iTroll
Precision Throttle Controller
www.iTroll.us

Made in USA

Installation Instructions
Fit Kit Y2R

Tools Required:
#2 Phillips Screwdriver 10 mm Open End Wrench Heavy wire cutters

Step 1:
- Make sure motor is NOT running! Put motor into NEUTRAL! Remove lid from motor.
- **Place towel or rag under carburetor to catch parts that may be accidentally dropped!**

Step 2: See Fig. 1
- Use ink marker to mark Yamaha throttle rod position at brass carburetor (carb) fitting (A). This mark allows you to return motor to stock configuration.

B: Remove rubber cap "B" (if present) from Yamaha rod.
C: Use #2 Phillips screwdriver to remove set screw "C" on carb fitting.
D: Remove Yamaha throttle rod from motor by popping forward end out of white plastic clip and then sliding it out of brass carb fitting.
E: Keep stock throttle rod, set screw and rubber cap to allow motor to be returned to stock.

Step 3: See Fig. 2
- Find iTroll throttle rod "A" with collar "B" attached.
- **Determine if your motor has Dogleg (bends) in carburetor arm in position shown.**
- **If you have "Dogleg", spin round brass fitting 180 degrees.**
- Slide throttle rod through brass carb fitting and then snap it into white plastic clip from Step 2.D above.

Step 4: See Fig. 2
You will notice that Yamaha has some "play" in the throttle rod fitting where the white clip is located. This is so the motor stays at idle when the motor is shifted in and out of gear.
- Push iTroll throttle rod towards REAR of motor (see arrow) until it stops moving.
- Slide collar on throttle rod until it touches the brass carb fitting.
- Use supplied 1/16 Allen wrench to tighten set screw of collar.
- Make sure throttle is fully closed after collar is fixed. Reposition collar if necessary.

Step 5: See Fig. 3
- Find iTroll pull rod, button bolt and washer.
- **NO Dogleg:** Arrange hardware so that washer is BETWEEN head of button bolt and pull rod.
- **WITH Dogleg:** Install button bolt and washer "upside down" from Fig 3 (threads facing UP).

Step 6: See Figs 3, 4 & 5
- **NO Dogleg:** Button bolt head is ABOVE brass carb fitting.
- **WITH Dogleg:** Button bolt head is BELOW brass carb fitting.
- Thread button bolt from pull rod assembly into brass carb fitting with supplied 2.5 mm allen wrench.
- Tighten button bolt until you feel it contact throttle rod.
- LOOSEN button bolt 1/4 turn.
- Check to see if brass carb fitting can be moved towards REAR of motor - the button bolt should NOT be locking carb fitting to throttle rod (with collar on it). If carb fitting and throttle rod are locked together, loosen button bolt 1/4 turn and repeat test.
- **Note: Button bolt is coated with thread locking compound to prevent it from loosening.**

Step 7: See Fig. 4& 5
- Pulling on pull rod should allow carb fitting to smoothly slide on throttle rod. Note GAP showing that carb fitting has pulled away from collar.

Step 8:
NOTE: Fig. 7 shows servo with arm attached. DO NOT attach servo arm and pull rod until Step 15!
- Use a utility knife to remove two vertical ridges from servo (Fig 6).
- Install servo motor onto mounting bracket with stainless steel screws and locking nuts.
- TILLER motors:

Tiller motors do NOT have the electric choke box "A" in Fig 7.
Use 10 mm wrench and supplied bolt + lock washer to secure bracket under rear factory threaded post where choke box would be mounted.
- REMOTE SHIFT motors: Use 10 mm wrench or socket to secure bracket under factory bolt.

Step 9:
In this step, you are temporarily hooking iTroll's power module to your 12 Volt battery:
- Connect Red wire to (+) battery terminal. 5 amp fuse has been installed at factory.
- Connect Black wire to (-) battery terminal.

