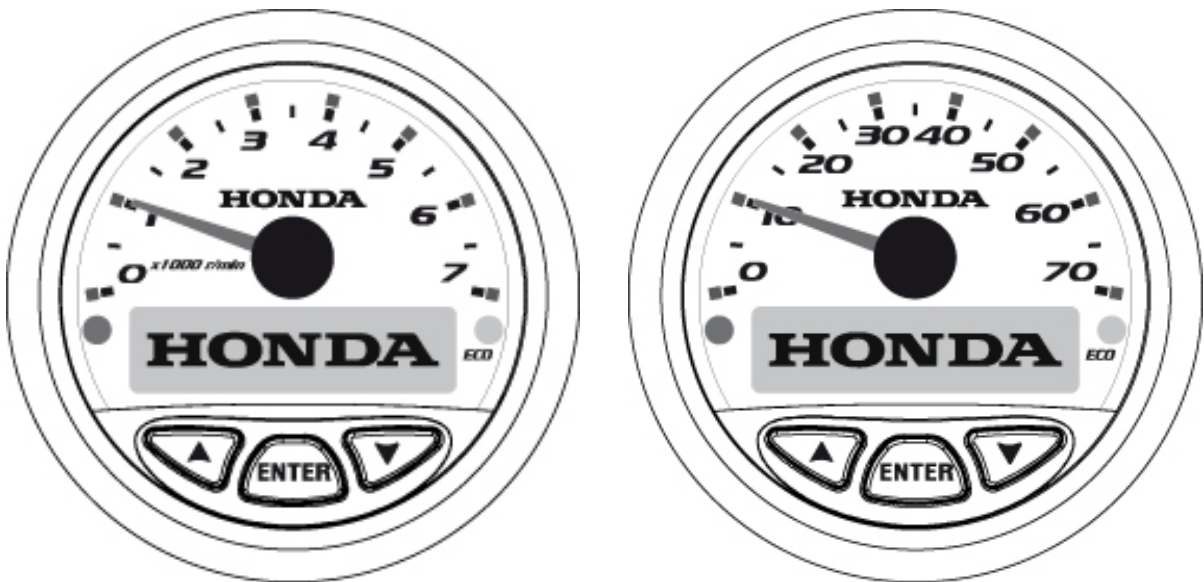


## Honda NMEA 2000®

# Digital Tachometer & Speedometer

## Operating Instructions



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## **Introduction**

Thank you for your selection and purchase of the Honda NMEA 2000® Digital Gauge.

We are certain you will be pleased with your purchase of this equipment which will provide you with detailed engine management data using NMEA 2000® CAN bus network technology.

We want you to get the best results from your new gauge and operate it safely. This document contains information on how to do that, so please read carefully

As most of the engine data is factory pre set for your convenience, this publication will provide you with information on basic operation and custom view possibilities.

The Honda Digital Tachometer & Speedometer are designed to be used exclusively with NMEA 2000® equipped Honda Outboards; other uses could result in damage to the gauge or the equipment it is connected to.

## **Overview**

The Honda NMEA 2000® Digital tachometer and speedometer gauges have been designed to operate together in a complimentary fashion displaying different data received from up to five engines on the same CAN bus network

Both gauges connect directly to the CAN bus network. Both gauges feature a 128 x 32 pixel, two color graphic LCD display, and three push buttons.

## **Systems Set Up**

Both Tachometer and Speedometer can be setup to display data in either English (US) or Metric (EU) values:

