THIS MANUAL DESCRIBES THE SMARTCRAFT GAUGE SYSTEMS AVAILABLE FOR YOUR BOAT
## PRODUCT IDENTIFICATION

For boats equipped with SmartCraft gauge systems, look to the descriptions below to identify the system in the boat. Please read about the SmartCraft system to get the best performance from them.

<table>
<thead>
<tr>
<th>Monitor</th>
<th>Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Version 1.01 &amp; 1.02</td>
<td>Software Version 2.00</td>
</tr>
<tr>
<td>NOTE: Software version will flash on screen at start up</td>
<td>NOTE: Software version will flash on screen at start up</td>
</tr>
</tbody>
</table>

### Part 1

![Monitor Software Version 1.01 & 1.02](image1.png)

### Part 2

![Monitor Software Version 2.00](image2.png)

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### Part 3

**System Tachometer and Speedometer**

Note: Look for RESET and Brightness arrows

![System Tachometer and Speedometer](image3.png)

### Part 4

**Smart Tachometer and Speedometer**

NOTE: Look for letters “VDO”

![Smart Tachometer and Speedometer](image4.png)
Part 1

Monitor with Software Version 1.01 and 1.02

Legend ........................................... 1-1
Basic Operation .................................. 1-2
Standard Information Display Screens ........ 1-3
Shallow Water Alarm ............................ 1-6
Warning System ................................. 1-7
Warning Display Screens ..................... 1-7
CAL 1 Calibration ............................... 1-9
CAL 2 Calibration ............................... 1-12

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

Monitor with Software Version 1.01 and 1.02 is compatible with:
2001 model year and newer Mercury Outboard models that are designed for use with SmartCraft.
MONITOR – VERSION 1.01-1.02

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 = \( U \)  

\[\text{\tiny Engine}\]  
\[\text{\tiny Fuel}\]  
\[\text{\tiny Water Temperature}\]  
\[\text{\tiny Water Pressure}\]  
\[\text{\tiny Oil}\]  
\[\text{\tiny Alarm}\]
Basic Operation
This 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 System 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.
MONITOR – VERSION 1.01-1.02
Standard Information Display Screens

Initial Power Up
At power 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).
Standard Information 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).

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).

Water Depth
Displays the depth of water under the transducer if connected.

NOTE: You must have a depth transducer connected to the system in order for this screen to operate.
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 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 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 Manual for further explanation of the problem and the correct action to take.

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

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.
MONITOR – VERSION 1.01-1.02

Warning Display Screens

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

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

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.
MONITOR – VERSION 1.01-1.02

**CAL 1 Calibration**

*Cal 1 Display Calibrations:*
- Trim Pop up Screen (On or Off)
- Trim Sensor Setting
- English or Metric Readings Selection
- Range Readings Selection
- Fuel Tank Capacity Setting

1. Turn ignition key to the on position.

2. Press and hold the **MODE** and **Sun** buttons for 3 seconds to bring up the CAL 1 calibration screen.

**NOTE:** Press and hold the **MODE** and **Sun** buttons 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.

![Cal 1 Start 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 **Sun** button to select.
   - 1 = on
   - 0 = off

3. Press the **MODE** button to move to the next function.
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.

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.

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.
MONITOR – VERSION 1.01-1.02

CAL 1 Calibration

**SAE English System**
- Gal
- Psi
- Ft

**Metric System**
- Ltr
- Bar
- M

**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.

**Fuel Tank Capacity**
If the boat installation does not have the fuel tank level sensor wired to the monitor, then calibrate the fuel tank capacity setting to read 0.
If a fuel tank level sensor is wired to the monitor, than enter the capacity of the fuel tank that has the sensor.

**IMPORTANT:** Set the fuel tank capacity setting at 0 if the fuel tank level is not going to be calibrated. This will prevent a constant alarm.

3. Press the button to input tank capacity number.
4. Press the button to move to the next function.
MONITOR – VERSION 1.01-1.02

CAL 2 Calibration

Cal 2 Display Calibrations:
• Single or Multi-engine Installation Setting
• Dual Station Setting
• Paddle Wheel Speed Sensor Frequency Setting
• Pitot Water Pressure Sensor Input Setting
• Fuel Tank Calibration
• Depth Screen (On or Off)
• Coolant Screen (On or Off)
• Oil Pressure Screen (On or Off)
• Water Pressure Screen (On or Off)
• Voltage Screen (On or Off)

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.

Single or Multi-Engine Setting
This screen lets you select the engine position that the Monitor is connected to.

Press the MODE button to move to the next function.
MONITOR – VERSION 1.01-1.02

CAL 2 Calibration

**Dual Station Setting**
If you have 2 Monitors connected to the same engine, one can be set St1 and the other should be St2.

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

**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.

**Water Pressure Sensor Input**
Select the speed input of the Pitot water pressure sensor on the engine.

*NOTE:* The standard speed input on production Mercury Outboards is 100 PSI. On a High Performance Outboard it could be 200 PSI.

1. Press the **SELECT** button to select.
   1 = 100 PSI
   2 = 200 PSI

2. Press the **MODE** button to move to the next function.
Fuel Tank Calibration
Select whether you want to calibrate the fuel tank.
NOTE: Selecting “1” will continue fuel tank calibration.

1. Press the button to select 1= on, 0 = off.

Fuel Tank Calibration
0% Setting
Have the fuel tank level at empty.

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

Fuel Tank 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 in CAL 1

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.
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.

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.

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.
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.

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.
MONITOR – VERSION 1.01-1.02

CAL 2 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 and hold and for 3 seconds to get out of the CAL 2 calibration screen.
NOTE: This manual shows all the Monitor display screens that are available. Depending on your type of engine, not all these screens will apply.

Monitor with Software Version 2.00 is compatible with:
2002 model year and newer Mercury Outboard Models that are designed for use with SmartCraft.
MerCruiser model 8.1/496
MONITOR – VERSION 2.00

Legend

A = ☀️
B = 🛡
C = 🌆
D = 🌊
E = 🌞
F = 🌈
I = 🌅
L = 🌅
N = 🌅
O = 🌅
P = 🌅
S = 🌅
T = 🌅
U = 🌅

☀️ = Engine
🛡️ = Fuel
🌄 = Water Temperature
💧 = Water Pressure
🌅 = Oil
⚠️ = Alarm
MONITOR – VERSION 2.00

Basic Operation

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

Pressing the 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.

Press the button.

AUTO-DETECTION

The unit will begin it’s “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.

(continued on next page)
MONITOR – VERSION 2.00

Initial Power Up (Or After Master Reset)

Initial Auto-Detection Error Messages:

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

Flashing “nonE” – The gauge does not see any engine computers (ECM's). Please check wiring for bad connections and for proper amount of terminator resistors.

Flashing “noSt” – None of the engine computers (ECM's) 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.

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 MODE to continue.
MONITOR – VERSION 2.00

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 \( \text{MODE} \) and \( \text{Menu} \) for approximately 12 seconds. You will see the word “dFLt” let go of the buttons.

2. Immediately press and hold in \( \text{MODE} \) and \( \text{Menu} \) 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.
MONITOR – VERSION 2.00
Standard Information 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.

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**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).
MONITOR – VERSION 2.00
Standard Information 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).
MONITOR – VERSION 2.00
Standard Information 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).
MONITOR – VERSION 2.00
Standard Information 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.

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.
MONITOR – VERSION 2.00

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 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 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 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.

Low Water Pressure
The Bell and Water Pressure icons are displayed. There is insufficient water pressure in the cooling system.
MONITOR – VERSION 2.00

Warning Display Screens

IMPORTANT: Refer to the Engine Operation, Maintenance 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
The Bell, Engine and oil icons are displayed. The oil pump has stopped functioning electrically. No lubricating oil is being supplied to the engine.
MONITOR – VERSION 2.00

**CAL 1 Calibration**

*Cal1 Display Calibrations:*
- (On or Off) Trim Pop up Screen
- Trim Calibration
- English or Metric Units Selection
- Range Units Selection
- (On or Off) Depth, Trim, Engine Temperature, Oil Pressure, Oil Temperature, Water Pressure, Volts, Engine Hours, 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 ( ) 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.
MONITOR – VERSION 2.00

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.
MONITOR – VERSION 2.00
CAL 1 Calibration

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

1. Press the \( \text{unit} \) button to toggle between units.
2. Press the \( \text{MODE} \) button to move to the next function.

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

1. Press the \( \text{unit} \) button to toggle between units.
2. Press the \( \text{MODE} \) 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 \( \text{on} \) button to select on or off.
2. Press the \( \text{MODE} \) 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 \( \text{on} \) button to select on or off.
2. Press the \( \text{MODE} \) button to move to the next function.
**MONITOR – VERSION 2.00**

**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.

1. Press the button to select on or off.
2. Press the button to move to the next function.
MONITOR – VERSION 2.00

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

### 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 and hold and for 3 seconds to get out of the CAL 2 calibration screen.
MONITOR – VERSION 2.00

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 (on) for 3 seconds to bring up the CAL 1 calibration screen. Press and hold (MODE) and (on) again for 3 seconds to bring up the CAL 2 calibration screen.

NOTE: Press and hold (MODE) and (on) 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.
Press the (MODE) button to save and move to the next function.

Pitot Water Pressure Sensor Input
Select the PSI 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 (on) button to select.
   1 = 100 PSI
   2 = 200 PSI
2. Press the (MODE) button to move to the next function.
MONITOR – VERSION 2.00

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.

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 procedure, but 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.
MONITOR – VERSION 2.00

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 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.

3. Enter the capacity of tank 2 in gallons using the (key).

   **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.

4. Press the (MODE) button to save and move to the next function.
MONITOR – VERSION 2.00

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” will continue fuel tank calibration.

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

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.
MONITOR – VERSION 2.00

CAL 2 Calibration

**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.

**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.

**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.
MONITOR – VERSION 2.00

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 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.
MONITOR – VERSION 2.00

CAL 2 Calibration

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.

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.

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.
MONITOR – VERSION 2.00

CAL 2 Calibration

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 the button to save. Press the button to advance to next function.
Part 3
System Tach and Speedometer

Basic Operation and Features .................. 3-1
Auto Detection Engine Function ............... 3-3
Master Reset ...................................... 3-3
Speedometer Display Screens .................. 3-4
Tachometer Display Screens .................... 3-6
Troll Control ...................................... 3-8
Warning System ................................... 3-10
Warning Display Screens ....................... 3-11
Cal 1 Tachometer Calibration ................... 3-15
Cal 2 Tachometer Calibration ................... 3-18
Cal 1 Speedometer Calibration ................... 3-22
Cal 2 Speedometer Calibration ................... 3-24

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

System Tach and Speedometer are compatible with:
2002 model year Mercury Outboard models that are designed for use with SmartCraft.
MerCruiser model 8.1/496
SYSTEM TACH & SPEED
Basic Operation and Features

**Power up:** Each gauge will power up when the ignition is turned on. Gauges will stay on as long as the ignition is on.

**Lights:** The brightness and contrast are adjustable.

**Buttons:** The **MODE** button is used for selecting information screens. The “+” and “−” buttons are used for setting engine speed during troll control and setting gauge calibrations.

**Troll Control:** Allows the operator to set and control the idle speed of the engine for trolling without using the throttle.

**Engine Guardian System:** Monitors the critical sensors on the engine for any early indications of problems. The system will respond to a problem by reducing engine speed in order to maintain a safe operating condition.

**Warning System:** The system will sound the warning horn and display the warning message.
SYSTEM TACH & SPEEDOMETER

Basic Operation and Features

Digital Display Screen: Displays the following engine information.

<table>
<thead>
<tr>
<th>Tachometer Display Screen:</th>
<th>Speedometer Display Screen:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEPENDING ON ENGINE TYPE</strong></td>
<td><strong>DEPENDING ON ENGINE TYPE</strong></td>
</tr>
<tr>
<td>Engine Break-in</td>
<td>Speed</td>
</tr>
<tr>
<td>Engine Temperature</td>
<td>Fuel Used</td>
</tr>
<tr>
<td>Oil Psi</td>
<td>COG/SOG – If GPS Input</td>
</tr>
<tr>
<td>Trim and RPM</td>
<td>Distance and fuel to waypoint –</td>
</tr>
<tr>
<td>Trim and Water Pressure</td>
<td><em>if waypoint programmed into optional GPS</em></td>
</tr>
<tr>
<td>Water Pressure</td>
<td>Clock – Air/Sea Temp</td>
</tr>
<tr>
<td>Battery Voltage and Engine Hours</td>
<td>Inst. and Ave. Fuel Economy</td>
</tr>
<tr>
<td>Fuel Flow and Fuel Used</td>
<td>Trip Odometer</td>
</tr>
<tr>
<td>RPM</td>
<td>Fuel Tank Levels</td>
</tr>
<tr>
<td>Depth</td>
<td>Oil Tank Levels</td>
</tr>
<tr>
<td></td>
<td>Fresh Water Tank2 or Level(s)</td>
</tr>
<tr>
<td></td>
<td>Waste Water Level(s) or</td>
</tr>
<tr>
<td></td>
<td><strong>Dual Engine</strong></td>
</tr>
<tr>
<td></td>
<td>Trim and RPM Synchronizer –</td>
</tr>
<tr>
<td></td>
<td>Fuel Range</td>
</tr>
<tr>
<td></td>
<td>Fuel Economy</td>
</tr>
<tr>
<td></td>
<td>Trip Odometer</td>
</tr>
</tbody>
</table>
SYSTEM TACH & SPEEDOMETER

Auto-Detection Engine Function

On first time power up of gauge or after a “Master Reset”, gauge will show “Auto detect”. Upon pressing the mode button, gauge will automatically determine engine type. This will preset the data monitoring screens accordingly. The intention is to make initial setup easier. If gauge shows a warning of “No Starboard Engine” or “Multiple Starboard Engines”, engine will need to be properly selected (Port and Stbd) using a Mercury engine diagnostic tool. “Master Reset” and “Auto detect” again. (Refer to “Master Reset”).

