ScanGauge ^{e}

By Linear Logic

™

www.ScanGauge.com

ScanGauge ^{e}

`32.1MPG`
`27.1AVG`

User Manual

Plugs into the diagnostic connector already built into all 1996 or newer cars and light trucks.

Version 1.0

WARNING

Use of the ScanGauge while driving could lead to an accident and serious injuries. The primary attention of the driver should always be on safe driving. As with any gauge or other instrumentation system in a motor vehicle, the information should be observed as part of a normal sequence of observations performed in the operation of the vehicle. Changes to the selections in the ScanGauge should only be made when it is safe to do so. The driver must remain attentive to driving the vehicle.

The mounting of the ScanGauge and the routing of the cable connecting it to the vehicle should be done with suitable caution so it does not create an unsafe condition. This includes but is not limited to the following restrictions:

- **Do Not mount the ScanGauge where it can obstruct the view of the driver.**

- **Do Not mount the ScanGauge in a manner that could cause it to be propelled through the vehicle during an accident causing injury, such as over or near an air bag.**

- **Do Not route the cable in a manner that would interfere with the operation of the vehicle controls.**

RIGHTS AND OBLIGATIONS

The ScanGauge may be used on any number of vehicles. The software contained in the ScanGauge is copyright protected by Linear Logic and may not be transferred or disassembled and used in another product, in part or in whole. The artwork used in generation of the circuitry is also copyright protected and cannot be used in part or in whole by any person or entity without the express written permission of Linear Logic.

Version 1.0

Information in this manual and the specifications and operation of
the ScanGauge itself are subject to change without notice.

Installing the ScanGauge

The ScanGauge is simple to install and requires no additional power source other than the OBDII connector.
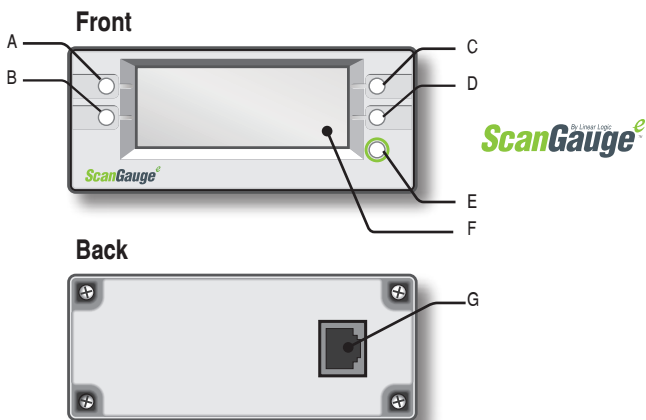
There are, however, some important considerations when choosing a location for your ScanGauge. Please see the Installation section for detailed information.

ScanGauge Overview

Package Contents

- ScanGauge
- Velcro® Strip
- Quick Start Guide
- 6ft OBDII Cable
- User Manual

Front

Back

A.	Function/Selection Button	The function buttons are used to make selections and to navigate the menu system of the ScanGauge
B.	Function/Selection Button	
C.	Function/Selection Button	
D.	Function/Selection Button	
E.	HOME Button	Use the HOME Button to quickly get back to the home screen
F.	LCD Display Screen	Displays the information the ScanGauge records
G.	OBDII Connection Plug	Connects the ScanGauge to the vehicle

Basic Operation and Features

Menu and Selection Buttons

The ScanGauge interface is made up of 5 buttons; one HOME and 4 function/select buttons. The HOME button, located in the lower right corner of the front face and marked with a green circle, has a single function — to display the Home Screen. Pushing the HOME button will always display the Home Screen as shown to the right.
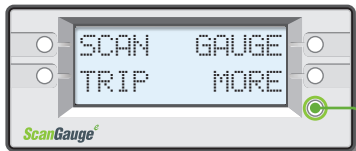
Push the HOME button to return to the HOME menu at anytime.

The function/select buttons are located at each corner of the display. The function of these buttons will vary depending on the particular screen you are currently viewing.

In general, when a "<" or ">" is displayed next to the button, pressing the button will move you to the next or previous selection for the currently selected feature.

Use the diagram to the left for an explanation of possible button functions.

Button Symbols	
Symbol	Function/Action
>	Move to next selection
<	Move to previous selection
↑	Move up one level
⇨	Step into function (not shown in above example)

From the Home Screen, pressing the button at the upper left corner will bring up selections for scanning the vehicle's computer for Trouble Codes and other information. Pressing the upper right button will bring up gauges showing the current information for the vehicle, such as speed, RPM, fuel economy, etc. Pressing the lower left button shows trip information and the lower right button brings up more types of selections.

Automatic Sleep Mode

About 12 seconds after turning off the vehicle or pressing a button after the vehicle engine is turned off, the ScanGauge will automatically power down into a sleep mode. Starting the engine or pressing the HOME button will automatically reactivate the ScanGauge, and it will return to the screen and lamp settings it had just before it went to sleep.

⚠️ If you need to disconnect the ScanGauge, wait until it has gone to sleep before you do it. This will allow all settings and trip information to be saved in Flash memory and restored when it is reconnected.

Automatic Mode Recognition

Different vehicles use different types of signaling from their computers. In most cases, the ScanGauge can quickly determine which type your vehicle is using. You don't have to know which type it is for it to be used.

Automatic Repeat Buttons

Pressing the buttons and holding them for more than a second will cause them to automatically repeat at a rate of about 2 times per second. This allows for rapid stepping to a value without a lot of button pressing.

Real-time Feedback Graph

The ScanGauge provides you with real-time information about your vehicle's fuel economy through an intuitive real-time graphic display.

Flash Memory

The ScanGauge uses a type of memory that doesn't require batteries or a source of power to maintain. This means that your settings will not be lost if you disconnect the vehicle battery or disconnect the ScanGauge.

Customizable Backlight Color

Choose from 7 standard backlight colors or program your own for 63 possible colors. The backlight intensity is also adjustable and can be set to Off, Low and High intensities.

Installation

1. **Locate the OBDII connector.**
   This connector is normally located under the dash on either side of the steering column. It can also be located under the dash on the passenger side in some vehicles. On rare occasions it is behind the ashtray in the dash or in the armrest. It may have a cover on it that can be pulled off by hand.

2. **Locate a place for the ScanGauge.**
   You can use the sticky-back Velcro® supplied with the ScanGauge to attach it to the location you have chosen. The Velcro® attachment allows you to easily remove it and use it to troubleshoot another vehicle and then return it to this vehicle.

   The location should be where it can easily be seen from the normal driving position. It should not be placed where it will obstruct the driver's view outside the vehicle or of other gauges.

   ⚠️ DO NOT mount the ScanGauge over an air bag cover where it could be propelled by a deploying air bag.

3. **Route the cable.**
   Route the cable from the OBDII connector and plug the small end of the cable into the back or side of the ScanGauge.

   ⚠️ IMPORTANT: A pin in the cable is connected to the vehicle's 12V system. Do not short any pins of the small connector to metal or other ground when the OBDII plug is plugged into the OBDII connector.

4. **Turn the vehicle on.**
   If the vehicle can be run, start it. If it cannot be run, turn the key to the Run position. This is the position it is normally in when the vehicle is being driven.

Typical OBDII connector location
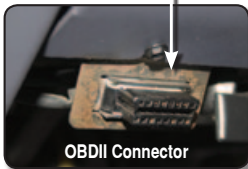
OBDII Connector

**Large end of the cable** connects to your vehicle.

Small end of the cable connects to your ScanGauge.

5. **Plug the ScanGauge plug into the OBDII socket.**

The ScanGauge derives all the power it needs from the OBDII connector. No other connections are needed for its operation.

Wait for the ScanGauge to connect. When the ScanGauge is first connected, it attempts to communicate with the vehicle. Communications can be established with the key in the Run position, even if the engine is not actually running. It could take up to 60 seconds for the connection to be made after the unit is plugged in with the key in the Run position.

While establishing communications, the screen will display:

Connecting Screen   HOME Screen
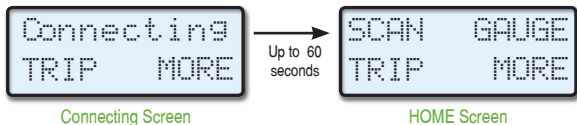
If it does not stop saying "Connecting" or the screen goes blank after 60 seconds, refer to Troubleshooting on page 40.

The TRIP and MORE buttons can be used even if a connection is not established. If communication with the vehicle ECU is not completed within about 75 seconds, the ScanGauge goes to sleep. It will continue to attempt to connect when the vehicle is restarted or the HOME button pressed. When communication has been established, the display will change over to that which was displayed the last time it went to sleep or to the HOME screen.

