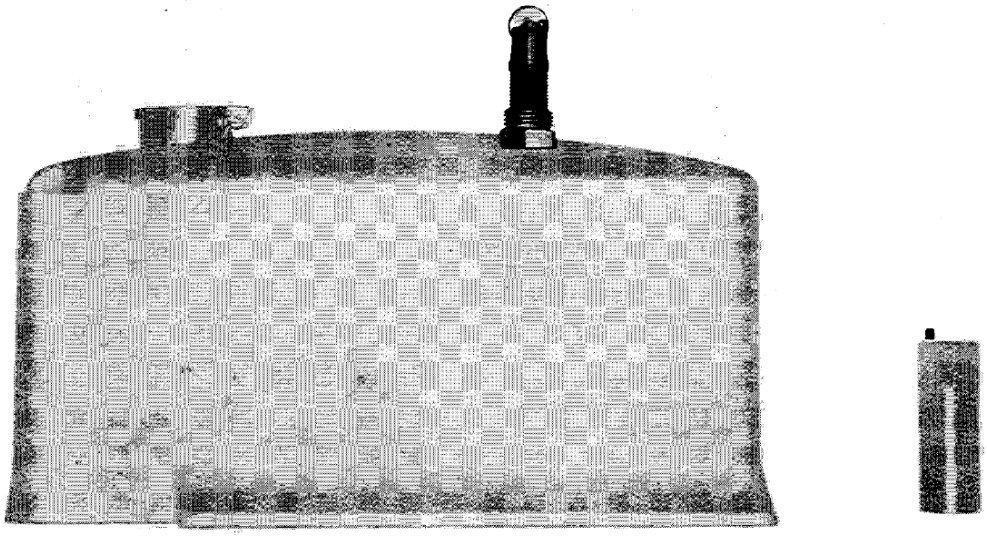
WOODWARD

Product Manual 36697
(Revision NEW)
Original Instructions



Manual Reset Device for De-energized-to-Shutdown Solenoid

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

This publication may have been revised or updated since this copy was produced. To verify that you have the latest revision, check manual *26311* , *Revision Status & Distribution Restrictions of Woodward Technical Publications*, on the *publications page* of the Woodward website:

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Proper Use

Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment. Any such unauthorized modifications: (i) constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and (ii) invalidate product certifications or listings.

Translated Publications

If the cover of this publication states "Translation of the Original Instructions" please note:

The original source of this publication may have been updated since this translation was made. Be sure to check manual *26311* , *Revision Status & Distribution Restrictions of Woodward Technical Publications*, to verify whether this translation is up to date. Out-of-date translations are marked with ⚠. Always compare with the original for technical specifications and for proper and safe installation and operation procedures.

Revisions—Changes in this publication since the last revision are indicated by a black line alongside the text.

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.

Manual Reset Device for De-energized-to-Shutdown Solenoid

Description

The manual reset device in Figure 1 offers a means of resetting the de-energized-to-shutdown mode of shutdown device in PG governors where no electricity is available. This reset device can be installed on the cover of any PG governor which employs a de-energized-to-shutdown mode of shutdown device. The device can also be applied to PG governors which are already equipped with the same type of shutdown device but no external manual resetting device.

Operation

During normal operation (when solenoid is energized), the de-energized-to-shutdown device holds the check ball on the lower seat permitting no oil trapped between the speed setting servo and the speed setting pilot valve to escape to the sump. When the solenoid is de-energized, however, the spring pushes the check ball upward and unseat it to purge the trapped oil. Where no electricity is available, it is impossible to start the engine, as the shutdown device keeps its shutdown position until it is energized. In order to start the engine while electric power is off, it is necessary to reset the check ball on the valve seat to prevent pressure oil from escaping to the sump.

By means of the manual reset device installed on the governor cover, the check ball can be pushed down to close the valve without removing the cover. The manual reset device can be manipulated to engine start position by removing cap (8), placing cup end of pin (4) in the hole in cam (3), and turning the cam slowly by means of the handle to push guide sleeve (7) down until it comes to stop.

By advancing the cam through guide sleeve (7), spring (9), guide pin (15), headed pin (16), adjusting screw (17), and the solenoid plunger rod (18), check ball (19) is pushed onto the valve seat against spring (20) to close the valve, and thus the engine is ready to be start.

In order to reset the de-energized-to-shutdown mode of shutdown device to the normal operating condition, it is necessary to return the cam setting to the original position by means of the handle. Remove and store the handle. Put the cover back on the device.

Installation

Place the cover which is specially designed for mounting the manual reset device on the column.

Energize the solenoid, and screw adjusting sleeve (13) into the hole in the cover until guide pin (15) touches headed pin (16), and then unscrew it 2-1/2 turns.