System tach and speed come standard with the “Engine Auto-detection Screen” this screen lets the gauge on its initial power up automatically detect which engine type you are using and preconfigure the gauge to match that vessel type.

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.

By pressing TROLL- and TROLL+ simultaneously for approximately 10 seconds (Until the graphic bars “collide”). You will be able to restore the unit back to factory presets.
Speedometer Display Screens

NOT ALL SCREENS MAY APPLY TO YOUR ENGINE TYPE.

When the ignition is turned on, the speedometer will show the last screen that was displayed before the ignition was turned off.

Press \textbf{MODE} to change display screens. You can revert back to the previous screen by pressing and holding \textbf{MODE} for 2 seconds. This will reverse the display rotation.

\textbf{NOTE:} Readings can be displayed in English (U.S.) or Metric. Refer to Calibrations.

\textbf{NOTE:} Descriptions are not necessarily in order on the gauge. Order changes depending on engine type.

1. \textbf{Clock - Temp} – Clock, air temperature and water temperature. The air and water temperature sensors will have to be connected to obtain display readings.

2. \textbf{Fuel Level} – Displays the amount of fuel remaining.

3. \textbf{Oil Level} – Displays the amount of engine oil remaining, or water/waste tank level (if attached).

4. \textbf{RPM Synchronizer} – Dual Engines Only – Monitors the revolutions of both engines.

5. \textbf{Trim Synchronizer} – Dual Engines Only – Displays the trim position of both engines. Simplifies keeping trim levels equal.
6. **Range** – The estimated range is based on boat speed, fuel consumption and fuel remaining in the tank. The numbers displayed indicates an estimate of the distance you can travel with the remaining fuel. Speed input required (Paddle Wheel, Pitot Pressure or GPS).

7. **Fuel Economy** – The display shows average “AVG” fuel consumption as well as Instantaneous “INST” fuel economy. The numbers displayed indicate miles per gallon “MPG” or kilometer per liter “KM/L”.

   **Fuel Reset** – To reset, select the display screen and press MODE and TROLL buttons.

8. **Trip Odometer** – Tells how far you’ve gone since you last reset the gauge to zero. **Trip Reset** – To reset, select the display screen and press MODE and TROLL buttons.

9. **Digital Speedometer** – Can display boat speed in miles per hour, kilometer per hour, or nautical miles per hour. The speedometer will use the paddle wheel for its low speed readings but will switch to the speedo or GPS (if connected) for high speed readings. (Transition point setting is described in Cal2).
Tachometer Display Screens

NOT ALL SCREENS MAY APPLY TO YOUR ENGINE TYPE.

When the ignition is turned on, the tachometer will display the last screen that was displayed before the ignition was turned off.

Press MODE to change display screens. You can revert back to the previous screen by pressing and holding MODE for 2 seconds. This will reverse the display rotation.

**NOTE:** Readings can be displayed in English (U.S.) or Metric. Refer to Calibration.

1. **Engine Break-in** – Displays time remaining on the break-in period of a new engine. This screen will automatically disappear after the break-in period is complete.

2. **Temperature** – Displays engine coolant temperature.

3. **Power Trim Angle** – Displays trim angle of the outboard or sterndrive up to the maximum trim angle, and then displays the trailer angle. 0 = down, 10 = maximum trim, and 25 = full trailer.

4. **Power Trim Angle - Water Pressure** – Displays trim angle of the engine and cooling system water pressure.

5. **Water Pressure** - Displays cooling system water pressure at the engine.
Tachometer Display Screens

6. **Oil Pressure** – Displays engine oil pressure in units of Psi or Bar.

7. **Battery Voltage** – Displays voltage level (condition) of battery. Also records the running time of engine.

8. **Fuel Flow** – Displays engine fuel use in gallons per hour or liters per hours.

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

10. **Water Depth** – Displays the depth of water under the transducer if connected. The water depth screen can be turned on or off in CAL 1 Calibration. You can set an alarm to trigger whenever the boat moves into water shallower than the alarm level. Refer to CAL 2 Calibration for water depth alarm and offset settings.

**NOTE:** You must have a depth transducer (purchased separately) connected to the system in order for this screen to operate.
Troll Control

Basic Operation

**NOTE:** Troll control may not be available on all engine models.

With troll control you can maintain a trolling speed of 550 to 1000 rpm without using the throttle.

**NOTE:** Troll control min/max range may change depending on engine type.

You can set the troll control by using either the tachometer or speedometer. Tachometer will set the speed in RPM and speedometer will set the speed in MPH, Kph or KN.

You can shut off troll control anytime by pushing the **MODE** button when in the troll display screen or by moving the throttle.

If you have troll control set at a desired speed and then you shut off the troll control, the system remembers the set speed and will return to that speed when re-engaged.

The display screen will revert back to the previous screen after 10 seconds of no activity. Push the **TROLL +** or **TROLL –** button to reactivate the display screen.

When the troll control is engaged and you are out of the troll control screen, a flashing signal “**TR**” (a) will appear in the upper left corner of the display to indicate troll control is still running.
**Troll Control**

**To Set Troll Control**

1. With the engine running, shift engine into gear. Set engine speed at idle.

2. Push in the **TROLL +** or **TROLL –** button to bring up the troll control display screen.

3. Press **MODE** to engage (turn on) the troll control.

4. Use the **TROLL +** **TROLL –** buttons to set the desired speed. Use (+) to increase speed and (−) to decrease speed.

5. If you set troll control to a higher speed than the troll rpm can bring the boat to, the **TARGET SPEED TOO FAST** (a) message will appear. Reduce troll speed.

6. If you set troll control to a slower speed than the troll rpm can bring the boat to, the **TARGET SPEED TOO SLOW** (b) message will appear. Increase troll speed.

**To Get Out of Troll Control**

There are three ways to turn off the troll control:

- Press the **MODE** button when in the troll display screen.
- Move the throttle to a different speed.
- Shift engine into neutral.
Warning System

Alarms Warnings – When a problem is detected, the name of the offending alarm appears on the display (a).

If problem can cause immediate engine damage, the Engine Guardian System (b) will respond to the problem by limiting engine power. Immediately reduce throttle speed to idle and refer to the warning messages on the following pages. Refer to the Engine Operation, Maintenance Manual for further explanation of the problem and the correct action to take.

The alarm message will stay displayed until the mode button is pressed. If there are multiple alarms, these will cycle on the display at five-second intervals.

If the mode button is pressed to a different screen, the flashing alarm signal “AL” (c) will appear in the upper right corner to indicate there still is a problem.
SYSTEM TACH & SPEEDOMETER

Warning Display Screens

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 Manual for explanation of the problem and the correct action to take.

