



MODEL NO. 30595
or ECU Conversion Parts

INSTALLATION INSTRUCTIONS

CONTROLLER CONVERSION

Groundsmaster 580—D & Reelmaster 223—D

INSTALLATION INSTRUCTIONS

These instructions apply to the installation of the Controller Conversion Kit, Model 30595 or replacement of Controller, Part No. 71—2480 or 75—0530.

IMPORTANT: Before installing new electronic controller to machine, make sure appropriate software, for your machine, has been loaded into controller. Check with Authorized TORO Distributor for assistance.



CAUTION

- Engine could start accidentally.
- Accidental starting of engine could cause serious injury to operator or bystanders.
- Shut engine off and remove key from ignition switch before performing any maintenance or adjustments.

1. Park machine on a level surface, lower the cutting units, stop the engine and engage the parking brake.
2. Open hood and disconnect negative (–) battery cable(s) from battery.
3. Open control panel cover and locate electronic controller and wire harness connected to it.
4. Remove capscrews and locknuts securing electronic controller to machine and remove controller.
5. Unplug connectors from electronic controller.

6. If machine is equipped with a voltage regulator, proceed to next step. If not, proceed to step 8

7. Use one of the following sets of instructions, depending on machine and serial number, for removal of regulator.

GM 580—D

Serial # 90101— 20150

A. Remove voltage regulator, regulator harness and capacitor from main wire harness (Fig. 1). Components are located underneath cup holder on control panel.

B. Connect orange/white wire from main wire harness to “I” terminal on ignition switch.

C. Place a heat shrinkable cap over ring terminal on black wire from main wire harness, previously connected to capacitor.

D. Using a heat gun, shrink cap on terminal.

E. Proceed with installation, but disregard steps 8 & 10.

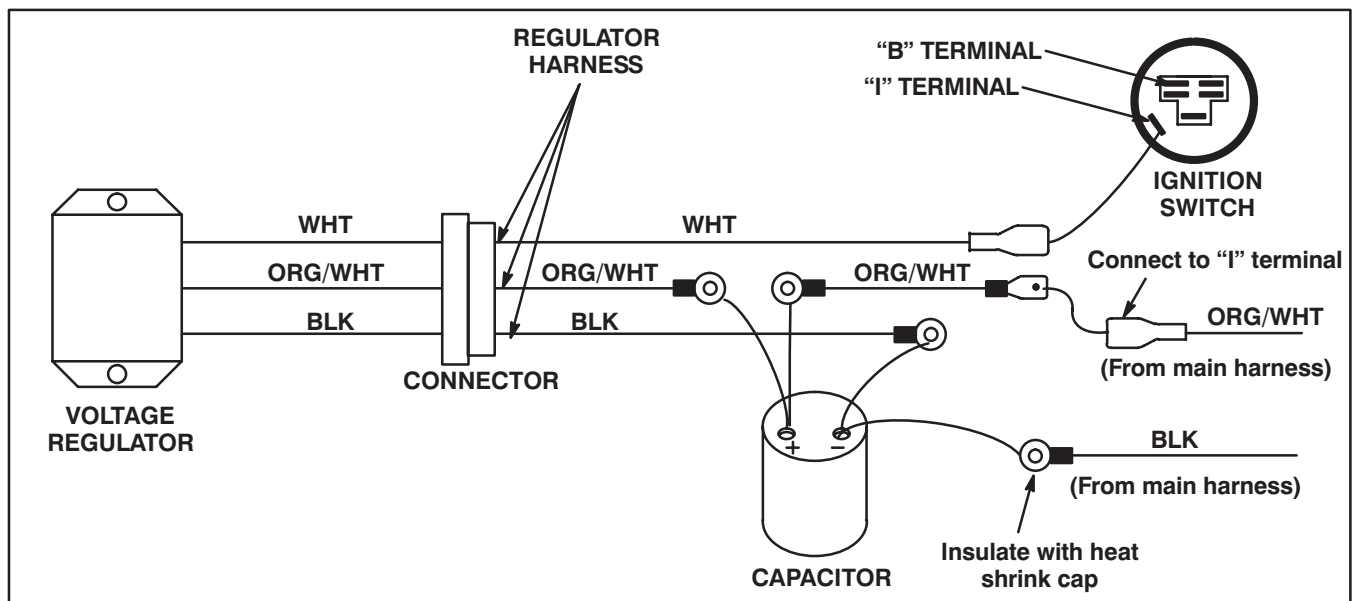


Figure 1

INSTALLATION INSTRUCTIONS

GM 580—D

Serial # 20151—20292

- A. Remove voltage regulator and, if present, capacitor from main wire harness. Component(s) are located underneath cup holder on control panel (Fig. 2).
- B. Place a heat shrinkable cap over ring terminal on black wire from main wire harness, previously connected to capacitor.
- C. Using a heat gun, shrink cap on terminal.
- D. Cut both orange/white and white wires from main wire harness near ring terminal.
- E. Connect orange/white and white wires using a butt splice connector and heat shrink tubing.
- F. Proceed with installation, but disregard steps 8—10.

