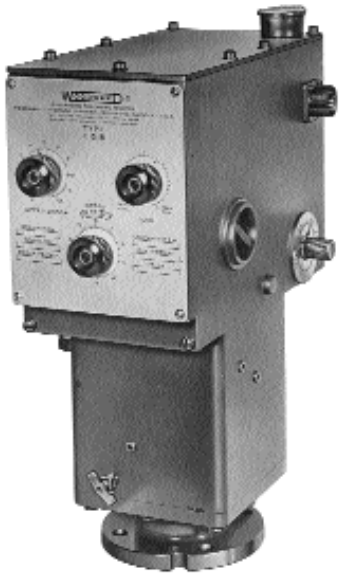
EGB-10P/EGB-13P/EGB-35P

Governor/Actuator

Applications



The EGB-10P, -13P, or -35P Governor/Actuator is used with Woodward analog or digital electronic controls that provide a proportional 20–160 mA signal to control dual fuel, diesel, and gasoline engines, and gas and steam turbines driving electrical or mechanical loads. The governor/actuator provides 14, 18, or 47 N·m (10, 13, or 35 lb-ft work capacity to position fuel racks or linkage.

During normal operation, the electronic control and actuator section of the EGB regulates fuel to the prime mover. Upon loss of electronic control signal, the standard EGB is adjusted to cause prime mover shutdown. An electronic, pneumatic, or manual starting device is then used to allow prime mover starting and operation under ballhead control. The ballhead section also regulates fuel if the control fails in such a manner as to call for maximum fuel. The EGB governor/ actuator can also be factory set to give maximum fuel (reverse action) on electronic control signal loss.

The self-contained hydraulic oil supply makes the governor easy to maintain in almost any installation environment.

Description

Under electronic control, speed and droop adjustments are made to the electronics. Most electronic controls provide features for isochronous load sharing between engines. The electronics must be able to function in droop mode for units that are paralleled with an infinite bus or to dissimilar governors.

The ballhead portion of the EGB governor/actuator can be operated isochronously or with droop for single-unit or parallel applications. A knob provides droop adjustment for the ballhead governor in parallel applications. The load-limit control knob is used to adjust the maximum output position of the governor/actuator.

- Electronic hydraulic actuator
- Backup ballhead governor
- Single or parallel operation in droop or isochronous modes
- External droop and load limit adjustments
- Self-contained oil supply
- Output depends on pump pressure

Output

	Useful Work	Max Work	Stalled Torque	Oil Pump
EGB-10P	10.2 N·m 7.5 lb-ft	14 N·m 10 lb-ft	18 N·m 13 lb-ft	690 kPa 100 psi
EGB-13P	12.9 N·m 9.5 lb-ft	18 N·m 13 lb-ft	23 N·m 17 lb-ft	896 kPa 130 psi
EGB-35P	35 N·m 26 lb-ft	47 N·m 35 lb-ft	61.7 N·m 45.5 lb-ft	2413 kPa 350 psi

Options

Ballhead Assemblies Standard—solid; Optional—spring driven-oil damped. Available in undamped natural frequencies of 0, 180, 290, 400 and 550 cpm.

Solenoid Shutdown Valve Can be used for prime mover shutdown. Energize or de-energize to shutdown versions are available.

Speed Adjusting Motor Permits remote, electric speed adjustment of the ballhead governor. The motor is series wound, split field, and available in most standard voltages. Optional switch contacts are useful for maximum and minimum indicator lights and/or motor limit switches.

Oil Heat Exchanger Used with the EGB-35P, and is used with EGB-10P and EGB-13P if high ambient temperatures or high drive speed cause oil operating temperatures greater than the oil manufacturer's temperature recommendation. An oil cooler is generally recommended if drive speed exceeds 1200 rpm.

Starting Devices A pneumatic or manually operated plunger lowers the actuator pilot valve. Oil pressure generated at cranking speed is allowed to move the terminal shaft in the increase direction, so the prime mover can start. The pneumatic device is designed for use with 690–1655 kPa (100–240 psi) supply.

Specifications

Terminal Shaft

Serration .750-48 SAE serration, one missing tooth. Shaft may extend from either side or both sides of the column.

Travel 45° maximum travel. Use about 27° travel between no load and full fuel. Relationship between engine torque output and terminal shaft travel must be nearly linear.

