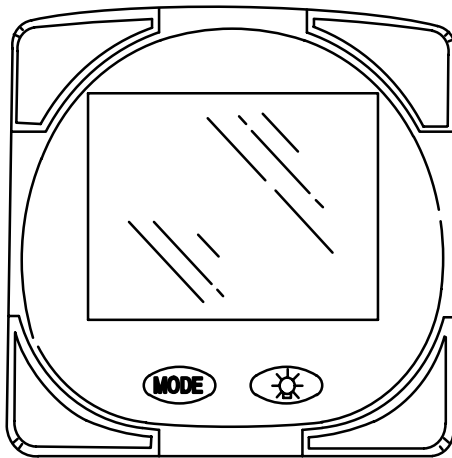


# **MERCURY**

## **SmartCraft**

### **Systems Monitor**



### **Operation Manual**

**THIS MANUAL DESCRIBES THE SMARTCRAFT GAUGE  
SYSTEMS AVAILABLE FOR YOUR BOAT**



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***NOTE:*** This manual shows all the Monitor display screens that are available. Depending on your type of engine, not all these screens will apply.



# LEGEND

A = *A*

B = *B*

C = *C*

D = *D*

E = *E*

F = *F*

I = *I*

L = *L*

N = *N*


O = *O*


P = *P*

S = *S*

T = *T*


U = *U*


 = Engine

 = Fuel

 = Water Temperature

 = Water Pressure

 = Oil

 = Alarm

# BASIC OPERATION


The Monitor is an LCD multi-function display gauge. A variety of displays can be activated using the **MODE** button.

Pressing the **MODE** button scrolls the following displays: fuel used, tachometer (RPM), fuel flow, power trim position, engine temp, water pressure, battery voltage, range (if calibrated), and water depth (if equipped with transducer).

The Monitor will power up when the ignition is turned on.

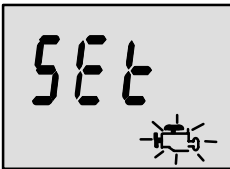
The display includes a backlight which allows you to read it at night.

The backlight brightness is adjustable using  button.

In the event of a warning alarm, the warning icon(s)  will be displayed.

## Initial Power Up (Or After Master Reset)

Unit will display software level then flash the word “**SET**” in conjunction with engine icon, indicating it is ready to start the auto-detect procedure.



Press the **MODE** button.

## AUTO-DETECTION

The unit will begin its “**Auto-detection**” of engine type procedure. In this procedure the Monitor checks with the engine control module (ECM) to see what type of engine you have and presets the data monitoring screens accordingly, (e.g., If Monitor detects an inboard engine connected to the data network it will turn off all engine/drive TRIM functions as these functions are not used in an inboard engine installation). The intention is to make initial setup easier. It also checks for other Monitors to allow for appropriate engine location and station location setting. When setting up monitors for multi-engine or multi-station installations, perform a power up or a master reset on all monitors before performing the auto-detect function. Once all of the monitors display “SET” then, perform auto-detect on the monitors.

# BASIC OPERATION

## Initial Power Up (Or After Master Reset)

### INITIAL AUTO-DETECTION ERROR MESSAGES:

A rectangular box with a light gray background and a black border. Inside, the text "Stbd" is displayed in a black, seven-segment digital font.

Flashing “**Stbd**” – More than one of the engine computers (ECMs) are configured as a starboard engine. The engines must be programmed for proper engine location using a DDT or Quicksilver Diagnostic Tool.


A rectangular box with a light gray background and a black border. Inside, the text "none" is displayed in a black, seven-segment digital font.

Flashing “**none**” – The gauge does not see any engine computers (ECMs). Please check wiring for bad connections and for proper amount of terminator resistors.

A rectangular box with a light gray background and a black border. Inside, the text "noSt" is displayed in a black, seven-segment digital font.

Flashing “**noSt**” – None of the engine computers (ECMs) are configured as a starboard engine. Engines may not be compatible or must be programmed for proper engine location by using a DDT or Quicksilver Diagnostic Tool.

A rectangular box with a light gray background and a black border. Inside, the text "2001" is displayed in a black, seven-segment digital font.



Flashing “**2001**” – You will need to manually select your engine type. Use the  button to scroll through the choices. Stnd = Stern Drive, Inbd = Inboard, JEtd = Jet Drive, Out2 = Outboard 2 Stroke, Out4 = Outboard 4 Stroke.

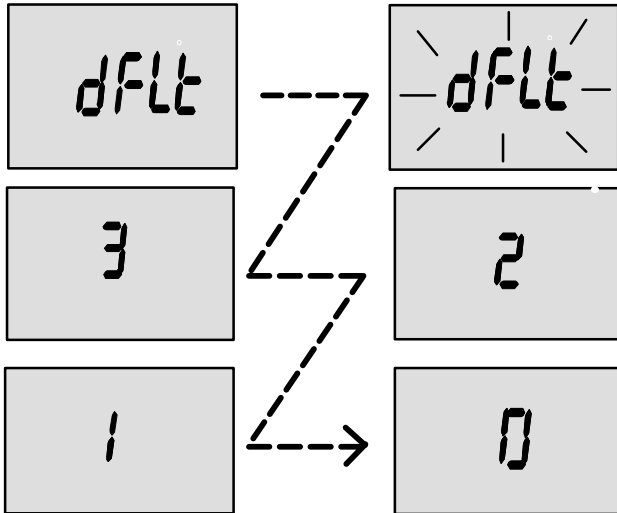
Press  to continue.

# MASTER RESET

You can return the gauge back to factory presets through the Master Reset command.

**IMPORTANT:** Performing a master reset will reset the unit back to all factory defaults, thus eliminating any installation calibrations performed during set up of product.

1. Hold in **MODE** and  for approximately 12 seconds. You will see the word “dFLt”. Let go of the buttons.
2. Immediately press and hold in **MODE** and  again until the unit counts down to zero “0”.
3. The “SEt” message flashing on the screen indicates that the unit has been reset to factory defaults.



# STANDARD DISPLAY SCREENS

**NOTE:** This manual shows all the Monitor display screens that are available. Depending on your type of engine, not all these screens will apply.



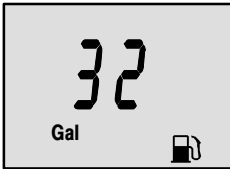
Software Version



Engine Hours


## Start Up

At start up, a momentary (1 second) screen displays the current monitor software version, followed by a 4 second display showing hours of engine use.



## Fuel Used

Displays approximate fuel used since the last reset. **Reset** will return display back to 0.

You can **Reset** anytime by pressing **MODE** and  buttons together momentarily.



## Engine RPM

Tachometer – Displays engine speed in Revolutions Per Minute (RPM).

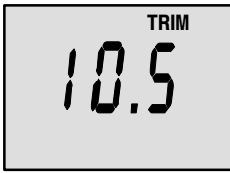


## Fuel Flow

Displays current estimated individual engine fuel consumption in Gallons per hour (Gal/hr) or Liters per hour (Ltr/hr).

(continued on next page)

# STANDARD DISPLAY SCREENS

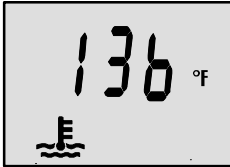


## Trim Position

Displays trim position of the propulsion unit up to the maximum trim position, and then displays the trailer position.

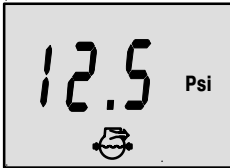
0 = down,  
10 = full trim  
25 = full trailer.