6. **If this is the first time it has been used on this vehicle, follow the procedures outlined in Setting Up Your ScanGauge on page 12.**

Important Installation Considerations

The ScanGauge has an operating temperature range of 0˚F to 160˚F (-18˚C to 71˚C). At higher temperatures, the display will become dark and difficult to read. At lower temperatures, the contrast will be reduced and the characters will change more slowly. As long as the temperature doesn't exceed –22˚F to 176˚F (-30˚C to 80˚C), the display will return to normal operation when the ScanGauge temperature returns to the normal operating temperature range.

- **A location in direct sunlight on the dashboard in a closed vehicle could exceed the normal operating temperature. The use of windshield shades or covering the ScanGauge with a**

piece of paper can significantly reduce this temperature. If attached with Velcro®, you can also move it temporarily to a location away from the sun.

- **DO NOT mount the ScanGauge over an air bag cover where it could be propelled by a deploying air bag.**

- **A pin (pin 16) in the cable is connected to the vehicle 12V system. DO NOT short any pins of the small connector to metal or other ground when the OBDII plug is plugged into the OBDII connector.**

- **The location should be where it can easily be seen from the normal driving position. It should not be placed where it will obstruct the driver's view outside the vehicle or of other gauges.**

Set Up and Calibrate Your ScanGauge

To get the most out of your ScanGauge, it is important to follow the setup and calibration procedures to ensure your ScanGauge reports accurate information.

This section outlines the various setup options and provides detail information about calibrating the ScanGauge for the most accurate readings.

## Setting Up Your ScanGauge

Calibration

Setting Up Your ScanGauge

Initial Setup Overview

To properly use your ScanGauge, you must first set up the vehicle parameters. Basic setup parameters include engine size, fuel tank size, fuel type and unit of measure. Advanced parameters are also available and are covered later in this chapter.
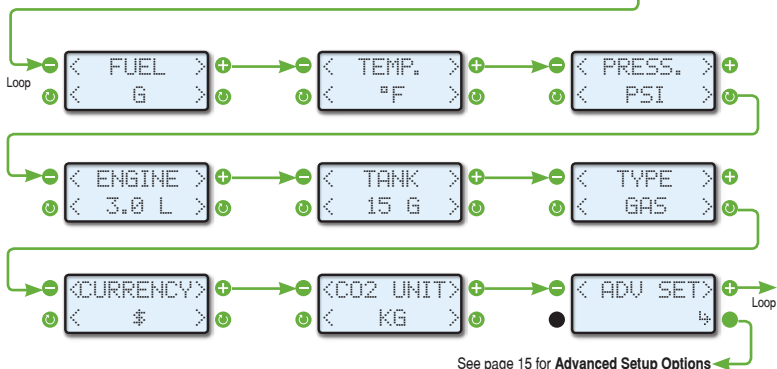
Access the Setup Options

To access the setup screens, press the function button next to MORE on the Home Screen. Next press the function button next to SETUP.
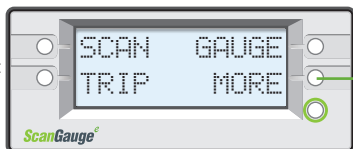
Displays the currently selected setup parameter

Use the upper buttons to move to the next or previous setup parameter

Use the lower buttons to adjust the currently selected setup parameter

Basic Setup Parameters

Setup Parameter	Display	Options	Description
Distance Units	DISTANCE	Miles Kilometers	The Setup Parameteres include multiple units of measure settings, including Distance, Fuel, Temperature and Pressure.
Fuel Units	FUEL	Gallons Liters	Each is set independently of the other and can be used in any combination.
Temperature Units	TEMP.	Fahrenheit (˚F) Celsius (˚C)	Making changes to these settings causes your ScanGauge to use these units when reporting and measuring data.
Pressure Units	PRESS.	PSI KPA	
Engine Size	ENGINE	0.0 - 9.9 (Liters)	Increase or decrease the Liters size until it matches the size of your engine.
Tank Size	TANK	0 - 255 Gallons/liters	Is adjustable in 1-gallon or liter increments depending on how you set the FUEL UNITS parameter.
Fuel Type	TYPE	GAS DIESELa DIESELb HYBRID LPG	Most diesel vehicles use the DIESELa setting. See special notes on page 14. Hybrid vehicles must choose HYBRID or the ScanGauge will go to sleep when the engine automatically shuts off. Set to LPG for propane powered vehicles.
Currency Type	CURRENCY	$, £, ¥, €	Choose the currency symbol ScanGauge should use to display monitor values.
CO2 Units	CO2	KG LBS	Set the unit of measure ScanGauge should use when tracking CO2.

Tips for Setting the Tank Size

The size will use Gallons or Liters depending on the selection you made in the Fuel Units Screen (FUEL). If the size in the manual is not in whole units, use the next lower value. For instance, if the capacity is 17.5 gallons, use 17 gallons.

It is dangerous to run a vehicle out of fuel and can damage the fuel pump. Do not rely on the fuel gauge or ScanGauge at low fuel levels or low remaining distance or time.

Can the ScanGauge Use Imperial Gallons?

ScanGauge uses gallons as a unit label, not a unit of measurement. Because of this, it can read in either US or Imperial Gallons without conversion. Make sure all units entered into ScanGauge are consistent, and the readings should remain accurate for US or Imperial Gallons.
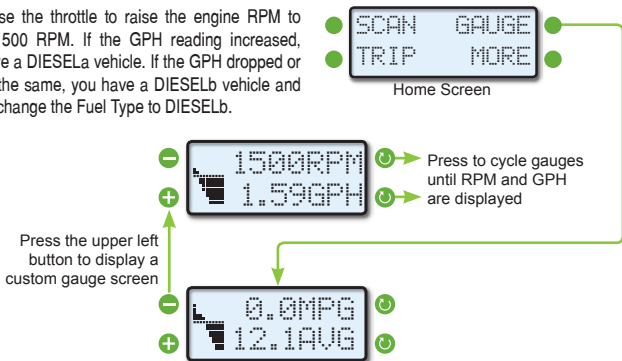
Can ScanGauge Display Liters per Hundred Kilometer?

By default, ScanGauge will express fuel economy in Liters per Hundred Kilometers (LHK), provided you have set fuel to LITERS and distance to KILOMETERS. For more information see LHK under Advanced Setup on page 15.

Diesel Vehicles: Determining the Diesel Type

If your vehicle uses diesel fuel and you're not sure which setting to use in the FUEL TYPE parameter, you can determine the type by performing the following procedure:

- Set the Engine Size (ENGINE) to match the liter size of your vehicle's engine.

- Set Fuel Type (TYPE) to DIESELa.

- Run the engine until warmed up to operating temperature.

- Park the vehicle and set it in Park or Neutral.

- While the engine is idling, select GAUGE from the Home Screen, navigate to one of the Custom Gauge screens and set gauges to show RPM and GPH. You can set the gauges by pressing the upper and lower right function buttons next to the gauge position.

- Make note of the GPH value.

- Next, use the throttle to raise the engine RPM to about 1500 RPM. If the GPH reading increased, you have a DIESELa vehicle. If the GPH dropped or stayed the same, you have a DIESELb vehicle and should change the Fuel Type to DIESELb.

Home Screen

Press to cycle gauges until RPM and GPH are displayed

Press the upper left button to display a custom gauge screen

Advanced Setup Options

Advanced Setup Overview

The Advanced Setup Options provide additional setup parameters you can use to adjust the functions and features of the ScanGauge to suit both your vehicle and your preferences.

ScanGauge provides a number of advanced setup parameters, including the ability to adjust the reported speed to compensate for oversized tires and the ability to change the update rate at which ScanGauge reports data.

This section provides a brief overview of each of the advanced parameters but may not cover the full scope of the subject the setting applies to. For more information, visit: **www.ScanGauge.com/support**

Accessing the Advanced Setup Options

The Advanced Setup Options are located within the SETUP menu. From the Home Screen, press the lower right function button next to MORE on the Home Screen. Next, use the upper left and right function buttons to cycle through the available screens until SETUP is displayed on the top line. Press the lower right function button to enter the SETUP options.