Hydraulic System

Sump Capacity 1.4 L (1.5 qt) petroleum-based lubricating oil. Most synthetic oils are acceptable. Contact Woodward if in doubt. 100–300 SUS (20–65 CST) at operating temperature is recommended.

Operating Temperature –29 to +93 °C (–20 to +200 °F)

Transducer Coil Normal operating signal: 20–160 mA; max. allowable: 400 mA

Control Characteristics

Steady State Speed Band ±0.25% of rated speed

Droop (in Ballhead Section) Adjustable between 0% and 12% through the full 45 degrees of terminal shaft travel

Governor Drive

Rotation Clockwise, counterclockwise, or both

Drive Speed 900–1100 rpm recommended

Operating Speed Range 300–1200 rpm (High drive speed may require an oil cooler.)

Physical Specifications

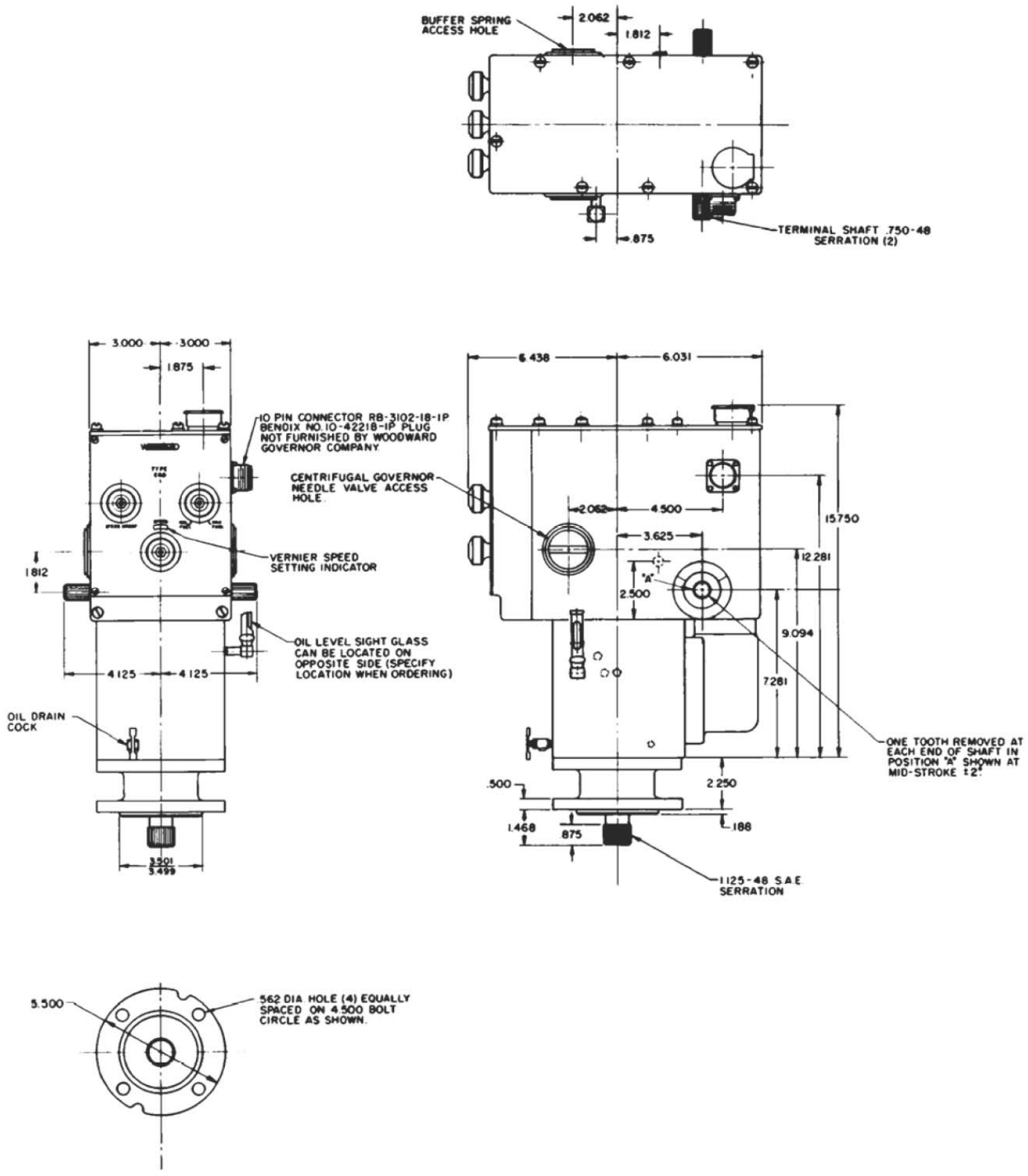
Construction Case and base are cast iron, column is cast aluminum

