This document describes the basic information on Volvo Penta IPS, Volvo IPS Gateway with Navpilot 300 installation. Please refer to the Navpilot 300 Installation and Operator's manual for full instructions.

INDEX

1. Volvo Penta IPS
   1-1. What is Volvo Penta IPS?
   1-2. IPS Network and Navpilot 300
2. VOLVO IPS Gateway # 000-022-971-00
3. Basic Installation and Operation
   3-1. Wiring
   3-2. Initial Settings on NAVpilot-300
   3-3. Operation
1. Volvo Penta IPS

### 1-1. What is Volvo Penta IPS?

Volvo Penta IPS (Inboard Performance System) is a modern inboard steering and throttle control system with multiple pod drive units which can rotate 360 degrees. IPS provides easy maneuverability, better fuel efficiency, less CO2 emissions, higher efficiency, speed etc. The IPS Joystick Controller allows simple lateral or rotational boat movement. For more details, visit [http://www.volvopenta.com](http://www.volvopenta.com).

### 1-2. IPS Network

The IPS consists of a NMEA2000 based network called EVC (Electric Vessel Control). This interface allows the Navpilot-300 to control the steering system electrically. The NAVpilot-300 is interfaced to the EVC via the Volvo IPS Interface Unit and a Y-cable, part # 000-022-971-00.
2. VOLVO IPS Interface gateway

IPS gateway Furuno part # 000-022-971-00 is compatible with Volvo Penta (VP) IPS drive versions C, D, or E type. These VP IPS drive versions have been installed on all IPS systems for the past several years. All new VP IPS vessels are compatible with the NAVpilot-300 via the IPS gateway. It is easy to confirm whether the IPS drive is a C, D, or E version. If you visually confirm that the boat has the same Throttle and Joystick controllers as pictured below, it is compatible with the NAVpilot-300.

Comprising of:

<table>
<thead>
<tr>
<th></th>
<th>VOLVO IPS GATEWAY</th>
<th>AUTOPILOT-GATEWAY for FURUNO Autopilot</th>
<th>000-022-971-00</th>
<th>1</th>
<th>w/ 1 Y-cable for EVC</th>
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Y-cable to be connected to the Autopilot Gateway at installation

3. Basic Installation

3-1. Wiring

1. Find the “EVC” black box on the IPS drive vessel.
The number of EVC units is equivalent to the number of IPS engine units on the vessel. In this example, the vessel has twin IPS drives. The NAVpilot-300 is compatible with two, three, or four drives.
2. Locate the “MULTI LINK” bus cable or find an Open Port on an EVC Bus connector to make the VP IPS 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 simply plug the VP IPS gateway into an open port on the hub and disregard the Y-Split Cable.
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 Pod Drive]. Selecting “EVCS Pod Drive” will allow the NAVpilot-300 system to communicate with the Volvo IPS gateway.

Next in [EVCS Power supply] - select [Output]. This will supply power to the Navpilot 300 DBW CAN bus and the Volvo IPS gateway. With EVCS Pwr Supply set to Output you should see a red LED on the IPS gateway.
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 and rudder test because those values are already fixed by the Volvo Penta IPS system.

3-3. Tips on Operation

The Navpilot-300 automatically incorporates features like Safe Helm called “override”. When a user touches a steering wheel or joystick, an override signal coming from the VOLVO EVC unit automatically sets the Navpilot-300 to STBY, just like the Safe Helm mode. When this happens, the NAVpilot-300 will display the “OVRD” icon on the top of the screen.