

NavPilot Installation Quick Guide (processor software version 6454002-02.04 or higher)

DOCKSIDE SETUP MENUS

Power “ON” the NavPilot system normally.

Access the “Installation Menu” by pressing and holding the [STBY] key, then press [MENU] and release.

► **Connect terminator plug to controller unused port** (see reverse@). **Purge all air from system** ◀

Select “Dockside Setup” using the [Rotary/Enter] knob, then press [Rotary/Enter] knob to confirm.

Use the [Rotary/Enter] knob to change and/or confirm the following settings:

Dockside Setup Menus	Selections	Notes
DRIVE UNIT:	REVERSIBLE 12V REVERSIBLE 24V SOLENOID	See label affixed to pump to confirm voltage match to NavPilot <u>Ensure</u> pump matches supply voltage to the NavPilot system Used for internal overload protection, does not change voltage SOLENOID: ON/OFF switching device that drives the ram
SELECT RRU: (Rudder Reference Unit)	ROTARY SENSOR LINEAR SENSOR	Rotary sensor (RRU): Inboard type (processor JP2 #3-4) Linear (Outboard): Teleflex unit (processor jumper JP2 #1-2)
AIR BLEEDING:	NO USE ◀ ▶ KEYS USE RRU	WARNING! Confirm rudder area is clear to prevent injury USE ◀ ▶ KEYS: On control unit to bleed system (see pg. 3-4) USE RRU: Remove rod from RRU and move to bleed system
RUDDER SENSOR ALIGNMENT	Indicator for rudder position when selected	Use helm control to physically center rudder Confirm that displayed rudder angle is within +/- 5 ° Tone “ON” will continuously beep when rudder is within +/- 5 ° If required physically adjust sensor to achieve +/-5 ° reading
BOAT TYPE	PLANNING SEMI-PLANNING DISPLACEMENT	Select boat type and press Rotary/Enter knob to confirm Affects the steering parameters and available functions
BOAT LENGTH	1 – 80 feet (meters)	Set from 1 - 80 feet, may affect NavPilot steering parameters
MAXIMUM SPEED MAX.SPD. (Navpilot 511)	1 – 99 knots	Set from 1 - 99 knots, will affect NavPilot steering parameters
RUDDER LIMIT SETUP WARNING! SEE NOTES FOR IMPORTANT INFORMATION	PORT: 10 - 60 STBD: 10 - 60 SET CENTER RUDDER POSITION	Follow on-screen prompts in precise order (do all 3 steps) Steer hard-over PORT, enter value; repeat steps for STARBOARD Center rudder with helm; “Set center rudder position”, press knob Complete all 3 steps or “RUDDER TEST” will be erratic and fail Final precise rudder center position is corrected during sea trial
AUTO RUDDER LIMIT	1° - 45°	Sets maximum rudder in degrees for the AUTO and NAV mode Setting <u>must be less</u> than the “rudder limit” values Recommended setting is <u>10°-15° less</u> than “rudder limit” values Can be increased if more rudder is required for “fishing mode”
MANUAL RUDDER LIMIT	1° - 45°	Sets maximum rudder in degrees for the REM or DODGE mode These modes use a wider angle or “range” of rudder movement Setting <u>must be less</u> than the “rudder limit” values Recommended setting is <u>~ 5° less</u> than “rudder limit” values
RUDDER TEST <u>Run engines on power steering boats</u> SOLENOID always = 100% (ON/OFF switching device)	? YES	Drive type: Reversible 12V, Reversible 24V, SOLENOID Bypass/clutch (if installed): Typically “NON” Rudder dead band: Shown in degrees Rudder speed: Shown in degrees per second Rudder duty: Lower than 50% = pump too large (may stall) Higher than 90% = pump too small (slow reaction) If test fails redo all steps of the RUDDER LIMIT SETUP
RATE OF TURN	1° - 9° / sec	Course changing speed in “degrees per second” for AUTO/NAV Boat size: Small 7-9° , Large/Catamaran 5-7° , Large Yacht 4-6°
COMPASS TYPE	PG500 PG1000 OTHER	PG500 - (magnetic) set to AUTO, magnetic variation is automatic PG1000 - (magnetic) set to AUTO, magnetic variation is automatic OTHER - (true type) use for gyro or Furuno satellite compass
COMPASS BAUD RATE	4800, 9600, 19200, 38400	4800 is default, only change if required PG500 – use only 4800

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SEA TRIAL MENUS

Power “ON” the NavPilot system normally.

Access the “Installation Menu” by pressing and holding the [STBY] key, then press [MENU] and release.

Select “Sea Trial” using the [Rotary/Enter] knob, then press [Rotary/Enter] knob to confirm.

Use the [Rotary/Enter] knob to change and/or confirm the following settings:

SEA TRIAL SHOULD BE CONDUCTED ON CALM WATER, FREE OF BOAT TRAFFIC AND OBSTRUCTIONS

Trial Menus	Selections	Notes
COMPASS CALIBRATION *	? AUTO MANUAL	PG500 or PG1000 only (CAL light blinks during calibration) AUTO: Turns vessel to starboard 3-4 full circles for calibration MANUAL: Turn helm to complete 3-4 full circles at 1-2 minute/per circle If Vessel starts turning automatically, COMPASS TYPE may be wrong
MAGNETIC VARIATION	AUTO MANUAL	GPS input to <u>NavPilot</u> required (NMEA sentence VTG or RMC) for auto AUTO (default): Automatically compensates a magnetic heading sensor MANUAL: Only used for special circumstances Selecting TRUE in the “Display Setup” menu <u>displays</u> TRUE on NavPilot Use PG500 or PG1000 keypad to set TRUE <u>output</u> (NMEA/ AD10)
COMPASS OFFSET	E 0.0 °	Allows offset correction to heading compass data
AUTO COMP CAL UPDATE **	OFF ON	PG500 (only): Available when PG500 is <u>selected</u> (in dockside menu) Select “ON” and press Rotary/Enter knob, AUTO illuminates on PG500 PG1000: Has <u>AUTO</u> key to control this function, press ~2 sec. to enable
SET CENTER RUDDER POSITION SET CENTER RUD. (NavPilot 511)		REQUIRED ADJUSTMENT or vessel may wander Ensure all engines are synchronized and maintain normal cruising speed
AUTO TUNING	? YES	Enables system to automatically set rudder gain and counter rudder gain This procedure will reduce the “self-learning feature” time requirements The procedure is <u>not</u> mandatory, system usage will teach all parameters Run vessel 10-12 knots straight to windward, select “YES” and confirm AUTO mode engages; message “AUTO TUNING –WAIT (%)” appears “AUTO TUNING IS COMPLETED” appears when tuning is complete
RUDDER DEAD BAND	AUTO MAN	AUTO (recommended): Done automatically during RUDDER TEST MANUAL: may be useful on vessels with chain driven or older systems

* **PG500 or PG1000 only**, not shown if “OTHER” is selected in the DOCKSIDE SETUP menu

** **PG500 only**, not shown if “PG1000” or “OTHER” is selected in the DOCKSIDE SETUP menu

MORE INSTALLATION NOTES AND TROUBLESHOOTING: ► Proper wiring size is mandatory!! (see note below) ◀

- @ Remember to connect a terminator plug (part number 000-147-017) to last control head open port in branch**
 - Maximum length of cable for each branch (2 total x 3 control units each) is 30 meters or less
 - Branch one, use TB8, JP1 (#1-2), Branch two (if used) TB9, JP1 (#3-4), controllers on branch power “on” together
- **Always use supplied 7-pin cable (5 meters) when connecting a PG500 to the NavPilot processor**
- **CONFIRM SIMULATION MODE IS “OFF”** (no SIM displayed in upper left screen)
 - Access Installation Menu, SYSTEM SETUP, SIMULATION MODE, use rotary/enter knob to select and turn “OFF”
- Ensure that NavPilot is set for “**XTE**” mode in [NAV MODE] menu. This mode should be used for all normal operations.
- NMEA sentence VTG or RMC input to the NavPilot is required for magnetic variation correction
- Monitoring NMEA input sentences; Access Installation Menu, SYSTEM SETUP, INCOMING NMEA0183 DATA menu
- Control units can clone display settings after first one is setup using the “RECEIVE SCREEN SETUP” (pg. 3-24)
- **Clearing Data:** Access Installation Menu
 - Select DOCKSIDE SETUP, COMPASS TYPE and change to OTHER, press the rotary/enter knob to confirm
 - Press [MENU] key twice to close the Installation Menu
 - Press the [MENU] key, select SYSTEM SETUP, MEMORY CLEAR, select mode and press rotary/enter knob
- **Ship’s Mains and Pump Motor cable must be sized properly** or NavPilot will shut down, see (pg. 2-4) for requirements
- Teleflex sensor: Cut black jumper, set processor jumper JP-2 to #1-2, set SELECT RRU to LINEAR SENSOR, (pg 2-6)
- **Do not connect the Teleflex shield wire, isolate from metal and secure! (Prevents ground loop)**