*NOTE: This screen can be set to pop up whenever the trim switch is used. Refer to the CAL 1 Calibrations.*



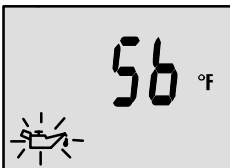
## Engine Temperature

Displays the engine temperature in degrees Fahrenheit (°F) or Celsius (°C).



## Water Pressure

Displays the engine temperature in degrees Fahrenheit (°F) or Celsius (°C).

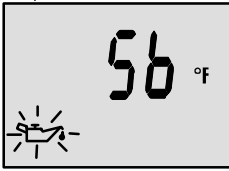


## Oil Temperature

Displays the engine oil temperature in degrees Fahrenheit (°F) or Celsius (°C).

(continued on next page)

# STANDARD DISPLAY SCREENS



## Oil Pressure

Displays engine oil pressure in Psi or Bar.



## Battery Voltage

Displays voltage level (condition) of battery.



## Range

Displays estimated range based on current fuel consumption and fuel remaining in the tank that is connected to the system. The number displayed is an estimate of the distance you can travel on the remaining fuel at current boat speed.

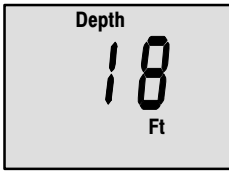
*NOTE: Two requirements to activate this screen,*

*1. You must perform the fuel tank calibration in CAL 2. Refer to the CAL 2 Calibrations Section.*

*2. You must have a speed input device connected to the system (paddle wheel or pitot pressure transducer).*

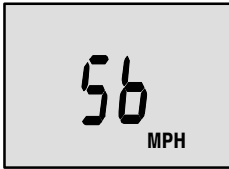
(continued on next page)

# STANDARD DISPLAY SCREENS



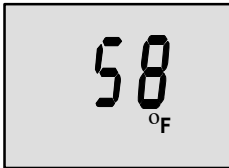
## Water Depth

Displays the depth of water under the transducer if connected. *NOTE: You must have a depth transducer (purchased separately) connected to the system in order for this screen to operate.*



## Vessel Speed

Displays the vessel speed.





## Seawater Temperature

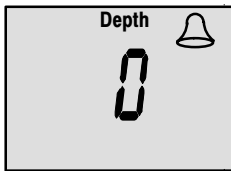
Displays the water temperature.


# Shallow Water Alarm

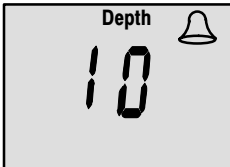
You can set an alarm to trigger whenever the boat moves into water shallower than the alarm level.

## Setting Shallow Water Alarm.

1. The water depth screen must be displayed. Be sure Depth is turned on in *CAL 2*. Refer to *CAL 2* Calibration Section.
2. Press both **MODE** and  buttons together for 3 seconds.
3. The alarm on or off menu will appear.
4. Press the  button to toggle to ON.



5. Push **MODE** button to save.
6. The depth number will be flashing. Press the  button to set the flashing number to desired alarm depth. 100 ft maximum depth and 2 ft minimum depth.



7. Push **MODE** button to save.

# WARNING SYSTEM

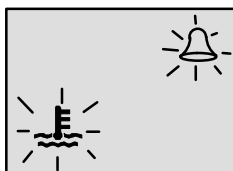
When a problem is detected with the engine, the warning display screens will alert the operator to the potential problem. Refer to the Engine Operation, Maintenance and Warranty Manual for explanation of the problem and the correct action to take.

If problem can cause immediate engine damage, the Engine Guardian System will respond to the problem by limiting engine power. Immediately reduce throttle speed to idle. Refer to the Engine Operation, Maintenance and Warranty Manual for further explanation of the problem and the correct action to take.

If the mode button is pressed to a different screen, the flashing alarm signal will remain flashing to indicate there still is a problem.

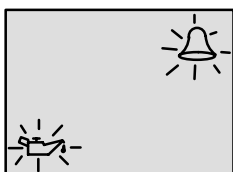
## Warning Display Screens

**IMPORTANT: Refer to the Engine Operation, Maintenance and Warranty Manual for further explanation of the problem and the correct action to take.**



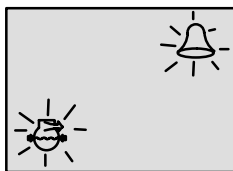
### Engine Overheat

The Bell and Temperature icons are displayed. There is insufficient water pressure in the cooling system.



### Low Oil Reserve

The bell and oil icons are displayed. The oil level is critically low in the engine mounted oil reservoir tank. (Outboard only)



### Low Water Pressure

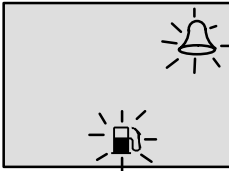
The Bell and Water Pressure icons are displayed. There is insufficient water pressure in the cooling system.

(continued on next page)

# WARNING SYSTEM

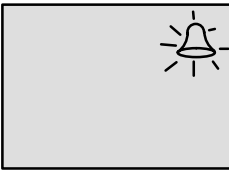
## Warning Display Screens

**IMPORTANT:** Refer to the Engine Operation, Maintenance and Warranty Manual for further explanation of the problem and the correct action to take.



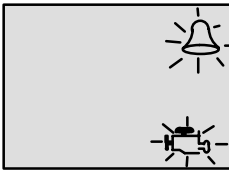
### Water in Fuel

The Bell and Fuel Icon are displayed. Water in the water-separating fuel filter reached the full level.



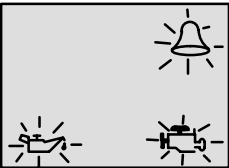
### Engine Overspeed

The Bell icon is displayed. The engine speed exceeded the maximum allowable RPM.



### Engine Malfunction

The Bell and Engine Icon will appear to inform the driver that an engine problem occurred.




### Oil Pump Fault / Low Oil Pressure

The Bell, Engine and oil icons are displayed. The oil pump has stopped functioning electrically. No lubricating oil is being supplied to the engine.


# CAL 1 CALIBRATION

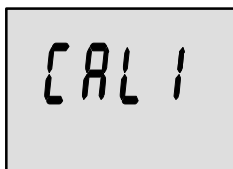
## Cal1 Display Calibrations:

- (On or Off) Trim Pop up Screen
- Trim Calibration
- English or Metric Units Selection
- Range/Distance Units Selection
- (On or Off) Depth, Trim, Engine Temperature, Oil Pressure, Oil Temperature, Water Pressure, Volts, Engine Hours,Speed, Sea-water Temperature and Data Simulator pages.

1. Turn ignition key to the on position.
2. Press and hold **MODE** and  for 3 seconds to bring up the CAL 1 calibration screen.

**NOTE:** Press and hold **MODE** and  when depth screen is displayed will open the depth calibration menu.

**NOTE:** Press and hold **MODE** and  for 3 seconds to get out of the CAL 1 calibration screen.





## Cal 1 Start Screen

Press the **MODE** button to move to the next calibration screen. 

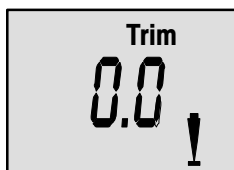


## Trim Pop-up Screen (Turn on or off)

Select whether you want the power trim display screen to pop up whenever the trim switch is activated.




1. Have the number "flashing" on display screen.
2. Press the  button to select.  
1 = on  
0 = off
3. Press the **MODE** button to move to the next function. 

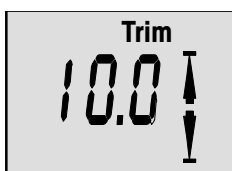
# CAL 1 CALIBRATION



## Trim Sensor 0.0 Setting




(Full Trim in Position)

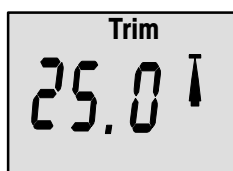
1. The word "Trim" and down arrow should be blinking.
2. Trim unit to the full Down/In position.
3. Press the  button to save.
4. Press the  button to advance to 10.0 setting. 



