

KT133 Series Governor System Installation Kit Deutz BF6L912 and BF6L913

Introduction

The KT133 Series Governor System Installation kit provides the bracket, cables and hardware necessary to install a GAC precise Electronic Governor on a Deutz BF6L912 and BF6L913 engines equipped with a Robert Bosch fuel injection pump. The GAC 225 series actuator is the correctly sized servo for either 12 or 24 volt systems.

The engine must have a 5/8-18 or 3/4-16 tapped hole in

the bell housing to accept the Magnetic Speed Sensor.

A specific GAC speed control unit and any remaining system components can be selected from the following pages to meet any specific applications.

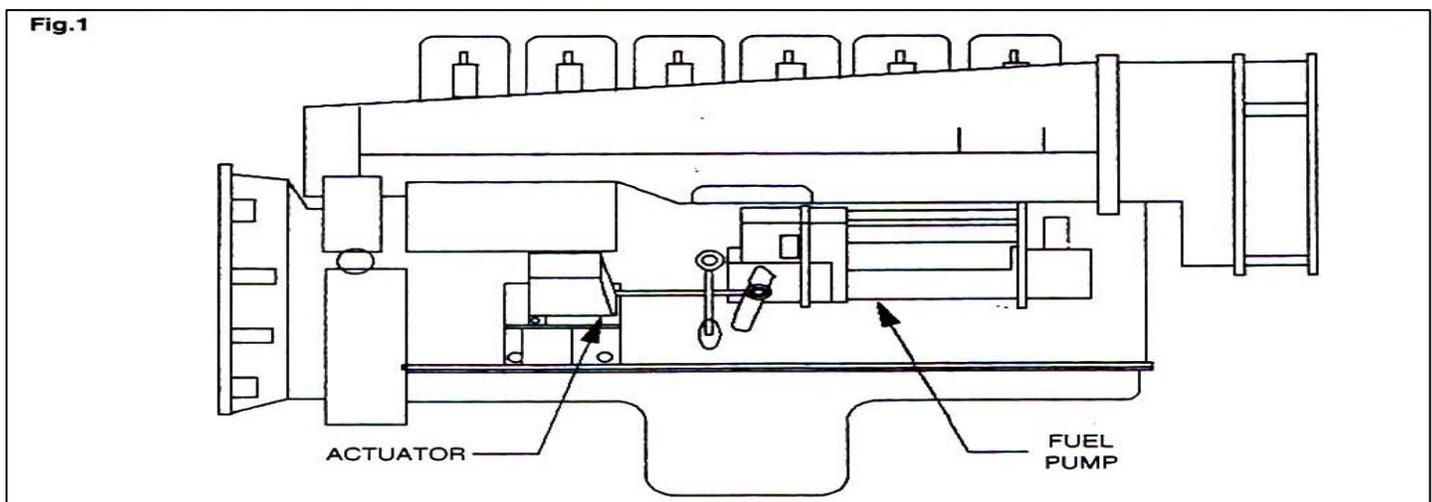
Contact GAC with any further questions or suggestions.

Pre-Installation

Start the engine and adjust the mechanical governor to a speed approximately 10% over the operating speed. Lock the mechanical governor operating lever in place. Stop the engine.

Disconnect the engine battery cables (negative first) to prevent accidental starting.

The electric governor actuator will control the engine through the fuel pump shut off lever. This lever must be on the outboard side. See Fig. 2. If necessary, move the lever. Also remove the shut-off lever return spring.



Actuator Installation

1. Mount the Actuator Bracket onto the engine block behind the fuel pump using three M8x16mm screws, lock washers and flat washers. See figure (2).

2. Install the actuator with its connector pointing up and its label facing the front of the engine. Attach the actuator to the bracket using two 5/16x18x1" bolts, flat washers, lock washers and nuts. Tighten all nuts and bolts.

Actuator Linkage Assembly

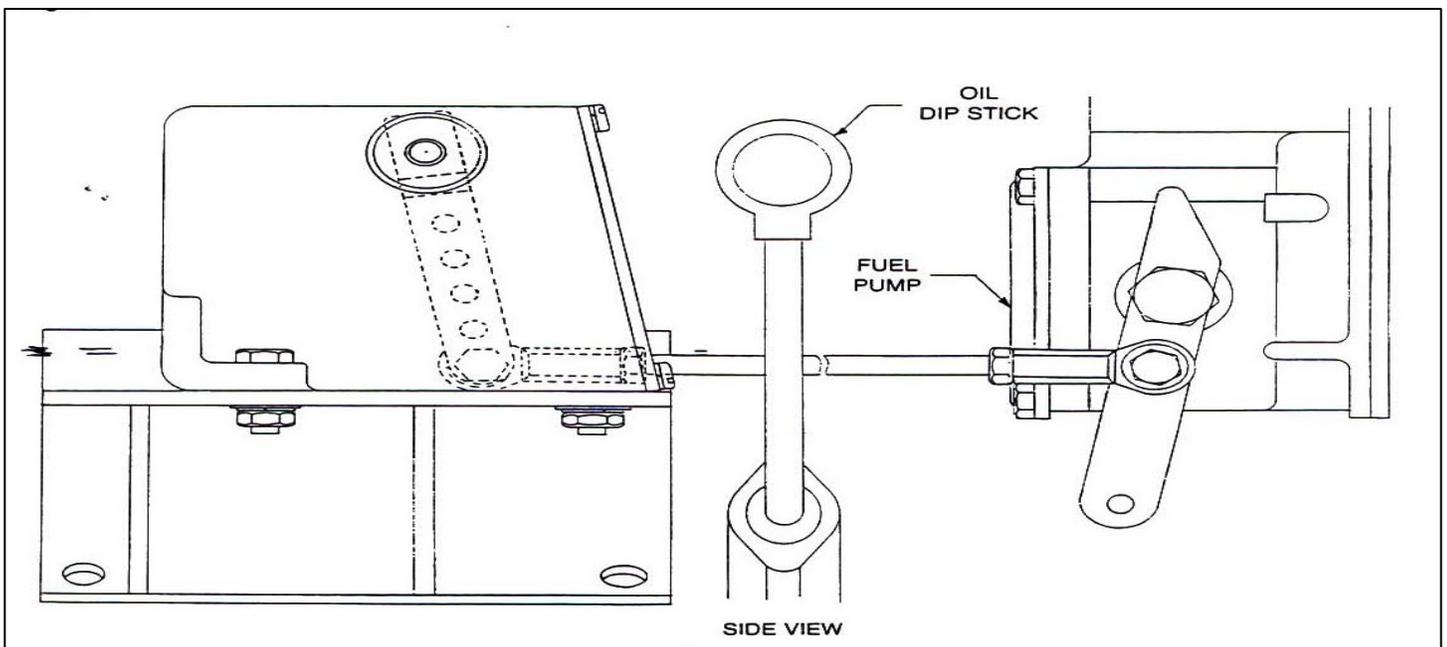
1. Thread a 1/4-20 jam nut and a ball bearing rod end approximately 1/2" onto each end of the linkage rod. Adjust the ball bearing rod ends so the hole centers are parallel to each other and the distance is 9 1/2" center to center.

2. Attach one end of the linkage rod assembly to the outboard side of the fuel pump shut off lever using a 1/2x20x1 1/2" bolt, spacer, flat washer and locking nut. See figure below.

3. Hold the fuel pump shutoff lever toward the front of the engine in the no fuel position. Slide the actuator lever flat side away from the actuator, onto the actuator shaft so that

aligned with the ball bearing rod end. If necessary slightly adjust the length of the linkage. Adjust the lever on the shaft until the linkage is straight. Attach the linkage to the inboard side of the actuator lever with a 1/2x20x1" bolt, flat washer and locking nut.

4. Move the linkage assembly through its full travel. There must be no friction or binding in any position. Push the actuator lever and linkage to the maximum fuel position (toward the rear of the engine) and release. It should snap back to the no fuel position with no binding. Tighten all nuts and bolts.



Speed Control Unit Installation

Mount the Speed Control Unit in the engine control cabinet or engine mounted enclosure.

If water, mist or condensation can come into contact with the controller, it should be mounted vertically.

Extreme heat should be avoided!