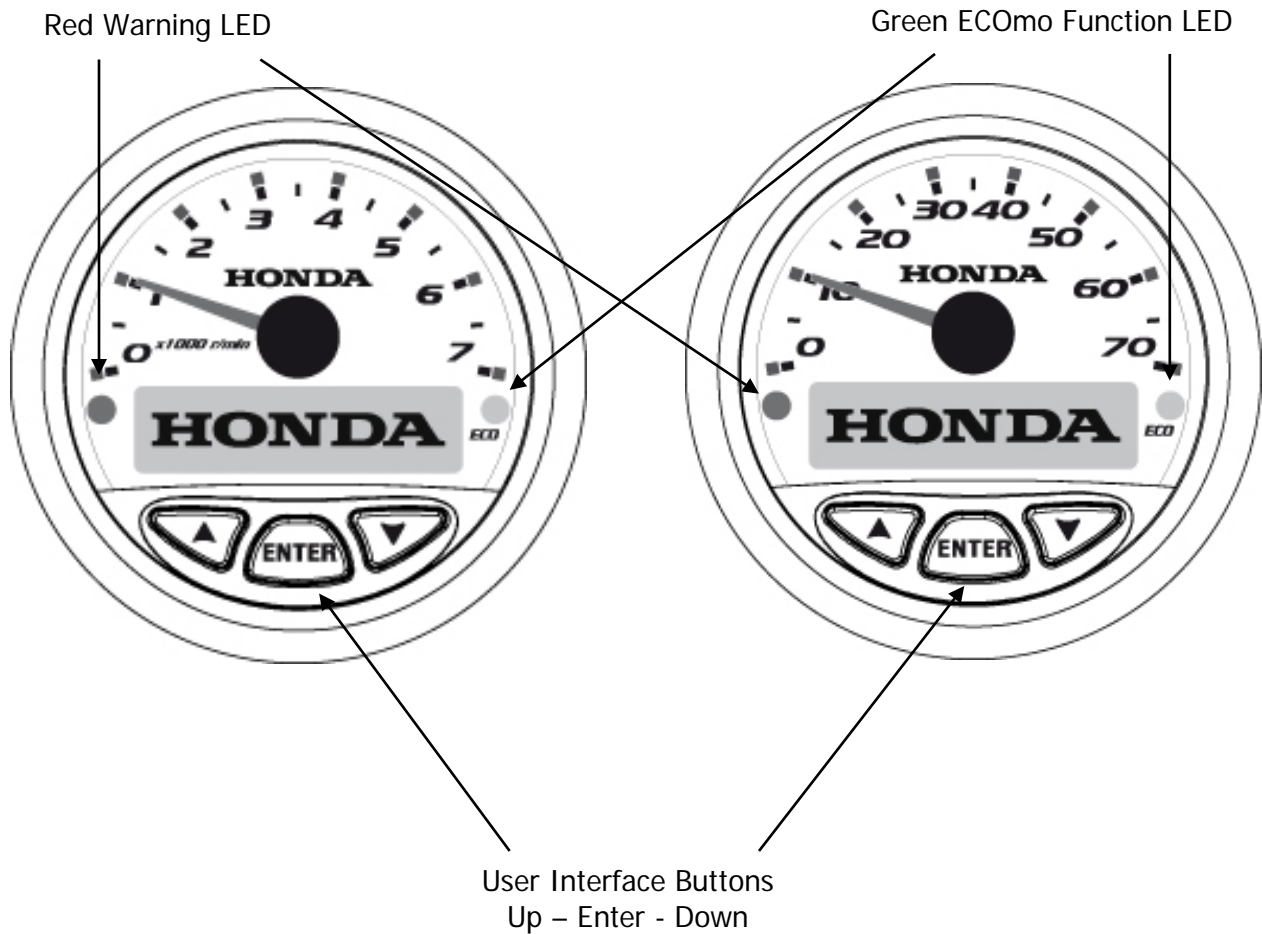
US will display Fahrenheit, gallons and MPH

EU will display Celsius, liters and Knots

### User Interface

Each gauge features user interface capability via three pushbuttons located on the front of the gauge, below the LCD display. The buttons indicate Up - Enter - Down (from left to right).

These push buttons provide the means by which the various displays and gauge capabilities are navigated and affected. The boat operator may select particular data to display and choose available system parameters. Changes by the operator are stored in nonvolatile memory and will be restored at each subsequent power on cycle.



**Tachometer & Speedometer Default Menu Display & Units**

PGN	Data	Tacho	Speedo	US	EU
# 127245	Steering angle (rudder angle)	off	on	deg	deg
127488	Engine RPM (Speed)	on	off	rpm	rpm
	Engine tilt / trim (Displayed as pop on LCD screen)	on	off	%	%
127489	Fuel Burn rate	on	on	g/h	l/h
	total engine hours	on	off	hr	hr
	engine coolant temperature	on	on	°F	°C
	Alternator potential	on	off	Vdc	Vdc
# 127505	Fuel Tank level (1-4 tanks)	on	on	%	%
	Water tank level	off	on	%	%
# 128259 Speed Over Water	SOW (No GPS)	off	on	mph	knots
# 129026 Speed Over Ground	SOG (GPS)	off	on	mph	knots
# 128267 Water Depth	Water depth	off	on	ft	m
# 130310 Environmental	Sea water temperature	off	on	°F	°C
Calculated	Total fuel used	off	on	US gal	litre
65280 ECOmo	ECOmo status indicator - Lean Burn Control	on	on	n/a	n/a

