

TurboGauge

USER MANUAL



The Ultra Compact
Vehicle Computer

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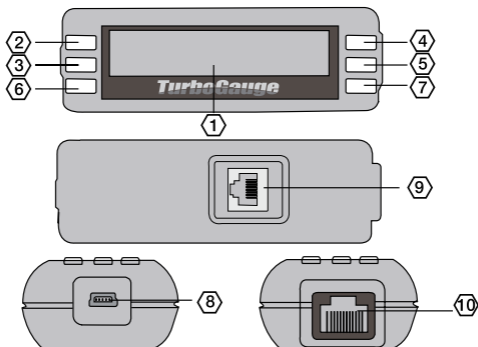
1. Safety Precautions and Warnings

To prevent personal injury or damage to vehicles and/or the TurboGauge, read this instruction manual first and observe the following safety precautions at a minimum whenever working on a vehicle:

- Always pay attention while driving.
- DO NOT try to make any adjustments while driving.
- DO NOT mount the TurboGauge in a position which can obstruct the view of the driver.
- DO NOT mount the TurboGauge in a manner which could cause it to be propelled through the vehicle during an accident causing injury, such as over or near an airbag.
- DO NOT route the cable in a manner which would interfere with the operation of the vehicle controls.
- Keep the TurboGauge dry, clean, free from oil/water or grease. Use a mild detergent on a clean cloth to clean the outside of the TurboGauge, when necessary.

TurboGauge

2. Using the TurboGauge



2.1 Tool Descriptions

1. LCD Display -- Display retrieved data.
- 2.3.4.5 Menu Selection Buttons -- When there are some icons or items on the screen next to the button, press it to perform the functions.
6. Button -- Return to previous screen, exit a menu or wake up the tool from sleep mode.
7. Button -- Move to next screen; it is also used to enter time setup screen.
8. USB Port -- Connect the tool to a computer with the USB cable supplied to update the tool.
- 9.10. OBDII Connector Port -- Connect the tool to vehicle's DLC with the OBDII cable supplied.

2.2 Specifications

- 1). Display: Backlit, 2 lines * 16 character display
- 2). Operating Temperature: -10 to 70°C (14 to 158 F°)
- 3). Storage Temperature: -20 to 70°C (-4 to 158 F°)
- 4). Power: 8 to 18 volts provided via vehicle power
- 5). Dimensions:

Length	Width	Height
126 mm (5 in)	41.6 mm (1.61 in)*	26.6 mm (1.05 in)

- 6). NW: 0.30kg (0.60lb), GW: 0.35kg(0.72lb)

2.3 Accessories Included

- 1). User manual/ quick start guide -- Instructions on tool operations
- 2). OBD II cable -- Provides power to the tool and communicates between the tool and vehicle.
- 3). USB cable -- Connects the tool to a computer for software update.
- 4). CD -- Includes user manual, DTC lookup software and etc.
- 5). Velcro mounting strips -- Used to affix the TurboGauge onto the vehicle.

2.4 Navigation Characters

Characters used to help navigate the auto computer are:

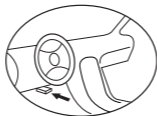
- 1). > or < or *-- Indicates the button next to it can be used and presses it to do what is displayed next to it.
- 2). "←" Moves to previous digit.
- 3). "→" Moves to next digit; Indicates an option is selected.
- 4). "+" -- Increase digit value.
- 5). "-" -- Decrease digit value.
- 6). "\$" -- Indicates the cost of fuel consumption.

2.5 Connection to the Vehicle

Follow the below steps to connect the tool to the vehicle:

- 1). Connect the OBDII cable to the tool.
- 2). Place the tool to the position you have chosen.
- 3). Locate DLC on vehicle.

The DLC (Data Link Connector or Diagnostic Link Connector) is a standardised 16-cavity connector where diagnostic auto computers interface with the vehicle's on-board computer. The DLC is usually located 12 inches from the center of the instrument panel (dash), under or around the driver's side for most vehicles. If Data Link Connector is not located under dashboard, a label should be there telling location. For some Asian and European vehicles, the DLC is located behind the ashtray and the ashtray must be removed to access the connector. A plastic DLC cover may be found for some vehicles and you need to remove it before plugging the OBDII cable. If the DLC cannot be found, refer to the vehicle's service manual for the location.