Once on the Setup Screen, use the upper left or right function buttons to cycle through the available screens until the screen displays ADV SET. Press the lower right function button to enter the Advanced Setup Options.
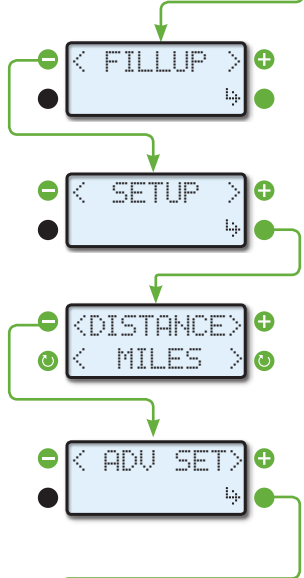
SCAN   GAUGE
TRIP   MORE
ScanGauge

< FILLUP >

< SETUP >

<DISTANCE>
< MILES >

< ADV SET>

Displays the currently selected setup parameter

Use the upper buttons to move to the next or previous Advanced Setup parameter

Use the lower buttons to adjust the currently selected setup parameter

< RATE >
< NORMAL >

Advanced Setup Parameters

Setup Parameter	Display	Options	Description
Data Update Rate	RATE	Slow Normal Fast	Sets the rate in which ScanGauge records and reports data. See page 16.
Speed Adjustment	SPD	-100%-100%	Sets the speed offset to compensate for inaccurate speed readings. See page 17.
Fuel Cutoff Setting	CUTOFF	0-99 (Default: 24)	Sets the fuel cutoff level. See page 17.
Parameter Identification Descriptor Method	PIDS	ALL (Default) SPRTD	Sets the PID method. See page 17.
Liters per Hundred Kilometers	LHK	OFF ON (Default)	Displays fuel economy in Liters per Hundred Kilometers. See page 18.
Diagnostic Trouble Codes Clear Method	DTC	NORMAL ALT	See page 18.
Sleep Event	SLEEP	0 RPM (Default) NO COM	Sets the ScanGauge power down event. See page 18.
Feedback Graph Mode	GRAPH	AVG GOAL	Sets the display mode for the real-time feedback graph. See page 19.
Feedback Graph Goal (Only Available when GRAPH is set to GOAL)	GOAL	0-255	Allows you to set an MPG goal. This parameter is only available when the GOAL option is set in the GRAPH parameter. See page 19.
Feedback Graph Update Rate	G-RATE	1-8 (Default: 5)	Sets the update rate for the real-time feedback graph. See page 19.

UPDATE RATE

You can adjust the rate in which ScanGauge reports data. The effect of this setting is most visible in the Gauge Screen.

The update rate defaults to NORMAL. In some cases, a faster update rate can be used. If this causes some updates to be skipped or irregularly operate, FAST should not be used. In some cases, even NORMAL can be too fast and lead to poor operation.

In these cases, SLOW should be used. PWM and all the CANxx modes can usually use FAST rate. VPW, ISO and KWP modes may have a problem with a rate higher than NORMAL.

Set Speed Adjustments

The speed indicated by ScanGauge can be adjusted to compensate for changes in tire size, gear changes, tire wear or any other factor that may affect the accuracy of your vehicle's speedometer.

```
⊖  < SPD 0%  >  ⊕
⊖  <  65→65  >  ⊕
```
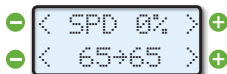
It is important to note that this adjustment only affects the ScanGauge's indicated speed and distances, and it does not affect the vehicle speedometer or odometer readings.

While viewing the SPD Screen, the lower left and right function buttons can be used to increase or decrease the selected adjustment in 1% steps.

The upper line displays SPD and a percentage. The percentage is the adjustment factor. The lower line displays 2 numbers: the left number is the speed reported by the vehicle, and the number on the right is the speed that will be shown by the ScanGauge after applying the correction factor.

One accurate way to set the speed is to use a GPS. With one person driving, the other person observes the speed on the GPS and adjusts the percentage until the lower right number agrees with the speed the GPS indicates.

For more information about the various methods of calculating your speed adjustment, visit us online at **www.ScanGauge.com/quick-tips/.**

⚠️ IMPORTANT: OBSERVE ALL SPEED LIMITS AND DRIVE SAFELY WHILE MAKING THESE ADJUSTMENTS. THE DRIVER MUST NOT BE DISTRACTED BY TRYING TO MAKE THESE ADJUSTMENTS WHILE DRIVING.

Set the Fuel Cutoff Level

Some vehicles will turn the fuel injectors off while coasting – this is known as Fuel Cutoff. ScanGauge attempts to detect the fuel cutoff condition by comparing the open/closed loop indicator and the throttle position. If ScanGauge improperly detects fuel cutoff, then you may see fuel economy being reported as 9999 MPG or 0.00 LHK.

```
⊖  < CUTOFF  >  ⊕
⊖  <   24    >  ⊕
```

The CUTOFF parameter allows you to set the point at which ScanGauge can determine the throttle is closed and in the fuel cutoff condition. The default value of 24 is usually correct for most vehicles but may need to be adjusted. This setting is not critical but is best at about 4 above the no-throttle TPS value. You can choose to disable the fuel cutoff sensing feature of the ScanGauge by setting the value of CUTOFF to 0.

Set PID Method

Use the PIDS menus to set the method ScanGauge uses to store Parameter Identifications Descriptors (PIDs) codes. Most

```
⊖  <  PIDS  >  ⊕
↻  <  ALL   >  ↻
```

vehicles use ALL, which is the factory default. But some vehicles will not work properly unless SPRTD (Supported) is used. This is the case for 1995 to 1999 Subaru vehicles. If the ScanGauge connects but then goes to sleep after showing little or no data on the GAUGE display, change this to SUPPORTED.

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LHK

Liters per Hundred Kilometers (LHK) is a popular way to express fuel economy in Europe.

By default, ScanGauge will express fuel economy in LHK, provided you have set fuel to LITERS and distance to KILOMETERS as outlined in the Basic Setup procedure (see page 12).

```
< LHK >
< ON >
```

If you would prefer fuel economy to be expressed as Kilometer Per Liter (KPL), set the LHK parameter to OFF. With LHK set to OFF, and fuel and distance set to LITERS and KILOMETERS, the ScanGauge will now express fuel economy in Kilometers Per Liter (KPL).

⚠️ IMPORTANT: Lower LHK values represent a higher fuel economy, unlike KPL where a higher number represents higher fuel economy.

Even when LHK is being used for economy readout, KPL will be used for the real-time feedback graph. Better fuel economy is always represented as a positive value in the graph.

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DTC

Some vehicles may not respond properly when attempting to retrieve or clear Diagnostic Trouble Codes (DTC). By default, this parameter is set to NORMAL. If you experience trouble, set this parameter to ALT.

```
< DTC >
< NORMAL >
```

··

Set the Sleep Event

By default, the ScanGauge will shut down when it sees 0 RPM. This may not be the desired setting if your vehicle is a Hybrid, which will report 0 RPM when the vehicle is stopped. When you select HYBRID in the fuel type (TYPE) parameter in the Basic Setup procedure (see page 12), ScanGauge will automatically set the Sleep Event parameter to NO COM.

```
< SLEEP >
< 0 RPM >
```

When using ScanGauge with the Sleep Event parameter set to NO COM, there is a small risk that the vehicle's ECU and ScanGauge will stay on and drain the battery. You must be sure the ScanGauge goes to sleep properly when the engine is turned off.

Set the Display Mode of the Real-time Feedback Graph

The ScanGauge features a real-time feedback graph that is visible in the GAUGE screens. By default, the GRAPH parameter is set to AVG, which provides real-time feedback about your instant average fuel economy (MPG/KPG/MPL/LHK).

```
< GRAPH >
< AVG >
```

You can choose to set the graph to display your instant average fuel economy against an arbitrary fuel efficiency goal. Setting up a fuel economy goal is a 2-step process.

Step 1
Use the lower left and lower right function buttons to set the GRAPH parameter to GOAL.

```
< GRAPH >
< GOAL >
```

Step 2
Push the upper right function button to move to the GOAL parameter screen. Use the lower left and lower right function buttons to set your fuel efficiency goal.

```
< GOAL >
< 15MPG >
```

With the GRAPH parameter set to GOAL, and a fuel efficiency target set in the GOAL parameter screen, the real-time feedback graph displayed on the GAUGE screen will now display your progress in achieving your fuel economy goal. For more information about how to read the graph, please refer to How to Read the Gauge Screen on page 26.

NOTE: To access the GOAL parameter screen, the GRAPH parameter must be set to GOAL.

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Set the Display Mode of the Real-time Feedback Graph

+/- 90 Sec.

The real-time feedback graph provides 10 columns, or 10 update points. Each time the graph is updated, the data is scrolled to the left with the newest measurement shown on the right.

```
< G-RATE >
< 5 >
```

The graph updates at regular intervals and can be adjusted from a faster rate of 8, to a slower rate of 1. The default rate of 5, updates the graph approximately every 90 seconds.

Backlight Display

Backlight Display Options

You can customize the backlight display of your ScanGauge. Options include the ability to set the intensity of the backlight, choose a standard built-in color for the backlight, and create your own custom color.