Site selection should allow access to the speed control unit adjustments.

The speed control unit case mounting holes can be used as a template for drilling holes.

Magnetic Speed Sensor Installation

1. Remove the plastic plug from the tapped hole in the engine bell housing.

2. If there is no hole, drill and tap the engine bell housing. The hole must be located perpendicular to the crankshaft centerline and centered over the flywheel.

3. Rotate the engine ring gear until a tooth crown is in the center of the tapped hole.

4. Thread the Magnetic Speed Sensor into the tapped hole until it bottoms on the ring gear tooth. Back the sensor out ½ turn and secure the lock nut

Governor System Wiring

See specific Speed Control Unit publication for connection information.

1. Connect the electric actuator harness to the actuator. Cut the harness to length. Attach the solderless spade connectors and attach to the ACTUATOR terminals of the Speed Control Unit.

2. Take and cut the Magnetic Speed Sensor harness to length and connect it to the Speed Control Unit with 2 solderless connectors at the Pick-up terminals.

3. Install wire leads from the battery (-) and (+) to the BATTERY input terminals of the Speed Control Unit using solderless spade connectors. Battery polarity must be observed. Fuse protection on the battery (+) of 15 amps is recommended.

Optional Speed Trim Control

Panel mount and wire the speed trim potentiometer available from GAC. Connect the terminals of the potentiometer to the Speed Control Unit.

Speed Control Unit Adjustment

1. Remove the protective covers over the adjustments on the Speed Control Unit.
2. Check to ensure that the GAIN and STABILITY adjustments are in their mid-positions.
3. If used, set the optional external speed trim control to its mid position

WARNING-An overspeed shutdown device, Independent of the governor system should be used. Equipment damage or personal injury may result due to loss of engine control

4. Start the engine and rotate the engine SPEED adjustment to the desired engine speed (this is a 25 turn potentiometer). Clockwise adjustment increases engine speed.

Governor Performance Adjustments

1. Rotate the Gain adjustment clockwise until instability develops. Gradually move the adjustment counter clockwise until stability returns. Move the adjustment 1/8 of a turn further counter clockwise to insure stable performance.
2. Rotate the STABILITY adjustment clockwise until instability develops. Gradually move the adjustment counter clockwise until stability returns. Move the adjustment 1/8 of a turn further counter clockwise to insure stable performance.
3. Gain and stability adjustments may require minor changes after engine load is applied. Normally adjustments made under no load conditions achieve satisfactory performance.

A strip chart recorder can be used to further optimize the adjustments.

If instability cannot be eliminated, or further performance improvements are required, refer to the Trouble Shooting Sections of the Speed Control Unit or Actuator publications.

4. Apply full load to the generator set. If it will not carry full load, stop the engine and shorten the linkage rod by turning the ball bearing rod ends in. Repeat the load test. It may be necessary to back out the maximum fuel stop screw on the operating and/or the shut off levers until full load is reached.

Parts for Complete Set-up		
ITEM	DESCRIPTION	QUANTITY
KT133	Installation Kit	1
ADC225S-12 or 24	Electronic Actuator	1
ESD5500E	Controller	1
MSP675	Mag-Pick-up	1
Options		
TP501	5K-1 Turn Potentiometer	1
EEG6500	Digital Controller Replacement for the ESD5500E	1

KT133 Governor System Installation Kit Parts List		
ITEM	DESCRIPTION	QUANTITY
1	Actuator Bracket	1
2	M8x1.25x16mm Bolt	3
3	M8 Lock Washer	3
4	M8 Flat Washer	3
5	5/16-18x1.25" Bolt	2
6	5/16" Flat Washer	2
7	5/16" Lock Washer	2
8	5/16x18 Nut	2
9	1/4-28x8-1/4" Linkage Rod	1
10	1/4-28 Nut	2
11	1/4-20x1-1/2" Bolt	1
12	1/2" Spacer	1
13	Ball Bearing Rod End	2
14	1/4-20x1" Bolt	2
15	1/4-20 Flat Washer	2
16	1/4-20 Locking Nut	2
17	Solderless Splice Connector	1
18	Solderless Spade Connector	2