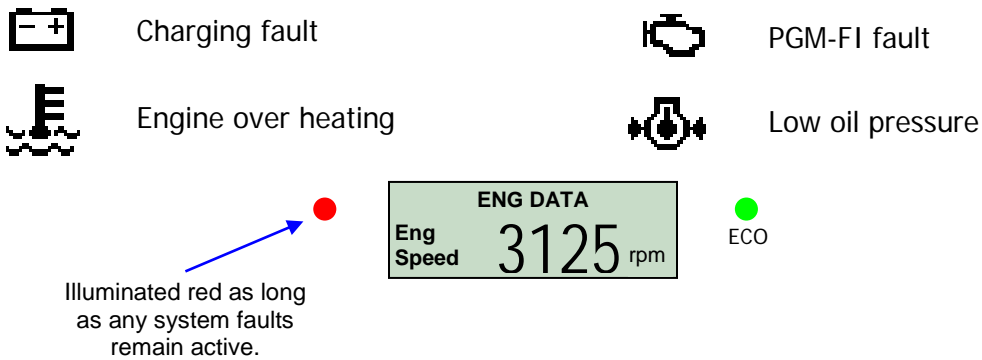
# NMEA 2000® sensors commercially available

### Alarm & Warning Pictographs

There are four (4) system warnings & alarms which can be detected by both gauges. These are displayed on the LCD display as pictographs. These pictographs are set “ON” in the Tachometer and “OFF” in the Speedometer from the factory, but can be changed if desired to display simultaneously on both gauges.

Each pictograph is displayed one at a time in the order in which the associated warning or alarm is detected. Each shall blink until acknowledged by pressing the Enter key. After all alarms and warnings are acknowledged, the previous display will be restored.

As long as the alarm or warning is active, it will be displayed in the alarms screen (see the alarm screen depicted below).



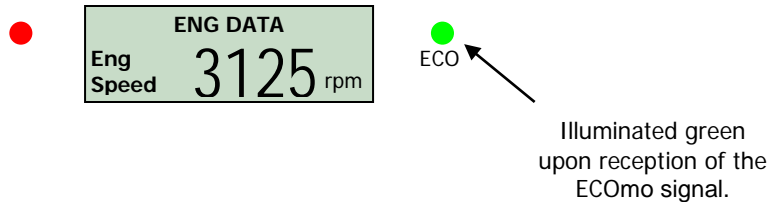
PGN	Data		Type	Indicators		
				Icon	LED Color	Audible Alert
127489		Check engine (PGM-FI)	Alarm		Red	Yes
		Over heat	Alarm		Red	Yes
		Low oil pressure	Alarm		Red	Yes
		Charge indicator	Alarm		Red	Yes
		Water in fuel	Warning	No Icon	None	Yes
		Emergency stop	Warning	No Icon	None	No
65280	ECOMO Mode indicator			No Icon	Green	No

A buzzer positioned in the Honda ignition switch panel will make the boat operator aware of operational changes by providing an audible alert and simultaneously illuminating the gauge Red LED in the event of an alarm situation

### Honda ECO mode (ECOMO – Lean Burn Control)

Hondas Lean Burn Control technology (ECOMO) provides for further improvement of fuel consumption in cruising mode by operation on a leaner air/fuel mixture.

The Honda Digital NMEA 2000® gauges include a unique ECO light, where illumination of the Green LED informs the boat operator that the engine has now entered the “Lean Burn Control mode” therefore contributing to reduced running costs.



