC, switch on the Suspension Meter2. When the Main Menu appears, select “**TRANSFER**” by pressing “**3**” from the keypad on the device. The download will automatically commence once the connection is successfully established.

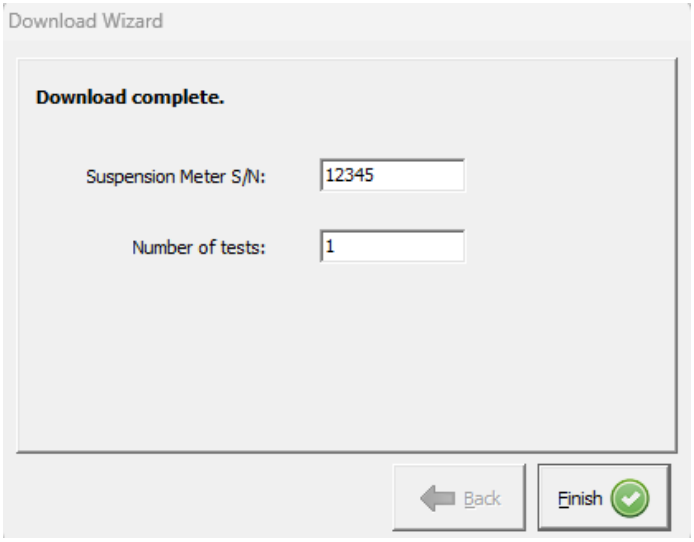
Step 7: Once the device has been connected successfully, the downloader will display a list of all tests currently stored on the meter. Select the tests that need to be downloaded and then press “**Next**”. The Suspension Meter2 software will automatically download all selected tests.



Step 8: The Download Wizard window will display the download progress. Wait until the download finishes.



Step 9: After test data has been downloaded a small window will appear that says "**Download completed**". Click on "**FINISH**" to view the downloaded tests.



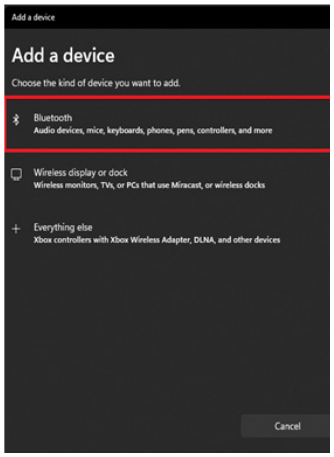
4.2.1 Downloading via Bluetooth

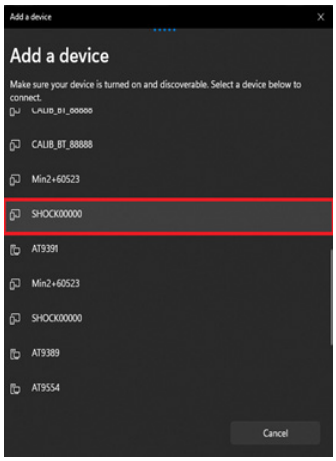
Before connecting the Suspension Meter2 to the PC using the Bluetooth interface, make sure the PC supports Bluetooth connectivity.

Once the Suspension Meter2 software has been installed, run the software on the PC and switch on the Suspension Meter2 by pressing the "**ON/OFF**" key.

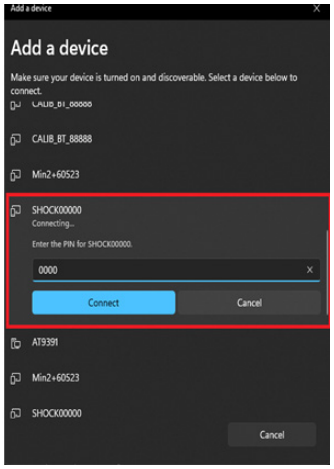
When connecting the Suspension Meter2 for the first time using the Bluetooth interface, the user will need to configure the Bluetooth connection. To configure the Bluetooth connection, open your Bluetooth manager program on your PC and search for "**Shock#####**" device, where "**#####**" is the serial number of the Suspension Meter2.

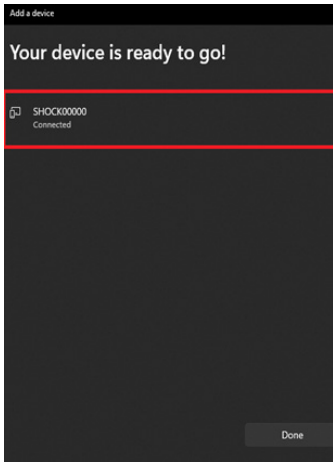
Note: the screenshots provided below may not be the same on your PC. For information regarding Bluetooth device pairing on your PC, please refer to the documentation of your Bluetooth Manager.



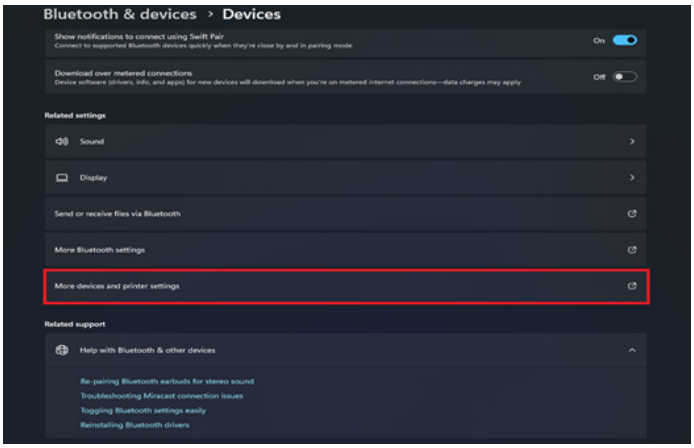


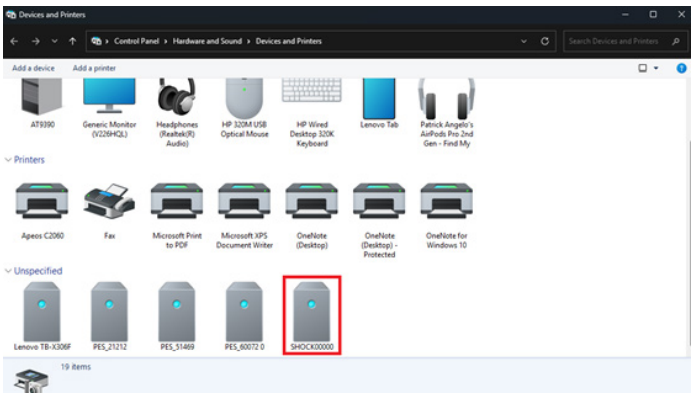
Select the device "**Shock#####**" from the list of discovered Bluetooth devices and create pairing. When prompted for the pairing code or pin number, enter "**0000**".

