

PG-PL Governor

APPLICATIONS

The PG-PL Governor is widely used for controlling speed for all types of diesel or gas engines and steam turbines, driving pumps and compressors.

STANDARD FEATURES

An internal oil pump, relief-valve, and accumulator system controls governor operating pressure. A self-contained sump stores oil and reduces contamination from outside sources.

Oil flow to and from the governor cylinder assembly is controlled by a centrifugal flyweight-head and pilot-valve assembly. A power cylinder (servomotor) positions the fuel racks, fuel valve or steam valve of the engine or turbine.

A pneumatic (direct or reverse) operated bellows-type mechanism sets governor speed. A knob on the governor provides a means of manual speed adjustment. Governor stability is provided by an adjustable needle valve and spring-loaded buffer compensation system.

OPTIONAL FEATURES

An oil cooler is recommended when governor oil temperature exceeds 210 °F or governor drive shaft speed exceeds 1200 rpm on diesel or gas engines, or 1100 rpm on steam turbines.

When engines are shut down for long periods of time in cold weather, an electric heater is available to maintain governor temperature and prevent start-up delays.

Air, oil, or water shutdown devices, either high or low pressure, are available for engine protection. An energize or de-energize solenoid shutdown device is also available.



For quick starts, a booster servomotor is available to supply immediate oil pressure to the governor. This conserves engine starting air.

Preloaded buffer springs are available for governors used on gas engines and on some engines driving reciprocating pumps.

Various base and power cylinder assemblies are available to conform to engine or turbine manufacturer's specifications.

Power servos may be mounted integrally on the governor with the terminal shaft in either the 3, 6, 9, or 12 o'clock positions. Power servos also may be mounted remotely from the governor. However, rotary power servos mount vertically only.

- Isochronous Control
- Pressure Compensated
- 12 to 58 Ft-Lb Output Capacities
- Remote Power Servos
- Pneumatic or Manual Speed Setting
- Rotary or Linear Output
- Self-Contained Sump

SPECIFICATIONS

SPEED SETTING

ManualControl knob on governor.
 PneumaticDirect or reverse. With 3 psi minimum and 100 psi maximum control air pressure. Ratio of max. to min. air control signal pressure must be greater than 2.5 to 1, but less than 10 to 1. Typical pneumatic ranges are 3 to 15 psi and 10 to 60 psi. 0.25 inches SAE air connection.

BELLOWS SELECTIONS (FOR PNEUMATIC SPEED SETTING)

BELLOWS	0.62 IN2	0.3 IN2	0.12 IN2
Max signal PSIG	20	20 to 50	50 to 120
Min signal PSIG	3	7	10

GOVERNOR DRIVE

Input ShaftKeyed or 1.125" - 48 serrated.
 Recommended Speed Range250 rpm minimum to 1000 rpm maximum. Speeds in excess of 1000 rpm are available but require single direction rotation. Oil coolers may also be required. Please consult Woodward Governor Company.
 Maximum Speed RangeThe absolute minimum speed is 200 rpm. The absolute maximum speed is 1600 rpm.
 Horsepower Requirement0.5 horsepower, typical maximum.
 RotationFixed cw, fixed ccw, or reversible.

OUTPUT

Power Cylinder Type and Travel

Linear with 1-inch maximum travel or rotary with 30 degrees maximum travel. When making connection to engine or turbine linkage, use 2/3 of the available governor terminal shaft travel between no load and full load. Split overtravel at each end so that the governor can shut down the prime mover and also give maximum fuel when required.

Maximum (stalled) Work Capacity

Governor Operating Oil Pressure (PSI) Servo	Work Capacities in Ft-Lb	
	12 ft-lb Servo	29 ft-lb Servo
100 (std.)	12	29
200	24	58

Useable WorkStandard governors, 8 ft-lbs or 2/3 of maximum work

PILOT VALVE

Plunger Movement.....Balanced between ballhead centrifugal force and speeder-spring force.
 BushingRotated integrally with governor drive shaft.
 Porting4 round or 3 slotted.

