

WORKMASTER[®]

WE FIND A WAY — OR MAKE ONE!

GO-A2 Gate Opener



OWNER / OPERATOR MANUAL

WORKMASTER disclaims any liability for injuries, death or damages arising directly or indirectly, from the use, operation, or application of this product not in accordance with the procedures, specifications and recommendations contained in this Owner/Operator's Manual. The user of this product is responsible to install, maintain and operate the product and parts or components manufactured or supplied by **WORKMASTER** in such a manner as to comply with all federal, state, and local rules, ordinances, regulations, and laws, including the Williams-Steiger Occupational Safety Act, and the American National Standards Institute Safety Code.

SYMBOLS

The following symbols are found throughout this Owner/Operator Manual to alert the reader to the relative danger that may result from non-observance.



This indicates a situation in which a hazard is imminent and will result in a high probability of serious injury or death.



This indicates a potentially hazardous situation, which could result in minor to moderate injury.



This indicates a potentially hazardous situation or unsafe practice which could result in product or property damaged.



IMPORTANT

This symbol indicates a general statement to assist the user in the operation or maintenance of the equipment.

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I. INTRODUCTION

Fast, safe, and economical unloading of covered hopper cars continues to be a problem at most unloading sites. One of the biggest contributors to this problem is the often time-consuming and difficult job of opening and closing bottom gates or doors of these hopper cars. Load compaction, weather conditions, age, abuse, or corrosive or gritty bulk materials can combine to prevent gate mechanisms from operating smoothly.

Regardless of cause, the costs associated with the problem are significant. Delays in emptying the hopper cars means slow car turnaround, increased demurrage costs, and interrupted production schedules. Even more importantly, the chance of worker injury is high since at many unloading sites, clumsy or dangerous makeshift tools are used during the "fight" to open a stubborn gate.

To meet our commitment of **"WE FIND A WAY – OR MAKE ONE"**, **WORKMASTER** has developed a line of Hopper Car Gate Openers and accessories which provide a safe, efficient, and economical solution to the problem of opening easy, medium, and hard-to-open hopper car gates.

There are pneumatic, electric, and manual units available producing 1,000 to 13,000 ft-lbs of torque to eliminate the need for "cheater" bars, sledgehammers, jacks, and other improper tools sometimes used on this difficult job.

This Operator's Guide details the specifications, operation, maintenance, and safe use of the **GO-A2** Pneumatic Hopper Car Gate Opener. Experience has shown that the **GO-A2** Opener will open the most difficult car gates. However, the same experience demonstrates that total satisfaction in use depends on attention to detail in operating and maintaining the unit.



IMPORTANT

All persons involved in the operation and maintenance of this equipment should be thoroughly familiar with the contents of this manual.

II. SAFETY

To prevent injury to yourself or others, and/or damage to equipment, you should adhere to the following basic safety instructions.

1. Carefully read the entire Owner/Operator's Manual prior to installing or operating equipment.
2. Always follow proper precautions and use proper tools and safety equipment.
3. Be sure to receive proper training.
4. Always use the equipment and all its components in applications for which they are approved.
5. Be sure to assemble all components correctly.
6. Never use worn, defective or damaged components.
7. Always Practice good housekeeping and maintain good lighting around all equipment.
8. Perform Lock-out/Tag-out procedure on all energy sources to the equipment, mounting structure, loading, and discharge systems in accordance with ANSI Standards before installation or maintenance.

III. REQUIRED MATERIALS

The following items are not supplied with your **WORKMASTER** Gate Opener but are necessary for its proper installation and operation.



CLEAN, DRY REGULATED and LUBRICATED compressed air.

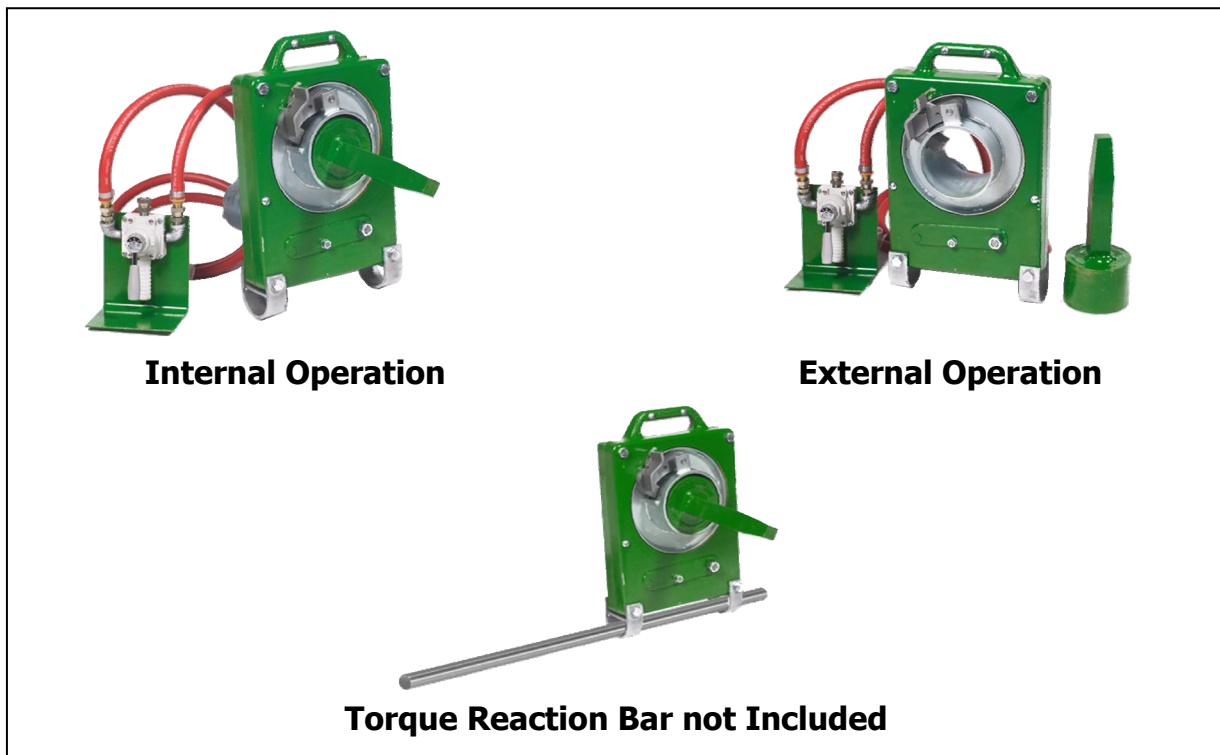


A strong, rigid Torque Reaction Bar to counterbalance length determined by unloading site conditions.

IV. METHOD OF OPERATION

The **GO-A2** can turn a railcar gate capstan two ways, internally & externally.

1. Internal Operation utilizes the capstan drive fitting supplied with the **GO-A2**. This method of operation is the most popular and considered the easiest.
2. External Operation involves attaching the **GO-A2** directly to the railcar's capstan. With this method the supplied drive fitting is not needed. This method of operation is used when the railcar's capstan socket is rounded-out and can not make solid contact with the capstan drive fitting.



Both the Internal Operation and the External Operation method of operation require the use of a torque reaction bar.

V. INTERNAL OPERATION

1. Using the Capstan Swaging Kit (optional accessory, **PN: 33-11120**), clean-out and square-up the capstan socket on the car gate so that the Capstan Drive Fitting on the Gear Motor's output drive can be properly aligned, and fully seated in the railcar gate's capstan socket.



IMPORTANT

Regular use of the CAPSTAN SWAGE TOOL will ensure a long-life for your Drive Fitting and your Impactor's Square Drive Anvil. Also, a clean, square Capstan socket will maximize the torque transfer between the Opener and the Car Gate.

2. Should the railcar's capstan barrel socket be completely worn, use our CAPSTAN RENEW ATTACHMENT, **PN 80-10728**, which slips over the barrel and then pin-locks in place to provide a reusable, perfectly formed female square socket.
3. Disengage the Car Gate Locking Mechanism before attempting to open the gate.



CAUTION

Failure to disengage the Car Gate Locking Mechanism will cause damage to the car gate and/or the railcar gate opener.

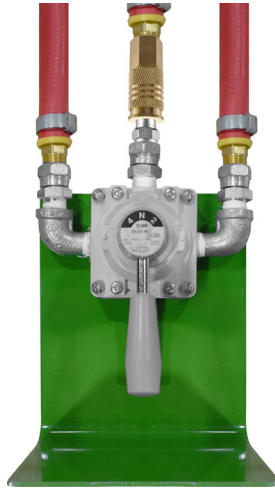
4. Place control valve in the closed position.



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PH: 267.350.2809

4. Connect filtered and lubricated 80 to 125 PSI (85-90PSI usually good) air supply to the Control Valve's inlet.



IMPORTANT

Air supply must be between 80 and 125 PSI *at the control valve* (not just at the air source), for the unit to work properly.