**WARNING DISPLAY SCREENS**

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>TACHOMETER DISPLAY</th>
<th>SPEEDOMETER DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>BATTERY</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>ENGINE DATA BUS</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>FAULT – HORN</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>FAULT – IGNITION</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>FAULT – INJECTOR</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>FAULT – OIL PUMP</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>FAULT – SENSOR</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>FAULT – WATER TEMP</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>LOW FUEL</td>
<td></td>
<td>⬤</td>
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<tr>
<td>LOW OIL</td>
<td></td>
<td>⬤</td>
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<tr>
<td>OIL TEMP</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>OIL PSI</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>OVERHEAT</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>OVER SPEED</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>PRESSURE</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>RESERVE OIL</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>WATER IN FUEL</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>MAP</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>MAT</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>TPS</td>
<td>⬤</td>
<td></td>
</tr>
</tbody>
</table>
Warning Display Screens

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

1. OVERHEAT – The engine has overheated.

2. PRESSURE – There is insufficient water pressure in the cooling system.

3. OVERSPEED – Engine speed exceeded the maximum allowable RPM.

4. WATER IN FUEL – Water in the water-separating fuel filter reached the full level.

5. FAULT-HORN – Warning horn is not functioning correctly.

6. RESERVE OIL LOW – 2 STROKE OUTBOARD ONLY – Oil level is critically low in the engine mounted oil reservoir tank.

7. FAULT-OIL PUMP – Oil pump has stopped functioning electrically. No lubricating oil is being supplied to the engine.

8. FAULT-INJECTOR – One or more of the fuel injectors have stop functioning electrically.
**SYSTEM TACH & SPEEDOMETER**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>FAULT IGNITION</td>
</tr>
<tr>
<td>10</td>
<td>BATTERY 8V 18V</td>
</tr>
<tr>
<td>11</td>
<td>ENGINE DATA BUS</td>
</tr>
<tr>
<td>12</td>
<td>FAULT SENSOR</td>
</tr>
<tr>
<td>13</td>
<td>FAULT WATER TEMP</td>
</tr>
<tr>
<td>14</td>
<td>no starboard engine</td>
</tr>
<tr>
<td>15</td>
<td>Multiple Starboard Engine</td>
</tr>
<tr>
<td>16</td>
<td>OIL TEMP</td>
</tr>
</tbody>
</table>

**Warning Display Screens**

9. **FAULT-IGNITION** – A problem has developed in the ignition system.

10. **BATTERY** – The electrical system is not charging or the battery charge is low.

11. **ENGINE DATA BUS** – The data communication link between the tachometer and engine is not connected.

12. **FAULT-SENSOR** – One of the sensors is not functioning correctly.

13. **FAULT-WATER TEMP** – The sensor for measuring outside lake/sea water temperature is not functioning correctly.

14. **NO STARBOARD ENGINE** – Informs you that the Instrument does not see the starboard engine computer. Usually indicates that no data is being transferred from the engine’s computer to the gauge. (Check wiring, also make sure both terminator resistors are installed in the bus). Make sure both ECM’s are not configured for port location using a DDT or Quicksilver Diagnostic Tool.

15. **MULTIPLE STARBOARD ENGINE** – SmartCraft Gauges are recognizing multiple engines as starboard.

In multiple engine applications, each engine must first be assigned a position (starboard, port, starboard2 or port2) with a Quicksilver Diagnostic Tool before the system will function properly.

If you have a dual engine application, you must first program the port engine with a Quicksilver Diagnostic Tool.

16. **OIL TEMPERATURE** – Engine oil is overheating.
Warning Display Screens

17. OIL PRESSURE – There is insufficient oil pressure.

18. LOW FUEL LEVEL – This message serves as a warning that the fuel level in the fuel tank is critically low. You should stop for fuel immediately to avoid running out.

19. LOW OIL LEVEL – OUTBOARD 2 STROKE ONLY – Oil level in the remote oil tank is low. You should stop and refill the oil tank immediately to avoid running out.

20. FAULT-MAP – Engine problem occurred. Have the engine checked by your dealer.


22. FAULT-TPS – Engine problem occurred. Have the engine checked by your dealer.
SYSTEM TACH & SPEEDOMETER

Quick Cal Calibration

Quick Cal – This calibration is for setting lighting and contrast.

1. Press in the MODE and TROLL buttons for up to 2 seconds to get to Quick Cal screen.

2. Press MODE to advance through the calibration selections.

CAL 1 Tachometer Calibration

Cal 1 – This calibration level lets you turn on and off the system screens. You may configure the system to display as little or as much information as you prefer.

1. Press in the MODE and TROLL buttons and hold for approximately 7 seconds until you see the Cal 1 screen.

2. Press MODE to advance through the calibration selections.

<table>
<thead>
<tr>
<th>REMOTE SCREENS?</th>
<th>If yes is selected, then screen changes made on this SC1000 tach will effect any other SC1000 tach in the system. NOTE: all tach will need to have this screen turned to “Yes” for this function to work.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REMOTE LCD LIGHT?</th>
<th>If yes is selected, then lighting levels made on this SC1000 tach will effect any other SC1000 tach in the system. NOTE: all tach will need to have this screen turned to “Yes” for this function to work.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REMOTE LCD CONTRAST?</th>
<th>If yes is selected, then contrast levels made on this SC1000 tach will effect any other SC1000 tach in the system. NOTE: all tach will need to have this screen turned to “Yes” for this function to work.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRIM POPUP?</th>
<th>Do you want power trim display screen to pop up momentarily when you trim the engine?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
</tbody>
</table>

(continued on next page)
## SYSTEM TACH & SPEEDOMETER

### CAL 1 Tachometer Calibration

<table>
<thead>
<tr>
<th>TRIM CALIBRATION</th>
<th>Choosing edit allows you to calibrate the gauge to the standard 0–10 unit trim and 11–25 trailer position scale.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[SKIP]</td>
<td></td>
</tr>
<tr>
<td>[EDIT]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRIM FULL DOWN THEN PRESS PLUS BUTTON</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[DFLT]</td>
<td></td>
</tr>
<tr>
<td>[SKIP]</td>
<td></td>
</tr>
<tr>
<td>[SAVE]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRIM FULL UP THEN PRESS PLUS BUTTON</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[DFLT]</td>
<td></td>
</tr>
<tr>
<td>[SKIP]</td>
<td></td>
</tr>
<tr>
<td>[SAVE]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRIM TO TRAILER POINT THEN PRESS PLUS BUTTON</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[DFLT]</td>
<td></td>
</tr>
<tr>
<td>[SKIP]</td>
<td></td>
</tr>
<tr>
<td>[SAVE]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DISPLAY UNITS</th>
<th>Lets you change units of measure between English (standard) or Metric.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN]</td>
<td></td>
</tr>
<tr>
<td>[SAVE]</td>
<td></td>
</tr>
<tr>
<td>[UP]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPEED UNITS</th>
<th>Lets you select speed units. You can choose from MPH (Miles Per Hour), KN (Nautical Miles Per Hour) or KMH (Kilometers Per Hour).</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN]</td>
<td></td>
</tr>
<tr>
<td>[SAVE]</td>
<td></td>
</tr>
<tr>
<td>[UP]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DEPTH SCREEN?</th>
<th>Do you want to turn on the depth screen? (Remember: You must have a Smart Craft depth transducer connected to the system for this screen to operate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]</td>
<td></td>
</tr>
<tr>
<td>[SAVE]</td>
<td></td>
</tr>
<tr>
<td>[YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENGINE TEMP SCREEN?</th>
<th>Do you want to turn on the engine temp screen?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]</td>
<td></td>
</tr>
<tr>
<td>[SAVE]</td>
<td></td>
</tr>
<tr>
<td>[YES]</td>
<td></td>
</tr>
</tbody>
</table>

