



Isochronous Governor Kits 30-80 ROZ FR11

Model	Kit No.
30-60 ROZ (4 cyl.)	PA-253163
60/80 ROZ (6 cyl.)	PA-253553

An isochronous governor is used where an electrical load is sensitive to frequency for proper operation. The isochronous governor kit senses generator load, as well as speed, and provides very fast and accurate load transient capability with near-zero percent speed droop.

WARNING

UNIT STARTS WITHOUT NOTICE! Units with Automatic Transfer Switches start automatically. Turn generator main switch on controller to OFF position and remove battery cables (remove negative lead first and reconnect it last) to disable generator set before working on any equipment connected to generator.

MOUNTING AND CONNECTION

- Place controller main switch to OFF position. Disconnect battery of generator set, negative lead first.
- Remove right-side junction box panel.
- Install actuator bracket(s) to engine mounting bosses. See Figure 1 and part listing for identification and location of parts.
 - On 30-60 kW (4 cyl.) models, mount brackets using two screws and lock washers.
 - On 60/80 kW (6 cyl.) models, mount bracket using existing hardware.
- Align slotted holes of actuator bracket with holes on actuator. Mount actuator with lever to the bottom and with harness connector pointing to the left (as viewed from the generator end) using two screws, washers, lock washers, and nuts.

NOTE

Place flat washer against slotted hole of actuator bracket.

- Install nut on each end of stud and thread on about 1-1/2 inches (38 mm).

- Install ball joint on each end of stud.
- Remove spring and bracket connected to fuel injection pump lever. These parts will not be reused.
- Install ball joint to hole on end of fuel injection pump lever using lock washer and nut.
- With fuel injection pump lever and actuator lever extended to the maximum position (toward generator end), adjust stud length to align ball joint with fourth hole from end of actuator lever (ball joint mounts to bottom of lever).
- Reduce length of stud by one full turn of ball joint and install ball joint to bottom of actuator lever with lock washer and nut.
- Tighten lock nut against ball joint on each end of stud.
- Loosen lock nuts and back out min. and max. stop screws on fuel injection pump by about 1/4 inch (6.3 mm). Tighten lock nuts.

NOTE

When adjustment is correct, fuel injection pump lever will rest against min. stop screw before actuator lever reaches its internal stop. Max. stop screw must be backed out far enough so full travel of actuator lever is possible.

- Check linkage for linearity and smooth nonbinding operation. If binding is evident on actuator lever, loosen arm retaining nut slightly. (Nut is self-locking.)

NOTE

The ball joints will allow a maximum of 10% misalignment.

- Remove and discard cap plug from flywheel housing. Turn magnetic pickup until center of pickup strikes ring gear tooth and back out 1/2 turn. Air gap is .020 inches (0.51 mm). Tighten lock nut.
- Drilling instructions for electronic controller.
 - On Dec-II controller models, remove the controller cover and drill four .281 inch (7.1 mm) dia. holes in rear panel of controller box using electronic controller as a template. See Figure 2a.
 - On relay controller models, drill four .281 inch (7.1 mm) dia. holes in top of junction box using electronic controller as template. See Figure 2b.

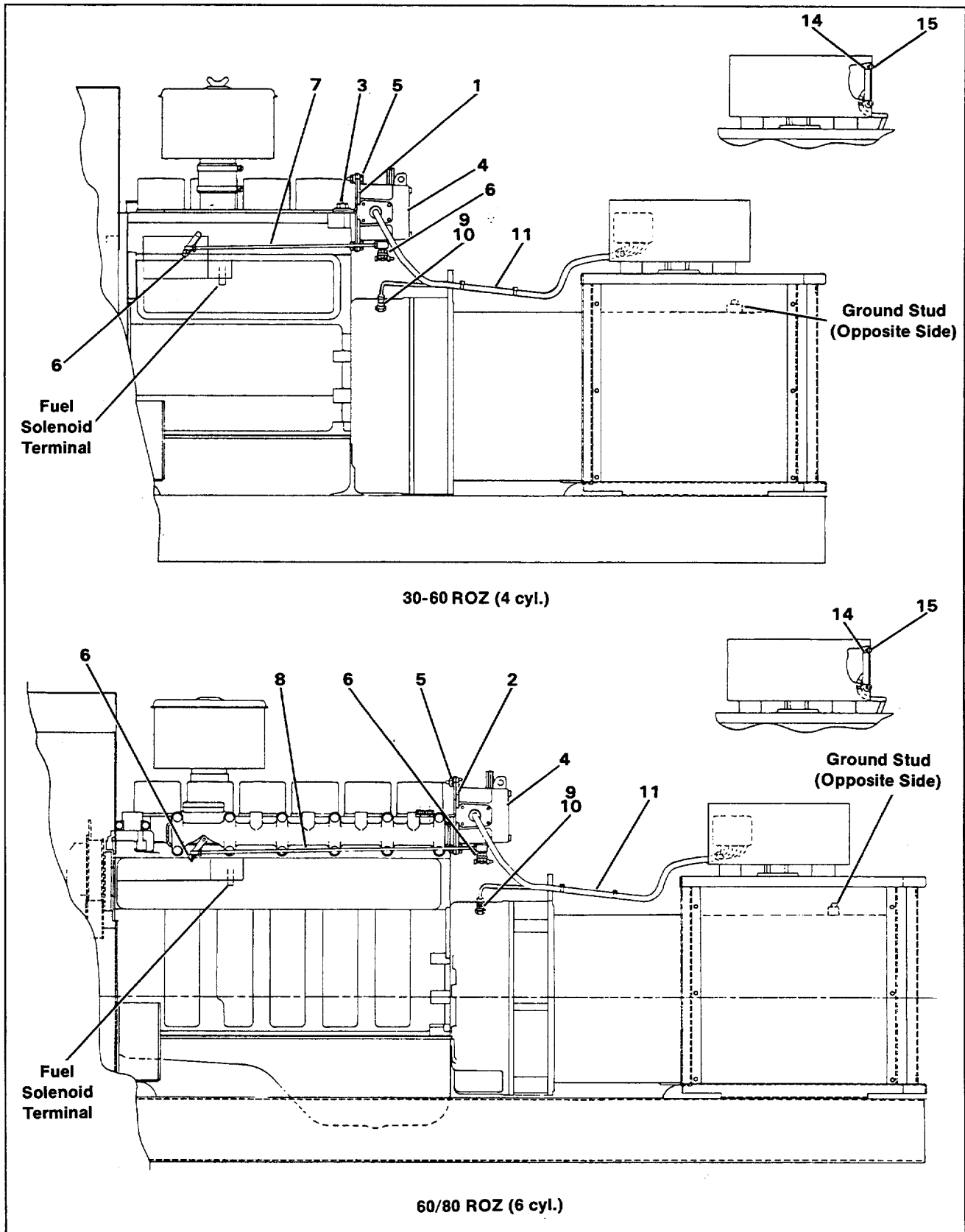


Figure 1a. Isochronous Governor Mounting (Dec-II Controller Models)

