

Handle Bar Service Kit

Models: 1510, 1530, 1610, 5400, Strive®



This kit is intended for machines manufactured before serial number code 10321871 (1510, 1530, 5400) or 10321169 (1610 & Strive®).

The purpose of this kit is to ensure safe and proper operation for machines that have experienced the following conditions: Machine moves on its own, sticks in forward or reverse, or fails to go in the direction to which the control grips are turned.

Kit Contents

Part No.	Description	Qty.
1034553	Bracket, Pot, Console	1
579259	Screw, Pan, M4 x 0.7 x 12, Phl	4
200301014	Washer, Flat, M4.3B x 10.1D x 1	4
02938	Washer, Lock, Int., #08	4
1034750	Cam, Plate, Switch	1
1034754	Hub Assy. w/ Gear	1
578580	Screw, Hex, M6 x 1.0 x 35	1
579029	Nut, Hex, Std, M6 x 1.0	1
605351	Bushing, .88, Blk	2
222648	Grip, Handle	1
32988	Washer, Lock, Int, 0.38	1

INSTALLATION INSTRUCTIONS:

Installation Time: 2 Hours

TOOLS REQUIRED: Protective (Cut Proof) Gloves, Utility Knife, Flat and Phillips Screwdrivers, 1/2" Wrench, 10mm Wrench, (2) 5.5mm Wrenches, 5.5 & 10mm Sockets, 1/16 & 5/32 Hex Wrenches, Pliers, Ohmmeter, Blue Thread Adhesive, Grease & Applicator.

NOTE: Photos shown are of the 1610/Strive®. Any differences in the procedure for the 1510, 1530 and 5400 are noted in the text.

PREPARATION

FOR SAFETY: Before installing kit, turn the key off and disconnect the negative (-) battery cable from the batteries, or on the 1530, unplug cord from wall outlet.

- Using a utility knife, remove the right side handle grip from the handle bar (Figure 1).



Fig. 1

- Remove control panel (8 screws) (Figure 2).

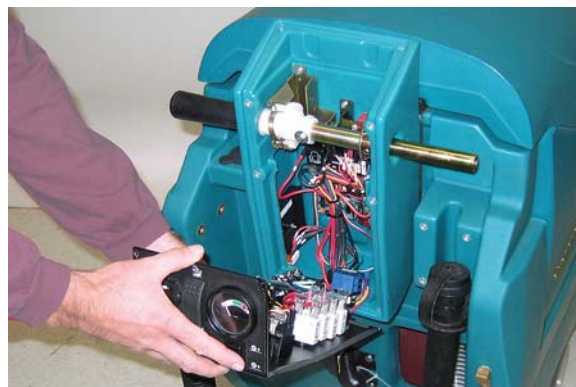


Fig. 2

- (1510, 1530, 1610, Strive® models) Loosen the set screw on the cam plate. Also, remove and discard mounting hardware from the hub assembly (Figure 3A).

(5400 model) Loosen the set screw on the collar. Also, remove and discard mounting hardware from hub assembly (Figure 3B).