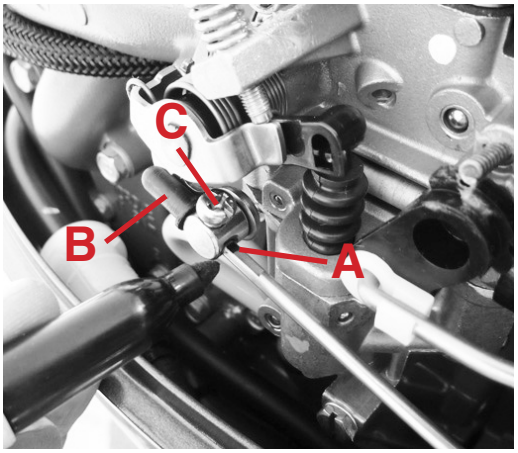

Figure 1

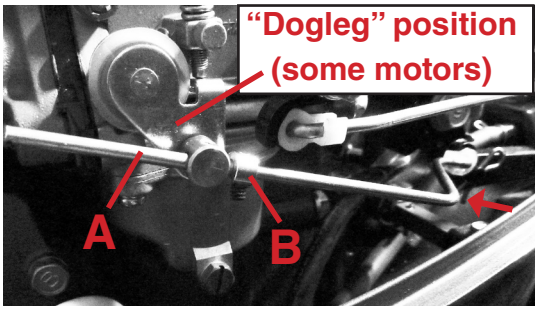

Figure 2

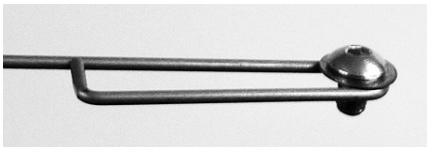
Figure 3

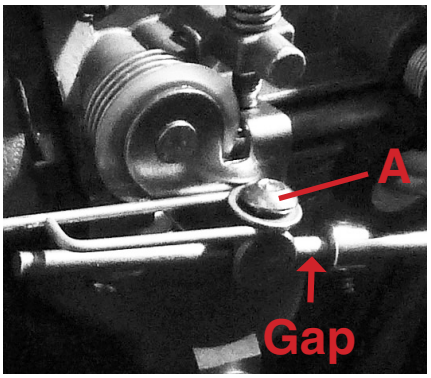

Figure 4: NO Dogleg in carb arm

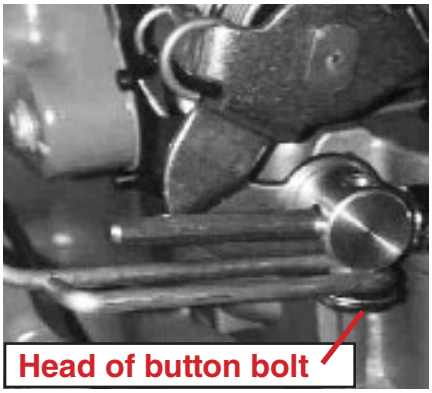

Figure 5: Dogleg in carb arm

Step 10:
• Plug servo motor into iTroll's servo control harness. Note that iTroll's 3 pin connector has a polarizing "DOT" on it. This dot corresponds to the servo's signal wire that is Orange, Yellow or White, depending on the brand of servo.

Step 11:
Use ink marker to make a mark on the servo's geared shaft so you can positively see the direction that the shaft is rotating.

Step 12:
Plug data cable from iTroll into power module.

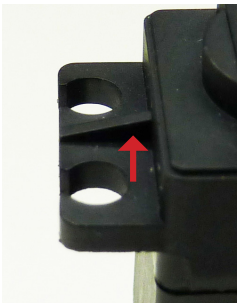

Figure 6 - Remove Ridges (2) from servo

Step 13:
Turn iTroll on (see owner's manual if required), then operate dial to turn servomotor. OBSERVE mark you made on servo's shaft to see if servo is turning CLOCKWISE as you advance the throttle with iTroll's knob.

Step 14:
See "Reference 2" section on page 3 of regular iTroll installation instructions. Follow programming instructions to set servo Travel and Rotation. Set servo travel for "S" (90 degrees). If the servo is rotating in the correct direction as determined in Step 13, leave rotation direction the same as the indicated "old" direction in the rotation set menu. If you need to reverse the servo's rotation, change it in the rotation set menu.

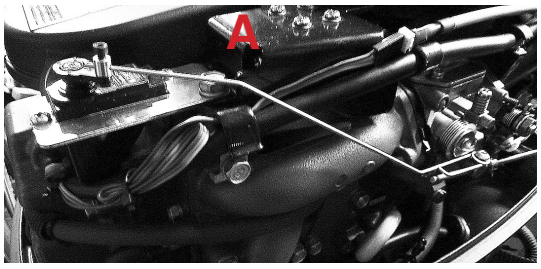

Figure 7

Step 15: See Fig. 8
Yamaha has used two types of hose retainers (see arrows in Fig. 8). When looking from above, one type holds the hose close to the choke box, the other spaces the hose far from the choke box (3/4 to 1 inch).
• If you have the close retainers, bend them as far inward as possible and run iTroll's pull rod OVER the hose.
• If you have the far retainers, run iTroll's pull rod UNDER the hose.
• Turn iTroll ON. After iTroll starts up, press IDLE button to put servo at idle position. Confirm that iTroll is at idle by reading it's display.
• Slide free end of pull rod through brass fitting on servo arm.
• **Motors WITH Dogleg: You may have to make pull rod taller by increasing the angles of the bends at locations shown in Fig 8.**
• Install servo arm as shown. Install Phillips head screw in center of servo arm!
• Eliminate all slack between front end of oval loop in pull rod and carb fitting button bolt by pulling free end of pull rod towards rear of motor. Make sure that the throttle stays CLOSED (resting on stop).
• Tighten set screw in servo arm fitting with supplied 3/32 Allen wrench.

Step 16:
• Check throttle to confirm that it is FULLY CLOSED. If throttle is open, loosen set screw and readjust the pull rod.

Step 17:
• Push iTroll's Run button and operate dial. Check for movement of throttle without sticking or binding.
• Trim excess push rod from servo arm fitting - leave approximately 1/2 inch sticking out from servo fitting to allow for future adjustments.

Step 18:
• Proceed with permanent installation of iTroll (see electronics installation manual).

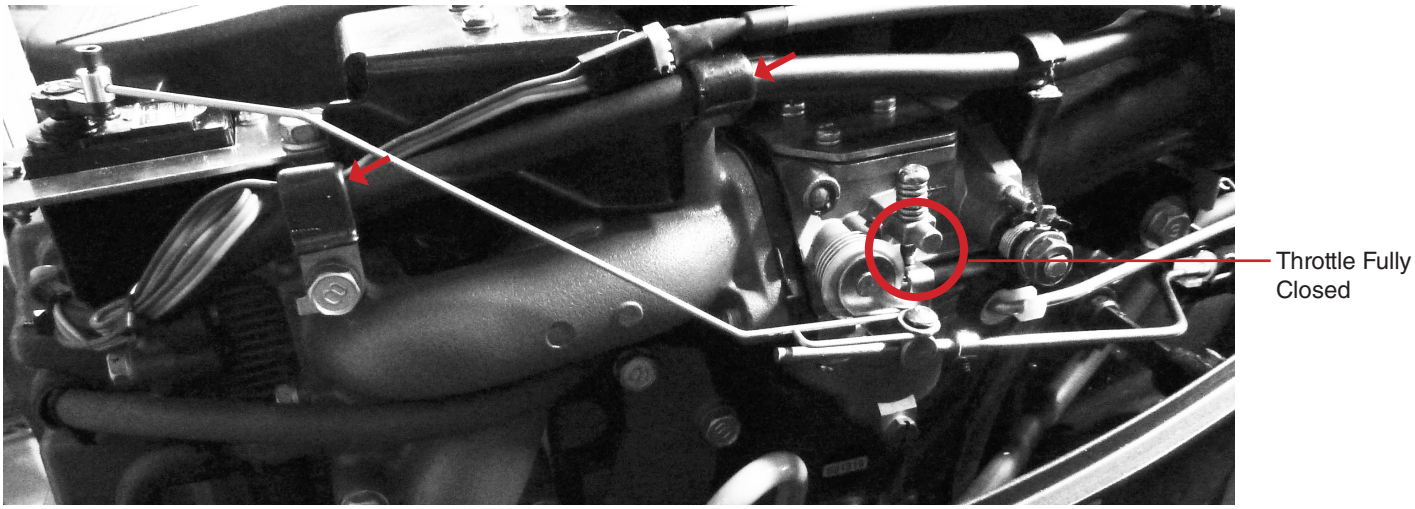

Figure 8 - Complete Installation
Note: "Close" hose configuration shown (See Step 15)