(continued on next page)
## SYSTEM TACH & SPEEDOMETER

### CAL 1 Tachometer Calibration

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIL TEMP SCREEN?</td>
<td>Do you want to turn on the oil temp screen?</td>
</tr>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
<tr>
<td>OIL PRESS SCREEN?</td>
<td>Do you want to turn on the oil pressure screen?</td>
</tr>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
<tr>
<td>TRIM AND PSI SCREEN?</td>
<td>Do you want to turn on the trim and water pressure split screen?</td>
</tr>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
<tr>
<td>WATER PSI SCREEN?</td>
<td>Do you want to turn on the water pressure screen?</td>
</tr>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
<tr>
<td>TRIM AND RPM SCREEN?</td>
<td>Do you want to turn on the trim and RPM split screen?</td>
</tr>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
<tr>
<td>RPM SCREEN?</td>
<td>Do you want to turn on the digital RPM screen?</td>
</tr>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
<tr>
<td>SIMULATOR MODE?</td>
<td>Do you want to turn on a simulation mode? (used for demonstration purposes).</td>
</tr>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
<tr>
<td>EXIT?</td>
<td>Do you want to exit calibration? Or jump straight into calibration level 2?</td>
</tr>
<tr>
<td>[NO] [SAVE] [CAL2]</td>
<td></td>
</tr>
</tbody>
</table>
**SYSTEM TACH & SPEEDOMETER**

**CAL 2 Tachometer Calibration**

**CAL 2** – This calibration level lets you configure the system sensor inputs.

1. Press in the `MODE` and `TROLL` buttons and hold for approximately 10 seconds for calibration2 (Cal2) screen.

2. Press `MODE` to advance through the calibration selections.

<table>
<thead>
<tr>
<th>EXTERNAL SENSORS</th>
<th>This section lets you enable or disable the following external sensor inputs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[SKIP]</td>
<td>[EDIT]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PITOT SENSOR?</th>
<th>Is the boat equipped with a pitot sensor to measure boat speed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]</td>
<td>[SAVE]</td>
</tr>
<tr>
<td>[YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PADDLE SENSOR?</th>
<th>Is the boat equipped with a paddle wheel to measure boat speed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]</td>
<td>[SAVE]</td>
</tr>
<tr>
<td>[YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRIM SENSOR?</th>
<th>Is the boat equipped with a trim sensor?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]</td>
<td>[SAVE]</td>
</tr>
<tr>
<td>[YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEA TEMP?</th>
<th>Is the boat equipped with a water temperature sensor?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]</td>
<td>[SAVE]</td>
</tr>
<tr>
<td>[YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INVERT STEERING</th>
<th>Is steering angle showing up on the link gauge opposite the direction that it should be? If it is then this feature will reverse the signal so it is displayed properly.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]</td>
<td>[SAVE]</td>
</tr>
<tr>
<td>[YES]</td>
<td></td>
</tr>
</tbody>
</table>

(continued on next page)
SPEED OPTION

This section lets you configure the following speed sensors.

PITOT SENSOR?

Select pitot transducer type. You can choose 100 or 200 PSI. (100 PSI is the most common)

PITOT SENSOR MULTIPLIER

Adjust the pitot pressure sensor for correcting display readings that are too high/low.

PADDLE SENSOR PULSE FACTOR

Adjust paddle wheel frequency for display readings that are too high/low.

PADDLE TO PITOT TRANSITION

Set the speed at which the gauge stops looking at the paddle wheel and starts using pitot to measure boat speed.

(continued on next page)

There are three methods for calibrating 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 procedure described on next page, but without actually adding fuel. System Tach will supply an estimated range value based on linear interpolation of the sensor range values. This mode does not factor in irregular tank shapes.

Third: By following the tank calibration procedure described on next page completely, which means adding fuel at each calibration point. System Tach will display an estimated range value that factors in the tank shape.
**SYSTEM TACH & SPEEDOMETER**

**CAL 2** Tachometer Calibration

<table>
<thead>
<tr>
<th>FUEL TANK CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN] [SAVE] [UP]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALIBRATION FUEL TANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>[SKIP] [EDIT]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EMPTY TANK THEN PRESS PLUS BUTTON</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DFLT] [SKIP] [SAVE]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FILL TO 1/4 THEN PRESS PLUS BUTTON</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DFLT] [SKIP] [SAVE]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FILL TO 1/2 THEN PRESS PLUS BUTTON</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DFLT] [SKIP] [SAVE]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FILL TO 3/4 THEN PRESS PLUS BUTTON</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DFLT] [SKIP] [SAVE]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FILL TO FULL THEN PRESS PLUS BUTTON</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DFLT] [SKIP] [SAVE]</td>
</tr>
</tbody>
</table>

(continued on next page)
### CAL 2 Tachometer Calibration

<table>
<thead>
<tr>
<th><strong>DEPTH SENSOR OFFSET</strong></th>
<th>Lets you electronically configure a depth offset. Entering a negative number gives you a water line offset. A positive number gives you a keel offset.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN]</td>
<td>[SAVE]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>DEPTH ALARM</strong></th>
<th>Lets you enter a depth value. When the depth transducer reads that value or below, the shallow water alarm will sound.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN]</td>
<td>[SAVE]</td>
</tr>
</tbody>
</table>
SYSTEM TACH & SPEEDOMETER

Quick Cal Calibration

Quick Cal – This calibration is for setting lighting and contrast.

1. Press in the [MODE] and [TROLL+] buttons for up to 2 seconds to get to Quick Cal screen.

2. Press [MODE] to advance through the calibration selections.

CAL 1 Speedometer Calibration

Cal 1 – This calibration level lets you turn on and off the system screens. You may configure the system to display as little or as much information as you prefer.

