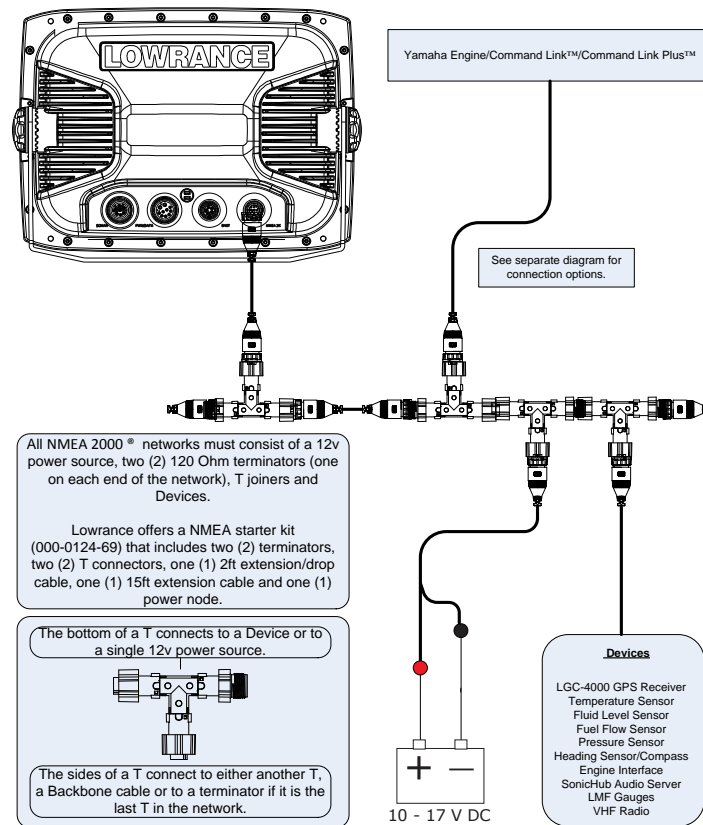


Yamaha® Engine Connection for NMEA 2000® Messages

Many Yamaha outboard engines have the ability to output engine data to a NMEA 2000® network. This output from the engine can be displayed on Navico Multi-Function Displays such as the Lowrance HDS, Lowrance LMF-200 and 400 gauges, the Simrad NSS/NSE/NSO or the B&G Zeus. The vessel must be equipped with an existing or new NMEA 2000® network as pictured below.



Yamaha	4-stroke 50-250†	2-stroke HDPI 150-350††	CommandLink™ Plus Systems†††
RPM	✓	✓	✓
Alternator Voltage	✓	✓	✓
Engine Hours	✓	✓	✓
Engine Temperature	✓	✓	✓
Fuel Pressure*	✓	✓	✓
Fuel Rate	✓	✓	✓
Oil Pressure*	✓	✓	✓
Trim **	✓	✓	✓
Water Pressure***	✓	✓	✓
Warnings			✓
Boat Speed***			✓
Water Depth			✓
Surface Water Temperature***			✓

*Contact Yamaha for list of optional features for specific engine models. ** Digital trim must be connected by a Yamaha dealer. ***Optional accessory required

† 2006 & newer: F50, T50, F60, T60, F75, F90, F115, LF115, F150, LF150, F200, LF200, F225, F225, F250, LF250.

†† 2006 & newer: Z150, LZ150, VZ150, Z175, Z200, LZ200, VZ225, Z250, LZ250, VZ250, Z300, LZ300, VZ300.

††† 2009 & newer: F225, F250, F300, F350 "Offshore" Series.

Engine Connections: No CommandLink™

Connect to the 4-pin factory harness located under the engine cowling using the Navico Yamaha Engine Interface Cable, Navico part number 000-0120-37. See your Yamaha dealer for exact engine connector location.



1) Interface Cable, p/n: 000-0120-37 2) Adapter installed in cowling. 3) Yamaha 4-pin connector. 4) Completed connection.

Connecting to an Engine without CommandLink™

If the Yamaha engine which is being connected to the NMEA 2000® network is not already connected to the Yamaha CommandLink™ system, then the Yamaha Engine Interface cable connects directly to the NMEA 2000® connector under the engine's cowling. The NMEA 2000® connector is located on the starboard side of the engine near the bottom of the cowling. It is a white, 4-pin connector, with only two wires connected, blue and white. This connector might have a water-proof plug installed from the factory, if so the plug must be removed before the Yamaha Engine Interface can be installed. Once this connection is made connect the Micro-C connector to the vessels NMEA 2000® network as shown in the system diagram on page 1 of this document.

This installation will not work on a CommandLink™ Plus system.

