

# PGA Governor

## Pressure Compensated Mechanical Governor



### Bellows Selection

Bellows	0.62 in <sup>2</sup>	0.3 in <sup>2</sup>	0.12 in <sup>2</sup>
Max signal PSIG	20	20 - 50	50 - 120
Min signal PSIG	63	7	10

### DESCRIPTION

The PGA is a pressure compensated, hydraulic governor that uses an air signal to establish the engine speed setting of the governor.

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

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

A pneumatic signal operates a bellows (direct or reverse) to change the engine speed setting of the governor. Manual speed adjustment may be made with a knob on the governor. An adjustable compensation system provides stability.

### OPTIONAL FEATURES

Optional features are used to adapt the PGA governor to most operating conditions and to control loads according to operating conditions.

#### Heat Exchanger

A heat exchanger helps maintain governor temperature below 200 °F. Governor temperature depends on ambient temperature, governor drive speed, operating internal pressure, etc.

### APPLICATION

The PGA Governor controls speed or power output of prime movers used for propulsion, power generators, and propeller pitch on marine applications, locomotive and off-road vehicles.

A wide variety of limiters and other accessories makes the PGA governor extremely versatile. The pneumatic speed reference setting makes the governor economical to install and easy to maintain.

The self-contained hydraulic oil supply makes the governor easily maintained in almost any installation environment.

#### PNEUMATIC SPEED SETTING

Standard system uses 100 psi system. A 200 psi system is optional.

- Isochronous or Droop Control
- 12 to 500 Ft-Lb Output Capacities
- Rotary or Linear Output
- Integral Power Servos
- Pneumatic or Manual Speed Setting
- Self Contained Sump

## Electric Heater

An Electric Heater is used to prevent start-up delays when engines are shut down for long periods in cold weather.

## Shutdown Devices

Lubricating Oil Pressure Failure Shutdown Devices and Air, Oil or Water Shutdown Devices (either high or low pressure) can provide engine protection. An energizer or de-energize Solenoid Shutdown Device is also available.

## Booster Servomotor

A Booster Servomotor, mounted externally, uses start air to supply immediate oil pressure to the governor as an aid for quick starts.

## Starting Fuel Limiter

Limits fuel flow to the engine during starting.

## Air Pressure Fuel Limiter

A Manifold Air Pressure Bias Fuel Limiter for turbo-charged engines limits engine fuel during acceleration as a

function of manifold air pressure. It reduces smoke and improves efficiency during acceleration.

## Load Control

A Load Control system provides a definite fuel or governor output position for each specific governor speed setting and in turn controls the engine hp output. Used in many marine applications.

## Speed Setting Fuel Limiter

A Speed Setting Fuel Limiter Linkage limits the maximum fuel setting to the engine as a function of governor speed setting.

## Torque Limit Control

Torque Limit Control limits fuel as a function of engine speed. Available in standard and vibration resistant designs.

# SPECIFICATIONS

## SPEED SETTING

Manual .....	control knob on governor.
Pneumatic .....	available in direct or reverse type. 3 psi minimum and 100 psi maximum control air pressure. Ratio of high to low air control signal to be greater than 2.5 to 1 but less than 10 to 1. Typical ranges are 3 to 15 psi and 10 to 60 psi.
Speed Band .....	steady state speed control at 0.25% of rated under normal operating conditions.

## GOVERNOR DRIVE

.....	1.125"-18 serrated or keyed.
Recommended Speed Range .....	250 to 1000 drive rpm. Maximum speed range is 200 to 1600 rpm. Speeds in excess of 1000 rpm require single direction rotation. Oil coolers may be required.
Horsepower .....	0.5 hp typical maximum to turn drive shaft at normal operating speed and temperature.
Direction of rotation .....	fixed cw, fixed ccw, or reversible.

## OUTPUT

Governor .....	output can be located in most configurations.
Linear .....	output of 1" maximum, push or pull to minimum fuel.
Rotary .....	output 30° maximum travel. Use 2/3 of the available governor travel between no load and full load.
Work Capacity .....	rotary output available from 12 to 500 ft-lbs. 200, 300, and 500 ft-lb units have different governor outlines. Linear output available in 12 and 28 ft-lb output only.

