

UG Governor

UG-5.7, UG-8, and UG-10 Dial and Lever

Applications

The UG Governor is a mechanical-hydraulic governor for controlling diesel, gas, or dual fuel engines, or steam turbines.

UG-Dial governors are particularly suited for constant speed applications. Knob speed settings make synchronization easy for generator applications. Motor speed setting is available for remote synchronization. Adjustable droop makes load sharing between engines precise.

UG Lever governors are widely used for variable speed control. Remote speed setting can be either mechanical through the speed setting lever or pneumatic with a special speed setting device. Special attachments are available for other applications.

The UG pump is designed for applications which reverse engine rotation.

The governor provides extremely reliable speed control throughout the drive speed and temperature range.

This proven design has been industry standard for many years. World-wide acceptance provides easy service in most engine and governor shops.

Description

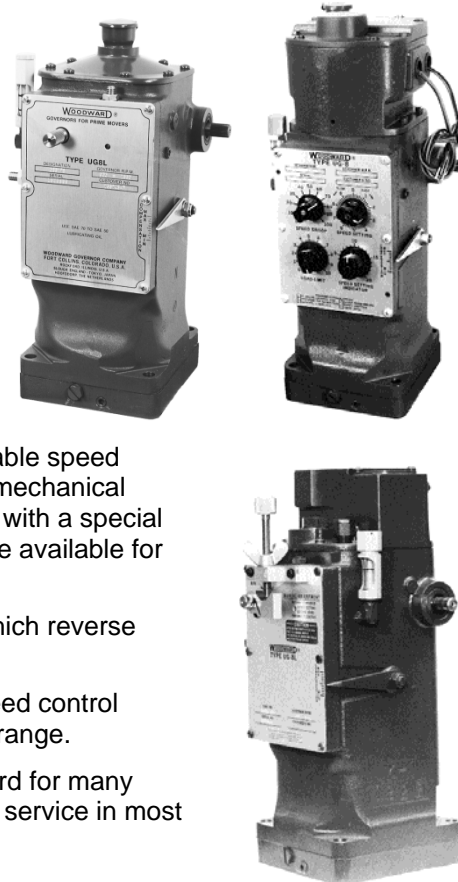
UG Governors (generally known as the "UG-8") are available in either a UG Dial or UG Lever configuration. Each model is available with any of three different work outputs: 7.1, 13.2, and 15.9 N·m (5.2, 9.7, and 11.7 lb-ft).

The UG-5.7 and UG-8 use 827 kPa (120 psi) operating pressure. The UG-5.7 unit has a reduced area servo piston which produces a quicker response to load changes and reduces overshoots at start up and on major load changes.

The UG-10 uses a 1034 kPa (150 psi) internal operating pressure to produce the higher work output.

Dashpot pressure compensation provides governor stability and allows the UG governor to operate in isochronous rather than droop. Droop is available to permit load sharing. A needle valve provides optimum adjustment that exactly matches the governor with a particular engine's dynamics.

The UG governor has an internal oil pump driven from the governor's drive shaft. An arrangement of check valves permits the governor to operate in either direction. Oil pressure is maintained by a relief valve-accumulator system with a drain to an internal oil sump.



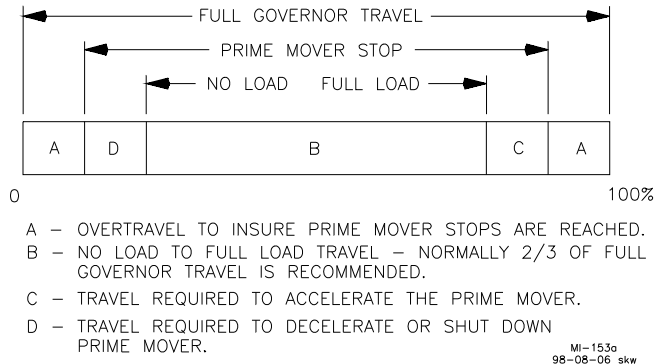
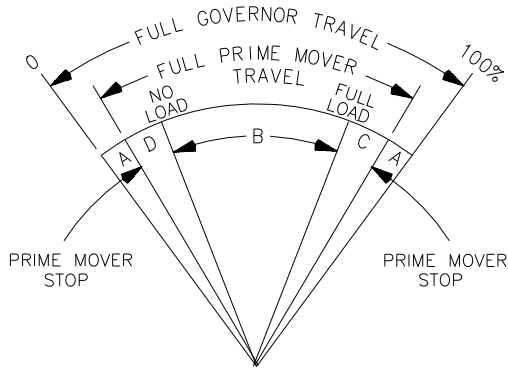
- Isochronous or droop control
- Dashpot/needle valve compensation
- Lever, dial, motor, or pneumatic speed settings
- Damped ballhead
- Self contained oil sump