## Trim Sensor 10.0 Setting




(Full Trim Out Position)

5. The word "Trim" and down and up arrows should be blinking.
6. Trim unit out to the maximum trim (not trailer) position.
7. Press the  button to save.
8. Press the  button to advance to 25.0 setting. 



## Trim Sensor 25.0 Setting

(Full Trailer Out Position)

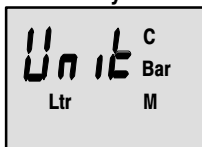
9. The word "Trim" and up arrow should be blinking.
10. Use the trim switch and trim unit out to the maximum trailer position.
11. Press the  button to save.
12. Press the  button to move to the next function. 

# CAL 1 CALIBRATION

## SAE English System






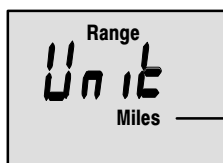
## Metric System



## English or Metric




Select whether you want the readings in the SAE English system or the Metric system.

1. Press the  button to toggle between units.
2. Press the  button to move to the next function. 



## Range Readings




Select whether you want the readings in Miles, Nautical Miles or Kilometers.

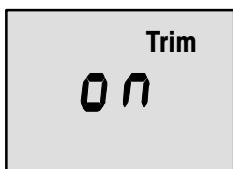
1. Press the  button to toggle between units.
2. Press the  button to move to the next function. 



## Depth Display (on or off)




Select whether you want the depth screen to be displayed.

1. Press the  button to select on or off.
2. Press the  button to move to the next function. 



## Trim Display (on or off)

Select whether you want the trim screen to be displayed.




1. Press the  button to select on or off.
2. Press the  button to move to the next function. 

# CAL 1 CALIBRATION



## Coolant Temperature Display (on or off)




Select whether you want the coolant temperature screen to be displayed.

1. Press the  button to select on or off.
2. Press the  button to move to the next function. 



## Oil Pressure Display (on or off)




Select whether you want the oil pressure screen to be displayed.

1. Press the  button to select on or off.
2. Press the  button to move to the next function. 

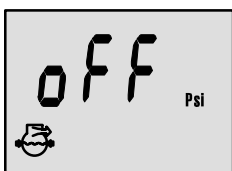


## Oil Temperature Display (on or off)

Select whether you want the oil temperature screen to be displayed. (Outboard only)




1. Press the  button to select on or off.
2. Press the  button to move to the next function. 

# CAL 1 CALIBRATION



## Water Pressure Display (on or off)




Select whether you want the water pressure screen to be displayed.

1. Press the  button to select on or off.
2. Press the  button to move to the next function. 



## Battery Voltage Display (on or off)




Select whether you want the battery voltage screen to be displayed.

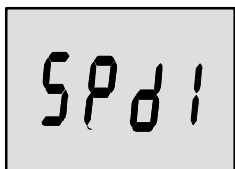
1. Press the  button to select on or off.
2. Press the  button to move to the next function. 



## Engine Hours Display (on or off)




Select whether you want the engine hours screen to be displayed.

1. Press the  button to select on or off.
2. Press the  button to move to the next function. 



## Vessel Speed Display (on or off)




Select whether you want vessel speed screen to be displayed.

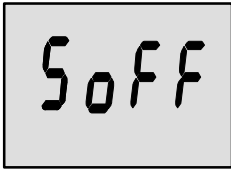
1. Press the  button to select on or off.
2. Press the  button to move to the next function. 



### Seawater Temperature Display (on or off)




Select whether you want seawater temperature screen to be displayed.

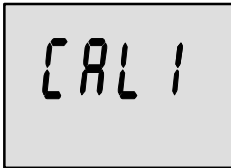
1. Press the  button to select on or off.
2. Press the  button to move to the next function. 