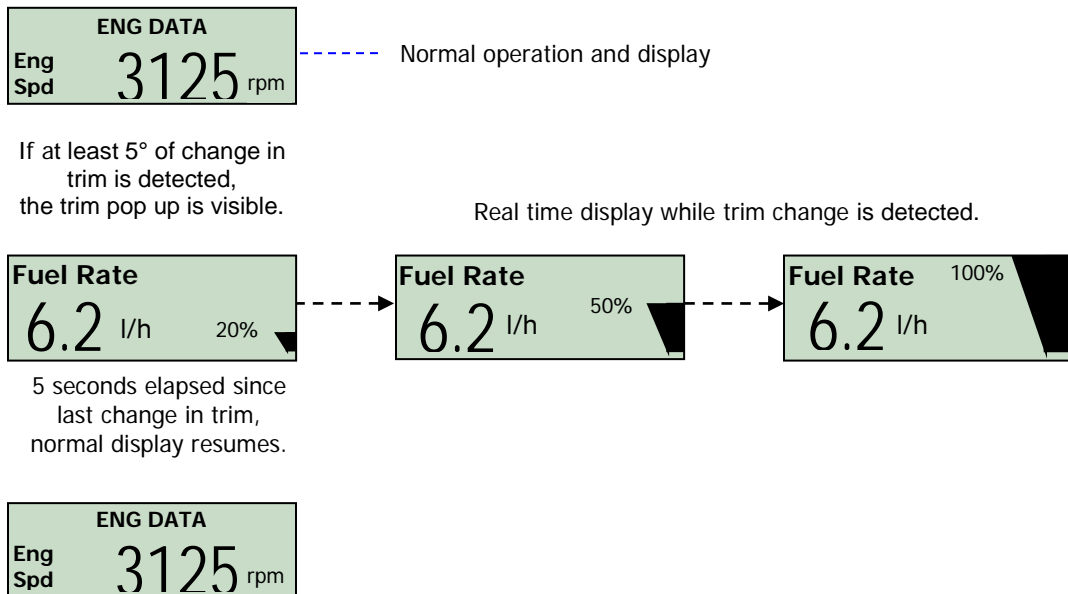
### Trim Angle Operation & Fuel Burn Rate.

Both Tachometer and Speedometer are capable of providing engine fuel burn rate data. However, only the Tachometer (upon selection of trim control button), will display the fuel burn rate & trim pop up automatically.

The indication of trim appears on the LCD screen as a graduated bar graph. The trim and fuel burn rate pop up temporarily displaces all previously selected data, except alarm displays.

The pop up will remain active as long as any change in trim is detected within 5 seconds of the last change.

The Trim display is displayed in the form of a graduated bar graph and numeric display 0% ~ 100%.



**Example: Trim & Fuel Burn Rate Pop up Display.**

## **Speedometer**

The Speedometer can acquire speed data from two sources which are both selectable in the setup menu.

### **SOW (Speed over Water)**

The default source is non GPS, indicated by “SOW” in the menu. This data source is usually from a through hull or transom mounted NMEA 2000® speed sensor.

### **SOG (Speed over Ground)**

The alternate is a GPS source, indicated by “SOG” in the menu. This can be selected with network connection to an NMEA 2000® GPS Antennae or an NMEA2000® device with integrated GPS antennae.

## **Speed Units Display (Dial Face / LCD)**

### **European Version - Metric Settings:**

The units of display for speed are in Knots on the dial face and always in kilometres per hour (km/h) on the LCD display.

### **U.S. Version (English Settings):**

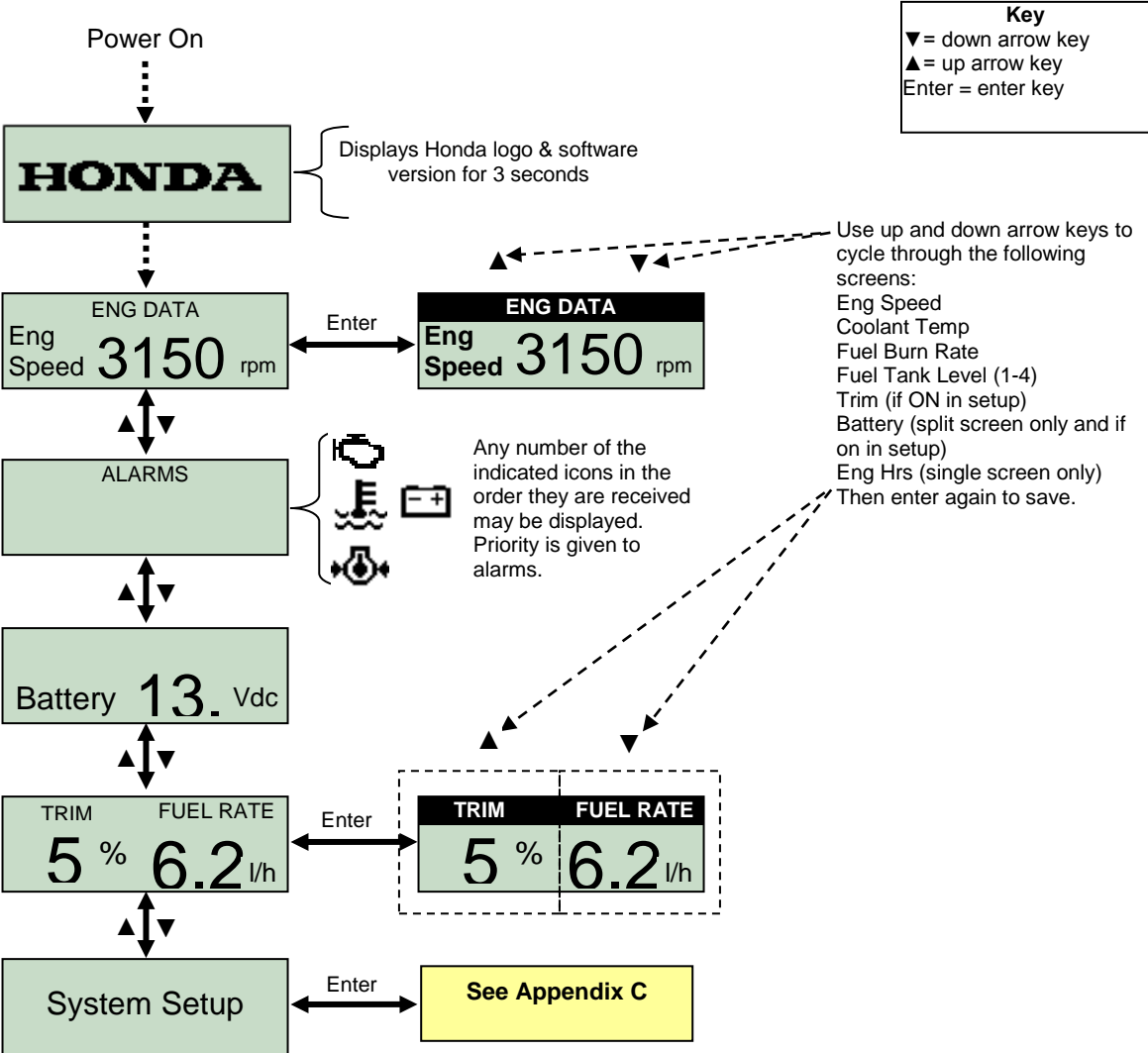
The units of display for speed are in Miles per Hour (MPH) on the dial face and always in kilometres on the LCD display.

The numeric indication on the Speedometer dial face is selectable between knots and miles per hour (mph) depending on the unit’s regional setting, EU or US type.

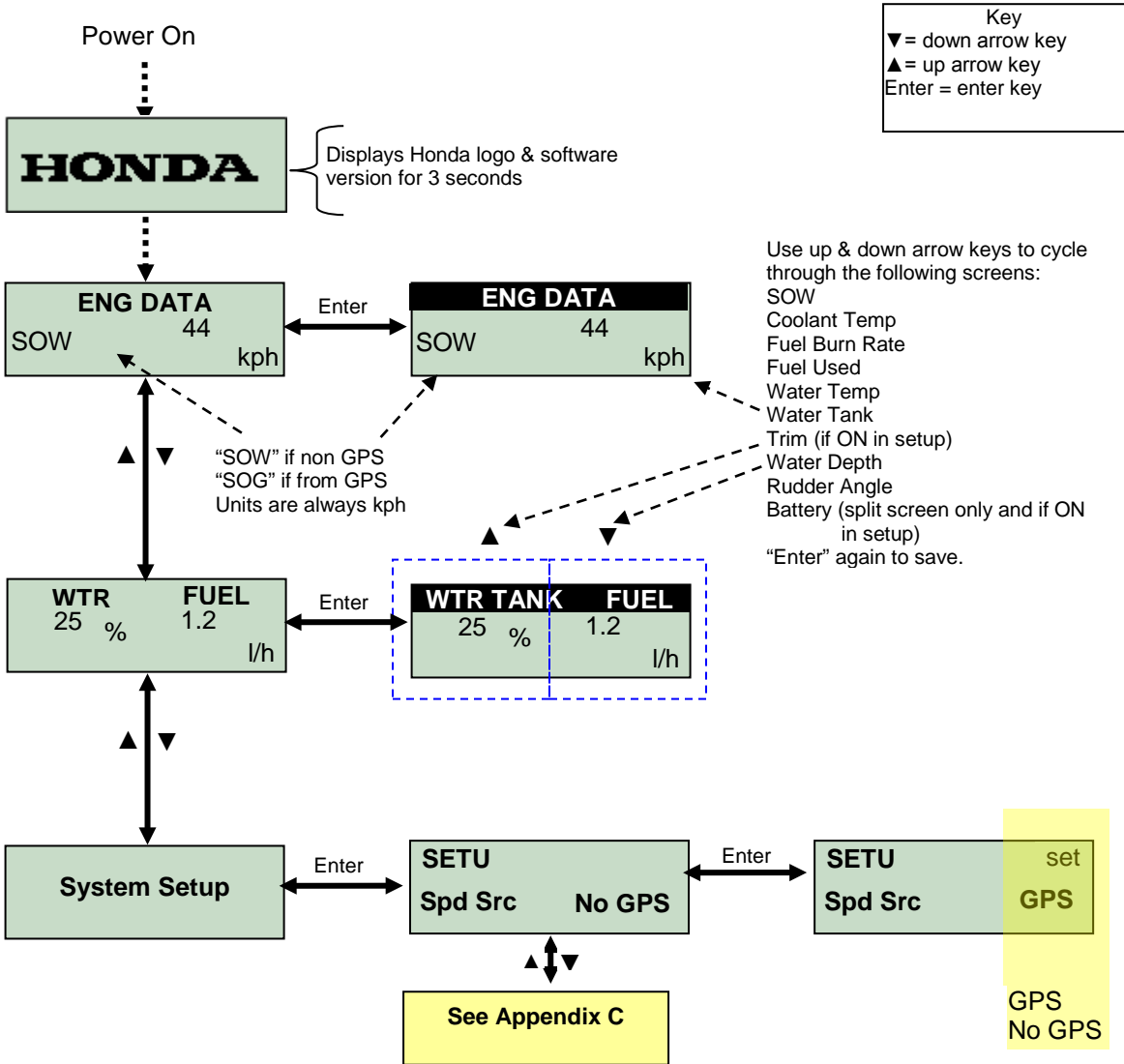
The numeric indication on the Speedometer dial face is selectable between knots and miles per hour (mph) depending on the unit’s regional setting, EU or American type.



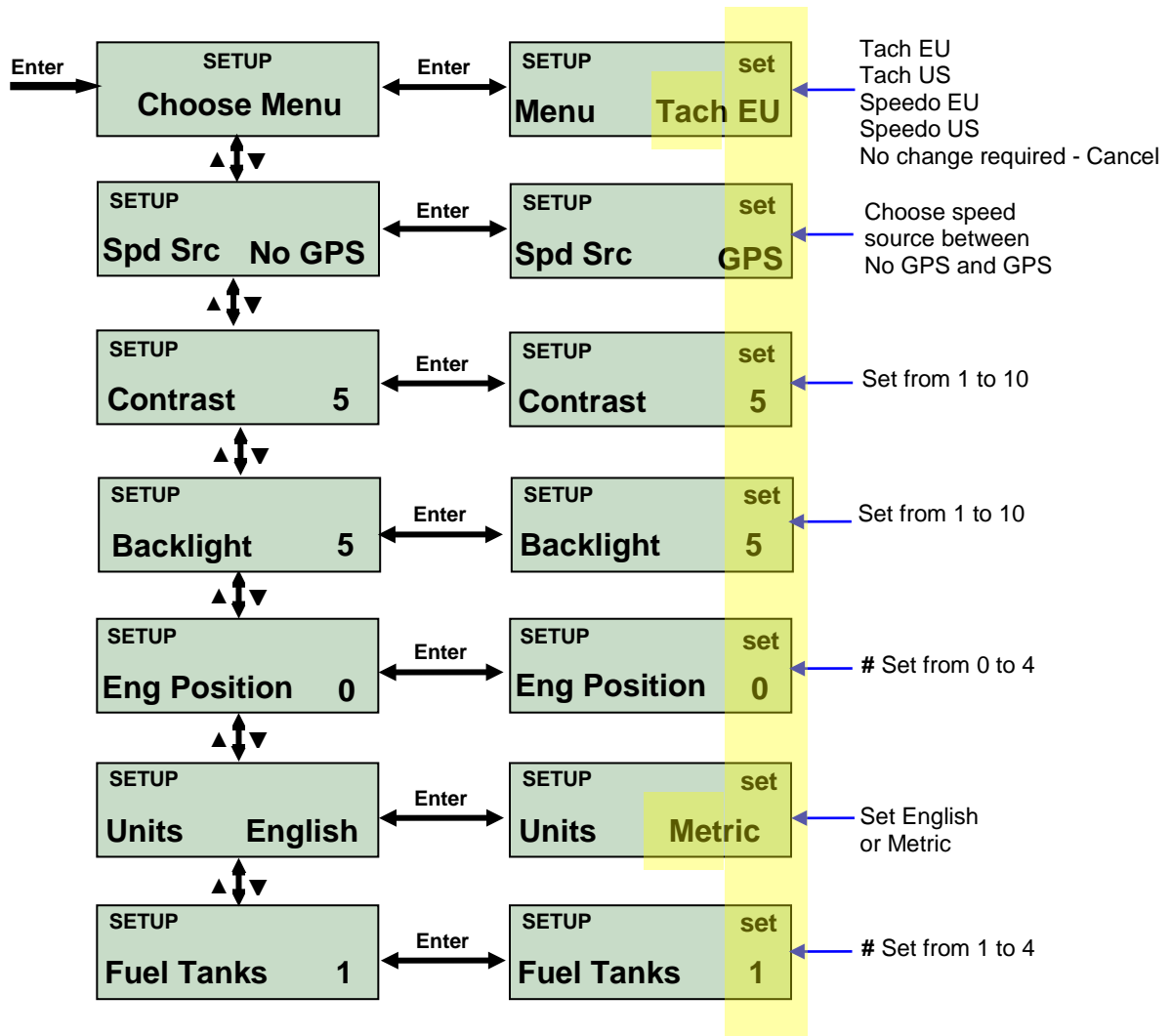
**Appendix A. Tachometer Default Menu Structure**



**Appendix B. Speedometer Default Menu Structure**



**Appendix C. Common Set up Menu Structure**



**#Note:**

Engine position 0 to 4, relates to the number of outboards which are installed on the boat and connected to the CAN bus network.