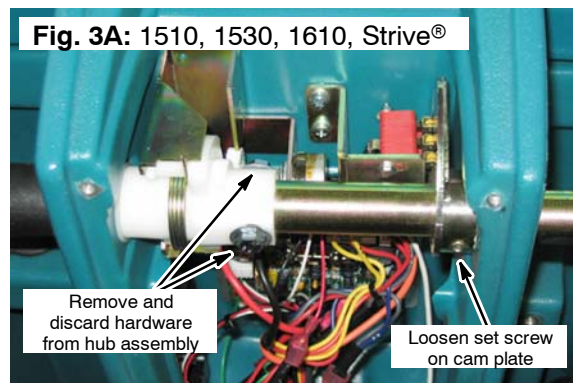


Fig. 3A: 1510, 1530, 1610, Strive®

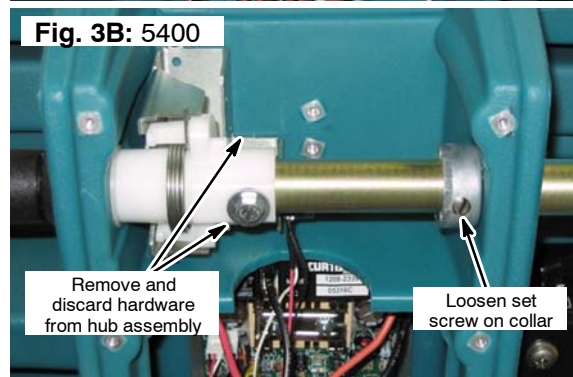


Fig. 3B: 5400

Fig. 3

Handle Bar Service Kit INSTALLATION INSTRUCTIONS - Continued

4. Pull handle bar out from machine This will allow the hub assembly, (2) nylon washers and the cam plate (or collar) to drop free. Remove the torsion spring from the hub, discard the hub, the nylon washers and cam plate, but keep the torsion spring to re-use later. Keep the collar on the 5400 machine.
5. **(1510, 1610, Strive®, 5400 models)** Remove the potentiometer mounting bracket from the machine. Remove the potentiometer and gear from the bracket - leave the wiring attached. Discard the bracket and bracket mounting hardware. Discard the flat washer from the potentiometer, but keep the lock-washer & hex nut to re-use later (Figure 4).

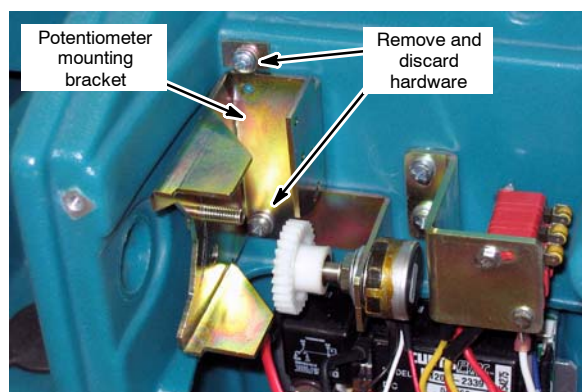


Fig. 4

6. **(1510, 1610, Strive® models)** Remove the switch mounting bracket from the machine. Remove the roll switches from the bracket - leave the wiring attached. Note the order of the switches as they must be re-attached in the same order. Discard the bracket and bracket mounting hardware but keep the switch mounting hardware to re-use later (Figure 5A).

(1530 model) Remove both of the switch mounting brackets from the machine. Remove the roll switches from the brackets - leave the wiring attached. Note the order of the switches as they must be re-attached in the same order. Discard the brackets and bracket mounting hardware but keep the switch mounting hardware to re-use later (Figure 5B).

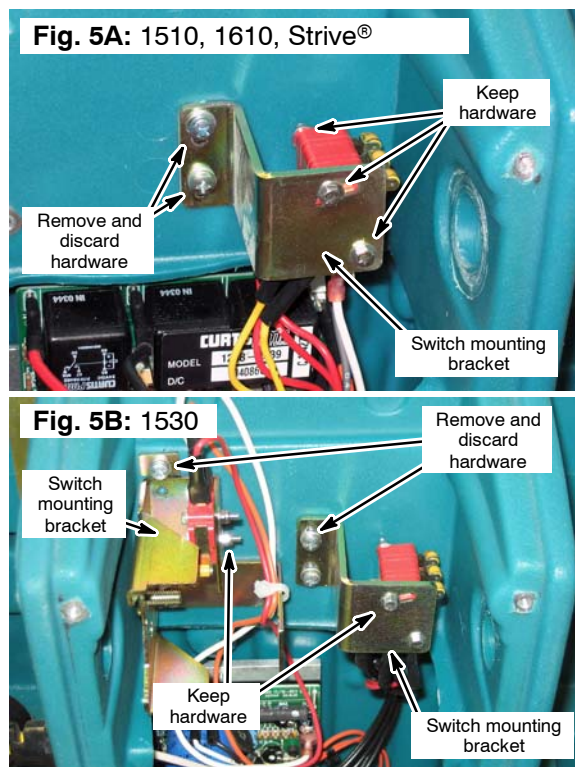


Fig. 5

KIT INSTALLATION

7. **(1510, 1530, 1610, Strive® models)** Install roll switches to the new switch mounting bracket in the same order they were previously. Use the hardware kept from step 6, but only hand-tighten at this time. Final position of the switches will be determined at step 11g (Figure 6).