## HYDRAULIC SYSTEM

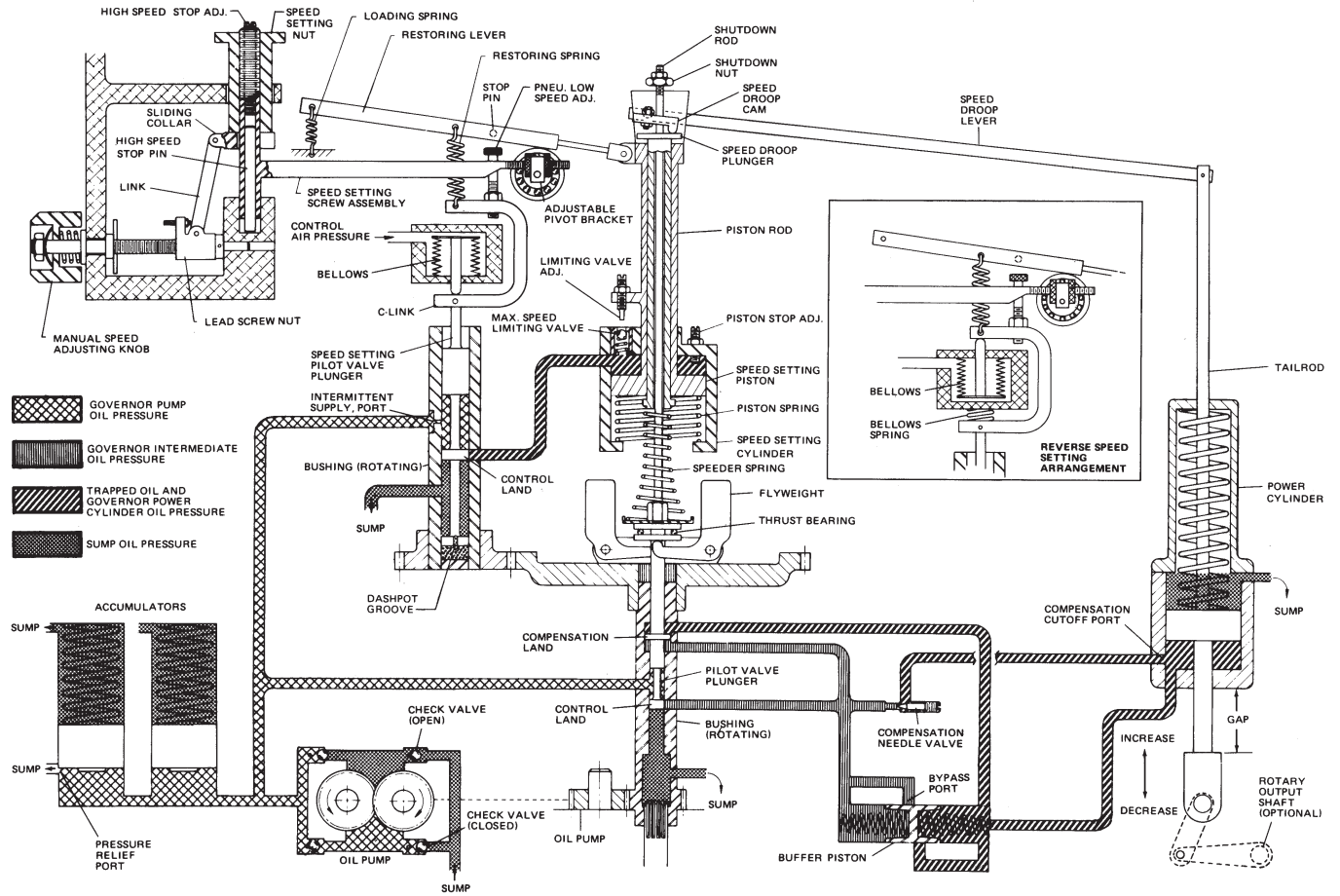
Sump Capacity .....	about 1.5 quarts. Uses SAE 10 to 50 oil, depending on operating temperature. 100 to 200 SUS recommended under normal operating conditions.
Operating Pressure .....	100 psi normal, 200 psi optional.

## CONSTRUCTION

Weight .....	85 to 120 pounds for standard PGA governors, depending on optional features.
Case and Base .....	cast iron, column is aluminum. Special pilot valve porting is available for difficult control conditions.

# REFERENCES

Manuals	Title
36699 .....	PGA Governor manual
36010 .....	PG Governors product specification
36619 .....	PG 200 product specification
36634 .....	PG 500 product specification



36600-B-11

**SCHEMATIC DIAGRAM, PGA GOVERNOR**

3800 N. Wilson Ave.  
 P.O. Box 3800  
 Loveland, CO, U.S.A.  
 80539-3800  
 Ph: 1 970-663-3900  
 Ph: 1 800-835-5182  
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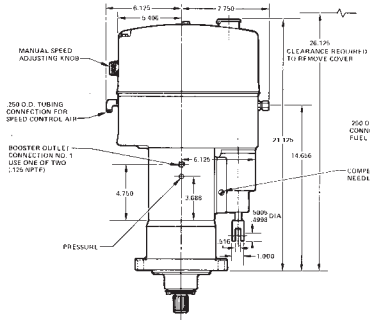
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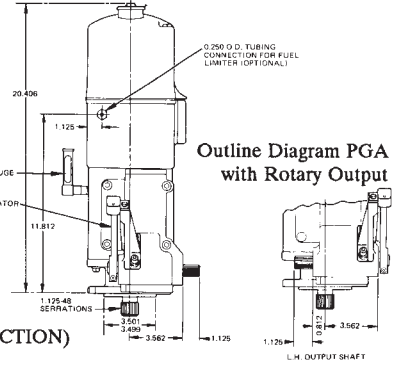
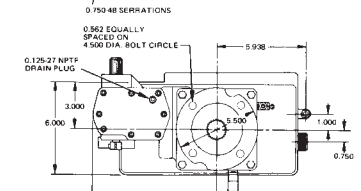
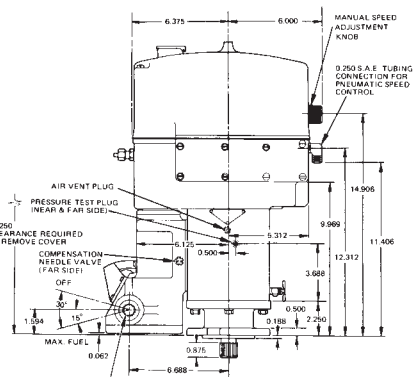
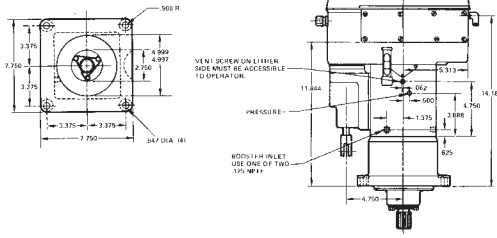
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Outline Diagram PGA with Linear Output



Outline Diagram PGA with Rotary Output

366-560

(DO NOT USE FOR CONSTRUCTION)

## OUTLINE DIAGRAM PGA WITH ROTARY OUTPUT

For more information contact: