

## Zy-Gear Installation & Maintenance

### Worm Gear Operator Installation, Adjustment and Maintenance

#### Installation

Ensure that gear operator and the valve are both in corresponding positions, fully open or fully closed. If the gear position does not match the valve position, rotate the handwheel until the gear and valve are in the same position. Check to ensure the keyway on valve stem and worm gear are aligned. Install mounting studs into bottom of the worm gear. Align the gear bore with the valve stem and lower the gear to the mounting flange or plate. Fasten the nuts.

#### Adjustment

Refer to gear diagram of each model from page 5 to 9 for gear parts. Locate the open side\* of the stop screw cover bolt. Remove the cover bolt and o-ring assembly, item 1 and 2, and loosen the lock screw, item 3, and the stop screw, item 4, with an Allen wrench\*\*. Lock screw has a through hex hole with the same size as the socket hole on the stop screw. Allen wrench may go through the socket hole of the lock screw and reach the hole of stop screw. Turn the handwheel to get the true open position of the ball, disc or plug, etc. Turn the stop screw clockwise until it comes into contact with the worm gear. Back up the wrench and make sure the

wrench is not engaged with the stop screw. Turn the lock screw clockwise until it contacts the stop screw. Re-install the cover bolt with the o-ring. Turn handwheel to the true closed position; repeat the above steps on the closed side stop screw adjustment. The true closed position of the valve may require setting during the time of the seat leak test.

#### Adjustment Notes

\*Open side of the stop screw is located at the far side from the handwheel on WG 008, 108, 208 and 408. It is located at the near side from the handwheel on WG 308. In general, if the handwheel is at the right side of the gear at top view, the open stop screw is at the far side. If the handwheel is at the left side of the gear at top view, the open stop screw is at the near side from the handwheel.

\*\*Allen wrench sizes needed: WG 008 and WG 108: M12, WG 208: M16, WG 308, WG 408: M24

#### Maintenance

Zy-Gear gears are permanently lubricated for safe operation for the life of the gears and do not require periodic maintenance.

### Bevel Gear Operator Installation & Maintenance

#### Installation

Inspect the gear to verify it's the right gear specified on the name plate. Ensure that the valve torque is within the gear rating. Support valve in the upright position (Fig. 1). Remove handwheel from the valve (Fig. 2). Place adapter plate\* on top of the valve yoke (Fig. 3). Align bolt holes of the adapter plate with respect to the valve bore making sure that gear input shaft will be in desired position after mounting. Align center of the adapter plate with stem center line. Tack-weld plate to valve yoke. Check to verify the alignment, then complete with a full circumferential weld. Set the driver\* on the yoke sleeve where the handwheel was set (Fig. 4). Set the gear operator on top of the adapter plate (Fig. 5). Rotate the gear operator to engage the driver and align the input shaft

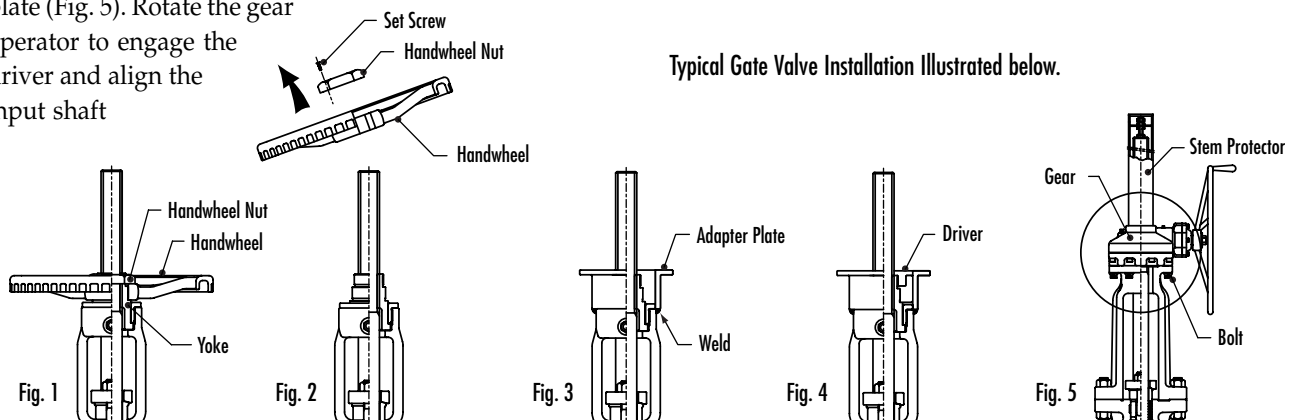
and the mounting holes. Install and tighten the mounting bolts. Install the stem protector as required. Cycle the valve to ensure proper operation of the valve. For NRS valves, please contact your Zy-Gear salesperson.

#### Installation Note

\*Both Adapter plate and Driver are designed to fit a specific valve. A top work dimension is needed for choosing the proper adapter plate. Consult salesperson if assistance is needed.

#### Maintenance

Zy-Gear bevel gears are equipped with grease fittings to allow for grease injection to minimize wear.



Typical Gate Valve Installation Illustrated below.