

Marine Cruise Control Installation Manual


Including Calibration Instructions

Installation Instructions:

Items Needed:

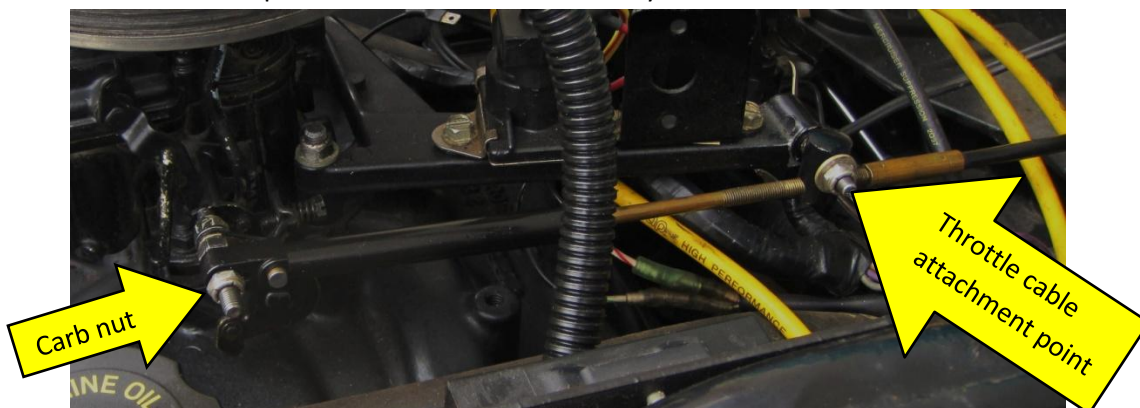
Adjustable wrench x2
Phillips screwdriver
5/16" nut driver (for cable anchor bolt)
Cordless drill/screwdriver
Pliers
Heavy wire cutters

Notes:

- a. Some engines are equipped with electronic fuel injection and do not have a carburetor. For the purpose of this installation, the term "carburetor" will refer to the point where the throttle cable end attaches to the throttle mechanism on the engine.
- b. Anywhere a bolt or nut is used; it is recommended that a drop of thread locker is used on every connection so that bolts and nuts don't come loose with the regular vibrations of the boat. Look for this arrow: 

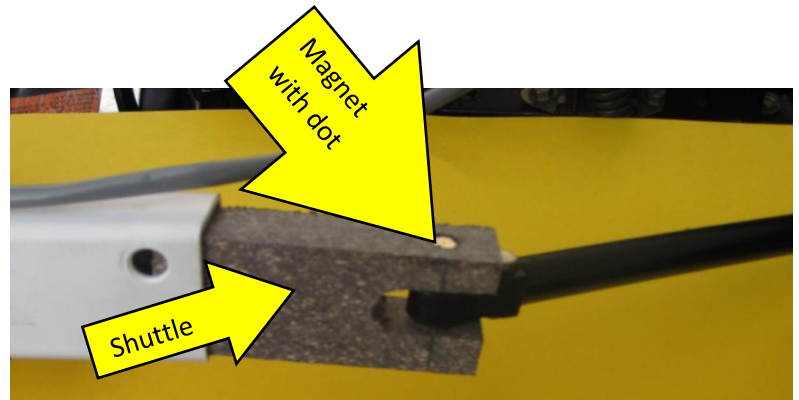
1. Remove Throttle Cable from Carburetor:

- a. Remove the nut that secures the throttle cable to the carburetor. Do not lose the nut!
- b. Remove the nut or mechanism that attaches the throttle cable housing to the throttle cable attachment point. Do not lose the nut or any hardware that comes off!



2. Attach the Throttle Cable to the throttle position sensor:

- a. Place the throttle cable end in the slot in the shuttle so that the small hole in the cable aligns with the small hole in the shuttle.
- b. Insert the magnet into the shuttle and through the end of the throttle cable so that the dot on the end of the magnet is exposed. Make sure the magnet is flush and does not stick out from the shuttle.

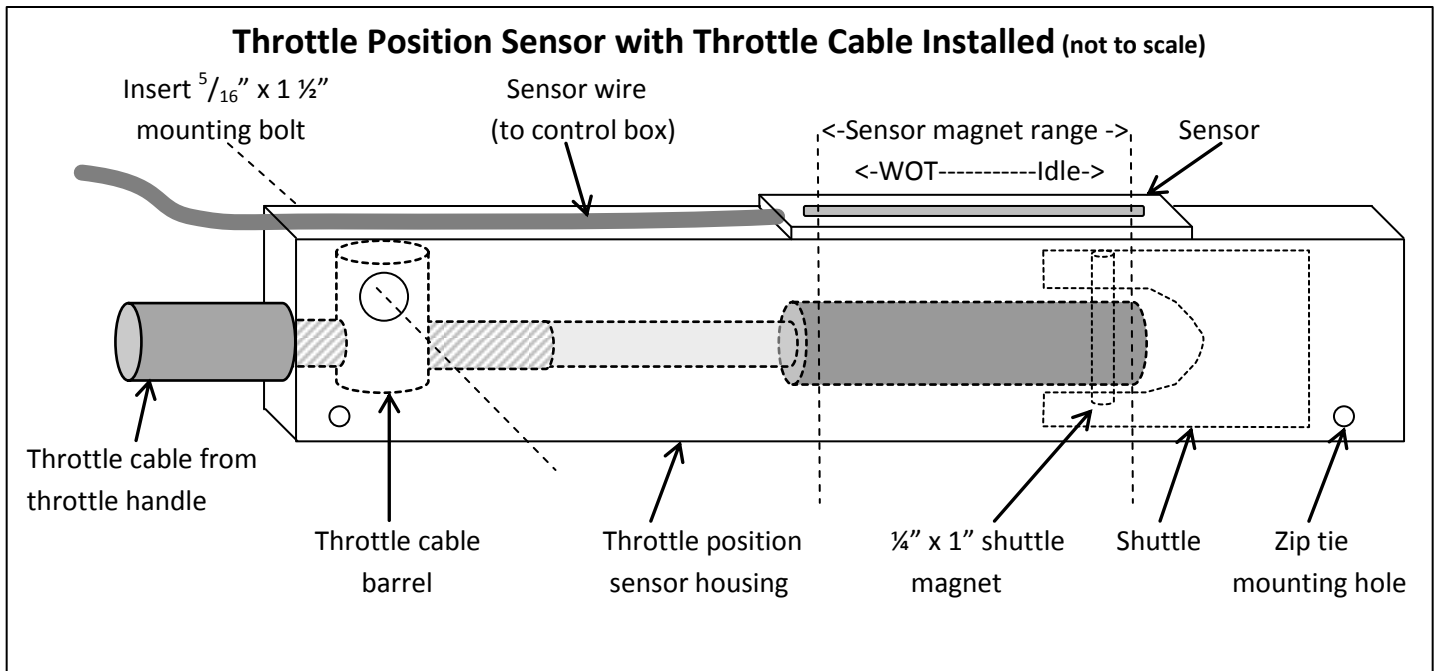


- c. Insert the shuttle into the throttle position sensor housing.
 - i. For Mercury type cables, insert the throttle cable mounting bolt and locknut. Do not tighten the nut too tight or it may warp the throttle position sensor housing.
 - ii. For Universal type cables, use the universal type cable to Mercury type cable adapter. Make sure holding pin has a secure hold on the universal type cable. Once the adapter is in place, insert the throttle cable mounting bolt through the adapter and secure the locknut. Do not tighten the nut too tight or it may warp the throttle position sensor housing.



- d. **IMPORTANT!** - Adjust the position barrel or the cable end so that the shuttle magnet always keeps a magnetic hold of the small magnet in the sensor on the throttle position sensor housing both when at idle and at WOT (Wide Open Throttle). The sensor magnet can move up to 4" and the cable shouldn't move much more than 3". As such, there should be plenty of room to capture all movement of the cable. This may be easier to do with the cable attached to the outside of the housing and once aligned, then put the cable inside the housing where the magnets can connect. **Warning:** If the magnet in the sensor is lost while in operation, the boat's carburetor will automatically go to idle until magnets come back into contact.