- 4). Plug the OBDII cable into the vehicle's DLC.
- 5). Turn the ignition on. Engine can be off or running.
- 6). The TurboGauge starts to communicate with the vehicle.

● **If auto computer links to the vehicle, but fails to communicate with the vehicle's ECU (Engine Control Unit) for the first time, the tool will turn off automatically.**

Follow steps below to troubleshoot if the tool cannot open:

- √ Verify that the ignition is ON;
 - √ Check if the OBDII connector is firmly connected to the vehicle's DLC;
 - √ Verify that the vehicle is OBDII compliant;
 - √ Turn the ignition back to on and repeat the procedure from step 5.
- 7). When communication has been established, the **HOME** screen will be displayed.



● By default, the **HOME** screen displays 4 menu options as shown in the figure above. It can be set to show the **Gauge, Tank, Total, Today and Current** information also. **HOME** screen hereafter in the manual refers to the default setting.

2.6 Turn off

- 1). Pull out the OBDII connector
- 2). The tool will turn off automatically in 10-20 seconds if no operation, after communication stops, or the engine stops
- 3). Hold the right-lower button to turn off the tool. The operation is available only at first or menu.
- 4). Turn off the vehicle, the tool will turn off after 20 seconds.

3. Scan Tool

3.1. Reading and erasing Codes (Home>Scan>DTC)

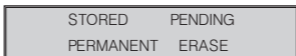
- 1). Press the button next to "SCAN" to start scanning.



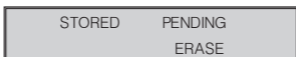
- 2). Press the button next to "DTC" to read the trouble code.



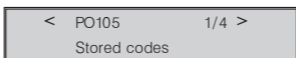
3). There are four sub-menu options from the DTC menu if the vehicle protocol is CAN.



If the vehicle protocol is not CAN, the menu will only contain three items.



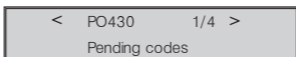
4). Press the button next to "Stored" to read the stored code.



If no codes are found, the screen will show "No codes!"

Press the lower-left button to return to the "DTC " menu

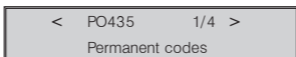
5). Press the button next to "Pending" to read the pending code.



If no codes are found, the screen will show "No codes!"

Press the lower-left button to return "DTC " menu

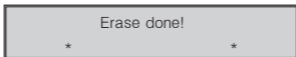
6). Press the button next to "Permanent" to read the permanent code.



If no codes are found, the screen will show "No codes!"

Press the lower-left button to return "DTC " menu

7). Press the button next to "Erase" to erase the trouble codes.



CAUTION: Erasing the Diagnostic Trouble Codes may allow the trip computer to delete not only the codes from the vehicle's on-board computer, but also "Freeze Frame" data and manufacturer enhanced data. Further, I/M Readiness Monitor Status for all vehicle monitors are reset to Not- Ready or Not-Complete status. Do not erase the codes before the system has been checked completely by a technician.

8) Press the lower-left button to return "DTC " menu

3.2. Retrieving I/M Readiness Status (Home>Scan>I/M)

I/M Readiness function is used to check the operations of the Emission System on OBDII compliant vehicles, including the below.

1. Malfunction Indicator Lamp Status (MIL)
2. Misfire Monitoring (MIS).
3. Fuel System Monitoring (Fuel)
4. Comprehensive Component Monitoring (CCM)
5. Catalyst Monitoring (CAT)
6. Heated Catalyst Monitoring (HCAT)
7. Evaporative System Monitoring (EVAP)
8. Secondary Air System Monitoring (AIR)
9. A/C System Refrigerant Monitoring (ACRF)
10. Oxygen Sensor Heater Monitoring (O2S)
11. Oxygen Sensor Heater Monitoring (HTR)
12. EGR System Monitoring (EGR)

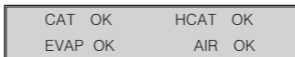
Besides, the below words show these monitors status:

- √ "OK" -- Indicates that a particular monitor being checked has completed its diagnostic testing.
- √ "NC" -- Indicates that a particular monitor being checked has not completed its diagnostic testing.
- √ "NA" -- The function is not supported on that vehicle.
- √ "ON" -- The malfunction indicator lamp is on.
- √ "OF" -- The malfunction indicator lamp is off.