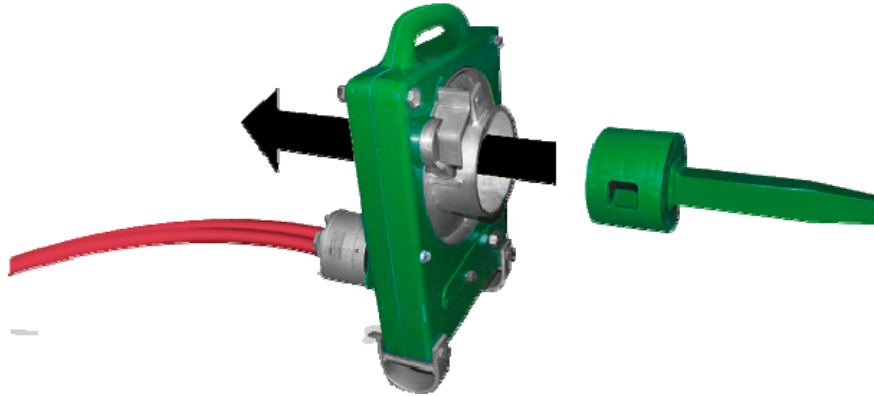
CAUTION

Do not exceed 125 PSI air pressure. Excessive air pressure may cause damage to the **GO-A2**. In addition to being regulated, the air supply must be clean, dry, filtered and lubricated.

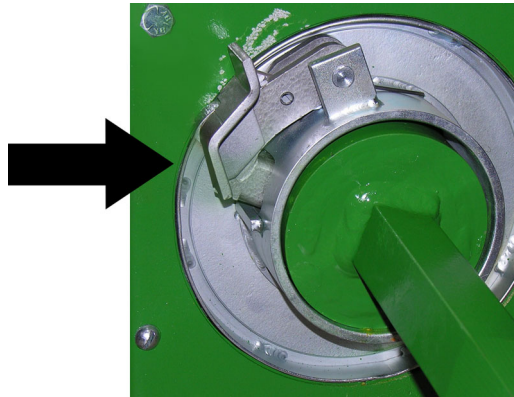
5. Retract the dog on the **GO-A2**'s cylinder body by moving the release lever until it stops.



6. Insert the drive fitting into the body of the **GO-A2**.



7. Lock the Drive Fitting in position by pushing the release lever until the dog is completely engaged in the Drive Fitting retainer slot as shown.



8. Place the **GO-A2** Gate Opener, with the Drive Fitting, into the railcar's capstan socket.
9. With the stirrups pointing down, slide a solid, heavy-duty, steel bar through the stirrups. This will serve as a torque reaction bar during operation.





IMPORTANT

Before inserting the torque reaction bar, you may need to rotate the **GO-A2** to position the stirrups perpendicular to the ground.

10. The reaction bar should protrude further on one side of the **GO-A2** depending on the desired direction of rotation (CW or CCW), *see Figure 1*.
11. When the **GO-A2** is in position and the reaction bar is secured, the unit can now be operated. For clockwise rotation (from the operator's perspective) turn the Control Valve lever to the left.
12. For counterclockwise rotation (from the operator's perspective), turn the Control Valve lever to the right.



