WORKMASTER®

WE FIND A WAY — OR MAKE ONE!

GO-A8-PW 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.

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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.

DANGER

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

WARNING

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

CAUTION

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 Owner/Operator Manual details the specifications, operation, maintenance, and safe use of the **GO-A8-PW** Pneumatic Hopper Car Gate Opener. Experience has proven that the **GO-A8-PW** 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.

Should the **GO-A8-PW** require repair, the Opener can be sent to our Authorized Service Center: AIRMATIC, 284 Three Tun Rd, Malvern, PA 19355; or your in-house service/maintenance mechanic can repair following instructions in our Maintenance and Parts Manual PN: 10-00067.

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 capable of supplying 114 CFM @ 85 PSI
- ☑ High-quality air hose: 1" ID, preferably fitted with a Universal (Chicago type) coupling for maximum air flow..

IV. SPECIFICATIONS AND COMPONENTS

To operate the **GO-A8-PW** effectively the user should be familiar with each of the Gate Opener's components. See **Figure 1** for a Component Layout, and the separate **WORKMASTER GO-A8-PW Gate Opener Maintenance & Parts Manual (PN: 10-00067)**.

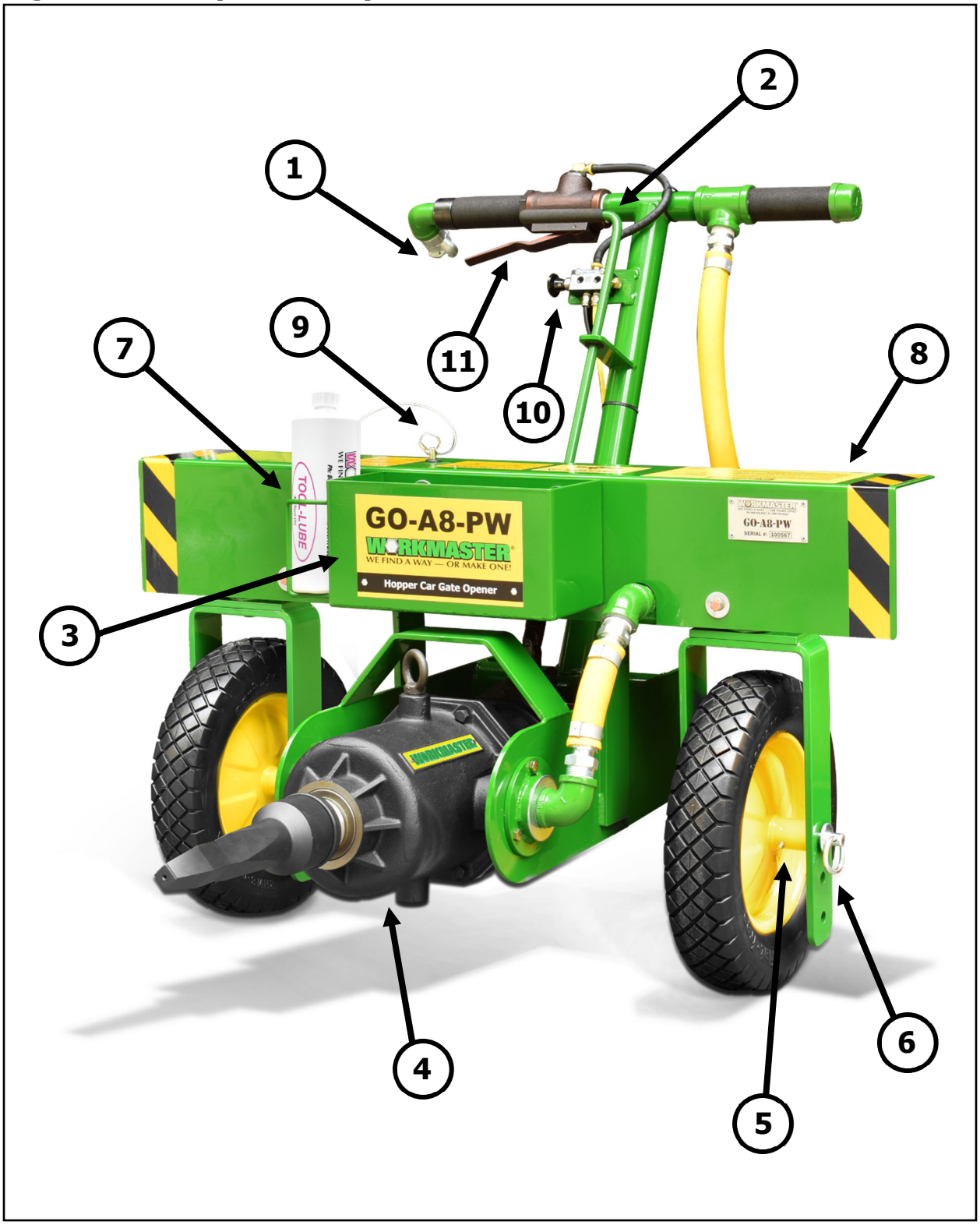
The **GO-A8-PW** Pneumatic Hopper Car Gate Opener consists of a heavy-duty reversible impact motor, self-closing lever control mechanism and a Rolling Cart. The **GO-A8-PW** Opener is portable, rugged, and capable of operating in the toughest environment. Under recommended operating conditions and with appropriate air supply and tool maintenance, the self-regulating **GO-A8-PW** Opener can generate up to 13,000 lb-ft of torque. The Impact Motor is air driven and requires a source of clean, dry, regulated and lubricated compressed air for operation.

Every user should be aware of the technical specifications and operating characteristics shown below in **Table 1**.

Table 1: Technical Specifications

CHARACTERISTICS	GO-A8-PW
Overall Dimensions	50” x 42” x 42”"
Weight w/ Drive Fitting	306 Lbs
Working Area Required	8 – 10 Ft Minimum – Site Specific
Free Speed	1500 RPM
Working Torque Range	1000 – 13000 lb-ft
CFM/PSI Free Speed	150 @ 85 PSI
CFM/PSI Impacting	114 @ 85 PSI
Air Inlet	1" NPTF
Tire Size	4.00 x 8 Solid Polyurethane
Anvil Size	1-1/2"
Retainer Type	Socket Pin w/ O-Ring
Hose Size	1" ID
Lubrication	Air Tool Oil

Figure 1: Component Layout (See pg 5 - 8 for details)



COMPONENT LAYOUT DESCRIPTIONS
(See Figure 1, pg 4)

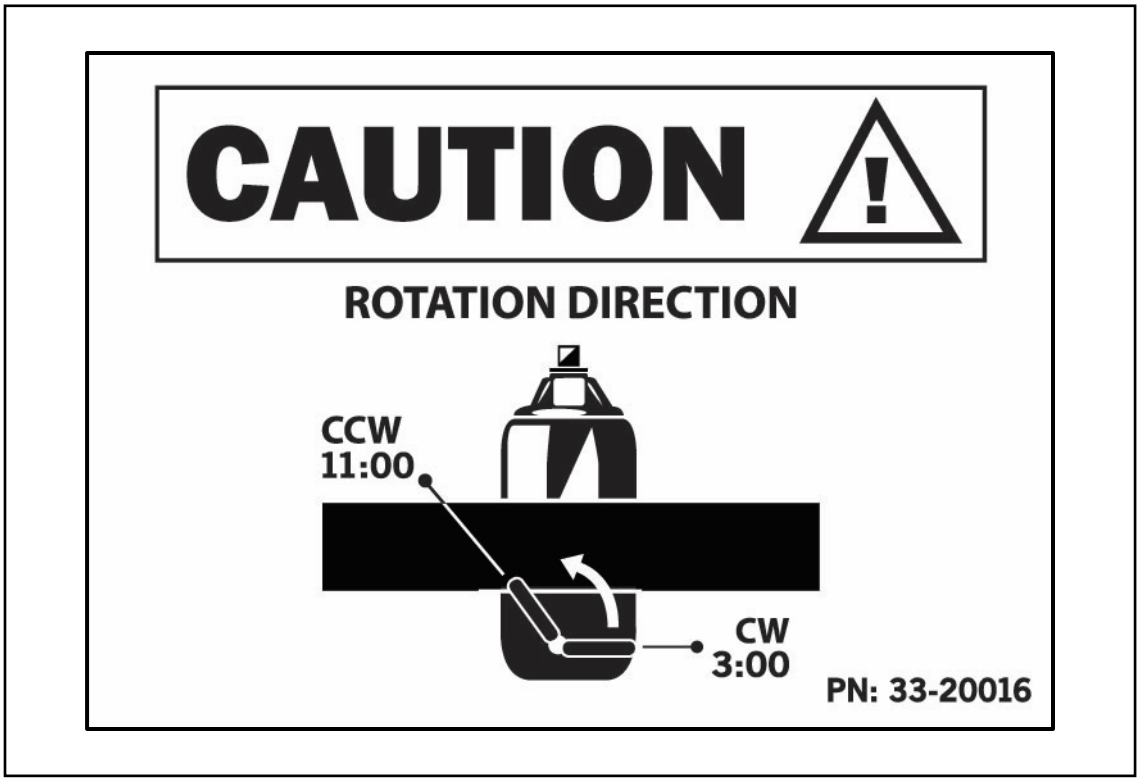
1. AIR INLET

The air inlet is a 1" NPT opening with a full-port, Universal (Chicago type) Coupling. The Coupling supplied is the recommended fitting for the **GO-A8-PW**. Replacing the Coupling with a quick-connect type plug will restrict air flow to the Impactor.

2. FORWARD/REVERSE LEVER (F/R Lever)

The F/R Lever is a steel rod attached to a swivel joint providing a universal type pivoting action. The rod, painted with enamel, has a rubber, slip-on grip for control comfort. The F/R Lever controls the direction of rotation of the Impactor's square drive anvil. A decal located on the Pivot Guard (Item 8) shows the position for clockwise anvil rotation (3 O'clock position), and for counterclockwise anvil rotation (11 O'clock position), see **Figure 2**.

Figure 2: Forward/Reverse Label



3. TOOLBOX

The Toolbox, bolted to the front face of the Pivot Guard, provides easy access storage for essential **GO-A8-PW** accessories. When not being used, the Drive Fitting, Swage Tool and Anvil Extensions should be stored in the Toolbox, and not on the Impactor's square drive.

4. IMPACTOR

This heavy duty, reversible, pneumatic motor requires a source of clean, dry, regulated and lubricated compressed air for producing the torque output. For a breakdown showing all the parts within the Impactor refer to the **Maintenance & Parts Manual (PN: 10-00067)**. The Impactor can pivot approximately 15° on its trunnions. For performance ratings, See **Table 1** located in the beginning of this section.

5. WHEEL-AXLE ASSEMBLY

The Wheel-Axle Assembly supports the **GO-A8-PW** Rolling Cart on wide stance, flat-free tires, providing excellent balance. The wheels are attached and secured to the axle by a cotter pin. The Wheel-Axle connects the wheels to the left and right Height Adjustment Forks. The Forks are welded to a pivot bar which is actuated by a cylinder via the Pivot Pull Switch (Item 10).

6. HEIGHT ADJUSTMENT FORK

Both Forks are designed to allow the operator to adjust the height of the Impactor's square drive. By repositioning the Wheel Assembly's Axle into the holes along the face of each Fork, the Impactor can be raised or lowered up to 4" to accommodate a variety of unloading site conditions. See **Section X: Height Adjustment** for adjustment instructions.

7. OIL CADDY

The Oil Caddy is welded to the Opener's Toolbox and is designed to serve a dual purpose. Primarily, the Oil Caddy allows the operator to always keep a bottle of air tool oil on-hand; secondly, the Oil Caddy serves as a reminder to check the oil level in the FRL supplied with this Gate Opener. The oil level should be checked daily.

8. PIVOT GUARD

The Pivot Guard protects the pneumatic cylinder which shifts the pivoting linkage at the cylinder plate forcing the shaft and fork frame to turn at a predetermined angle. The Pivot Guard has safety lock pinholes that extend through the pivoting linkage plates and restrict wheel direction change until the pin is removed. This pivot wheel action allows the **GO-A8-PW** to travel with rolling capstans.

9. PIVOT LOCKING PIN

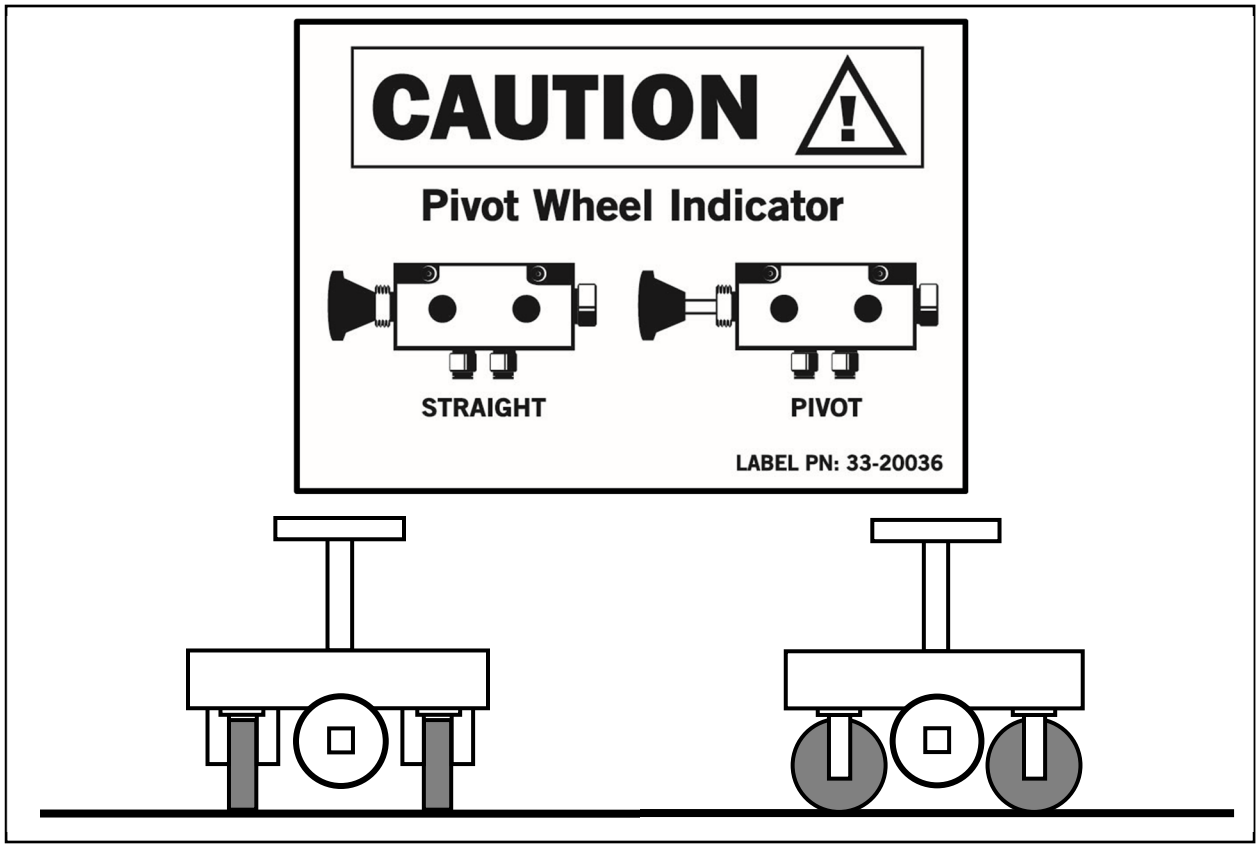
The Pivot Locking Pin is used to lock the wheels and the Height Adjustment Forks in the straight or pivot position. The Pin, attached to the **GO-A8-PW** by a coated lanyard, must be removed before actuating the Pivot Pull Switch. The Pin should be reinserted into the correct pinhole on the Pivot Guard when the wheels are in the desired position. A label located on the Pivot Guard, See **Figure 3**, shows which pin hole is used to lock the **GO-A8-PW**'s wheels in the desired position.

Figure 3: Locking Pin Label

10. PIVOT PULL SWITCH

The Pivot Pull Switch is a pneumatic actuated valve that controls the movement of the **GO-A8-PW**'s wheels and Height Adjustment Forks. When the Switch is in the PIVOT position, the wheels will rotate so that they are parallel to the railcar. When the Pull Switch is in the STRAIGHT position, the wheels will move perpendicular to the railcar. A label located on the Pivot Guard, See **Figure 4**, shows the Pivot Pull Switch position for the desired wheel movement.

Figure 4: Pivot Pull Switch Label



11. THROTTLE VALVE

The Throttle Valve is a self-closing, lever-operated valve that is attached to the right-hand side of the frame on the Handle Assembly. The Throttle Valve has a spring-loaded lever, which shuts off air to the Impactor as soon as the throttle is released. Only when the Throttle Lever is depressed will the Impactor be activated.

V. AIR REQUIREMENTS

An Air Compressor of sufficient capacity is needed to provide the necessary air volume (CFM), at the most efficient operating pressure (PSI), to ensure effective and economical operation of the **GO-A8-PW** Opener.

IMPORTANT

Low or inadequate air pressure at the Opener is costly and wasteful. An insufficient air volume will not allow the GO-A8-PW Opener to operate effectively.

1. Air Pressure of 85 to 90 PSI is recommended for maximum performance. This setting represents the required *operating air pressure at the Opener*, not at the Compressor. There is always a pressure drop between the Compressor and the Opener; only the pressure and volume at the Opener is effective in doing work. If the hose is relatively short (25' to 50'), and in good condition, the pressure drop between the Compressor (or Air Receiver Tank), and the Opener should not exceed 15% of initial pressure. Adjust Compressor output to compensate for drop.

2. Clean, moisture-free, lubricated air should be always delivered to the Opener. The airline delivering air to the Opener should be equipped with a coalescing type of filter/dryer to collect and remove moisture and contaminants.

3. Quality air hose designed especially for heavy-duty service should be used. It should be constructed with an outer covering that resists abrasive wear, an oil-resistant inner tube, and should be able to withstand temperature extremes. It should have a working pressure of at least 200PSI.

4. All hose couplings and fittings between the compressor and the Opener should be full bore type, be in good condition, securely attached, and kept as tight as possible (check Coupling gaskets). Elimination of air leaks involves making the air system tight and then keeping it tight. At a typical unloading site, air losses through bad connections, too many connections and worn hose often reaches 25% of the total air compressed.

VI. PRE-START CHECK LIST

1. Check FRL Air Control Service Unit: Regulator set at 85-90 PSI; Fill the Lubricator with the air tool oil supplied. See **Section VII: Compressed Air Treatment** for details.

2. With air pressure OFF, install Capstan Drive Fitting making sure that the Pin Retainer and O-Ring are properly seated.

3. Connect all air hoses and make sure all controls are locked and properly secured.

Compressed air is an invisible hazard. Any component through which it passes can release an explosive force which could result in personal injury or death. As noted earlier, all persons involved in the operation and maintenance of this equipment should be thoroughly familiar with its use.

4. When using a new air hose, blow lubricated air through the hose to coat the ID of the new hose with oil. This should be done before the air hose is connected to the Gate Opener.

Be sure all hose connections are tightly secured. A loose hose not only causes air leaks but can whip around and injure personal in the area. Secure hose couplings with safety pins, clips, cables, or chains.

5. Each day, before opening any slide gates, operate the **GO-A8-PW** at free-speed for about 30-40 seconds. This will allow oil to coat the Impactor's internal components.