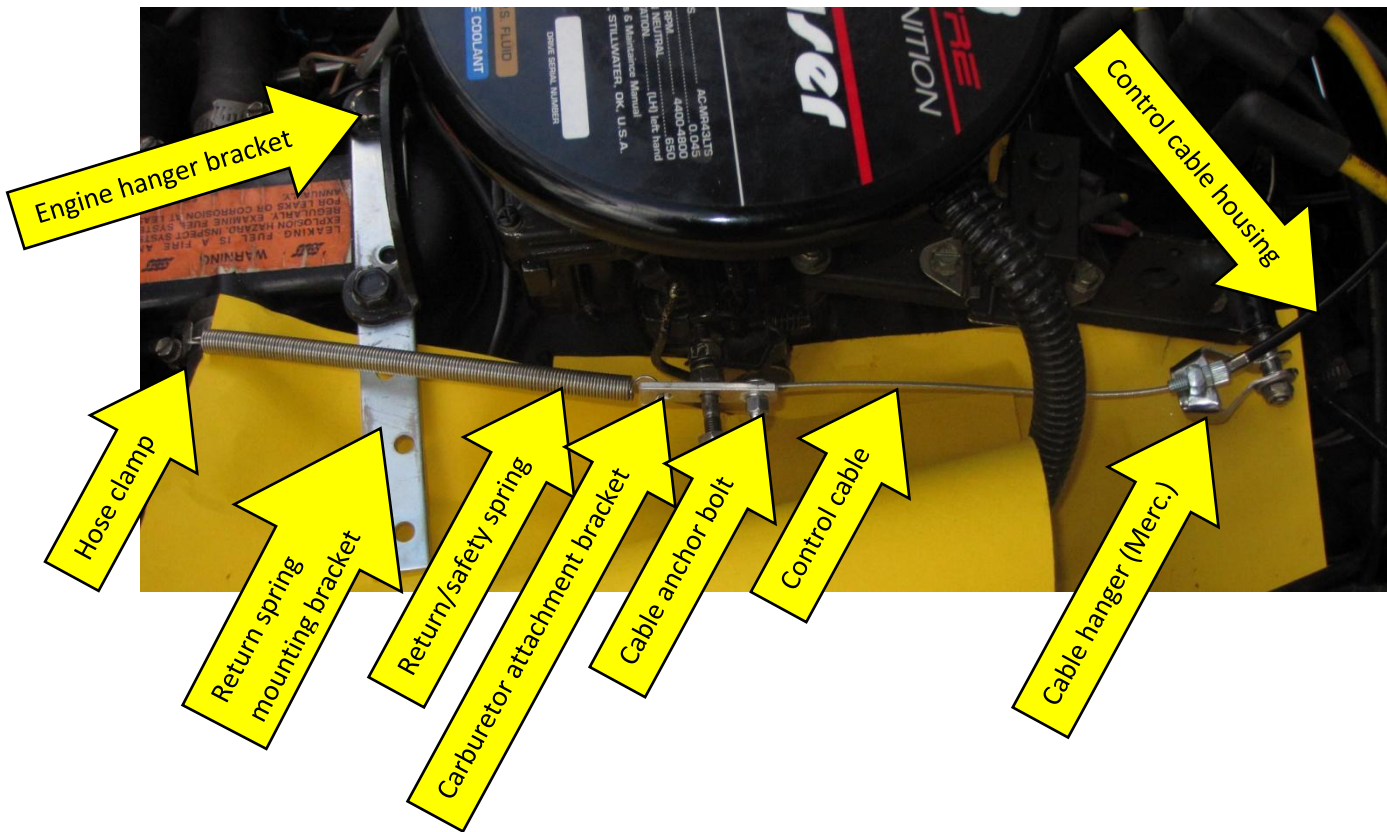
- e. Tightly wrap zip ties with screw holes around throttle position sensor housing and through the mounting holes and screw the throttle position sensor into the transom or other fixed location. Be sure not to kink the throttle cable housing.



3. Attach the Control Cable to Carburetor:



- a. Create a secure place to attach the throttle return spring. Some engines may have an engine hanger bracket in front of the carburetor. Remove this bracket and place a return spring bracket between the engine and hanger bracket and replace the bolts for the hanger bracket. Other means may be necessary to create a secure place to attach the throttle return spring such as attaching the spring to a hose clamp on one of the engine hoses directly in front of the carburetor.
- b. Attach the return/safety spring to the return spring bracket or hose clamp directly in front of the carburetor.
- c. Attach the return/safety spring to the control cable attachment bracket on one of the end holes. Sometimes, a second spring may be necessary to pull carburetor to idle during use.
- d. Slide the control cable attachment bracket onto the carburetor using the middle hole. Replace the nut that came off the carburetor when removing the throttle cable (step 1a). The throttle return spring should be extended at least 1" from its compressed length when the carburetor is in idle.
- e. Make sure the carburetor can be moved to WOT (Wide Open Throttle) with spring attached. It may be slightly difficult to pull the carburetor due to the spring, but that is expected.



