



**Product Manual 03046**  
**(Revision NEW)**  
Original Instructions

# **Vibration-Resistant Motor Cover for UG Governor**

**Installation and Operation Manual**



### General Precautions

Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment.

Practice all plant and safety instructions and precautions.

Failure to follow instructions can cause personal injury and/or property damage.



### Revisions

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## Warnings and Notices

### Important Definitions



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

- **DANGER**—Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING**—Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION**—Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE**—Indicates a hazard that could result in property damage only (including damage to the control).
- **IMPORTANT**—Designates an operating tip or maintenance suggestion.

#### **WARNING**

**Overspeed /  
Overtemperature /  
Overpressure**

The engine, turbine, or other type of prime mover should be equipped with an overspeed shutdown device to protect against runaway or damage to the prime mover with possible personal injury, loss of life, or property damage.

The overspeed shutdown device must be totally independent of the prime mover control system. An overtemperature or overpressure shutdown device may also be needed for safety, as appropriate.

#### **WARNING**

**Personal Protective  
Equipment**

The products described in this publication may present risks that could lead to personal injury, loss of life, or property damage. Always wear the appropriate personal protective equipment (PPE) for the job at hand. Equipment that should be considered includes but is not limited to:

- Eye Protection
- Hearing Protection
- Hard Hat
- Gloves
- Safety Boots
- Respirator

Always read the proper Material Safety Data Sheet (MSDS) for any working fluid(s) and comply with recommended safety equipment.

#### **WARNING**

**Start-up**

Be prepared to make an emergency shutdown when starting the engine, turbine, or other type of prime mover, to protect against runaway or overspeed with possible personal injury, loss of life, or property damage.

#### **WARNING**

**Automotive  
Applications**

On- and off-highway Mobile Applications: Unless Woodward's control functions as the supervisory control, customer should install a system totally independent of the prime mover control system that monitors for supervisory control of engine (and takes appropriate action if supervisory control is lost) to protect against loss of engine control with possible personal injury, loss of life, or property damage.

**NOTICE****Battery Charging  
Device**

To prevent damage to a control system that uses an alternator or battery-charging device, make sure the charging device is turned off before disconnecting the battery from the system.

## Electrostatic Discharge Awareness

**NOTICE****Electrostatic  
Precautions**

Electronic controls contain static-sensitive parts. Observe the following precautions to prevent damage to these parts:

- Discharge body static before handling the control (with power to the control turned off, contact a grounded surface and maintain contact while handling the control).
- Avoid all plastic, vinyl, and Styrofoam (except antistatic versions) around printed circuit boards.
- Do not touch the components or conductors on a printed circuit board with your hands or with conductive devices.

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual **82715**, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

Follow these precautions when working with or near the control.

1. Avoid the build-up of static electricity on your body by not wearing clothing made of synthetic materials. Wear cotton or cotton-blend materials as much as possible because these do not store static electric charges as much as synthetics.
2. Do not remove the printed circuit board (PCB) from the control cabinet unless absolutely necessary. If you must remove the PCB from the control cabinet, follow these precautions:
  - Do not touch any part of the PCB except the edges.
  - Do not touch the electrical conductors, the connectors, or the components with conductive devices or with your hands.
  - When replacing a PCB, keep the new PCB in the plastic antistatic protective bag it comes in until you are ready to install it. Immediately after removing the old PCB from the control cabinet, place it in the antistatic protective bag.

# Vibration-Resistant Motor Cover for UG Governor

## General Information

The vibration-resistant motor cover for UG governors reduces vibration levels transmitted to the motor assembly. The speed-setting motor is mounted on a plate supported by rubber vibration dampers. Motor covers are available for either the UG-8 type or UG-40 type governor.

Solenoid shutdown devices may be used with special vibration-resistant covers.

The vibration-resistant motor cover is used when excessive vibration causes damage to the speed-setting motor, usually identified by unacceptable wear to internal motor parts. In most instances these installation will also require vibration-resistant parts in the governor.

## Installation

All vibration-resistant-motor covers are designed for replacement of existing covers. Note that additional vertical clearance will be required. See the outline drawings for dimensions (Figures 1 and 2 for UG-8 style, Figure 3 for UG-40 style).

### **IMPORTANT**

Some cover installations will permit installation of the oil gauge only on the right side of the governor.

## Disassembly and Assembly

The following procedure should be followed to disassemble or assemble a vibration-resistant cover. (Parts are identified with reference numbers from Figures 4, 5, 6, and 7.)

