

CPT Operation

Turn power on with Rudder control. Wait at least 1 minute for pilot to warm up before using.

To Steer with Autopilot:

Hold boat on desired heading 30 seconds. Engage Clutch. Flip toggle-switch up to Hold Heading. Fine tune Rudder and Deadband as needed.

To Hand steer:

Flip toggle-switch down to Standby and Disengage Clutch

* In an emergency, the wheel can be forced to overpower the clutch and shear the shear-pins

Rudder:

Controls autopilot Rudder Response

Determines proportionally how far to turn wheel for heading corrections.

High settings turn boat's rudder more; Low settings turn boat's rudder less

Turn to 5 at start, then increase or decrease as needed. Set as high as possible without causing over-steering

Deadband:

Controls autopilot "Dead Range"

Determines "sensitivity" to boat heading changes. Use to adjust for sea conditions.

Low settings hold boat to a tighter heading

Lowest setting allows approximately $\pm 1^\circ$ heading range

High settings allow the boat to steer within a wider heading range

Setting of "5" allows approximately $\pm 10^\circ$ heading range

Turn to minimum at start. Increase only after rudder control is set and autopilot is steering adequately

1° and 10° buttons:

Push and release buttons to adjust heading; changes target heading

Check boat headway and rudder/deadband if boat is not responding (1° button will not be immediate)

Tacking:

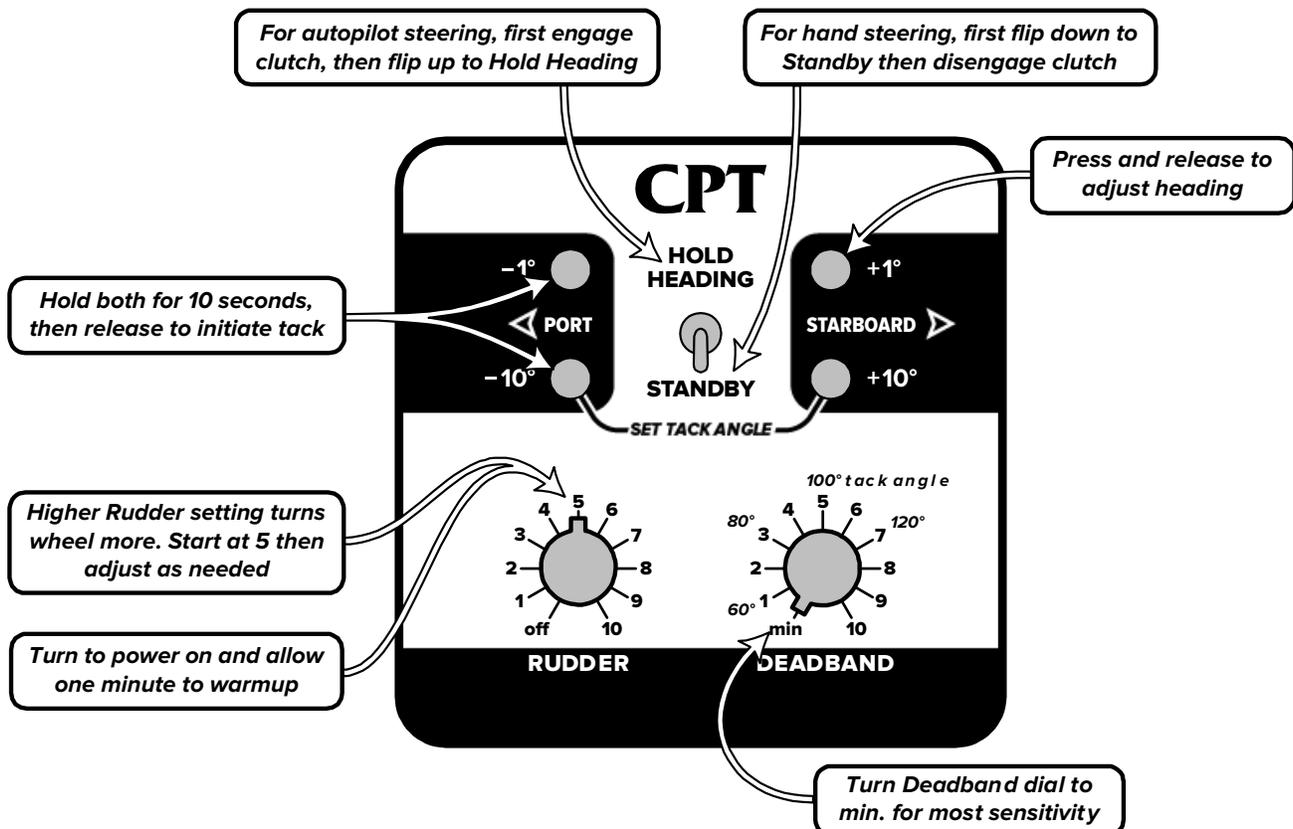
Simultaneously hold down the 1° and 10° buttons for the direction you wish to tack. Keep both buttons pressed for five seconds. Release buttons to tack. Set deadband low to keep the boat close to the new tack heading.