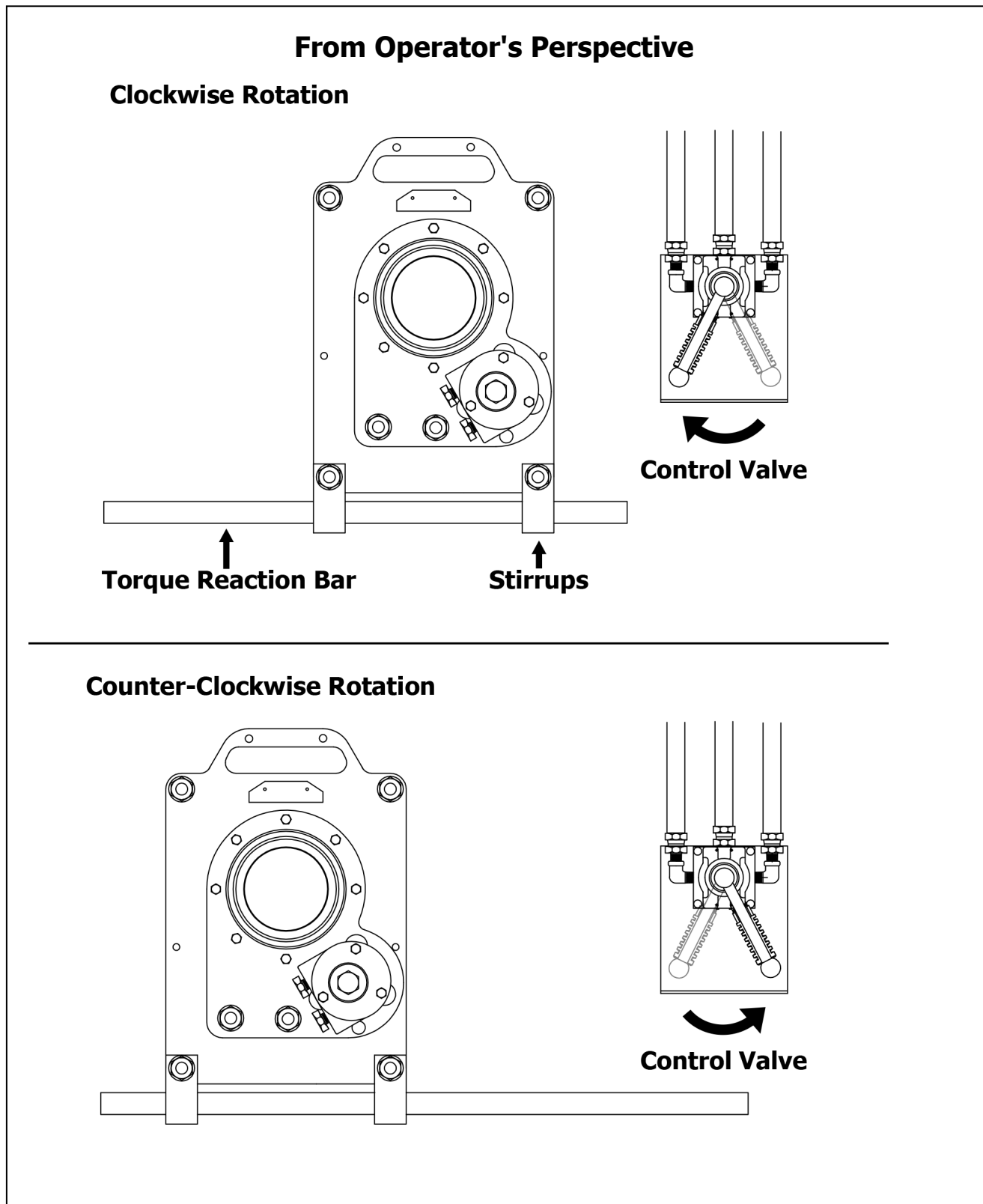
The **GO-A2** produces torque for slow, deliberate opening of railcar gates. It is not designed for rapid change of gear direction. Alternating quickly between clockwise and counterclockwise rotation will damage the gear mechanism.



CAUTION

If the railcar gate will not move, STOP using the **GO-A2** Opener, and notify your supervisor. Continued use will damage the Opener.

Figure 1: Lever and Reaction Bar Position



VI. EXTERNAL OPERATION

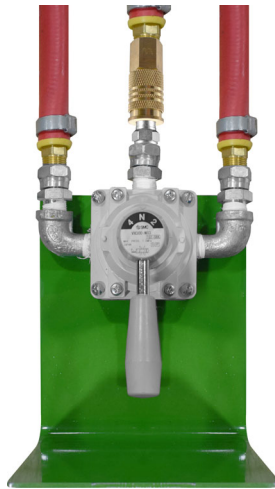
1. Disengage the Car Gate Locking Mechanism before attempting to open the gate.



CAUTION

Failure to disengage the Car Gate Locking Mechanism will cause damage to the car gate and/or the railcar gate opener.

2. Place control valve in the closed position.



3. Connect filtered and lubricated 80 to 125 PSI air supply to the Control Valve's inlet.





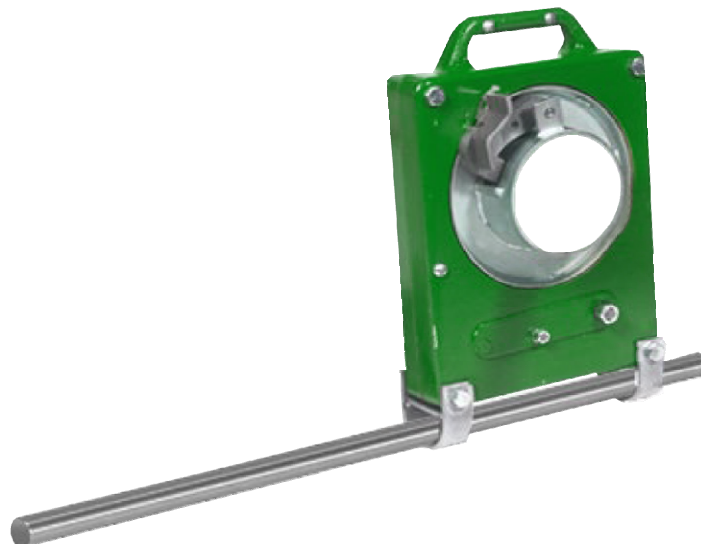
CAUTION

Air supply must be between 80 and 125 PSI *at the control valve* (not at the air source), for the unit to work properly. Do not exceed 125 PSI air pressure. Excessive air pressure will damage the **GO-A2**. Make sure air is filtered and lubricated.

4. Retract the dog by moving the release lever until it stops.



5. With the stirrups pointing down, place the **GO-A2** directly onto the railcar's capstan and engage the dog so that it locks into one of the capstan's socket drive holes.
6. Slide a solid, heavy-duty steel bar through the stirrups. This will serve as a Torque Reaction Bar during operation.





IMPORTANT

Before inserting the reaction bar, you may need to rotate the **GO-A2** to position the stirrups perpendicular to the ground.

7. The reaction bar should protrude further on one side of the **GO-A2** depending on the desired direction of rotation, *see Figure 2*.
8. When the **GO-A2** is in position and the reaction bar is secured, the unit can now be operated. For clockwise rotation (from the operator's perspective) turn the Control Valve lever to the left.
9. For counterclockwise rotation (from the operator's perspective), turn the Control Valve lever to the right.



The **GO-A2** produces torque for slow, deliberate opening of railcar gates. It is not designed for rapid change of gear direction. Alternating quickly between clockwise and counterclockwise rotation will damage the gear mechanism.



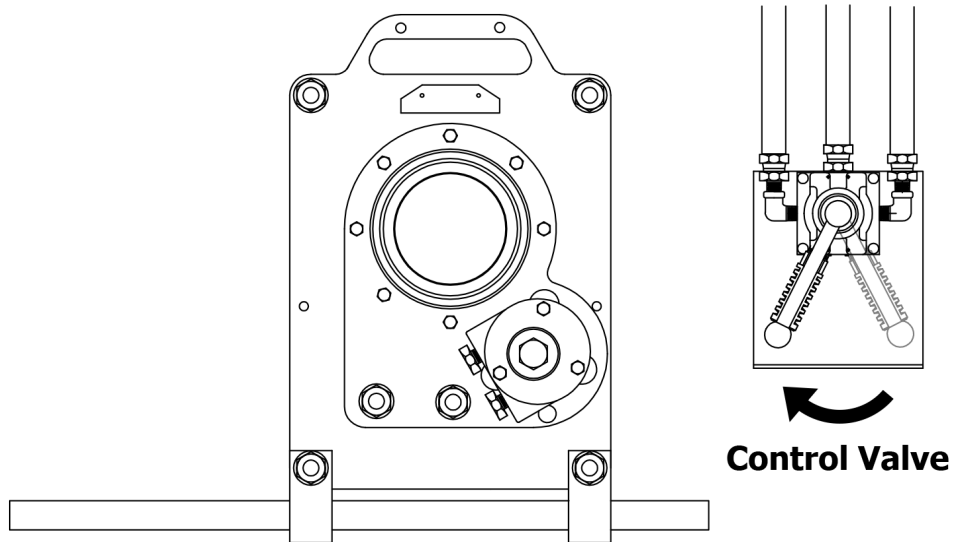
CAUTION

If the railcar gate will not move, STOP using the **GO-A2** Opener, and notify your supervisor. Continued use will damage the Opener.

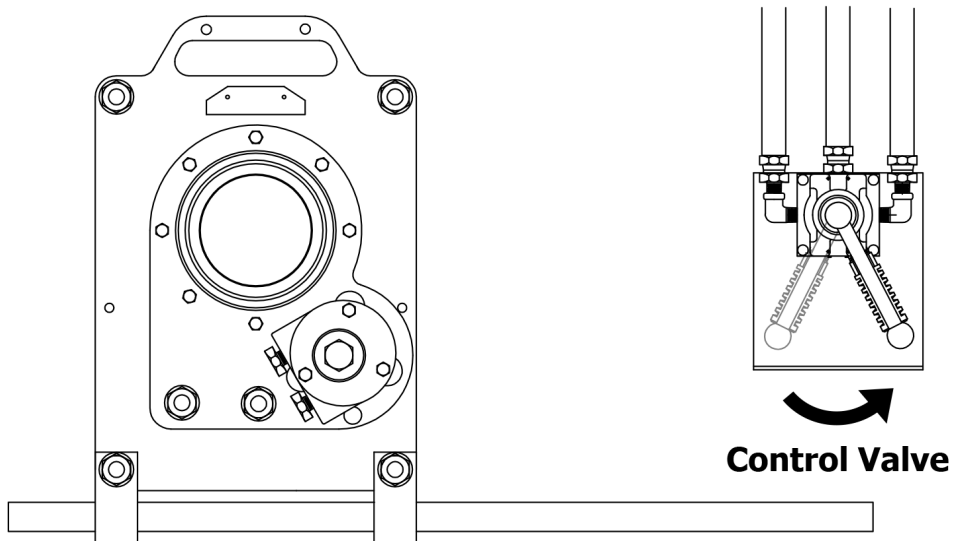
Figure 2: Lever and Reaction Bar Position

From Operator's Perspective

Clockwise Rotation

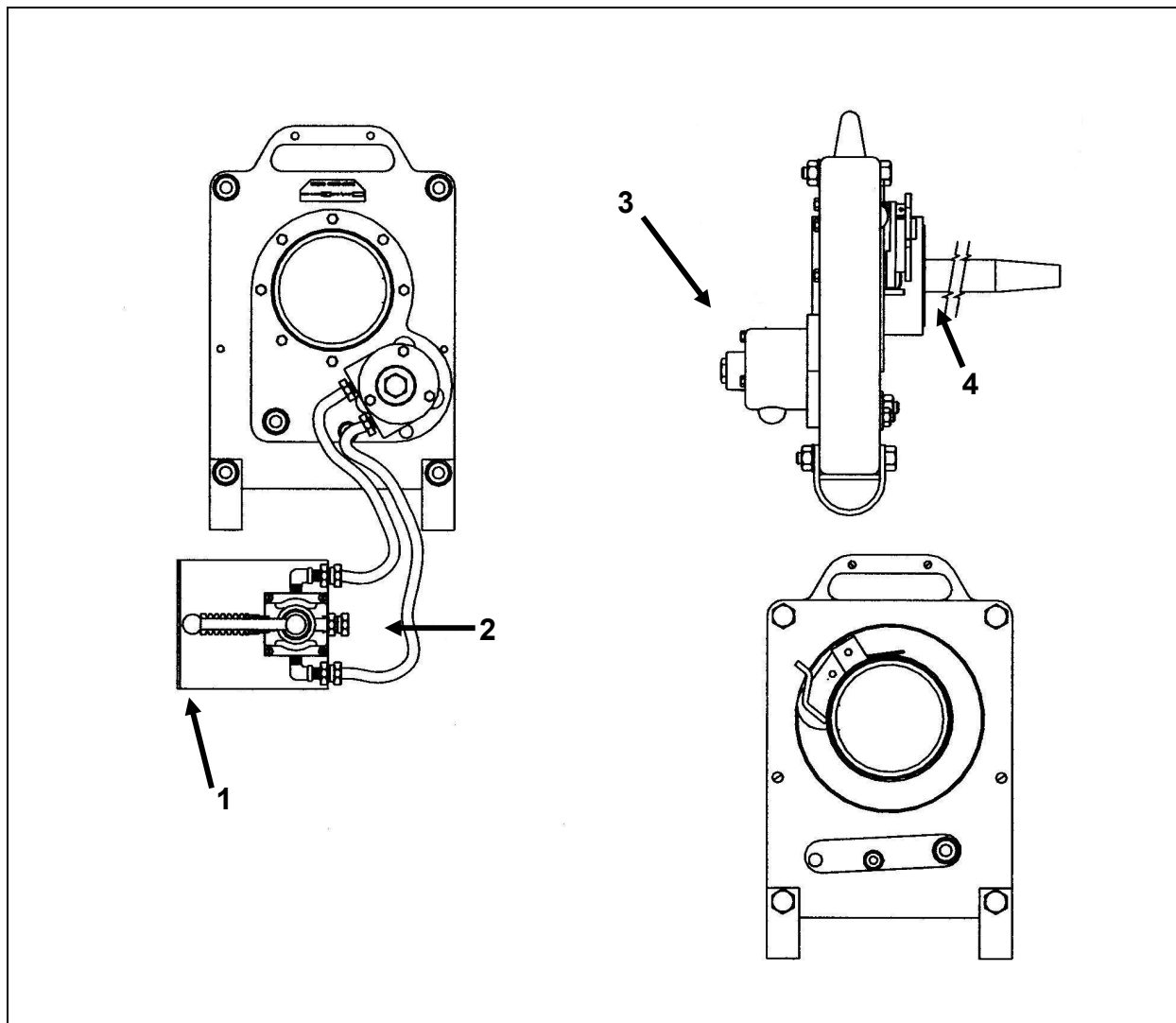


Counter-Clockwise Rotation

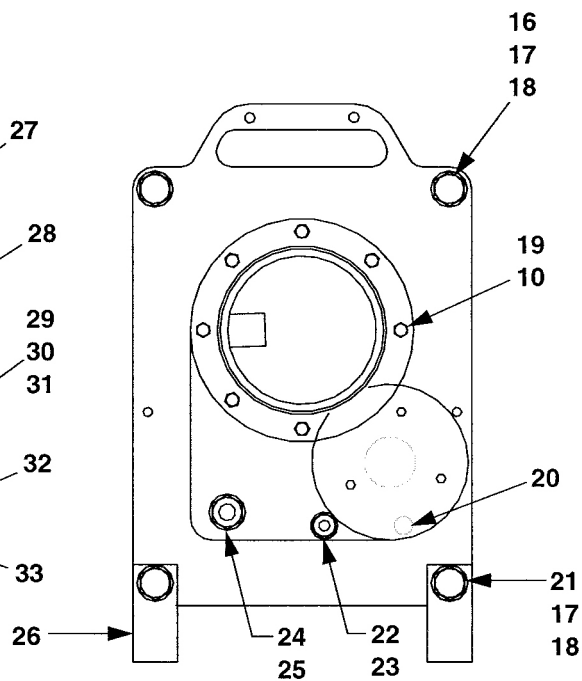
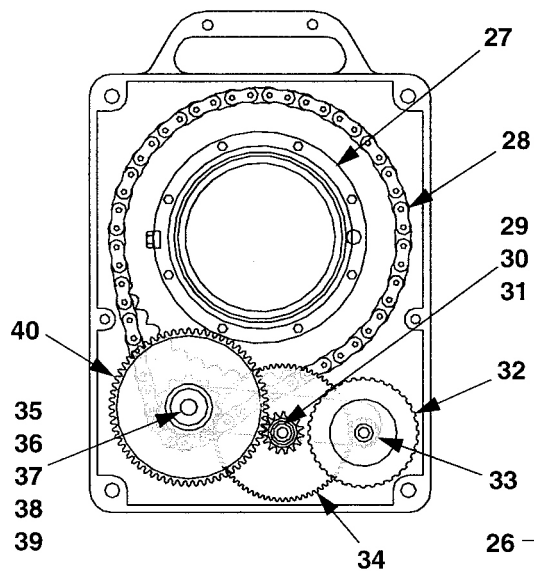
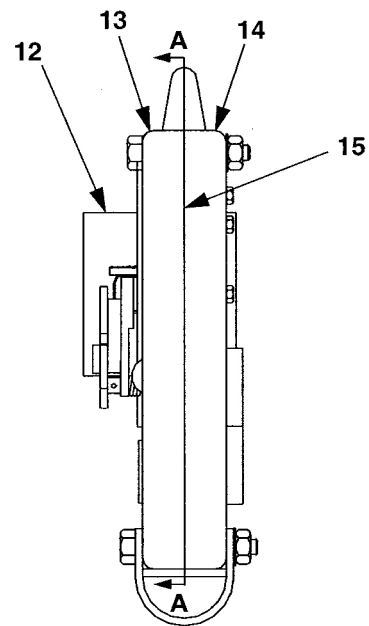
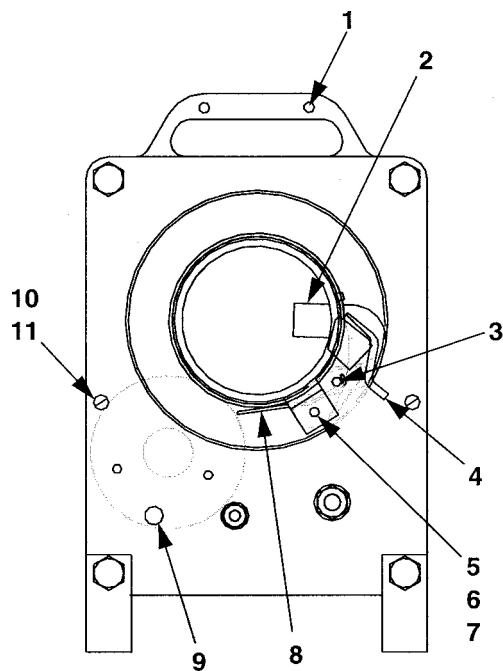


APPENDIX A: PARTS LIST

This section provides description and corresponding part numbers for **WORKMASTER GO-A2** Gate Openers. Please reference part numbers when ordering parts. See **Figure 5** for repair assembly drawing.

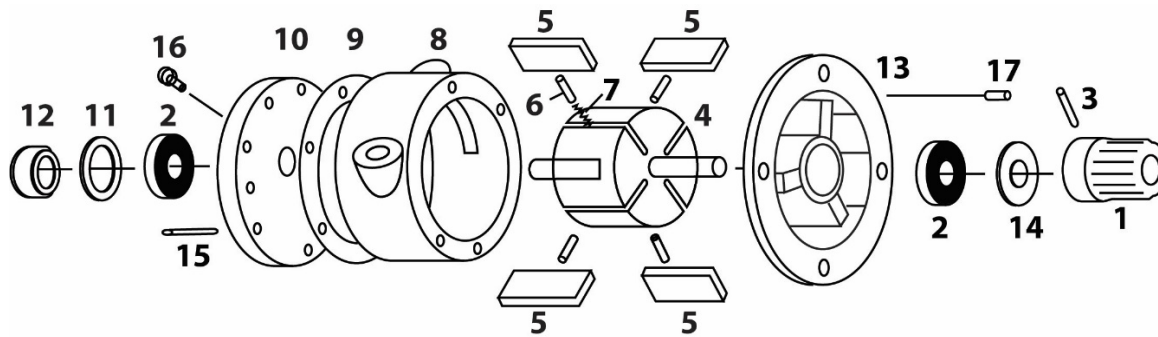


Item	Description	Part #	Qty
1	Hand Valve	33-20200	1
2	Hose Assembly	33-20201	2
3	Air Motor Assembly	33-30169	1
4	Drive Fitting	33-20203	1



Item	Description	Part #	Qty		Item	Description	Part#	Qty
1	Round Head Screw	33-20204	2		23	Hex Nut	33-20226	2
2	Pawl	33-20205	1		24	Lock Washer	33-20227	2
3	Spring Pin	33-20206	1		25	Hex Nut	33-20228	2
4	Dog Release Weldment	33-20207	1		26	Stirrup Weldment	33-20229	2
5	Spacer	33-20208	1		27	Outer Race Assy	33-20230	1
6	Clevis Pin	33-20209	1		28	Chain	33-30111	1
7	Roll Pin	33-20210	1		29	Shaft	33-20232	1
8	Spring	33-20211	1		30	Flat Washer	33-20233	2
9	Bushing Cap	33-20212	1		31	Oilite Washer	33-20234	2
10	Lock Washer	33-20213	11		32	Gear Weldment	33-20235	1
11	Round Head Screw	33-20214	2		33	Oilite Bushing	33-30162	1
12	Hub Weldment	33-20215	1		34	Gear Assembly	33-20237	1
13	Case Shell	33-20216	1		35	Flat Washer	33-20238	2
14	Case Shell Motor Side	33-20217	1		36	Oilite Washer	33-20239	2
15	Gasket	33-20218	1		37	Roller Tube	33-20240	1
16	HHCS	33-20219	2		38	Inner Bearing	33-20241	2
17	Hex Nut	33-20220	4		39	Shaft	33-20242	1
18	Lock Washer	33-20221	4		40	Gear Cluster	33-20243	1
19	HHCS	33-20222	7		NS	Roller Steel	33-20244	18
20	Bushing Cap	33-20223	1		NS	Square Spacer	33-20245	18
21	HHCS	33-20224	2		NS	Large Seal	33-20246	1
22	Lock Washer	33-20225	2		NS	Small Seal	33-20247	1

Air Motor Assembly Breakdown



Item #	Part #	Description	Qty
1	33-A001	Gear Std.	1
2△	33-A3002	Bearing	2
3	33-A3003	Pin	1
4	33-A3004	Rotor	1
5△	33-A3005	Vane	4
6△	33-A3006	Spring Pin	4
7△	33-A3007	Springs	2
8	33-A3008	Body	1
9△	33-A3009	Shims	2
10	33-A3010	Dead End Plate	1
11△	33-A3011	End Cap Gasket	1
12	33-A3012	End Cap	1
13	33-A3013	Drive End Plate	1
14	33-A3014	Seal	1
15	33-A3015	Dowel Pins	4
16	33-A3016	1/4-28 x .50 PFHMS	6
17	33-A3017	1/4-28 x .625 SHCS	6
△	33-30136	Service Kit: Includes all △	1
	33-30169	Complete Assembly	1

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