

**WATCH
TECHNOLOGIES**

Sluice Gate Installation Guide

Watch Technologies

4330 Fish Hatchery Rd. Grants Pass, Oregon 97527

541-472-8095 Jack@watchtechnologies.com

Introduction

The following Installation Guide is designed to provide Watch Technologies' customers with sufficient information to successfully install our gates as designed. Typically, our customers were provided both Shop Drawings and a 3-D CAD model of their gates prior to manufacture for both review and authorization to manufacture. If that was not the case please contact our office and secure these documents. These documents alone, however, may not provide the all the guidance everyone may require to place their gates into position and secure them for the long-term. This Guide will clearly define how Watch Technologies' staff would install our gates. If there are situations that are not covered by this Guide or questions of any sort that come up during the course of an installation do not hesitate to call, email, or write for clarification. Watch Technologies is committed to assisting installation in every way possible so that our customers get the best use out of our gates. Properly installing a gate is critical to immediate and long-term performance.

The Gate

Regardless of size or style, all Watch Technologies gates share some features in common although every gate will not have every feature. For example, some gates will have multiple threaded stems instead of a single stem, pedestals rather than frame mounted actuators, handwheels or electronic actuators, differently placed seals, and so forth. All gates, however, mount to or in some kind of structure, have a frame, blade, blade guides, stem(s) or pneumatic ram, and actuation of some type. If, after removing a gate from the pallet it was shipped on, there are questions regarding the gate or components associated with the gate please contact Watch Technologies before attempting an installation.

Watch Technologies assumes our customers have some familiarity with the purpose and setting for each gate. This is important for proper installation planning. Please contact Watch Technologies prior to planning an installation if there are any questions regarding these matters or the materials required to properly install a gate. Most gates are not installed in convenient locations so advance planning is important to assure an efficient process.

Typical Gate

Figure 1 below and right is a typical flush mounted Handwheel actuated gate. It is meant to be installed on a concrete or similarly hard flat surface covering an opening through which water will flow and be controlled manually using the Handwheel. A Bill of Materials, also called a Cut List, located top right in the drawing details the components and measurements of this gate. Watch

Technologies will use a drawing like this one to manufacture a gate. Note the holes marked on the lower right portion of the frame and the measurements indicating their spacing; these are the holes used for mounting this gate to a surface. Unless otherwise noted, these holes are always 5/8" and sized to allow for 1/2" threaded rod or Wedge-Anchors typically recommended for mounting.

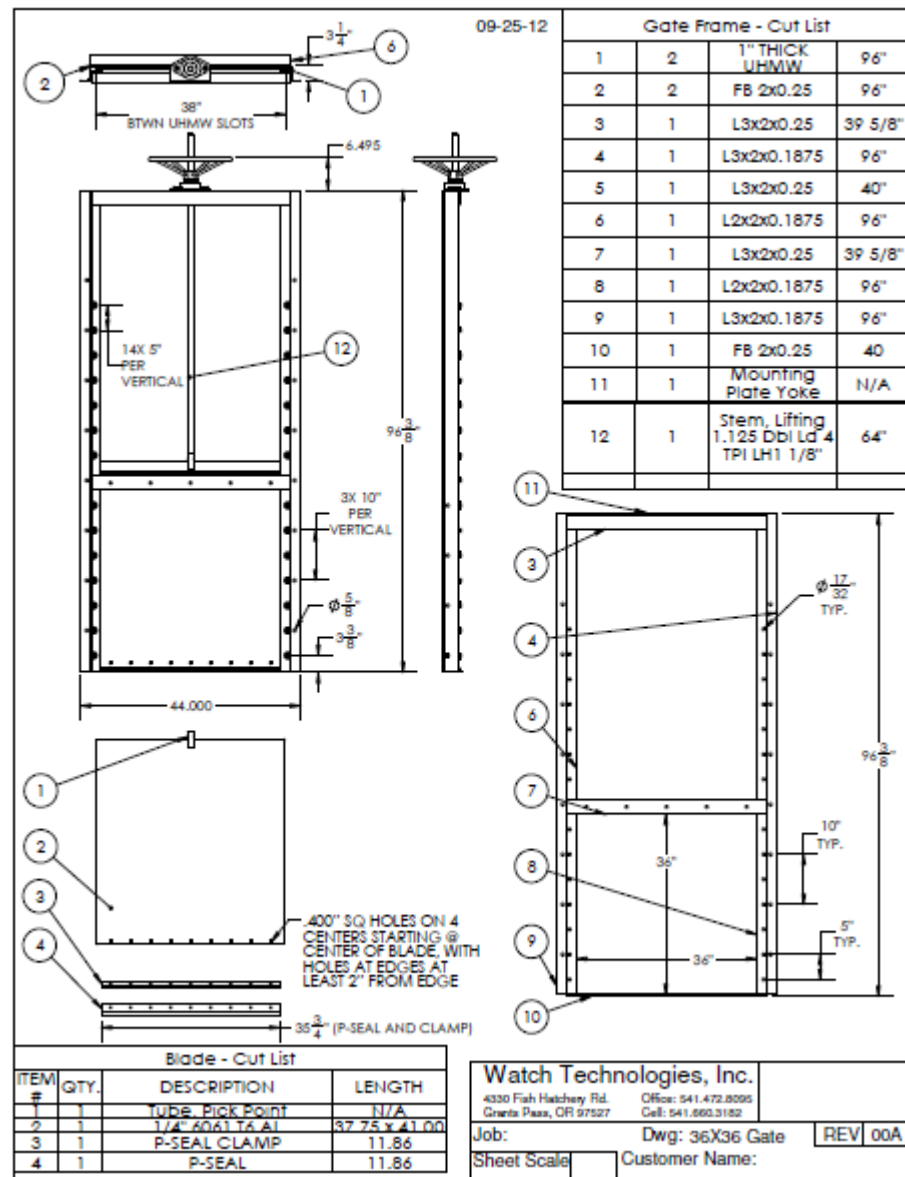


Figure 1. Typical Flush Mount Manually Actuated Gate

Installing a Gate

1. Position the Gate

The first step in installing a gate is to pre-position the gate where it will be mounted to mark two (2) holes for anchors. If pre-positioning the gate is not possible, carefully measure and mark the mounting surface for two holes, one on each side of the gate frame that will match two holes in the frame so the gate can be temporarily mounted to mark and drill the remaining mounting holes. Gate frame holes are sized to allow Wedge Anchors to pass through the frame to the mounting surface. Drill all holes 4"-6" into mounting surface.

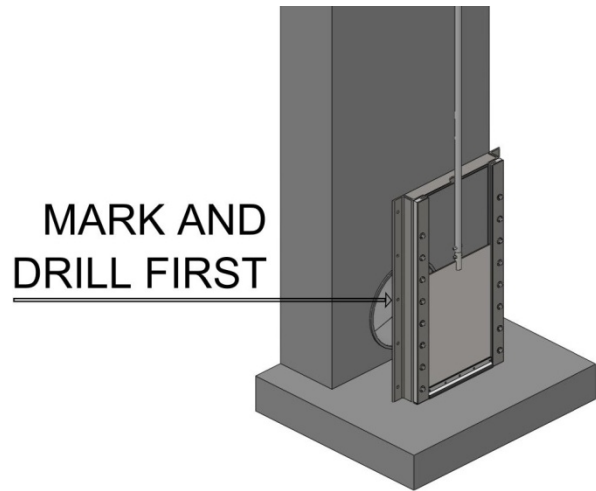


Figure 2. Pre-Position Gate

2. Place Anchors

If threaded rod is to be used for anchors, remove gate to allow placement of anchors and install 1/2" Stainless Steel threaded rods cut to appropriate length in each hole using a two-part epoxy glue to secure the rods in the concrete. Allow 12 hours to set. Anchors of any type must be sufficiently long to account for a grout seal, see #5 below. Fill all mounting holes with anchors. If Wedge anchors are used the gate should not be removed from positioning anchors. Place all anchors into holes through the gate frame tapping them into place taking care not to damage

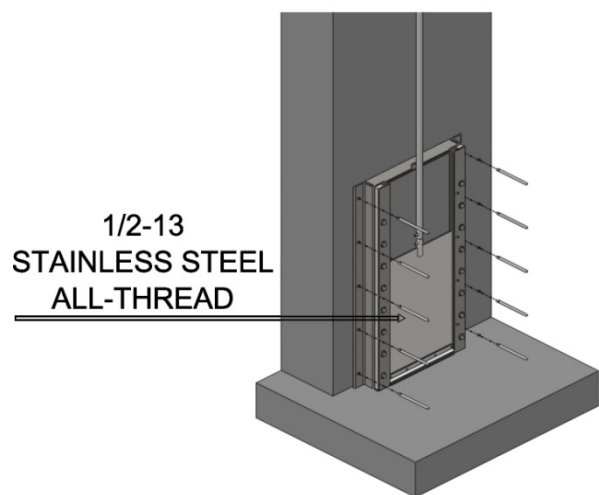


Figure 3. Anchors

anchor threads. Install and tighten a Jam nuts on each Wedge anchor to tighten and lock Wedge Anchor into place. Remove Jamb nut and gate after all Wedge anchors are secure.

3. Jam Nuts

With the gate removed install Thrust nuts on every anchor. Thrust nuts are meant to provide an adjustable surface against which the gate will rest once it is plumb. Adjust the nuts at each corner of the gate so the gate is plumb leaving a minimum ½ inch space between mounting surface and gate and then bring the remaining nuts up snug to the back of the gate. Re-check for plumb.

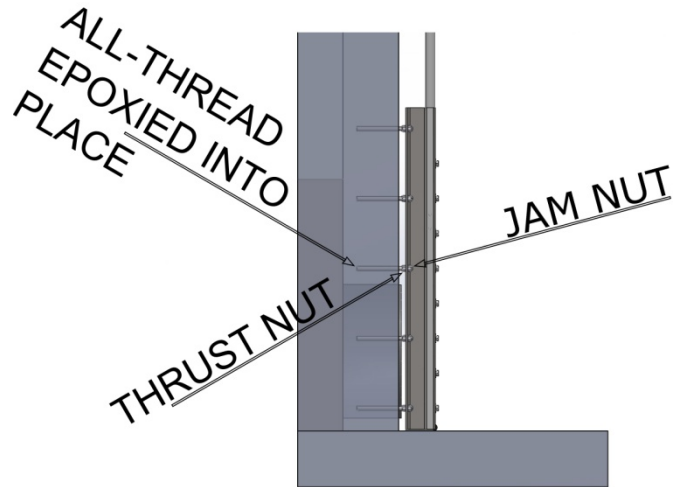


Figure 3. Jam Nuts

4. Secure the Gate

Place Jam nuts on each anchor and hand tighten to secure the gate. Re-check plumb then firmly tighten Jam nuts to permanently secure the gate.

5. Install Grout

Mix a non-shrinking grout and fill the space between the mounting surface and back of the gate and all gate surfaces that make a seal, for example

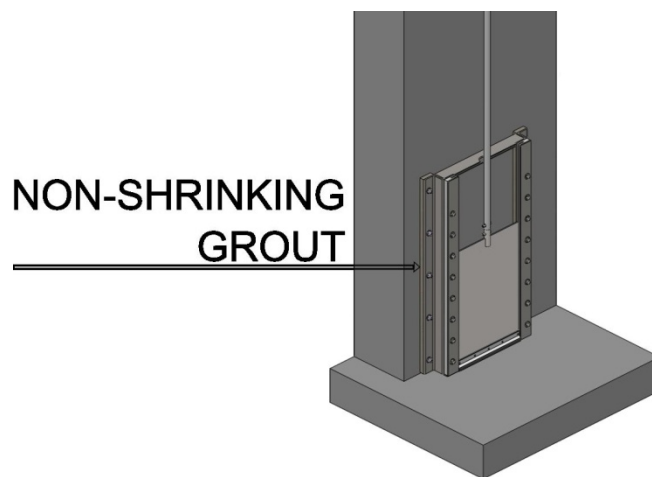


Figure 4. Secure Gate

an upper wiper seal across the top of the opening as shown in Figure 5. It may be

necessary to place a removable form around the grout locations to hold the grout in place until dry. Make sure there are no voids in the grout.

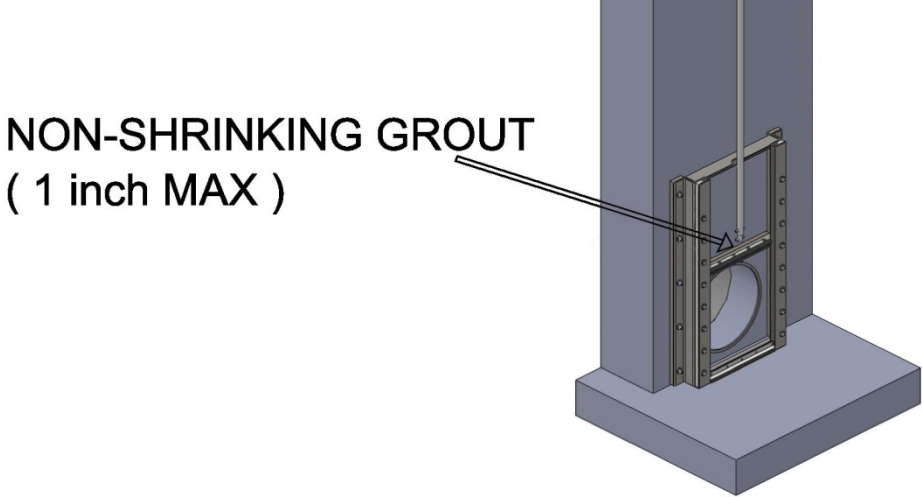


Figure 5. Upper Seal Grout Location

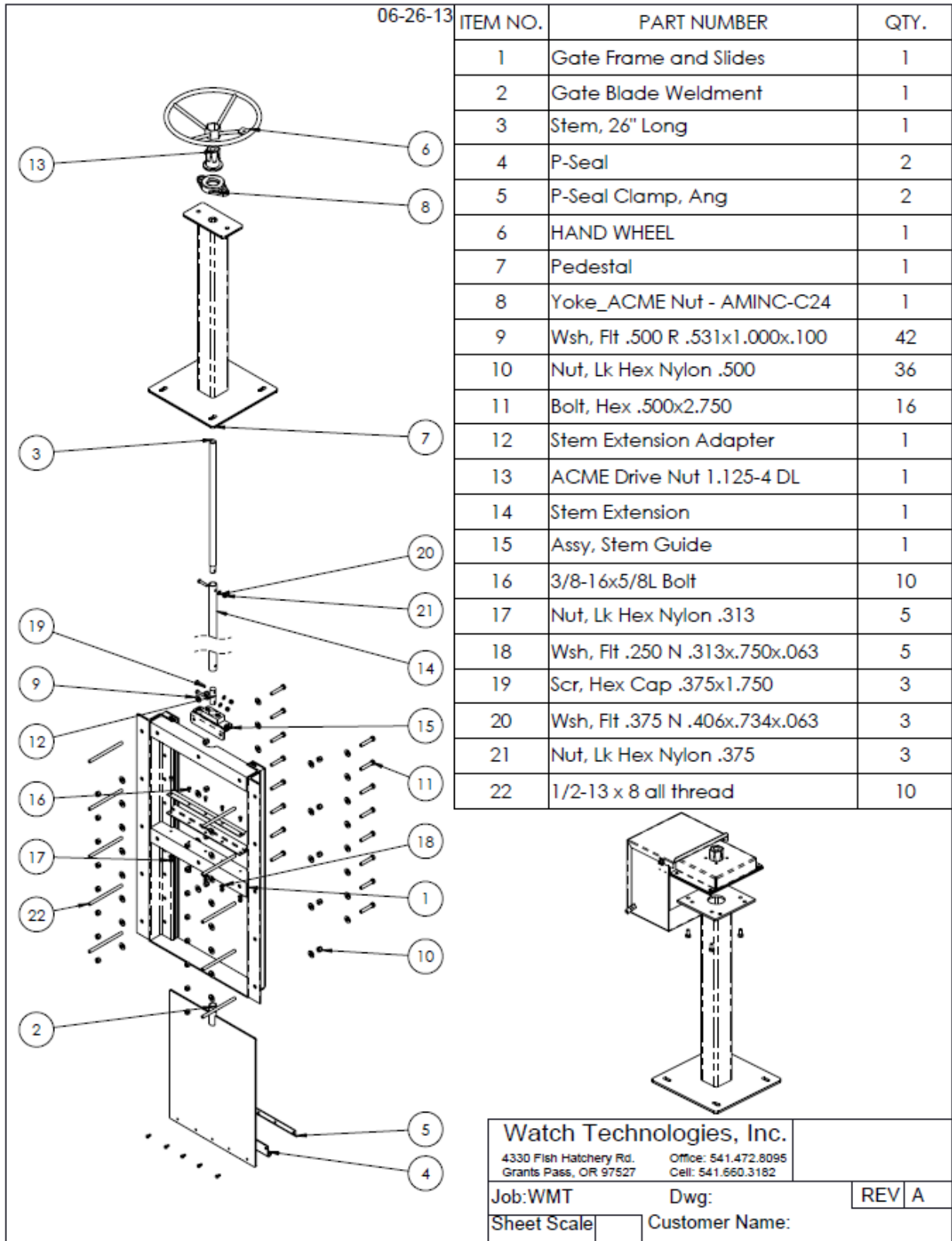
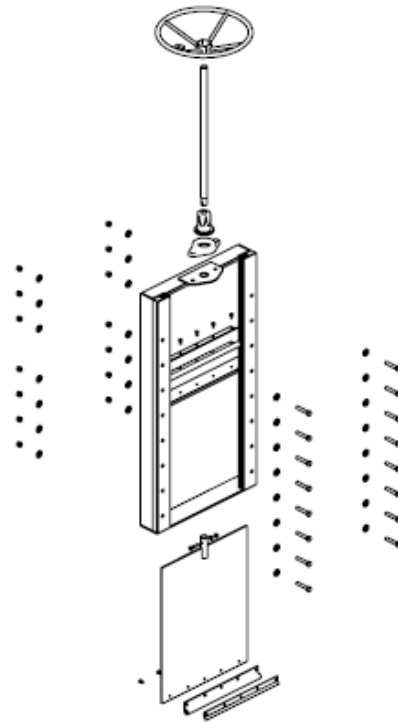
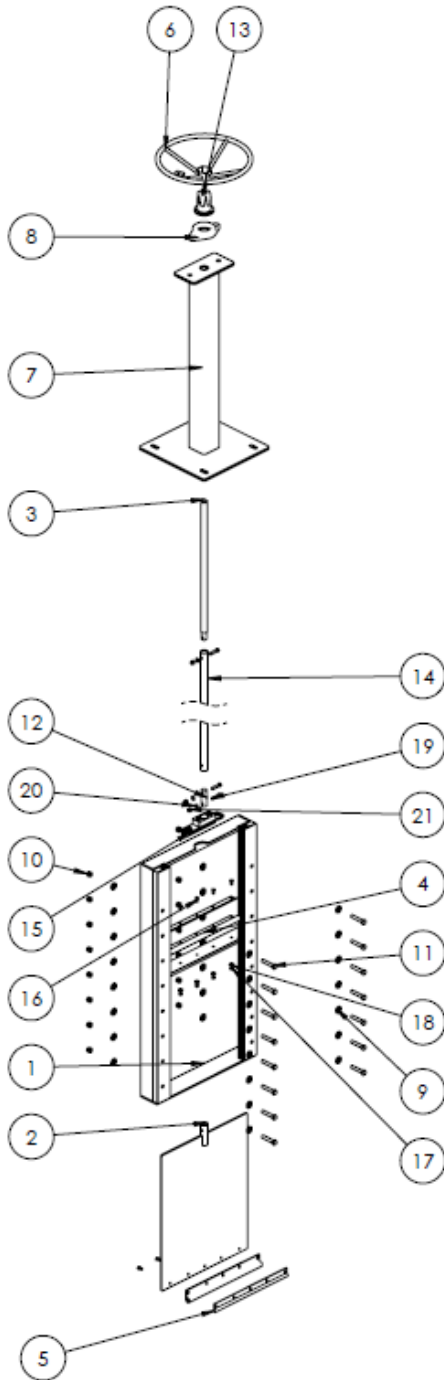


Figure 6. Exploded Typical with Pedestal

06-26-13

ITEM NO.	PART NUMBER	QTY.
1	Gate Frame and Slides	1
2	Gate Blade Weldment	1
3	Stem, 26" Long	1
4	P-Seal	2
5	P-Seal Clamp, Ang	2
6	HAND WHEEL	1
7	Pedestal	1
8	Yoke_ACME Nut - AMINC-C24	1
9	Wsh, Flt .500 R .531x1.000x.100	31
10	Nut, Lk Hex Nylon .500	26
11	Bolt, Hex .500x2.750	15
12	Stem Extension Adapter	1
13	ACME Drive Nut 1.125-4 DL	1
14	Stem Extension	1
15	Assy, Stem Guide	1
16	3/8-1 6x5/8L Bolt	10
17	Nut, Lk Hex Nylon .313	5
18	Wsh, Flt .250 N .313x.750x.063	5
19	Scr, Hex Cap .375x1.750	3
20	Wsh, Flt .375 N .406x.734x.063	3
21	Nut, Lk Hex Nylon .375	3

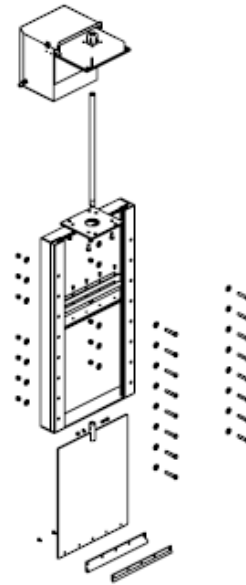
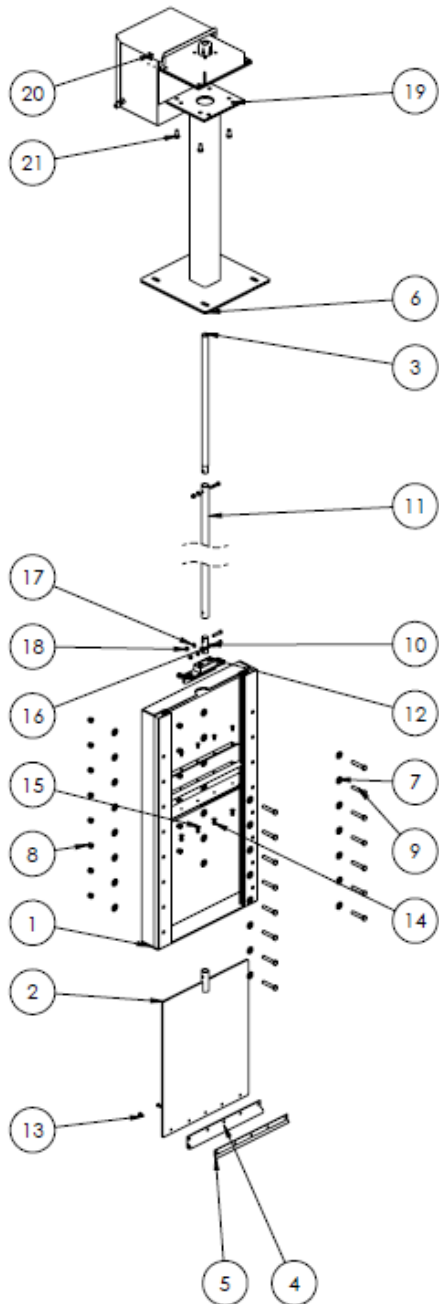


Watch Technologies, Inc. 4330 Fish Hatchery Rd. Office: 541.472.8095 Grants Pass, OR 97527 Cell: 541.660.3182		
Job:WMT	Dwg:	REV A
Sheet Scale	Customer Name:	

Figure 7. Exploded Manual Actuation

06-27-13

ITEM NO.	PART NUMBER	QTY.
1	Gate Frame and Slides	1
2	Gate Blade Weldment	1
3	Stem, 26" Long	1
4	P-Seal	2
5	P-Seal Clamp, Ang	2
6	Pedestal	1
7	Wsh, Flt .500 R .531x1.000x.100	31
8	Nut, Lk Hex Nylon .500	16
9	Bolt, Hex .500x2.750	15
10	Stem Extension Adapter	1
11	Stem Extension	1
12	Assy, Stem Guide	1
13	3/8-16x5/8L Bolt	10
14	Nut, Lk Hex Nylon .313	5
15	Wsh, Flt .250 N .313x.750x.063	5
16	Scr, Hex Cap .375x1.750	3
17	Wsh, Flt .375 N .406x.734x.063	3
18	Nut, Lk Hex Nylon .375	3
19	Actuator Mounting Plate	1
20	Assy - Motor Box - WT-200V	1
21	Bolt, Hex .500x1.000	4



Watch Technologies, Inc. 4330 Fish Hatchery Rd. Office: 541.472.8095 Grants Pass, OR 97527 Cell: 541.660.3182		
Job:WMT	Dwg:	REV A
Sheet Scale	Customer Name:	

Figure 8. Exploded Automated Actuation