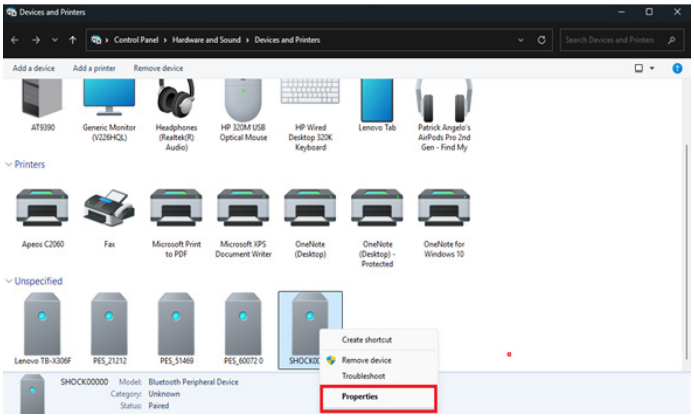


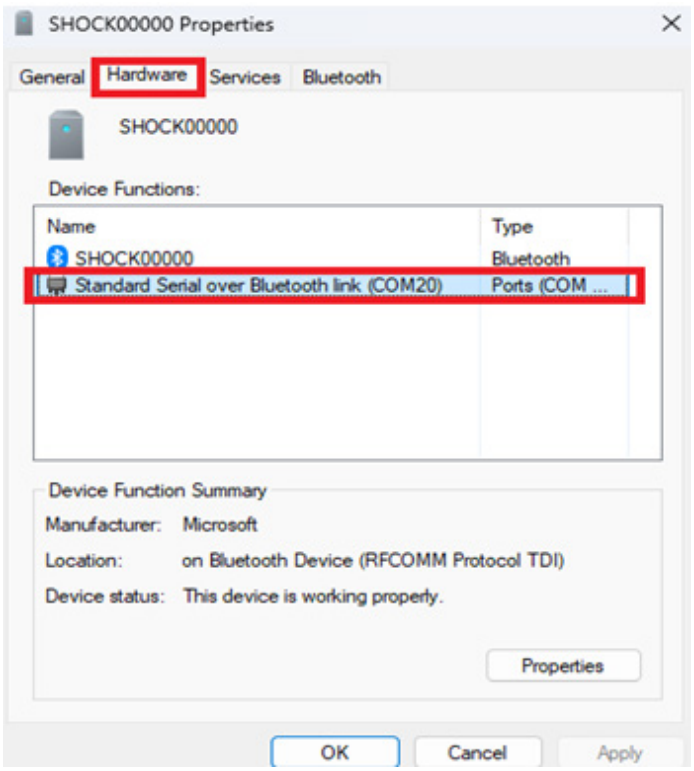


Users can also identify the COM port assigned to the Bluetooth device by checking the device status. This COM port should be selected for the Bluetooth connection in the software.

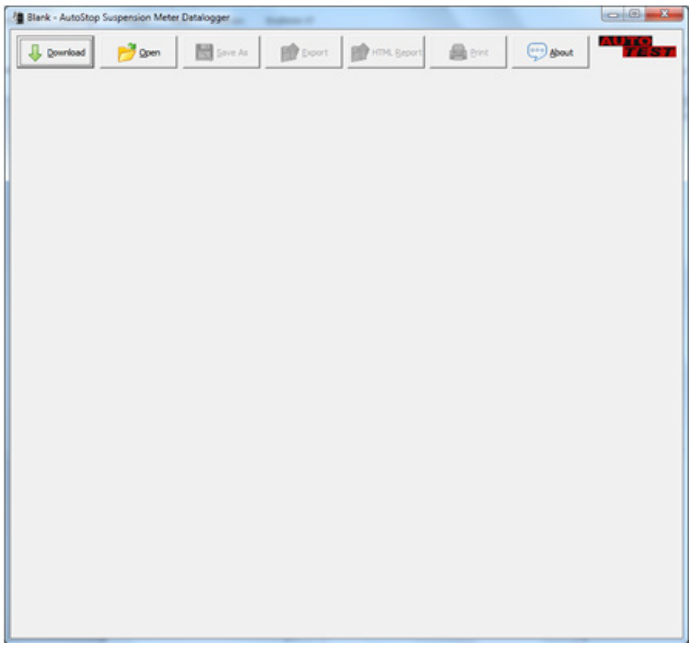




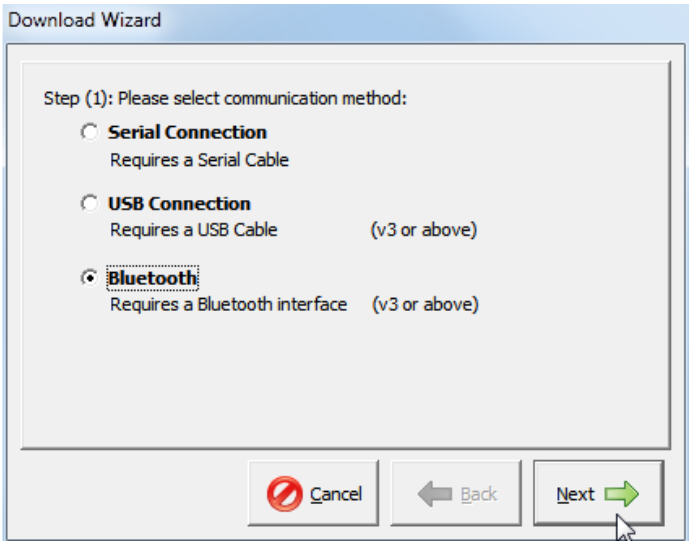




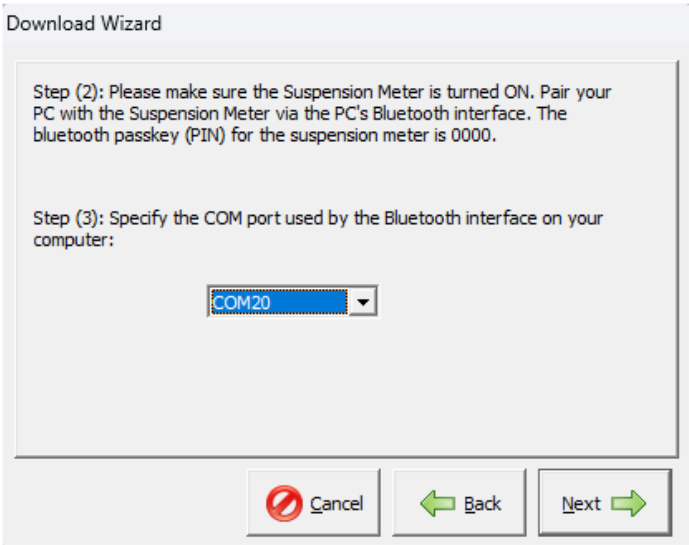
Once the Bluetooth connection is setup, the user can now download test results from AutoStop® Suspension Meter2 using the Bluetooth interface. To download the results, open the AutoStop® Suspension Meter2 software and click on the "**Download**" button.