Access the Display Options

To access the Display Options Screen, press the function button next to MORE on the Home Screen. Next press the function button next to DISPLAY.
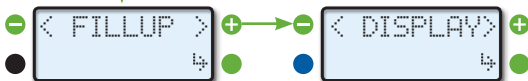
Change the Backlight Intensity

Use the lower left and right function buttons to adjust the backlight intensity. Options include:

Use lower function buttons to choose a backlight color

Backlight Color Options	
Sequence	Setting
1	HIGH (Default)
2	LOW
3	OFF

Change the Backlight Color

Use the lower left and right function buttons to cycle through the available colors.

Use lower function buttons to choose a backlight color

Backlight Color Options	
Sequence	Color
1	LT Blue (Light Blue)
2	User Defined (Custom Color)
3	Blue
4	Green
5	BLU-GRN (Blue green)
6	Red
7	Violet
8	Amber

Set a Custom Backlight Color

The backlight can be customized by setting the intensity of the three basic colors — Red, Green and Blue — for a total of more than 60 possible colors. The example to the right is what you would see for a Pink backlight.

To create your own color, start by pressing the function button next to a color. This will cause it to sequence through 4 possible values ranging from off — a setting of 0, to full intensity — a setting of 3. As you press the buttons, the backlight will change to show the color result of the current selections.

If you have previously set the intensity at LOW, the display will show the color at the low intensity level. If you had set it at HIGH, the display will show the color at the high intensity level. Note: there may be a small difference in color between LOW and HIGH.

When you have the color you want, press the lower right function button next to SAVE. This will save the color in Flash memory. You can change the color as often as you want.
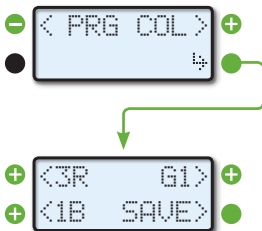
Custom Color Adjustments	
Value	Color Intensity
0	0 intensity (Off)
1	1/4 intensity
2	1/2 intensity
3	Full intensity

Calibrating Your ScanGauge

Improving the Accuracy of Your ScanGauge

The accuracy of your ScanGauge can be improved by calibrating the fuel consumption. Calibrating your ScanGauge to accurately report fuel consumption is a 2-step process: your **first fill-up** and your **second fill-up**.

While both steps involve using the FILLUP function of your ScanGauge, the procedures for Step 1 and Step 2 vary slightly from each other. Please read carefully.

Access the FILLUP Menu

To access the FILLUP screen, press the function button next to MORE on the Home Screen. The next screen will be the FILLUP screen. Press the lower right function button to enter the Fill-up function.

Before proceeding, read through the tips below for some helpful information and the procedure for your first fill-up.
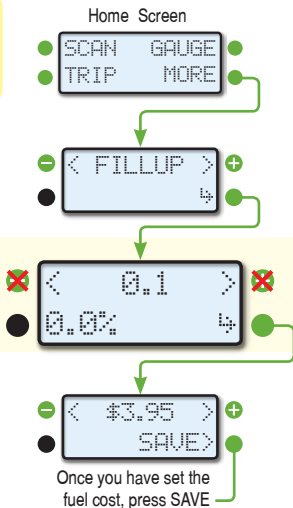
Step 1 - Your First Fill-up

Home Screen

Follow these calibration instructions only when you are filling your fuel tank. If you do not fill your tank to its capacity, then the calibration process will not produce accurate results.

```
SCAN    GAUGE
TRIP    MORE
```

1) Fill up the tank, letting the pump shut off automatically.

2) Use the FILLUP function to tell ScanGauge you have filled the tank. From the Home Screen, follow the sequence shown to the right.

```
< FILLUP >
              ↳
```

3) **On your first fill-up, DO NOT make any adjustments to the indicated fuel. Simply press the lower right function button to move to the next screen.**

```
<      0.1    >
0.0%          ↳
```

4) Next, the Fuel Cost Screen will appear. Enter the cost per gallon/liter and press the lower right function button next to SAVE.

5) Keep the ScanGauge connected to your vehicle and use the vehicle normally.

```
< $3.95  >
          SAVE>
```

Once you have set the fuel cost, press SAVE

6) Once you reach approximately 1/4 tank of fuel left, follow the directions in Step 2.

Helpful Calibration Tips:

- When filling the tank on your second fill-up, try to use the same pump you used for your first fill-up with the vehicle pointed in the same direction. If you fill-up 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.

- When filling your tank, let the pump shut off automatically. Do not top off.

- To maintain accurate "TO EMPTY" information in the ScanGauge's trip computers, you should always fill your tank to capacity and follow the FILLUP sequence in Step 2.

- Once you have completed your second fill-up, subsequent fill-ups may not require adjusting the gallons/liters before pressing DONE.

> After following the initial calibration procedure, you should follow Step 2 for each subsequent fill-up.
>
> If you miss a fill-up procedure after filling your tank, start with Step 1 of the calibration process on your next fill-up to maintain accuracy.

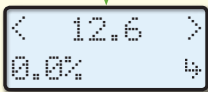## Step 2 - Your Second Fill-up and Subsequent Fill-ups

Home Screen

```
● SCAN    GAUGE ●
● TRIP     MORE ●
```

1) **When the tank is around 1/4 full**, fill up your tank again. Be sure to let the pump shut off automatically.

```
● <  FILLUP  > ●
●              ↳ ●
```

2) Use the FILLUP function to tell ScanGauge you have filled the tank. From the Home Screen, follow the sequence shown to the left.

```
● <    12.6    > ●
● 0.0%         ↳ ●
```

3) The next screen will show the amount of fuel your ScanGauge believes was used since the previous fill-up. **Use the upper left and right function buttons to adjust the amount of fuel you actually put in the tank.**

```
● <   $3.95   > ●
●          SAVE> ●
```

Once you have set the fuel cost, press SAVE.

4) Push the lower right function button to save the value and complete the fill-up process.

5) Next, the Fuel Cost Screen will appear. Enter the cost per gallon/liter and press the lower right function button next to SAVE.

Operating Your ScanGauge

The ScanGauge features a simple and easy-to-use, menu-driven design. After each button is pressed, new selections will appear in the display prompting you for what can be done next.

The HOME button (button with a green circle around it) will take you back to the starting point at any time or activate the ScanGauge if asleep.

Digital Gauges

Trip Computers

Scan Tool

Digital Gauges

Overview

The digital gauge screens display two digital gauges at a time and a fuel efficiency monitor with a real-time feedback graph. The gauges along with the graph are updated in real time when your vehicle is running and can be used to monitor the operating condition of your vehicle.

Access the Digital Gauges
From the Home Screen, pressing the button next to GAUGE causes the display to change to show the currently selected gauges. They are automatically updated.

Selecting the Gauge Screens
There are a total of 5 gauge screens: 3 default gauge screens and 2 custom gauge screens. Use the upper and lower left function buttons to move between the 5 available gauge screens.
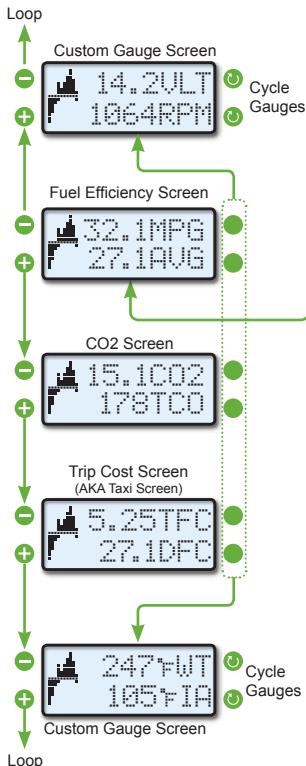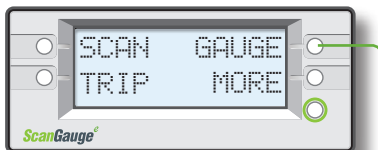
The Default Gauge Screens
There are 3 default gauge screens: the Fuel Efficiency Screen, the CO2 Screen and the Trip Cost Screen. For a complete explanation of the default screens, see page 27.
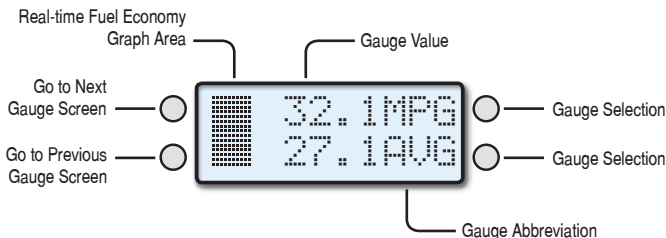
The Custom Gauge Screens
In addition to the default screens, there are 2 user selectable screens allowing you to set and store your own digital gauge combinations. Pressing the button next to one of the gauges will allow you to change the gauge that is displayed in that position. Pressing a button repeatedly, allows you to cycle through all the available gauges. The selection will continue through all of the gauges and then loop back to the starting gauge. This gives you the ability to customize the gauge display to show the gauges you're most interested in.