1. Press in the [MODE] and [TROLL+] buttons and hold for approximately 7 seconds until you see the Cal 1 screen.

2. Press [MODE] to advance through the calibration selections.

<table>
<thead>
<tr>
<th>REMOTE LCD LIGHT?</th>
<th>Enables you to set the lighting levels on all the SC1000 simultaneously from this gauge.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REMOTE LCD CONTRAST?</th>
<th>Enables you to control the contrast from another System TACH/Speed simultaneously from this gauge.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO] [SAVE] [YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>Allows you to set the time.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO] [SKIP] [EDIT]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME FORMAT</th>
<th>Choose between a 12 hour and 24 hour format.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN] [SAVE] [UP]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USE GPS TIME?</th>
<th>If you have a GPS connected this feature enables the gauge to let the GPS update the gauges internal clock.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN] [SAVE] [UP]</td>
<td></td>
</tr>
</tbody>
</table>

(continued on next page)
**SYSTEM TACH & SPEEDOMETER**

*CAL 1 Speedometer Calibration*

<table>
<thead>
<tr>
<th>CALIBRATION HOUR 12:00 AM</th>
<th>Adjust the gauges internal clock to match your local time. First set the hours then press MODE button to set the minutes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN]  [SAVE]  [UP]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DISPLAY UNITS</th>
<th>Lets you change units of measurement between English (standard) or Metric.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN]  [SAVE]  [UP]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPEED UNITS</th>
<th>Lets you select the units at which speed is displayed. You can choose from MPH (Miles Per Hour), KTS (Knots), or KMH (Kilometers Per Hour).</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN]  [SAVE]  [UP]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TO WAYPOINT SCREEN?</th>
<th>If you have a GPS connected you can turn on the screen that shows your distance and fuel to a waypoint.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]  [SAVE]  [YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIMULATOR MODE?</th>
<th>Do you want to turn on a simulation mode? (Used for demonstration purposes).</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]  [SAVE]  [YES]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXIT?</th>
<th>Do you want to exit calibration? Or jump straight into calibration level 2?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]  [YES]  [CAL2]</td>
<td></td>
</tr>
</tbody>
</table>
# SYSTEM TACH & SPEEDOMETER

## CAL 2 Speedometer Calibration

**CAL 2** – This calibration level lets you configure the system sensor inputs.

1. Press in the **MODE** and **TROLL** buttons and hold for approximately 10 seconds for calibration2 (*Cal2*) screen.

2. Press **MODE** to advance through the calibration selections.

<table>
<thead>
<tr>
<th>EXTERNAL SENSORS</th>
<th>This lets you enable or disable external sensor inputs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[SKIP]</td>
<td></td>
</tr>
<tr>
<td>[EDIT]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AIR TEMP?</th>
<th>Are you using a air temp. sensor?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]</td>
<td>[SAVE] [YES]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GPS?</th>
<th>Do you have a GPS sensor installed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]</td>
<td>[SAVE] [YES]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>USE GPS SPEED?</th>
<th>Use the GPS input to drive the speed display?</th>
</tr>
</thead>
<tbody>
<tr>
<td>[NO]</td>
<td>[SAVE] [YES]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WATER TEMPERATURE ADJUST</th>
<th>Adjust water temp. transducer to match actual sea water temperature.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DOWN]</td>
<td>[SAVE] [UP]</td>
</tr>
</tbody>
</table>
Part 4

Smart Tach and Speedometer

Basic Operation and Features .......................... 4-1
Speedometer Display Screens ......................... 4-2
Tachometer Display Screens .......................... 4-4
Troll Control ............................................. 4-6
Warning System ......................................... 4-8
Warning Display Screens ............................... 4-9
Tachometer Calibration ................................. 4-12
Speedometer Calibration ............................... 4-17

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

Smart Tach and Speedometer are compatible with:
2001 model year and newer Mercury Outboard models that are designed for use with SmartCraft.
Basic Operation and Features

**Power up:** Each gauge will power up when the ignition is turned on. Gauges will stay on as long as the ignition is on.

**Lights:** The brightness and contrast are adjustable.

**Buttons:** The MODE button is used for selecting information screens. The + and – buttons are used for setting engine speed during troll control and setting gauge calibrations.

**Troll Control:** Allows the operator to set and control the idle speed of the engine for trolling without using the throttle.

**Engine Guardian System:** Monitors the critical sensors on the engine for any early indications of problems. The system will respond to a problem by reducing engine speed in order to maintain a safe operating condition.

**Warning System:** The system will sound the warning horn and display the warning message.

<table>
<thead>
<tr>
<th>Tachometer Display Screen</th>
<th>Speedometer Display Screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Tachometer</td>
<td>Clock and Temperature</td>
</tr>
<tr>
<td>Hour Meter</td>
<td>Fuel Tank Level(s)</td>
</tr>
<tr>
<td>Power Trim Angle</td>
<td>Oil Tank Level(s)</td>
</tr>
<tr>
<td>Fuel Flow</td>
<td>Fuel Economy</td>
</tr>
<tr>
<td>Engine Temperature</td>
<td>Fuel Range</td>
</tr>
<tr>
<td>Battery Voltage</td>
<td>Trip Odometer</td>
</tr>
<tr>
<td>Water Pressure</td>
<td>Digital Speedometer</td>
</tr>
<tr>
<td></td>
<td>Barometer Reading</td>
</tr>
</tbody>
</table>
Speedometer Displays

When the ignition is turned on, the speedometer will show the last screen that was displayed before the ignition was turned off.

Press \textit{MODE} to change display screens. You can revert back to the previous screen by pressing and holding \textit{MODE} for 2 seconds. This will reverse the display rotation.

\textbf{NOTE:} Readings can be displayed in English (U.S.) or Metric. Refer to Calibrations.

1. \textbf{Clock - Temp} – Clock, air temperature and water temperature. The air and water temperature sensors will have to be connected to obtain display readings.

2. \textbf{Fuel Level} – Displays the amount of fuel remaining.

3. \textbf{Oil Level} – Displays the amount of engine oil remaining.

4. \textbf{RPM Synchronizer} – Dual Engines – Monitors the revolutions of both engines. Allows throttle adjustments to keep each running uniformly.

5. \textbf{Trim Synchronizer} – Dual Engines – Displays the trim position of both engines. Simplifies keeping trim levels equal.
Speedometer Displays

6. Traveling Range – The estimated traveling range is based on current fuel consumption and fuel remaining in the tank. The numbers displayed indicates an estimate of the distance you can travel with the remaining fuel.

7. Fuel Economy – The display shows average “AVG” fuel consumption as well as Instantaneous “INST” fuel economy. The numbers displayed indicate miles per gallon “MPG” or kilometer per liter “KM/L”. Reset – To reset, select the display screen and press MODE and TROLL buttons.

8. Trip Odometer – Tells how far you’ve gone since you last set the gauge to zero. Trip Reset – To reset, select the display screen and press MODE and TROLL buttons.

9. Digital Speedometer – Can display boat speed in miles per hour, kilometer per hour, or knots. The digital speedometer will continue to increase even if needle is at maximum. The speedometer will use the paddle wheel for its low speed readings but will switch to the speedo or GPS (if connected) for high speed readings.

10. Barometer – Shows the barometric pressure reading only at the time the ignition was turned on.
SMART TACH & SPEEDOMETER

Tachometer Displays

When the ignition is turned on, the tachometer will display the last screen that was displayed before the ignition was turned off.

Press **MODE** to change display screens. You can revert back to the previous screen by pressing and holding **MODE** for 2 seconds. This will reverse the display rotation.

**NOTE:** Readings can be displayed in English (U.S.) or Metric. Refer to Calibration.

1. **Engine Break-in** – Displays time remaining on the break-in period of a new engine. This screen will automatically disappear after the break-in period is complete.