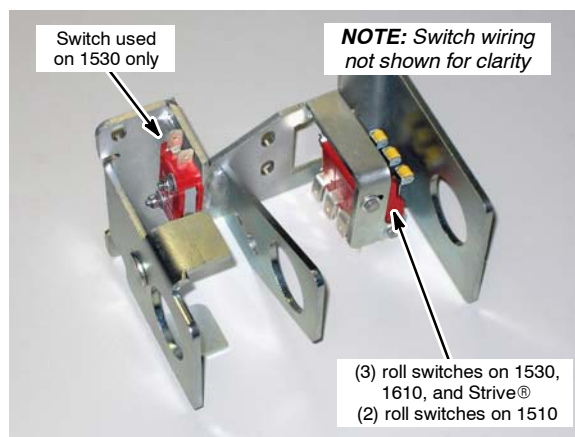


Fig. 6

INSTALLATION INSTRUCTIONS - Continued

8. Install (2) new bushings to the bracket as shown (Figure 7).

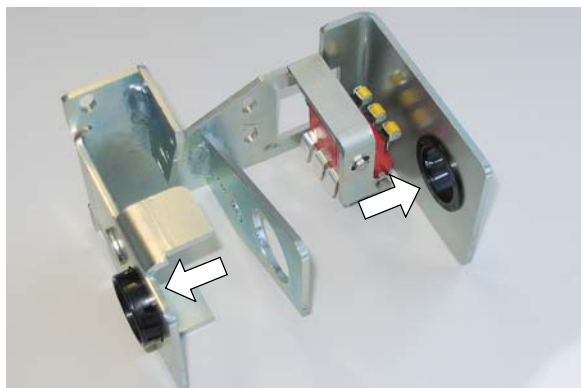


Fig. 7

9. **(1510, 1610, Strive®, 5400 models)** Mount the potentiometer to the bracket as shown – use the lockwasher from the kit and the lockwasher and hex nut from step 5. The nut should only be hand tightened at this point. Attach the gear to the potentiometer shaft, but do not tighten the set screw at this point. The final positioning will be determined at step 12f (Figure 8).

ATTENTION: For gears that do not have the D-shape mounting hole, make sure the set screw is on the flat spot of the shaft.

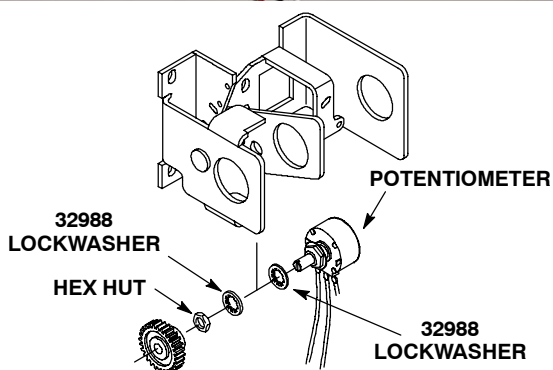
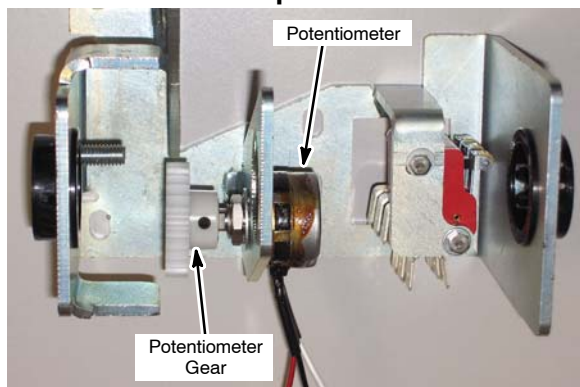


Fig. 8

10. Mount the new bracket assembly to the machine, using the screws and washers supplied in the kit. Only hand-tighten the screws at this point. The final position of the bracket will be determined at step 11e (Figure 9).