Specifications

Governor Drive Standard drive is 5/8-36 (inch) serrated
Drive shafts are available with 0.187 inch-wide keyways and threaded castle nut to carry gear

Drive Speeds and Requirements Maximum speed range of 375 to 1500 rpm
Recommended constant speed operating range of 1000 to 1500 rpm
Requires 249 W (1/3 hp) at normal speed and operating temperature
Rotation clockwise or counterclockwise

Work Output 7.1 N·m (5.2 lb-ft) for the UG-5.7
13.2 N·m (9.7 lb-ft) for the UG-8
15.9 N·m (11.7 lb-ft) for the UG-10



Terminal Shaft 12.70 mm (0.500 inch) diameter, SAE-36 serrations. May extend from either or both sides of the governor
Shafts designed for specific applications are available

Linkage The relationship between engine torque output and governor terminal shaft travel should be linear (very important for gas or dual fuel engines)

Steady State Speed Band $\pm 0.25\%$ of rated speed

Variable Speed Range 375 to 1500 rpm

Droop Adjustable on the dial governor from 0 to 12.5% at 1500 rpm and from 0 to 19% at 1000 rpm

Adjustable on the lever governor from 0 to 26.5% at 1500 rpm and from 0 to 40% at 1000 rpm

All droop figures are based on 42° of terminal shaft travel. If less than full shaft travel is utilized, available droop will be decreased by the same percentage as is output shaft travel.

Ballhead/Drive Configuration A spring-driven, oil-damped ballhead and flexible drive is often used to dampen the high-frequency, low-amplitude torsional vibration which may be present in the drive to the governor

Ballheads are also available in undamped natural frequencies of: none, 50, 70, 100, or 150 cpm