2. **Power Trim Angle - Water Pressure** – Displays trim angle of the outboard and cooling system water pressure.

3. **Fuel Flow** – Displays engine fuel use in gallons per hour or liters per hours.

4. **Temperature** – Displays engine coolant temperature from Cold to Hot.

5. **Battery Voltage** – Displays voltage level (condition) of battery.
Tachometer Displays

6. **Water Pressure:** Displays cooling system water pressure at the engine.

7. **Power Trim Angle:** Displays trim angle of the outboard up to the maximum trim angle, and then displays the trailer angle. 0 = down, 10 = full trim, and 25 = full trailer.

8. **Digital Tachometer:** Displays engine speed in Revolutions Per Minute (RPM).

9. **Hour Meter:** Records the running time of the engine.
SMART TACH & SPEEDOMETER

Troll Control

Basic Operation

With troll control you can maintain a trolling speed of 550 to 1000 rpm without using the throttle. See NOTE: following.

**NOTE:** Avoid using a very low rpm trolling speed for an extended period of time. Doing so could result in a low-battery voltage condition.

You can set the troll control by using either the tachometer or speedometer. Tachometer will set the speed in RPM and speedometer will set the speed in MPH.

You can shut off troll control anytime by pushing the **MODE** button when in the troll display screen or moving the throttle.

If you have troll control set at a desired speed and then you shut off the troll control, the system remembers the set speed and will return to that speed when re-engaged.

The display screen will revert back to the previous screen after 10 seconds of no activity. Push the **TROLL +** or **TROLL -** button to reactivate the display screen.

When the troll control is engaged and you are out of the troll control screen, a flashing signal “TR” (a) will appear in the upper left corner of the display to indicate troll control is still running.
Troll Control

To Set Troll Control

1. With the engine running, shift outboard into gear. Set engine speed at idle.

2. Push in the \textit{TROLL+} or \textit{TROLL–} button to bring up the troll control display screen.

3. Press \textit{MODE} to engage (turn on) the troll control.

4. Use the \textit{TROLL+} and \textit{TROLL–} buttons to set the desired speed. Use (+) to increase speed and (–) to decrease speed.

5. If you set troll control to a higher speed than the troll rpm can bring the boat to, the \textit{TARGET SPEED TOO FAST} (a) message will appear. Reduce troll speed.

6. If you set troll control to a slower speed than the troll rpm can bring the boat to, the \textit{TARGET SPEED TOO SLOW} (b) message will appear. Increase troll speed.

To Get Out of Troll Control

There are three ways to turn off the troll control:

- Press the \textit{MODE} button when in the troll display screen.
- Move the throttle to a different speed.
- Shift outboard into neutral.
Warning System

Alarms Warnings – When a problem is detected, the name of the offending alarm appears on the display (a).

If problem can cause immediate engine damage, the Engine Guardian System (b) will respond to the problem by limiting engine power. Immediately reduce throttle speed to idle and refer to the warning messages on the following pages. Refer to the Engine Operation, Maintenance Manual for further explanation of the problem and the correct action to take.

The alarm message will stay displayed until the mode button is pressed. If there are multiple alarms, these will cycle on the display at five-second intervals.

If the mode button is pressed to a different screen, the flashing alarm signal “AL” (c) will appear in the upper right corner to indicate there still is a problem.
SMART TACH & SPEEDOMETER

Warning Display Screens

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 Manual for explanation of the problem and the correct action to take.

WARNING DISPLAY SCREENS

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>TACHOMETER DISPLAY</th>
<th>SPEEDOMETER DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>BATTERY</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>ENGINE DATA BUS</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>FAULT – HORN</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>FAULT – IGNITION</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>FAULT – INJECTOR</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>FAULT – OIL PUMP</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>FAULT – SENSOR</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>FAULT – WATER TEMP</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>LOW FUEL</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>LOW OIL</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>OVERHEAT</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>OVER SPEED</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>PRESSURE</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>RESERVE OIL</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>UNIT MISMATCH (MULTI ENGINE)</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>WATER IN FUEL</td>
<td>●</td>
<td></td>
</tr>
</tbody>
</table>
Warning Display Screens

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

1. **OVERHEAT** – The engine has overheated.

2. **PRESSURE** – There is insufficient water pressure in the cooling system.

3. **OVERSPEED** – Engine speed exceeded the maximum allowable RPM.

4. **WATER IN FUEL** – Water in the water-separating fuel filter reached the full level.

5. **FAULT-HORN** – Warning horn is not functioning correctly.

6. **RESERVE OIL LOW – 2 STROKE OUTBOARD ONLY** – Oil level is critically low in the engine mounted oil reservoir tank.

7. **FAULT-OIL PUMP** – Oil pump has stopped functioning electrically. No lubricating oil is being supplied to the engine.

8. **FAULT-INJECTOR** – One or more of the fuel injectors have stop functioning electrically.
Warning Display Screens

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

9. **FAULT-IGNITION** – A problem has developed in the ignition system.

10. **BATTERY** – The electrical system is not charging or the battery charge is low.

11. **ENGINE DATA BUS** – The data communication link between the tachometer and engine is not connected.

12. **FAULT-SENSOR** – One of the sensors is not functioning correctly.

13. **FAULT-WATER TEMP** – The sensor for measuring outside lake/sea water temperature is not functioning correctly.

14. **UNIT MISMATCH** – (Multi Engines) This message tells you that the tachometers are not calibrated alike. For example, this could happen if one tachometer reading is English and the other is in Metric. Re-calibrate the tachometers.

15. **LOW FUEL LEVEL** – This message serves as a warning that the fuel level in the fuel tank is critically low. You should stop for fuel immediately to avoid running out.

16. **LOW OIL LEVEL** – OUTBOARD 2 STROKE ONLY – oil level in the remote oil tank is low. You should stop and refill the oil tank immediately to avoid running out.
SMART TACH & SPEEDOMETER

Tachometer Calibration

**NOTE:** When calibrating multi tachometers (multi engines) turn ignition on for all the tachometers.

Simple Calibration – This calibration for setting lighting and a few other common screens can be made while engine is running.

1. Press in the **MODE** and **TROLL** buttons for calibration screen.

2. Press **MODE** to advance through the calibration selections.

Advanced Calibration – This calibration goes through all mode selections.

1. Turn ignition key to the off position.

2. Hold **TROLL** and turn ignition on.

3. Press and hold **MODE** for 2 seconds to bring up the calibration screen.

4. Press **MODE** to advance through the calibration selections.

---

**CALIBRATION BRIGHTNESS**  
[DOWN] [SAVE] [UP]  

Press – or + to adjust level. Press **MODE** to save setting

**CALIBRATION BRIGHTNESS**  
Set all instruments?  
[ NO ] [ YES ]  

Do you want the same brightness level for all SmartCraft gauges? Press + for yes. Press **MODE** for no.