The information available will vary from vehicle to vehicle. If the information is not available for a certain gauge, no data will be shown for it. If the same gauge is selected for more than one position, only one of them will show data (if it is available). The other positions will show the abbreviation, but no data.

Loop

Custom Gauge Screen

14.2VLT
1064RPM

Cycle Gauges

Fuel Efficiency Screen

32.1MPG
27.1AVG

CO2 Screen

15.1CO2
178TCO

Trip Cost Screen
(AKA Taxi Screen)

5.25TFC
27.1DFC

247°WT
105°IA

Cycle Gauges

Custom Gauge Screen

Loop

How to Read the Gauge Screen

The Gauge Screen provides information about your vehicle as you drive with real-time graphic feedback and digital gauges.
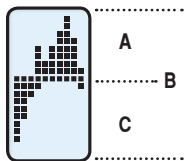

Real-time Fuel Economy Graph Area — Gauge Value

Go to Next Gauge Screen — Gauge Selection

Go to Previous Gauge Screen — Gauge Selection

Gauge Abbreviation

Display shows:
```
32.1MPG
27.1AVG
```

Real-time Fuel Economy Feedback Graph

ScanGaugeE™ provides you with real-time information about your vehicle's fuel economy through an intuitive graphic display. Use the instant feedback provided to adjust your driving style and improve your fuel economy.

The graph represents your **current average fuel economy over a period of time** and is separated into 3 sections; (A) above your average, (B) at your average, and (C) below your current average.

As you drive, the graph will scroll to the left at regular intervals (see page 19) and provided feedback about your average fuel economy for the current trip. You goal should be to keep the graph above the **Current Average (B) line.** As your trip progresses, this may become increasing difficult as you raise your current average fuel economy.


Current Average Fuel Economy
A - Above the Average
B - Current Average
C - Below the Average

Goal Based Fuel Economy Feedback Graph

It is possible to set the Real-time Fuel Economy Graphic Feedback to display results based on a fuel efficiency goal. To do this you will need to access the **Advanced Setup Parameters,** See **Set the Display Mode of the Real-time Feedback Graph** on page 19.
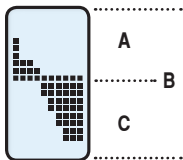

When set in Goal mode, the **Current Average (B)** line represents your Fuel Efficiency Goal. The area above the Current Average (A) line represents fuel efficiency readings above your goal and the area below the Current Average (C) line represents fuel efficiency readings below your goal.

Fuel Economy Screen
Track Your Fuel Efficiency in Real Time
The Fuel Economy screen provides information about the
amount of fuel you are using as you drive.
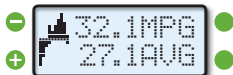
The default setting displays Miles Per Gallon (MPG) and your Average Fuel Economy (AVG). The
display of this screen may be affected by the setup parameters you entered in the Basic Setup
Parameters (see page 13).

For instance, if you set **Kilometers** for the
distance parameter, the MPG gauge would
display as KPG (Kilometers Per Gallon).
Possible gauges that may be displayed on this
screen are shown in the table to the right.

Gauge	Name
MPG	Miles Per Gallon
KPG	Kilometers Per Gallon
MPL	Miles Per Liter
LHK	Liters per Hundred Kilometers
KPL	Kilometers per Liter

CO2 Screen
Monitor Your Carbon Footprint
The CO2 screen provides easy access to your vehicle's CO2
output. This built-in gauge screen provides information about
your vehicle's CO2 production (CO2) for the current trip, as well
as the total CO2 production for the day (TCO).

For information about how ScanGauge tracks the trips you take in your vehicle, see the section titled
Trip Computers on page 30.

Trip Cost Screen
Monitor Your Fuel Costs in Real Time
The Trip Cost Screen tracks your fuel costs in real time. This
built-in gauge screen displays your current fuel costs with Trip
Fuel Cost (TFC) and Today's Fuel Costs (DFC) digital gauges.

Gauge Abbreviations

The following table shows what the gauge names. In some cases, the unit selections made in the **Basic Setup Parameters** (see page 13) will determine the gauge abbreviations.

The information available will vary from vehicle to vehicle. If the information is not available for a certain gauge, no data will be shown for it. If the same gauge is selected for more than one position, only one of them will show data (if it is available). The other positions will show the abbreviation, but no data.

Gauge	Name	Description
CLSD LP OPEN LP	Fuel System Loop Status	This indicates when the oxygen sensor is being used to control the mixture (closed-loop) and when it is not (open-loop). It is usually closed except when the engine is cold or under full throttle acceleration.
MAP	Manifold Absolute Pressure	This indicates the pressure in the intake manifold. It is reported in Pounds per Square Inch (PSI) by default but can be changed to Kilo Pascals (KPA) if desired. At sea level, the pressure at wide open throttle can be as high as 15 PSI or 100kPA. If the engine is turbocharged or supercharged, the pressure can be higher than this.
MPG KPG MPL LHK KPL	Miles Per Gallon Kilometers Per Gallon Miles Per Liter Liters Per 100Km Kilometers per Liter	Instant fuel economy is updated about every 2 seconds at the NORMAL update rate . Small changes in throttle position or load while driving will show almost immediate changes in this gauge.
MPH KPH	Miles Per Hour Kilometers Per Hour	Speed in the units selected
RPM	Revolutions Per Minute	RPM of the engine
TPS	Throttle Position Sensor	In some vehicles, a closed throttle will read 0 and full throttle will read 100. Other vehicles will have a higher value than 0 for a closed throttle and a full throttle value less than 100.
FWT CWT	Water Temperature	Water/Coolant temperature A vehicle with a 50/50 mix of coolant and water will not boil over until about 265˚ F at sea level. This will be reduced at higher elevations.
AVG	Average Fuel Economy	This is the current average fuel economy and is updated about every 2 seconds (normal rate).
TFC	Trip Fuel Cost	This is the total fuel cost for the current trip.

Gauge	Name	Description
CPM	Cost Per Mile	Cost of fuel per mile at this time
VLT	Battery Voltage	Normal running battery voltage is between 13 and 15. When the engine is off it should be between 11 and 13. Voltages higher than 15 volts can damage batteries and electrical components. Voltages below 13 when the vehicle is running could indicate poor charging of the battery. Voltages below 11 when the engine is off could indicate a low battery charge or a shorted battery cell.
FIA CIA	Intake Air Temperature	Temperature of the air going into the engine. At highway speeds, this will typically be a few degrees higher than the outside air temperature. At idle or low speed, it may be much higher in temperature than the outside temperature due to the low airflow into the engine and the high under-hood temperatures warming it up.
FPR	Fuel Pressure	This is the fuel pressure from the fuel pump. Very few vehicles report this.
GPH LPH	Gallons Per Hour Liters Per Hour	Fuel consumption rate in the selected units. This is sensitive to throttle, gear and loading changes.
IGN	Ignition Timing	Shows the amount of timing advance (or retard). The more advance there is (or less retard), the better for fuel economy and power. The limit is set by the octane of the fuel, the intake air temperature, and the load on the engine. A lower than normal amount of advance for similar temperature and speed could indicate too low an octane of fuel is being used.
LOD	Engine Loading	This is a percentage of the maximum power available currently being generated. In some vehicles it is the maximum available at the present RPM.
DFC	Day's Fuel Cost	This is the total fuel cost for all trips for the current day.
CO2	Current Carbon Dioxide	This shows the amount of CO_2 your vehicle has produced during the current trip.
TCO	Today's Carbon Dioxide	This shows the total amount of CO_2 your vehicle has produced during the current day.

Trip Computers

Trip Computer Overview

The ScanGauge features 5 built-in trip computers. The trip computers automatically store a set of useful information about the trips you have taken in your vehicle and are updated in real time as you drive.

Built-in Trip Computers			
Trip Computer	**Display Name**	**Available Information**	**Display Name**
Current Trip	CURRENT	Average Fuel Economy	FUEL ECO
		Trip Fuel Used	FUEL USE
Today's Trips	TODAY	Maximum Coolant Temperature	WT MAX
		Trip Distance	DIST
		Maximum Engine RPM	MAX RPM
Previous Trips	PREV DAY	Trip Elapsed Time	HOURS
		Maximum Speed	MAX SPD
Tank Trip*	TANK	Average Speed	AVG SPD
		Trip Fuel Cost	COST
		Trip CO2 Production	CO2
Tank To Empty*	TO EMPTY	Fuel Remaining	FUEL
		Distance Remaining Before Tank Is Empty	DISTANCE
		Time Remaining Before Tank Is Empty	HOURS

* For ScanGauge to maintain accurate tank information, you must first calibrate your ScanGauge using the procedure outlined in Calibrating Your ScanGauge (page 22) and follow the Fill-up Procedure outlined in the Filling Up Your Tank section on page 34, for each subsequent refueling.
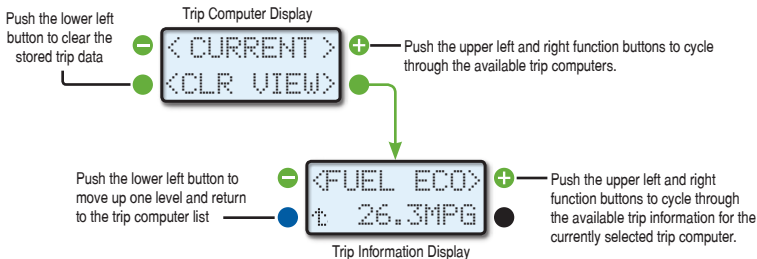
Access the Trip Computers

From the Home Screen, press the button next to TRIP to access the trip computers. The Trip Computer Screen gives you access to **Current Trip**, **Today's Trips**, **Previous Trips** and **Tank Trip**.
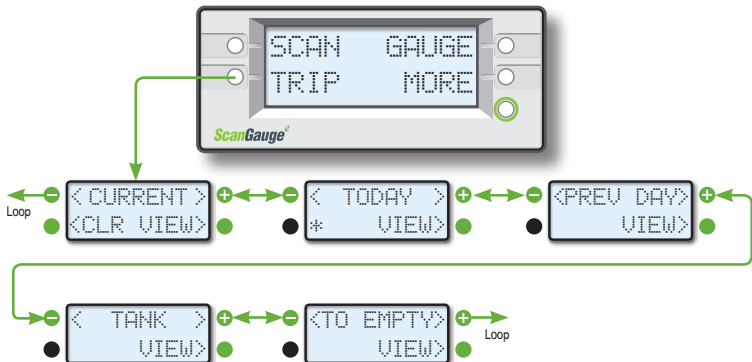
Viewing Available Trip Data

While viewing the Trip Computer Screen, press the upper right or left function buttons to cycle through available Trip Computers. Once you have located the trip computer you would like to view, push the lower right function button next to VIEW to access the trip computer data. Push the lower left function button next to CLR to reset current trip data.

While viewing trip data, use the upper left and right function buttons to cycle through the available trip data. To return to the list of trip computers, push the lower left function button to move up one level.
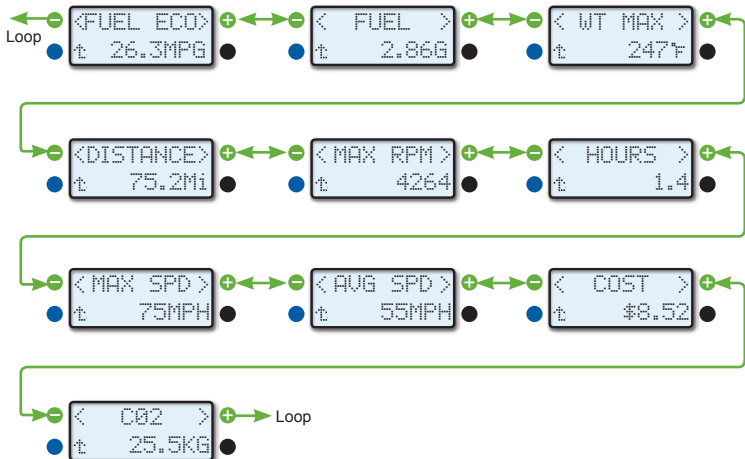

Push the lower left button to clear the stored trip data

Trip Computer Display

Push the upper left and right function buttons to cycle through the available trip computers.

Push the lower left button to move up one level and return to the trip computer list

Push the upper left and right function buttons to cycle through the available trip information for the currently selected trip computer.

Trip Information Display

Time-based Trip Computers

The Current Trip (CURRENT), Today's Trip (TODAY) and Previous Day's Trip (PREV DAY) computers all track similar information for different time periods.

The ScanGauge automatically records trip data as you operate your vehicle. In addition, the information from the Current Trip is automatically transferred to the Today's Trip each time you shut off your vehicle for more than 3 minutes. Information from the Today's Trip is automatically transferred to the Previous Day's Trip when the engine has been shut off for 8 to 10 hours.

To cycle through the available trip data, push the upper left or upper right function buttons.

Loop   <FUEL ECO>   26.3MPG   ← →   < FUEL >   2.86G   ← →   < WT MAX >   247°F

<DISTANCE>   75.2Mi   ← →   < MAX RPM >   4264   ← →   < HOURS >   1.4

< MAX SPD >   75MPH   ← →   < AVG SPD >   55MPH   ← →   < COST > $8.52

< CO2 >   25.5KG   → Loop

Resetting Current Trip Data

The Current Trip data is automatically reset after about 3 minutes of the ScanGauge being asleep — generally after the vehicle has been shut off. When this happens, the data stored in the Current Trip will automatically be transferred to the Today's Trip.

You can reset the trip data at any time for the Current Trip computers. To reset trip data, simply press the lower left function button next to CLR as shown in the example to the right.

< CURRENT >
<CLR VIEW>

Push to reset CURRENT trip data
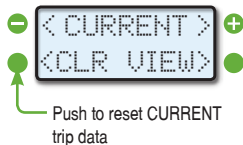
Today's Trip Data

Notice that there is no RESET for TODAY. The Today Trip will automatically reset after the engine has been off for 8 to 10 hours (as when sitting overnight). The values for TODAY will be transferred to the Previous Day's Trip, and the values that were in Previous Day's Trip are thrown out.
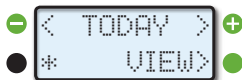
The asterisk (*) in the lower right corner indicates that the ScanGauge was disconnected for at least part of the day and the data may not be complete. This will be transferred to the Previous Day's Trip along with the data.

> If the vehicle is driven early in the morning and then not again until late that evening, the data will be transferred to the previous day. If the vehicle is driven until late at night and then used again very early in the morning, the data will stay in the Today's Trip. The end of the Today's Trip requires the vehicle be off, the ScanGauge connected, and the vehicle not driven for 8 to 10 hours.

Fuel-based Trip Computers

The Tank Trip (TANK) and To Empty Trip (TO EMPTY) computers can tell you much about the current tank of fuel. For instance, you can learn how much fuel you have used and how far you have traveled since your last fill-up, or how much fuel you have left and the approximate distance you can travel before needing to fill up.

> For ScanGauge to maintain accurate Tank Trip information, you must first calibrate your ScanGauge using the procedure outlined in **Calibrating Your ScanGauge** (page 22) and follow the **Fill-up Procedure** outlined in the **Filling Up Your Tank** section on page 34, for each subsequent refueling.
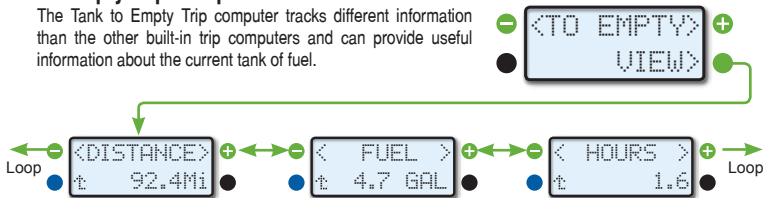
Tank Trip Computer

The Tank Trip computer shows similar information as the other three trip computers — Current Trip, Today's Trip, and Previous Day's Trip (see page 32) — but with information related to the current tank of fuel. For instance, you can see how much CO_2 your vehicle has produced and average fuel economy you have achieved during the current tank of fuel.
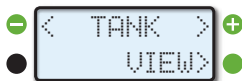
The Tank Trip information is reset each time you fill up your tank, and follow the **Fill-up Procedure** shown on page 35.

To Empty Trip Computer

The Tank to Empty Trip computer tracks different information than the other built-in trip computers and can provide useful information about the current tank of fuel.

```
⊖ <TO EMPTY> ⊕
●           VIEW> ●
```

```
← ⊖ <DISTANCE> ⊕ ← → ⊖ <  FUEL  > ⊕ ← → ⊖ <  HOURS  > ⊕ →
Loop  ● ṫ  92.4Mi ●      ● ṫ  4.7 GAL ●      ● ṫ      1.6 ●   Loop
```

For instance, Tank to Empty Trip can show you the amount of remaining fuel in your tank and the approximate distance and time you can travel before needing to refuel.

The displays above tell you that if your mileage remains the same as it has since the last fill-up, you have approximately 4.7 gallons of fuel remaining, and that you will run out of fuel in 92.4 miles in about 1.6 hours.

The estimate of distance and time to empty is based on the economy that has been obtained so far on the current tank of fuel. Right after refueling, these values will change fairly quickly. As more of the fuel has been burned from the tank, the readings will stabilize.

It is possible to see the distance and time to empty increase as you drive. The distance can increase as you drive at a steady fuel-efficient speed. This causes the fuel economy for the tank to rise; and applying this higher fuel efficiency to the fuel remaining in the tank can actually result in more remaining distance. If you drive slower than the average speed of the tank so far, the time to empty can increase.

To maintain accurate **To Empty** information, you must use the following **FILLUP** procedure shown under **Filling Up Your Tank** to indicate the vehicle tank has been refilled. It is also necessary to fill the tank to make the TO EMPTY information correct.

Filling Up Your Tank

To maintain accurate information in the Tank Trip and Tank To Empty Trip computers, you must tell your ScanGauge that you have filled the tank each time you fuel up your vehicle. To maintain accurate Tank To Empty information, it is also important to fill the tank to capacity each time you put fuel in the vehicle.

Once you have completed your second fill-up (page 23), subsequent fill-ups may not require adjusting the gallons/liters before pressing DONE.

You should refill the vehicle when there is above 50 miles/km remaining. Pushing below 50 could result in running out of fuel.

When filling your tank, let the pump shut off automatically. Do not top off.

To maintain accurate **To Empty** information in the ScanGauge's trip computers, you should always fill your tank to capacity.

The Fill-up Procedure

To access the FILLUP Screen, follow the diagram to the right. From the Home Screen, press the lower right function button next to MORE. Next, use the upper left and right function buttons to cycle through the available options until the screen displays FILLUP.

To enter the fill up procedure, press the lower right function button next to the ⊷ symbol.

If the tank is not full, the **To Empty** information will not be accurate and you must be sure not to make an adjustment before pressing DONE (⊷) the next time you fill up.

The ScanGauge allows you to change the adjustment factor directly if less than 1 gallon/liter has been used since the previous fill-up sequence was done.

It is not necessary to make an adjustment each time you refuel.

You can press HOME>MORE>FILLUP> ⊷ when you refuel. This will restart the Tank to Empty Trip computer without changing the adjustment factor.

There will be variations in the agreement of the pump fuel used and the ScanGauge indicated fuel use from tank to tank due to:

Home Screen

```
 SCAN   GAUGE
 TRIP    MORE
```

```
 <  FILLUP  >
             ⊷
```

```
 <    12.6   >
 0.0%        ⊷
```

```
 <  13.1GAL >
 0.4%        ⊷
```

```
 <   $3.95  >
          SAVE>
```

Once you have set the fuel cost, press SAVE

- Different shutoff levels of the fuel pumps

- Different tilt of the vehicle at the fuel pump due to ground slope or vehicle loading

- Different temperature of the fuel (changes density – best to refill in the morning when the fuel is colder)

- Variations in vehicle sensors due to temperature and time

- Pump accuracy limits

These are just some of the variables that limit absolute accuracy and show why you should never trust a low reading of DISTANCE in the Tank to Empty Trip to believe you will be able to make it to the next gas station.
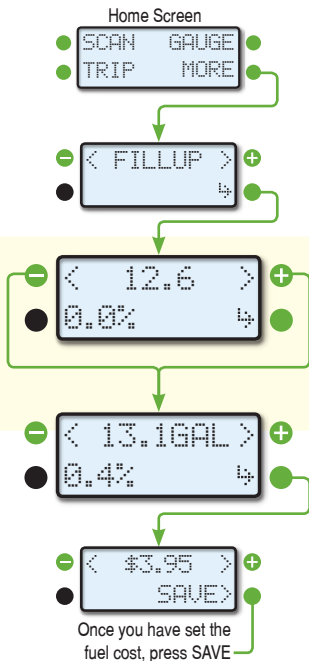
Scan Tool

Scan Tool Overview

The ScanGauge features a built-in Scan Tool that you can use to view and clear Diagnostic Trouble Codes (DTCs), view the parameters that were present when a Trouble Code was logged, and turn off the Check Engine light.

Access the Scan Tool

From the Home Screen, press the upper left function button next to SCAN to access the built-in Scan Tool. When you press SCAN, the ScanGauge immediately checks your vehicle's computer for any DTCs. Generally, a Trouble Code will cause your Check Engine light turn on.

ScanGauge detected 2 DTC codes

ScanGauge did not detect any DTC codes
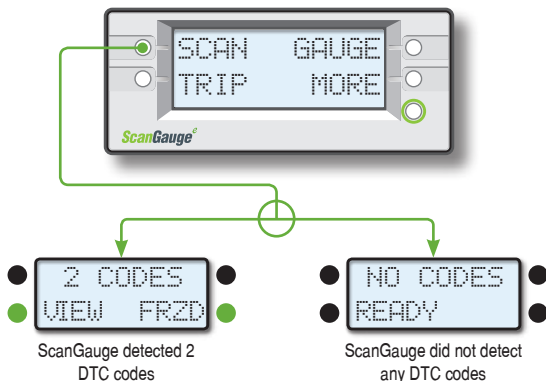
If No Codes Are Found

If no codes are found, the ScanGauge will display **NO CODES** on the first line.

The Second line will display either READY or NOT READY**.**

READY - Indicates all tests have been completed since the last reset. This is needed in some states to indicate a valid OBD test for emission testing.

NOT READY - This is an indication the vehicle hasn't completed some test cycles. It could take up to several days after codes are cleared for the vehicle to be READY, and your vehicle may not pass some types of emissions testing.

What to Do if DTCs Are Found

If you your vehicle's Check Engine light is on, that's a good indication that your vehicle may be storing Trouble Codes (DTCs). If ScanGauge indicated it has found stored DTCs, you can access the specific code numbers and related Parameter Identification Descriptors (PIDs), also known as Freeze Data, if data was captured when the trouble occurred.

```
2 CODES
VIEW  FRZD
```
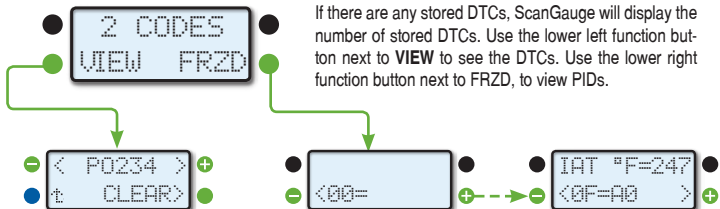
If there are any stored DTCs, ScanGauge will display the number of stored DTCs. Use the lower left function button next to **VIEW** to see the DTCs. Use the lower right function button next to FRZD, to view PIDs.

```
< P0234 >
↳    CLEAR>
```

```
<00=
```

```
IAT °F=247
<0F=A0      >
```

Viewing DTCs

To view the specific DTCs, press the function button next to VIEW. If more then one code is stored, you can use the upper left and right function buttons to step through the stored codes.

You can return the previous screen by pressing the function button next to the ↳ symbol.

Viewing PIDs

To step through and view the available PID data, press the lower left and right function buttons.

Gauge values will be shown in the top line for those PIDs that directly correspond to a gauge (see pages 28 and 29 for Gauge Abbreviations).

The values in the second line are in hexadecimal just as they are reported by the vehicle computer. You can exit this mode using the HOME button.

Decoding DTCs

DTCs vary from vehicle to vehicle, and you will need to find the definitions for your vehicle.

An excellent way to do this is to use a good search engine on the internet. Use Trouble Codes as the search words. You can add your make of vehicle to narrow the search. Using the actual DTC in the search could bring up a lot of information on the problem if it is a common failure.

A good Web site to try is: http://www.troublecodes.net.

Another way to find the Trouble Code meaning and also information on what might be causing the problem is to do a search on the Trouble Code and the type of vehicle. For instance, searching for "P0401 Ford" will return not only the code definition but also information on the cause and cure.

When you find a list of codes for your vehicle, it would be a good idea to print them out and keep them in the glove compartment for future reference. It is comforting when you are on a trip and the Check Engine light comes on to be able to read the code and determine if it is a critical problem or not.

The shop manuals for your vehicle will also contain information for Trouble Codes.

Clearing Trouble Codes

While viewing the DTC codes, pressing the lower right function button next to **CLEAR** will result in a prompt from ScanGauge to verify that you want to clear the Trouble Code(s) and turn off the Check Engine light.

If you want to continue and clear the Trouble Codes, press YES. If you decide you do not want to clear the Trouble Codes, press NO.

When the YES button is pressed, ScanGauge will send out a signal to clear all of the Trouble Codes.

While ScanGauge is waiting for a response from the vehicle, the screen will display the message WAITING**.**

If it is successful, the display will show CODES CLEARED. This should also turn off the Check Engine light on the dashboard and clear the Freeze Data.

If the display shows NO RESPONSE**,** the clear codes command was unsuccessful and your vehicle is not responding to the clear command.
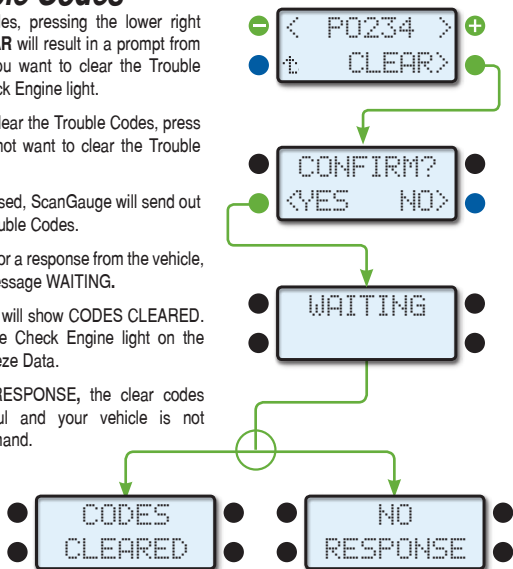
Troubleshooting

This section provides basic troubleshooting information. For more comprehensive information, please visit us online at: www.ScanGauge.com/support

Basic Troubleshooting

Where to Get Support

Below is a list of the more common troubleshooting tips. For a more comprehensive list of troubleshooting tips, tricks and frequently asked questions, please visit us online.

Online:	www.ScanGauge.com/support
	www.facebook.com/ScanGauge
Toll Free:	888-433-5664
E-mail:	support@linear-logic.com

Problem	Possible Cause	Solutions
Nothing displayed and no backlight	Vehicle has a blown fuse	Replace blown vehicle fuse. The OBDII connector is usually powered off the cigarette lighter/accessory fuse. Check this one first.
Never stops saying "Connecting"	Vehicle ECU not on	Turn key to RUN or start engine.
	ECU not responding properly	Use MORE>MORE>MODE and try forcing the following modes: FORD Products: PWM or CANSF GM Products: VPW , ISO or CANSF Chrysler Products: ISO, VPW or CANSF Volvo Products: ISO, CANSF or CANLF Others: ISO, KWPS, KWPF, CANSF, CANLF, CANSS or CANLS
	Vehicle is not OBDII, OBD2 or EOBD compatible	None — ScanGauge requires vehicle to be OBDII, OBD2 or EOBD compatible.
Connects and then goes to sleep after 10 to 15 seconds	Engine is not running	Start engine.
	ECU requires only supported PIDS (Common on 1995-1999 Subaru)	Set the PIDs method to SUPPORTED in the Advanced Setup Parameters (see page 16).
Poor MPG and Trip Fuel use accuracy	Some sensor initial accuracy not good (especially Diesel)	Use FILLUP procedure to adjust for sensor errors (see page 35).

| Problem	Possible Cause	Solutions
Unable to clear trouble codes	Vehicle is not responding to the Clear Codes command	Sometimes multiple attempts are needed to clear the codes. You may also try clearing the codes with the vehicle not running, and the key in the on position. Some vehicles don't respond properly to the Clear Codes command and the codes cannot be cleared by the ScanGauge.
Shuts off when engine automatically turns off in a Hybrid vehicle	Fuel type not set to HYBRID	Set the fuel type (TYPE) parameter to HYBRID in the Basic Setup Parameters (see page 13), ScanGauge will automatically set the Sleep Event parameter to NO COM (see page 18).
Trip Fuel use is very inaccurate after using fill-up adjustment.	Error in adjustment procedure.	Recalibrate your ScanGauge. See Calibrating Your ScanGauge on pages 22 and 23.
Some gauges are blank	Some sensors are not used in the vehicle or data is not reported by ECU	About 10% of vehicles show FPR and 50% show MAP. 1995-1999 Subarus don't show intake air temperature. Some Ford diesels don't show coolant temperature. For a compressive compatibility list, please visit: www.ScanGauge.com/support.
When I scan the vehicle, it displays NOT READY	The vehicle has not completed its Readiness Tests since the last time it was cleared, or the battery was disconnected	It will continue to say "NOT READY" until all on-board diagnostic tests have been completed. This does not mean that it is not ready to be scanned. To get to this screen the vehicle computer reported that no Trouble Codes exist. Some states require that some or all on-board tests be completed and no Trouble Codes be present to pass emissions testing. When the ScanGauge reports No Codes Found and READY, the vehicle is ready to pass emissions. Some states allow some tests to not be completed and can pass the vehicle even when the ScanGauge reports NOT READY.

Reset Your ScanGauge

You can reset your ScanGauge to factory defaults and view the current firmware your ScanGauge uses in the MORE menu.

To Reset Your ScanGauge

From the Home Screen, push the function button next to MORE. Next, use the upper left and right function buttons to cycle through the available options until you reach the screen titled RESET. To begin the process, push the lower right function button next to the ⬌ symbol.

The next screen will ask you to confirm the reset. To complete the process, push the lower left function button next to YES.
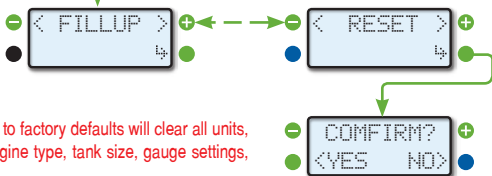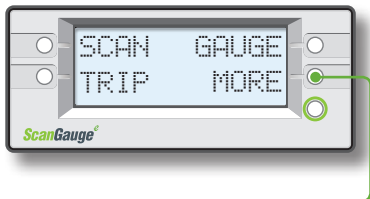
⚠ Setting your ScanGauge to factory defaults will clear all units, engine displacement, engine type, tank size, gauge settings, trip and screen settings.

View Firmware Version of Your ScanGauge

From the Home Screen, push the function button next to MORE. Next, use the upper left and right function buttons to cycle through the available options until you reach the screen titled VERSION.

The version of firmware, which is in the ScanGauge, will be displayed in the lower left corner of the screen. The actual version number you see may be different than the one shown here.

Pushing the function button next to the ⬌ symbol, will display the Copyright notice for Linear Logic, the company that made the firmware.
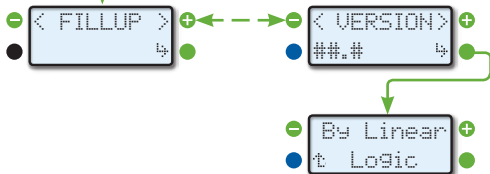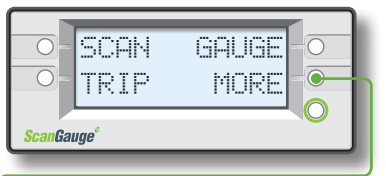
Read or Set the Operating Mode

ScanGauge allows you to view the operating mode your ScanGauge is using to communicate with your vehicle's ECU. You may also manually set the mode.

From the Home Screen, push the function button next to MORE. Next, use the upper left and right function buttons to cycle through the available options until you reach the screen titled MODE. The current mode will be displayed in the lower left corner of the screen.

To manually set ScanGauge to use a particular mode, push the function button next to the ⇥ symbol to enter the MODE screen. Next, use the upper left and right function buttons to cycle through and select a particular mode. Finally, press the lower right function button next to FORCE to set ScanGauge to use the selected mode when communicating with your vehicle's ECU.

The mode should be set this way only if it cannot be determined automatically.
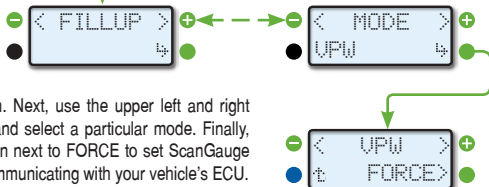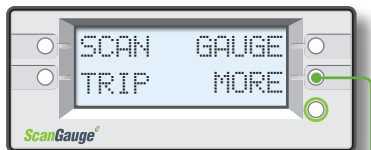
Limited Warranty

Linear Logic will repair this product with new or rebuilt parts, free of charge, for a period of 3 years from the date of original purchase in the event of a defect in materials or workmanship.

Warranty Service can be obtained by sending the product to:

Linear Logic LLC
ATTN: Warranty Service
2222 S Dobson Rd Suite 800
Mesa, AZ 85202

Include your name, address, telephone number and/or e-mail address along with a copy of the Receipt or Packing List.

Also include information about the problem, including the type of vehicle you are using it on and a description of the problem.

An e-mail to *service@Linear-Logic.com* may be able to assist in solving a problem and will not diminish your rights to the full warranty.

Limits and Exclusions:

There are no express warranties except as listed above.

Linear Logic SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE AP-PLICABLE WARRANTY PERIOD.

If a problem with this product develops after the warranty period, you may contact our service department via the mail address or e-mail address listed above for a cost estimate on repairs to the unit.

If the problem is not handled to your satisfaction, contact our customer care department at *customer.care@Linear-Logic.com*.

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