Engine Connections: CommandLink™

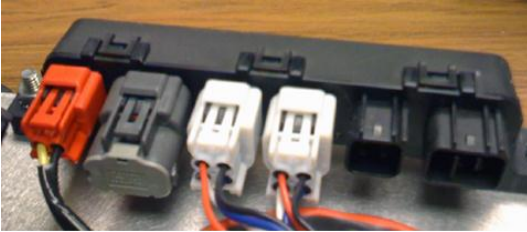
Connect to the CommandLink™ bus using the Yamaha CommandLink™ Gateway (MAR-GTWAY-ML-09).



1) MAR-GTWAY-ML-09



2) Yamaha CommandLink™ junction box (back).



3) Yamaha CommandLink™ junction box (front).



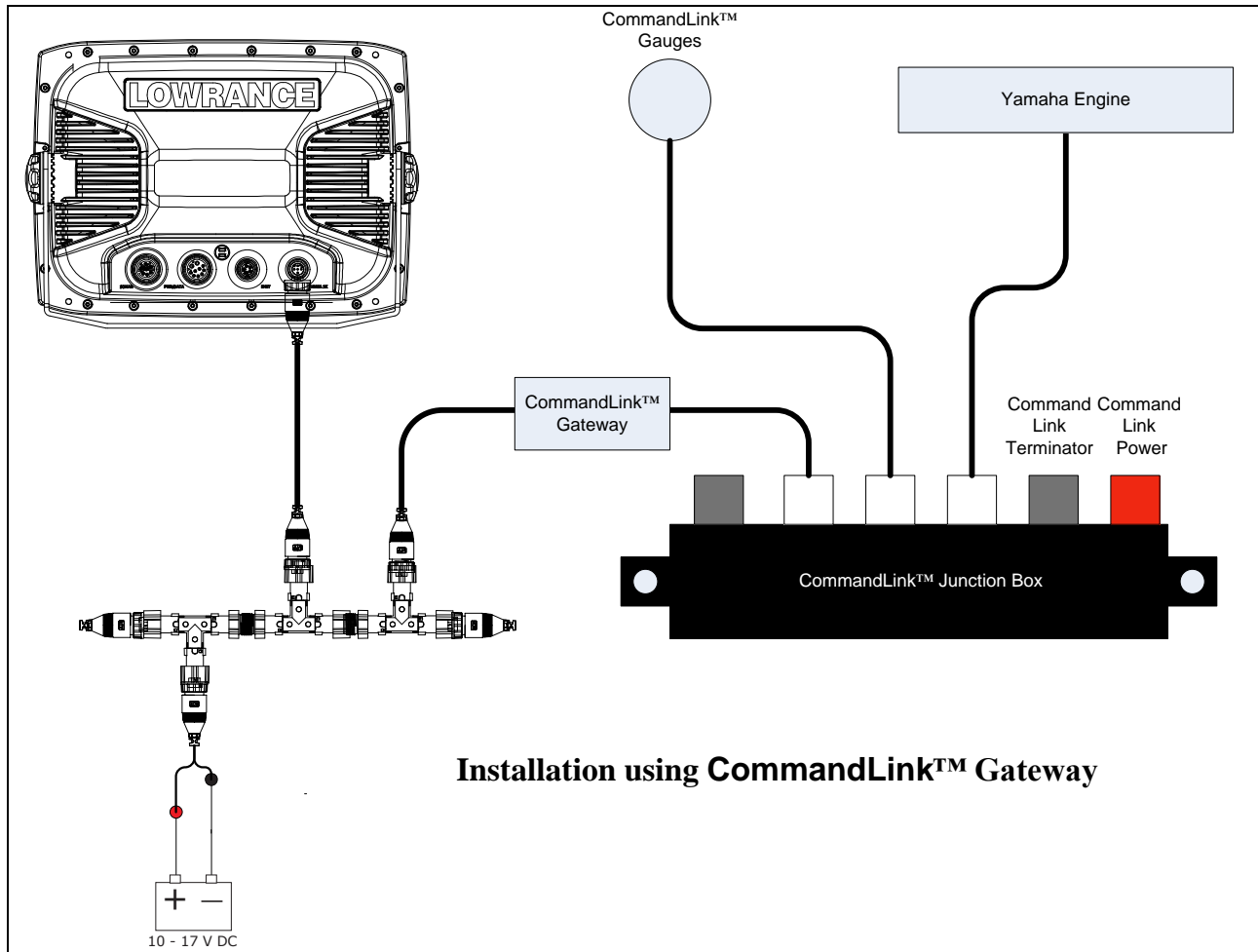
4) CommandLink™ terminator removed.

Connecting to an Engine with CommandLink™

Yamaha's CommandLink™ is an engine and gauge network system based on NMEA 2000®. This system connects to the engine through the same NMEA 2000® connector under the cowling as shown above. The CommandLink™ system does not use discrete T connectors, but large junction boxes in order to connected devices.

To connect Navico NMEA 2000® devices to a Yamaha CommandLink™ System, the Yamaha Engine Gateway Cable, (MAR-GTWAY-ML-09) pictured above, will be used to extend the backbone of the network by changing it from the Yamaha connector system to the standard NMEA 2000® connector system. The CommandLink™ terminator must be removed from the junction box that will be used to connect the Yamaha Engine Interface Gateway and an NMEA 2000® terminator (female) will be used to terminate the end of the NMEA 2000® network, as shown below.

This installation will not work on a CommandLink™ Plus system.



Engine Connections: CommandLink™ Plus™

Connect to the CommandLink™ Plus network using the 6-pin CommandLink™ Plus Gateway cable MAR-GTWAY-KT-00.



Yamaha CommandLink™ Plus™

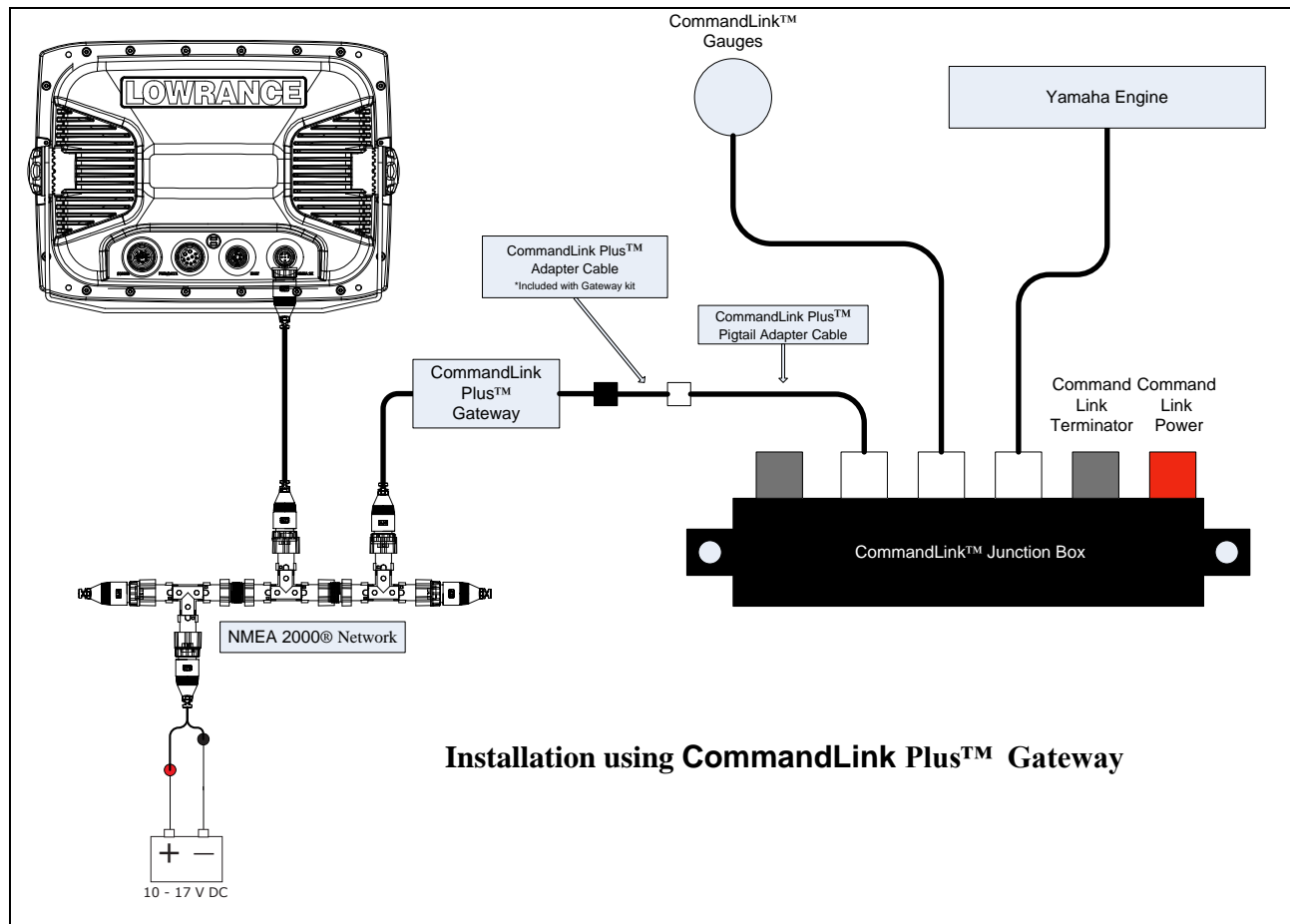
Yamaha introduced the CommandLink™ Plus system in 2009 with 4.2L F225/250/300 “Offshore” series motors and the 5.3L F350 motor.

Although the original CommandLink™ System is natively compatible with NMEA 2000®, the CommandLink™ Plus System is not. To connect the CommandLink™ Plus system to a NMEA 2000® network, the Yamaha CommandLink™ Plus Gateway must be used. The Yamaha CommandLink™ Plus Gateway is not the same as the Yamaha CommandLink™ Gateway. The CommandLink™ Plus Gateway is also only available from Yamaha, Yamaha part number MAR-GTWAY-KT-00. The CommandLink™ Plus Gateway has a 6-pin connector, a short adapter cable, and the standard NMEA 2000® style connector.

A Pigtail Adapter Cable is also required. These are available from Yamaha in the following lengths:

Yamaha Part #	Description
6Y8-82521-01-00	1ft Pigtail Bus Cable
6Y8-82521-11-00	2ft Pigtail Bus Cable
6Y8-82521-21-00	3ft Pigtail Bus Cable
6Y8-82521-31-00	6ft Pigtail Bus Cable
6Y8-82521-41-00	9ft Pigtail Bus Cable
6Y8-82521-51-00	12ft Pigtail Bus Cable

If both the CommandLink™ Plus and CommandLink™ buses are utilized it is important to note that the two buses should **never be connected** to each other. This could result in damage to the Yamaha system.



Digital Trim Connection

If the Yamaha engine was previously connected to an analog trim gauge, the trim information output by the engine onto the NMEA 2000® network will be inaccurate. To enable accurate Trim Data onto the NMEA 2000® network, an additional connection must be made under the cowling.

There are two single-wire connectors under the cowling, near the NMEA 2000® connector, that must be connected together to allow accurate NMEA 2000® trim information to be transmitted from the engine. Both connectors have a pink wire. See your Yamaha dealer for exact location.

MFD Setup

After the physical connections have been made the user can now setup the unit to display the engine data.

On HDS perform the following steps:

- 1) Vessel Setup: Press the Menu key twice to access the system menu, select the Fuel menu then Vessel Setup...and press Enter.
 - a. Change the Vessel Setup to match the Engine/Tank configuration of the vessel. (Figure 1.A)
 - b. Set the Tank Size. (Figure 1.B)

c. Select Save to retain these settings. (Figure 1.C)

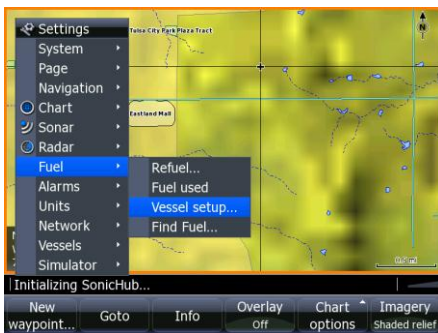


Figure 1.A

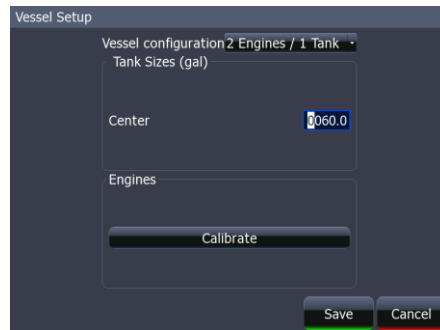


Figure 1.B



Figure 1.C

- 2) With the Engine powered on Confirm that it shows up in the device list.
 - a. Press the Menu key twice to access the system menu, select the Network menu then Device List and press Enter. (Figure 2.A)
 - i. You should now see your engine listed along with any other devices that are connected to your network.
 - b. From the Device List you can highlight the Engine and press enter to see and the Data that is available from the Engine.
 - i. Scroll to the Data tab and press Enter.
 - 3) Confirm that the data sources are set for the Engine.
 - a. Press the Menu key twice to access the system menu, select the Network menu then Data Sources and press Enter. (Figure 3.A)
 - i. From here select Engine and press Enter.
 - ii. Auto Configure the Network. In most cases this will set the data sources to the correct location.



Figure 2.A



Figure 3.A

*If the engine instances are not set by Yamaha you will need to use Yamaha

CommandLink™ gauges to set them or have a Yamaha dealer set them.

1. You may also manually select the engine you wish to set (Port/Center/Starboard) and press Enter.
 2. From here you can manually set the data source for all engine related information.
- 4) Now Data overlays and the Info gauge screen can be set up.
 - a. Reference the manual for your MFD to set overlays and edit the gauge screen.