### Disassembly

1. Remove the governor cover assembly.
2. Remove the four cotter pins (1, 33, 55, or 74), and take off the four 0.250-28 elastic hex nuts (2, 44, 56, or 71). The elastic hex nuts and the cotter pins should not be reused when assembling a vibration-resistant cover.
3. Remove the four washers (3, 30, 57, or 75) and rubber damping pads (4, 31, 58, or 76).
4. Wiring from the motor must be free from the cover plug before the motor can be removed from the cover. If the wire is freed from the plug instead of the motor, it will be necessary to pull the wire through the rubber grommet to remove the motor. Some covers include a wire strap on the cover which must be removed before the wire can be freed,

5. Remove the motor and bracket assembly. It may be necessary to loosen the four screws attaching the motor to the bracket before the assembly can be removed from the cover. Remove the bracket from the motor, if necessary.
6. Remove the rubber damping pads (4, 31, 58, or 76) from the studs.
7. Remove the spring washer (9, 32, 60, and 73) from the cover.
8. Remove the rests from the four studs in the covers without solenoid shutdowns (6 or 59).
9. Remove the four screws and plate assembly from the covers with solenoid shutdowns. (40 and 46 or 80 and 78.)

**IMPORTANT**

The four studs are pressed into the cover or plate assembly with Loctite. Do not attempt to disassemble. Replacement of any portion of the studs or cover will require a new cover or plate assembly.

## Assembly

Assemble in the opposite order of disassembly.

1. Install the plate assembly on covers with solenoids. Install the rests (6, 59) on the studs of covers without solenoids.
2. Install four rubber damping pads on the four mounting studs.
3. Install the bracket (5, 45, 61, 76) on the motor with screws (19, 43, 65, or 79.)
4. Install the bracket and motor assembly on the studs. The shaft of the motor must go through the spring washer and the center bore position of the cover and through the spring washer. Replace the wiring to the same terminals from which it was removed during disassembly. Replace the wire strap if it was used in the original assembly.
5. Place four more rubber damping pads on top of the motor mounting plate and tighten down with a 0.250-28 elastic hex nut. Torque to 40 lb-in (4.5 N·m). Do not over tighten as this will compress the damping pads. Replace the cotter pins in the installation studs.

**IMPORTANT**

Make sure that the shaft of the speed setting motor is located in the center of the bore in the cover before tightening the elastic lock nuts. If necessary, move the bracket-motor assembly on the studs to center the shaft.

When replacing the cover and motor on the governor, the shaft from the motor must engage the square drive in the speed-setting clutch when installing the cover on the governor.

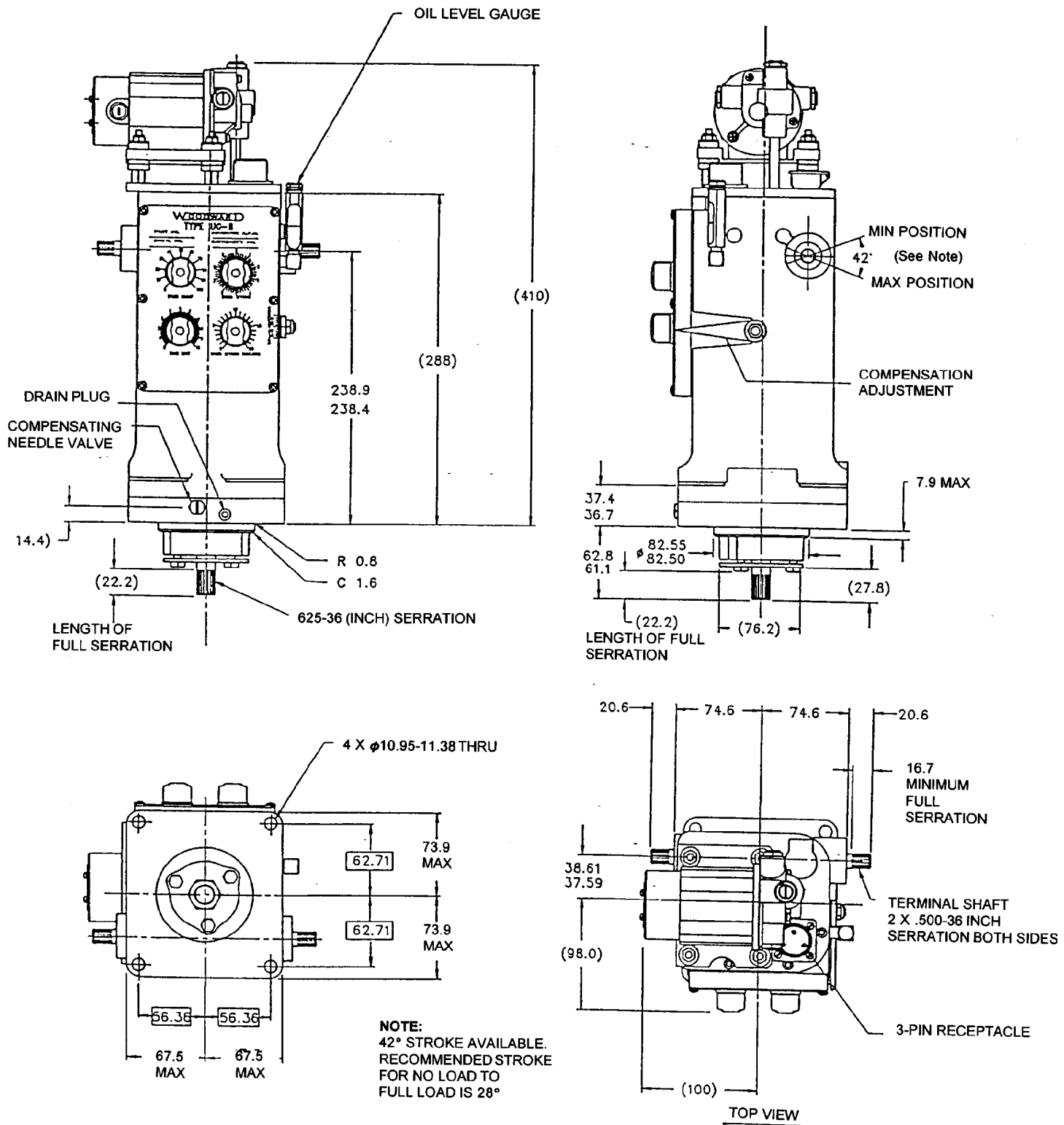


Figure 1. Outline Drawing of UG-8D (5.7 or 12.8) Governor with Vibration-Resistant Motor Cover

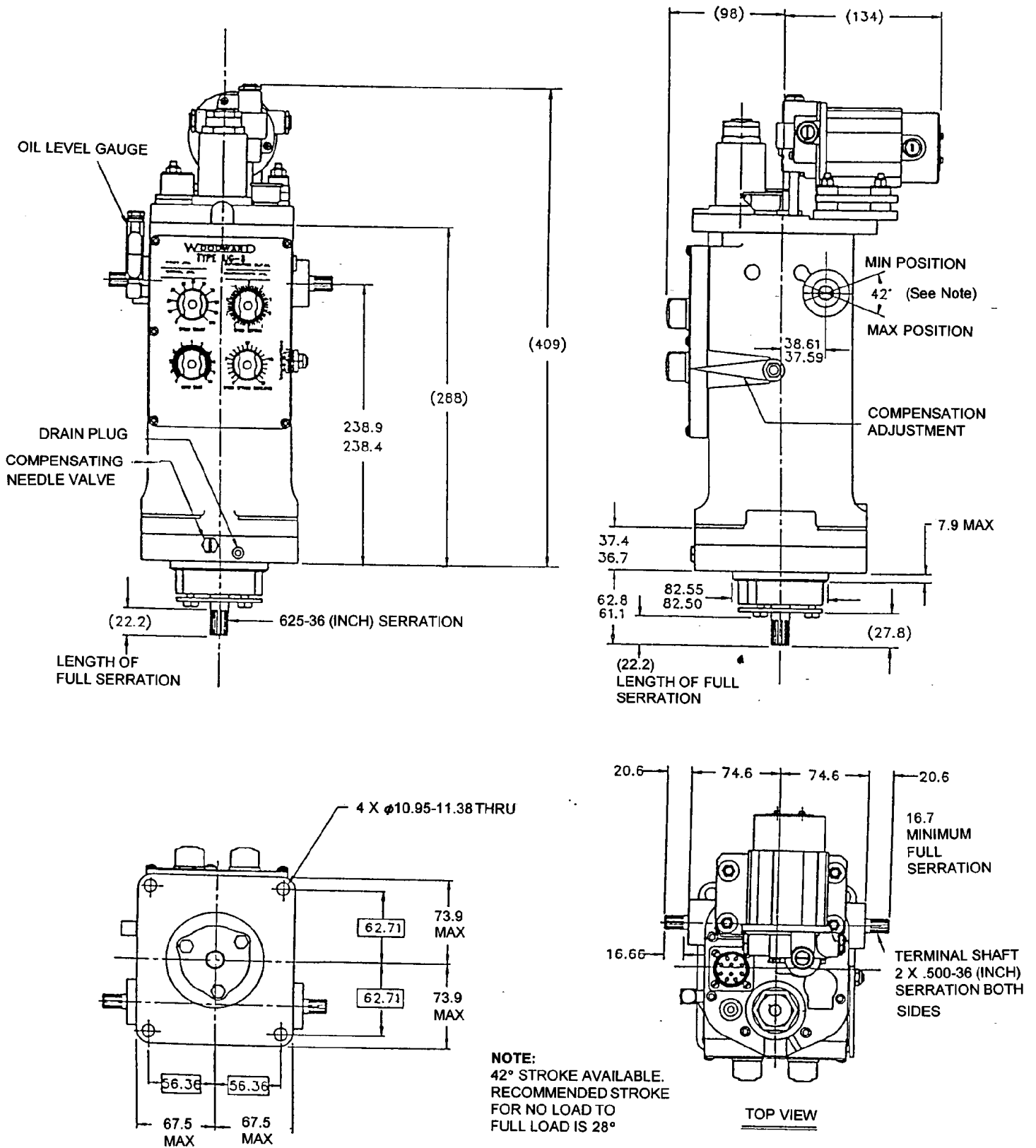


Figure 2. Outline Drawing of UG-8D (5.7 or 12.8) Governor with Vibration-Resistant Motor Cover and Solenoid Shutdown



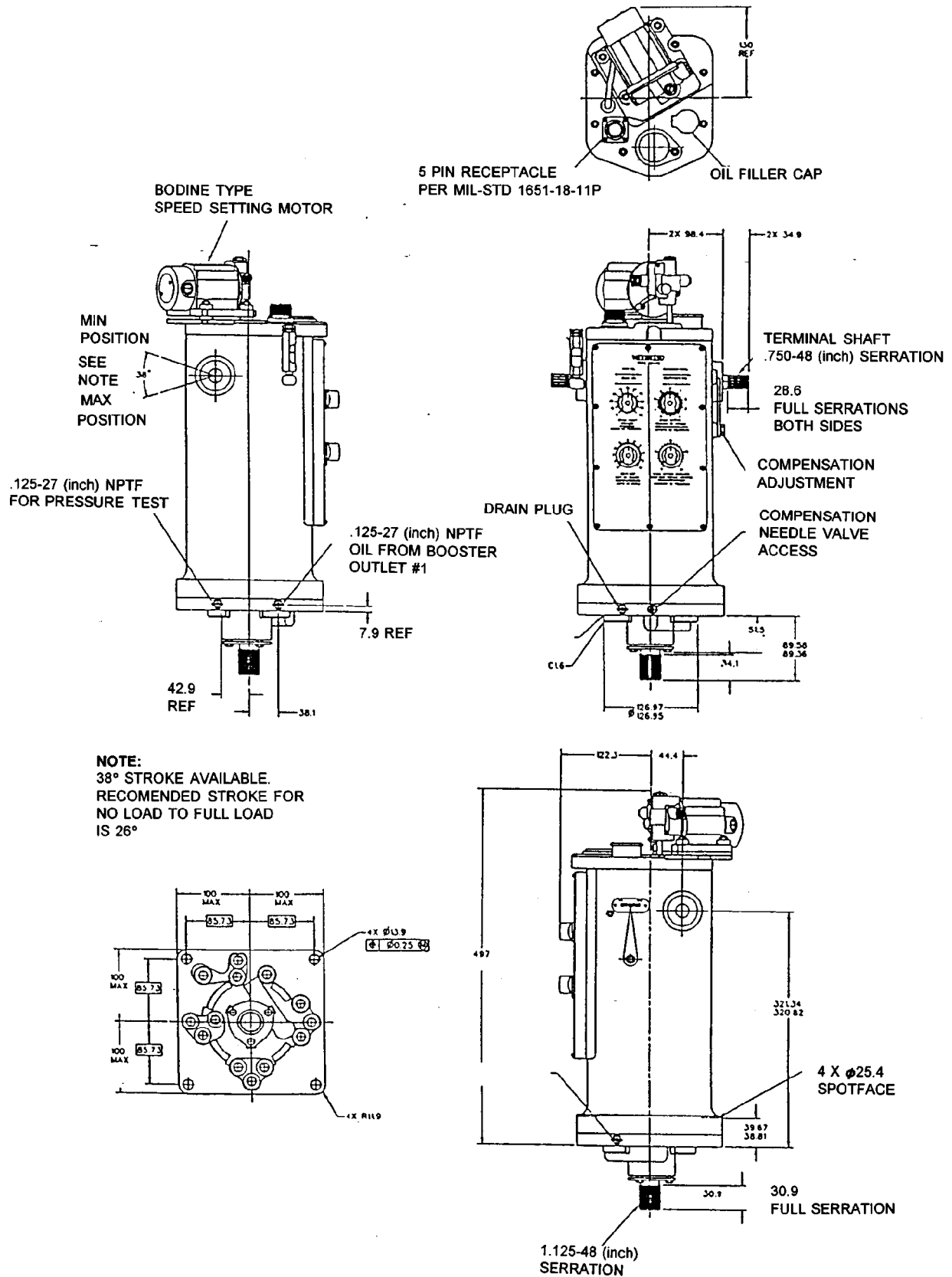


Figure 3. Outline Drawing of UG-40D Governor with Vibration-Resistant Motor Cover

## Replacement Parts Information

When ordering replacement parts, include the following information

- Governor serial number and part number shown on the nameplate
- Manual number (this is manual 03046)
- Part reference number and part name from parts list

Ref. No.	Description .....	Quantity
03046-1	Pin. Cotter, 0.062 x 0.500 long .....	4
03046-2	Nut, 0.250-28. Elastic Hex, thin .....	4
03046-3	Washer, Plain .....	4
03046-4	Pad, Rubber Damping .....	8
03046-5	Bracket, Motor Mounting.....	1
03046-6	Rest, Motor Mounting .....	4
03046-7	Cup. Oil.....	1
03046-8	Cover Assembly, Vibration Resistant.....	1
03046-9	Spring, Motor Seal .....	1
03046-10	Receptacle, 3-Pin .....	1
03046-11	Screw, 4-40 x 0.375 Fil Head.....	4
03046-12	Washer, No. 4 Spring Lock.....	4
03046-13	Washer, No. 10 Spring Lock.....	8
03046-14	Screw, 10-32 x 0.625 Hex Head Cap .....	8
03046-15	Gasket, Connector.....	1
03046-16	Strap. 1 Wire.....	1
03046-17	Screw, 8-32 x 0.312, Lk Ph Pan Hd.....	1
03046-18	Grommet, 0.250 ID Rubber.....	1
03046-19	Screw, 10-32 x 0.375 Ph Flat Hd.....	4

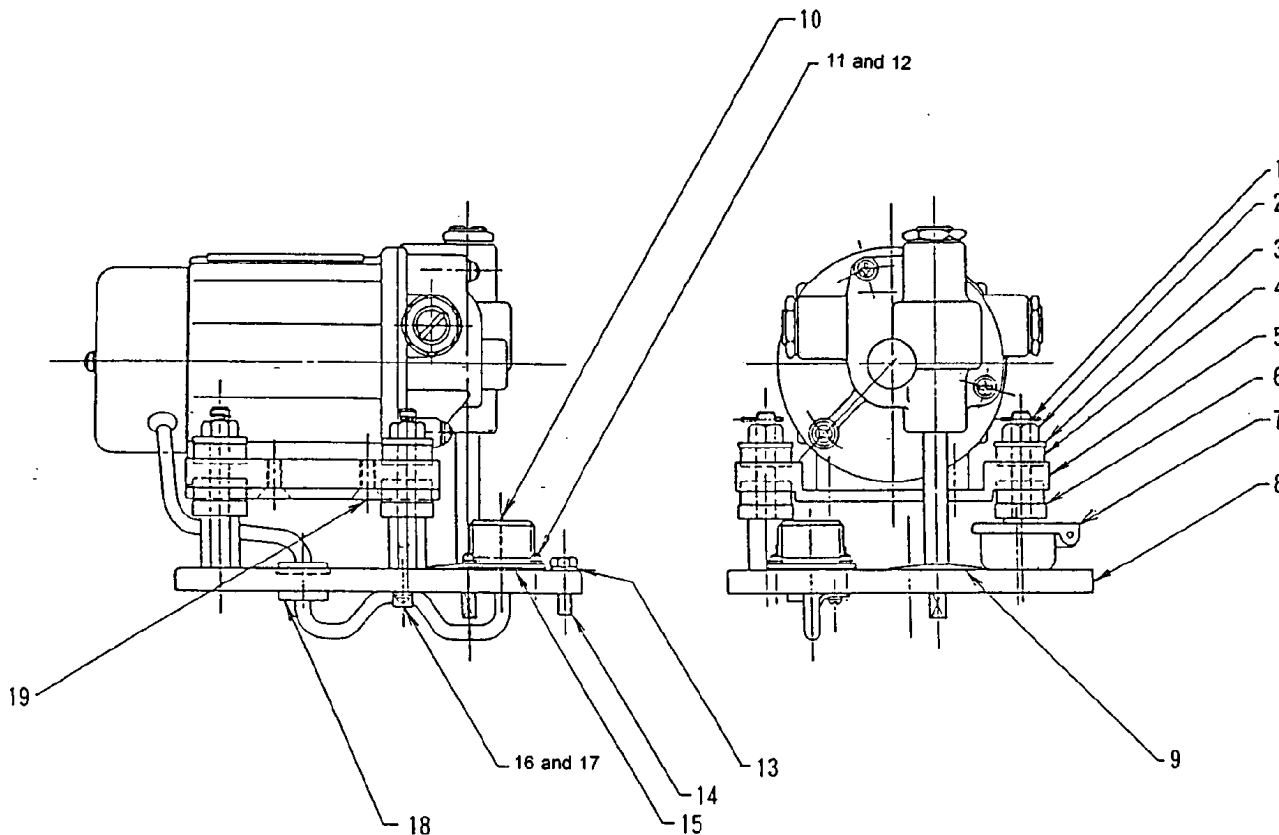


Figure 4. UG-8 Dial (5.7 or 12.8) Vibration-Resistant Motor Cover Assembly 90°  
Motor Mounting

Ref. No.	Description .....	Quantity
03046-25	Cup, Oil .....	1
03046-26	Screw, 10-32 x 0.750 Soc Hd.....	7
03046-27	Washer, No. 10. Spring Lock .....	7
03046-28	Strap, 1 Wire .....	3
03046-29	Screw, 8-32 x 0.312 Lk Ph .....	3
03046-30	Washer, Plain.....	4
03046-31	Pad, Rubber Damping.....	8
03046-32	Spring, Motor Seal .....	1
03046-33	Pin, Cotter, 0.062 x 0.500 Long.....	1
03046-34	Receptacle, 5-Pin.....	1
03046-35	Screw, 4-40 a 0.375, Fit Hd.....	4
03046-36	Washer, No. 4, Spring Lock .....	4
03046-37	Gasket, Receptacle-Governor Cover .....	1
03046-38	Cover .....	1
03046-39	Gasket. UG-8 Governor Cover.....	1
03046-40	Screw, 10-32 a 0.625, Soc Head .....	4
03046-41	Washer, No. 10 Spring Lock .....	4
03046-42	Grommet. 0.250 ID, Rubber .....	1
03046-43	Screw, 10-32 x 0.500 Ph Pan Head.....	4
03046-44	Nut, 0.250-28, Elastic Hex, Thin.....	4
03046-45	Bracket, Motor Mounting .....	1
03046-46	Plate Assembly, Motor Mounting.....	1

