

MX5 Diagnostic Tool

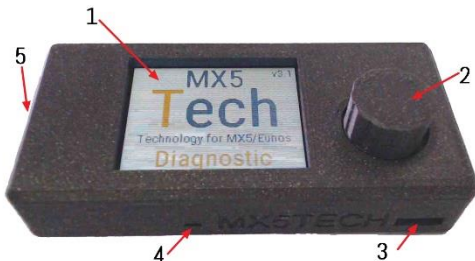
User Instructions



1. Precautions

- Only to be used in the engine bay diagnostic port on MK1 and appropriate MK2 Mazda MX5 and Eunos cars with original ECU. No responsibility is accepted for incorrect use or any damage caused by use of this tool.
- Do not use if pins are bent or the tool is damaged in any way.
- Do not expose to moisture or extremes of temperature.
- Keep stored in original packaging to protect the pins.

2. Features

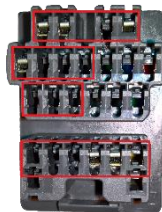


- 1=Display Screen
- 2=Control knob. Turn and press.
- 3=USB Socket.
- 4=Sounder
- 5=Connection Pins (Underneath)

3. Plugging and Unplugging

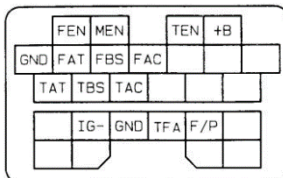
To install the tool, ensure ignition is off. Open the diagnostic port cover located in the engine bay near the air filter. Carefully align the pins of the tool with the pins of the diagnostic port as shown. Holding the sides of the case, press vertically down with a gentle but firm pressure so that the pins engage by 1 or 2mm into the port. The tool should remain level at all times.

To remove the tool, grasp the sides of the case and apply gentle but firm pressure upwards until the tool releases.



4. Available Functions

The ability of the diagnostic to perform some scans and tests depends of the availability of various pins in your diagnostic connector. All cars should allow scanning for engine codes, switch tests, rev counting, battery and fan test. The other functions with their pins are as follows:



- Aircon Scan:** FAC/TAC pins
- ABS Brake Scan:** FBS/TBS pins
- Auto Box Scan:** FAT/TAT pins
- Fan Test:** TFA pin
- Rev Counter:** IG- pin

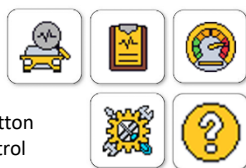
Please carefully check your diagnostic port to see which pins are fitted to determine which functions will work on the diagnostic tool

5. Turning On

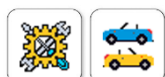
Once the tool is firmly in place, turn the ignition on. The display should illuminate, and the sounder should emit a series of beeps. If the display does not illuminate, turn off the ignition and check that the pins are correctly located and that the tool is firmly pressed into the connectors. *Note: If you have previously turned off sound, no beeps will be heard on switch on.*

6. The Menu System

The tool is operated using a menu system using a series of icons. Rotate the control button to scroll through the icons. The action of each icon is also shown in text at the bottom of the screen. Press the control button until it clicks to select an icon. Clicking the control button will also select items and exit screens.

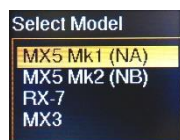


7. Setting the Model



Before performing a fault scan, you should select the vehicle model you are using the tool with. This is because different

models transmit different format codes. The default is MK1. Navigate to the **Model** menu option in the **Settings** menu. Highlight the appropriate model and click the control button.



8. Other Settings

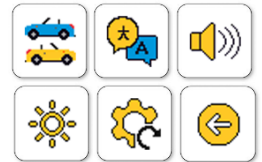
Various features of the tool can be adjusted using the items in the **Settings** sub-menu.

The **Language** option lets you select the default language of the tool (Currently only English available).

The **Sound** option allows you to disable the internal sounder for silent operation.

The **Backlight** option allows you to adjust the brightness of the display.

The **Factory Reset** option allows you to return all settings to their default.



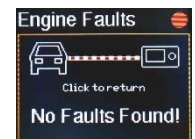
9. Scanning for Fault Codes



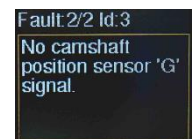
The tool will scan for fault codes from up to four categories depending on the make and model of the test vehicle. It will scan engine faults on all compatible vehicles and optionally scan for Air Conditioning, Auto Gearbox and Ant-lock braking system faults on vehicles with those systems installed and if the appropriate pin is present in the diagnostic connector (See section 4).

To scan for faults, open the **Diagnostics** sub-menu and then enter the further sub menu for the type of faults to scan.

Select the **Scan for Faults** icon to begin scanning for fault codes.



As the flash codes are received you will see a red circle flashing in the top right corner of the screen. If the circle does not flash, after a short period of time the tool will inform you that there are no faults. In this case, click the control button to return to the menu. If the circle is flashing, the tool will begin looking for the start of a message. After a few seconds (longer on MX5 Mk2), the tool will find the start of the fault data and begin reading in codes. As each fault code is read, the screen will update to show the count of faults found so far. This will continue until all codes have been read. At this point the tool will play a series of tones to alert you that the scan has completed and display the first fault code. The code number is the raw code sent from the ECU. The tool will display the fault related to this code and possible causes.



NOTE: The causes are simply suggestions and the user should check all reasons for any displayed faults.

Any further faults can be displayed by turning the control button. Click the control button to return to the menu. *Note: MK2 MX5 codes are 4 times the length of Mk1 codes and consist of 4 digits. Consequently, they will take much longer to scan – please be patient!* At any point during the scan process, click the control button to abort.