### Simulator Display (on or off)




Select whether you want seawater temperature screen to be displayed.

1. Press the  button to select on or off.
2. Press the  button to move to the Calibration selection screen. 



### Calibration Selection Screen



Select between Cal1, Cal2, or to exit the calibration mode..

1. Press and hold  and  for 3 seconds to get out of the CAL 1 calibration screen or press the  to go to CAL 2 calibration screen.

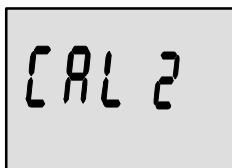
# CAL 2 CALIBRATION

## CAL2 Display Calibrations:


- Paddle Wheel Speed Sensor Frequency Setting
- Pitot Water Pressure Speed Sensor Input Setting
- Pitot Water Pressure Speed Sensor Multiplier
- Fuel Tank Calibration

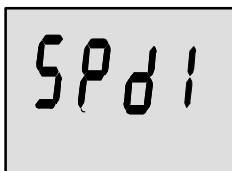
1. Turn ignition key to the on position.
2. Press and hold **MODE** and  for 3 seconds to bring up the CAL 1 calibration screen. Press and hold **MODE** and  again for 3 seconds to bring up the CAL 2 calibration screen.

**NOTE:** Press and hold **MODE** and  for 3 seconds to get out of the CAL 2 calibration screen.



## Cal 2 Start Screen



Press the **MODE** button to move to the next calibration screen. 



## Pitot Water Pressure Sensor Input

Select the pressure input of the Pitot water pressure sensor on the engine.

**NOTE:** The standard speed input on production Mercury Outboards is 100 PSI. Certain High Performance applications may require a 200 PSI input.


1. Press the  button to select.
  - 0 =No Pitot pressure sensor
  - 1 = 100 PSI
  - 2 = 200 PSI
2. Press the **MODE** button to move to the next function. 

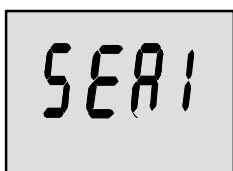
# CAL 2 CALIBRATION



## Paddle Wheel Speed Sensor Frequency

Frequency can be changed to match requirements of different sensors. 4.9 is the frequency of the paddle wheel speed sensor provided by Mercury Marine.


Press the **MODE** button to save and move to the next function. 

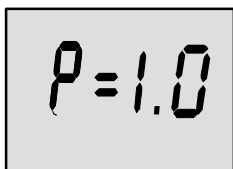


## Seawater Temperature Display (on or off)

Indicates if a seawater temperature sensor is installed.

*NOTE: You must have a Mercury paddlewheel or depth/temp transducer (purchased separately) connected to the system in order for this screen to operate .*


Press the **MODE** button to save and move to the next function. 



## Pitot Multiplier Screen

Allows you to adjust the speedometer value to match another speedometer, such as a GPS.

*NOTE: The multiplier ranges from 0.5 to 1.5.*

Press the **MODE** button to save and move to the next function. 

# CAL 2 CALIBRATION

## Fuel Tank Calibration

### THERE ARE THREE METHODS TO SET UP THE FUEL TANK LEVEL MONITORING FEATURE:

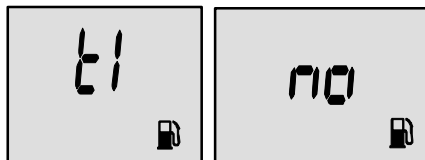
**First:** Do nothing. Linear readout based on raw sensor values. This mode does not factor in irregular tank shapes.

**Second:** By following the tank calibration default procedure, which is done without actually adding fuel to the tank. The Monitor will supply an estimated range value based on default sensor values. This mode does not factor in irregular tank shapes.

**Third:** By following the tank calibration procedure completely, which includes adding fuel at certain calibration points. Monitor will display an estimated range value that factors in the tank shape.