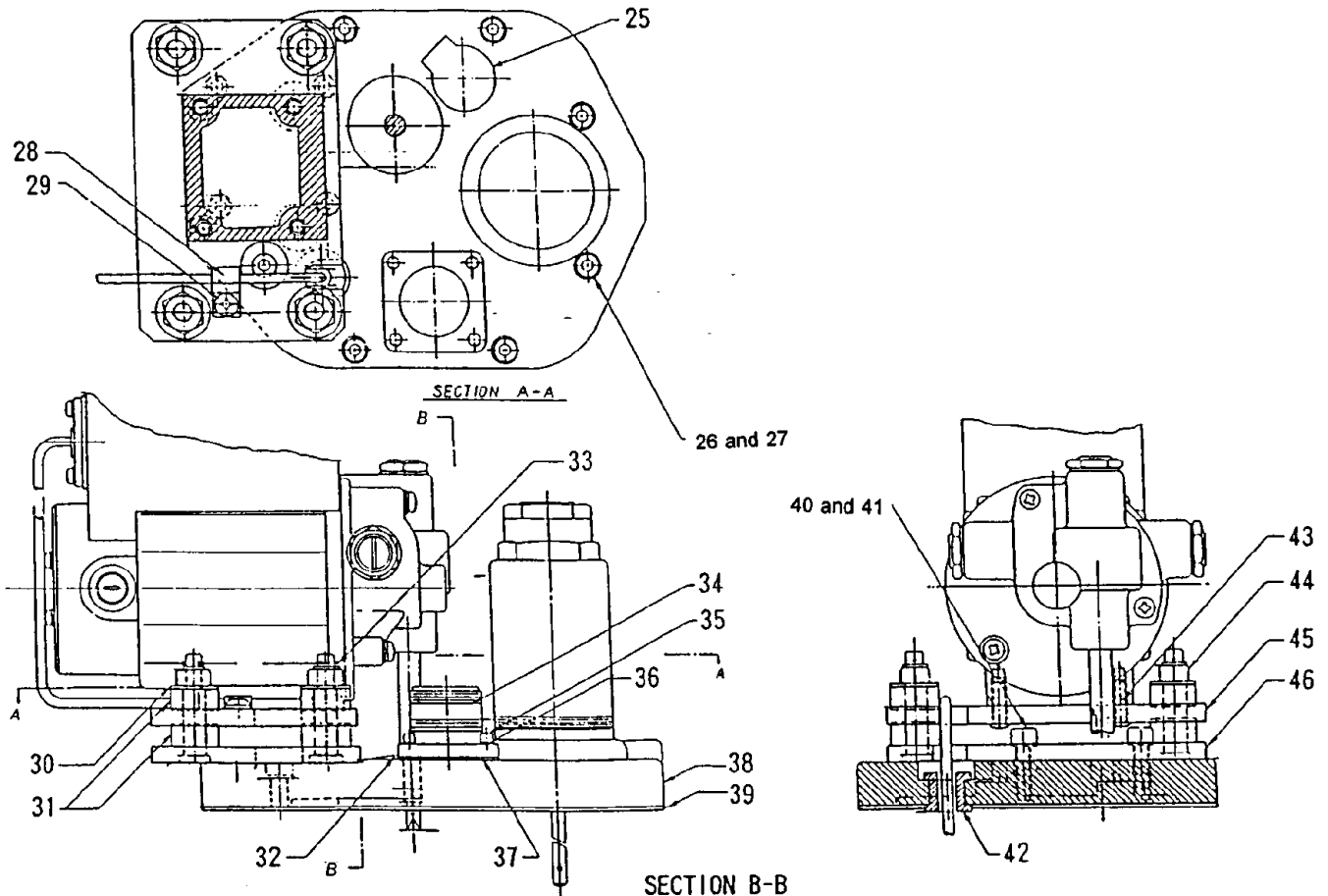


Figure 5. UG-8 Dial (5.7 or 12) with Solenoid Shutdown Vibration-Resistant Motor Cover

Ref. No.	Description .....	Quantity
03046-55	Pin, Cotter, 0.062 x 0.500 Long .....	4
03046-56	Nut, 0.250-21, Elastic Hex, Thin .....	4
03046-57	Washer, Plain .....	4
03046-58	Pad, Rubber Damping .....	8
03046-59	Rest, Motor Mounting .....	4
03046-60	Spring, Motor Seal .....	1
03046-61	Bracket Assembly, Motor Mounting .....	1
03046-62	Cup, Oil.....	1
03046-63	Cover Assembly, Vibration Res., UG-40....	1
03046-64	Screw, 10-32 x 0.375 Ph Flat Hd.....	4