10. Viewing Previous Faults



The most recent scan results are stored permanently in the tool, even when powered off, until a subsequent scan overwrites them.

Use the **Previous Faults** icon in the appropriate diagnostics sub-menu to view the results of the most recent scan.

11. Cooling Fan Test

Note: This function may not work on some later models which have the cooling fan controlled by the ECU.



To enter this mode, select **Fan** icon from the **Tests** menu. The display will indicate that you are in fan test mode. Ensure that nothing is blocking the fan and that all loose clothing and hands are clear. Rotate the control button to operate the cooling fans. The display will display the fact that the fan is now operating. Rotate the control button to stop the fan. Click the control button to return to the main menu.

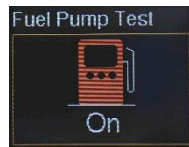


12. Fuel Pump Test



To enter this mode, select Fuel Pump from the Tests sub-menu. The display will indicate that you are in fuel pump test mode. The operation

time of the fuel pumps is limited to 2 seconds to prevent over-pressuring of the system, especially if there is a leak or fault. This test is only meant for testing fuel pressure and should be carried out only by competent technicians. Rotate the control button to operate the fuel pump. The display will display the fact that the fuel pump is now operating. Rotate the control button to stop the fuel pump. Click the control button to return to the menu.



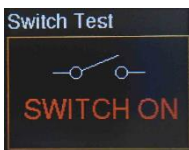
13. Switches Test



The tool can indicate whether a selection of switch inputs into the ECU are working. Select the

Switches icon from the **Tests** sub-menu to enter this mode. The display will indicate that you are in Switch Test mode and list details of which switches can be tested. You do not need to make any further selections for this function to operate as all switch inputs trigger the same output.

As each switch is operated in the vehicle, the display will indicate whether the operation was detected along with an audible warning. Click the control button to return to the menu. *Note: If the display shows "Switch Detected" immediately after entering this mode, this indicates that one or more of the switches are already operated. Click the control button to return to the menu and check all switches before re-trying.*



14. Battery Voltage



The tool can indicate the current battery voltage. To show the voltage meter select the **Battery Level** icon from the **Measurements** sub-menu. The screen will display the voltage.

With the engine off this is usually just below 12 volts. With the engine running this is usually between 12 and 14 volts. Press the control button to exit back to the menu.

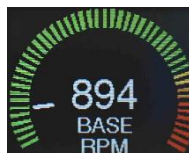


15. Rev Counter (Base Idle & Free)



When the ECU is in diagnostic mode, the timing is fixed, and the engine revs will drop slightly. This is referred to as

"Rev Base Idle" in the tool. This mode can be used to set the base idle rate of the engine.



When not in diagnostic mode, the timing is not fixed, and the engine will rev normally. This is referred to as **"Rev Free"** in

the tool. Use this mode to see revs at any level.

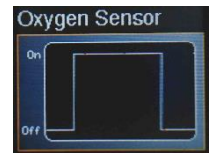


To show the rev meter select either **"Rev Base Idle"** or the **"Rev Free"** icon from the **Measurements** sub-menu. Press the control button to exit back to the menu.

16. Oxygen Sensor



The tool can display the operation of the oxygen sensor in the form of an ON/OFF scrolling graph.



To see the oxygen sensor operation, start the engine and select the **Oxygen Sensor** icon from the **Measurements** sub-menu. The scrolling graph will be displayed. The sensor will not operate until the engine is warm and is revving at approximately 3000 rpm or higher. This may take a couple of minutes. When the sensor starts operating you will see the line on the graph switch regularly between "On" and "Off"

17. Updating the Firmware

From time to time we may release new versions of the firmware used to run the tool. This firmware can be updated using the USB socket on the tool. For more information please visit our website at www.mx5tech.co.uk.

18. About



This function displays the current version of the firmware used by the tool. Please quote this version number if you ever need to contact us regarding your Diagnostic Tool. Click the control button to return to the menu.

19. Resetting Fault Codes in the ECU

If the Diagnostic Tool has detected fault codes which you have consequently repaired or fixed, they can be cleared from the ECU by disconnecting the battery and pressing the brake for a few seconds. Alternatively, you can remove the fuse marked **BTN** instead of disconnecting the battery. Unfortunately, there is no way to reset the ECU codes via the diagnostic connector.

20. Additional Important Notes

- When the Diagnostic Tool is plugged in, some functions place the ECU into diagnostic mode. **Do not attempt to drive the car with the tool plugged in.**
- If the tool does not immediately operate on turning on the ignition, turn off and double check the pin positioning.
- This tool will NOT read fault codes from aftermarket or modified ECUs, nor will it work with cars after the year 2000 with full OBD systems. However, it may still allow you to perform the test and measurement functions.

21. Problem Solving

If you have any problems with the Diagnostic Tool, please thoroughly read the information above. If the unit does not operate, the most likely cause is mispositioning of the pins or the tool not being plugged in firmly enough.

When checking for fault codes, if the red circle is flashing but codes are not being correctly read or not read at all, the most likely cause is that you have selected the wrong model of car. Check that you have selected the correct model.

More information and a FAQ is available on the website at www.mx5tech.co.uk

If the unit is not functioning, you can reset it to factory settings by holding down the control button when turning on the unit and continue holding it for 5 seconds.

If you need to contact us regarding your Diagnostic Tool, please send us an email at support@mx5tech.co.uk