- 1). Press the button next to "I/M" to view I/M readiness status.



- 2). View I/M readiness status on screen.



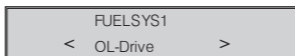
- 3). Use the upper four buttons next to any of the items or use lower-right button to view additional data on next screen(s).
- 4). Press lower-left button to exit.

3.3 Reading Freeze Frame Data (Home>Scan>FRZ)

- 1). To view freeze frame data,press the button next to "FRZ".



2). Use the button next to "<" and ">" to view previous or next PID data.



If there is no freeze frame data available, a "No freeze frame" message shows on the screen. Press "*" to return.

3). Press the lower-left button to exit.

3.4 Viewing VIN Number(Home>Scan>INFO)

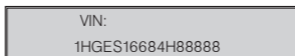
The tool is able to retrieve Vehicle Identification number on 2002 and newer vehicles that support Mode 9.

1). Press the button next to "INFO" to view vehicle information.



If the vehicle does not support this mode, a "Not supported!" message comes up on the display. Press "*" or wait a few seconds to return.

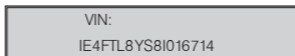
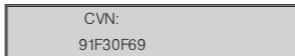
2). View VIN no. on screen.



If the vehicle supports both VIN and CVN, the unit shows them as belows:



Press the respective button to review the CVN and VIN.



3) Press the lower-left button to exit.

4. Gauge

The TurboGauge can be configured to measure and monitor up to four different sets of information simultaneously, providing real-time engine performance analysis to allow you to adjust driving behavior and improve fuel economy.

1. Fuel system 1 status (LP1)
 2. Fuel system 2 status (LP2)
 3. Calculated load value (LOD)
 4. Engine coolant temperature (ECT)
 5. Fuel rail pressure (FRP)
 6. Intake manifold absolute pressure (MAP)
 7. Engine speed (RPM)
 8. Vehicle speed (VSS)
 9. Ignition timing advance for #1 cylinder (IGN)
 10. Intake air temperature (IAT)
 11. Air flow rate from mass air flow sensor (MAF)
 12. Absolute throttle position (TP)
 13. Commanded secondary air status (AIR)
 14. Short term fuel trim (B1-S1) --- (B1-S4) if it supports PID 13 or 1D
 15. Oxygen sensor output voltage (B1-S1) --- (B1-S4) if it supports PID 13 or 1D
 16. Short term fuel trim (B2-S1) --- (B2-S4) if it supports PID 13 or 1D
 17. Oxygen sensor output voltage (B2-S1) --- (B2-S4) if it supports PID 13 or 1D
 18. Battery voltage (VLT)
- 1). Press the button next to "GAUGE" to view gauge readings.



- 2). View currently selected gauges on screen.



● The information available varies from vehicle to vehicle. If the information is not available for a certain gauge, the trip computer shows " ".

● When the selected gauges are displayed for about 12 seconds, the trip computer records them automatically. It shows these 4 gauges directly when viewing gauges readings next time.

3). Use the upper four buttons next to any of the items or use lower-right button to view additional data on next screen(s).

4). Press the lower-left button to exit.

5.Trip Computer

The auto computer records information about CURRENT, TODAY,TANK and TOTAL trips.

5.1 Current Trip:(Home>Trip>Current).

Displayed data are as follows:

1. Average LPH (Unit: LPH)
2. Average LHK (Unit: LHK)
3. Time (Unit: __:__)
4. Distance (Unit: KM)
5. Fuel (Unit:L)
6. Cost (Unit:\$)
7. Average Speed (Unit: KPH)
8. Max. Speed (Unit: KPH)
9. Instant LPH (Unit: LPH)
10. Instant LHK (Unit: LHK)
11. Horsepower (Unit: KW)

NOTE: Definition of one trip is the time from engine ignition to engine turn-off must be > 30 minutes.

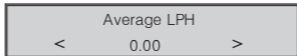
- 1).Press the button next to "TRIP" from home screen.



- 2).Press the button next to "CURRENT" to enter current trip screen



- 3).View detailed trip information on the screen.



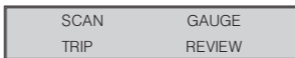
Press the button next to "< " and " >" to choose the next trip information

- 5). Press the lower-left button next to return the previous menu.

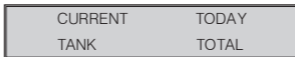
5.2 Today Trip:(Home>Trip>Today)

Displayed data are as follows:

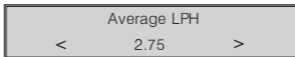
1. Average LPH (Unit: LPH)
 2. Average LHK (Unit: LHK)
 3. Time (Unit: __:__)
 4. Distance (Unit: KM)
 5. Fuel (Unit:L)
 6. Cost (Unit:\$)
 7. Average Speed (Unit: KPH)
 8. Max. Speed (Unit: KPH)
- 1). Press the button next to "TRIP" from home screen.



- 2). Press the button next to "TODAY" to enter today trip screen



- 3). View detailed trip information on the screen.



- Press the button next to "<" and ">" to choose the next trip information
- 5). Press the lower-left button next to return the previous menu.

5.3 Tank Trip:(Home>Trip>Tank)

The TANK trip shows the following items:

1. Average LPH (Unit: LPH)
 2. Average LHK (Unit: LHK)
 3. Fuel (Unit: L)
 4. Cost (Unit:\$)
 5. Fuel to empty(Unit:L)
 6. Distance (Unit: KM)
 7. Tank to empty (Unit: KM)
 8. Time (Unit: __:__)
 9. Time to empty (Unit: __:__)
- 1). Press the button next to "TRIP" from home screen.



2). Press the button next to "TANK" to enter tank trip screen

CURRENT	TODAY
TANK	TOTAL

3). View detailed trip information on the screen.

Average LPH		
<	2.75	>

Press the button next to "<" and ">" to choose the next trip information

5). Press the lower-left button next to return the previous menu.

5.4 Total Trip:(Home>Trip>Total)

The Total trip shows the following items:

1. Average LPH (Unit: LPH)
2. Average LHK (Unit: LHK)
3. Time (Unit: __: __)
4. Distance (Unit: KM)
5. Fuel (Unit:L)
6. Cost (Unit:\$)
7. Average Speed (Unit: KPH)
8. Max. Speed (Unit: KPH)

1). Press the button next to "TRIP" from home screen.

SCAN	GAUGE
TRIP	REVIEW

2). Press the button next to "TOTAL" to enter total trip screen

CURRENT	TODAY
TANK	TOTAL

3). View detailed trip information on the screen.

Average LPH		
<	0.00	>

Press the button next to "<" and ">" to choose the next trip information

5). Press the lower-left button next to return the previous menu.

6. REVIEW-Car Black Box^(Home>REVIEW)

The tool is able to save up to 300 hours of driving data. Data from each trip is recorded for the following categories:

Time and date each trip starts and ends

Duration time travelled each trip

Distance travelled each trip

Fuel used

Cost of fuel used

Average speed

Maximum speed during trip

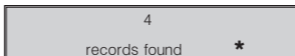
Average LPH

Average LHK

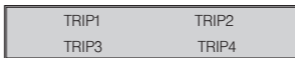
1).Review home screen.



2). Press the button next to "Review".

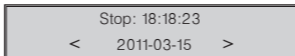
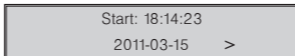


3). Select a set of trip information to view.



4). Press the button next each trip to view detailed trip information.

Trip start and Trip end



Duration and Distance

Duration		
<	0:04	>

Distance		
<	25Km	>

Fuel used and Cost used

Fuel used		
<	0.5 L	>

Cost		
<	\$ 0.20	>

Average speed and Maximum speed.

Average Speed		
<	104.0KPH	>

Maximum Speed		
<	124.KPH	>

Average LPH and Average LHK

Average LPH		
<	27.6	>

Average LHK		
<	25.3	>

5). Press the lower-left button, it returns to the previous screen.

7. Tool Information

Tool information includes the following:

- 1). Fuel: Used to refuel the vehicle every time
- 2).Rate: Sets sampling and recording rate
- 3).Time: Changes time displayed by the auto computer
- 4). Display: Sets contrast, display mode and light of the tool
- 5). Price: Sets the fuel cost
- 6). Setup: Sets unit, type, size and engine of the tool
- 7). Default: Resets all units, engine displacement, engine type, tank size, gauge settings, trip data and screen settings to manufacturer defaults
- 8). About: The version and conversion

7.1 Fuel (Home>>Fuel)

>> Means to press the lower-right button once

NOTE: In order to get more accurate fuel consumption readings, and to get valid TANK information, use the Fuel function every time your vehicle is refueled. Make sure the tank size and the fuel type are properly set before using this function.

- 1). Press the button next to "FUEL" to enter fuel setup menu.

FUEL	RATE
TIME	DISPLAY

7.1. Refueling

- 1). Press the button next to "REFUELING".

REFUELING	RESET
CUT OFF	CORRECT

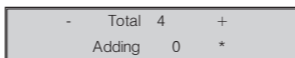
- 2). There will be displayed two signals on the second line: "\$" and "L"

Metering	
\$	L

- 3). Press the button next to "\$" or "L" to adjust the fuel.
"\$" stands for the fuel cost and "L" stands for the fuel volume

-	Total	0.0	+
	Adding	0.0	*

4). Use the button next to "-" or "+" to adjust the amount of fuel which the user put in the tank.



5). Press "*" to finish the adjustment, and the fuel economy will be immediately affected by the adjustment.

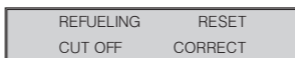
Record the adjustment factor for your vehicle if you use it in another vehicle and then return it back to this one, so you can later adjust it back to this one without repeating the steps above.

6). Keep the TurboGauge connected to the vehicle and use the vehicle normally. Once you reach approximately 1/4 tank of fuel left, please kindly refuel the vehicle.

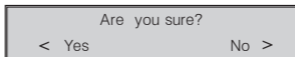
- Fill the tank in gas station and let the pump shut off automatically.
- When filling the tank on your second refuel, try to use the same pump you used for your first refuel with the vehicle pointed in the same direction. If you refuel your fuel tank with your vehicle on an incline, it can have an effect on the amount of fuel the pump can dispense into your tank.
- Drive your vehicle normally with the auto computer connected.
- When filling your tank, let the pump shut off automatically - don't top off.
- Keep the refuel operation after fill up each time.

7.1.2 RESET

1). Press the button next to "RESET" to enter fuel reset menu.



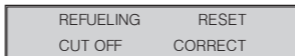
2). Choose the buttons next to "<" and ">", and reset the fuel set.



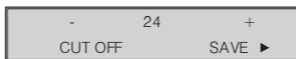
- keep the reset operation before the first refuel and better not to reset the product after the later refuel operation.

7.1.3 CUT OFF

1). Press the button next to "CUT OFF" to enter fuel cut off menu.



- 2). Use the button on the upper left or upper right to select the fuel type your vehicle uses.

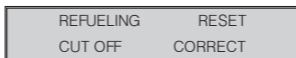


Some vehicles will turn the fuel injectors off when coasting. This will cause the fuel economy to go to 9999 MPG to 0.00KHL. This shows when you are not using any fuel while coasting. This is sensed through the open/closed loop indicator and the throttle position. To tell if the throttle is closed, the throttle position is checked against the CUT OFF value. CUT OFF is the value the throttle has to be above in order to indicate a fuel cutoff and show 0 fuel flow.

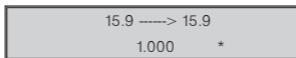
- 3). Choose the suitable data via the button next to "+" and "-", then press SAVE button, then it returns the "Setup" Menu.

7.1.4 CORRECT

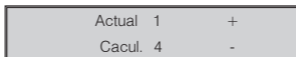
- 1). Press the button next to "CORRECT" to enter fuel correct menu.



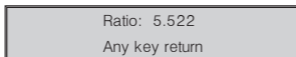
- 2). Press the button next to "*" to adjust the real fuel consumption.



- 3). Press the buttons next to "-" or "+" to adjust the amount of actual fuel refilled.



- 4). Press the lower-right button to save the adjust result.

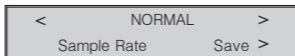


7.2. Rate (Home>>Rate)

- 1). Press the lower-right button from HOME screen.



- 2). Press the button next to "RATE".



- 3). Use the upper-left and upper-right button to select a sampling rate among "Auto", "NORMAL" and "SLOW", and press "SAVE" button to save the setup. it returns to RATE Menu.
NORMAL is the factory default rate. If this causes some updates to be skipped or irregular operation, "SLOW" should be used.

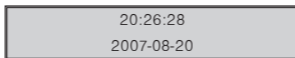
7.3. Time (Home>>Time)

- 1).press the lower-right button from "HOME" screen.

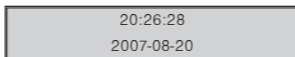


- If the HOME screen is set to display information of current trip,press the lower-right button to enter HOME screen and then to Tool Information.

- 2). Press the button next to "TIME".



- 3). Press the lower-left button to enter time adjustment screen.



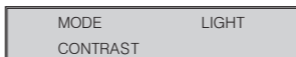
- 4). Use the button next to " ← " or " → "to select a digit, and then use the button next to " - " or " + " to increase or decrease the value.
- 5). Press the lower-left button to finish and save the setup, or press the lower-right button to exit without saving the settings.

7.4. Display (Home>> Display)

1). Press the lower-right button from HOME screen.

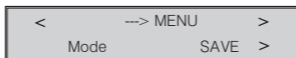


2). Press the button next to "DISPLAY".



A. Enter Mode Menu

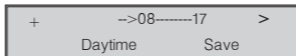
1).To change the display mode of trip items,press the button next to MODE.



2). Use the upper left or upper right button to change among "MENU ", "CURRENT","TODAY","TOTAL","TANK" and "GAUGE",and press SAVE. and return to Display menu.

B. Enter Light Menu

1). To change the display of home screen,press the button next to HOME.

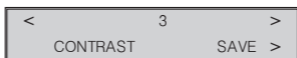


2). Use the button next to > to select the correcting time. then the time item will show <- or --->. Use the button next to + to correct the time value. and press "SAVE".

- This procedure is used to set the daytime, so the other time is night time.
- When the time is daytime, the light will be stronger than that in night time.

C. Enter Contrast Menu

1). To change the contrast of display,press the button next to CONTRAST.



2). Use the button next to "-" or "+" to adjust the contrast, and press "SAVE".

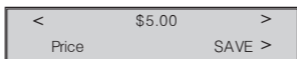
7.5. Price (Home>> >>Price)

(>> means the use press the lower-right button twice)

1). Press the button next to "Price" and enter the menu.



2). Use the button next to "<" or ">" to adjust the contrast, and press "SAVE".



7.6. Setup (Home>> >>Setup)

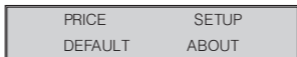
The auto computer allows you to make the following adjustments and settings:

- 1). Type: Selects the fuel type your vehicle uses.
- 2). Size: Sets tank size of the vehicle.
- 3). Engine: Sets up engine size.
- 4). Units: Changes unit of measure.

● The auto computer uses flash memory to save settings, so the data will not be lost if the unit is disconnected from the vehicle

To enter setup menu (Home> Setup)

Press the button next to SETUP to perform various setups.



NOTE: In order to get accurate data of fuel consumption, distance to empty, time to empty and etc., always perform setup like it is the first time using the TurboGauge in a vehicle. For example, if you use it in another vehicle and return it back to the original one, or if the unit is reset to factory settings.

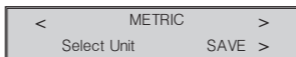
TurboGauge

7.6.1 Units (Home>> >>Setup> Unit)

1. Press the button next to "UNIT" change units of system.



2). Use the upper left or upper right button to change between metric and English unit of measure, and press "SAVE". then it returns the Setup Menu

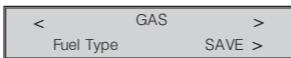


7.6.2 Type (Home>> >>Setup>Type)

1). Press the button next to "TYPE" to enter fuel setup menu.

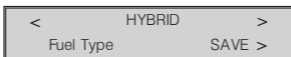


2). Use the button on the upper left or upper right to select the fuel type your vehicle uses.



There are **DIESELa**, **DIESELb**, **HYBRID**, **GAS**, **LPG** fuels types to choose. **DIESELa** and **DIESELb** do not refer to different types of diesel fuel. They only affect the way fuel consumption is computed and are selected based on the way the vehicle computer reports its sensor information. Most diesel vehicles use DIESELa. Do the following to determine which option your diesel vehicle uses: **Set engine size --> choose DIESELa --> warm up the engine and idle in neutral or park --> select GAUGE and have one of the gauges show RPM and another show GPH --> note the GPH value--> use the throttle to raise the engine RPM to about 1500 RPM.** If the GPH reading increases, you have a DIESELa vehicle. If the GPH drops or stays the same, you have a DIESELb vehicle.

3). Press SAVE button and an "→" icon appears on the screen indicating the type is selected. then it returns the "Setup" Menu

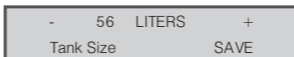


7.6.3 Tank Size (Home>> >>Setup>Size)

1). Press the button next to "SIZE" to set the tank size of your vehicle.



2). Use the button next to "-" or "+" to change the tank size, and press SAVE button to save, then it returns the "Setup" Menu.

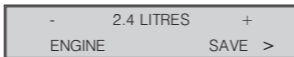


7.6.4 Engine (Home>> >>Setup>Engine)

1). Press the button next to "ENGINE".



2). Use the button next to "-" or "+" to change engine size, and press SAVE button, then it returns the "Setup" Menu

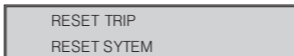


7.7 Default (Home>> >> Default)

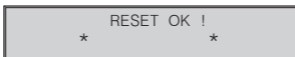
1). To reset the TurboGauge to original factory settings, press the lower-right button from the HOME screen twice.



2). Press the button next to "DEFAULT".



- 3). Choose the RESET TRIP or RESET SYSTEM .

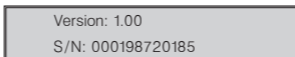


7.8 ABOUT(Home>> >> ABOUT)

- 1). To reset the TurboGauge to original factory settings, press the lower-right button from the HOME screen twice.



- 2). Press the button next to see the SN.



- 3). Press the lower-left button to return.

8. Update

- 1). Please kindly download the update software from the website to the computer.
- 2). Install the update software to your TurboGauge via the USB cable.
- 3). After updating the Turbo Gauge, please reset the tool.

9 Appendix

9.1 Gauge Abbreviations

LP1	Fuel system 1 status	LP2	Fuel system 2 status
LOD	Calculated load value	ECT	Engine coolant temperature
FPR	Fuel rail pressure	MAP	Intake manifold absolute pressure
RPM	Engine speed	VSS	Vehicle speed
IGN	Ignition timing advance for #1 cylinder	IAT	Intake air temperature
MAF	Air flow rate from mass air flow sensor	TP	Absolute throttle position
AIR	Commanded secondary air status	(B1-S1) - (B1-S4)	Short term fuel trim if it surport PID 13 or 1D
(B1-S1) - (B1-S4)	Oxygen sensor output voltage if it surport PID 13 or 1D	(B2-S1) - (B2-S4)	Short term fuel trim if it surport PID 13 or 1D
(B2-S1) - (B2-S4)	Oxygen sensor output voltage if it surport PID 13 or 1D	VLT	Battery voltage

9.2. SCAN Abbreviations

MIL	Malfunction Indicator Lamp Status	CCM	Comprehensive Component Monitoring
MIS	Misfire Monitoring	FUEL	Fuel System Monitoring
CAT	Catalyst Monitoring	EGR	EGR System Monitoring
HCAT	Heated Catalyst Monitoring	EVAP	Evaporative System Monitoring
AIR	Secondary Air System Monitoring	ACRF	A/C system refrigerant Monitoring
O2S	Oxygen Sensor Monitoring	HTR	Oxygen Sensor Heater Monitoring
FRZD	Freeze Data	VIN	Vehicle No.
ACL	Acceleration	Ext. Acl	Extreme Acceleration
DTC	Diagnostic Trouble Code	SMP Rate	Systems Management Processor Rate