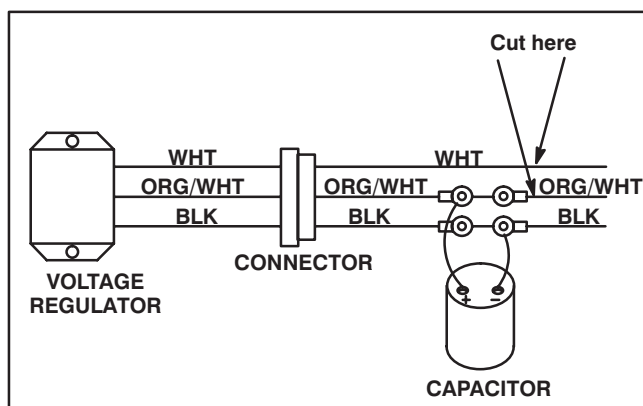


Figure 2

RM 223—D

- A. Disconnect and remove switching regulator, located inside control panel housing.
- B. Connect jumper wire to yellow wires previously connected to regulator.
- C. Proceed with installation, but disregard step 9.
8. Locate capacitor in control panel. Disconnect ring terminals securing capacitor to wire harness. Remove capacitor from wire harness.
9. Using one of the following sets of instructions, remove diode from wire harness.

GM 580—D

- A. Locate diode in wire harness conduit coming from fuse block.
- B. Cut wires at each side of diode.
- C. Remove and discard diode. Remove yellow wire previously connected to capacitor. Retain for use in next step.

- D. Connect yellow wire from fuse block to yellow wire connected to "B" terminal on ignition switch with yellow wire (removed in previous step), butt splice connectors and heat shrink tubing,

RM 223—D

- A. Locate diode at point where harness enters control panel.
- B. Unplug wires from diode and remove diode.
- C. Connect jumper wire, with same terminals, to disconnected diode wires.

10. Place a heat shrinkable cap over each of the ring terminals previously connected to capacitor. Using a heat gun, shrink caps on terminals. Secure loose wires to wire harness.

11. Plug harness adapter into appropriate connections on new controller and secure connections with plug retaining screw.

12. Mount new controller and harness adapter to machine with hardware provided.

Note: If Controller, Part No. 92—5720 is being installed on a GM 580—D, refer to figure 3 for installation procedure.

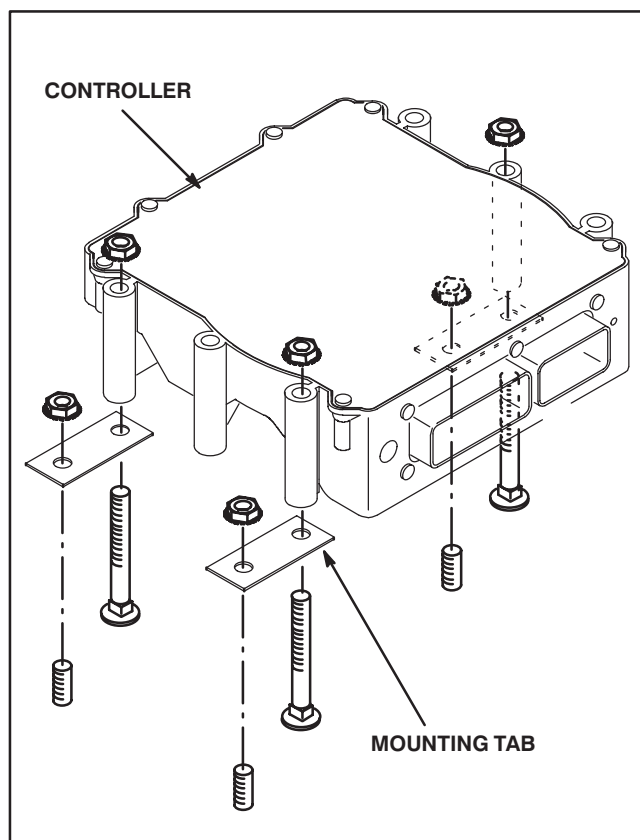


Figure 3

13. Plug other harness connectors into existing wire harness connectors.

14. Reinstall battery cable(s) to battery.

INSTALLATION INSTRUCTIONS

Model 30595 Kit Only

15. Affix appropriate decal, for your machine, to ACE Diagnostic Hand Held Display.

16. Affix a new decal to each side of machine.

Note: If conversion parts have been installed on machine, a Diagnostic Hand Held Display, to aid in trouble shooting electrical malfunctions, is available. Order the following parts from your local Authorized TORO Distributor.

Part Number	Description
85—4750	Diagnostic Hand Held Display
88—1860	Decal—Diagnostic (GM 580—D)
85—4840	Decal—Diagnostic (RM 223—D)

OPERATING INSTRUCTIONS

The harness adapter is equipped with a green diagnostic light which indicates if the electronic controller is functioning correctly. When the electronic controller is functioning correctly and the key switch is moved to the RUN position, the green diagnostic light will be illuminated. The light will blink if the controller detects a malfunction in the electrical system. The light will stop blinking and automatically reset when the key switch is turned to the OFF position.

When the green diagnostic light blinks, one of the following has been detected by the controller:

1. One of the outputs has been shorted.
2. One of the outputs is open circuited.

If the diagnostic light is not illuminated when the key switch is in the RUN position, this indicates that the electronic controller is:

1. Not powered.
2. Not functioning correctly.
3. The light is burned out.
4. The loopback connector is disconnected

Check electrical connections, input fuses and diagnostic light bulb to determine malfunction. Make sure loopback connector is secured to wire harness connector.