CONTROL CHARACTERISTICS

Steady State Speed Band±0.25% of rated speed (under normal operating conditions).
 Ballhead AssembliesSolid or spring driven oil damped.
 Operating TemperatureContinuous operating temperature is 140 °F to 200 °F. Consult Woodward beyond these limits. Hydraulic pour point must be below lowest expected starting temperature.

HYDRAULIC SYSTEM

Oil	SAE 10 to 50 oil depending on temperature.
Viscosity	100 to 300 SUS under normal operating conditions.
Self-Contained Sump Capacity	Approximately 1 1/2 quarts.
Relief Valves	100 to 200 psi.
Operating Pressure	100 psi normal, 200 psi optional.

CONSTRUCTION

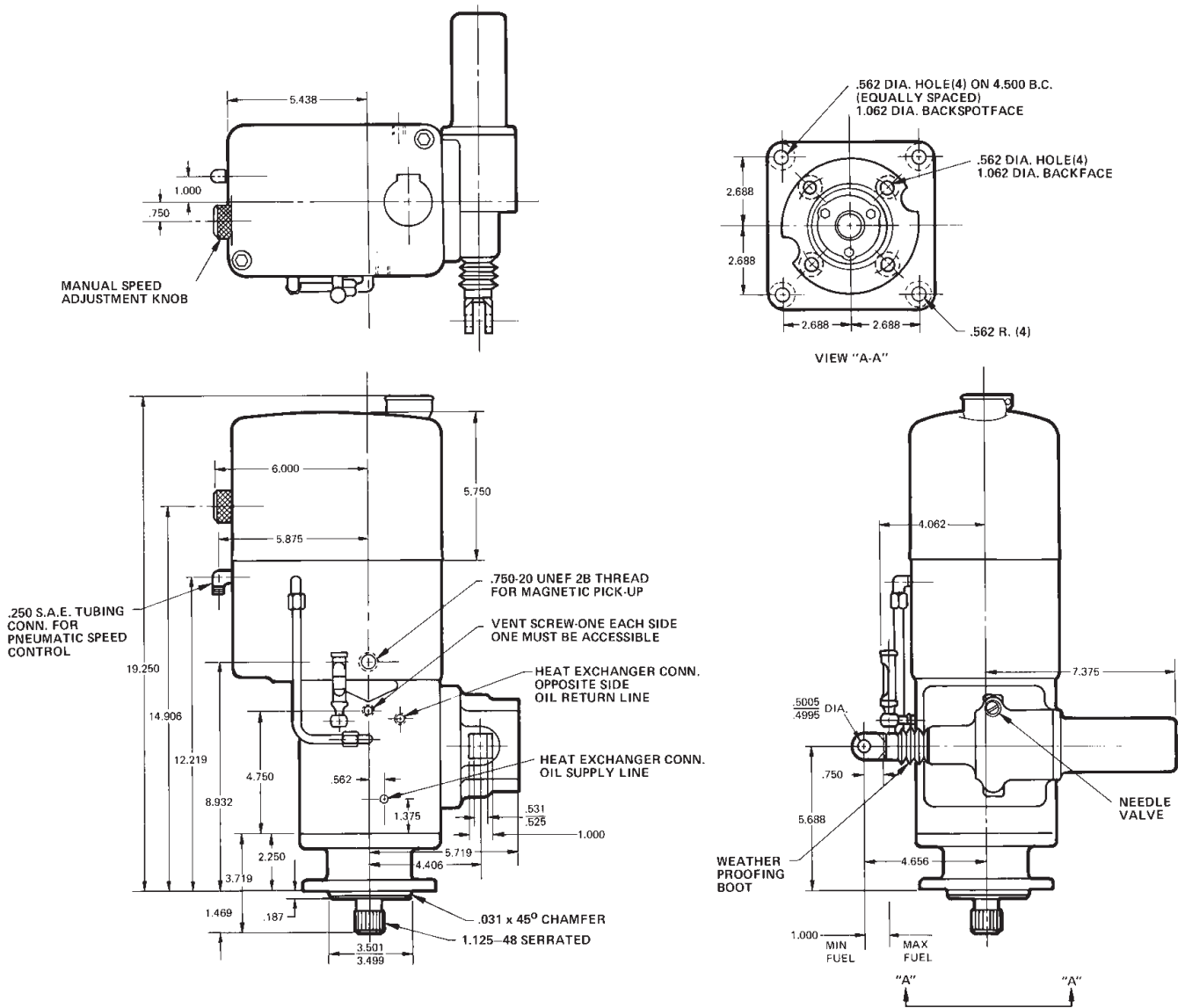
Weight	Approximately 80 lbs.
Case and Base	Cast iron.
Column	Cast aluminum.