* Flip to Standby and disengage clutch if stuck in irons or no wind to prevent wheel hitting rudder-stops

Change Tack Angle:

Hold both 10° Port and 10° Starboard buttons down at the same time. Turn deadband dial to new tack angle and release buttons to set. Remember to return deadband dial to desired deadband setting afterwards.

* Tack angles are approximate and will vary from boat to boat based on the magnetic environment. You will have to see which angle works best for your boat.



Deadband and Rudder Settings

RUDDER

- Determines how far to turn wheel (rudder) for corrections.
- High settings turn rudder more; Low settings turn rudder less.
- **Turn to 5 at start, then increase or decrease as needed**
- **Set as high as possible without causing over-steering**

The Rudder control turns the pilot on, and determines how far the boat's wheel (rudder) turns when a heading correction is needed. Low settings result in smaller wheel corrections, higher settings in larger wheel corrections. The corrections are proportional to the amount of heading change needed.

The best rudder setting will be high enough to return the vessel to heading with just one or two motor pulses or corrections. If the rudder setting is too low the pilot will not be able to keep the boat on heading.

Most boats use a setting of about 5. Many repeated small corrections in one direction indicate the rudder setting is too low.

DEADBAND

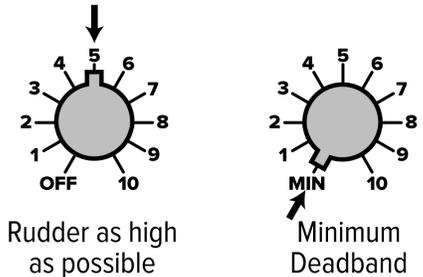
- Determines "sensitivity" to boat heading changes
- Also known as "dead range" or "sea state" adjustment
- Use to adjust for sea conditions
- Low settings hold boat to a tighter heading
 - Lowest setting allows approx. $\pm 1^\circ$ heading range
- High settings let the boat steer a wider heading range
 - Setting of "5" allows $\pm 10^\circ$ heading range
- **Turn to minimum at start.** Increase only after rudder control is set and autopilot is steering adequately

When first using the pilot, keep the deadband on the lowest setting while becoming familiar and finding the best rudder setting.

The deadband setting is adjusted with the deadband control knob. Turning the knob clockwise increases the deadband (dead range). At the lowest setting the pilot will respond if the boat strays much more than 1° to 2° to port or starboard. On long passages, turning the deadband and rudder up a bit higher can reduce battery use while still providing a good average course.

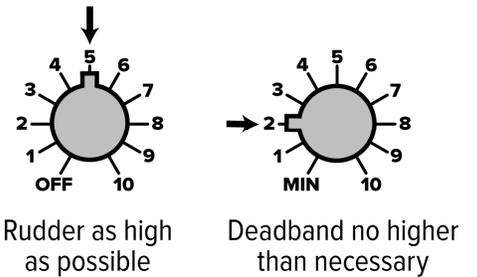
Rhythmic CPT steering corrections, in time with the roll of the boat, indicate that the deadband is too low. The deadband can be raised slightly to avoid constant correction. In seas and swells most boats steer nicely at settings of 2 to 4. In rougher seas, the deadband should be higher to avoid constant wheel corrections. A lower deadband setting (lower dead range) is generally beneficial when sailing downwind or in flat water.

Rudder and Deadband Settings for Flat Water



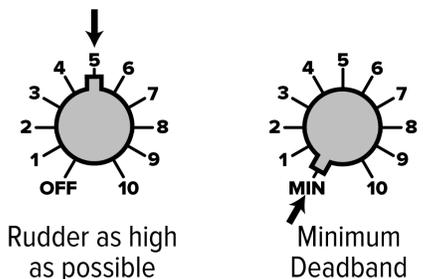
Start at 5, then increase or decrease as needed

Rudder and Deadband Settings for Seas and Swells



Start at 5, then increase or decrease as needed

Rudder and Deadband Settings for Downwind Sailing



Start at 5, then increase or decrease as needed