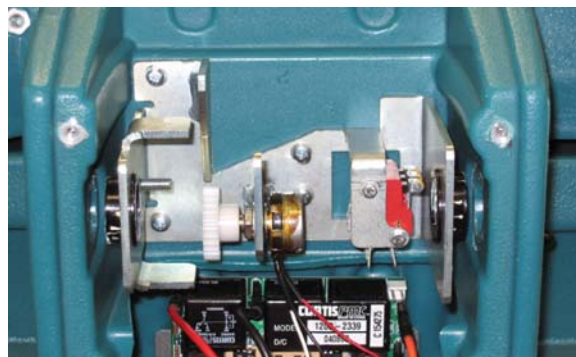


Fig. 9

11. Re-install handle:

- a. Apply grease to the inside of the new bushings and slide the handle part way into the housing as shown (Figure 10).

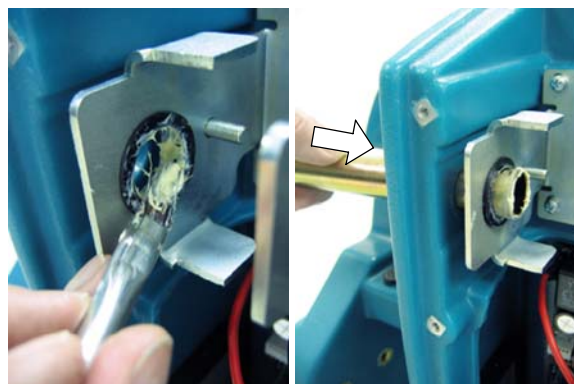


Fig. 10

- b. Attach the torsion spring to the new hub and slide the handle bar through the hub assembly (Figure 11).

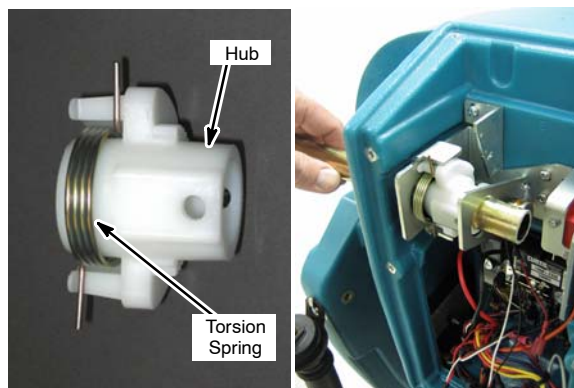


Fig. 11

Handle Bar Service Kit INSTALLATION INSTRUCTIONS - Continued

c. **(1510, 1530, 1610, Strive® models)** Apply grease to the recessed area on the new cam plate. Slide the handle bar through the cam plate, and out the far side of the control housing (Figure 12A).

(5400 model) Slide the handle bar through the collar retained from step 4, and out the far side of the control housing. Collar should be just touching, but not tight against the plastic bushing (Figure 12B).

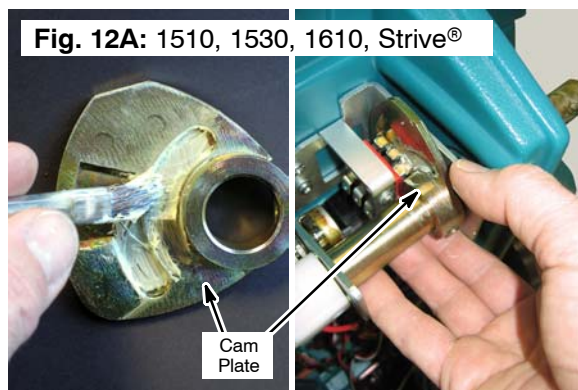


Fig. 12B: 5400

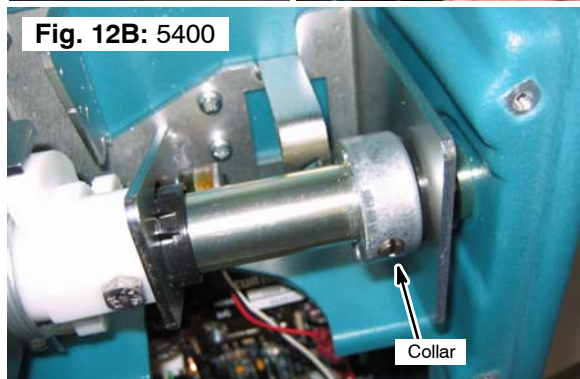


Fig. 12

d. Secure the hub assembly to the handle using the bolt and hex nut supplied in the kit (Figure 13).