**CALIBRATION CONTRAST**  
[DOWN] [SAVE] [UP]  

Press – or + to adjust level. Press **MODE** to save setting

**CALIBRATION CONTRAST**  
Set all instruments?  
[ NO ] [ YES ]  

Do you want the same contrast level for all SmartCraft gauges? Press + for yes. Press **MODE** for no.

**CALIBRATION CONTROL OPTIONS**  
REMOTE SCREEN ? YES – NO  
[DOWN] [SAVE] [UP]  

Multi Engine – Do you want tachometer display screens to advance together? Press + or – to select. Press **MODE** to save.

(continued on next page)
# SMART TACH & SPEEDOMETER

## Tachometer Calibration

<table>
<thead>
<tr>
<th>CALIBRATION CONTROL OPTIONS</th>
<th>Do you want power trim angle display screen to pop up whenever you trim the outboard? <strong>Press + or –</strong> to select. <strong>Press MODE</strong> to save.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRIM POP UP ? YES – NO</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALIBRATION ENGINE POSITION</th>
<th>Match tachometer to the correct engine. <strong>Press +</strong> to select engine. <strong>Press MODE</strong> to save.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE-PORT-CENTER-STARBORD</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALIBRATION DISPLAY UNITS</th>
<th>Select display readings in English or Metric. <strong>Press + or –</strong> to select. <strong>Press MODE</strong> to save.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLISH - METRIC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALIBRATION SPEED UNITS</th>
<th>Display boat speed in KN (knots), KPH (kilometers per hour), MPH (miles per hour). <strong>Press + or –</strong> to select setting. <strong>Press MODE</strong> to save.</th>
</tr>
</thead>
<tbody>
<tr>
<td>KN - KPH - MPH</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALIBRATION EXTERNAL SENSORS</th>
<th>Press MODE to skip to the next display. <strong>Press + (edit)</strong> if your adding or deleting any external sensor to the SmartCraft System. <strong>Editing External Sensors</strong> Chose Yes or No for each sensor No = not used Yes = in use <strong>Press + or –</strong> for correct setting <strong>Press MODE</strong> to save and advance to next sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>[EDIT]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALIBRATION EXTERNAL SENSORS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEEDO SENSOR ? YES/NO</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CALIBRATION EXTERNAL SENSORS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PADDLE WHEEL SENSOR ? YES/NO</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CALIBRATION EXTERNAL SENSORS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER TEMP SENSOR ? YES/NO</td>
<td></td>
</tr>
</tbody>
</table>

(continued on next page)
Add the capacity of the fuel tank. **Press** + or – to select. **Press** MODE to save.

This calibration accurately adjusts the fuel level sending unit in the fuel tank. **NOTE:** If the fuel tank is not calibrated, fuel range cannot be displayed. **Press** MODE to skip to the next display. **Press** + (edit) to calibrate the fuel tank.

*Pressing DFLT (default) during edit will return to original value setting*

Calibrate the fuel tank as follows:

1. Empty the fuel tank, **Press** + to save.
2. Fill tank to 1/4 full, **Press** + to save.
3. Fill tank to 1/2 full, **Press** + to save.
4. Fill tank to 3/4 full, **Press** + to save.
5. Fill tank to full, **Press** + to save.

The fuel tank is now calibrated.

(continued on next page)
SMART TACH & SPEEDOMETER

Tachometer Calibration

Add the capacity of the oil tank. **Press + or –** to select. **Press MODE** to save.

This calibration accurately adjusts the oil level sending unit in the oil tank. **Press MODE** to skip to the next display. **Press +** (edit) to calibrate the oil tank.

**Pressing DFLT (default) during edit will return to original value setting**

Calibrate the oil tank as follows:

1. Empty the oil tank, **Press +** to save
2. Fill tank to 1/4 full, **Press +** to save.
3. Fill tank to 1/2 full, **Press +** to save.
4. Fill tank to 3/4 full, **Press +** to save.
5. Fill tank to full, **Press +** to save.

The oil tank is now calibrated (continued on next page)
If the speedometer is not reading correctly, the speed sensors can be recalibrated to correct the setting. **Press** **MODE** to skip to the next display. **Press** + (edit) to calibrate the sensors. Increasing or decreasing the multiplier will increase or decrease the speed reading **Press** – or + for changing setting. **Press** **MODE** to save.

If the trim setting is not reading correctly, the trim sensor can be recalibrated to correct the setting. **Pressing** DFLT (default) during edit will return to original value setting. **Press** **MODE** to skip to the next display. **Press** + (edit) to calibrate the sensor.

1. Trim outboard full up, than **Press** + to save.
2. Trim outboard to the point where the trim cylinders takes over, than **Press** + to save.
3. Trim outboard full down, than **Press** + to save.

Do you want to exit the calibration mode? **Press** + for yes. **Press** **MODE** for no.
SMART TACH & SPEEDOMETER

Speedometer Calibration

Simple Calibration – This calibration for setting lighting and setting the clock can be made while engine is running.

1. Press in the MODE and TROLL + buttons for calibration screen.
2. Press MODE to advance through the calibration selections.

Advanced Calibration – This calibration goes through the entire mode selections.

1. Turn ignition key to the off position.
2. Hold TROLL + and turn ignition key to the on position.
3. Press and hold MODE for 2 seconds to bring up the calibration screen.
4. Press MODE to advance through the calibration selections.

- Press – or + to adjust level. Press MODE to save setting

---

Do you want the same brightness level for all SmartCraft gauges? Press + for yes. Press MODE for no.

---

Press – or + to adjust level. Press MODE to save setting

Do you want the same contrast level for all SmartCraft gauges? Press + for yes. Press MODE for no.

(continued on next page)
SMART TACH & SPEEDOMETER

Speedometer Calibration

CALIBRATION TIME

[SKIP] [EDIT]

CALIBRATION TIME FORMAT
12H – M,D,Y, or 24H – D,M,Y
[DOWN] [SAVE] [UP]

CALIBRATION NMEA
ENABLE or DISABLE
[DOWN] [SAVE] [UP]

CALIBRATION UTC ZONE
UTC CORRECTION = X H
[DOWN] [SAVE] [UP]

CALIBRATION HOUR

4:15 PM
[DOWN] [SAVE] [UP]

CALIBRATION MINUTE

4:15 PM
[DOWN] [SAVE] [UP]

If the clock display is correct, press MODE to skip.
To set or reset the clock Press +

Select 12 hour or 24 hour clock set.
Press – or + to select. Press MODE to save.

Press – or + to enable or disable GPS time calibration. If a GPS navigation receiver is connected to the gauges, NMEA data will set the time automatically. Press MODE to save.

Press – or + to add UTC correction.
MODE to save. (Hour offset from universal time constant)

Press – or + to set the hour
Press MODE to save.

Press – or + to set the minute
Press MODE to save.

(continued on next page)
Press MODE to skip to the next display. Press + (edit) if your adding or deleting any external sensor to the SmartCraft System.

**Editing External Sensors**

Choose Yes or No for each sensor

No = not used  Yes = in use

Press + or – for correct setting

Press MODE to save and advance to next sensor

Do you want to exit the calibration mode? Press + for yes. Press MODE for no.