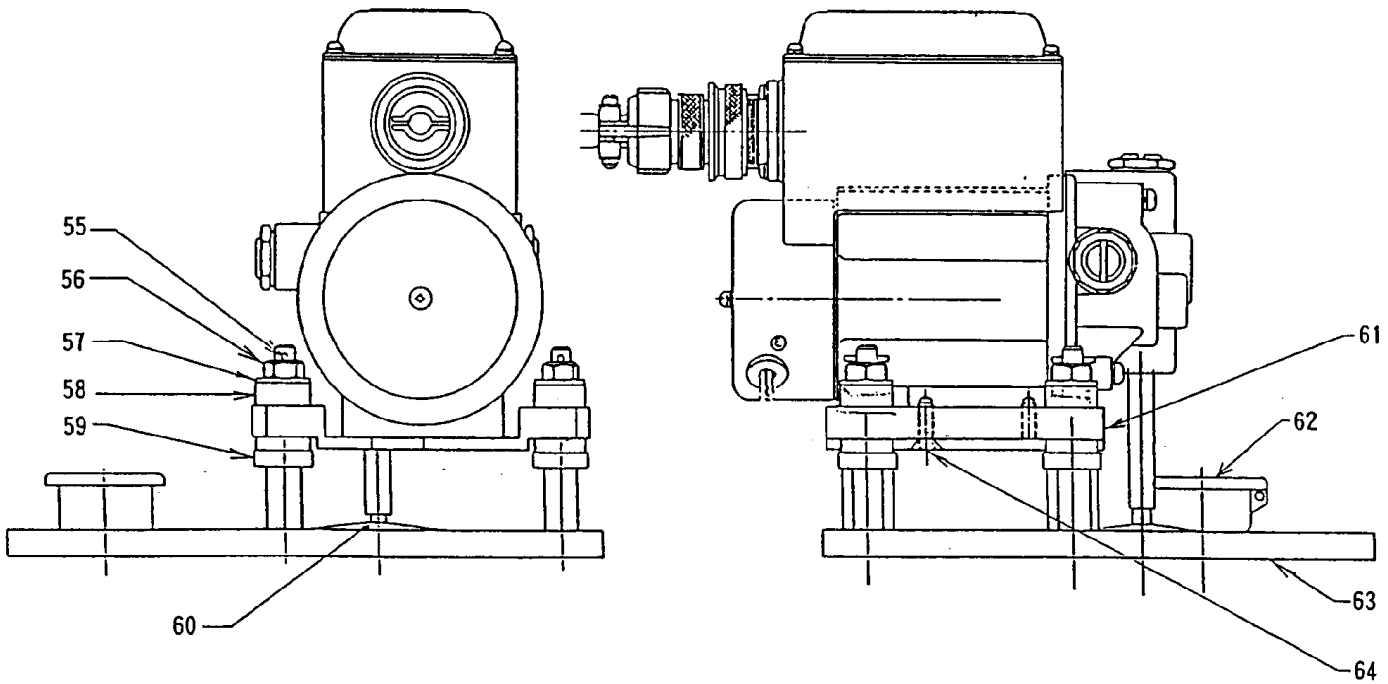


Figure 6. UG-40 Type Vibration-Resistant Motor Cover

Ref. No.	Description .....	Quantity
03046-71	Nut, 0.250-28, Elastic Hex, Thin.....	4
03046-72	Cover Assembly, UG-40, Vibration Res .....	1
03046-73	Spring, Motor Seal .....	1
03046-74	Pin, Cotter, 0.062 x 0.500 Long.....	4
03046-75	Washer, Plain.....	4
03046-76	Pad, Rubber Damping.....	8
03046-77	Bracket, Motor Mounting .....	1
03046-78	Plate Assembly, Motor .....	1
03046-79	Screw, 10-32 x 0.375 Ph Flat Head .....	4
03046-80	Screw, 10-32 x 0.500 Sems, Ph Pan Hd....	5

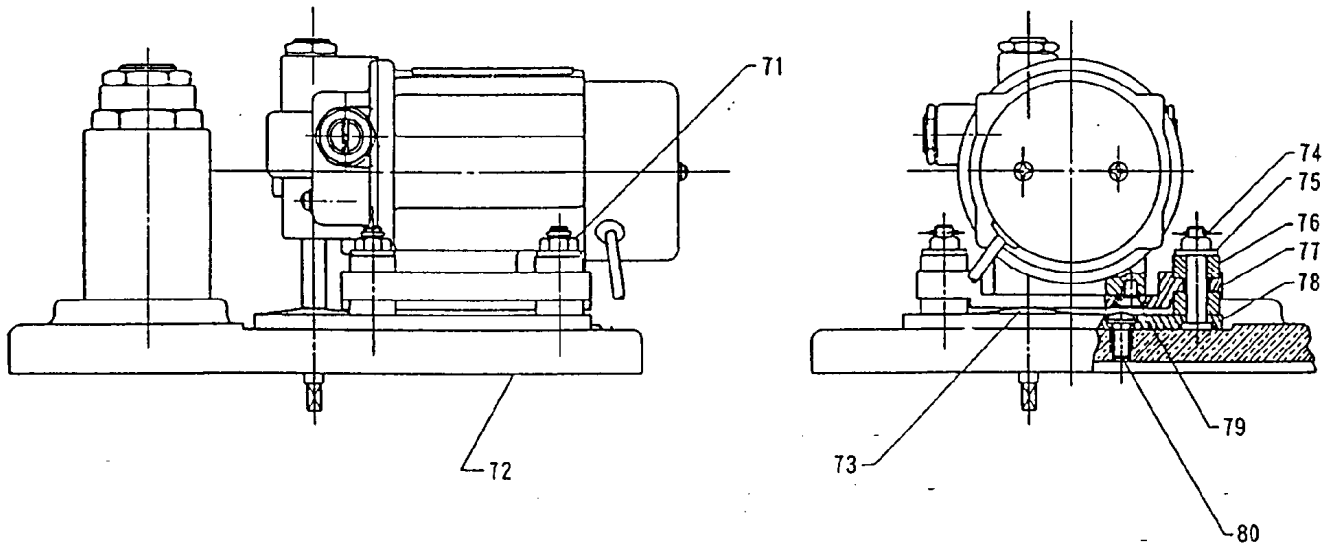


Figure 7. Vibration-Resistant Motor Mounting with Solenoid Shutdown for use on UG-40 Governor

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**Please reference publication 03046.**



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