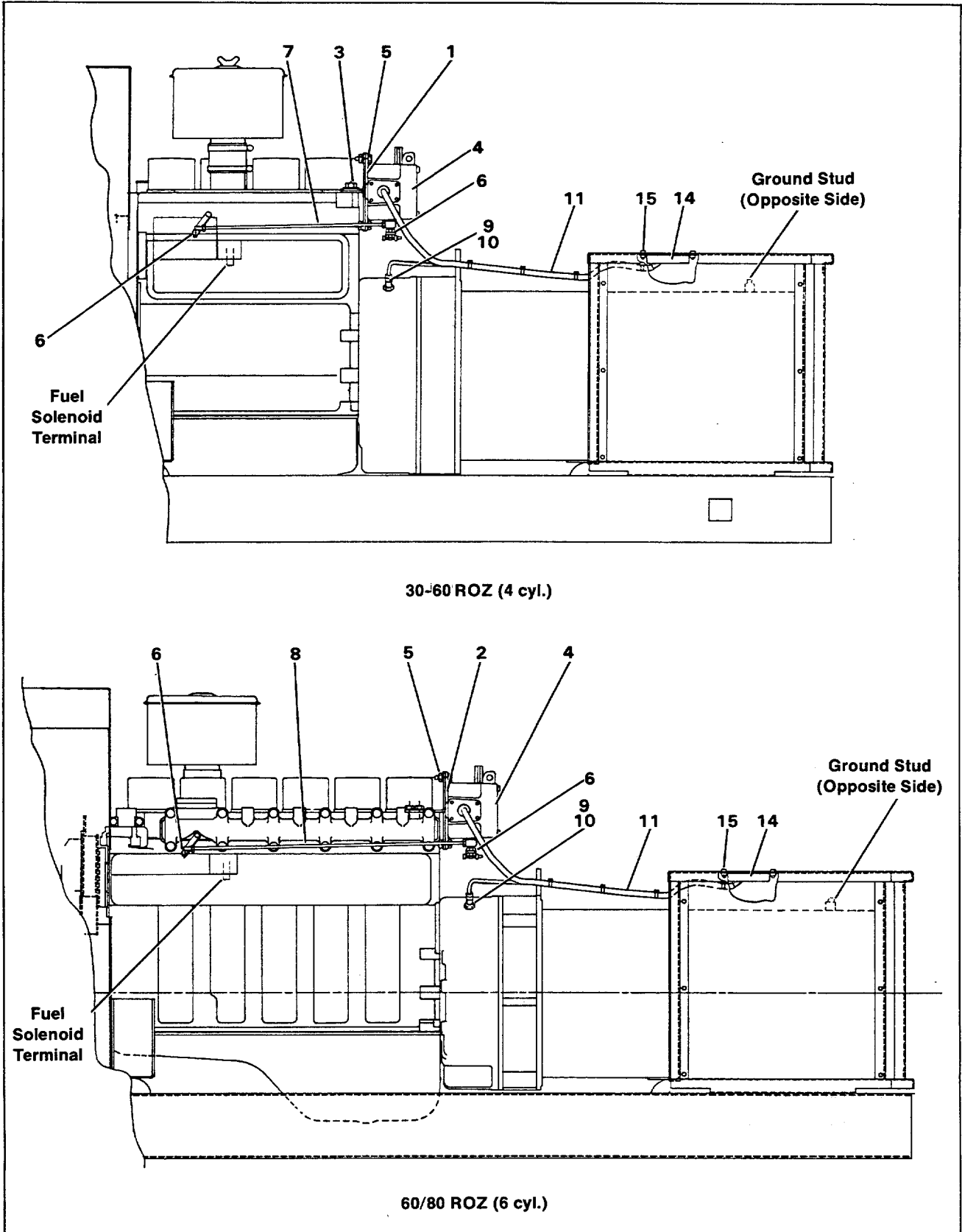


Figure 1b. Isochronous Governor Mounting (Relay Controller Models)

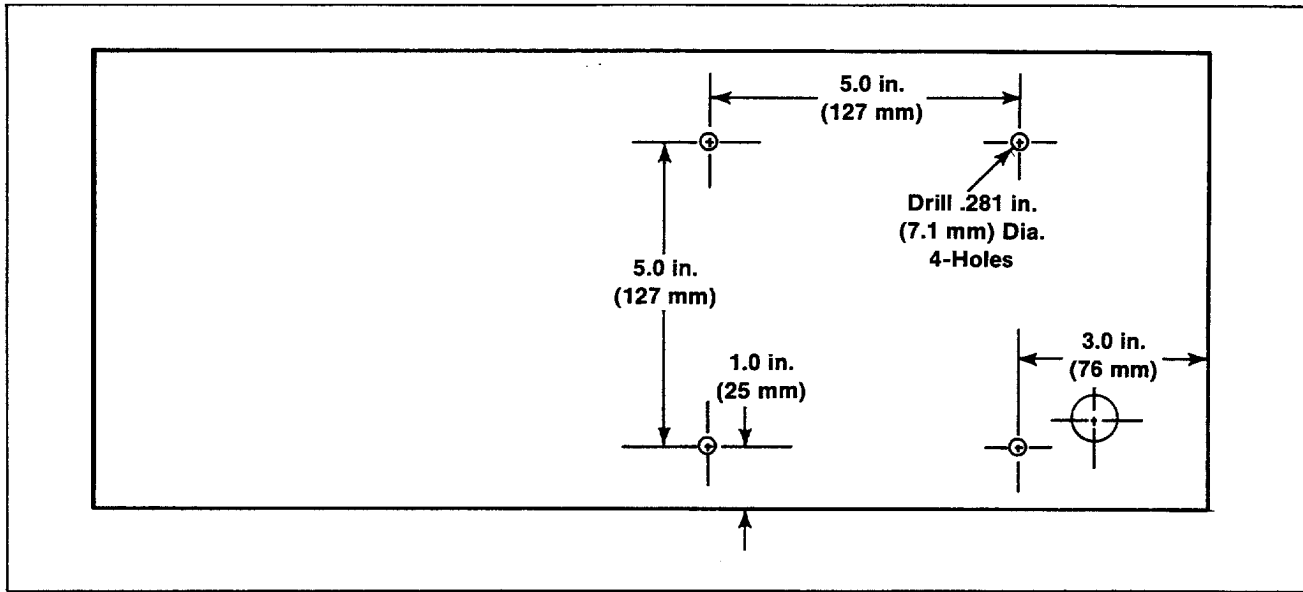


Figure 2a. Drilling Instructions for Electronic Controller
(Rear View of Dec-II Controller Models)

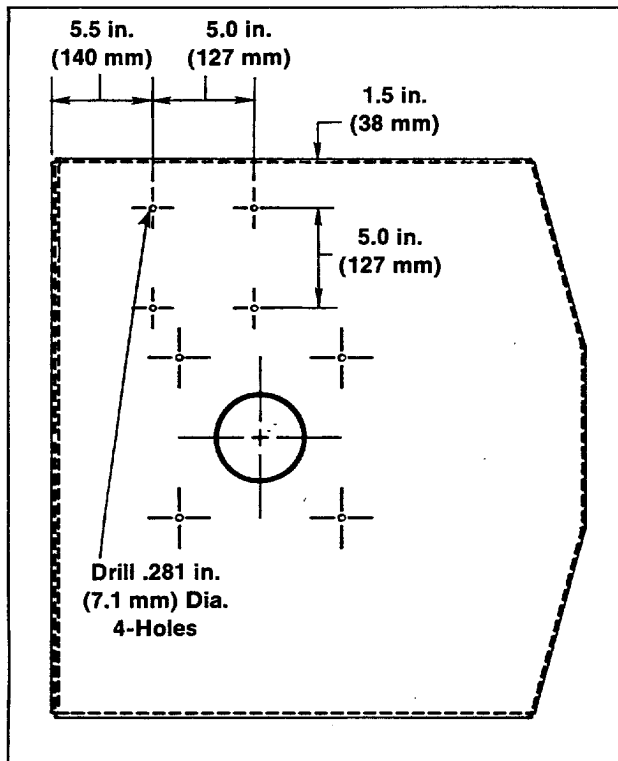


Figure 2b. Drilling Instructions for Electronic Controller
(Relay Controller Models)

16. Connect isochronous governor according to wiring diagram, see Figure 3. On Dec-II controller models, the leads are run through the hole in rear panel of controller box. On relay controller models, the leads are run through the grommet in rear of junction box.

- a. Plug harness into actuator connector and tighten collar. Connect red and green leads to electronic controller terminal 1. Connect white and black leads to electronic controller terminal 2.
 - b. Crimp spade terminals to magnetic pickup leads. Twist leads together to help prevent pickup of RF interference and connect to electronic controller terminals 3 and 4. Color of magnetic pickup leads is not important.
 - c. Connect eyelet terminal of long lead to fuel solenoid terminal and spade terminal to electronic controller terminal 6. See Figure 1 for location of fuel solenoid terminal.
 - d. Secure leads together using cable ties.
 - e. Connect short lead to ground stud on stator shell and to electronic controller terminal 5.
17. On Dec-II controller models, install electronic controller on inside of controller box using four screws, lock washers, and nuts. Place electronic controller terminal strip toward the bottom.
 18. Check that the controller main switch is in the OFF position. Reconnect battery, negative lead last.
 19. Electronic controller adjustment.

WARNING

DANGER OF ELECTROCUTION! The following procedure requires that the generator set be running while adjustments are made. Avoid contacting electrical connections with adjustment tool. Remove wrist-watch, rings, and jewelry that can cause short circuits. Do not touch electrical equipment when standing in water, on wet ground, or when your hands are wet.

- a. Remove plug from electronic controller.
- b. Start the generator set with no load and then back off on the throttle until the engine is at idle speed.

NOTE

When governor arm is at idle position, frequency should be approximately 58 Hz on 60 Hz models and 48 Hz on 50 Hz models. Adjust governor rod length as necessary.

- c. Adjust speed control to the specified speed.

NOTE

A clockwise (CW) adjustment will increase speed.

- d. Turn the gain control CW until instability results. If instability does not result, momentarily move throttle. Finally, adjust gain control counterclockwise (CCW) until stability is restored.

NOTE

Turning the gain control CW will shorten the amount of speed change. For best performance, the gain control should be turned CW as far as possible without instability.

- e. Turn the stability control CW until instability results. Adjust the stability control CCW until stability is restored.

NOTE

Turning the stability control CW will reduce the amount of time which the engine needs to regain the set speed after a load change.

- f. Apply various loads up to full load to insure stability at all loads. Repeat Steps c through e as necessary.
 - g. The governor is now set to a nominal operating point. Place controller main switch to OFF position to stop the generator set.
20. Disconnect battery of generator set, negative lead first.
 21. Replace plug in electronic controller.
 22. On relay controller models, install electronic controller on inside of junction box top panel using four screws, lock washers, and nuts. Place terminal strip of electronic controller toward the engine.
 23. Replace right-side junction box panel.
 24. On Dec-II controller models, replace controller cover and install screws.
 25. Check that the controller main switch is in the OFF position. Reconnect battery, negative lead last.

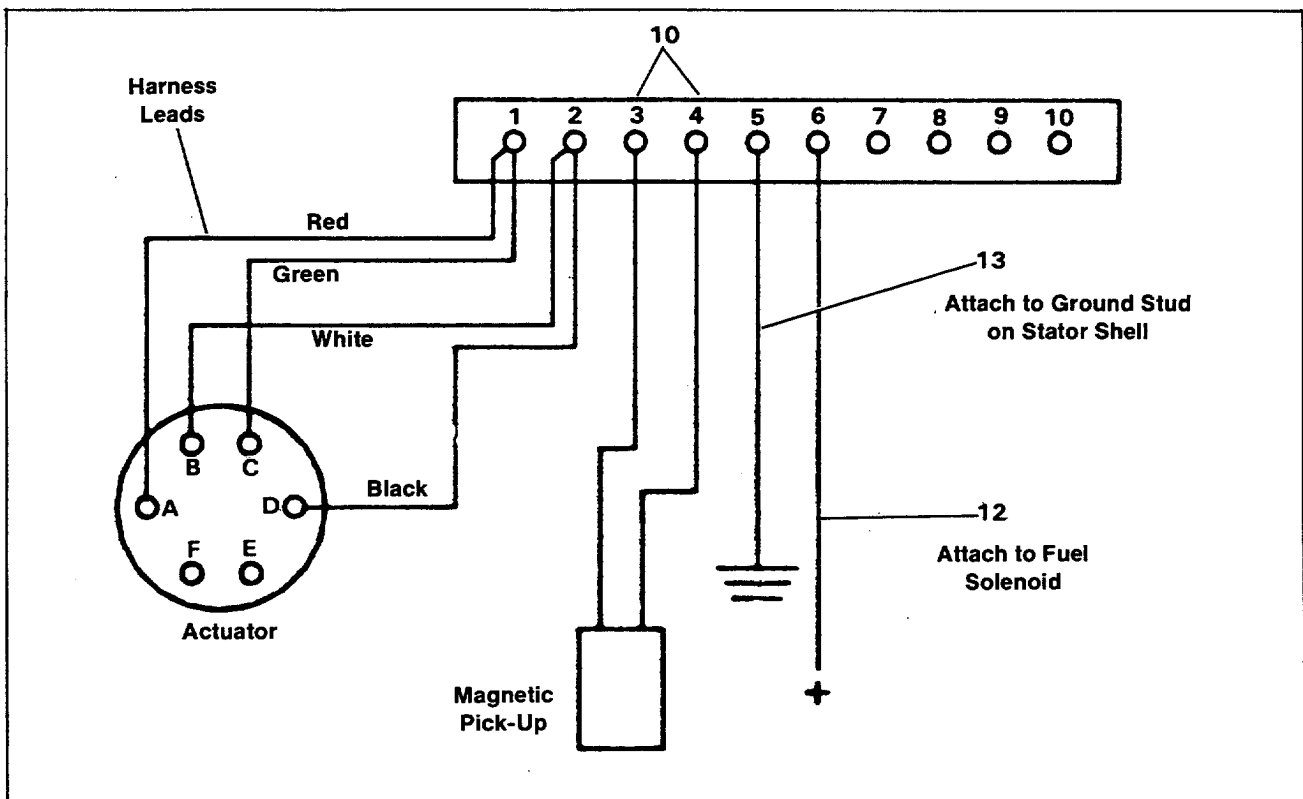


Figure 3. Wiring Diagram

PART LISTING

Ref. No.	Description	Qty.	Common Parts	PA-253163	PA-253553
1	Bracket, Actuator	2		253430	
2	Bracket, Actuator	1			253554
3	Screw, M12-1.75 x 20	2		X-6052-1	
	Washer, 1/2" Lock	2		X-24-6	
4	Actuator	1	290357		
5	Screw, M6-1 x 25	2	X-6049-3		
	Washer, 1/4" Flat	2	X-25-53		
	Washer, 1/4" Lock	2	X-20-1		
	Nut, M6-1	2	X-6053-1		
6	Ball Joint	2	271097		
	Washer, 1/4" Lock	2	X-20-1		
	Nut, 1/4-28	4	X-81-2		
7	Stud	1		X-352-53	
8	Stud	1			X-352-54
9	Pickup, Magnetic	1	253604		
10	Terminal, Spade	2	X-285-1		
11	Harness	1	253524		
	Tie, Cable	5	X-468-1		
12	Lead, Long	1	LN-1648-2214		
13	Lead, Short	1	LN-1620-2215		
14	Controller, Electronic	1	253455		
15	Screw, M6-1 x 16	4	X-6049-2		
	Washer, 1/4" Lock	4	X-20-1		
	Nut, M6-1	4	X-6053-1		