

NAVpilot



Model: NAVpilot-300

Yamaha Helm Master Interface

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1. Yamaha Helm Master

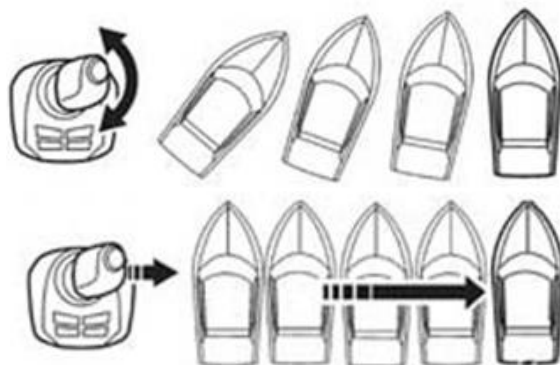
1-1 What is Yamaha Helm Master?

Yamaha Helm Master is a steering and throttle control system co-developed with Volvo Penta. It is designed to steer middle to large-sized outboard boats with twin or triple 4-stroke (225 to 350 HP) outboard engines.

All steering actions are controlled electronically. Shifting and rotational vessel motion can be controlled with a joystick as shown at right.

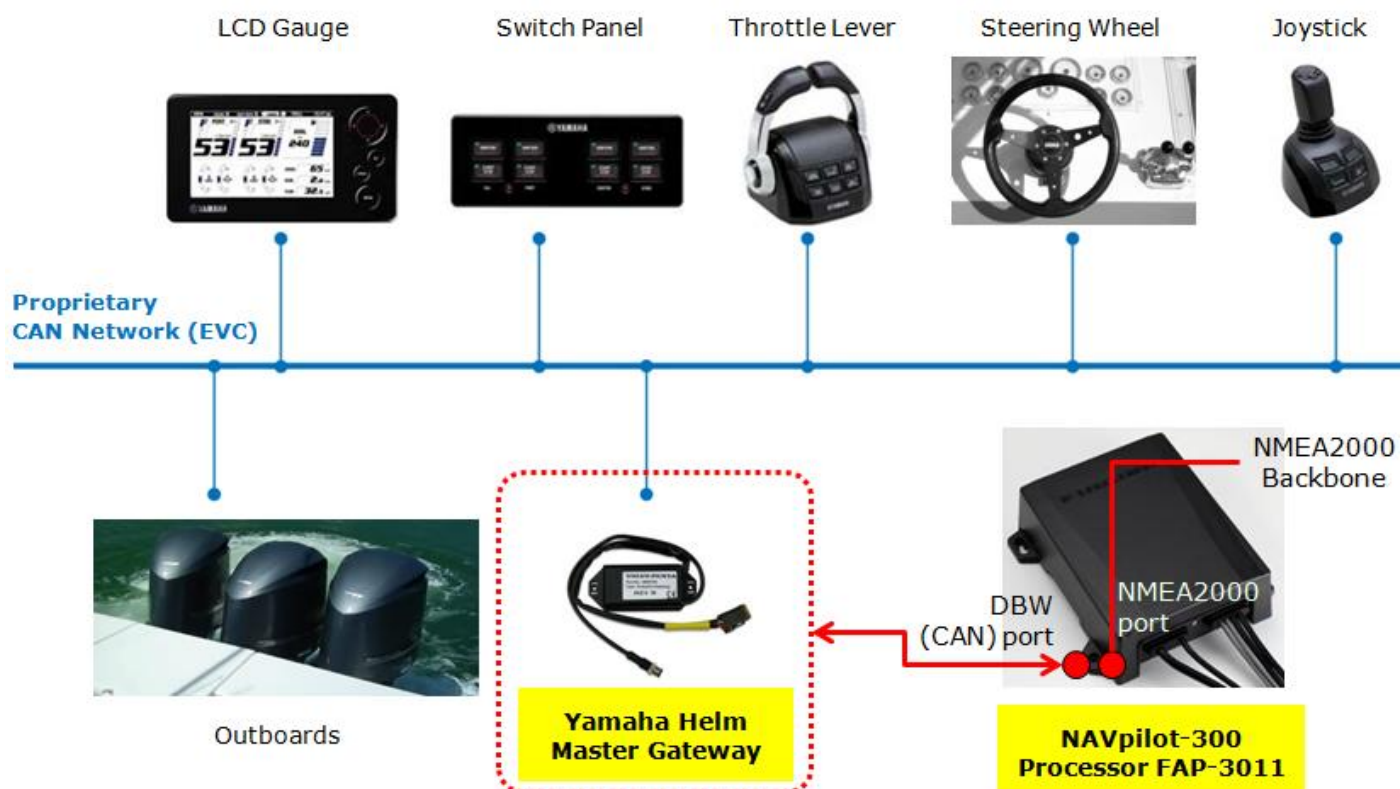
For more details, visit the following website.

<http://yamahaoutboards.com/rigging/helm-master/overview>



1-2 Helm Master Network via Steering Gateway Part # 000-027-162-00

Helm Master consists of an electronically controlled proprietary CAN network called **EVC** (Electric Vessel Control). The NAVpilot-300 interfaces with the Yamaha EVC via an Autopilot Gateway, part # 000-027-162-00. This part # consists of the Yamaha Helm Master Steering Gateway and a Y-cable.



2. Yamaha Helm Master Part # 000-027-162-00

The Yamaha Helm Master Gateway consists of two components.

Comprising of:

1	Yamaha HM Gateway	AUTOPILOT-GATEWAY for FURUNO Autopilot	1	000-027-162-00
2	Cable Assembly	Y-cable for EVC	1	

Y-cable to be connected to the Autopilot Gateway at installation



3. Basic Installation

3-1. Wiring

- (1) Locate the EVC black box control unit and the associated EVC Bus wiring on the Helm Master boat.
- (2) Locate the multi-link bus cable or find an open port on an EVC bus connector to make the Helm Master gateway connection. The bus cable connections and hub (if installed) will be located close to the EVC unit.



(3) Disconnect the multi-link cable connector and install the Y-split cable for multi-link cable installation or if there is a hub simply plug the Helm Master gateway into the open port on the hub and disregard the Y-Split Cable. NOTE: There will be several similar style bus connectors but only the correct ones will fit properly.



4. Check that all cables are re-connected.

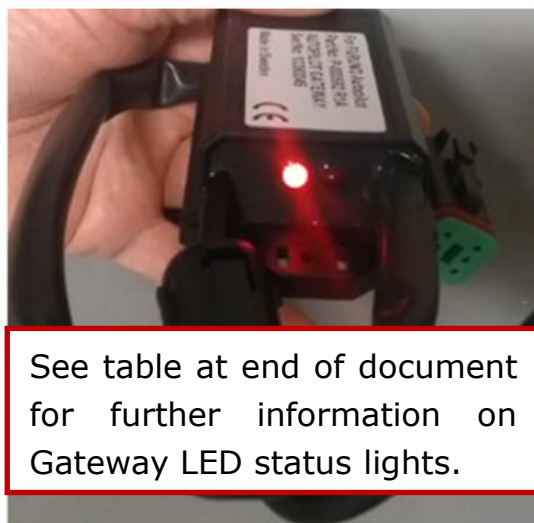


3-2. Initial Settings on NAVpilot-300

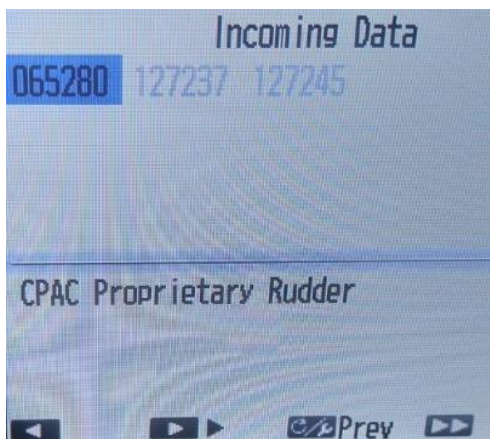
1. In [Installation] – [SHIP'S CHARACTERISTICS] – [BOAT TYPE], select [**EVCS Outboard**].

Selecting "**EVCS Outboard**" will allow the NAVpilot-300 system to communicate with the Yamaha Helm Master System.

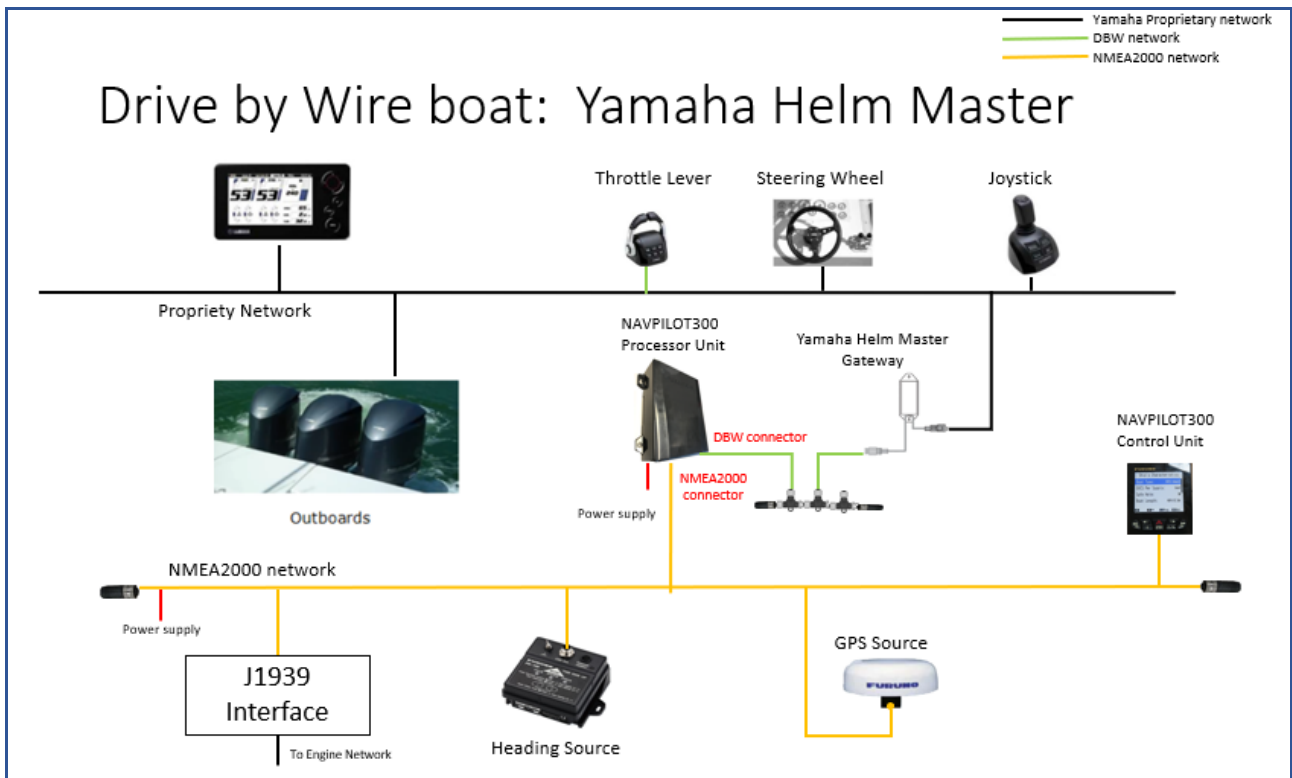
Next select [EVCS Power supply]- [Output]. This will supply power to the Navpilot 300 DBW CAN bus and the Yamaha Helm Master gateway. With **EVCS Pwr Supply** set to Output you should see a red LED on the gateway.



Check the incoming data to make sure that the three proprietary PGNs coming from the gateway are in black. If they are light gray there is a problem with the network. Check to make sure you have a red light on the gateway. Make sure you have a proper CAN bus network, such as 2 terminating resistors.



NOTE: You must install a proper CAN bus network that includes two terminating resistors on the DBW port.



2. Set the boat length/cruising speed and Rate of Turn information to fit the customer's boat characteristics.

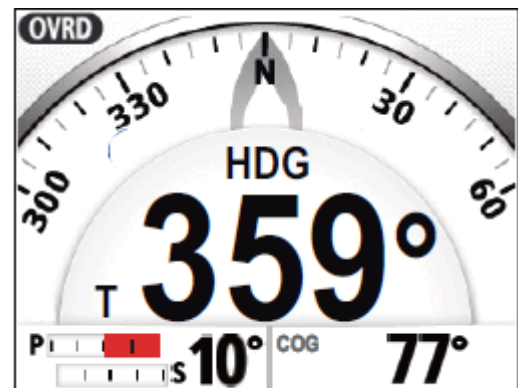
You do not need to carry out the Rudder Limit Set-up or Rudder Test because those values are already fixed by the Yamaha Helm Master System.

Note: Do not confuse a steering gateway with a Yamaha engine gateway. They look similar but are different and supply different information. You need a steering gateway for the Navpilot 300 autopilot interface and a Yamaha NMEA2000 engine gateway if you would like to display engine information on an MFD. Below is a picture of the gateways side by side.



3-3. Tips on Operation

The Navpilot-300 incorporates an "Override" safety feature. When a user moves the helm a or uses the joystick, an override signal coming from the Yamaha EVC system automatically sets the Navpilot-300 to STBY (Standby). When this happens, the NAVpilot-300 will display the "OVRD" (Override) icon on the top of the screen.



EVC Override is active.

Gateway LED Status lights

Autopilot LED

Constant lit – The autopilot is powered on (*normal condition*).

Diagnostic (autopilot interface) LED

- Flashes on/off repeatedly (*normal condition*) – The unit is receiving and transmitting valid autopilot and Multilink data.
- Constant lit – The unit is powered up but does not receive communication from either side (autopilot or Multilink).
- Flashes two strobes and then off repeatedly – The gateway is receiving Multilink data but does not have an autopilot connection.
- Flashes three strobes and then off repeatedly – The unit is receiving autopilot data but does not have a Multilink connection



Autopilot LED

Diagnostic LED

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