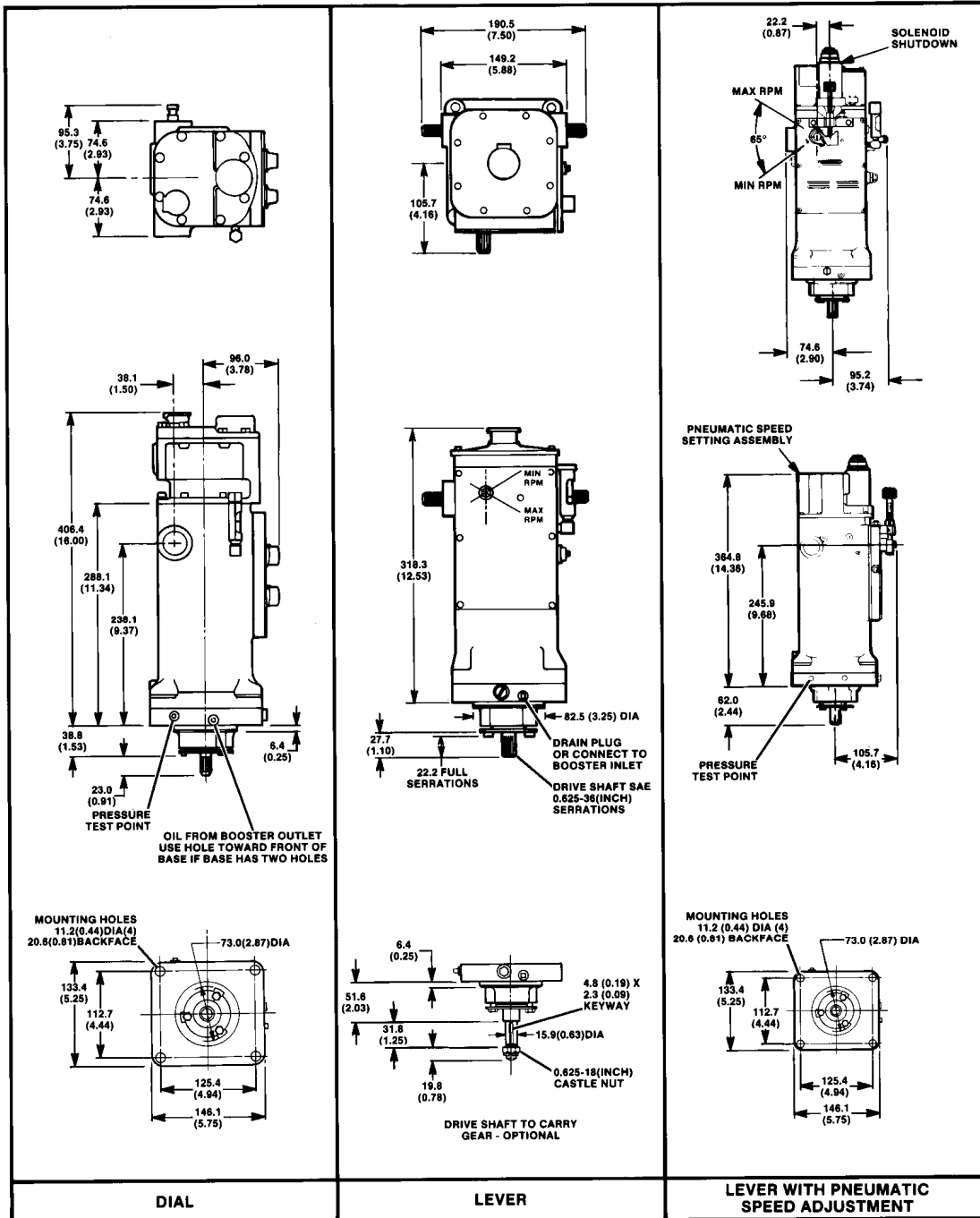
Operating Temperature Gas-fueled engines, particularly those used on gas pipelines, often have not operated at optimum efficiency because automated controls to maintain that peak condition have not been readily available

Pilot Valve Plunger Movement Balanced between ballhead centrifugal force and speeder spring force

Pilot Valve Bushing Rotated as an integral part of governor drive shaft

Pilot Valve Porting A selection of chopper, 2 slotted or 8 round. Chopper gives slow response in acceleration

Oil	Self contained sump 1.9 L (2.0 US quart) capacity SAE 10 to 50 is recommended with a viscosity of 100 to 300 SUS. 15 to 70 CTS
Oil Pressure	758 to 827 kPa (110 to 120 psi) maintained by relief valve-accumulator system. 1034 kPa (150 psi) for the UG-10 governor
Weight (Dial Type)	22 kg (48 lb), 23 kg (50 lb) with synchronizing motor
Weight (Lever Type)	20 kg (45 lb)
Weight (Pneumatic Type)	23 kg (50 lb)
Case, Base, and Cover Construction	Cast iron
Mounting Configuration	Vertical to 45° (dial plate up)
Mounting Studs	7.9 mm (5/16 in.) diameter (4)
Technical Manuals	03040 (Dial) 03036 (Lever) 54042 (Installation)



NOTE: INCHES ARE IN PARENTHESES

UG Governors

03000-B-82

(Do not use for construction)



PO Box 1519, Fort Collins CO, USA 80522-1519
 1000 East Drake Road, Fort Collins CO 80525
 Tel.: +1 (970) 482-5811 • Fax: +1 (970) 498-3058
www.woodward.com

Distributors & Service

Woodward has an international network of distributors and service facilities. For your nearest representative, call the Fort Collins plant or see the Worldwide Directory on our website.

This document is distributed for informational purposes only. It is not to be construed as creating or becoming part of any Woodward contractual or warranty obligation unless expressly stated in a written sales contract.

Copyright © Woodward 1972–2005, All Rights Reserved

For more information contact:

