AUMA Actuators, Inc. USA

Installation and Operation Instructions for Models GS160-GS500 Worm Gearboxes

General Description

The model GS worm gear may be used for either manual operation by means of a handwheel or motor operation by the addition of an actuator mounting flange. The GS is specifically designed for mounting of an AUMA SA series actuator, but also may be adapted for any other suitable motor operator.

Possible damage can be avoided by observing the following points.

Transport and Storage

- Transport to installation site in sturdy packaging.
- Store in well-ventilated and dry enclosed areas.
- Protect against humidity from the floor by storing on wooden frames, on pallets, in cage boxes, or on shelves.
- Cover to protect against dust and dirt, etc.
- Protect bright surfaces by using a lasting corrosion protection agent; for example, an acid-free grease.

Service Conditions

AUMA worm gearboxes, GS and primary reduction gearing GZ, are suitable for the following ambient conditions:

GS	-20°F to +175°F (standard)
GS-H	+32°F to 250°F
GS-L	-40°F to +140°F

Installation Procedure

Refer to exploded view parts list for GS160-500.

The following procedure should be used for installation.

- Install a properly machined splined coupling (9) onto valve shaft. Make certain that the key is properly located. Refer to GS160-315 or GS400-500 drawing for proper coupling placement (dimension M/L).

NOTE: dry, free cleaned — The mounting surfaces of the GS gearbox and mating valve flange must be clean and of all paint, oil, grease, dirt, etc. It is recommended that these surfaces by scraped, with a suitable solvent, and adhesive be applied (similar to Locktite 242).

- Place the GS operator over the splined coupling in the desired orientation. With the GS resting on the valve mounting flange, turn actuator handwheel clockwise or counter-clockwise as necessary to line up threaded bolt holes located on the mounting flange.
- Fasten with bolts of SAE Grade 5 minimum (Grade 8.8 metric) using lock washers. Tighten bolts equally and in a diagonal sequence until the appropriate torque value is achieved.

NOTE: Refer to appropriate AUMA dimensional drawing supplied with gearbox for bolt quantities and sizes.

NOTE: Proper bolt tightening torques must be achieved to prevent relative movement between gearbox and mounting flange which may result in unbalanced loading and subsequent housing/flange failure.

End Stop Adjustment Procedure

AUMA Models GS160 through GS500 are equipped with a traveling-nut-type mechanical stop to provide adjustable end-of-travel stops. The procedure for setting the *open* and *closed* stop positions is as follows. Portions of the procedure are applicable to motor operation. (Refer to exploded view parts list for GS160-500.)

- Loosen the clamping ring bolts (03) approximately two turns to loosen lock washer (013).
- Manually operate the GS unit until the desired closed position is reached.
- Rotate cap (13 by hand or wrench in a clockwise direction until traveling nut (15) contacts the stop.

NOTE: For electrical operation, back-off traveling nut from the *closed* stop position by turning cap (13) counter-clockwise about one-half turn. Set the closed limit switch in the electric actuator per "Setting of Limit Switching" section of the electric actuator SA07.1-SA48.1 Operations Instructions.

- Tighten bolts (03). *Closed* position is now set.
- Loosen nuts (09) on pointer cover (8). Turn cover until arrow corresponds to CLOSED mark. Tighten bolts. The *open* position is factory set for 90° of travel.
- If a valve rotation other than 90° is required, remove cap (13) and loosen bolts (025).
- Open valve to desired position and rotate end stop nut (14) so that it contacts traveling nut (15).

NOTE: 1) Maximum angle of rotation is 135°.

2) For electrical operation, back-off end stop nut (14) counter-clockwise one-half turn. Set the open limit switch in the electric actuator per "Setting of Limit Switching" section of the electric actuator SA07.1-SA48.1 Operations Instructions.

- Tighten end stop bolts (025) and replace cap (13) with o-ring (024).