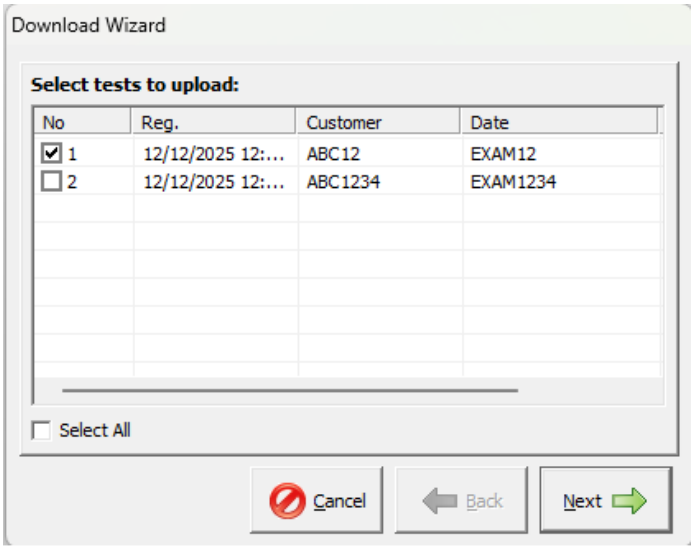
When the following connection window appears, select "**Bluetooth**" connection and press "**Next**".



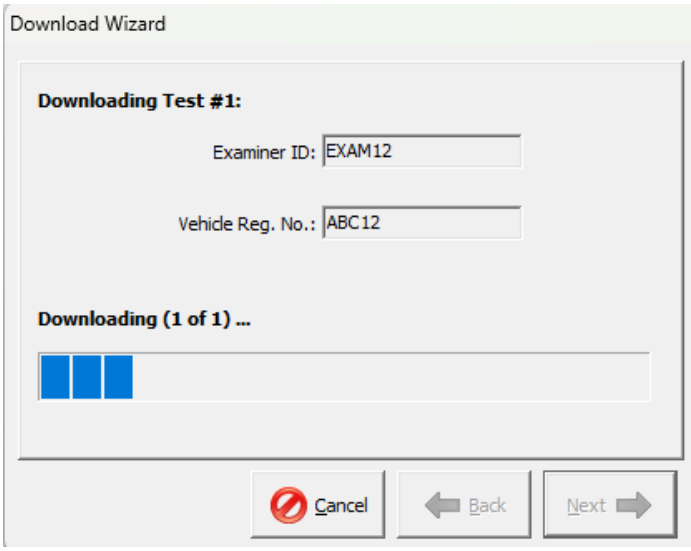
Select the COM port number of the Bluetooth connection connected with the Suspension Meter2. The COM port number is the same COM port obtained during the Bluetooth pairing process.



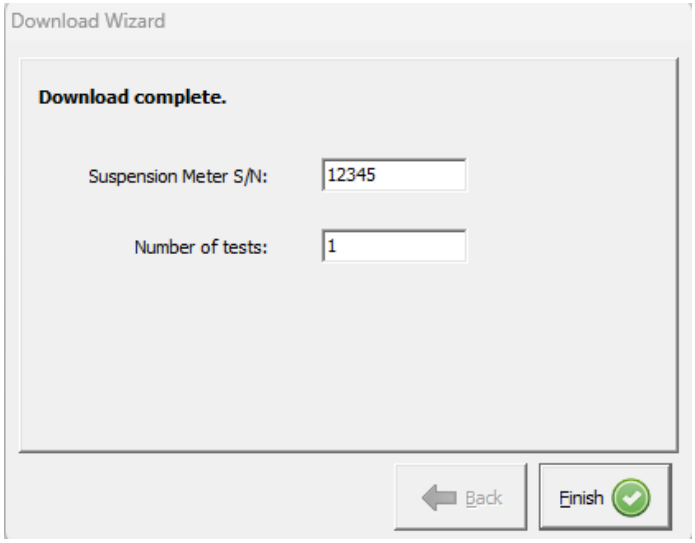
Make sure the Suspension Meter2 is on. Press "**Next**" to continue. Once the connection is established, the Suspension Meter2 software will acquire a list of all tests currently stored on the device.



Select the tests that need to be downloaded and press "**Next**". The Suspension Meter2 software will then download the selected tests.

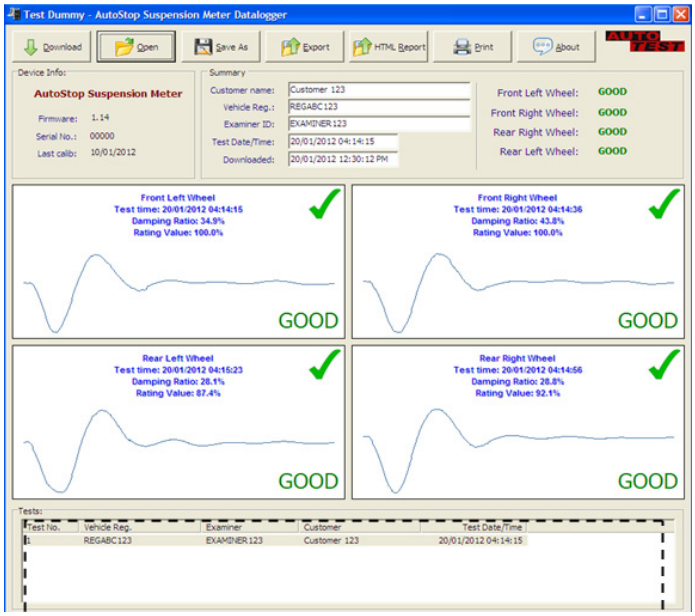


Once the desired tests have been downloaded, press "**Finish**" to return to the main window and view test results.



4.3 Using the Suspension Meter2 Software

The software will display all the saved tests. You can view the results of the particular test and the corresponding graph for each test.



There are options on the software such as:

1. **Open:** open a saved file on your PC.
2. **Save:** save the results onto your PC.
3. **Export:** view and save the test result in a Microsoft Excel compatible format.
4. **HTML Report:** display the suspension test report for the selected vehicle in a text format that can be selected and copied to another application such as Microsoft Word.
5. **Print:** print the test result. There are options to print unit details, test details and the data table.
6. **About:** view information about the software.

5. Specification

Input

- **Accelerometer:** Accuracy ±2%
- **Resolution:** 16 bit ADC

Output

- **Display:** CFAG12864Q1-TFH — 128×64 graphical LCD
- **Resolution:** 1%

Power Source

- **Lithium Polymer Battery**
- **Temperature Range:**
- -10C – 55C (while not charging)
- 0C – 45C (while charging)

Humidity

- 25% to 85%

6. Troubleshooting

Problem	Potential Cause and Action Necessary
Suspension Meter2 will not turn on	Battery flat - battery needs to be recharged. Internal electronics may have failed - return unit for servicing.
Suspension Meter2 not recording keypad input	Keypad damaged - return unit for servicing.
Suspension Meter2 turns itself off during use	Battery flat - battery needs to be recharged.
Suspension Meter2 displays "**Battery Flat**"	Battery flat - battery needs to be recharged.
Suspension Meter2 displays "**Clock failed**"	The in-built clock has failed. It might be an electronic fault, or the unit needs to be recalibrated. Please return unit for servicing & inspection.

7. Warranty

7.1 Application of these conditions

These conditions, subject to any variations we agree to in writing, apply to all supplies made by AutoTest Products Pty Ltd (Supplier) (AutoTest) specified in an invoice or Contract as the Supplier to the entity specified in the invoice or the Contract as the Purchaser. These conditions, in their present form or as changed, pursuant to these conditions, together with the relevant payment, invoices and Purchase Orders exchanged between the parties form the Contract.

7.2 Inconsistencies

Where the supply purports to be made on or subject to Terms and Conditions other than these conditions, the Purchaser agrees that such other Terms and Conditions are disregarded and form no part of the Contract unless the Supplier agrees otherwise in writing.