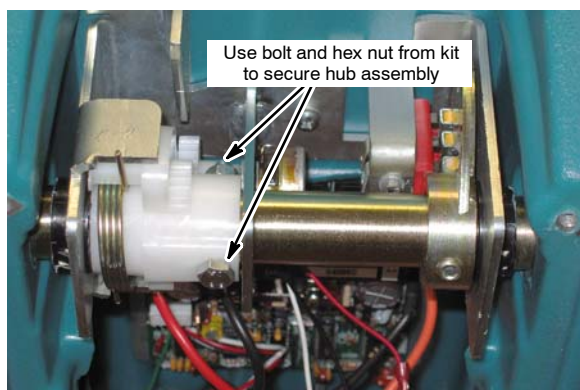


Fig. 13

e. Tighten the mounting bracket screws, then check to insure the handle twists freely. If the handle bar binds on the control housing, remove the handle bar and enlarge the holes in the control housing to provide adequate clearance.

f. **(1510, 1530, 1610, Strive® models)** Position the cam plate so the switches are disengaged and fall in the recessed area on the cam plate. Also, the cam plate should be just touching, but not tight against the plastic bushing in the bracket. Once this position is achieved, secure the cam plate with the set screw - add blue thread adhesive to the set screw threads (Figure 14).

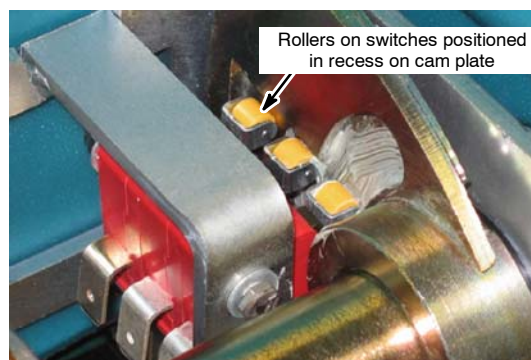


Fig. 14

g. **(1510, 1530, 1610, Strive® models)** Rotate the handle to ensure all switches are engaging freely as activated by the cam plate. Adjust switch positions if needed, then tighten the switch mounting hardware.

12. **(1510, 1610, Strive®, 5400 models)** Calibrate the potentiometer.

a. Disconnect the red potentiometer wire (Figure 15a).

b. Disconnect the six-pin connector from the control board (Figure 15b).

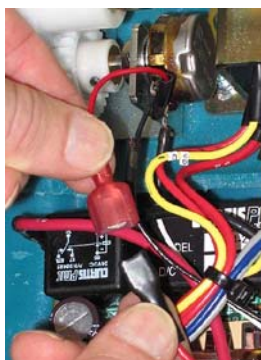


Fig. 15a

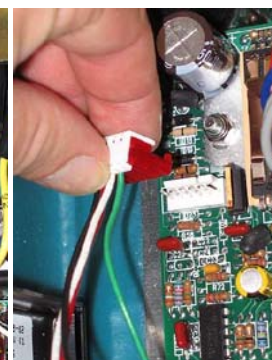


Fig. 5b

INSTALLATION INSTRUCTIONS - Continued

c. Using an ohmmeter, measure the resistance between the black and white wires from the six-pin connector (Figure 16a). The reading should be $5.0k\Omega$ ohms \pm 10%.

d. Divide the reading by two to locate the middle setting number. (Middle setting number example: $5.0k\Omega \div 2 = 2.5k\Omega$)

e. With the control grips at the neutral position, measure the resistance between the red wire and the black or white wire from the six-pin connector (Figure 16b). The meter should read the middle setting number (Example: $2.5k\Omega$).