De-energize the solenoid and turn cam (3)approximately 90 degrees from the original idle position.

If the governor starts operation at the above set cam position, lock adjusting sleeve (13) with nut (10). But if the governor does not start operating, screw adjusting sleeve (13) further into the cover until the governor begins to operate. If the governor starts operating at a lesser angle of cam movement, unscrew adjusting sleeve (13) and readjust.

Parts List

Ref. No.	Part Name	Quantity
36697-1	Gasket	1
36697-2	Cover	1
36697-3	Cam O.S.T.D.	1
36697-4	Pin	1
36697-5	Roll pin	1
36697-6	Roll pin	1
36697-7	Guide Sleeve	1
36697-8	Cap	1
36697-9	Spring	1
36697-10	Nut	1
36697-11	Retaining Ring	1
36697-12	Spring	1
36697-13	Adjusting Sleeve	1
36697-14	Oilite Bushing	1
36697-15	Guide pin	1
36697-16	Headed pin	1
36697-17	Adjusting screw	1
36697-18	Solenoid Plunger Rod	1
36697-19	Steel Ball	1
36697-20	Spring	1

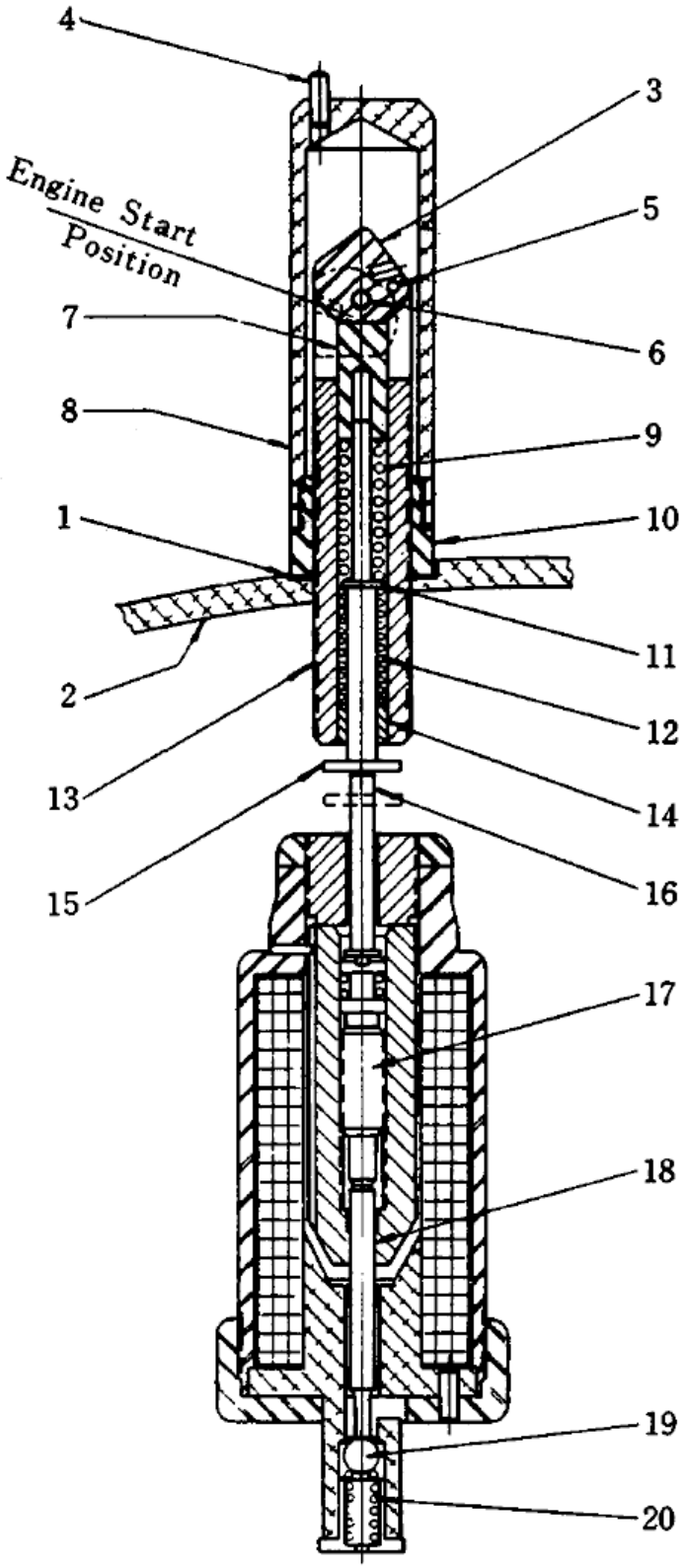

Figure 1. Manual Reset Device Parts

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Send comments to: icinfo@woodward.com

Please reference publication 36697.

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