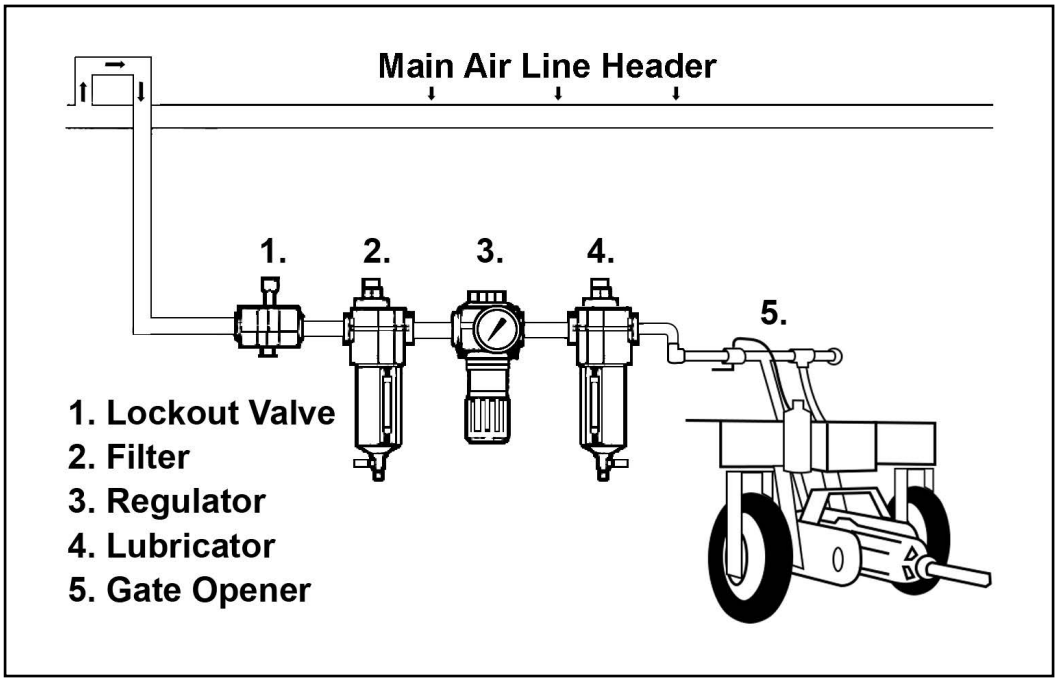
VII. COMPRESSED AIR TREATMENT

The **GO-A8-PW** Hopper Car Gate Opener is designed to operate with a clean, dry air supply at the required pressure (85 to 90-PSI) and air volume (114 CFM). Dirty and wet air will result in sluggish operation, more frequent repair and replacement of parts due to sticking, jamming and rusting of wearing parts. Moisture will also wash out the required oils, resulting in excessive wear. A decreased air pressure at the Gate Opener caused by a Regulator Gauge set too low or by restricted (too small) or plugged lines, valves or couplings will cause a reduction in efficiency at the Gate Opener. Clean, dry air at the required pressure (85 to 90-PSI) will enable the unloading site worker to start immediately at an efficient level, with no time lost to purge the lines, drain the Filter, set the Regulator Gauge or fill the Lubricator, and will help to maintain productivity and prolong Gate Opener life.

WORKMASTER supplies a heavy-duty, preassembled, high air flow, combination 1" FRL Service Unit **(PN: 82-10406)**. This Service Unit consists of a Filter w/ Metal Bowl and Sight Glass; a Regulator w/ Gauge; and a Lubricator w/ Metal Bowl & Sight Glass to treat the compressed air supplied to the Gate Opener. This FRL Service Unit should be installed as close as practical (the Service Unit should be rigidly mounted in an activity/weather protected area), to the hopper car unloading site.

The Service Unit is mounted so that the Filter is upstream of the Regulator and Lubricator. The top of the inlet side of the Filter is clearly marked with an " ➡ " for proper connection from the compressed air system through the Service Unit.

Figure 5: Filter / Regulator / Lubricator (FRL) Air Control



FILTER: Designed to operate at 250 PSI max pressure and in a temperature range of 40°F to 200°F. Filtering out of dirt and foreign particles, and the separation of moisture is automatic with air flow. There are no moving parts, and no adjustments are necessary.

Maintenance: Accumulated moisture and sludge must be periodically drained. Sediment must not be permitted to fill above the Filter's Lower Baffle. The Filter should be drained weekly by turning the petcock on the bottom of the Filter Bowl *clockwise* ½ to 1 turn. This can be done while the Filter is under pressure to take advantage of blowdown. Periodically, eg, every 3 to 4 months, the Service Unit must be depressurized so that the Filter can be cleaned to maintain filtering efficiency:

1. Unscrew the Metal Bowl and then unscrew the Filter Element from the Head;
2. Wash the Element in kerosene;
3. Clean the Filter Bowl with soapy water;
4. Inspect the O-ring, replace if damaged or destroyed;
5. Dry the Filter Element thoroughly;
6. Reassemble carefully to avoid stripping and cross threading;
7. After Metal Bowl is tightened, it may be rotated up to 180° for proper viewing of the Sight Glass.

REGULATOR: Designed to operate at 250 PSI max pressure with an air flow up to 700 CFM and in a temperature range of 40°F to 160°F. The Regulator is always installed downstream of the Filter but upstream of the Lubricator. Before turning the air supply to the Service Unit "ON", back-off the Regulator's Pressure Adjusting Knob. When air supply is turned "ON", regulate the Adjusting Knob until the pressure gauge shows the desired 85 to 90-PSI. To lock the Adjusting Knob, push down until Knob snaps into locking groove. To make the Regulator tamper-resistant, remove Adjusting Knob from the Regulator. The Regulator may be readjusted later by simply replacing the Knob.

Maintenance: Upon detection of leaks, pressure fluctuation, or pressure "creep", the Regulator must be inspected and cleaned:

1. Depressurize the Service Unit;
2. Remove Bottom Cap;
3. Inspect Valve for damage or wear;
4. Inspect Seat in Head Casting for foreign material or damage;
5. Clean with kerosene and blow-out with air;
6. Replace damaged or worn parts;
7. Replace Bottom Cap.

NB: If leaks persist, it will be necessary to remove Regulator's Bonnet and inspect Diaphragm and Diaphragm Seat for foreign matter or wear and replace if necessary.

The Lubricator for the GO-A8-PW is empty when shipped from the factory. To avoid damage to the Impactor the Lubricator must be filled prior to operation.

LUBRICATOR: Designed to operate at 250 PSI max pressure and a temperature range of 40°F to 160°F. This simple, trouble-free design has a large capacity Metal Bowl w/ Sight Glass. It can be filled to the top to extend intervals between filling and the Sight Glass makes it easy to monitor oil levels. The Lubricator is always installed downstream of the Filter and the Regulator. It automatically maintains the proper air to oil ratio regardless of variation in air flow. While the Lubricator must be initially filled while the Service Unit is not pressurized, the Lubricator can be refilled under pressure by slowly removing the Filler Plug to release back pressure and then inserting a long spout/funnel into the opening and adding oil until the Metal Bowl is filled (Sight Glass). ***NB: The Metal Bowl must not be removed while the Service Unit is under air supply pressure.***

NB: **Check the Lubricator's oil level Sight Glass daily and add Tool-Lube Air Motor Oil as required.**

The Lubricator automatically varies oil mist delivery with air flow variations at any adjustment. The Lubricator's Wick Element Assembly is factory pre-set at a "mean" (halfway) adjustment that is appropriate for most Gate Opener applications (distance between the FRL and the Gate Opener can affect oil mist delivery). If necessary, increased oil mist delivery can be obtained by raising the Oil Feeder Wick **(A)** (see **Figure 6**) higher in the venturi (air stream). To decrease oil mist delivery, lower the Oil Feeder Wick into the venturi. Read the following instructions if oil mist delivery must be changed.

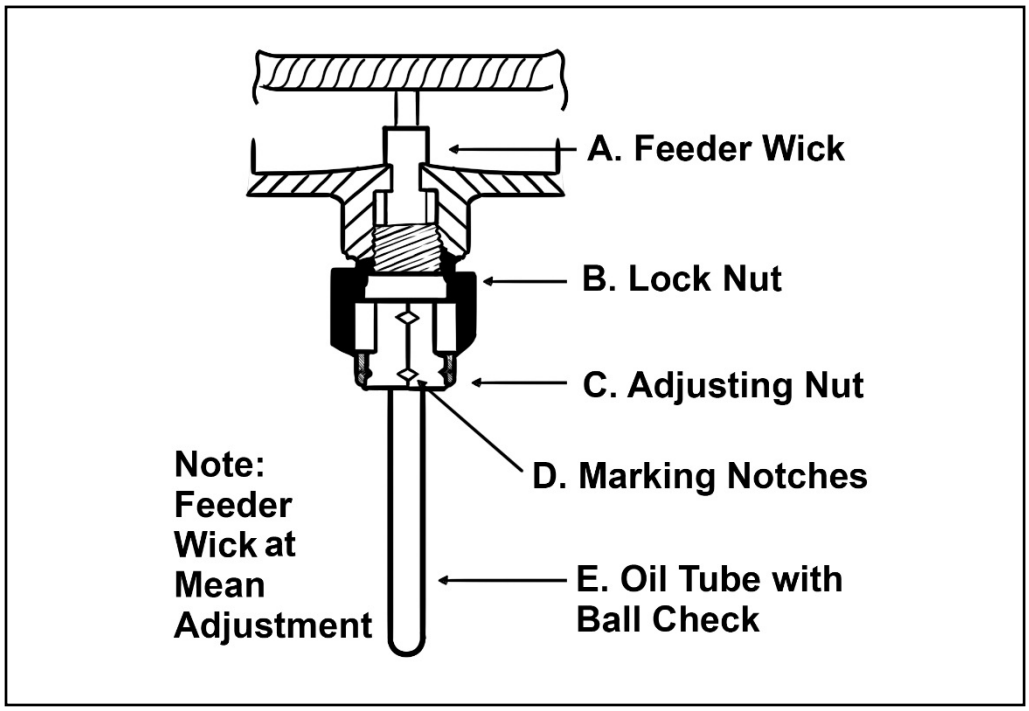
IMPORTANT

WORKMASTER's TOOL-LUBE Air Tool Oil is recommended. It is a High-Grade Air Tool Oil with absorbing emulsifiers. *Do Not Use* any of the following: Kerosene, hydraulic fluid, transmission fluid, spindle oil, motor oil or antifreeze.

IMPORTANT

For cold weather operation, such as winter conditions (below 40° F), when the **GO-A8-PW** is used outdoors or in an un-heated service area, the Lubricator should be filled with a Winter Grade Air Tool Oil (PN: 40007).

Figure 6: Venturi Section of Lubricator



TO ADJUST OIL FEEDER WITH ASSEMBLY (A-C-E)

1. Depressurize Service Unit, then loosen Lubricator's Bowl Ring Nut by hand. Remove Bowl using Ring Nut. Loosen Locknut **(B)**;
2. Increase oil mist delivery by turning Adjusting Nut **(C)** up to raise Feeder Wick with **(A)** into venturi, or turn Adjusting Nut **(C)** down to decrease oil mist delivery;
3. Tighten Locknut **(B)**. The height of the Feeder Wick **(A)** in the venturi is visually indicated by the relative position of the Marking Notch **(D)** on Adjusting Nut **(C)** to the bottom of Locknut **(B)**;
4. Reattach Bowl using Ring Nut, be sure O-ring Seal is correctly set in Lubricator head groove. Tighten Bowl Ring Nut by hand. (Reassemble carefully to avoid stripping and cross threading.)

IMPORTANT

For Food Service applications you must use a high-quality Food Grade Air Tool Oil. Contact your **WORKMASTER** Distributor for product recommendation.

VIII. OPENING CAR GATES

1. Roll the **GO-A8-PW** Opener up to the hopper gate until you "rough spot" position the Opener's output drive with the Railcar Gate's Capstan Socket.

2. Using the CAPSTAN SWAGE TOOL (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 Impactor's Output Drive can be aligned properly, 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.

3. 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.

4. 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.

5. Roll the Opener forward toward the car gate until the CAPSTAN DRIVE FITTING is firmly seated in the Railcar's Capstan Socket.

6. Rotate the Forward/Reverse Lever to set the Impactor's motor rotation direction.

Keep your hands off the Throttle Lever until it is time to start the Opener. Plant feet firmly, and always keep both hands on the handle while operating the **GO-A8-PW** Opener.

7. For Railcars with Rolling Capstans, remove the Pivot Locking Pin from the **GO-A8-PW**'s straight position pin hole, and push/pull the Pivot Pull Switch to the pivot position. This will cause the **GO-A8-PW**'s tires to rotate parallel to the Railcar.

8. Secure the Pivot Locking Pin in the PIVOT lock pin hole. Make sure the Pin is fully seated so that no more than 1/4" of the Pin protrudes above the Pivot Guard.

9. Grip the Opener's handle with both hands. Depress the Throttle Valve Lever slowly, applying a firm, steady inward pressure to the handle. The correct amount of pressure for maximum efficiency can be learned only by experience. Control the opening speed of gate travel so that the Gate does not unnecessarily slam against the end of the Gate Track.

CAUTION

Release the Throttle Lever the moment the Gate reaches its fully opened position. Prolonged impacting can cause structural damage to the gate mechanism.

10. If the Car Gate will not move, STOP using the **GO-A8-PW** Opener and notify your supervisor, continued impacting will destroy the Gate.

Do not use other opening devices (pry bars, multipliers, etc.) to "Help" the **GO-A8-PW** Opener.

11. Once the Car Gate is fully opened, pull the Pivot Locking Pin from the Pivot lock pin hole, and push/pull the Pivot Pull Switch to the straight position. This will cause the Tires to rotate perpendicular to the Railcar.

12. Secure the Pivot Locking Pin in the Straight lock pin hole.

13. Roll the **GO-A8-PW** Opener away from the Railcar disengaging the CAPSTAN DRIVE FITTING from the Railcar's Capstan Socket.

IX. CLOSING CAR GATES

1. Roll the **GO-A8-PW** Opener up to the hopper gate until you "rough spot" position the Opener's output drive with the Railcar Gate's Capstan Socket.

2. Re-examine the Capstan Socket. Look for rounded edges, spalling or mushrooming. If needed, re-use the Swage Tool to square-up the Socket.

3. Roll the Opener forward toward the car gate until the CAPSTAN DRIVE FITTING is firmly seated in the railcar's Capstan Socket.

4. Rotate the Forward/Reverse Lever to set the Impactor's motor rotation direction.

Keep your hands off the Throttle Lever until it is time to start the Opener. Plant feet firmly, and always keep both hands on the handle while operating the **GO-A8-PW** Opener.

5. For railcars with rolling Capstans, remove the Pivot Locking Pin from the **GO-A8-PW**'s STRAIGHT position pin hole, and push/pull the Pivot Pull Switch to the Pivot position. This will cause the **GO-A8-PW**'s tires to rotate parallel to the railcar.

6. Secure the Pivot Locking Pin in the Pivot lock pin hole. Make sure the Pin is fully seated so that no more than 1/4" of the Pin protrudes above the Pivot Guard.

7. Grip the Opener's handle with both hands. Depress the Throttle Valve Lever slowly, applying a firm, steady inward pressure to the handle. The correct amount of pressure for maximum efficiency can be gained only by experience. Control the closing speed of the gate travel so that the Gate does not unnecessarily slam against the end of the gate track.

CAUTION

Release the Throttle Lever the moment the Gate reaches its fully closed position. Prolonged impacting can cause structural damage to the gate mechanism.

8. If the Car Gate will not move, STOP using the **GO-A8-PW** Opener and notify your supervisor.

Do not use other opening devices (pry bars, multipliers, etc.) to "Help" the **GO-A8-PW** Opener.

9. Once the car gate is fully closed pull the Pivot Locking Pin from the Pivot Lock Pin hole and push/pull the Pivot Pull Switch to the Straight position. This will cause the Wheels to rotate perpendicular to the Railcar.

10. Secure the Pivot Locking Pin in the Straight lock pin hole.

11. Roll the **GO-A8-PW** Opener back from the Railcar thereby disengaging the CAPSTAN DRIVE FITTING from the Railcar's Capstan Socket.

12. Engage the Railcar Gate locking mechanism.

X. HEIGHT ADJUSTMENT

The height of the Gate Opener's Drive Shaft can be adjusted to help align the Drive Fitting with the Capstan. By repositioning the wheel axle pins, the Impactor can be raised or lowered up to 4".

To Adjust the height:

1. Pivot the wheels to the Straight position (parallel with Impactor).

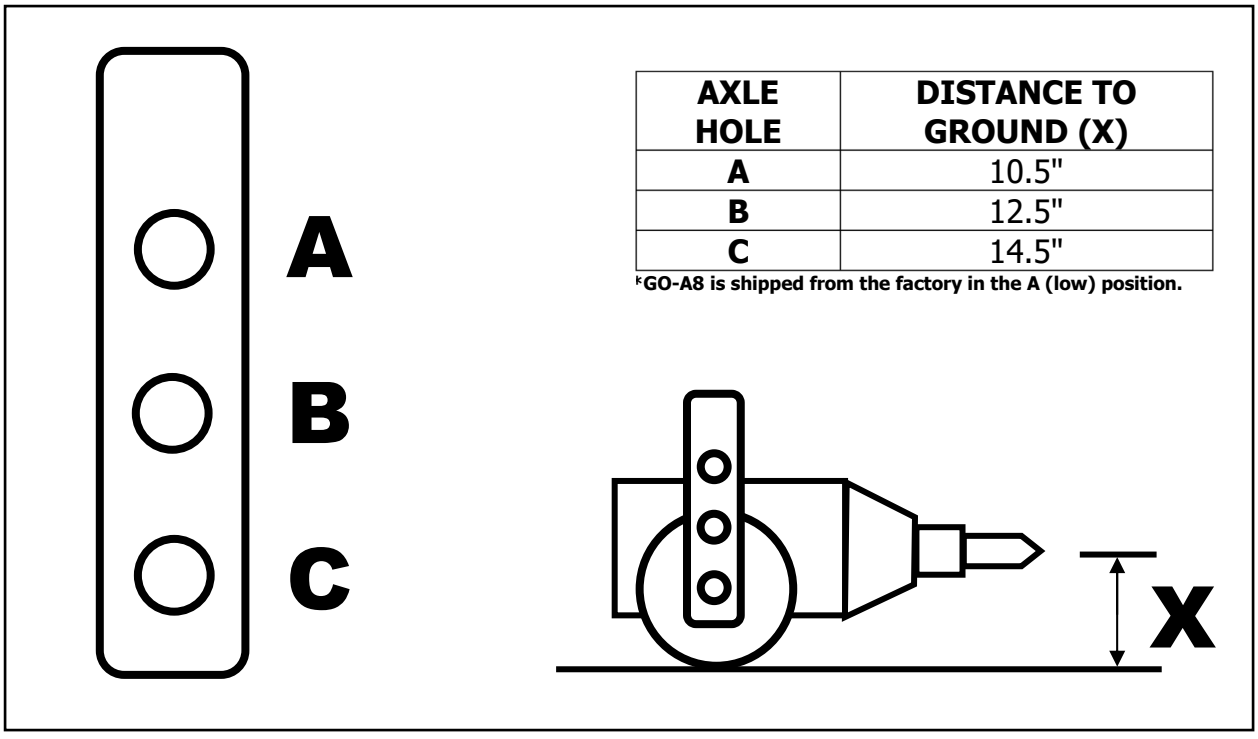
2. Disconnect the air supply line to the Gate Opener.

3. Tilt the Opener back onto the Foot Bar.

4. Remove the Locking Clips from both Wheel Axle Pins.

5. Remove Axle pins and move Wheels to the desired height. See **Figure 7**, for Height Adjustment Specifications.

Figure 7: Height Adjustment Specifications



AXLE HOLE	DISTANCE TO GROUND (X)
A	10.5"
B	12.5"
C	14.5"

*GO-A8 is shipped from the factory in the A (low) position.

6. Replace Axle Pins and Locking Clips.

XI. STORAGE

1. When not in use the **GO-A8-PW** should be stored in a clean, dry & sheltered area, safely out of the way.

2. If a sheltered area is not available and/or not practical, **WORKMASTER**'s waterproof, puncture and tear resistant Protective Cover will provide excellent protection from both the elements and unloading site debris. See **Section XII: Accessories** for ordering information.