If the meter does not read the middle setting number as described above (\pm 10%), slightly rotate the potentiometer gear until achieved.



Fig. 16a

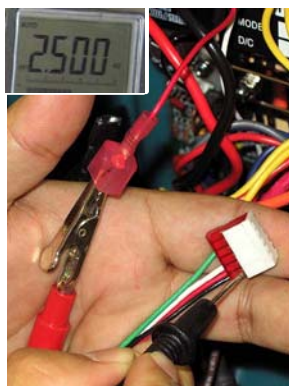


Fig. 16b

f. Once the middle setting number is found, carefully position the potentiometer so that the gear is properly aligned as shown (Figure 17). Tighten potentiometer mounting nut and set screw in the gear – use blue thread adhesive on the set screw threads.

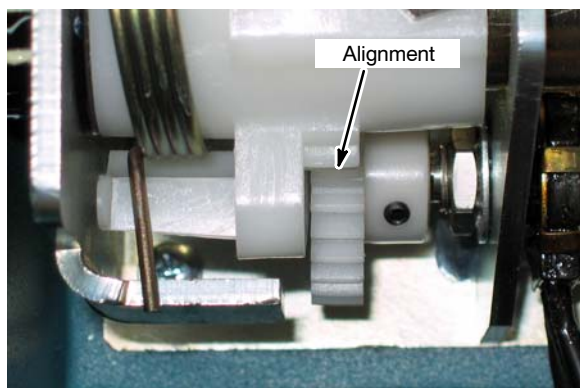


Fig. 17

g. To ensure proper potentiometer setting, use your ohmmeter and re-check the middle setting reading before reconnecting the wires. If adjustment is needed, rotate the potentiometer slightly until properly set.

13. Perform the following checklist on all that apply (Figure 18):

- a. Gear set screw is tight.**
- b. Potentiometer nut is tight.**
- c. Gear is properly aligned.**
- d. Plastic hub and mounting bracket do not interfere with each other.** If they interfere, remove the mounting bracket and file down any metal burrs that may be present.
- e. Handle bar rotates freely within the control housing holes.**

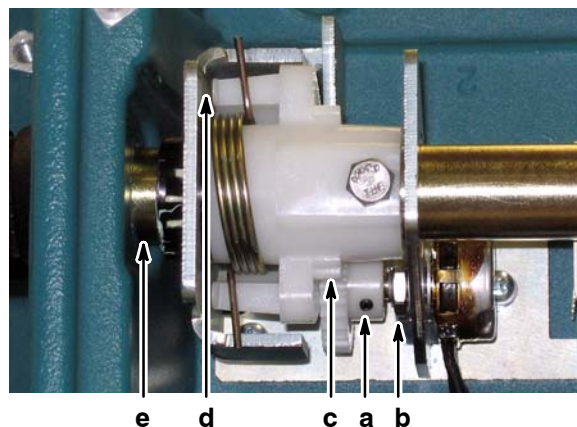


Fig. 18

14. (1510, 1530, 1610, Strive® models)

On the control panel, remove the (3) unused terminals from the brush switch. This will eliminate possible interference between the switch and the cam rotation (Figure 19).

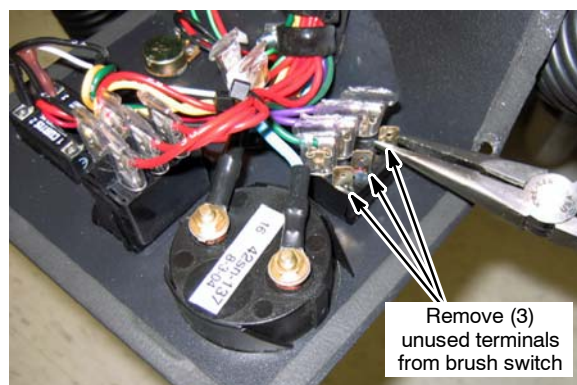


Fig. 19

15. Replace the control panel, install new handle grip, reconnect the battery cable and operate the machine to ensure proper operation.