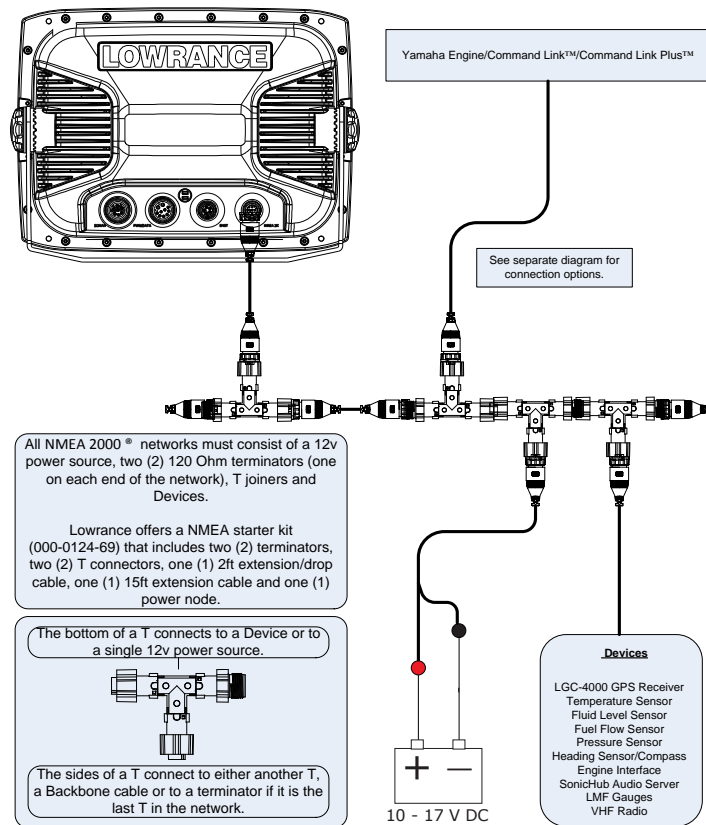


## Yamaha® Engine Connection for NMEA 2000® Messages

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™

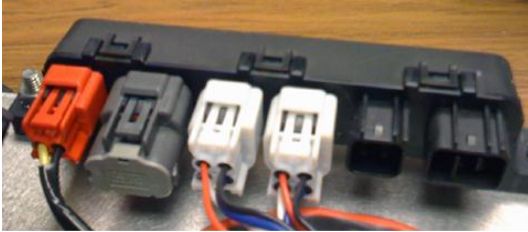
Connect to the CommandLink™ bus using the Yamaha CommandLink™ Gateway (MAR-GTWAY-ML-09).



1) MAR-GTWAY-ML-09



2) Yamaha CommandLink™ junction box (back).



3) Yamaha CommandLink™ junction box (front).



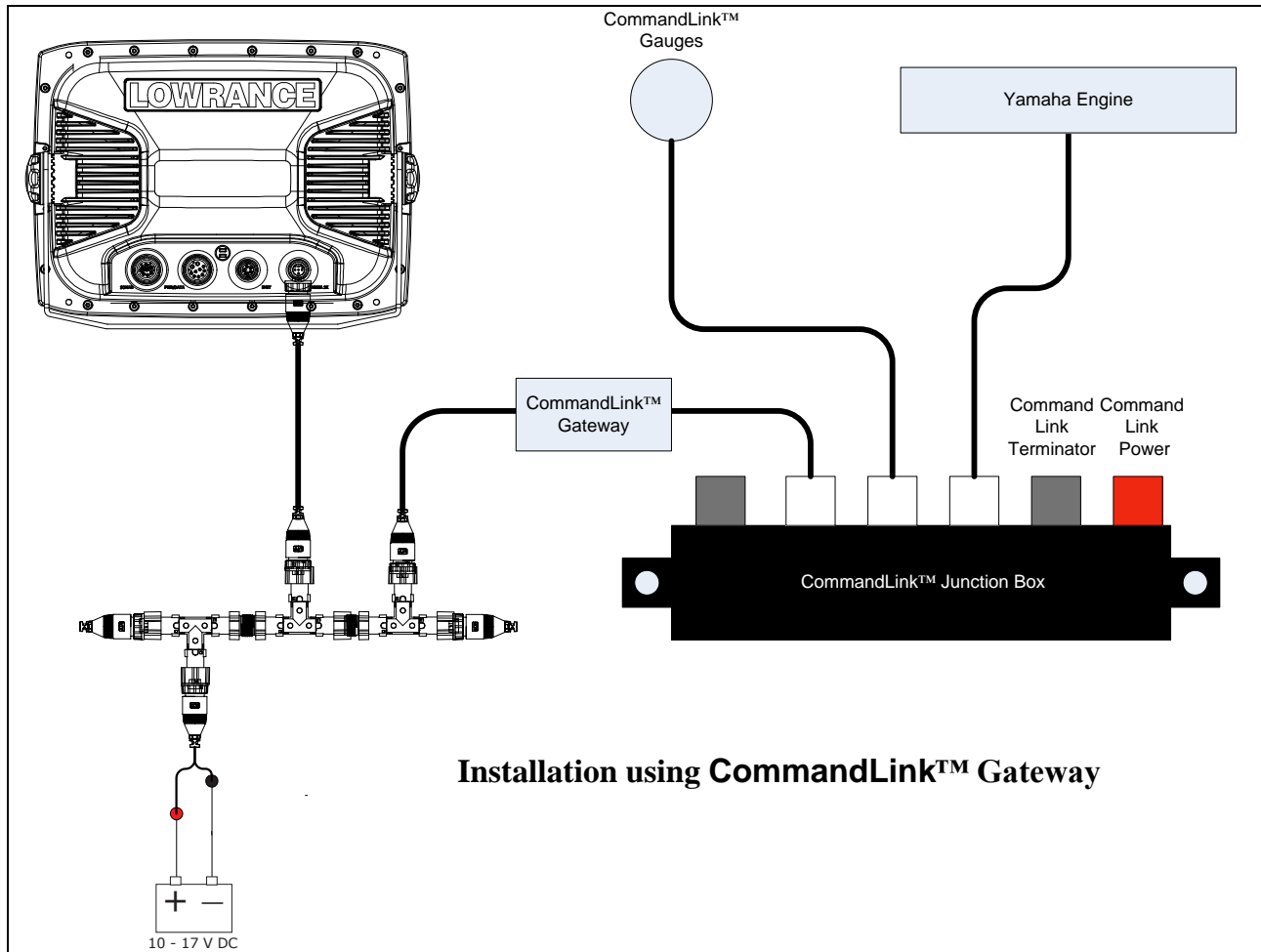
4) CommandLink™ terminator removed.

## 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™

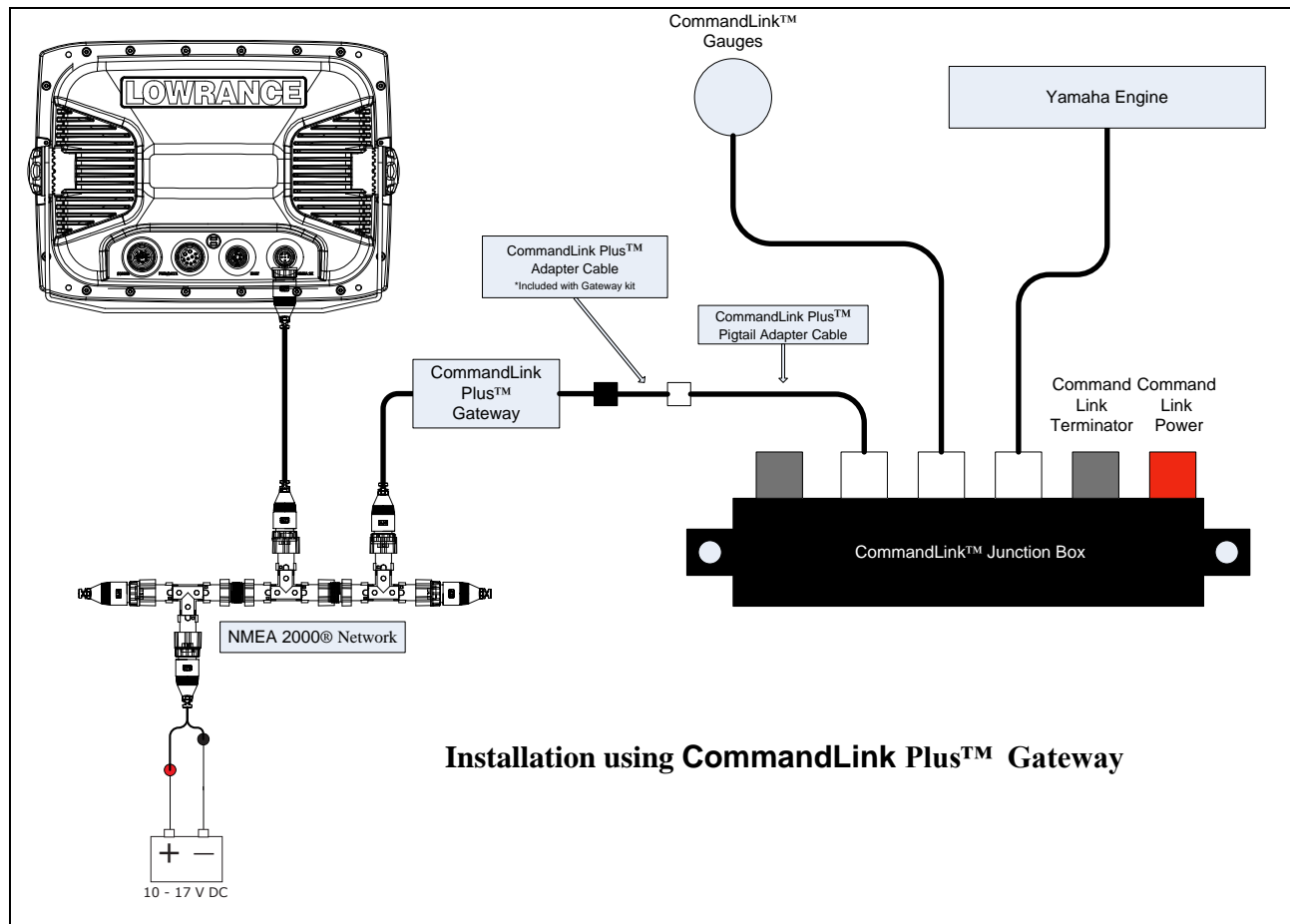
Yamaha introduced the CommandLink™ Plus system in 2009 with 4.2L F225/250/300 “Offshore” series motors and the 5.3L F350 motor.

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)

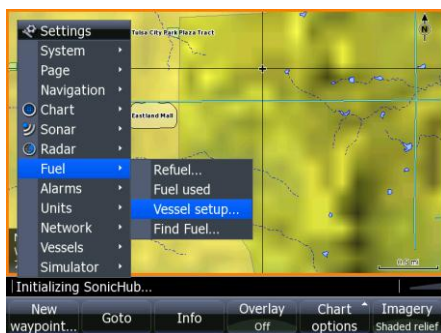


Figure 1.A

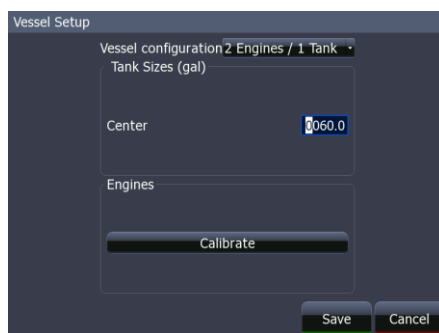


Figure 1.B



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.



Figure 2.A

- 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.

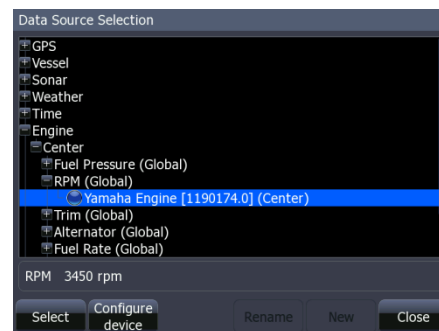


Figure 3.A

\*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.