

INSTALLATION INSTRUCTIONS

Original Issue Date: **10/01**
 Model: **125/150EOZ and 100/125EFOZ**
 Market: **Marine**
 Subject: **Electronic Governor Kits**

Introduction

The electronic governor provides isochronous governing by using the signal from the magnetic pickup to control the current input to the throttle actuator.

See Figure 1 for electronic governor kit selection. After installing the kit, the electronic governor requires adjustment and calibration. Refer to the generator set service manual (TP-5737) for governor adjustments.


Kit No.	Generator Set Battery Voltage	Type
GM17043-KP1	12 VDC	Non Paralleling
GM17044-KP1	24 VDC	
GM17045-KP1	12 VDC	Paralleling
GM17046-KP1	24 VDC	

Figure 1 Electronic Governor Kit Selection

Safety Precautions

Observe the following safety precautions when installing the electronic governor kit.

⚠ WARNING




Accidental starting.
Can cause severe injury or death.

Disconnect the battery cables before working on the generator set. Remove the negative (-) lead first when disconnecting the battery. Reconnect the negative (-) lead last when reconnecting the battery.

Disabling the generator set. Accidental starting can cause severe injury or death. Before working on the generator set or connected equipment, disable the generator set as follows: (1) Move the generator set master switch to the OFF position. (2) Disconnect the power to the battery charger. (3) Remove the battery cables, negative (-) lead first. Reconnect the negative (-) lead last when reconnecting the battery. Follow these precautions to prevent starting of the generator set by an automatic transfer switch, remote start/stop switch, or engine start command from a remote computer.

⚠ WARNING



Fire.
Can cause severe injury or death.

Do not smoke or permit flames or sparks near fuels or the fuel system.

Servicing the fuel system. A flash fire can cause severe injury or death. Do not smoke or permit flames or sparks near the carburetor, fuel line, fuel filter, fuel pump, or other potential sources of spilled fuels or fuel vapors. Catch fuels in an approved container when removing the fuel line or carburetor.

Installation Procedure

- 1. Remove the generator set from service.**
 - 1.1 Place the generator set master switch in the OFF position.
 - 1.2 Disconnect the power to the battery charger, if equipped.
 - 1.3 Disconnect the generator set engine starting battery(ies), negative (-) lead first.

- 2. Install the governor kit.**
 - 2.1 Remove the controller cover.
 - 2.2 Use the 4 screws (X-117-5) and 4 nuts (X-6210-5) to mount the governor control (336236, 336396, 273749, or 227264) inside the controller. See Figure 6.

2.3 Install the grommet (X-284-3). See Figure 6.

2.4 For paralleling units, proceed to step 2.5. For non-paralleling units, connect the governor leads as follows. See Figure 7.

Governor Lead Color	Connects to
Black/White White	Magnetic pickup cable (336239)
Purple Purple	Actuator cable (336638)
Black Red	Power cable (324526)

Figure 2 Governor Control Lead Connections (Non-Paralleling Units)

2.5 **Paralleling Units:** Connect the governor terminals as follows. See Figure 8.

Governor Terminals	Connects to
1 and 2	Power cable (324616)
4 and 5	Actuator cable (273765)
6, 7, and 9	Remote speed pot, if equipped
10 and 11	Magnetic pickup cable (324617)

Figure 3 Governor Control Terminal Connections (Paralleling Units)

2.6 Connect the leads to the relay (259391 or 272684) as follows.

Lead	Connects to Relay Position
SW70-1624-5713 (Lead 70)	86
SWOP-1460-5716 (Lead OP)	30
SW7N-1624-5714 (Lead 7N)	85
White power cable	87
Black power cable	85

Figure 4 Relay Connections

2.7 Use a screw (X-117-5) and a nut (X-6210-5) to mount the relay at the location shown in Figure 6.

2.8 Connect lead SW70-1624-5713 to terminal 70 on the safeguard breaker terminal strip.

2.9 Connect lead SW7N-1624-5714 to terminal 7N on the safeguard breaker terminal strip.

2.10 Connect lead SWOP-1460-5716 to the battery positive (+) side of the starter solenoid.

2.11 Mount the magnetic pickup (255750). See Figure 6.

2.12 See Figure 5 for magnetic pickup adjustment.

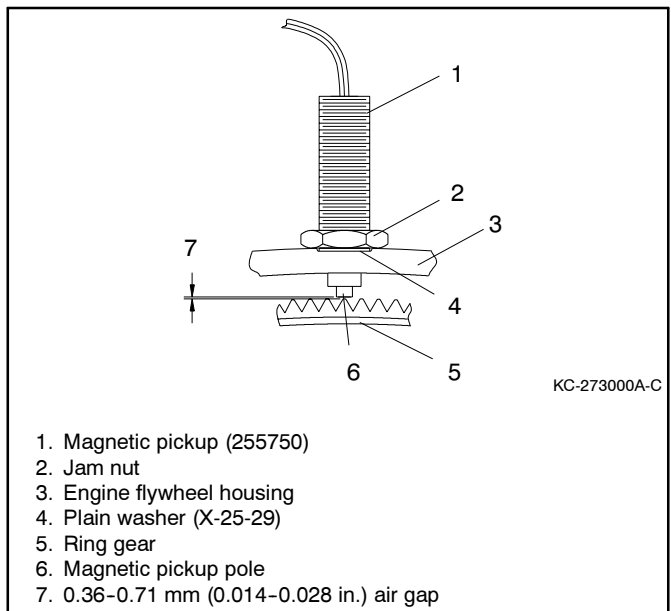


Figure 5 Magnetic Pickup Adjustment

Note: The magnetic pickup pole must touch a ring gear tooth. With the flywheel stationary, turn the magnetic pickup until the pole face of the pickup bottoms out on the ring gear tooth. Turn the magnetic pickup back out 1/4 turn min. to 1/2 turn max. to obtain the correct air gap measurement of 0.36–0.71 mm (0.014–0.028 in.).

2.13 Connect the terminals of the magnetic pickup cable (336239 or 324617) to the terminals of the magnetic pickup (255750).

2.14 Thread a nut (X-81-9) on each end of the stud (X-352-81).

2.15 Install an end rod (254229) on each end of the stud.

2.16 Secure the end rod to the shutoff lever (273752) and to the engine using a bolt (X-465-7) and a nut (X-101-8).

Note: Position the shutoff lever as shown in Figure 6, View A with the cutout in the position shown.

2.17 Secure the end rod to the yolk (273751) using a bolt (X-465-7) and a nut (X-101-8).

2.18 Secure the yoke to the actuator using a nut (M934-06-60).

2.19 Mount the actuator bracket (336935) to the engine using 3 bolts (X-125-5) and 3 nuts (X-6210-7).

Note: Position the actuator shaft to hold the pump lever in the stop position when power is off.

2.20 Mount the governor actuator (273748 or 227263) onto the actuator bracket using 4 bolts (X-465-7) and 4 nuts (X-6210-2). See Figure 6.

2.21 Connect the actuator cable (336638 or 273765) to the actuator (273748 or 227263).

Note: Route the cables along the engine harness and secure the cables using cable ties (X-468-1 qty. 7).

2.22 Replace the controller cover.

3. Restore the generator set to service.

3.1 Check that the generator master switch is in the OFF position.

3.2 Reconnect the generator set engine starting battery, negative (–) lead last.

3.3 Reconnect the power to the battery charger, if equipped.

4. Adjust the governor.

4.1 Consult the generator set service manual for the governor adjustment procedure

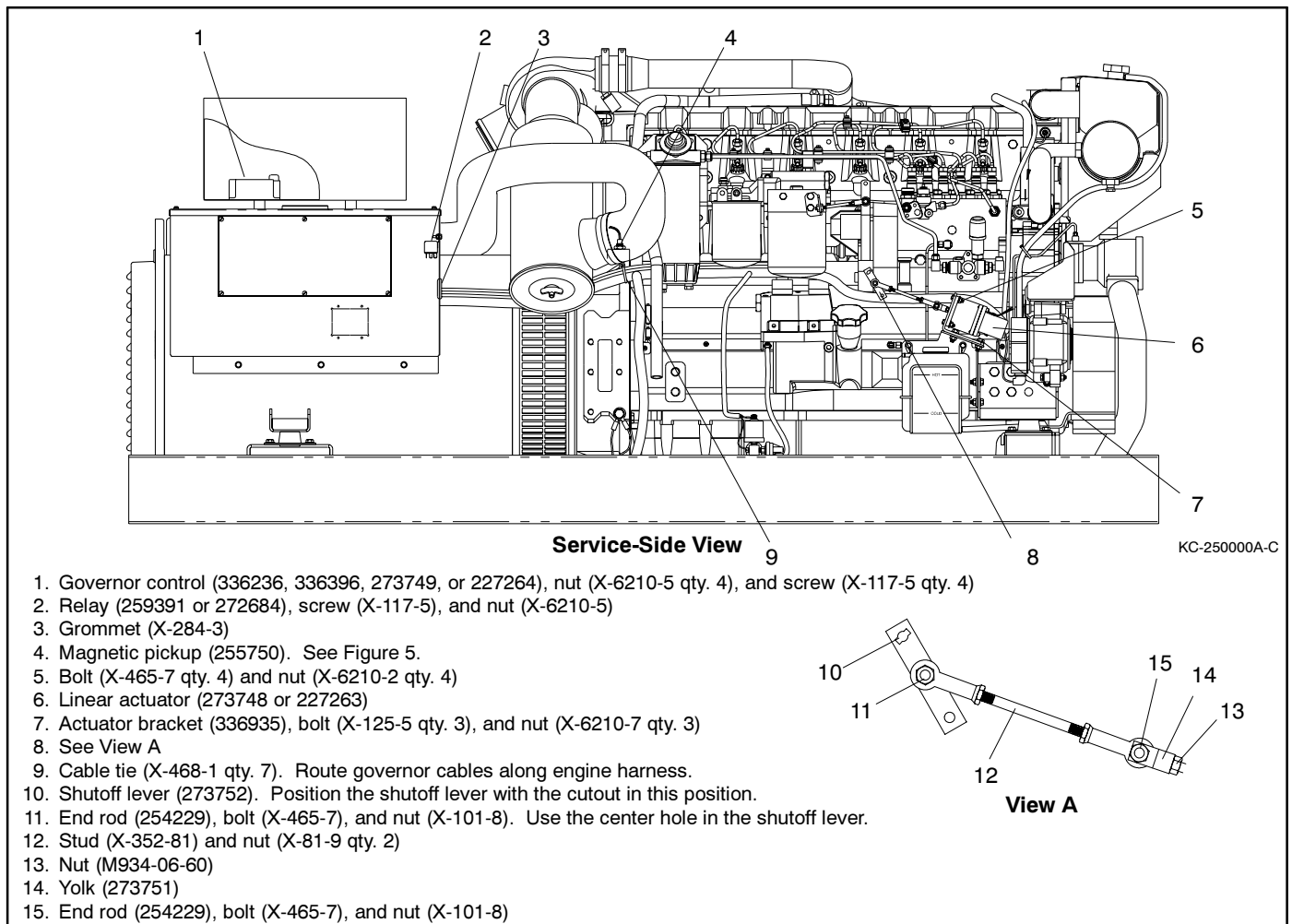
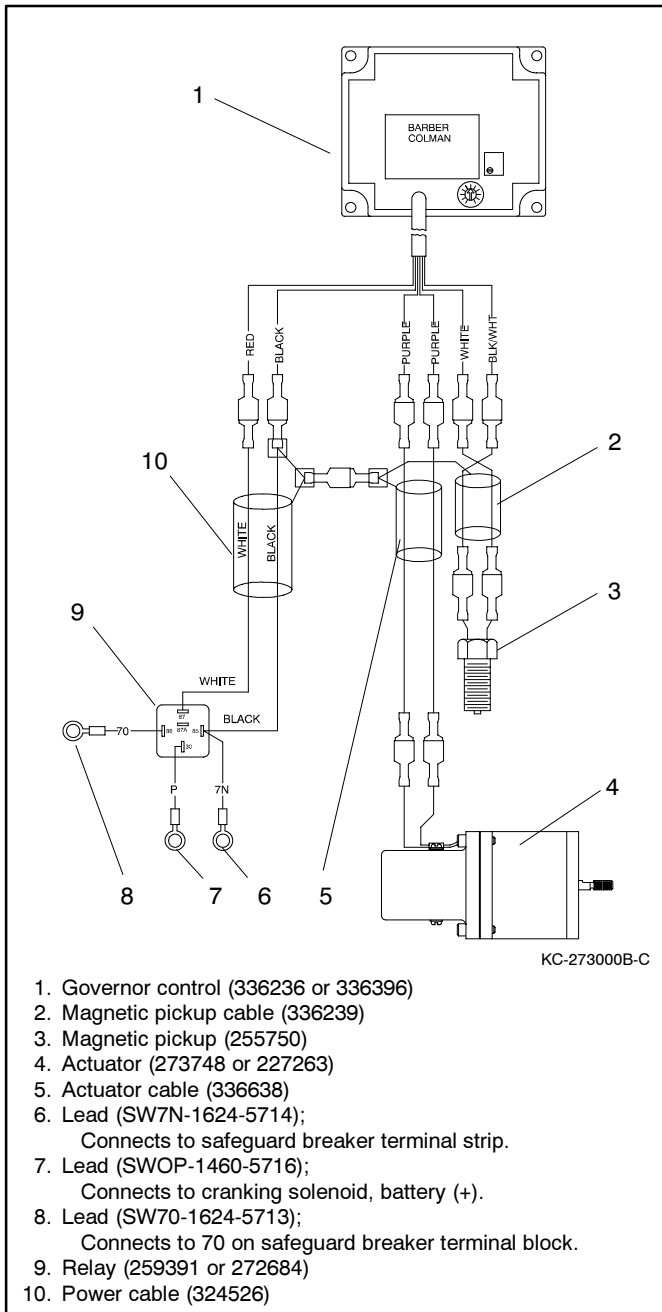
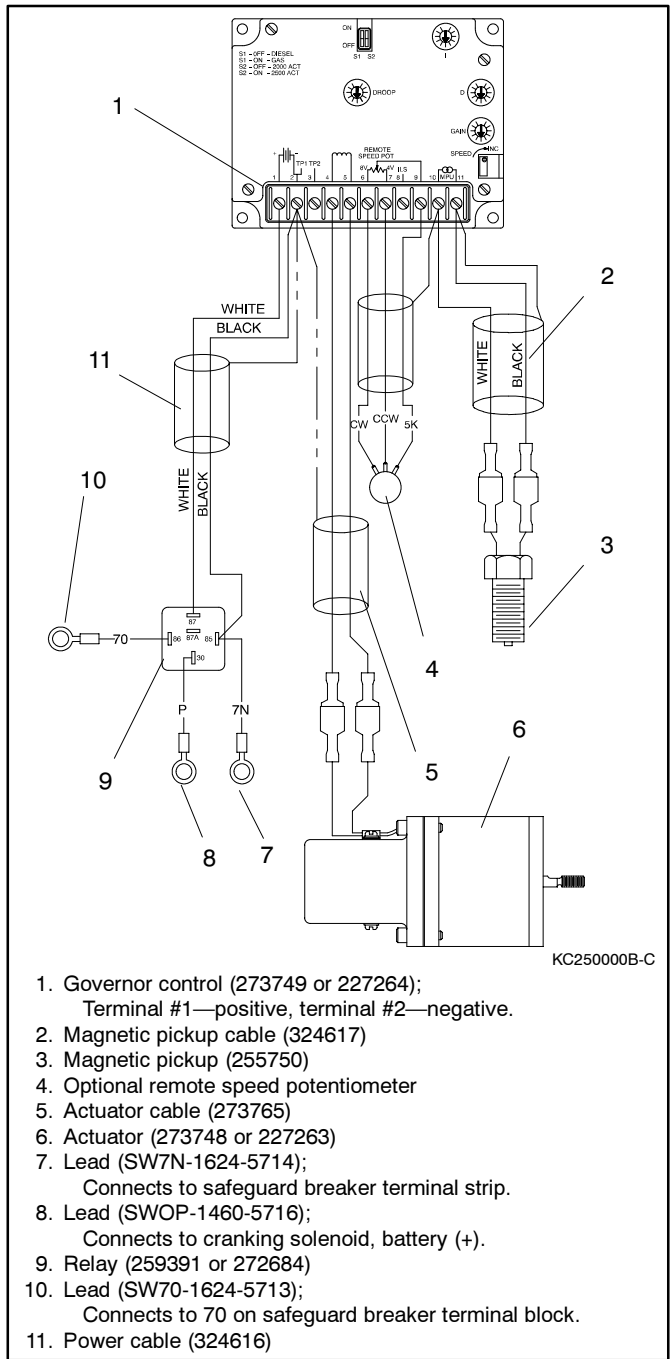


Figure 6 Locator Drawing



1. Governor control (336236 or 336396)
2. Magnetic pickup cable (336239)
3. Magnetic pickup (255750)
4. Actuator (273748 or 227263)
5. Actuator cable (336638)
6. Lead (SW7N-1624-5714);
Connects to safeguard breaker terminal strip.
7. Lead (SWOP-1460-5716);
Connects to cranking solenoid, battery (+).
8. Lead (SW70-1624-5713);
Connects to 70 on safeguard breaker terminal block.
9. Relay (259391 or 272684)
10. Power cable (324526)

Figure 7 Governor Diagram (Non-Paralleling Units)



1. Governor control (273749 or 227264);
Terminal #1—positive, terminal #2—negative.
2. Magnetic pickup cable (324617)
3. Magnetic pickup (255750)
4. Optional remote speed potentiometer
5. Actuator cable (273765)
6. Actuator (273748 or 227263)
7. Lead (SW7N-1624-5714);
Connects to safeguard breaker terminal strip.
8. Lead (SWOP-1460-5716);
Connects to cranking solenoid, battery (+).
9. Relay (259391 or 272684)
10. Lead (SW70-1624-5713);
Connects to 70 on safeguard breaker terminal block.
11. Power cable (324616)

Figure 8 Governor Diagram (Paralleling Units)

Parts List

Electronic Governor Kits

Kits: GM17043-KP1, GM17044-KP1, GM17045-KP1, and GM17046-KP1						
Qty.	Description	Common Parts	Unique Parts			
			GM17043-KP1	GM17044-KP1	GM17045-KP1	GM17046-KP1
1	Lead	SWOP-1460-5716				
1	Lead	SW7N-1624-5714				
1	Lead	SW70-1624-5713				
5	Screw, hex head (10-24 x 5/8)	X-117-5				
1	Grommet, (1-3/8)	X-284-3				
7	Tie (expense), cable	X-468-1				
5	Nut (expense), whiz 10-24	X-6210-5				
1	Pickup, magnetic	255750				
2	Rod, end	254229				
1	Yoke	273751				
1	Lever, shutoff	273752				
1	Bracket, actuator	336935				
1	Nut, hex (6 mm)	M934-06-60				
2	Nut (1/4-20)	X-101-8				
3	Bolt, hex cap (5/16-18 x 1 in.)	X-125-5				
1	Washer, plain (0.812 in. ID x 0.469 in. OD)	X-25-29				
1	Stud (1/4-28 x 4.25 in.)	X-352-81				
6	Bolt, hex cap (1/4-20 x 1 in.)	X-465-7				
4	Nut, flange spiralock (1/4-20)	X-6210-2				
3	Nut, flange spiralock (5/16-18)	X-6210-7				
2	Nut, hex jam (1/4-28)	X-81-9				
1	Relay		259391	272684	259391	272684
1	Control, governor		336236	336396	273749	227264
1	Actuator, linear		273748	227263	273748	227263
1	Cable, actuator			336638		273765
1	Cable, power			324526		324616
1	Cable, magnetic pickup			336239		324617

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