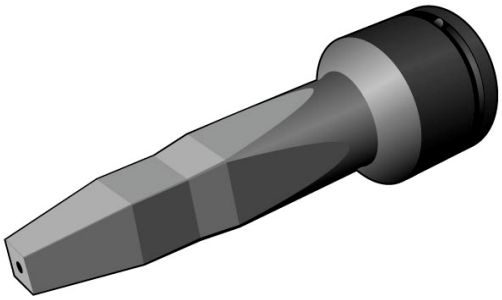
3. For prolonged storage (more than 2-weeks), the **GO-A8-PW** should be operated, at free-speed, for about 10-minutes. This will allow oil to coat the Impactor's internal components.

4. All accessories including the Drive Fitting, should be stored in the **GO-A8-PW**'s Toolbox. Do not leave these items attached to the Impactor if they are not being used.

XII. ACCESSORIES

This Section describes the accessories available from **WORKMASTER**. The attachments and lubrication products are those that we recommend the Customer purchase based upon our specialized knowledge of and experience with the Opener and the parts required or in similar applications. Maintaining an inventory of the recommended lubricant, attachments, and accessories will significantly improve job site safety, increase the Opener's productivity, and reduce maintenance costs and down time associated with emergency acquisitions.

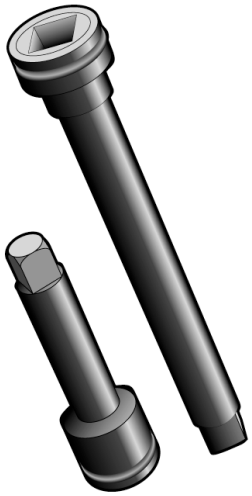
DRIVE FITTING



This tapered, 1-piece Drive Fitting is designed to fit every Railcar Capstan with full contact on all sides. Its 1-1/2" female sq. socket creates a large contact surface with the Impactor's Anvil. With a forged core and precision machined sides – tapered from a 1-1/2" square to a 3/4" square tip – this Drive Fitting is built-to-last.

PART #: 33-01410

ANVIL EXTENSION



Unmovable obstacles and/or unloading site gaps can make getting your Gate Opener close to the Railcar's capstan impossible! These heavy-duty 12" and 20" Anvil Extensions make the impossible, possible. Each Extension is designed to not only extend your Gate Opener's reach, but to do so without any torque loss. They are precision machined, impact resistant, and constructed of hardened tool steel.

12" EXTENSION, PART #: 33-10012
20" EXTENSION, PART #: 33-10020

UNIVERSAL JOINT

Covered Hopper Cars come in a variety of shapes and sizes, and the height of a capstan and the surrounding terrain can vary just as much. This heavy-duty Universal Joint can overcome these height variances by positioning your Drive Fitting directly in-line with the center of the capstan. Correct alignment with the capstan is critical to the life of your Gate Opener and can insure the solid in-line entry of the Drive Fitting on even the steepest of railroad slopes.

PART #: 33-10090

CAPSTAN SWAGGING KIT

Over time the inside edges of a Railcar's capstan wear and become rounded. When this happens opening or closing a hopper car becomes an inefficient and costly task. The Capstan Swage Kit can bring new life to dull, worn and damaged capstans. With just a few, sharp hammer blows, worn or damaged capstans are quickly renewed. The Swage Tool is machined from Grade 4140 tool steel and specially heat treated for proper hardness. The non-sparking, non-magnetic Swagging Hammer, with a patented dead blow technology, delivers 40% more driving force than conventional style hammers. It has a 15" overall length and a 2-1/2" face that makes hitting the targeted Swage Tool a cinch every time. With an ergonomic grip design and weighing only 48oz. the Swagging Hammer is comfortable and easy to swing. Our Swage Tool with Swagging Hammer can deliver the results you need to get difficult capstan sockets squared-up and ready to roll.
MEETS OSHA STANDARDS FOR NON-SPARKING HAMMERS.

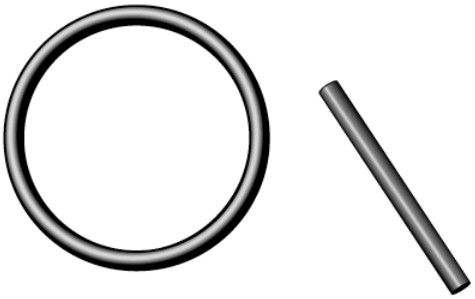
PART #: 33-11120

CAPSTAN RENEW ATTACHMENT

The Attachment is an easy-to-use adapter that slips over the Barrel and then pin-locks in place to provide a perfectly formed female square socket for the Gate Opener's Drive Fitting. The Attachment weighs < 15 lbs. so it can be easily and rapidly moved from gate to gate, and its lock-in-place feature ensures the capstan stability needed to accept the Opener's power output.
A Perfect Fit, Every Time!

PART #: 80-10728

PIN & RING RETAINER



If your unloading site sees a variety of railcars and you're constantly changing the accessories on your Gate Opener, you'll need **WORKMASTER**'s Pin & Ring Connectors to help keep the job moving. The Pin is hardened steel, the Ring is nick-resistant rubber, and together they make changing from your 12" Extension to your Universal Joint, to your 20" Extension, quick and easy. **WORKMASTER**'s Pin & Ring Connectors are also OSHA approved because there are no protruding ends that can damage property or injure workers.

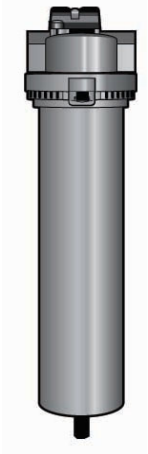
PIN, PART #: 32-50124
RING, PART #: 32-50000

RET-RING CONNECTOR

WORKMASTER's 1-1/2" Ret-Ring Connector secures your Drive Fitting to your Gate Opener, Extension or Universal Joint. One piece, molded of durable polyurethane, with a steel insert for added safety, the Ret-Ring Connector makes changing accessories quick and easy. Its bright blue color makes it easy to spot if dropped or misplaced and its enclosed design is OSHA approved for all Gate Opener and rotating tool applications.

PART#: 32-50001

FILTER / DRYER



Stop water and dirt from entering your Gate Opener with **WORKMASTER'**s Filter/Dryer Assembly. This unique accessory incorporates patented inverse flow technology and is engineered specifically to remove condensed liquids and dirt from the airlines feeding your Gate Opener or Pocket Vibrator. This Filter/Dryer Assembly prevents airline moisture problems from damaging your Pneumatic equipment.

- 1" Inlet, air flow up to 150 SCFM
- Metal Bowl
- Stainless Steel Element and Cotton replaceable Cartridge

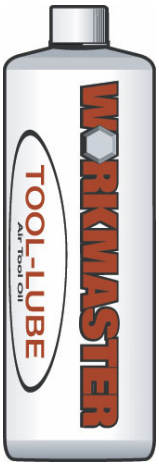
PART#: 82-10420

PROTECTIVE COVER

Rain, snow, wind-blown dirt and plant debris can really do a number on your Railcar Gate Opener. But with **WORKMASTER**'s waterproof, puncture and tear resistant protective cover, you can keep your Gate Opener working and looking like new. The Cover's tapered fit shelters your Gate Opener from the elements while maintaining the unit's mobility. Protect your Gate Opener from nicks, scratches dents and rust with **WORKMASTER**'s Gate Opener Cover.

PART #: 30-20020

AIR TOOL OIL



Keep your Gate Opener running longer - up to three times longer - cleaner, with less downtime and greater power using **WORKMASTER**'s TOOL-LUBE Air Tool Oil. Special emulsifiers allow this unique oil to absorb 10% of its weight in water preventing the formation of rust, gum, and sludge. With regular use of **WORKMASTER**'s TOOL-LUBE you can expect your pneumatic Gate Opener to operate with greater consistency, reduced noise levels, and at its highest performance level.

1 QT, PART #: 36-21010
1 CASE, (12 QTS) PART #: 36-21014

APPENDIX A: TROUBLESHOOTING

TROUBLE	PROBABLE CAUSE	RECOMMENDED ACTION
Tool runs slowly or not at all. Air flows only slightly from exhaust.	• Airflow blocked by accumulation of dirt. • Motor parts jammed with dirt particles. • Air is escaping through housing connection that may have vibrated loose.	1. Check that all housing bolts are tight. If not, apply Loc-Tite and retighten. 2. Pour a liberal amount of air tool oil into air inlet. 3. Operate tool in short bursts – quickly reversing rotation back and forth. 4. Repeat as needed. 5. Tap motor housing lightly with soft-faced mallet. 6. Disconnect air supply – then attempt to free motor by rotating drive shank manually.
Tool runs and impacts but exhibits lack of power (will not open gates that it previously would).	• Back head gasket (See **GO-A8-PW MAINTENANCE & PARTS MANUAL: Appendix A**, Exploded View) broken through.	1. Replace Gasket.
Drive Fittings will not stay on.	• Pin and O-Ring is not being used to secure Drive Fitting.	1. Replace Pin and O-Ring (See **SECTION XII: ACCESSORIES**).
Premature Square Drive wear.	• Drive Fitting socket is worn.	1. Replace worn Drive Fitting. (See **SECTION XII: ACCESSORIES**).
Gate Opener gradually losing power but still runs at full free speed.	• Internal parts are worn or sticking due to lack of lubricant.	**OIL LUBED:** 1. Check in-line Lubricator sight glass or presence of air motor oil. **GREASE LUBED:** **NOTE:** Vibration and heat usually indicate insufficient grease in the Hammer Case Assembly. The average greasing interval is six months. Severe operating conditions may require more frequent lubrication. 1. Check for excess grease by rotating Square Drive by hand. It should turn freely. Excess grease is usually expelled automatically. 2. Disassembly is required for greasing. (See **GO-A8-PW MAINTENANCE & PARTS MANUAL: Disassembly Instructions**).
Gate Opener will not shut-off.	• Throttle Trigger stuck or bent. • Throttle Valve Assembly broken or out of position.	1. Lubricate with air motor oil and operate trigger briskly. 2. Remove Throttle Valve Assembly and install new valve body assembly.
Impactor housing bolts become loose.	• Vibration from impacting.	1. Loctite the bolts and retighten.

APPENDIX B: COMPRESSED AIR SYSTEM

View the plant's air supply as a power transmission utility system. Correctly designed, installed, and maintained, no other utility is as powerful, economical, and unique as your Compressed Air System. Top performance of any air-driven device only occurs when the required operating PSI (air pressure) and CFM (air volume) are supplied, maintained, and controlled. Be sure to:

1. Eliminate or compensate for air leaks in pipes, couplings, valves, and fittings.

2. Check that the ID of the couplings & supply hose are at least the size of the Opener's NPT tapped inlet port (eg, 1" NPT inlet = ID Hose > 1").

Use a **Filter** (< 40µm) to make sure the air supply is kept as clean and dry as possible. An air tool operated with excess moisture or contaminants in the system will suffer poor performance, premature wear, increased maintenance and downtime, and higher noise levels. The filter must be drained regularly, and its filtration element regularly cleaned or replaced. A **Regulator w/ gauge** is required so that the air tool's force, frequency, energy (air) consumption and noise can be adjusted and controlled. A **Lubricator** will extend the air tool's life. The Lubricator must be correctly sized, pressurized, oil-flow adjusted, and installed as close to the air tool as practical.

Lubrication rate must be tailored to specific needs. Precise control is difficult to achieve – it's affected by airflow (CFM), air pressure (PSI), oil level, temperature, and viscosity. **Do not over-lubricate.** Most devices need only a small amount of oil. Oil flooding causes: (1) sluggish operation; (2) oil laden exhaust air which causes: (a) back-pressure due to clogged mufflers; (b) product or atmosphere contamination. Regularly check Lubricator's oil level. Use only a **WORKMASTER** recommended oil (eg, **WORKMASTER**'s **TOOL-LUBE Air Tool Oil PN: 36-21010**), or a *high-grade* air motor oil.

APPENDIX C: AIR SUPPLY PIPING

Use the Table below as a guide for sizing the airlines routed to your Gate Opener.

Recommended Pipe Size for Compressed Air Flow to 125 PSI									
Air Volume	**Pipe Length – feet (') Nominal Pipe Diameter – inches (")**								
CFM	**25'**	**50'**	**75'**	**100'**	**150'**	**200'**	**300'**	**500'**	**1000'**
6	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"
18	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	1"	1"
30	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1-1/4"	1-1/4"
45	3/4"	3/4"	1"	1"	1"	1"	1-1/4"	1-1/4"	1-1/4"
60	3/4"	1"	1"	1"	1-1/4"	1-1/4"	1-1/4"	1-1/2	1-1/2"
90	1"	1"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	2"
120	1"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	1-1/2"	2"	2"
150	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"
180	1-1/4"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"	2-1/2"
240	1-1/4"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"	2-1/2"	3"
300	1-1/2"	2"	2"	2"	2"	2-1/2"	2-1/2"	3"	3"
360	1-1/2"	2"	2"	2"	2-1/2"	2-1/2"	2-1/2"	3"	3"

NOTES

Ask about other Railcar Products

Rail-Shaker Piston Vibrator

CRT Turbine Series Vibrator

CRR Roller Series Vibrator

A powerful boost for rail car unloading.

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