- f. Slide the cable hanger onto the throttle cable attachment point on the engine and replace the nut that came off the throttle cable attachment point when the throttle cable was removed (step 1b). The cable hanger should hang so that the cable adjustment barrel is up and toward the carburetor.
- g. Find a secure and dry location for the control box. A gunwale is an ideal location however the engine compartment is good as well. The control box does not need to be bolted down but should be secured from sliding and bouncing.
- h. **IMPORTANT:** At this point, make sure the control cable is secure to the control motor pulley and pulled as far out of the control box as possible. Run the control cable with the control cable housing on it through the boat into the engine compartment. Running it alongside the existing throttle cable is usually a good location for the control cable.
- i. The throttle cable housing may be shortened if necessary using heavy wire cutters. If cut, make sure none of the inner metal housing intrudes or rubs on the control cable.
- j. Run the control cable through the cable hanger barrel and to the cable anchor bolt.
- k. Using the cable anchor bolt, slide the control cable into the bolt until the cable is almost tight and secure the cable anchor bolt. A little bit of slack in the cable will be removed during calibration step 6. Double check to make sure the control cable is secure on the control motor pulley and that it is pulled as far out of the control box as possible.
- l. The control cable may be cut to length using heavy wire cutters at this point and a cable end crimped onto the exposed end for protection. Leave a few inches of extra cable in case adjustments need to be made later.

4. Install Control Switch:

- a. The control switch can be placed in a standard 2" hole on the dash in place of an existing gauge or can be removed and mounted in a new hole.
- b. Once the switch is in place, connect the switch wires to the jack in the control box.
- c. The beeper can also be panel mounted if desired.



5. Connect 12V electrical supply and ignition signal wire:

- a. The best place to supply the 12V is directly from the battery. Connect the + (red) wire to the + (red) battery terminal. Connect the - (black) wire to the - (black) battery terminal. If connected to the fuse panel in the boat, make sure to use a 10 amp fuse.
- b. Connect the ignition signal wire. Attach the single conductor ignition signal wire to the ignition lead on the ignition switch (the ignition switch may need to be removed from the dash for this). A terminal splitter may be necessary to share the ignition lead on the ignition switch.

6. Connect GPS Antenna:

- a. Place GPS antenna in a place where it will get full view of the sky. On top of the dash and under the windshield is an excellent location, however other locations will work.
- b. Run GPS antenna wire to control box and connect it to the jack on the control box.

Calibration:

Note:

-> It is recommended that the system is calibrated at LEAST once at the beginning of each boating season. More frequent calibration may help improve system performance.

->Exiting calibration mode can be done by turning the ignition off. Any settings that have been made will be saved.

- 1. Ignition** - Turn the ignition switch to the ON/RUN position the engine OFF. Make sure there is no set speed (the LED will blink slowly if there is a set speed). If LED is blinking, hold DOWN for two (2) seconds (LED will turn off).
- 2. Start Calibration** - Click and hold the control switch in the up (clockwise) position for ten (10) seconds. The LED will start blinking rapidly. One (1) long beep will sound.
- 3. Set Idle** - Push the throttle handle to 50% WOT and then back to the idle detent (the bump before neutral). Click and release the control switch UP (clockwise). One (1) short beep will sound.
- 4. Set WOT on Throttle Handle** - Move the throttle handle to the WOT (Wide Open Throttle) position. Click and release the control switch DOWN (counterclockwise). Two (2) short beeps will sound.
- 5. Carb Setting** - With the throttle handle in idle, click and hold the control switch up for two (2) seconds. Three (3) short beeps will sound.
- 6. Remove Slack** - Bring the throttle handle back to idle. Push the throttle handle to 50% WOT and then quickly back to idle. Repeat this three (3) times. This will remove slack from the control cable.
DO NOT SKIP THIS STEP!
- 7. Set WOT on Carburetor** - Move the throttle handle back to idle. Advance the throttle handle until the carburetor is at WOT (Wide Open Throttle) but no further. The control cable will be quite tight when the carburetor is at WOT. NOTE: The carburetor will reach WOT before the throttle handle reaches its WOT position. Be careful not to push the carburetor beyond WOT. If the throttle handle tries to push the carburetor past WOT, the control cable will seem to click or bump or may release. If it does, repeat steps 6 and 7.
- 8. Finalize** - Once the carburetor is at WOT, click and hold the control switch down (counterclockwise) for 2 seconds. Three (3) short beeps will sound signaling calibration is finished. The LED will turn off.