9.3. TRIP UNIT Abbreviations

Current Trip Unit

		Metric	Definition	English	Definition
1	Average LPH	LPH	Liter /Hour	GPH	Gallon / Hour
2	Average LHK	LHK	Liter /100 kilometers	MPG	Mile / Gallon
3	Time	__ : __	Hour: Minute	__ : __	Hour: Minute
4	Distance	KM	Kilometer	MI	Mile
5	Fuel	L	Liter	GAL	Gallon
6	Cost	\$	dollar	\$	dollar
7	Average Speed	KPH	Kilometer/Hour	MPH	Mile /Hour
8	Maximum Speed	KPH	Kilometer/Hour Max.	MPH	Mile /Hour
9	Instant LPH	LPH	Liter /Hour	GPH	Gallon / Hour
10	Instant LHK	LHK	Liter /100 kilometers	MPG	Mile / Gallon
11	Horsepower	KW	KW	HPR	HPR

Today Trip Unit

		Metric	Definition	English	Definition
1	Average LPH	LPH	Liter /Hour	GPH	Gallon / Hour
2	Average LHK	LHK	Liter /100 kilometers	MPG	Mile / Gallon
3	Time	__ : __	Hour: Minute	__ : __	Hour: Minute
4	Distance	KM	Kilometer	MI	Mile
5	Fuel	L	Liter	GAL	Gallon
6	Cost	\$	dollar	\$	dollar
7	Average Speed	KPH	Kilometer/Hour	MPH	Mile /Hour
8	Maximum Speed	KPH	Kilometer/Hour Max.	MPH	Mile /Hour

Tank Trip Unit

		Metric	Definition	English	Definition
1	Average LPH	LPH	Liter /Hour	GPH	Gallon / Hour
2	Average LHK	LHK	Liter /100 kilometers	MPG	Mile / Gallon
3	Fuel	L	Liter	GAL	Gallon
4	Cost	\$	dollar	\$	dollar
5	Fuel to empty	L	Liter	GAL	Gallon
6	Distance	KM	Kilometer	MI	Mile
7	Tank to empty	KM	Kilometer	MI	Mile
8	Time	__ : __	Hour: Minute	__ : __	Hour: Minute
9	Time to empty	__ : __	Hour: Minute	__ : __	Hour: Minute

Total Trip Unit

		Metric	Definition	English	Definition
1	Average LPH	LPH	Liter /Hour	GPH	Gallon / Hour
2	Average LHK	LHK	Liter /100 kilometers	MPG	Mile / Gallon
3	Time	__:__	Hour: Minute	__:__	Hour: Minute
4	Distance	KM	Kilometer	MI	Mile
5	Fuel	L	Liter	GAL	Gallon
6	Cost	\$	dollar	\$	dollar
7	Average Speed	KPH	Kilometer/Hour	MPH	Mile /Hour
8	Maximum Speed	KPH	Kilometer/Hour Max.	MPH	Mile /Hour

10.Warranty and Service

10.1 Limited One Year Warranty

Endeavour Tools warrants to its customers that this product will be free from all defects in materials and workmanship for a period of one (1) year from the date of the original purchase, subject to the following terms and conditions:

- 1). The sole responsibility of Endeavour Tools under the warranty is limited to either the repair or, at the option of Endeavour Tools, replacement of the Turbo Gauge at no charge with proof of purchase. The sales receipt may be used for this purpose.
- 2). This warranty does not apply to damages caused by improper use, accident, flood, lightning, or if the product was altered or repaired by anyone other than the Manufacturer's Service Center.
- 3). Endeavour Tools shall not be liable for any incidental or consequential damages arising from the use, misuse, or mounting of the TurboGauge.
- 4). All information in this manual is based on the latest information available at the time of publication and no warranty can be made for its accuracy or completeness. Endeavour Tools reserves the right to make changes at any time without notice.
- 5). This product also comes with guarantees that cannot be excluded under Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. The benefits provided to you as the consumer by this warranty are in addition to other rights and remedies available to you under the law.

10.2. Service Procedures

If you have any questions, please contact your local store, distributor or visit our website: www.endeavourtools.com.au

For technical support, or to make a warranty claim please contact Endeavour Tools by email (support@endeavourtools.com.au) or by phone on 03 9753 3800.