# CAL 2 CALIBRATION

## CAL 2 Calibration





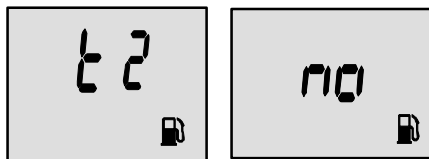
### Tank 1 (fuel) Capacity Setting

“t1” = tank 1

1. Press the **MODE** button until “t1” is displayed. “t1” = tank 1.
2. Press **MODE** once more. The word “no” and the fuel icon will be displayed.

**NOTE:** The word “no” will not go away unless the gauge sees a tank connected to the system. With no tank connected, you will not be able to enter a capacity.

3. Enter the capacity of tank 1 in gallons/liters using the  key.
4. Press the **MODE** button to save and move to the next function. 





### Tank 2 Capacity Setting

**NOTE:** Tank 2 does not have to be a fuel tank. It could represent an oil tank for example.

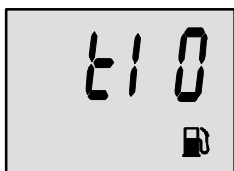
“t2” = tank 2

1. Press the **MODE** button until “t2” is displayed. “t2” = tank 2.
2. Press **MODE** once more. The word “no” and the fuel icon will be displayed.

**NOTE:** The word “no” will not go away unless the gauge sees a tank connected to the system. With no tank connected, you will not be able to enter a capacity.

3. Enter the capacity of tank 2 in gallons using the  key.
4. Press the **MODE** button to save and move to the next function. 



# CAL 2 CALIBRATION

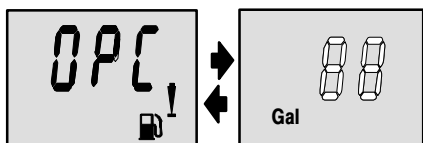


## Tank 1 Calibration

Once the capacities have been entered, you need to select whether you want to calibrate fuel tank 1 "t1".



*NOTE:* The gauge will not let you calibrate the fuel tank until the capacity had been entered).

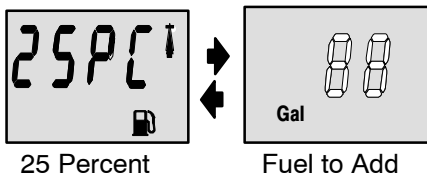
1. Press the  button to select 1 = on, 0 = off. Selecting "1" and then press  to continue fuel tank calibration.



## Tank 1 Calibration 0% Setting

Have the fuel tank level at empty.



2. Press the  button to save. Press the  button to advance to 25% setting. ⬇



## Tank 1 Calibration 25% Setting

Adding the amount of fuel shown will raise fuel tank level to 25 percent.

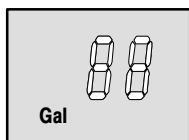
*NOTE:* The quantity of "Fuel to Add" is determined by the fuel tank capacity number entered.

3. Add the displayed amount of fuel to the fuel tank.
4. Press the  button to save. Press the  button to advance to 50% setting. ⬇

# CAL 2 CALIBRATION



50 Percent






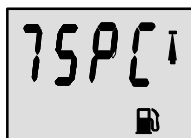
Fuel to Add

## Tank 1 Calibration 50% Setting

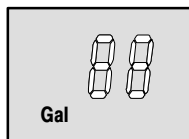
Adding the amount of fuel shown will raise fuel tank level to 50 percent.

*NOTE: The quantity of "Fuel to Add" is determined by the fuel tank capacity number entered.*

5. Add the displayed amount of fuel to the fuel tank.
6. Press the  button to save. Press the  button to advance to 75% setting. 



75 Percent






Fuel to Add

## Tank 1 Calibration 75% Setting

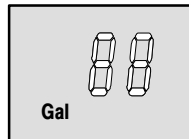
Adding the amount of fuel shown will raise fuel tank level to 75 percent.