MOUNTING

Configuration	Vertical.
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REFERENCES

Manual	36694 PG-PL Governors.
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OUTLINE DRAWING, PG-PL GOVERNOR
(SHOWN WITH 12 FT-LB LINEAR SERVO-HORIZONTAL)

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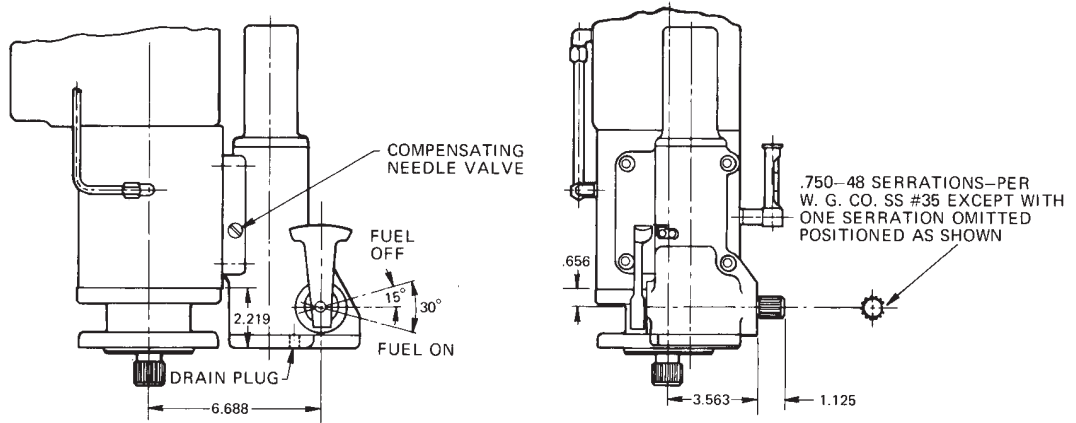


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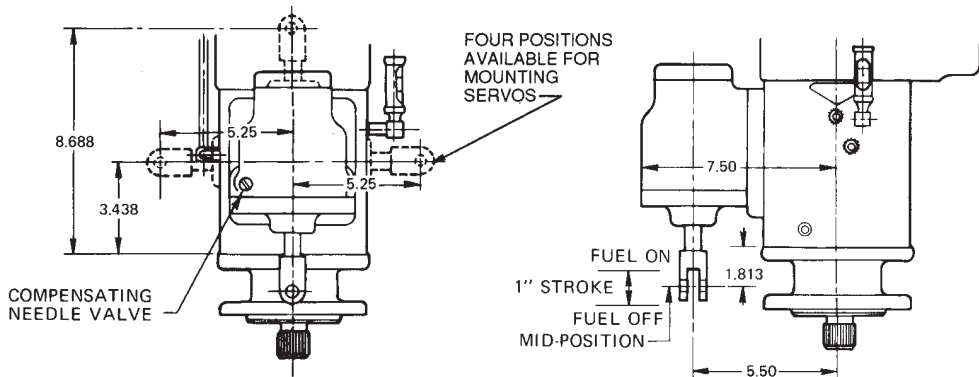
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12 Ft-Lb Spring Loaded Rotary Power Servo



**29/58 FT-LB DIFFERENTIAL POWER SERVO (LINEAR OUTPUT)
 (DO NOT USE FOR CONSTRUCTION)**

For more information contact: