

Valtek Manual Handwheel Actuators

GENERAL INFORMATION

The following instructions are designed to assist in installing, maintaining and servicing Valtek® manual handwheel actuators. Product users and maintenance personnel should thoroughly review this bulletin prior to installing, operating or disassembling the actuator.

To avoid possible injury to personnel or damage to actuator parts, WARNING and CAUTION notes must be strictly adhered to. Modifying this product, substituting non-factory or inferior parts, or using maintenance procedures other than outlined could drastically affect performance and be hazardous to personnel and equipment.

INSTALLATION

Prior to installation, make sure adequate overhead clearance for the actuator is provided to allow for proper removal and maintenance. Refer to Table I:

NOTE: If the handwheel is attached to a valve body assembly, see *Installation, Operation, Maintenance Instructions for Mark One and Mark Two Control Valves (IOM 1)* for overhead clearances.

**Table I:
Overhead Clearance for Disassembly**

Actuator Size*	Handwheel Diameter	Minimum Clearance
25	9 or 12-inch	6 inches
50	12 or 18-inch	8 inches
100	18 or 24-inch	9 inches

* Actuator Size is comparable to standard cylinder actuator size.

MAINTENANCE

At least once every six months, check for proper operation by following the preventative maintenance steps outlined below. These steps can be performed while the actuator is in service and, in some cases, without interrupting service. If an internal problem is suspected with the actuator, refer to the “Disassembly And Reassembly” section.

1. Examine the actuator for damage caused by corrosive fumes and process drippings.
2. Clean the actuator and repaint any areas of severe oxidation.
3. If possible, extend or retract handwheel stem actuator and check for smooth, full-stroke operation.
4. Make sure the stem clamp is securely fastened to the handwheel stem.
5. Check rubber bellows for wear.
6. Periodically inject general purpose bearing grease into the handwheel mechanism through the yoke grease fitting.

DISASSEMBLY AND REASSEMBLY

Disassembling the Actuator

WARNING: Depressurize the line to atmospheric pressure and drain all fluids before working on the actuator. Failure to do so can cause serious injury.

To disassemble the manual handwheel actuator, refer to Figure 1 and proceed as follows:

1. If the actuator is installed on a valve, remove it per Installation, Operation, Maintenance Instructions for Mark One and Mark Two Control Valves (IOM 1).

2. Remove stem clamp and stem bellows from the handwheel stem.
3. Remove the handwheel stem by screwing it out of the handwheel nut.
4. Remove the two or more screws holding the cover plate to the handwheel. Remove the cover plate and cover plate gasket.
5. Support the handwheel nut and remove the retaining ring, handwheel and handwheel key from the actuator.
6. Carefully slide the handwheel nut from the yoke.
7. Remove both sets of rollers and races; inspect them for damage or wear.

Reassembling the Actuator

To reassemble the manual handwheel actuator, refer to Figure 1 and proceed as follows:

1. Thoroughly clean all internal parts of old grease before beginning assembly.
2. With general purpose bearing grease, lubricate both sets of rollers and races. Replace one set of rollers and races on shoulder end of the handwheel nut. Replace the second set in recessed area at the top of the yoke.
3. With general purpose bearing grease, thoroughly lubricate the inside threads and outside surfaces of the handwheel nut and reinstall it in the yoke.
4. Insert the handwheel key into the handwheel nut. Slip the handwheel over the handwheel nut while engaging the key in the handwheel keyslot.

5. Install the retaining ring into the groove located in the handwheel nut. This should securely fasten the handwheel to the handwheel nut.

NOTE: *If the handwheel does not feel securely fastened, check to see if both sets of rollers and races are installed correctly.*

6. Replace the cover plate gasket and cover plate. Fasten both parts to the handwheel with two or more screws.

7. Screw the handwheel stem into the handwheel nut. Place the stem clamp on the handwheel stem until $\frac{1}{16}$ -inch of the stem appears underneath the clamp. If the stem clamp does not point to the closed position on the stroke plate, remove the stem clamp and screw the handwheel stem in or out of the handwheel nut until the stem clamp is at correct height (when positioned correctly on the handwheel stem).

8. Replace the stem bellows and stem clamp. Tighten the stem clamp bolting.

NOTE: *If the actuator is installed on a valve, refer to Installation, Operation, Maintenance Instructions 1 for correct plug stem thread engagement.*

9. Inject general purpose grease into the handwheel mechanism through the yoke grease fitting until the mechanism is filled.
10. Using the handwheel, retract the actuator to check for full stroke operation.

Troubleshooting Manual Handwheel Actuators

Problem	Probable Cause	Corrective Action
Jerky or sticking stem travel	<ol style="list-style-type: none"> 1. Lack of lubrication 2. Worn or damaged races and rollers 3. Internal valve problem 	<ol style="list-style-type: none"> 1. Inject general purpose bearing grease into handwheel mechanism through yoke grease fitting 2. Replace races and rollers 3. Refer to valve's maintenance instructions
Less than full stroke	<ol style="list-style-type: none"> 1. Handwheel stem not fully engaged 2. Internal valve problem 	<ol style="list-style-type: none"> 1. See step 7 in "Reassembly" section 2. Refer to valve's maintenance instructions

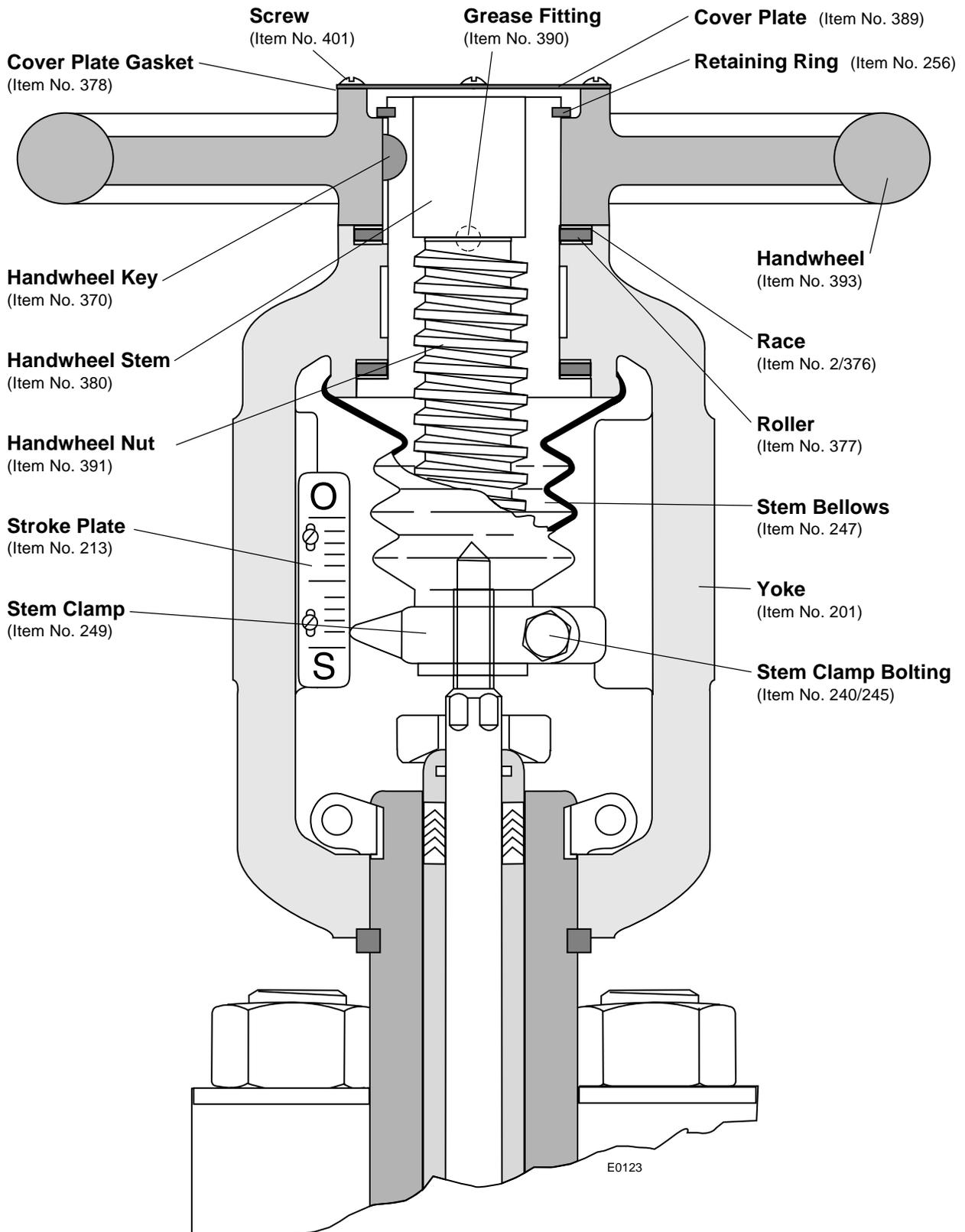


Figure 1: Manual Handwheel Actuator

NOTE: Item numbers correspond directly to actuator's bill of material. Refer to it for specific part numbers.

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