

Calibration and Settings EVC-E2

IPS350/400/450/500/600

IPS800/950

IPS1050/1200

**VOLVO
PENTA**

Table of Contents

Calibration and Settings, general	2
Controls and Steering system.....	5
Alarm handling.....	7
Acknowledge message.....	7
IPS calibration	8
Calibrating Volvo Penta IPS drive units.....	9
Steering mode	11
Auto configuration, twin installation	12
Auto configuration, triple installation	14
Auto configuration, quadruple installation.....	16
Auto configuration, 4" display.....	18
Auto configuration, 7" display.....	19
Auto configuration, analog lever.....	21
Language	22
Units	23
Add e-Key.....	24
Lever calibration, top mounted lever.....	25
Lever calibration, analog lever with stand-aloneHCU	27
Fuel tank settings.....	29
Multi-point calibration	31
Water in oil sensor	32
Slip calibration	33
Idling speed calibration.....	35
Calibrating the Joystick function	36
Joystick docking force	38
Calibration of Interceptor System.....	39
Depth Alarm	45
Autopilot (4" display)	46
Fuel tank settings (Volvo Penta Glass Cockpit)	51
Autopilot (Volvo Penta Glass Cockpit).....	53

Calibration and Settings

General

- When the installation is complete, auto-configuration and calibration of the controls must always be carried out. Keys must be added to the system.
- Auto-configuration means that the system detects and defines all the components connected to it.
- Perform the calibrations according to the order in this manual.
- Auto-configuration must always be carried out when any changes are made to the EVC system, e.g. if the system is extended or modified.
- During control lever calibration, lever settings and idle rpm are defined for the EVC system. If a control lever is replaced, the new one must be calibrated.
- The engine cannot be started until keys are added to the system.

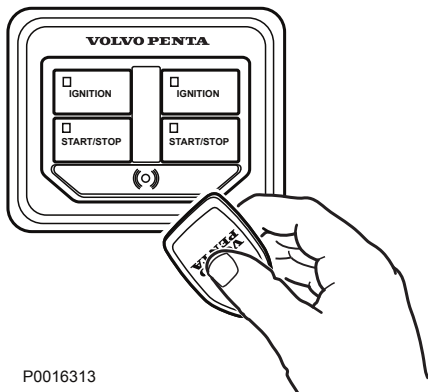
NOTICE! Not all steps are shown for new installations. These exceptions are marked by asterisks (*) in the illustration sequences.

e-Key

The key fob is held in front of the panel to unlock the boat's EVC system. There are ignition and Start/Stop buttons for each driveline.

The system has autostart, which means the button need only be pressed once to start the engines.

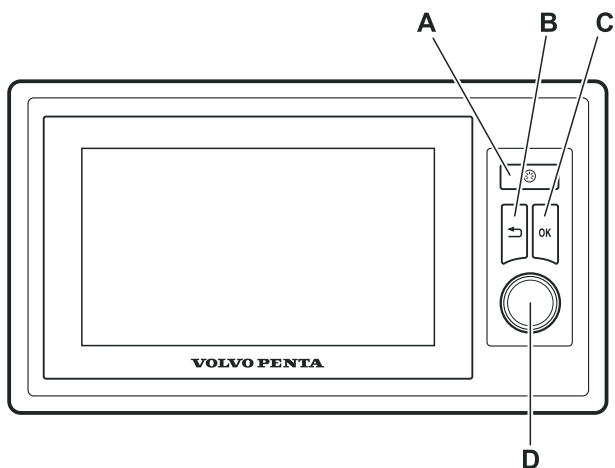
The system will attempt to start the engines for a maximum of 10 seconds after which the starter motor circuit is broken to protect the starter motor from overheating. If possible, allow the starter motor to cool for at least five minutes before making a new start attempt.



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Displays

7" display



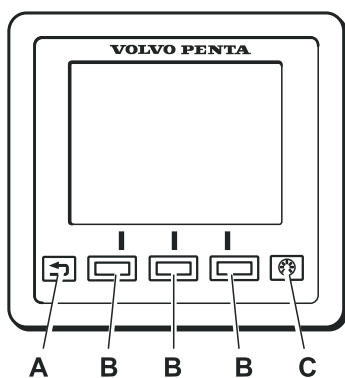
P0017900

A. Controls instrument lighting.

B. Press to go back in the menu.

C. Confirm selection. Open sub menus and the *Settings* menu.

D. Turn to scroll through the menus.



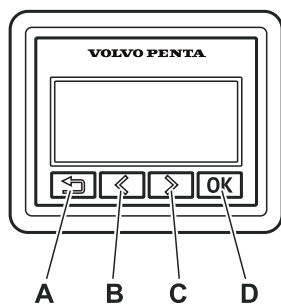
P0017914

4" display

B. Press to go back in the menu.

B. Button functions are shown on screen; they change according to the menu selection.

C. Controls instrument lighting.



P0017684

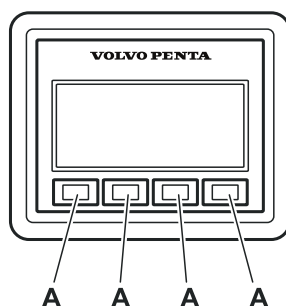
2.5" display

B. Press to go back in the menu. Press repeatedly to return to the main menu; alternatively, hold down the button for a couple of seconds.

B. Go left or up in the menu.

B. Go right or down in the menu.

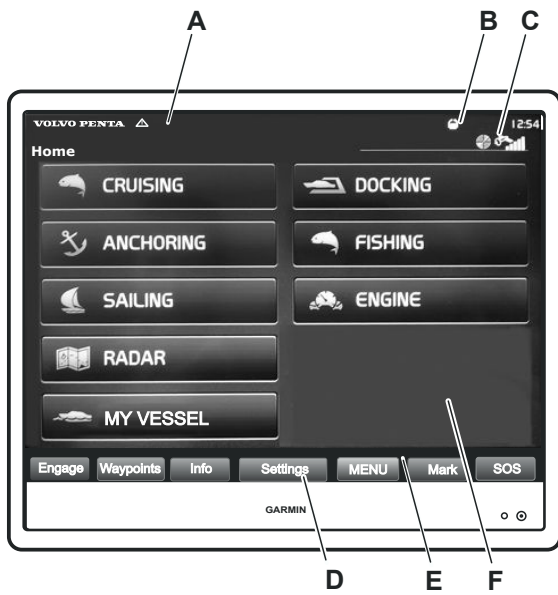
D. Confirm selection.



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Multifunction panel

A. Button function depends on the software installed.



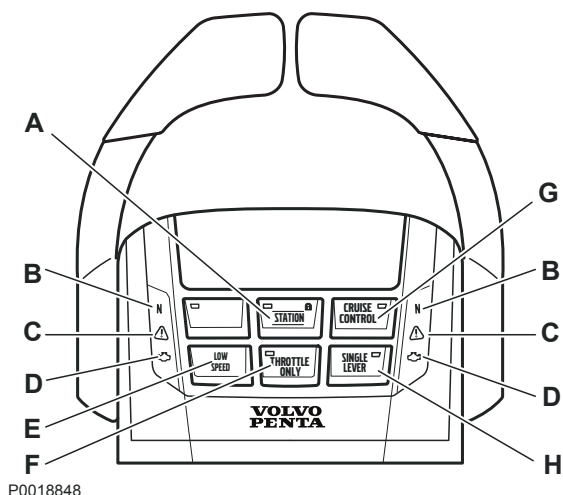
Volvo Penta Glass Cockpit

The Home menu is divided into fields:

- A. Warning and alarm symbols.
- B. Active function symbols.
- C. Shows current Autopilot settings.
- D. Settings with further selections.
- E. Optional screen functions.
- F. Main menus in home screen.

P0019900

Controls and Steering System



A. STATION Activated helm station.

Green LED indicator

- Constant light: Station activated.
- Extinguished: Station inactivated.
- Flashing: Warning or attempted unauthorized station transfer.

Red LED indicator

- Lit when system is locked. The engine can be controlled from the locked helm station.

B. Neutral LED Confirms neutral position.

Green LED indicator

- Constant light: Neutral.
- Extinguished: Ahead, Astern.
- Flashing: Calibration or warm-up mode.

C. Warning lamp

LED indication:

- Orange: Remark.
- Red: Warning.

D. MIL LED

Yellow indicator lamp.

E. LOW SPEED

Low speed function on/off.

F. THROTTLE ONLY

Gas only (disengaged drive) on/off.

G. CRUISE CONTROL

Cruise control on/off.

H. SINGLE LEVER

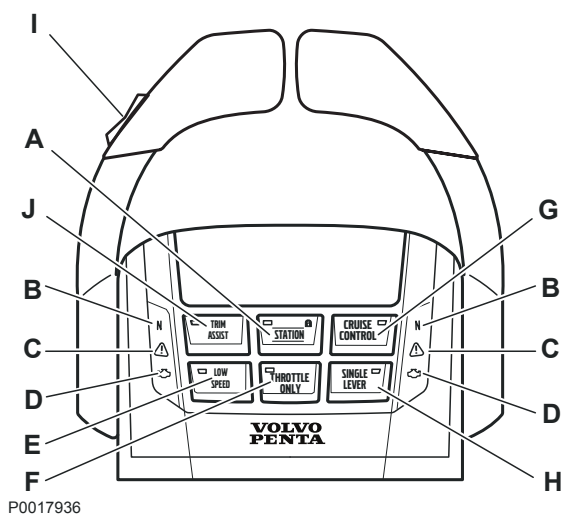
Yellow indicator lamp.

I. IS / POWER TRIM BUTTONS

- Interceptor System (IS) manual: up/down
- Power Trim up/down.

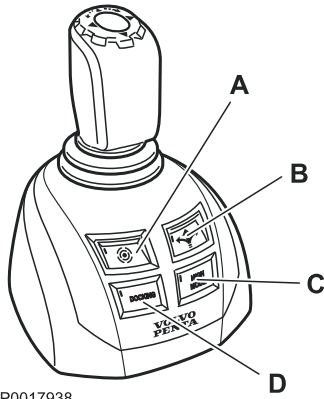
J. IS / TRIM ASSIST

- Interceptor System (IS) auto/manual.
- Power Trim Assist (PTA) on/off.



With Interceptor System (IS)

Joystick



P0017938

A. DYNAMIC POSITIONING SYSTEM

Dynamic positioning system on/off.

B. JOYSTICK DRIVING

Joystick steering on/off.

C. HIGH MODE

Extra power on/off.

D. DOCKING

Docking function on/off.

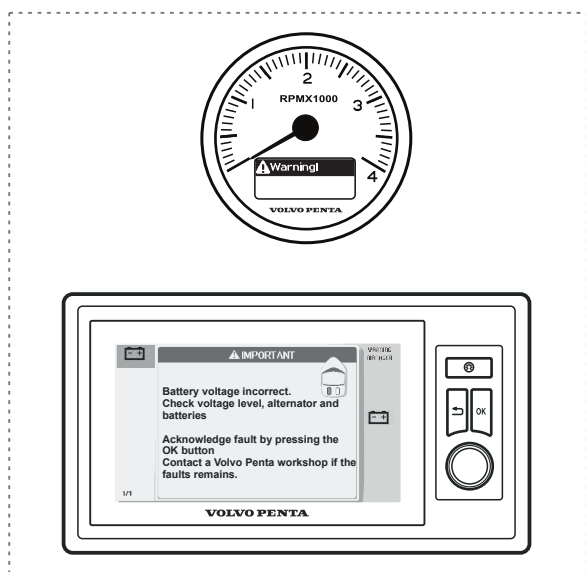
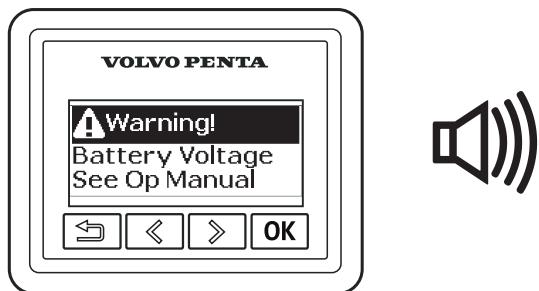
Alarm handling

Error message from the engine and EVC system.

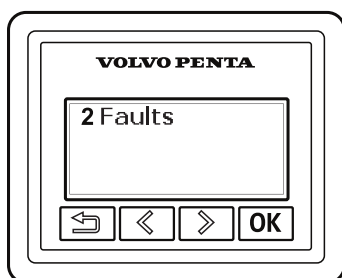
The engine, transmission and the EVC system are monitored and checked by the diagnostics function. Should the diagnostic function discover a malfunction it will protect the engine and ensure continued operation by controlling the engine. The engine is controlled in different ways depending on the severity of the fault.

When a malfunction is detected, the helmsman is warned by an audible alarm and a message is displayed on the screen.

The message shows the cause of the fault and its remedy. This information is also available in the Fault Code Register in the engine's Operator's Manual.



P0012489

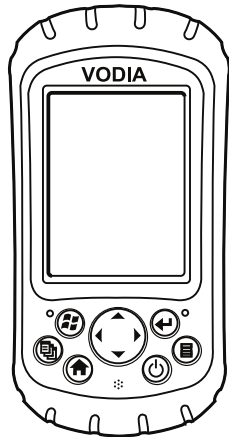


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Acknowledge message

- 1 Push OK to acknowledge the alarm. The buzzer becomes silent.
- 2 Read the message.
- 3 Push OK again and the message disappears.

The alarm has to be acknowledged before the engine can be started.



P0005180

IPS Calibration

The VODIA diagnostic tool may be used to adjust EVC system parameters. This is done with the **Parameter programming** tool in the **Service and maintenance** menu.

VODIA is a special tool from Volvo Penta, refer to Volvo Penta Partner Network to order. Further information about VODIA use is available in the VODIA Operator's Manual that can be downloaded from Volvo Penta Partner Network.

Once contact with the system has been established, contact is then made with the specific ECU (Engine Control Unit) in the menu to show which unit parameters can be adjusted.

Adjustable parameters

NOTICE! Certain parameters may require special permission for adjustment.

Neutral signal

VODIA text: "**Neutral signal**".

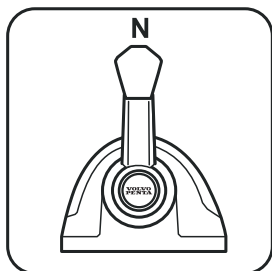
Activated for one PCU (MID 187).

The parameter enables activation or deactivation of the control lever neutral position function.

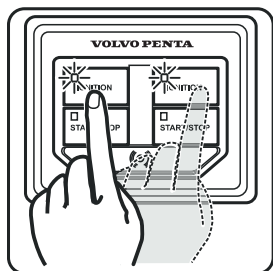
The function can be activated individually at helm station HCU's. If the function is required for all helm stations it must be activated in the PCU via VODIA. This affects all helm stations for the driveline concerned with up to four HCU's possible per driveline.

Calibrating Volvo Penta IPS drive units

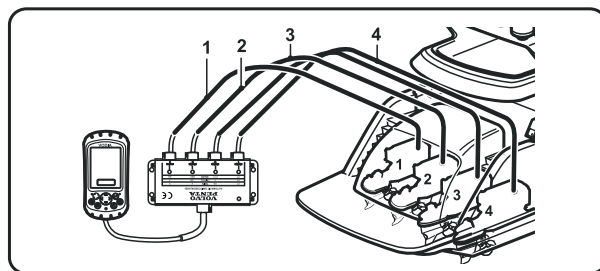
Performed by the OEM and consists of two parts: **Drive leg position**, which calibrates the relative positions between the drive and **Drive Alignment**, is carried out using a centering tool for the drives.



1. Control lever in neutral position.



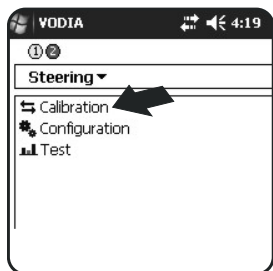
2. Turn on the ignition.



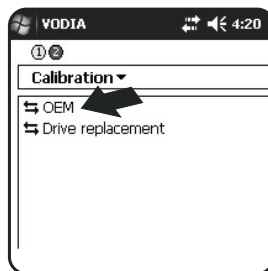
3. Connect to VODIA. (Example shows quad)



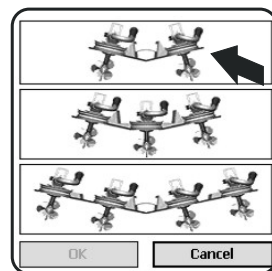
4. Select function group Steering.



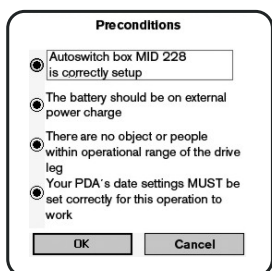
5. Select calibration.



6. Select OEM.



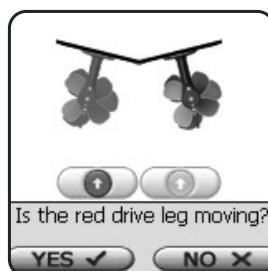
7. Select installation type.



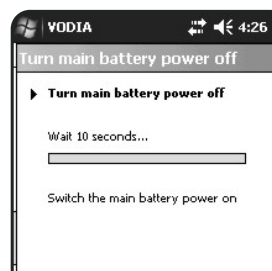
8. Preconditions.



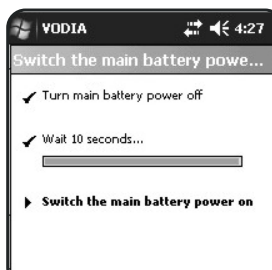
9. **Step 1:** Start Drive leg position and follow the instructions.



10. For example: Is the marked drive leg moving?



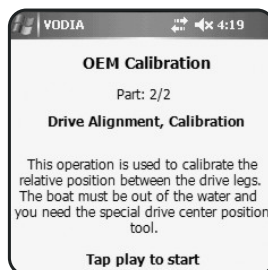
11. Cut the current with the main switches. Wait 10 seconds.



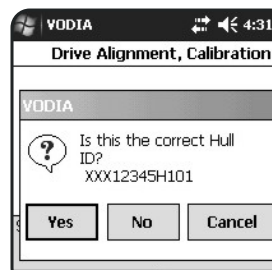
12. Turn the main switch on.



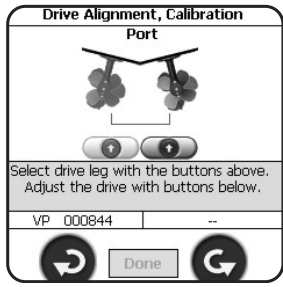
13. Confirm with OK.



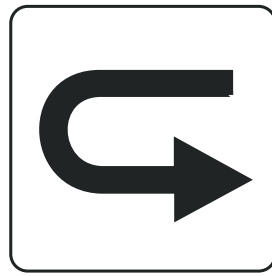
14. **Step 2:** Start Drive alignment and follow the instructions.



15. Confirm the hull ID.



16. Select driveline. Adjust the drive with arrow buttons and press Done.



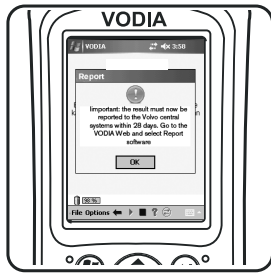
17. Repeat for additional engines.



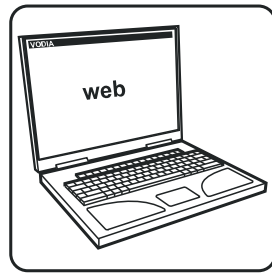
18. Are you sure that the drive legs are aligned with the center positioning tool?



19. Caution! Remove the positioning tool.



20. Report the result within 28 days.

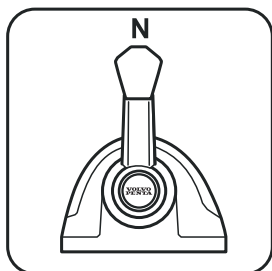


21. VODIA web, select Report software.

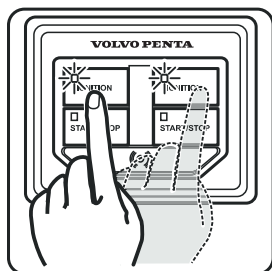
Steering mode

Steering mode specifies the relative positions between the drives. Select between steering rates Minimum, Medium and Maximum. Additionally, IPS2 and IPS3 have two medium positions: low and high. Maximum steering rate provides the smallest turning radius.

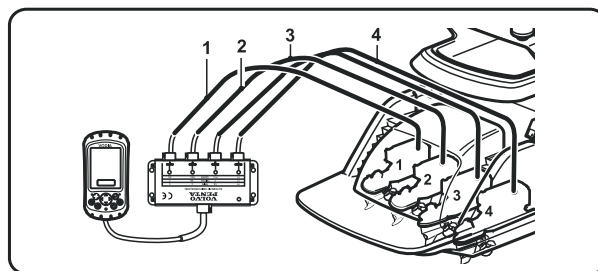
NOTICE! Where necessary, determine steering mode settings according to the Sea Trial Wizard.



1. Move control to neutral.



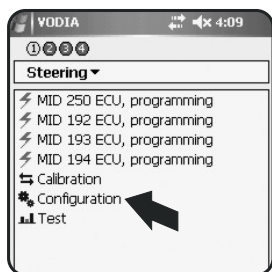
2. Turn the ignition on.



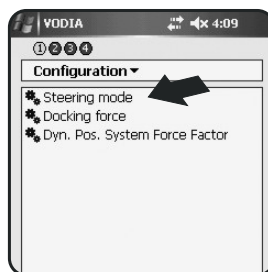
3. Connect to VODIA. (Example shows quad)



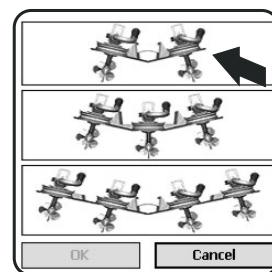
4. Select function group Steering.



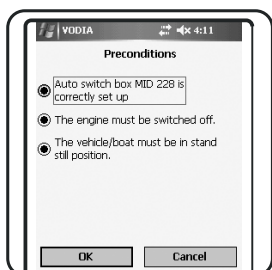
5. Configuration.



6. Steering mode.



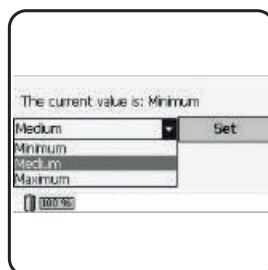
7. Select installation type.



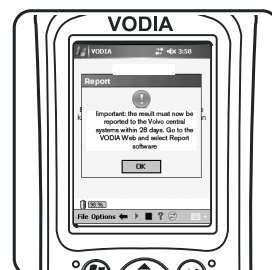
8. Preconditions



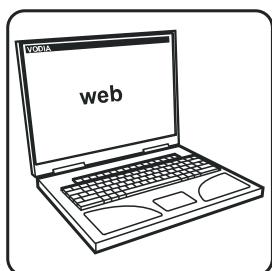
9. Tap Play to start.



10. Select steering mode.



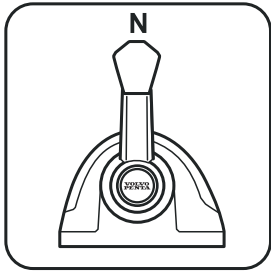
11. Report the result within 28 days.



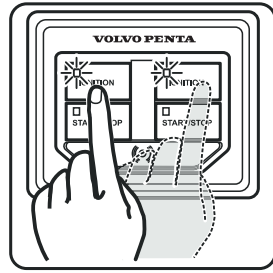
12. VODIA web, select Report software.

Auto configuration, twin installation

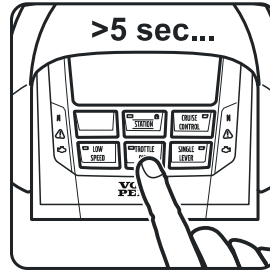
In example below the 2.5" display is used. If 4" or 7" display, use keys / knobs to navigate and OK to confirm.
 * Indication not shown / skip the item during new installation.



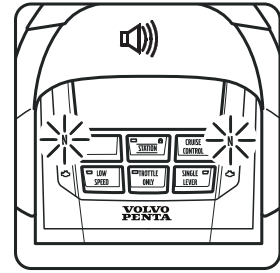
1. Put the gear in neutral



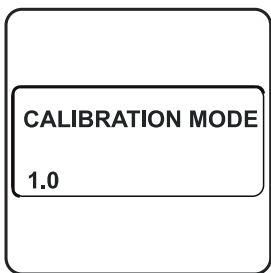
2.* Turn the ignition on.



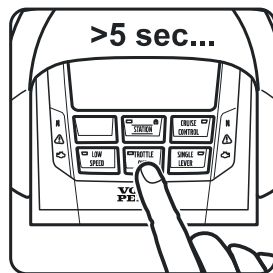
3. Press THROTTLE ONLY



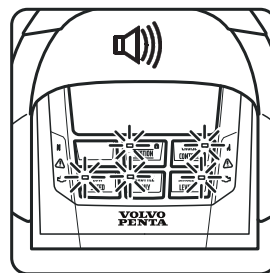
4.* Indicates that calibration mode is activated.



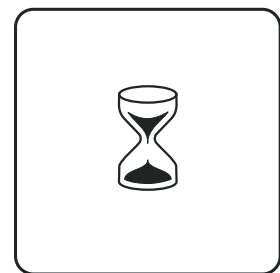
5.* Calibration Mode 1.0



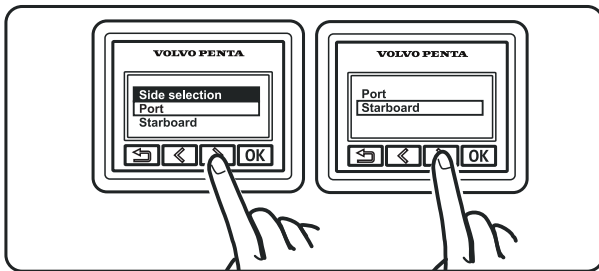
6. Press THROTTLE ONLY



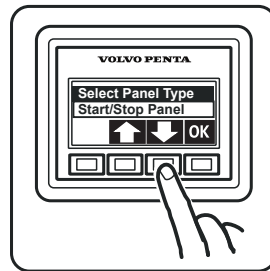
7.* Auto configuration begun.



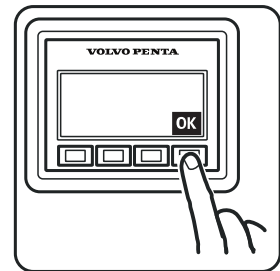
8. Wait.



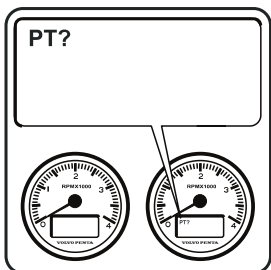
9. Select the engine to be shown in each display. Confirm with OK.



10. If multifunction panel: select type of panel.



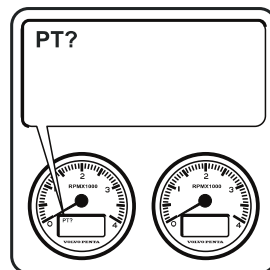
11. Confirm with OK.



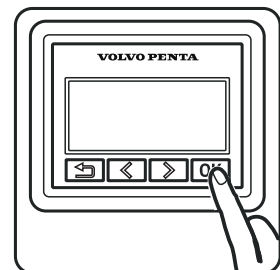
12. Configure any tachometer.



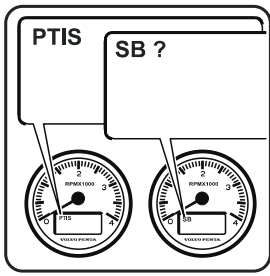
13. Allocate tachometer. Scroll using the arrow buttons.



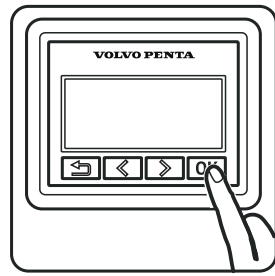
14. Allocate port tachometer.



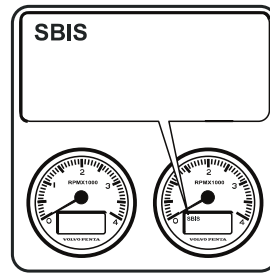
15. Confirm with OK.



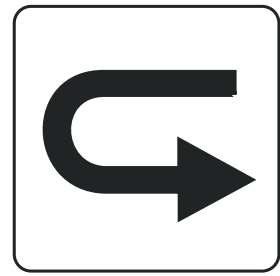
16. Port ready, allocate starboard.



17. Confirm with OK.



18. Starboard confirmed.

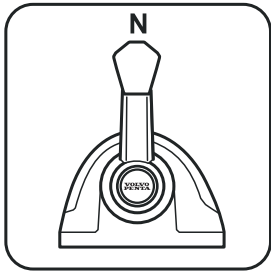


19. Repeat steps 9–18 for further helm stations.

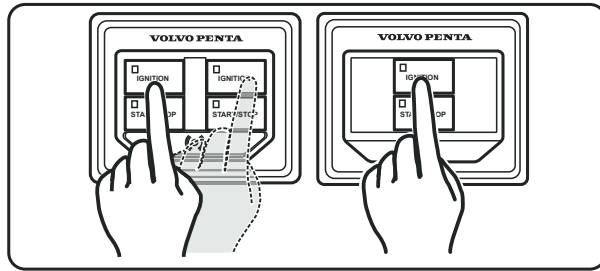
20. Restart the system to confirm the calibration.

Auto configuration, triple installation

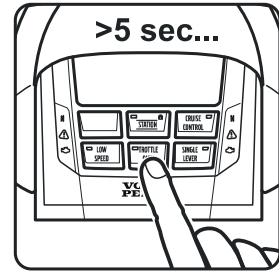
In example below the 2.5" display is used. If 7" display, use keys / knobs to navigate and OK to confirm.
NOTICE! * Indication not shown / skip the item during new installation.



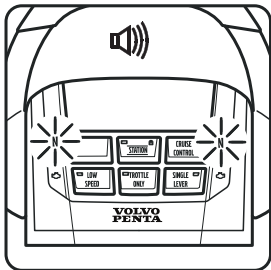
1. Move control to neutral.



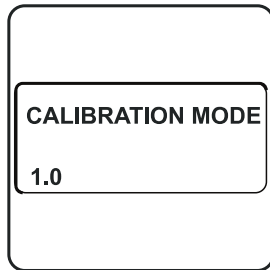
2.* Turn the ignition on.



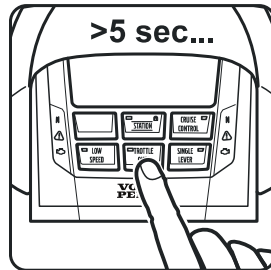
3. Press THROTTLE ONLY



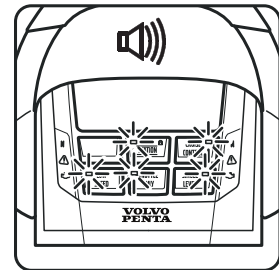
4.* Indicates that calibration mode is activated.



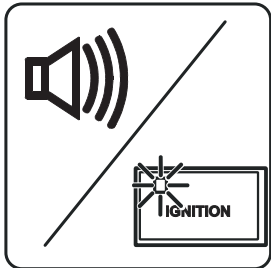
5.* Calibration Mode 1.0 in the display.



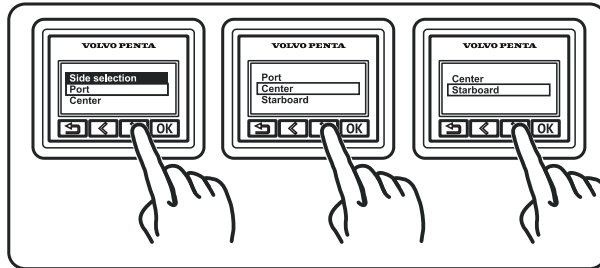
6. Press THROTTLE ONLY



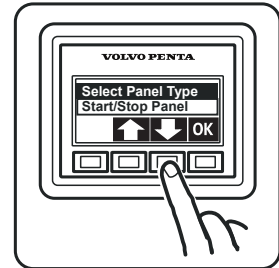
7.* Auto configuration begun.



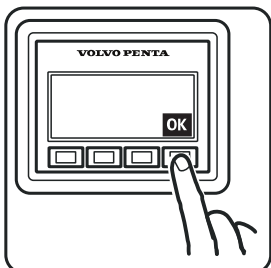
8. Wait until buzzer and ignition light activates.



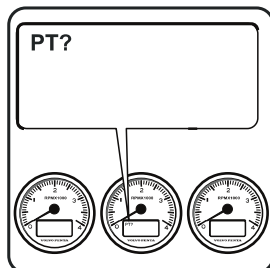
9. Select the engine to be shown in each display. Confirm with OK.



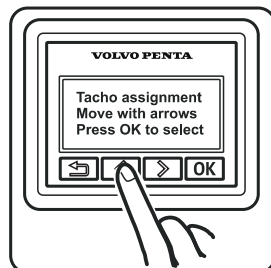
10. If multifunction panel: select type of panel.



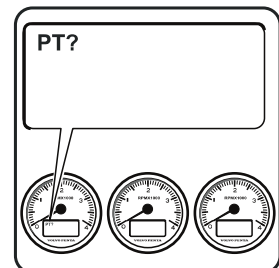
11. Confirm with OK.



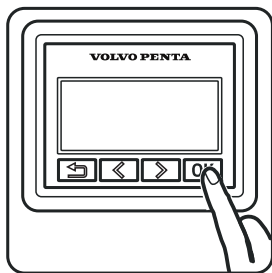
12. Configure any tachometer.



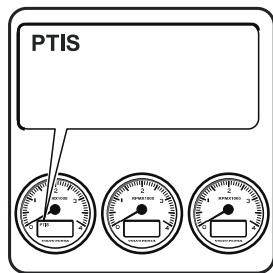
13. Allocate tachometer. Scroll using the arrow buttons.



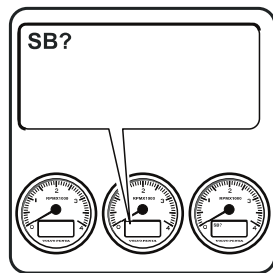
14. Allocate port tachometer.



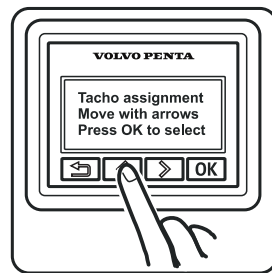
15. Confirm with OK.



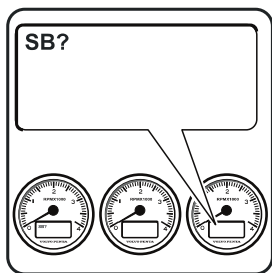
16. Port ready, allocate starboard.



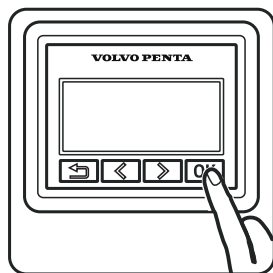
17. Starboard Engine?



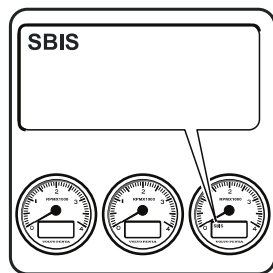
18. Allocate tachometer. Scroll using the arrow buttons.



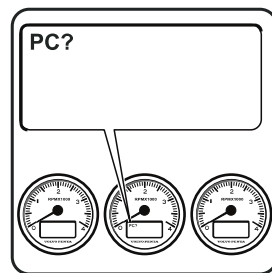
19. Starboard Engine?



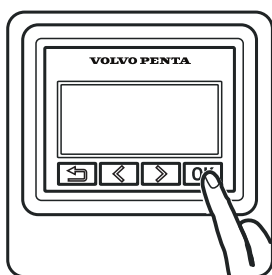
20. Confirm with OK.



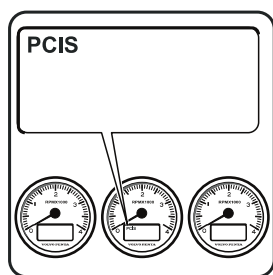
21. Starboard confirmed.



22. Center engine?



23. Confirm with OK.



24. Center confirmed.

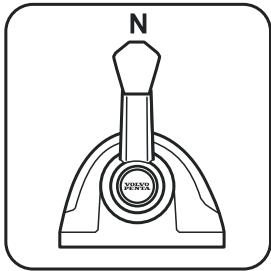


25. Repeat steps 9–24 for further helm stations.

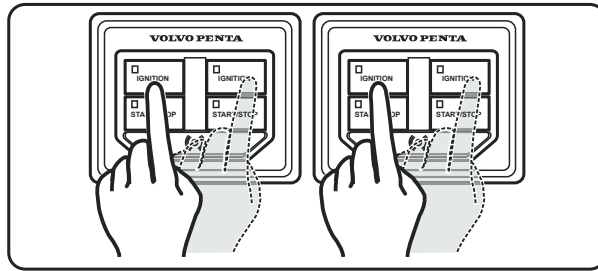
26. Restart the system to confirm the calibration.

Auto configuration, quadruple installation

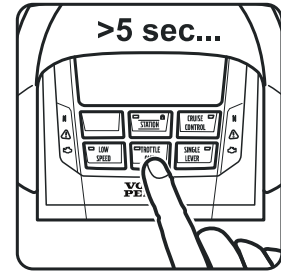
In example below the 2.5" display is used. If 7" display, use keys / knobs to navigate and OK to confirm.
NOTICE! * Indication not shown / skip the item during new installation.



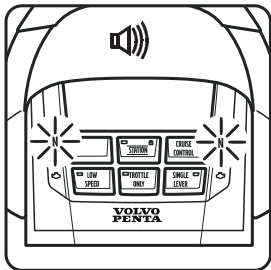
1. Move control to neutral.



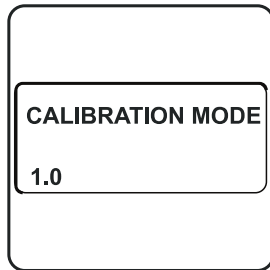
2.* Turn the ignition on.



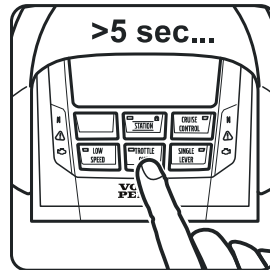
3. Press THROTTLE ONLY



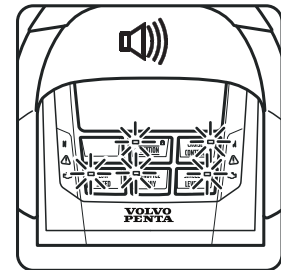
4.* Indicates that calibration mode is activated.



5.* Calibration Mode 1.0



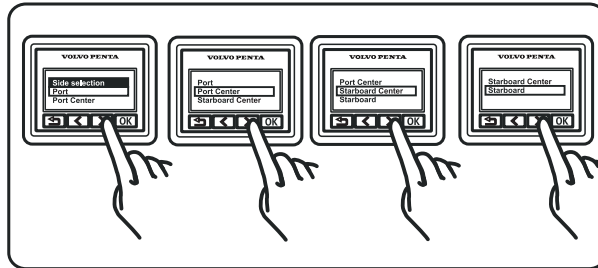
6. Press THROTTLE ONLY



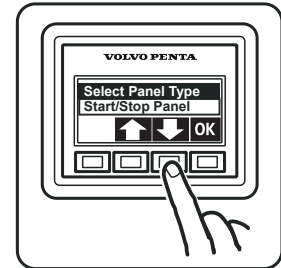
7.* Auto configuration begun.



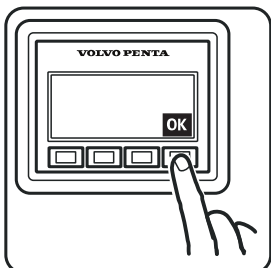
8. Wait.



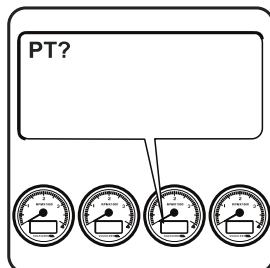
9. Select the engine to be shown in each display. Confirm with OK.



10. If multifunction panel: select type of panel.



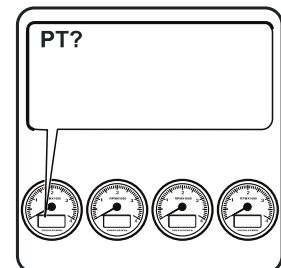
11. Confirm with OK.



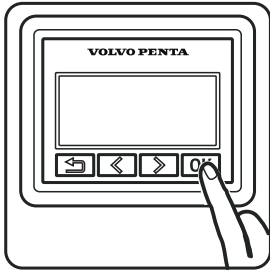
12. Configure any tachometer.



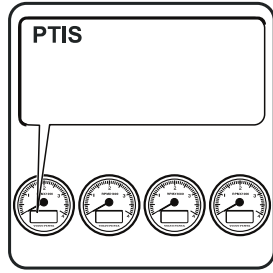
13. Allocate tachometer. Scroll using the arrow buttons.



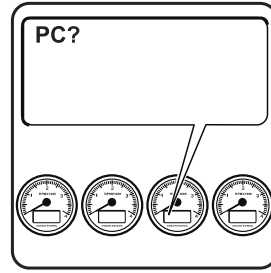
14. Port Engine?



15. Confirm with OK.



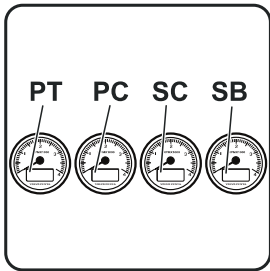
16. Allocate port tachometer.



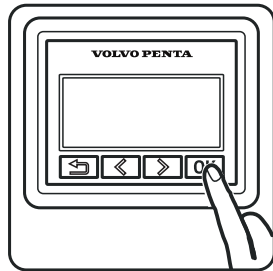
17. Port center engine?



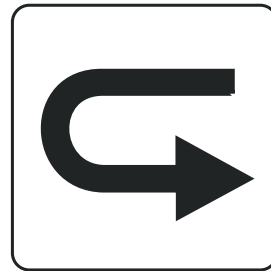
18. Allocate tachometer. Scroll using the arrow buttons.



19. Repeat for all tachometers.



20. Confirm with OK.



21. Repeat steps 9–20 for further helm stations.

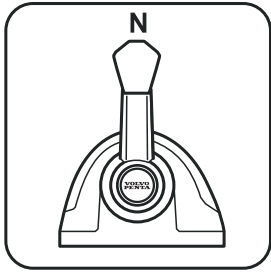


22. Restart the system to confirm the calibration.

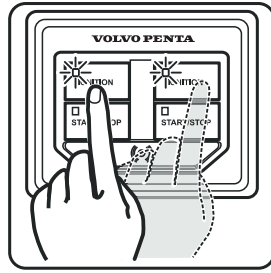
Auto configuration, 4" display

NOTICE! 4" display can not be used in combination with 2,5" or 7" display at the same helm station.

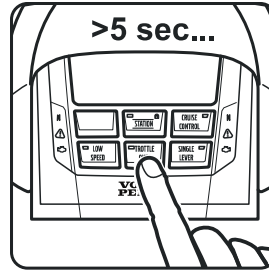
NOTICE! * Indication not shown / skip the item during new installation. (Example below show a twin installation)



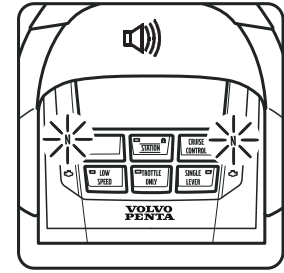
1. Move control to neutral.



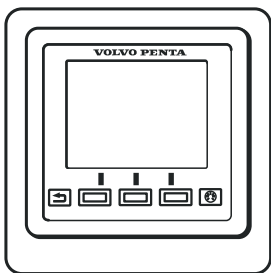
2.* Turn the ignition on.



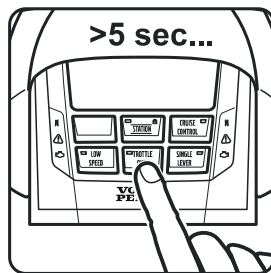
3. Press THROTTLE ONLY



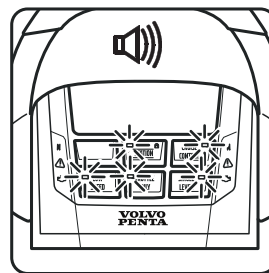
4.* Indicates that calibration mode is activated.



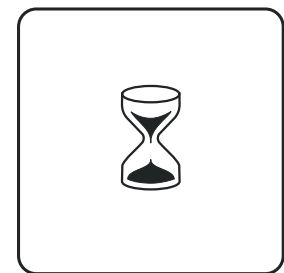
5.* Calibration Mode 1.0



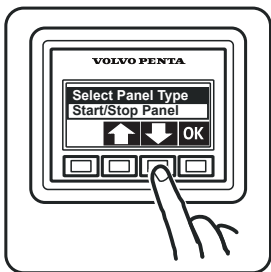
6. Press THROTTLE ONLY



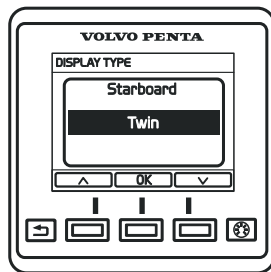
7.* Auto configuration begun.



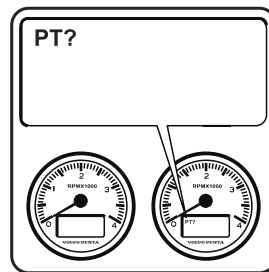
8. Wait.



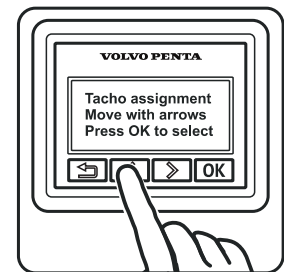
9. If multifunction panel: select type of panel. Confirm with OK.



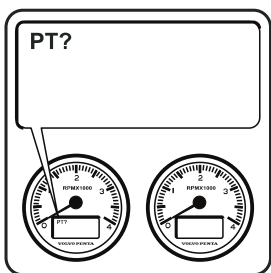
10. Select display type. Confirm with OK.



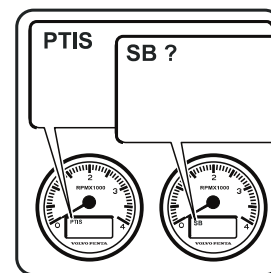
11. Configure any tachometer.



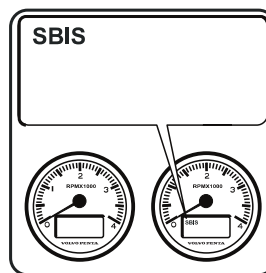
12. Allocate tachometer. Scroll using the arrow buttons.



13. Allocate port tachometer. Confirm with OK.



14. Port ready, allocate starboard. Confirm with OK.



15. Starboard confirmed.



16. Repeat steps 9–15 for further helm stations.

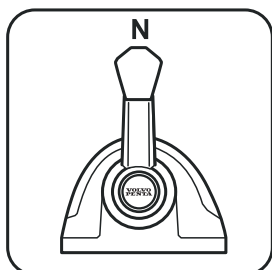
17. Restart the system to confirm the calibration.

Auto configuration, 7" display

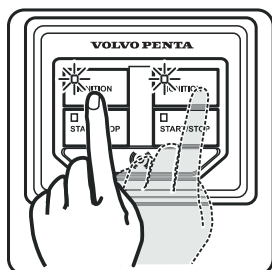
NOTICE! If two 7" displays are used on one helm station they must be configured as TWIN/TWIN SECONDARY respective port/starboard (on twin installations) as TRIPLE/TRIPLE SECONDARY (on triple installations) and as QUAD PORT/QUAD STARBOARD (on quad installations)

NOTICE! * Indication not shown / skip the item during new installation.

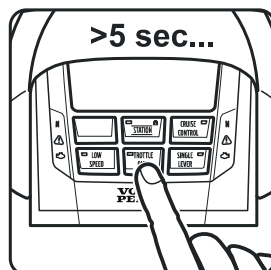
(Example below show a twin installation)



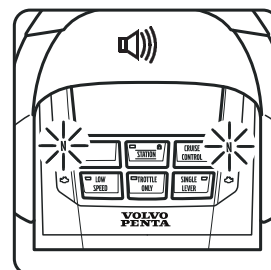
1. Move control to neutral.



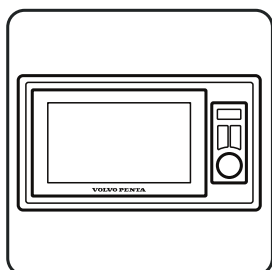
2.* Turn the ignition on.



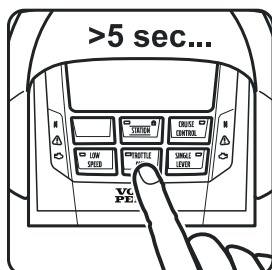
3. Press THROTTLE ONLY



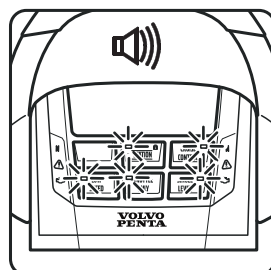
4.* Indicates that calibration mode is activated.



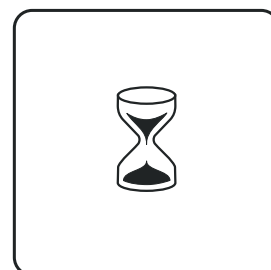
5.* Calibration Mode 1.0



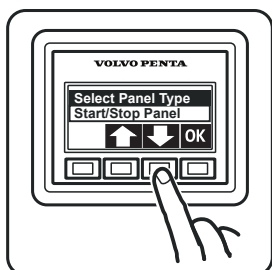
6. Press THROTTLE ONLY



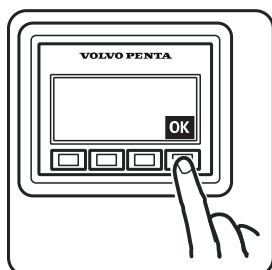
7.* Auto configuration begun.



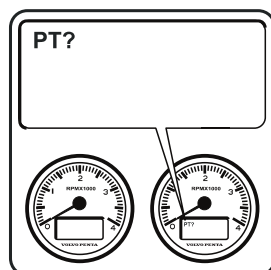
8. Wait.



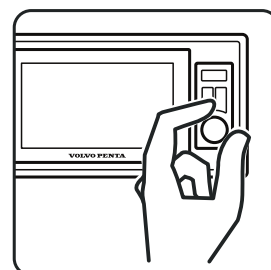
9. If multifunction panel: select type of panel.



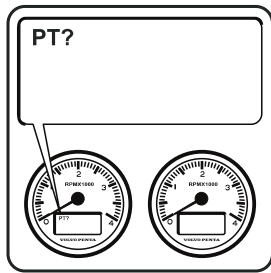
10. Confirm with OK.



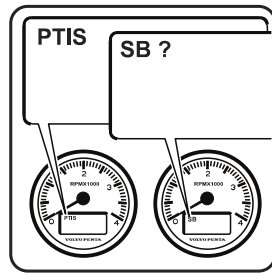
11. Configure any tachometer.



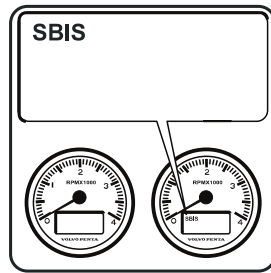
12. Allocate tachometer. Scroll using the arrow buttons.



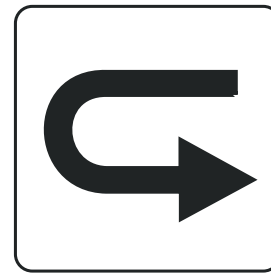
13. Allocate port tachometer.
Confirm with OK.



14. Port ready, allocate starboard.
Confirm with OK.



15. Starboard confirmed.



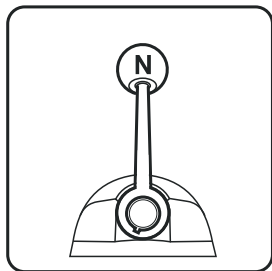
16. Repeat steps 9–15 for further helm stations.

17. Restart the system to confirm the calibration.

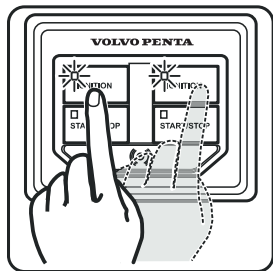
Auto configuration, analog lever

In example below the 2.5" display is used. If 7" display, use keys / knobs to navigate and OK to confirm.

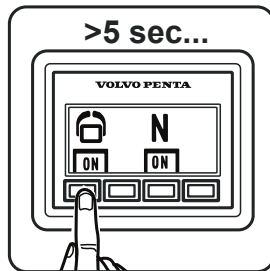
NOTICE! * Indication not shown / skip the item during new installation. (Example below show a twin installation)



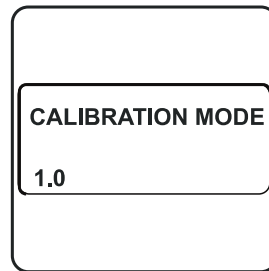
1. Move control to neutral.



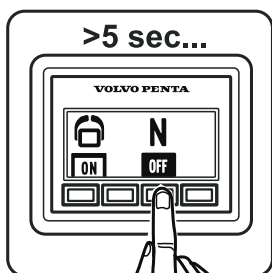
2.* Turn the ignition on.



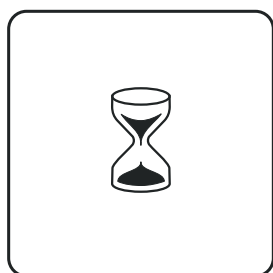
3. Set active station.



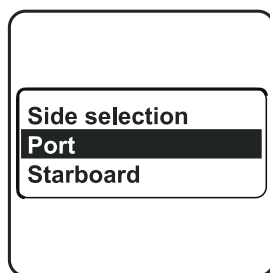
4.* Calibration Mode 1.0



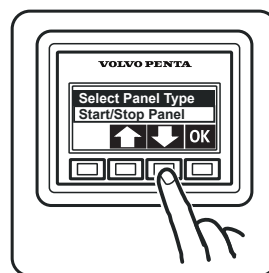
5. Push the Neutral button.



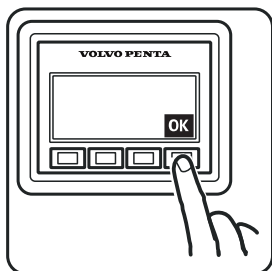
6. Wait.



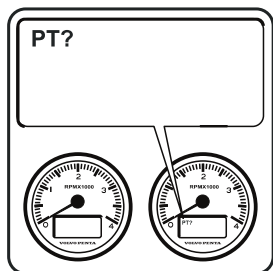
7. Select Port engine. Confirm with OK.



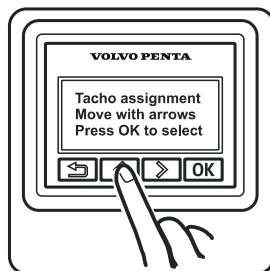
8. If multifunction panel: select type of panel.⁽¹⁾



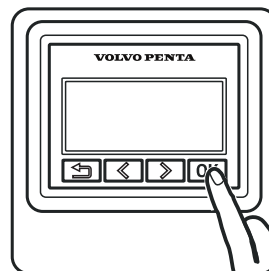
9. Confirm with OK.



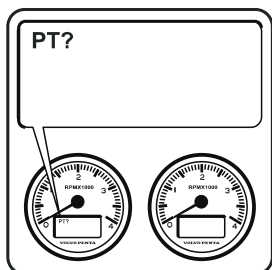
10. Configure any tachometer.



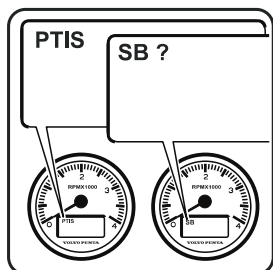
11. Allocate tachometer. Scroll using the arrow buttons.



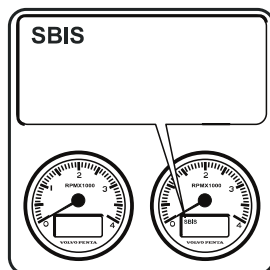
12. Confirm with OK.



13. Allocate port tachometer. OK



14. Port ready, allocate starboard. OK



15. Starboard confirmed.



16. Repeat steps 7–15 for further helm stations.

17. Restart the system to confirm the calibration.

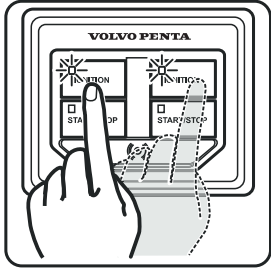
1. Start/Stop panel required at each station.

Language

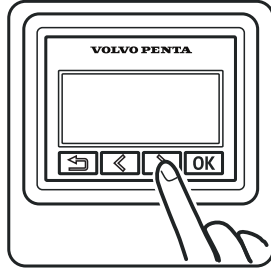
Select preferred language:

English, Danish, Finnish, French, Dutch, Italian, Portuguese, Spanish, Swedish and German.

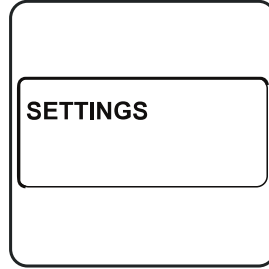
NOTICE! The setting need only be made at one helm station to be displayed on all screens at all helm stations.



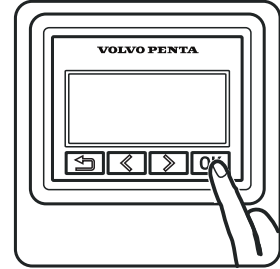
1. Turn the ignition on.



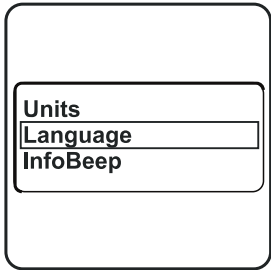
2. Scroll the menu.



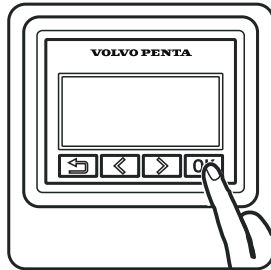
3. Settings



4. Confirm with OK.



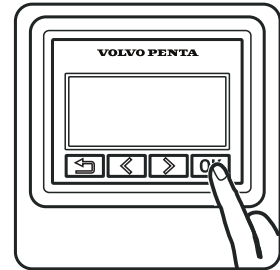
5. Scroll to Language menu.



6. Confirm with OK.



7. Select preferred language.



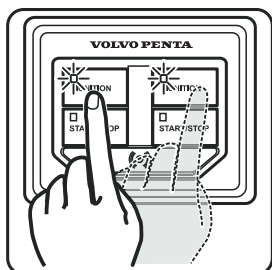
8. Confirm with OK.



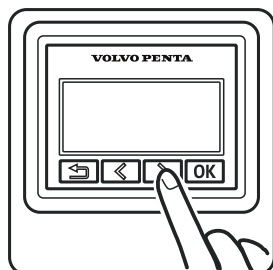
9. Restart the system to confirm the calibration.

Units

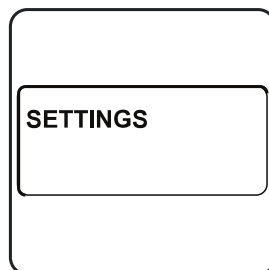
NOTICE! The setting need only be made at one helm station to be displayed on all screens at all helm stations.



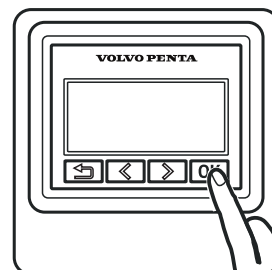
1. Turn the ignition on.



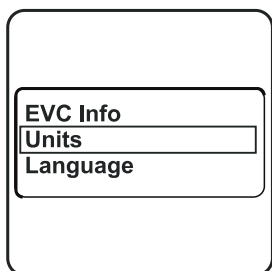
2. Scroll the menu.



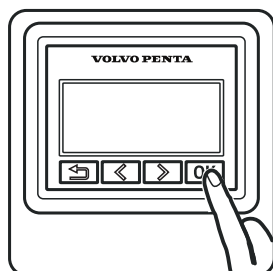
3. Settings



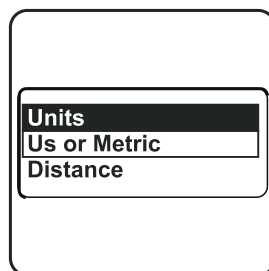
4. Confirm with OK.



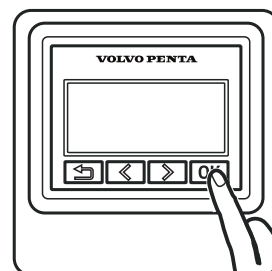
5. Scroll to the Units menu.



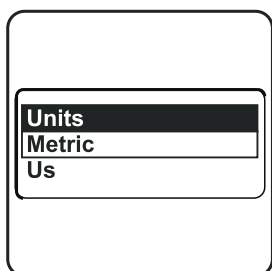
6. Confirm with OK.



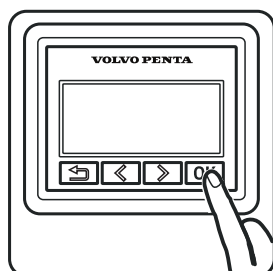
7. Select preferred units.



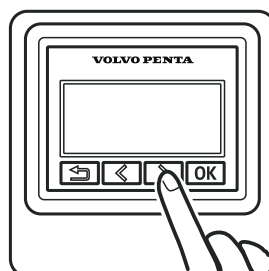
8. Confirm with OK.



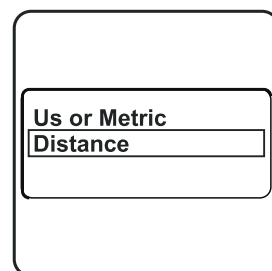
9. Select preferred units.



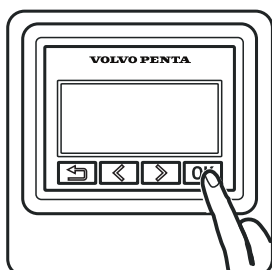
10. Confirm with OK.



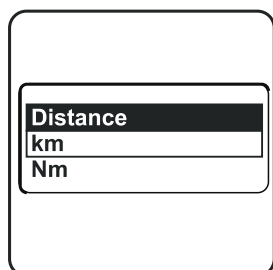
11. Scroll to set units of distance.



12. Scroll to Distance.



13. Confirm with OK.



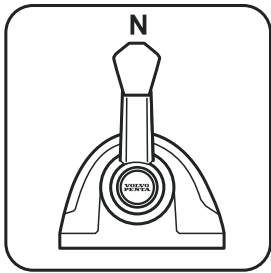
14. Select unit and confirm with OK.



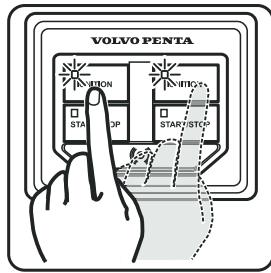
15. Restart the system to confirm the calibration.

Add e-Key

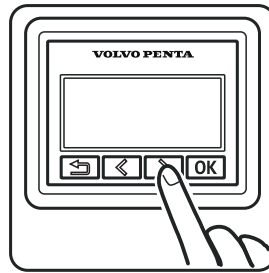
NOTICE! The ignition must be on and engine(s) stopped.



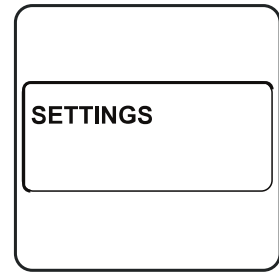
1. Move control to neutral.



2. Turn the ignition on.



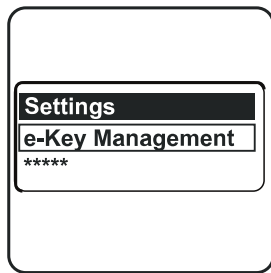
3. Scroll the menu.



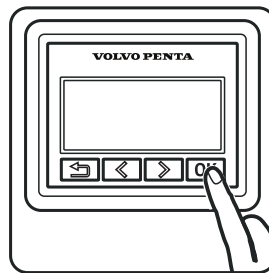
4. Settings.



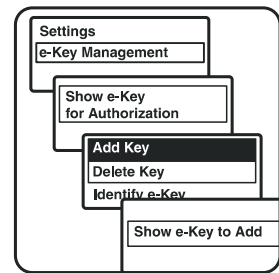
5. Confirm with OK.



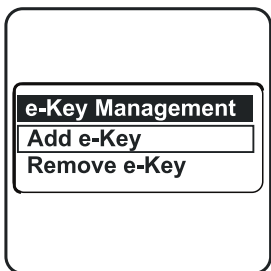
6. Scroll to the e-Key management menu.



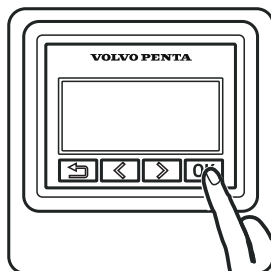
7. Confirm with OK.



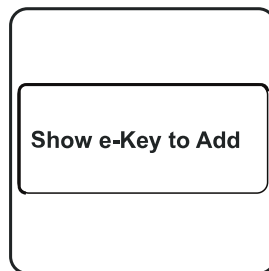
8. If previous e-Key exists, confirm it before step 9.



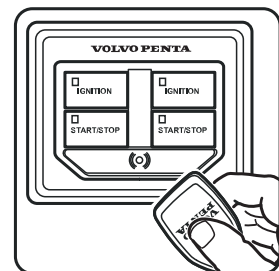
9. Select Add e-Key.



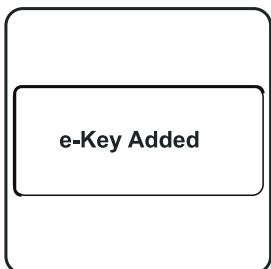
10. Confirm with OK.



11. Show e-Key to add.



12. Hold the new e-Key in front of the Start/Stop panel.



13. e-Key added. Remaining available locations for e-Key in display.



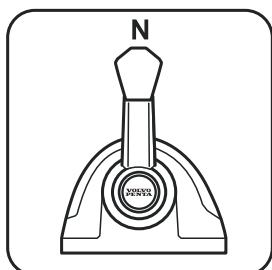
14. Repeat steps 9–13 for additional e-Keys.



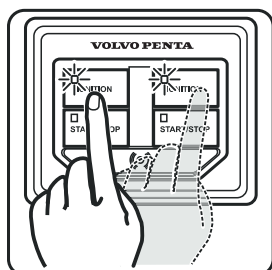
15. Restart the system to confirm the calibration.

Lever Calibration, top mounted lever

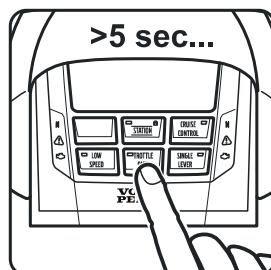
NOTICE! Both levers must be calibrated at the same time to provide the same positions for all engines.
WOT = Wide Open Throttle.



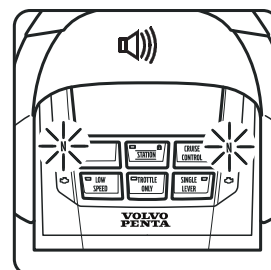
1. Move control to neutral.



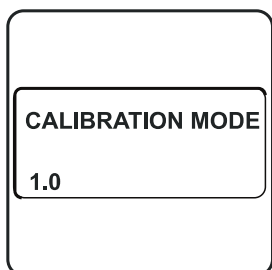
2. Turn the ignition on.



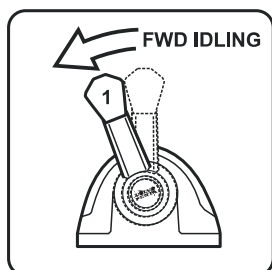
3. Press THROTTLE ONLY



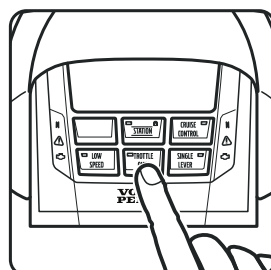
4. Indicates that calibration mode is activated.



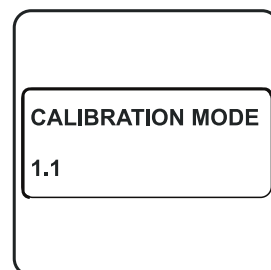
5. Calibration Mode 1.0.



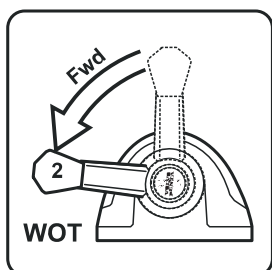
6. Move the levers ahead to position 1.



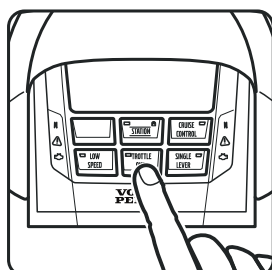
7. Press THROTTLE ONLY



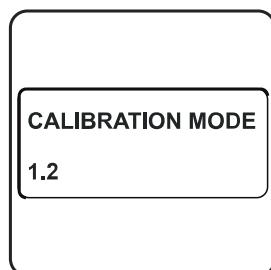
8. Calibration Mode 1.1.



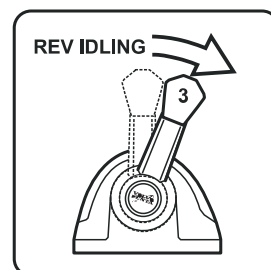
9. Full power ahead.



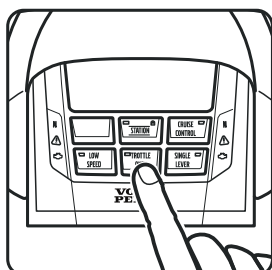
10. Press THROTTLE ONLY



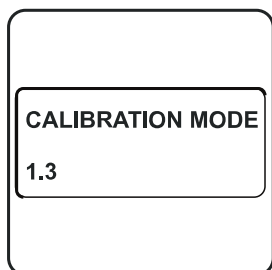
11. Calibration Mode 1.2.



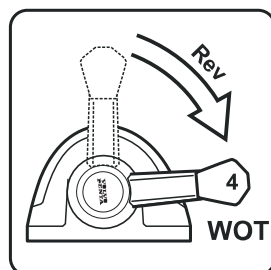
12. Move the levers astern to position 3.



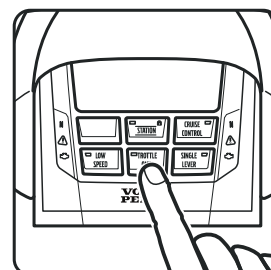
13. Press THROTTLE ONLY



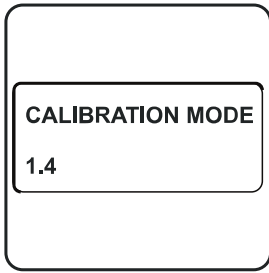
14. Calibration Mode 1.3.



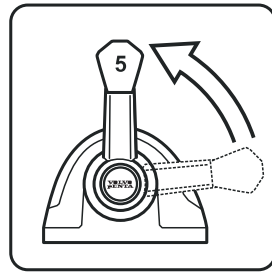
15. Full power astern.



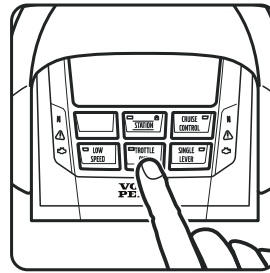
16. Press THROTTLE ONLY



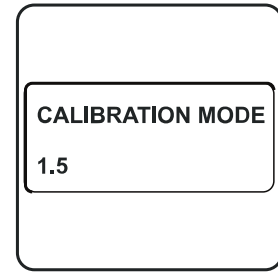
17. Calibration Mode 1.4.



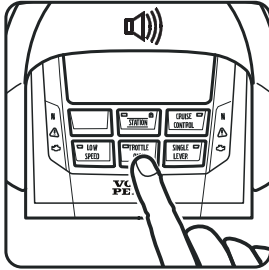
18. Move control to neutral.



19. Press THROTTLE ONLY



20. Calibration Mode 1.5.



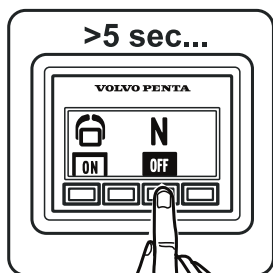
21. Press THROTTLE ONLY An audible signal will confirm that calibration is complete.



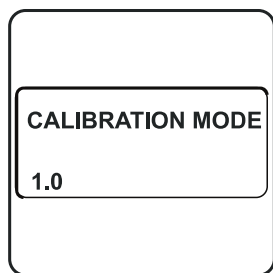
22. Restart the system to confirm the calibration.

Lever calibration, analog lever with stand-alone HCU

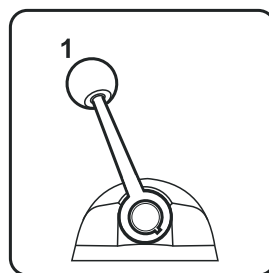
WOT = Wide Open Throttle.



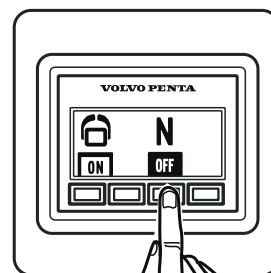
1. Push the Neutral button.



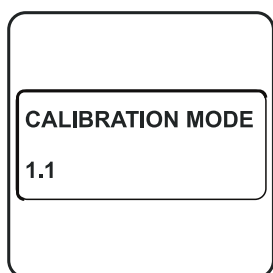
2. Calibration Mode 1.0.



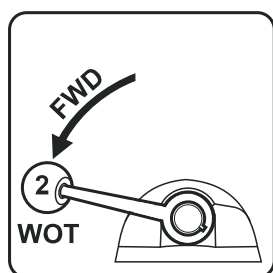
3. Move the levers ahead to position 1.



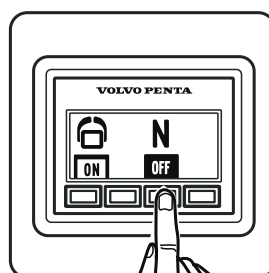
4. Confirm the position.



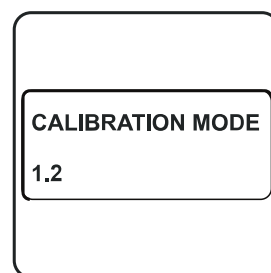
5. Calibration Mode 1.1.



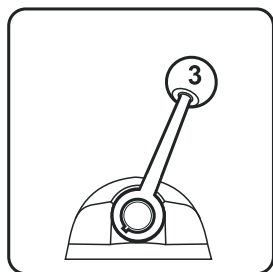
6. Move the lever to position 2.



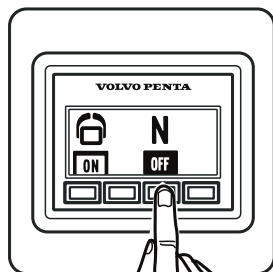
7. Confirm the position.



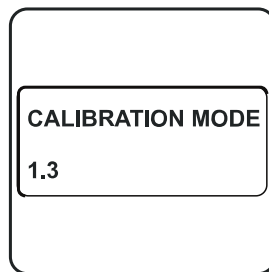
8. Calibration Mode 1.2.



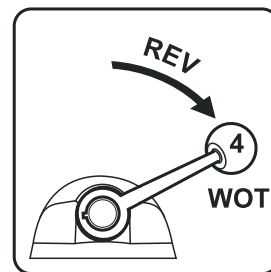
9. Move the levers astern to position 3.



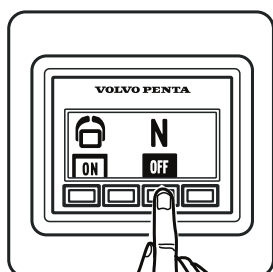
10. Confirm the position.



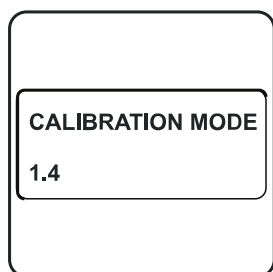
11. Calibration Mode 1.3.



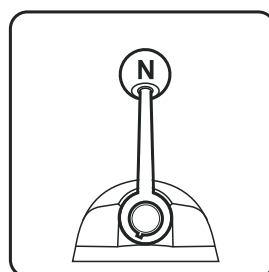
12. Move the lever to position 4, WOT astern.



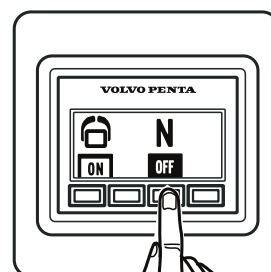
13. Confirm the position.



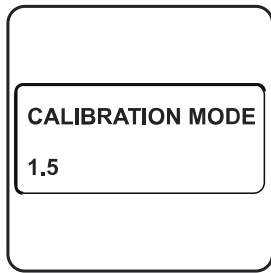
14. Calibration Mode 1.4.



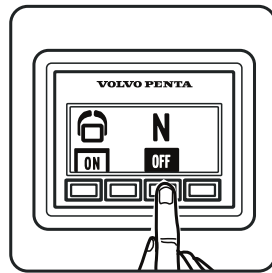
15. Put the gear in neutral



16. Confirm the position.



17. Calibration Mode 1.5.



18. To finish, press Neutral.



19. Restart the system to confirm the calibration.

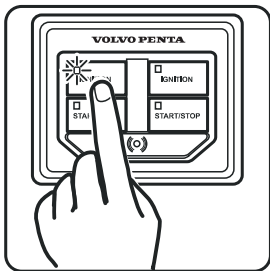
Fuel tank settings

- If only one tank is fitted it must be configured as port side. If there are two tanks they must be calibrated separately; begin by configuring the port side tank.
- There are two alternative ways of calibrating the fuel tank level sensor. **Full tank calibration** is an approximate method while **Multi-point calibration** provides more precise results. Multi-point calibration is a prerequisite for the trip computer to show fully accurate information.
- Auto-configuration must be done when the fuel tank sensor is connected.

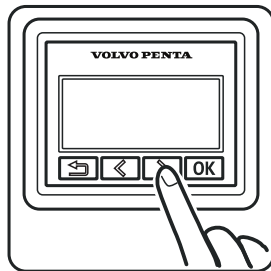
Setting alarm level and tank volume

NOTICE! The tank must be empty.

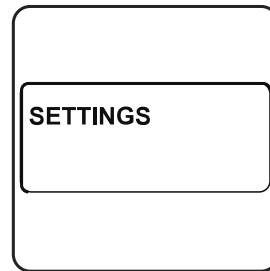
NOTICE! The alarm is switched off at the factory = 0%.



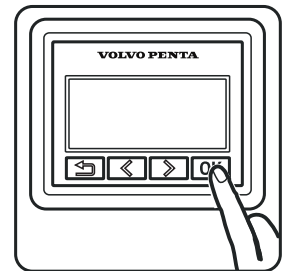
1. Switch on ignition to the port engine.



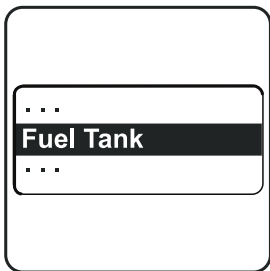
2. System with 2.5" Display.



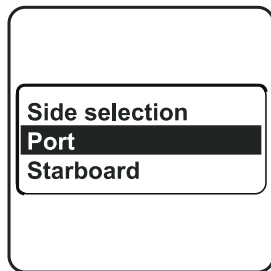
3. Settings.



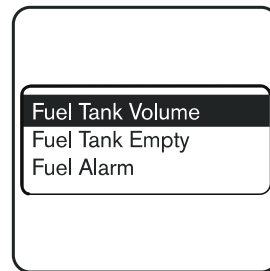
4. Confirm with OK.



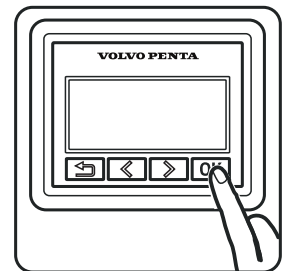
5. Scroll to Fuel Tank. Confirm with OK.



6. Select port side.



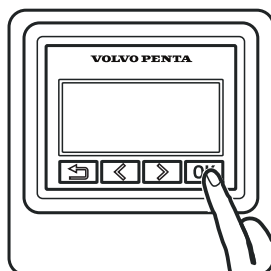
7. Scroll to Fuel Tank Volume.



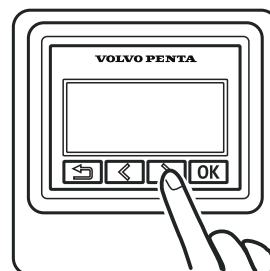
8. Confirm with OK.



9. Warning! May only be performed by qualified Volvo Penta personnel.



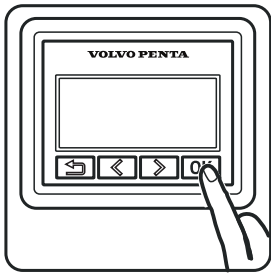
10. Confirm the warning message.



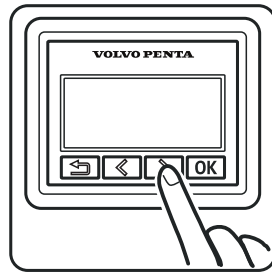
11. Set the max volume.



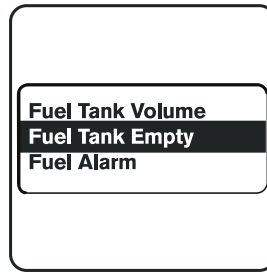
12. Scroll to correct value.



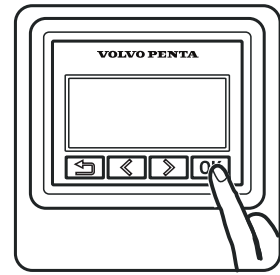
13. Confirm with OK.



14. System with 2.5" Display.



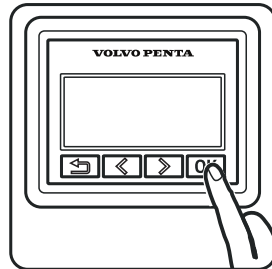
15. Select Fuel Tank Empty



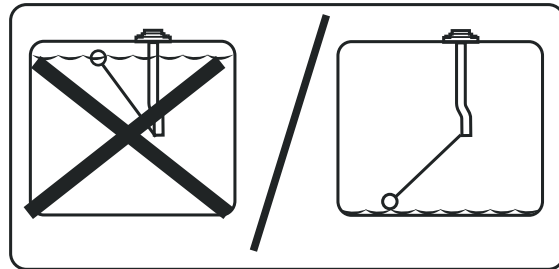
16. Confirm with OK.



17. Warning! May only be performed by qualified Volvo Penta personnel.



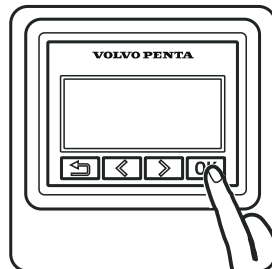
18. Confirm the warning message.



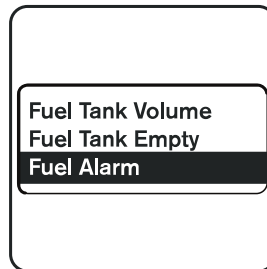
19. Make sure the tank is empty and the sensor is correctly positioned.



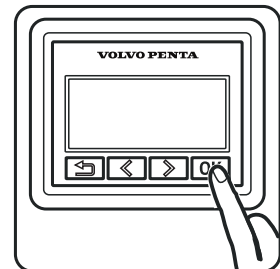
20. FUEL TANK PUSH WHEN EMPTY.



21. Confirm that the tank is empty.



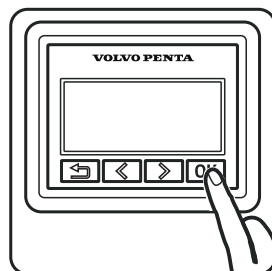
22. Scroll to Fuel Alarm.



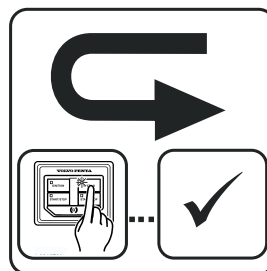
23. Confirm with OK.



24. Set preferred alarm level.



25. Confirm with OK.



26. Turn ignition off.

Repeat for further fuel tanks with port ignition off.

27. Restart the system to confirm the calibration.

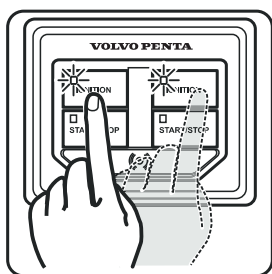
Multi-point calibration

To carry out multi-point calibration, fill the fuel tank to max 20% of its total capacity.

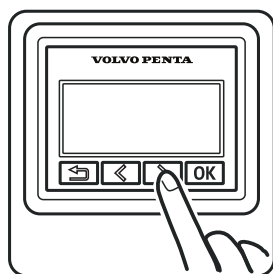
NOTICE! Empty tank calibration must be concluded before multi-point calibration is performed.

Calibration is carried out in five steps: Position 1: 20% full tank.
Position 2: 40% full tank.
Position 3: 60% full tank.

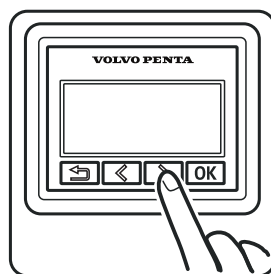
Position 4: 80% full tank.
Position 5: 100% full tank.



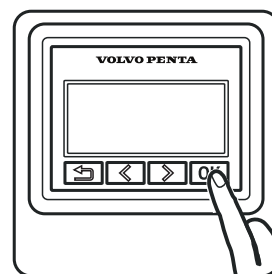
1. Turn the ignition on.



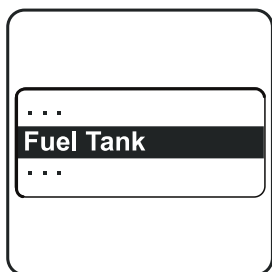
2. System with 2.5" Display.



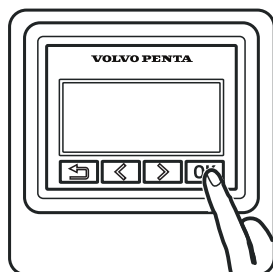
3. Settings



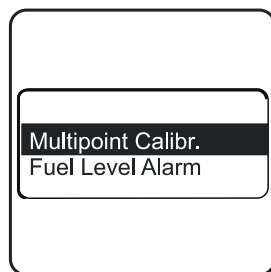
4. Confirm with OK.



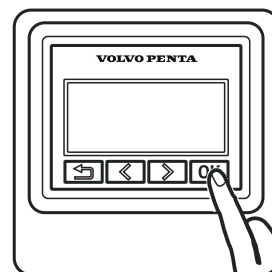
5. Scroll to the Fuel Tank menu.



6. Confirm with OK.



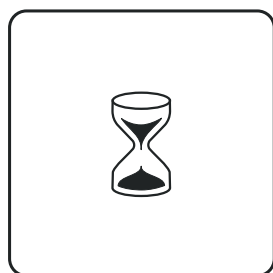
7. Scroll to Multi-Point Calibration



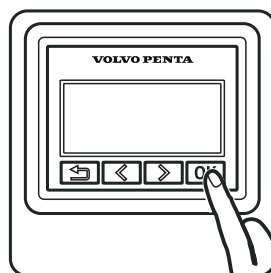
8. Confirm with OK.



9. Fill the tank with the quantity specified for Pos. 1



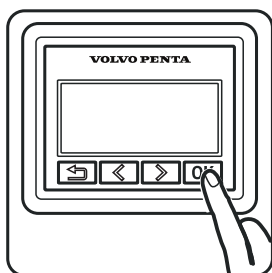
10. Wait for 10 seconds.



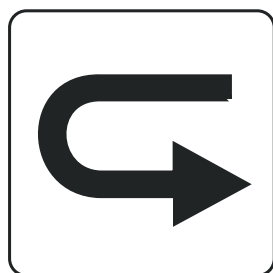
11. Confirm when tank is filled to the specified level.



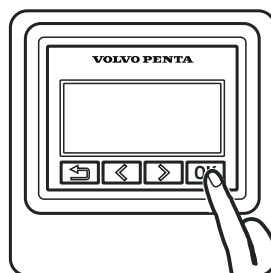
12. Fill to the volume specified for Pos. 2. Wait 10 seconds.



13. Confirm when tank is filled to the specified level.



14. Repeat the procedure for Pos. 3, Pos. 4 and Pos 5.



15. Confirm each position.



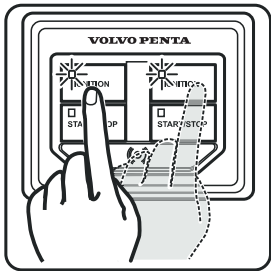
17. Restart the system to confirm the calibration.

Water in oil sensor

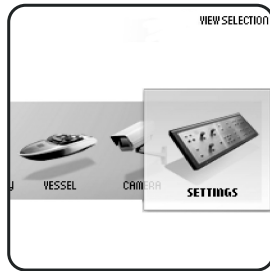
System with 7" Display

Applies to **IPS 800–950** and **IPS 1050–1200**. Perform for new installations and oil change.

NOTICE! Preconditions: Engine running below 1000 RPM.



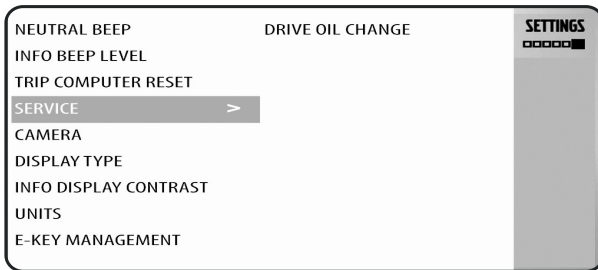
1. Ignition must be on for all drivelines.



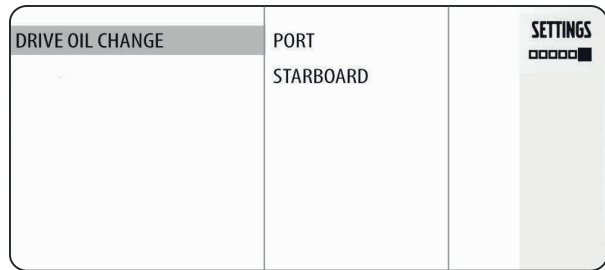
2. Go to Settings



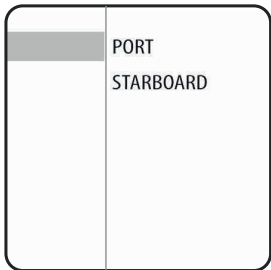
3. EVC Settings.



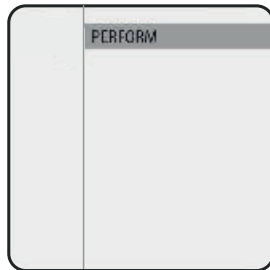
4. Select Service.



5. Select Drive oil change.



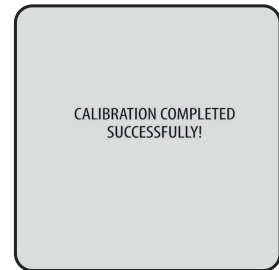
6. Select driveline.



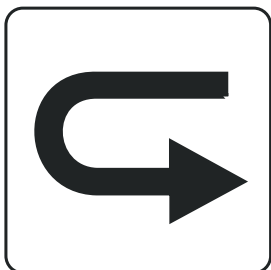
7. Select Perform.



8. Press OK to start.



9. Calibration completed successfully.



10. Repeat for additional engines.



11. Restart the system to confirm the calibration.

Slip calibration

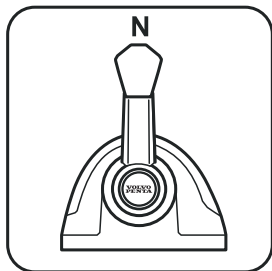
CAUTION!

This procedure requires the engine to be running. The gear will be engaged, be prepared for sudden movements.

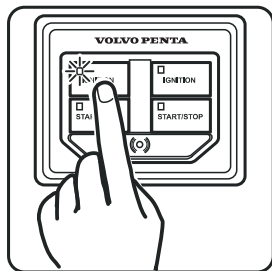
Carry out trolling calibration for one engine at a time to avoid excessive forces. Use both levers to calibrate trippel installation.

NOTICE! Do not perform calibration before transmission temperature has reached at least 30°C (86°F).

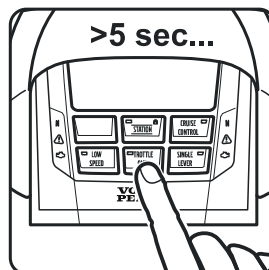
NOTICE! To be performed in open water.



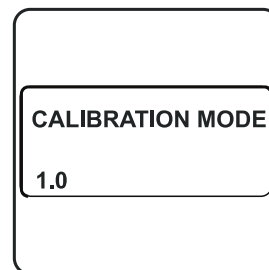
1. Move control to neutral.



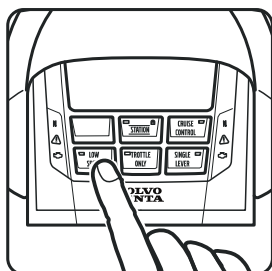
2. Switch on ignition to the port engine.



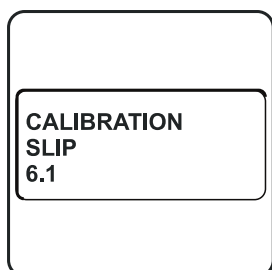
3. Press THROTTLE ONLY



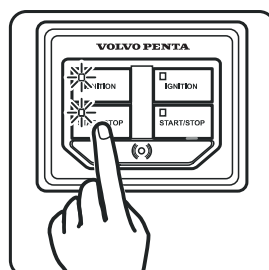
4. Calibration Mode 1.0.



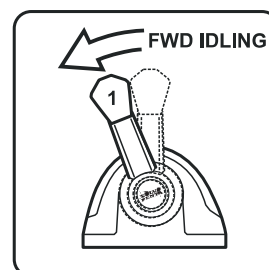
5. Press LOW SPEED.



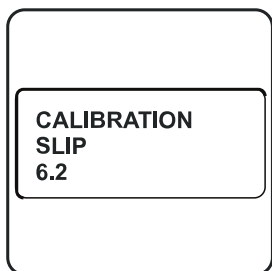
6. Slip calibration 6.1.



7. Start the port engine.



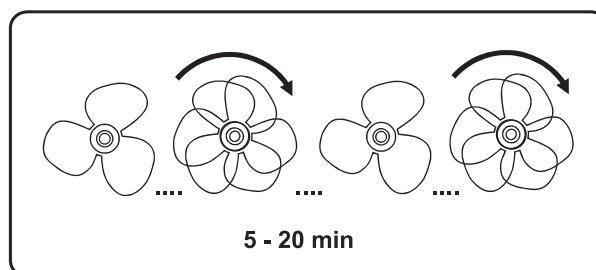
8. Move the levers ahead to position 1.



9. Slip calibration 6.2.

WARNING!

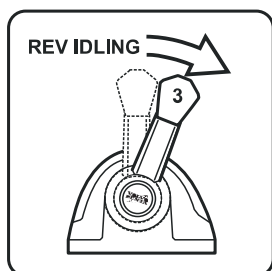
Trolling calibration is now performed. During calibration gears will be engaged and disengaged a number of times. This means the boat will move.



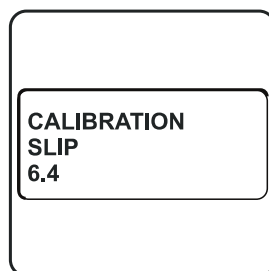
10. Calibration for trolling ahead is performed. Lasts for 5 to 20 minutes.



11. Slip calibration 6.3.



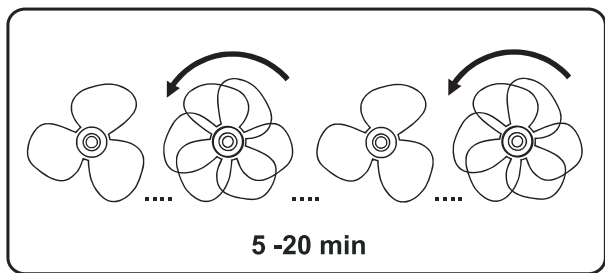
12. Move the levers astern to position 3.



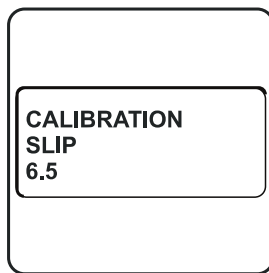
13. Slip calibration 6.4.

WARNING!

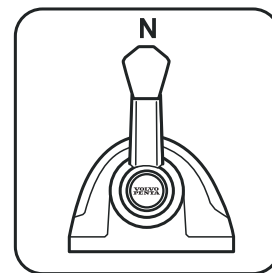
Trolling calibration is now performed. During calibration gears will be engaged and disengaged a number of times. This means the boat will move.



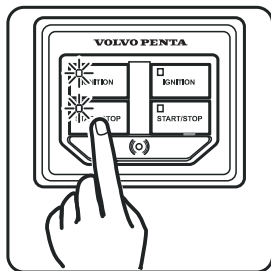
14. Calibration for trolling astern is performed. Lasts for 5 to 20 minutes.



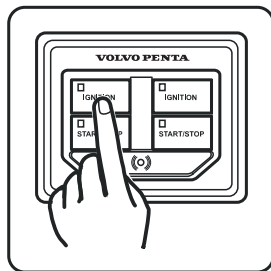
15. Slip calibration 6.5.



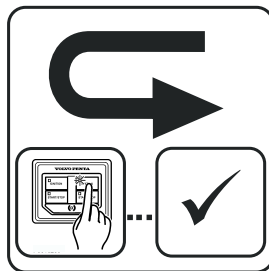
16. Move control to neutral.



17. Stop the engine.



18. Turn ignition off.



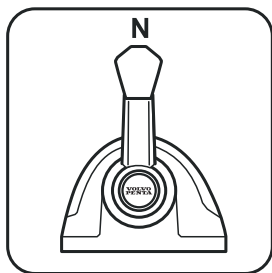
19. Repeat for additional engines. Restart the system to confirm the calibration.

If this error message appears:

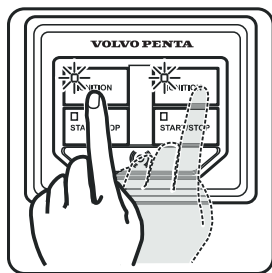
SLIP CALIBRATION FAILED

20. Restart calibration.

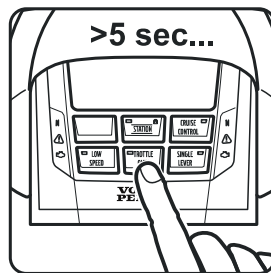
Idling speed calibration



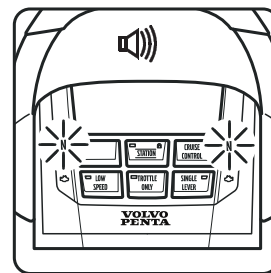
1. Move control to neutral.



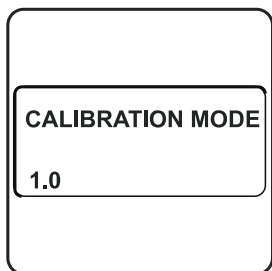
2. Turn the ignition on.



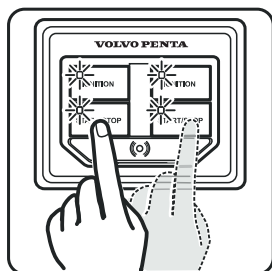
3. Press THROTTLE ONLY



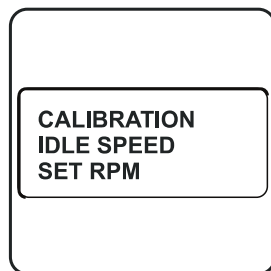
4. Indicates that calibration mode is activated.



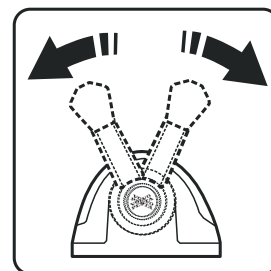
5. Calibration Mode 1.0.



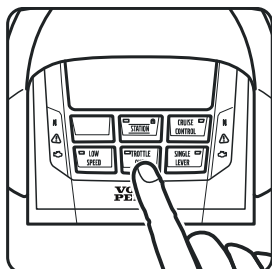
6. Start the engines.



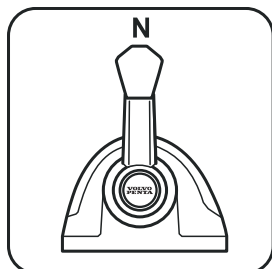
7. CALIBRATION IDLE SPEED SET RPM appears in the display.



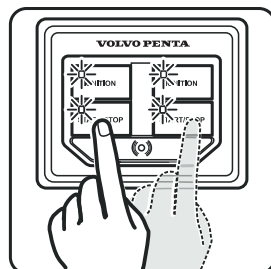
8. Set the preferred idle speed using the control.
 D4: 700-750 rpm
 D6: 600-650 rpm
 D11: 550-700 rpm
 D13: 550-800 rpm



9. Confirm: Press THROTTLE ONLY



10. Move control to neutral.



11. Stop the engines.

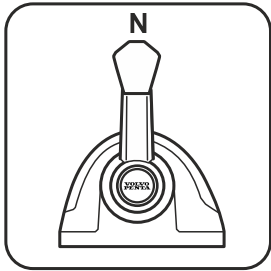


12. Restart the system to confirm the calibration.

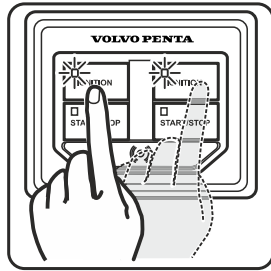
Calibrating the Joystick Function

NOTICE! Calibration may be done in either direction, port or starboard, at one station.

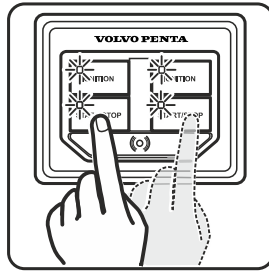
- This calibration need only be made if boat maneuvers do not correspond to joystick movements.
- Make sure there is sufficient space for maneuvering the boat.



1. Move control to neutral.



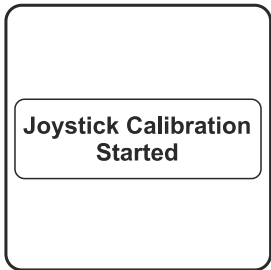
2. Turn the ignition on.



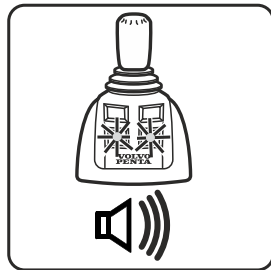
3. Start the engines.



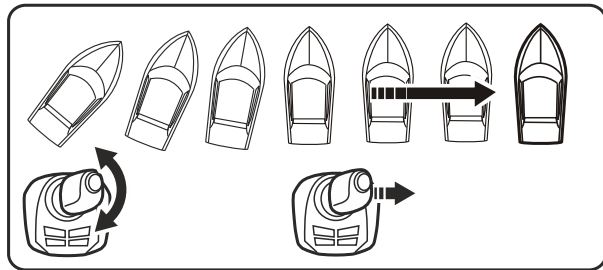
4. Hold the DOCKING button down for five seconds.



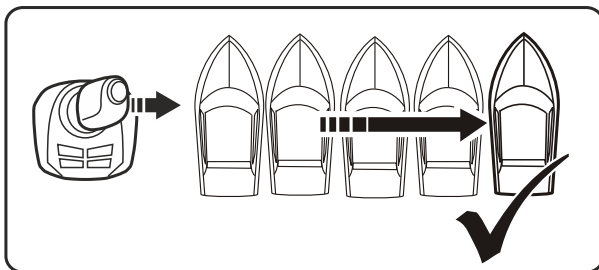
5. Joystick calibration started.



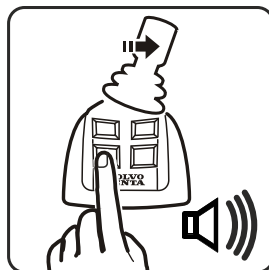
6. Buzzer and light confirm start of calibration.



7. Compensate boat movements with the joystick.



8. The boat must move straight abeam.

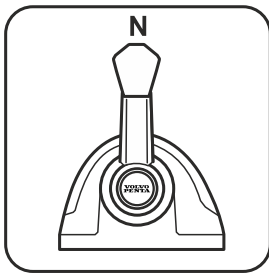


9. Hold the position and confirm by pushing DOCKING.

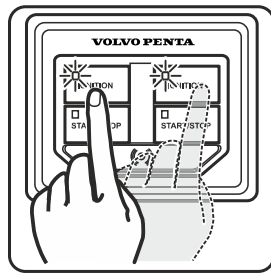


10. Buzzer and light confirm end of calibration. Restart the system to confirm the calibration.

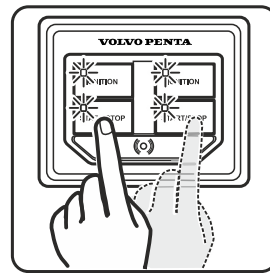
Resetting calibration to the factory setting.



1. Move control to neutral.



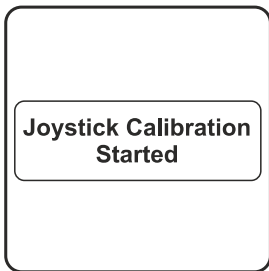
2. Turn the ignition on.



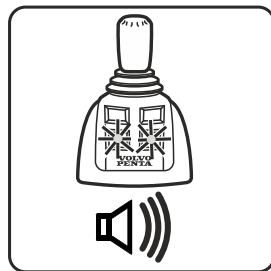
3. Start the engines.



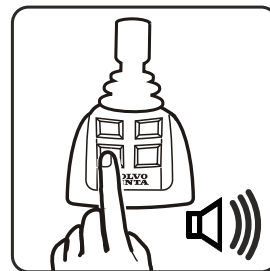
4. Hold the DOCKING button down for five seconds.



5. Joystick calibration started.



6. Buzzer and light confirm start of calibration.



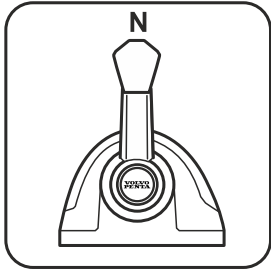
7. Hold the position and confirm by pushing DOCKING.



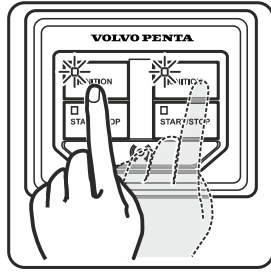
Buzzer and light confirm end of calibration. Restart the system to confirm the calibration.

Joystick Docking force

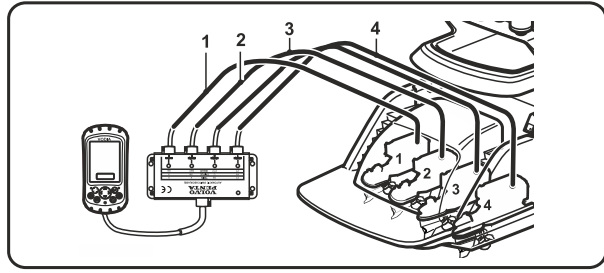
Changes the force when moving abeam. Select between Minimum, Medium and Maximum. Normal force mode and extra force mode are changed by the same factor.



1. Move control to neutral.



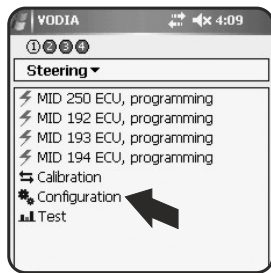
2. Turn the ignition on.



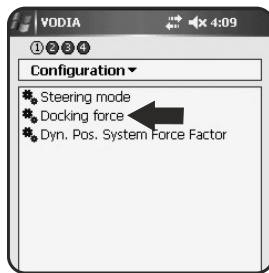
3. Connect to VODIA. (Example shows quad)



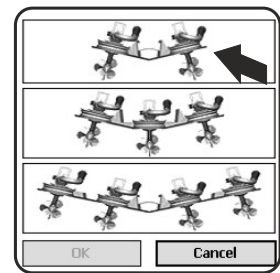
4. Select function group Steering.



5. Configuration.



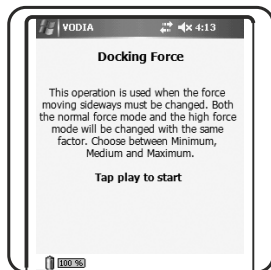
6. Dockingforce.



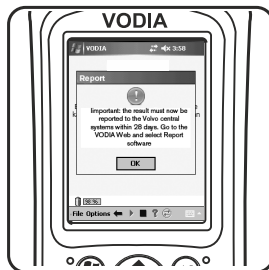
7. Select installation type.



8. Preconditions



9. Tap Play to start.



10. Report the result within 28 days.



11. VODIA web, select Report software.

Calibration of Interceptor System

The IS system must be calibrated in order for it to be activated and function as expected. Calibration is carried out through parameter programming with the aid of the VODIA tool.

NOTICE! It is the boatbuilder's responsibility to decide on the mode selected in settings based on how the boat is intended to handle.

Sea trial with inactive system

Always test the boat under load conditions that represent those of the end user. Assess the boat's characteristics such as trim, visibility, heel in turns and spray. Note the speed at which maximum trim angle is achieved; this value is used for calibrating PZW.

NOTICE! PZW, PZZ and PZX only require calibration on installations with auto function.

Preparations

1. Identify the chassis number

Identify the port driveline chassis number.

2. Order the change kit

The change kits are available in four versions, auto or manual and two or four interceptors.

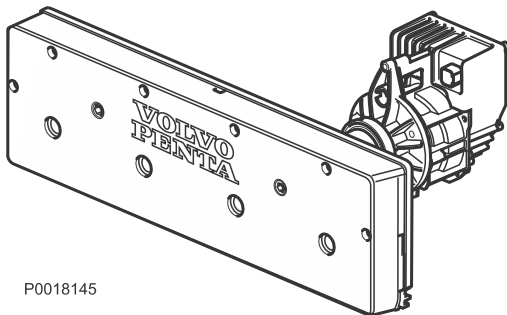
3. Download the software package

Go to Volvo Penta Partner Network and download the software package (MID194) to VODIA.

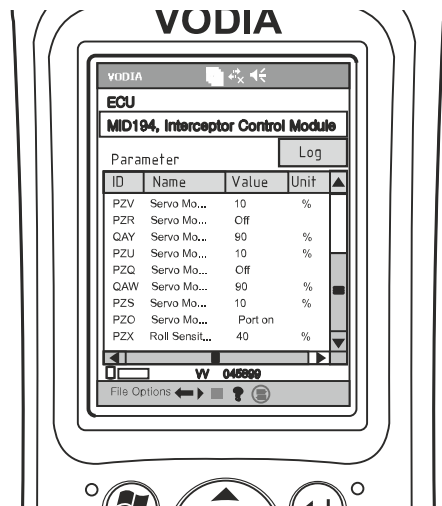
4. Program the control unit, ICM.

This is where the parameters PZP, PZR, PZQ and PZO are set; they need not be changed if no fault occurred when ordering the change kit.

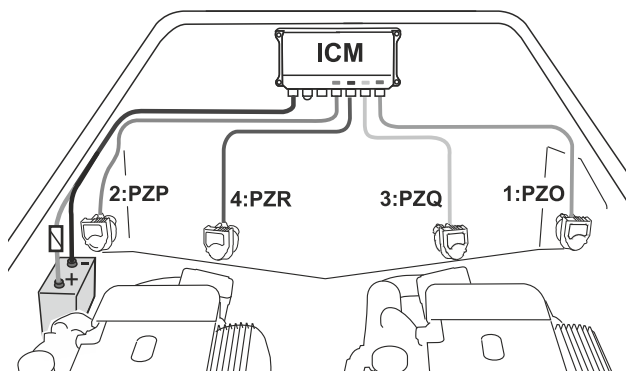
NOTICE! Auto-configuration must be carried out once programming is completed so that the EVC system can identify the IS installation.



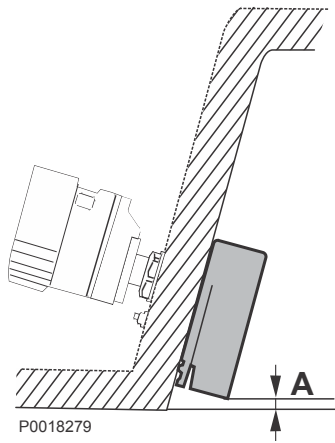
P0018145



P0018172

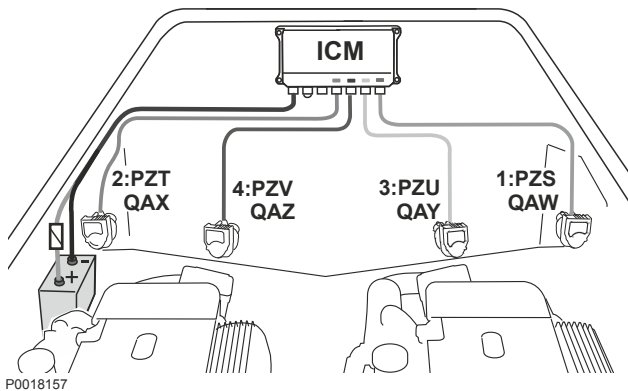


P0018157

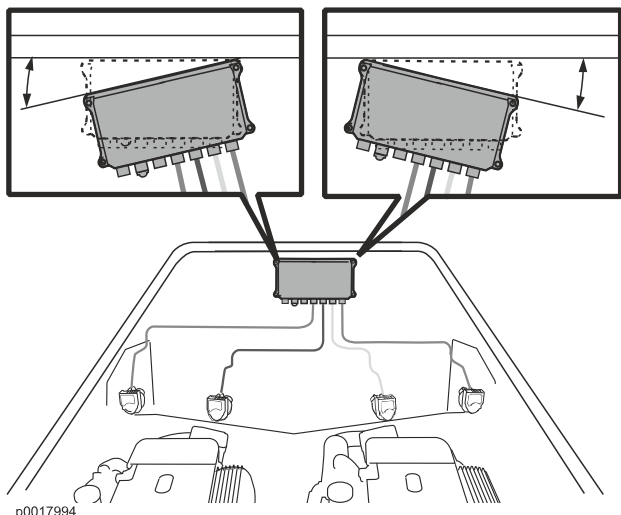


Adjusting blade position

Check the installed position of the interceptors on the transom, height above bottom (A). The system has a pre-installed value of 10% (5 mm) (0.2") of maximum interceptor blade extension (50 mm) (2"). Measure and take note of any deviation each interceptor may have from the pre-set value. Deviations mean that the parameters below must be set.



- 1 PZS, Servo Module 1 Zero Offset Position**
 Adjusting blade start position.
 If the unit is installed e.g. 8 mm (0,3") above the bottom the value must be set at 16% (16% of 50 mm = 8 mm) (16% of 2" = 0.3").
- 2 QAW, Servo Module 1 Working Range**
 Pre-set value 90%. The sum total of PZS and QAW must be 100%.
 E.g. if PZS (start position) is changed to 16% then QAW must be set at 84% (100%-16% = 84%).
- 3 PZV, Servo Module 4 Zero Offset Position**
 Adjusting blade start position.
 If the unit is installed e.g. 8 mm (0,3") above the bottom the value must be set at 16% (16% of 50 mm = 8 mm) (16% of 2" = 0.3").
- 4 QAZ, Servo Module 4 Working Range**
 Pre-set value 90%. The sum total of PZV and QAZ must be 100%.
 E.g. if PZV (start position) is changed to 16% then QAZ must be set at 84% (100%-16% = 84%).
- 5 PZT, Servo Module 2 Zero Offset Position**
 Adjusting blade start position.
 If the unit is installed e.g. 8 mm (0,3") above the bottom the value must be set at 16% (16% of 50 mm = 8 mm) (16% of 2" = 0.3").
- 6 QAX, Servo Module 2 Working Range**
 Pre-set value 90%. The sum total of PZT and QAX must be 100%.
 E.g. if PZT (start position) is changed to 16% then QAX must be set at 84% (100%-16% = 84%).
- 7 PZU, Servo Module 3 Zero Offset Position**
 Adjusting blade start position.
 If the unit is installed e.g. 8 mm (0,3") above the bottom the value must be set at 16% (16% of 50 mm = 8 mm) (16% of 2" = 0.3").
- 8 QAY, Servo Module 3 Working Range**
 Pre-set value 90%. The sum total of PZU and QAY must be 100%.
 E.g. if PZU (start position) is changed to 16% then QAY must be set at 84% (100%-16% = 84%).

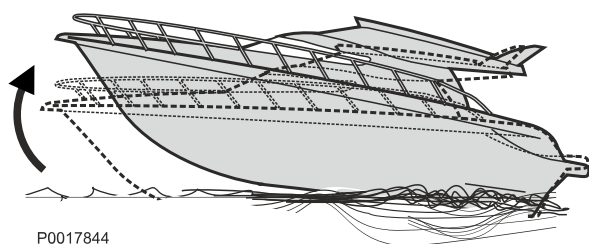


p0017994

PZY, Roll Sensor Offset

The PZY parameter is used to enable the system to generate a flat thwartships trim angle. If the ICM unit is correctly installed in horizontal alignment with the boat's intended horizontal plane, the value needs no adjustment.

- 1 Check that the control unit (ICM) is installed straight in relation to the boat's horizontal plane. Measure and note any degrees of deviation.
- 2 Adjust PZY with the noted deviation.
- 3 Perform a test run at planing speed to verify the settings.
- 4 Adjust further as necessary.
Positive values adjust port side up/ starboard side down.
Negative values adjust port side down/ starboard side up.



P0017844

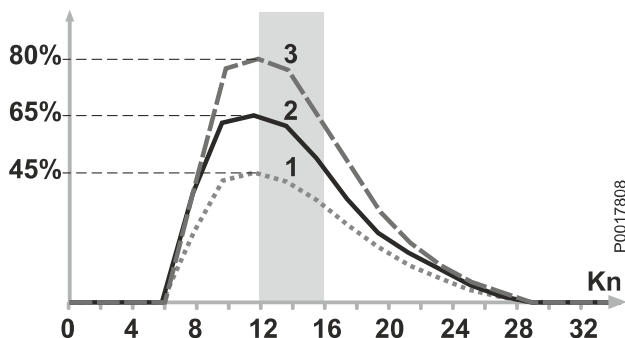
PZW, Automatic Trim Demand

Setting the boat's angle of attack.

- 1 **Select a suitable calibration graph**
Select the plot group based partly on the speed the boat has at maximum trim angle and partly on its top speed. The plot groups are 1-3, 4-6, 7-9, 10-12, 13-15 and 16-18 as illustrated below.
- 2 Set the selected graph in PZW. We recommend initiating the test run with the graph in the middle of the selected plot group, i.e. 2, 5, 8, 11, 14 or 17.
- 3 **Verification runs**

NOTICE! Verification of the graph selected must be done in test runs across the boat's full speed range.

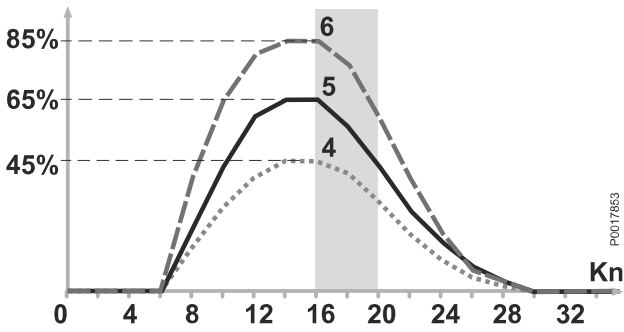
Select how great compensation must be by testing the boat on a selected graph. If the angle of attack must be reduced select a higher graph number, and if it must be raised select a lower graph number.



P0017808

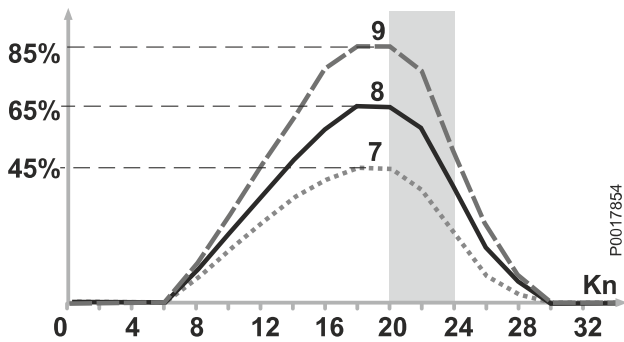
Graph 1-3

This plot group is suitable for boats whose maximum trim angle is achieved at 12–16 knots.



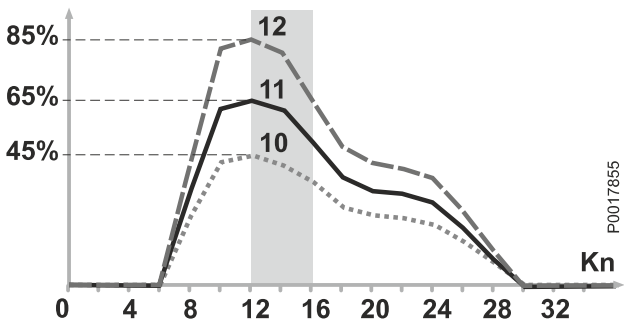
Graph 4-6

This plot group is suitable for boats whose maximum trim angle is achieved at 16-20 knots.



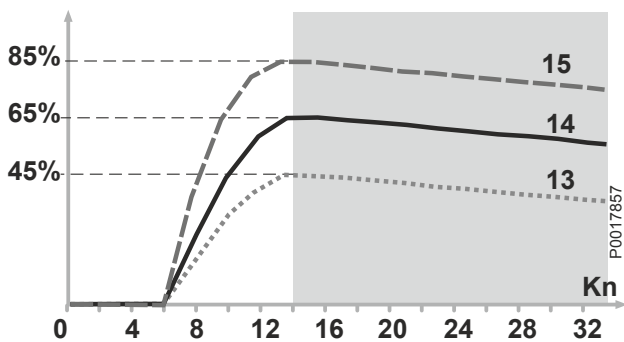
Graph 7-9

This plot group is suitable for boats whose maximum trim angle is achieved at 20-24 knots.



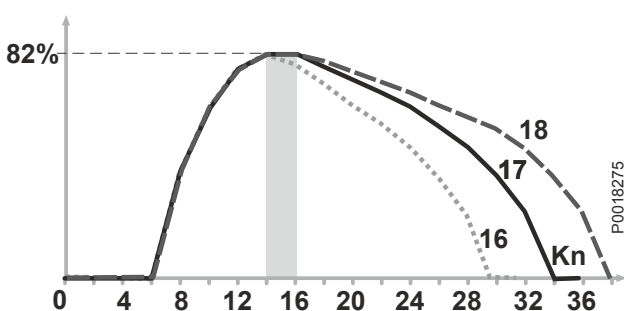
Graph 10-12

This plot group is suitable for boats whose maximum trim angle is achieved at 12-16 knots. E.g. for AQ-installations with PTA and IS collaboration.



Graph 13-15:

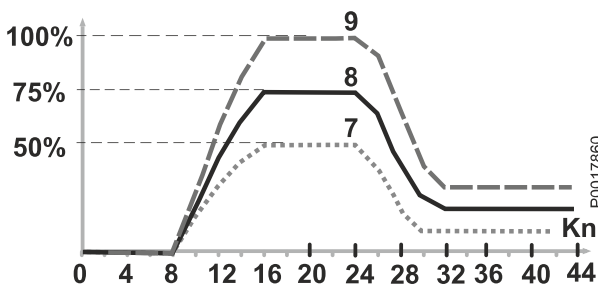
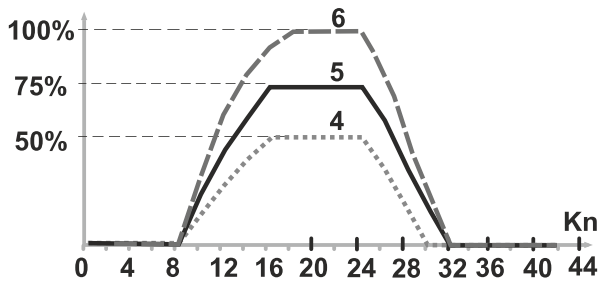
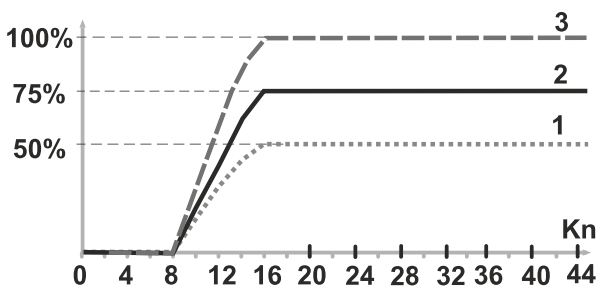
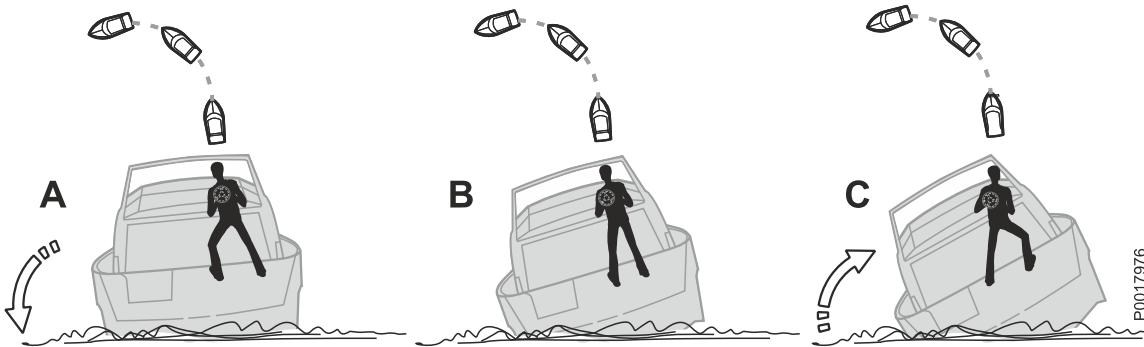
Slower types of boat. Autotrim compensation is required across the boat's entire planing speed range.



Graph 16-18:

Faster types of boat. Autotrim compensation is required across the boat's entire planing speed range.

PZZ, Turn Demand (Steering Roll Compensation)



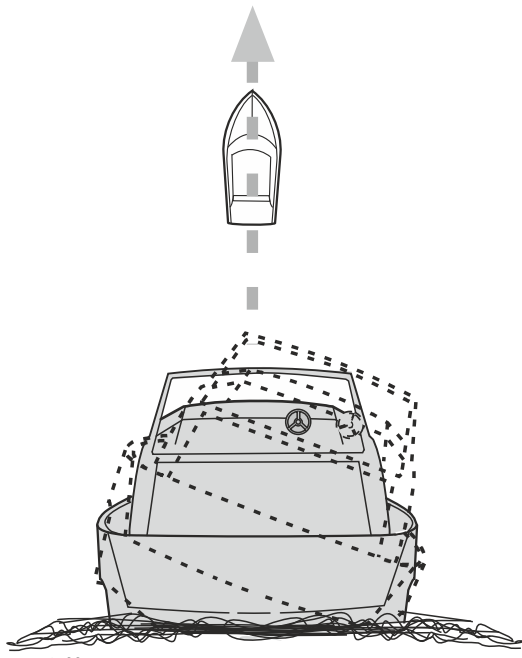
Setting how aggressively the system must compensate heel in connection with the application of helm, when the helmsman steers the boat with the aid of a wheel or tiller (Joystick).

The illustrations above show a boat at planing speed when the helmsman makes a hard turn that would normally cause the boat to heel. Calibration takes place at two speeds in which boat handling in the turn is assessed according to the following:

- A** – an increase in heel during the turn is desired.
- B** – the boat heels to the preferred extent in the turn.
- C** – an decrease in heel during the turn is desired.

Selecting a suitable calibration graph

- 1 Set graph 8 and test run the boat at a speed of 20-25 knots. Assess boat handling according to A, B or C.
- 2 **If A is selected** – switch to graph 7.
If B is selected – retain graph 8.
If C is selected – switch to graph 9.
- 3 Increase speed to 30–35 knots and once again assess boat handling according to A, B or C.
- 4 **If graph 7 assessed according to:**
A – switch to graph 4 (heel increases).
B – retain graph 7 (heel maintained).
C – switch to graph 1 (heel decreases).
- 5 **If graph 8 assessed according to:**
A – switch to graph 5 (heel increases).
B – retain graph 8 (heel maintained).
C – switch to graph 2 (heel decreases).
- 6 **If graph 9 assessed according to:**
A – switch to graph 6 (heel increases).
B – retain graph 9 (heel maintained).
C – switch to graph 3 (heel decreases).



PZX, Roll Sensitivity (List Compensation)

The system attempts to generate a level thwarts trim angle on a straight or almost straight heading at planing speed. The value PZX is pre-set at 50, which works well on most planing boats, but is variable from 0-100.

NOTICE! Tests and adjustments must be made at planing speeds (>20 kn).

- Adjust PZX in increments of 2 per test run.
- Adjust the value **up** if the boat does not stabilize quickly enough.
- Adjust the value **down** if the boat continues to oscillate at planing speed.

ODG, Trim Button Cross-coupling

Changes the interceptor blade affected according to the button depressed on the control. ODG is pre-set to OFF = Port button down moves the starboard interceptor down; port button up moves the starboard interceptor up and vice versa.

If the opposite is preferred, set ODG to ON (cross-coupled) = port button down moves the port interceptor down; port button up moves the port interceptor up and vice versa.

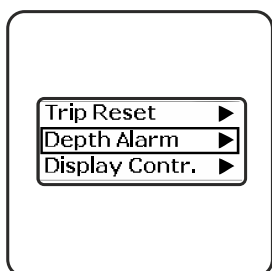
NOTICE! If ODG is set to ON (cross-coupled) it should be noted in the owner's manual.

Depth Alarm

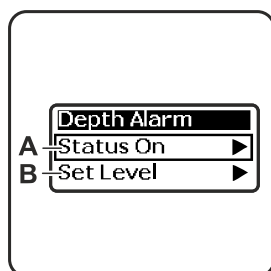
Setting for the depth alarm level on Volvo Pentas echo sounders.

The setting need only be made at one helm station to be displayed on all screens at all helm stations.

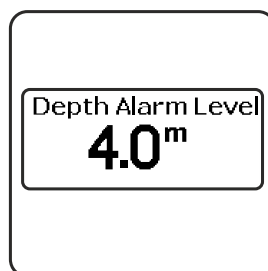
NOTICE! Ignition must be on for all drivelines.



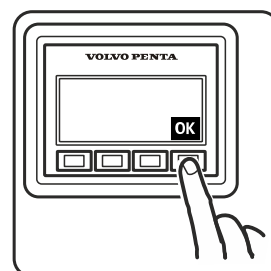
1. Scroll to Depth Alarm in the Settings menu



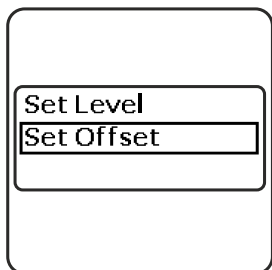
2. **A** On/Off.
B Specify level.



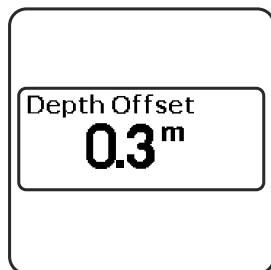
3. Scroll to Depth Alarm Level.



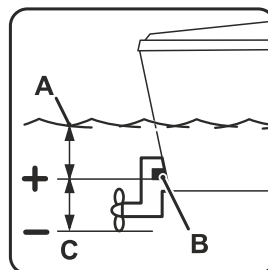
4. Confirm.



5. Select Depth Offset.



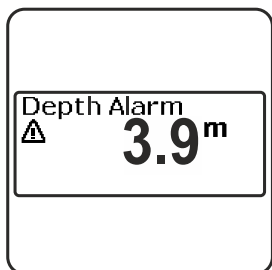
6. Set the value.



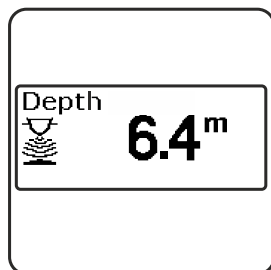
7. **A** Waterline.
B Echo sounder.
C Lowest point.

Set the distance for the echo-sounder/ waterline or echosounder/lowest point to the display depth.

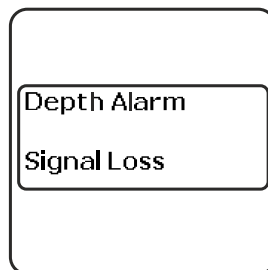
8. Distance A–B: positive value. Distance B–C: negative value.



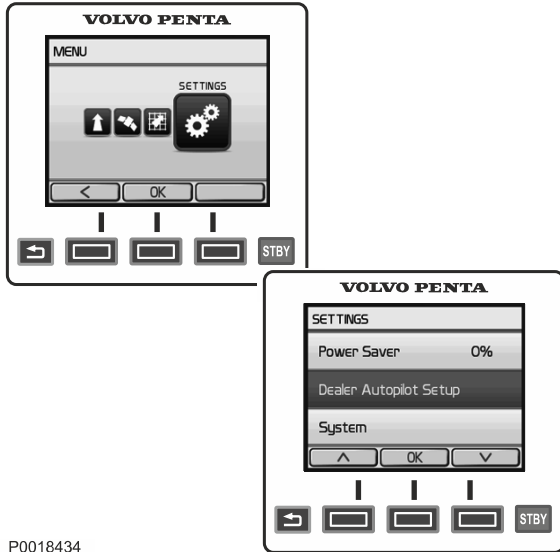
9. Depth Alarm: appears and sounds every 30 seconds.



10. Ceases when depth exceeds alarm level or when confirmed.



11. Signal fault. E.g. sensor not working.



P0018434


Autopilot


The autopilot must be configured and tuned to suit the boat. Start by running the Sea Trial Wizard which calibrates the basic sensors. It is important to run the wizard under circumstances and load conditions that are representative for the end user.

NOTICE! If an interceptor system (IS) is installed it must be calibrated and in auto mode before the autopilot is calibrated.

Autopilot buttons

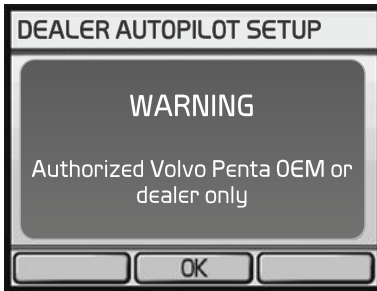
Use the panel buttons to scroll through menus and confirm settings. Menu buttons function are shown on the display.

 – Return to the previous menu. If the button is held down the display returns to the Autopilot menu.

 – Menu buttons function are shown on the display.

Proceed to autopilot configuration by scrolling to *Settings > Dealer settings, autopilot*.

The display will show the message **WARNING!** *Authorized Volvo Penta OEM or dealer only*. Press OK to confirm the message.



P0018417

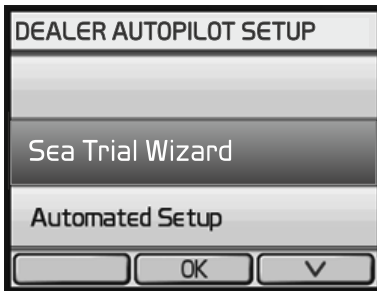
Sea Trial Wizard

The wizard calibrates the compass, adjusts the autopilot and sets North (if a GPS unit is connected).

CAUTION!

This procedure requires the engine to be running. The gear will be engaged, be prepared for sudden movements.

NOTICE! The wizard must be run in calm, open waters.

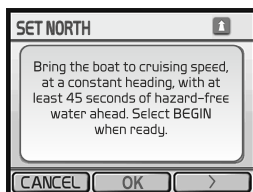
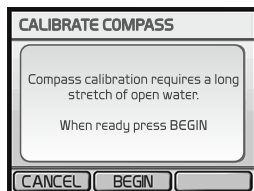
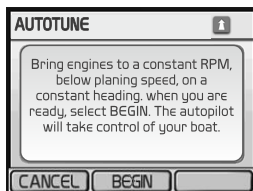


P0018429

- 1 Scroll to **Sea Trial Wizard**. Press OK.
- 2 Set the boat's planing rpm so that it corresponds to the boat's tachometer. Confirm with OK.



P0018430



- 3 Press BEGIN to start the Sea Trial Wizard. Follow the instructions on the display.

NOTICE! The autopilot will take over control of the boat at times; be prepared to take back control.

- 4 Test the autopilot after running the Sea Trial Wizard.
- 5 The Sea Trial Wizard may be run several times fully or in part.

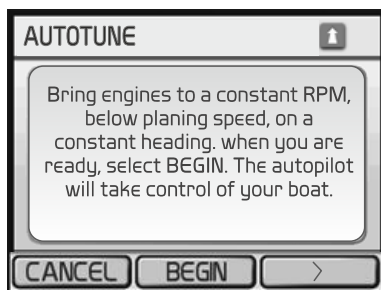
Test Drive

- 1 Run the boat dead ahead at low speed. The boat should not rock too much.
 - 2 Turn the boat with the aid of the autopilot. The boat must turn smoothly; not too quickly nor too slowly.
 - 3 If the boat turns too quickly or too slowly adjust using the autopilot *Acceleration limiter*.
 - 4 If the boat is rocking or not correcting the course properly, adjust using the autopilot *Rudder sensitivity*.
 - 5 Perform steps 3–4 until the boats turns smoothly and does not rock too much.
 - 6 In the case of planing boats, repeat steps 1-4 at a higher speed.
- 1 Go to the settings menu and scroll to System > System information
 - 2 Hold down the center button on the panel for 5 seconds.
 - 3 Return to the settings menu using the back button.

Automated Set Up

Autotune

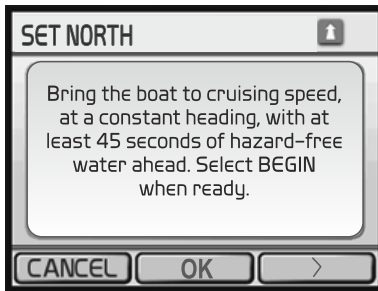
- 1 Make sure you have a long stretch of open water ahead.
 - 2 Adjust the throttle so that the boat is below planing speed.
 - 3 Press BEGIN.
- NOTICE!** The boat will zig-zag while adjustment is taking place.
- 4 When autotune is complete a message will be shown on the display. Press OK.



P0018431



P0018432



P0018433

Calibrate Compass

- 1 Run the boat at a chosen course.
- 2 Press BEGIN and continue on that course.
- 3 Follow the instructions on the display and turn slowly to starboard without letting the boat heel. Run as steadily and smoothly as possible. The autopilot will indicate if the speed maintained is too fast, too slow or just right.
- 4 When calibration is complete a message will be shown on the display. Press OK.

Set North

This setting is only shown when a GPS unit is connected. If a GPS is lacking set North using *Fine tuning course* under the *Navigation settings* menu.

- 1 Make sure you have at least 45 seconds of hazard-free, open water while at planing speed available.
- 2 Run the boat dead ahead at cruising speed.
- 3 When the setting is complete a message will be shown on the display. Press OK.

Speed Source Setup	
Planing RPM	3000
Low RPM Limit	500
High RPM Limit	6000
<input type="button" value="▲"/> <input type="button" value="OK"/> <input type="button" value="▼"/>	

P0018413

Speed Source Set up

- **Tachometer Data**
Compares the RPM readings on the Autopilot with the tachometer.
- **Planing RPM**
Adjusts the boat's planing RPM in cases where the autopilot does not correspond to the boat's actual planing RPM. Use the arrow buttons to adjust.
- **Low RPM Limit (Low RPM Limit)**
Adjusts the engine idle RPM in cases where it does not correspond to the RPM the autopilot shows. Use the arrow buttons to adjust.
- **High RPM Limit (High RPM Limit)**
Adjusts engine RPM at full throttle in cases where it does not correspond the RPM the autopilot shows. Use the arrow buttons to adjust.

Autopilot Tuning

NOTICE! If set values are too high the autopilot may become overactive and constantly seek to adjust the course. An overactive autopilot can cause wear on the drive unit and drain the battery.

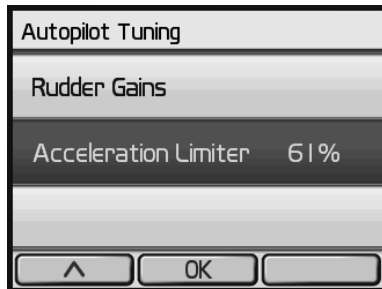
Low Speed	40%
Low Speed Counter	74%
High Speed	40%
High Speed Counter	74%
<input type="button" value="▲"/> <input type="button" value="OK"/> <input type="button" value="▼"/>	

P0018410

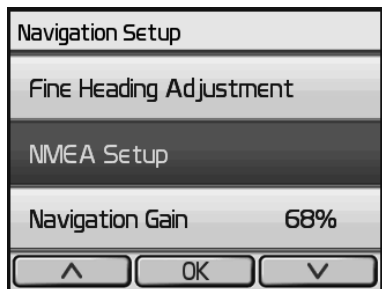
- **Rudder Gains**
Low speed and high speed sets the rudder gain for how strictly the autopilot holds a course and how tightly it performs turns. Low speed and high speed counters correct the autopilot if it turns too much or too little from a specified position.

NOTICE! Adjust rudder sensitivity in small increments and by only one value at a time. Carry out a test run after each adjustment.

- **Low Speed**
Adjusting the rudder angle at speeds below planing speed.
- **Low Speed Counter**
Adjusting the autopilot at speeds **below** planing speed in cases where turns are not executed correctly.
Too high a value may cause the boat to stop turning too early and then slowly approach the correct value.
Too low a value may cause the boat to turn too much and then return to the correct value.
- **High Speed**
Adjusting the rudder angle at speeds above planing speed.
- **High Speed Counter**
Adjusting the autopilot at speeds **above** planing speed in cases where turns are not executed correctly.
Too high a value may cause the boat to stop turning too early and then slowly approach the correct position.



P0018414



P0018415

Too low a value may cause the boat to turn too much and then return to the correct position.

- **Acceleration Limiter**

Limits how quickly the autopilot yaws. Increase the value if the boat yaws too quickly. Reduce the value if the boat yaws too slowly.

Navigation Set up

- **Fine Heading Adjustment**

This setting is only shown when no GPS unit is connected.

- 1 Set North using a hand-held compass.
- 2 Adjust North on the autopilot until it corresponds with North on the magnetic compass.
- 3 Confirm with OK.

- **NMEA Set up**

- **NMEA Checksum**

If a GPS unit connected to NMEA 0183 calculates an erroneous checksum it is possible to disable checksum monitoring.

NOTICE! When the function is disabled data reliability may be at risk.

- **Reversed XTE**

If the connected GPS unit sends an erroneous heading signal (port confused with starboard) it can be corrected by switching the setting on or off.

- **Navigation Gain**

Setting how aggressively the autopilot counteracts deviations from a course set in the plotter. Too high a value may cause the boat to swing over the course. Too low a value may cause the autopilot to react too slowly to deviations from the course.

- **Navigation Trim Gain**

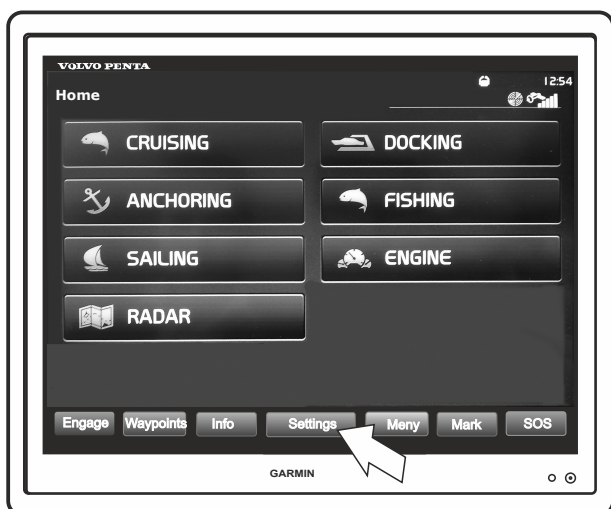
Fine tuning of acceptable course deviations. Only adjust this value if *Navigation search* has been adjusted.

Too high a value may overcompensate for deviations from the set course. Too low a value allows excessive deviations from the set course.

Volvo Penta Glass Cockpit, calibration

NOTICE! Applies only to EVC-E2.
All EVC functions are integrated in the touch screen.

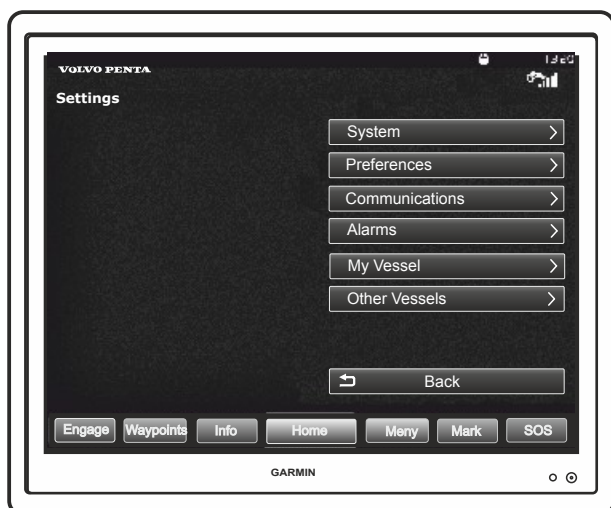
Select **Settings** in the main menu to reach calibration and settings.



P0018820

Select **My Vessel** for calibration and settings. Follow the instructions shown on screen.

Select **Home** to return to the main menu.



P0019939



P0019944

Fuel tank settings

Carry out calibration in the following sequence:

- **Fuel Tank Volume**
- **Empty tank**
- **Full tank**
- **Multipoint**

Each menu has sub menus.

Select *Start* to begin the wizard concerned and then follow the instructions on the display.

Autopilot calibration

The autopilot must be configured to suit the boat. Start by running the Sea Trial Wizard which calibrates the basic sensors. It is important that the wizard be run under circumstances and load conditions that are representative for the end user.

NOTICE! If an interceptor system (IS) is installed it must be calibrated and in auto mode before the autopilot is calibrated.

Autopilot menus

Scroll to the main autopilot menu: Home> Settings> My Vessel> Dealer Autopilot setup

The display will show the message **WARNING!** *Authorized Volvo Penta dealer or OEM only.* Confirm the message: Press OK.



P0018821



P0018822

The autopilot main view shows the following choices:

- Sea Trial Wizard
- Automated Set Up
- Speed Source Set Up
- Autopilot Tuning
- Restore Defaults

Each menu has sub menus.

Select *Start* to begin the wizard concerned and then follow the instructions on the display.

Sea Trial Wizard

CAUTION!

This procedure requires the engine to be running. The gear will be engaged, be prepared for sudden movements.

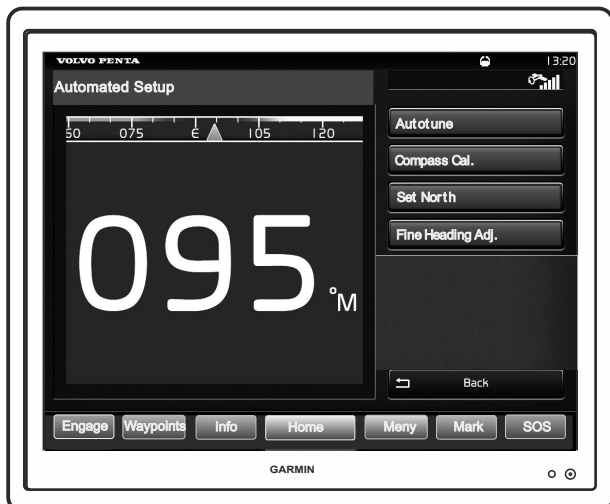
NOTICE! The wizard must be run in calm, open waters.



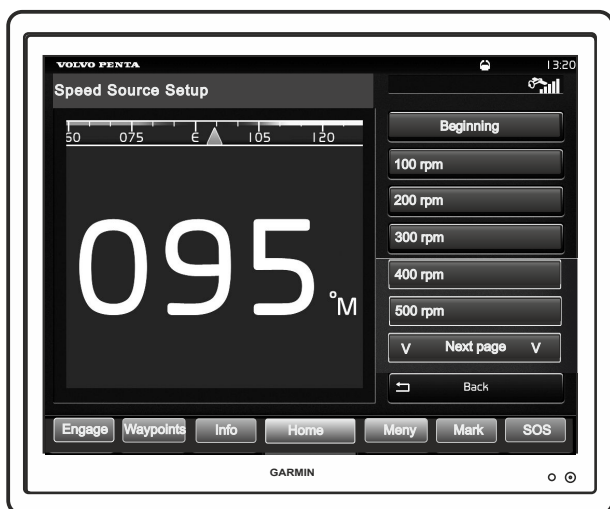
P0018849

- **Planing RPM**
Adjust the boat's planing rpm so that it corresponds to the boat's tachometer.
- **High RPM Limit. (High RPM Limit)**
Adjusts engine rpm at full throttle in cases where it does not correspond the rpm the autopilot shows. Select a value from the list to adjust.
- **Calibrate Compass**
Make sure you have a long stretch of open water ahead.
- **Autotune**
- **Set North**

When the Sea Trial Wizard is finished **Ready** will be shown to the right of the wizard concerned. Settings can also be calibrated individually in the following menu groups.



P0018825



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Automated Setup

- **Autotune**

NOTICE! If set values are too high the autopilot may become overactive and constantly seek to adjust the course. An overactive autopilot can cause wear on the drive unit and drain the battery.

Run the boat dead ahead at low speed. Start the wizard. The boat will change course in a cyclic zig-zag for around 15 seconds.

- **Compass Calibration**

Make sure you have at least 45 seconds of hazard-free water ahead.

- **Set North**

Make sure you have at least 45 seconds of hazard-free water ahead.

- **Fine Heading Adjustment**

Speed Source Set Up

- **Low RPM Limit.** (Low RPM Limit)

Adjusts the engine idle rpm in cases where it does not correspond to the rpm the autopilot shows.

- **High RPM Limit.** (High RPM Limit)

Adjusts engine rpm at full throttle in cases where it does not correspond the rpm the autopilot shows.

- **Planing RPM**

Adjusts the boat's planing rpm in cases where the autopilot does not correspond to the boat's actual planing rpm.



P0018826

Autopilot Tuning

Use the *Up* and *Down* buttons to adjust the value.

- **Acceleration Limiter**

Limits how quickly the autopilot yaws. Increase the value if the boat yaws too quickly. Reduce the value if the boat yaws too slowly.

- **Rudder Gains**

Low speed and high speed set rudder angle to how strictly the autopilot holds a course and how tightly it performs turns. Low speed and high speed counters correct the autopilot if it turns too much or too little from a specified position.

NOTICE! Adjust rudder sensitivity in small increments and by only one value at a time. Carry out a test run after each adjustment.

- **Low Speed**

Adjusting the rudder angle at speeds below planing speed.

- **Low Speed Counter**

Adjusting the autopilot at speeds **below** planing speed in cases where turns are not executed correctly.

Too high a value may cause the boat to stop turning too early and then slowly approach the correct value.

Too low a value may cause the boat to turn too much and then return to the correct value.

- **High Speed**

Adjusting the rudder angle at speeds above planing speed.

- **High Speed Counter**

Adjusting the autopilot at speeds **above** planing speed in cases where turns are not executed correctly.

Too high a value may cause the boat to stop turning too early and then slowly approach the correct position.

Too low a value may cause the boat to turn too much and then return to the correct position.

Alphabetical index

A	
Acknowledge message.....	7
Add e-Key.....	24
Alarm handling.....	7
Auto configuration, 4" display.....	18
Auto configuration, 7" display.....	19
Auto configuration, analog lever.....	21
Auto configuration, quadruple installation.....	16
Auto configuration, triple installation.....	14
Auto configuration, twin installation.....	12
Autopilot.....	46
C	
Calibrating the Joystick Function.....	36
Calibration and Settings.....	2
Calibration of Interceptor System.....	39
Controls and Steering System.....	5
D	
Depth Alarm.....	45
Displays.....	3
E	
e-Key.....	2
F	
Fuel tank settings.....	29
G	
General.....	2
I	
Idling speed calibration.....	35
IPS Calibration.....	8
L	
Language.....	22
Lever calibration, analog lever with stand-alone HCU.....	27
Lever Calibration, top mounted lever.....	25
S	
Slip calibration.....	33
U	
Units.....	23
V	
Volvo Penta Glass Cockpit, calibration.....	51
W	
Water in oil sensor.....	32



A series of 20 horizontal dotted lines spanning the width of the page, providing a guide for handwriting practice.

VOLVO PENTA

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