Weight 45–52 kg (100–115 lb), depending on options

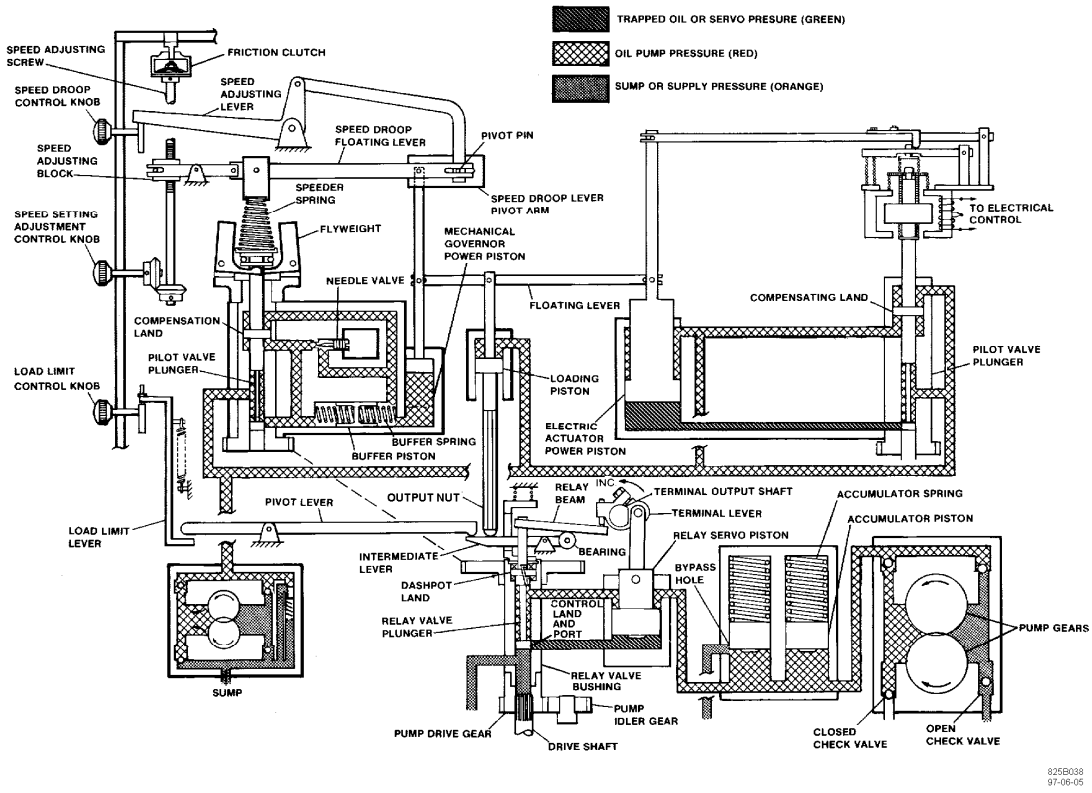
Installation Attitude Vertical

Mounting Base and Drive Shaft

Standard PG base assembly with 1.125-48 serrated drive shaft
PG-UG8 and PG-UG8-90° with a .188 x .094 keyway or .625-36 serrated drive shaft
PG extended square base assembly with .188 x .094 keyway
PG-UG40 base assembly with 1.125-48 serration or .188 x .094 keyway



EGB-10P Outline Drawing



EGB Schematic Diagram

References

Manual	**Title**
82340	*EGB-10P, 13P, and 35 P Governor/Actuator*
37712	*EGB-35 and EGB-50 Governor/Actuator*
36693	*PG Base Assemblies*
36641	*Governor Oil Heat Exchanger*

Product Specification	**Title**
82390	*2301A Load Sharing and Speed Control*
82021	*2301A Speed Control*

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