*NOTE: The quantity of "Fuel to Add" is determined by the fuel tank capacity number entered.*

7. Add the displayed amount of fuel to the fuel tank.
8. Press the  button to save. Press the  button to advance to full% setting. 






Full Percent



Fuel to Add

## Tank 1 Calibration Full Setting

Add the amount of fuel to fill the fuel tank.

9. Add the amount of fuel to fill the fuel tank.
10. Press the  button to save. Press the  button to advance to next function. 

# CAL 2 CALIBRATION



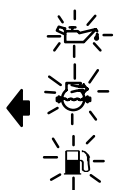
## Tank 2 Calibration

Select whether you want to calibrate tank 2.

*NOTE: Tank 2 does not have to be a fuel tank. It could represent an oil tank for example.*

*NOTE: The gauge will not let you calibrate the tank until the capacity had been entered).*

1. Press the **(MODE)** button until “t2” is displayed. “t2” = tank 2.
2. Press the **(☀)** button to select 1= on, 0 = off. Selecting “1” will continue tank 2 calibration.
3. Press the **(MODE)** button to continue.



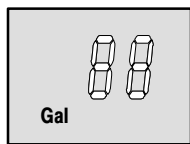
## Tank 2 Calibration Icon Selection

Select one of three icons for tank 2 display screen. (oil, water/waste, fuel).

1. Press the **(☀)** button, you will see a blinking icon. Using the **(☀)** button, select which icon you want tank 2 to be, (oil, fuel, or water/waste).

**NOTE:** If you choose oil or water/waste icon, no further tank 2 calibration will be needed. If tank 2 will be for fuel, continue tank 2 procedure.

2. Press the **(MODE)** button to continue.

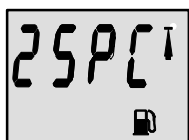


## Tank 2 Calibration 0% Setting

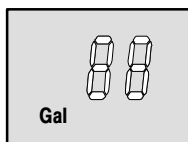
Have the fuel tank level at empty.

3. Press the **(☀)** button to save. Press the **(MODE)** button to advance to 25% setting. ⬇

# CAL 2 CALIBRATION



25 Percent






Fuel to Add

## Tank 2 Calibration 25% Setting

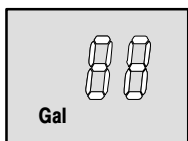
Adding the amount of fuel shown will raise fuel tank level to 25 percent.

*NOTE :The quantity of fuel to add is determined by the fuel tank capacity number entered.*

4. Add the displayed amount of fuel to the fuel tank.
5. Press the  button to save. Press the  button to advance to 50% setting. 



50 Percent






Fuel to Add

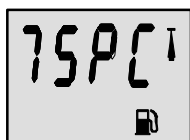
## Tank 2 Calibration 50% Setting

Adding the amount of fuel shown will raise fuel tank level to 50 percent.

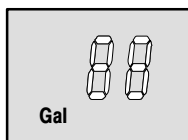
*NOTE: The quantity of fuel to add is determined by the fuel tank capacity number entered.*

6. Add the displayed amount of fuel to the fuel tank.
7. Press the  button to save. Press the  button to advance to 75% setting. 

# CAL 2 CALIBRATION



75 Percent






Fuel to Add

## Tank 2 Calibration 75% Setting

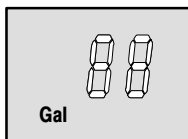
Adding the amount of fuel shown will raise fuel tank level to 75 percent.

*NOTE: The quantity of fuel to add is determined by the fuel tank capacity number entered.*

8. Add the displayed amount of fuel to the fuel tank.
9. Press the  button to save. Press the  button to advance to full% setting. 





Full Percent



Fuel to Add

## Tank 2 Calibration Full Setting

Add the amount of fuel to fill the fuel tank.

10. Add the amount of fuel to fill the fuel tank.
11. Press and hold  and  for 3 seconds to get out of the CAL 2 calibration screen.