7.3 Warranty Terms and Conditions

When you purchase an AutoTest product you are required to complete the warranty registration form and return it to AutoTest Products Pty Ltd within 10 days of purchase of the product.

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 Pty Ltd which can be identified by the trade name or logo affixed to them or by other documents.

AutoTest Products Pty Ltd does not warrant any products not supplied by AutoTest Products Pty Ltd.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law.

Subject to section 7.1 and the terms below, as your Standard Warranty AutoTest Products Pty Ltd agrees to repair or replace at AutoTest Products Pty Ltd's cost the AutoTest product, and any AutoTest Products Pty Ltd accessory supplied with the product, purchased by you in Australia from an AutoTest Authorised Dealer when the product does not perform in accordance with the manufacturer's specifications during the Warranty Term, commencing from the date of purchase. Transit insurance and return freight will be at the owner's expense.

AutoTest Products Pty Ltd or any AutoTest Authorised Service Centre reserves the right to refuse warranty repair if accident, abuse, misuse, or misapplication has damaged the product. Products damaged in transit or as a result of service or modification by anyone other than an AutoTest Authorised Service Centre are excluded from the warranty. No other warranties, express or implied, apply, including any regarding merchantability or fitness for any particular purpose.

Products presented for repair may be replaced by refurbished products of the same type rather than being repaired. Refurbished parts may be used to repair the products. Replacement of the product or a part does not extend or restart the Warranty Term.

The product will be at the owner's risk whilst in transit to and from the AutoTest Authorised Service Centre.

AutoTest Products Pty Ltd will bear the expense of

transport where transported by AutoTest Products Pty Ltd or its Authorised representatives. Any other expense of claiming the warranty will be borne by you.

AutoTest Products Pty Ltd and its Authorised Service Centres may seek reimbursement of any costs incurred by them when the product is found to be in good working order.

AutoTest Products Pty Ltd or an Authorised Service Centre is not responsible for incidental or consequential damage 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.

To the full extent permitted by law, but subject always to 7.1, the Standard Warranty does not cover:

- If the product has not been installed, operated, maintained or used in accordance with the manufacturer's instructions or specifications provided with the product.
- If the factory-applied serial number has been altered or removed from the product.
- To damage, malfunction or failure resulting from alterations, accident, misuse, abuse, fire, liquid spillage, mis-adjustment of customer controls, use on an incorrect voltage, power surges and dips, thunderstorm activity, voltage supply problems, tampering or unauthorised repairs by any persons, use of defective or incompatible accessories, the operation of a computer virus of any kind, exposure to abnormally corrosive conditions or entry by any insect, vermin or foreign object in the product.
- The use of proper paper and stationery is very important to the operation of the printers. Use of non-standard paper will jam the printer and/or wear the print head. Use of non-standard paper will void the warranty.
- Repairs attempted or made by anyone other than our regional repair centre or authorised warranty service centre.
- To damage arising during transportation, installation or while moving the product, or to any transportation costs of the product or any parts thereof to and from the owner, unless otherwise specified in these Warranty Terms.
- Conditions or malfunctions caused by the reasonable effects of fair wear and tear or the malfunction of normally wearing parts, which include but are not limited to: batteries, plugs and leads.
- To any third-party software or hardware not contained in the product as originally configured by the manufacturer.
- To any failure, to the extent that the failure is not a failure of the product to perform in accordance with its specifications.
- To replacement or repair of any

  1) consumables (including cables), paper, ink ribbons or

  2) batteries (beyond 3 months from date of purchase), or

  3) lost parts or accessories.
- To service of any product whilst it is outside Australia.
- To any wear and tear.
- AutoTest Products Pty Ltd will not be liable for any loss, damage or alterations to

  1) third party hardware or software.

  or

  2) programs, data or information stored on any media or any part of the product, no matter how occurring.

  or

  3) for any loss or damage arising from loss of use, loss of profits or revenue, or for any resulting indirect or consequential loss or damage.
- Modified, abused, neglected, accidentally damaged or excessively worn products, or products that have become damaged or defective as a result of improper use.
- AutoTest products that are not distributed through AutoTest Products Pty Ltd's authorised distributors and resellers.

(Warranty non-transferable) This warranty is not transferable beyond the original purchaser.

Warranty is subject to AutoTest Products Pty Ltd's Standard Terms & Conditions published widely. For more detailed warranty clauses, please visit our website www.autotest.net.au/terms-and-conditions/.