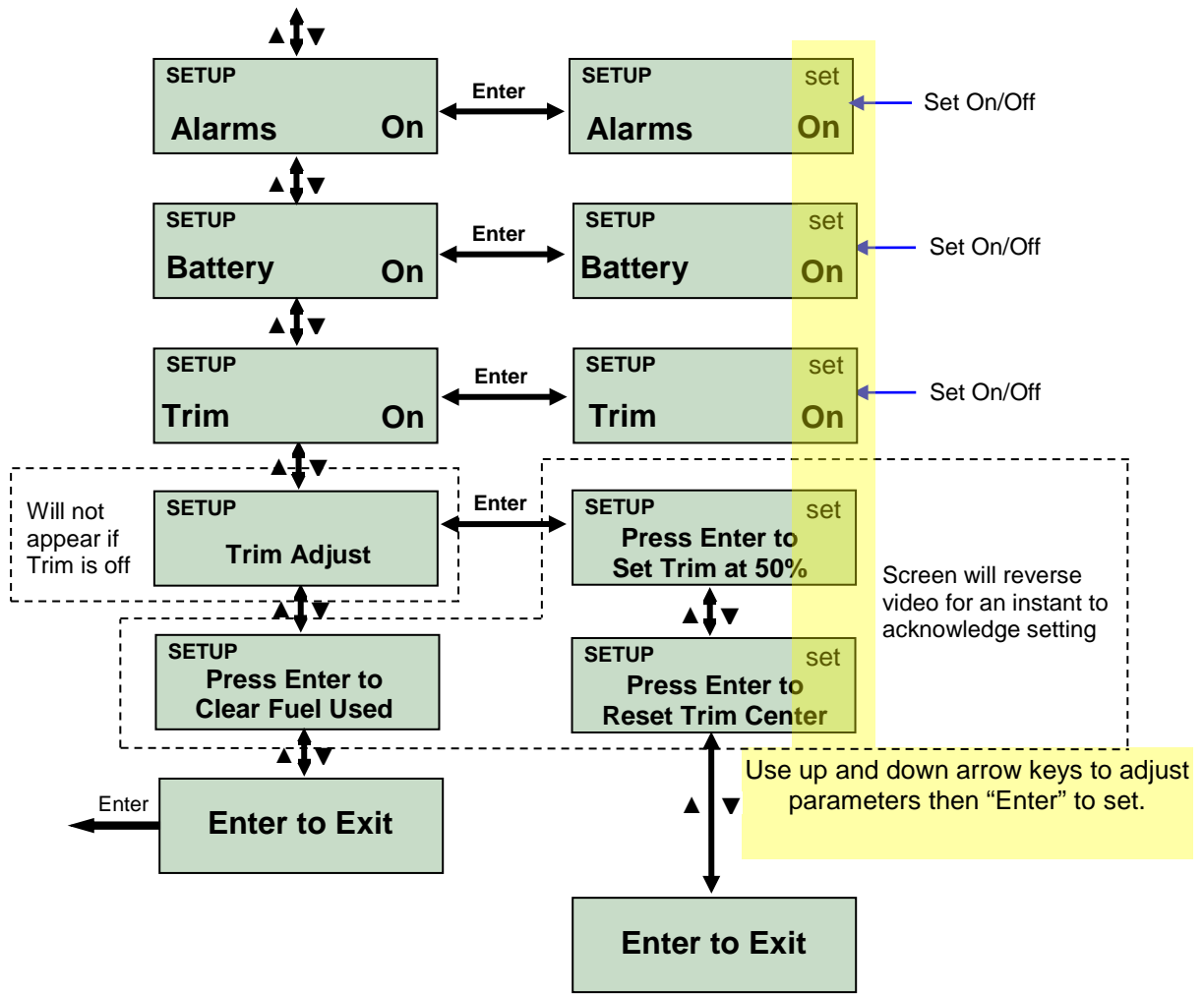
**Position 0** > 1st Engine

**Position 1** > 2nd Engine

In total, up to 5 engines can be supported by the Honda NMEA 2000® gauges.

This function should be set by your Honda Dealer during engine installation, set up and PDI. The number of on board fuel tanks should also be matched to the total number of engines.

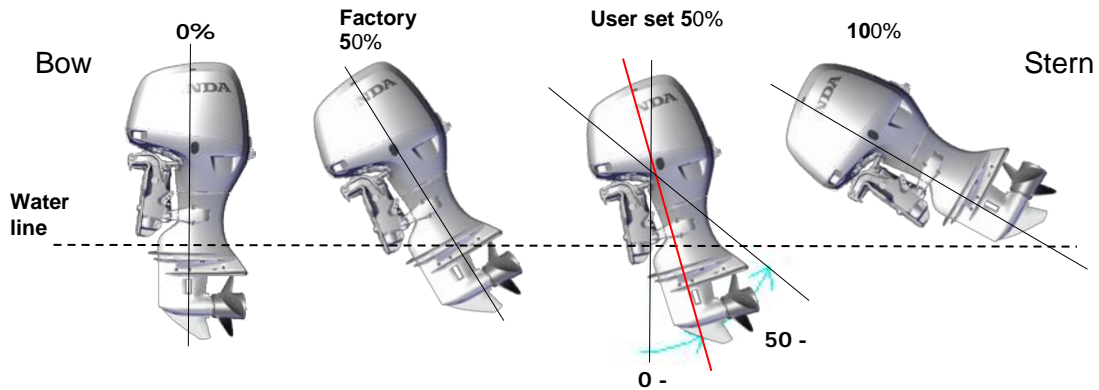
Appendix D. Customizing View



### Trim Center Adjust.

The setup menu "Trim Adjust" (see Appendix D) allows resetting the factory 50% point to any other arbitrary point between 0% and 100%. This feature is for convenience only and may result in asymmetry between 0-50% and 50-100% actual distances.

The factory setting may also be restored in the setup menu.



**HONDA**  

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**MARINE**