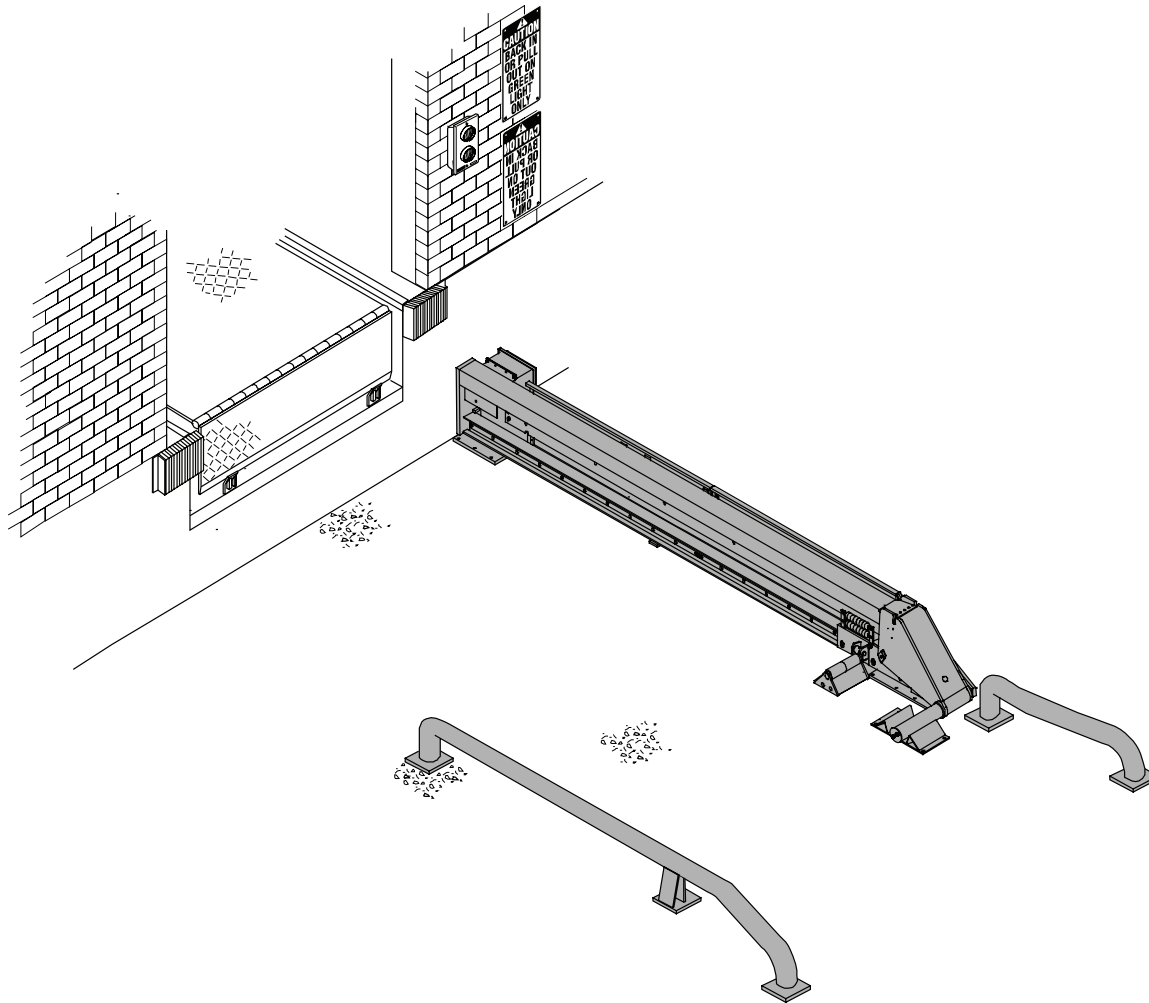


This manual covers units: built after serial numbers GW231001 and up

Installed on: _____



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NOTICE TO USER

Read and understand this manual before attempting to install or operate. For best results, have this product serviced by your authorized RITE-HITE® representative.

The GWL-2300 vehicle restraint by RITE-HITE is intended to provide a safer workplace for workers in shipping and receiving dock areas. The GWL-2300 vehicle restraint is a restraint device that, when properly installed and operated, retains a secure connection between the truck and dock. Signal lights, warning horn and signs provide instructions to the truck driver and GWL-2300 vehicle restraint operator that a safe condition exists. The GWL-2300 vehicle restraint is operated by pressing push buttons on an inside control box.

Your local Rite-Hite® representative provides a Planned Maintenance Program (P.M.P.) which can be fitted to your specific operation. Call your local representative or Rite-Hite® at 414-355-2600.

The Rite-Hite® products in this manual are covered by one or more of the following U.S. patents: 5882167, 6065172, 6070283, 6085375, 6092970, 6106212, 6116839, 6190109, 6276016, 6311352, 6318947, 6322310, 6360394, 6368043, 6431819, 6488464, 6524053, 6726432, 6773221, 6832403, 6880301, 7032267, 7062814, 7213285, 7216391, 7363670, 7380305, 7503089, 7533431, 7546655, 7584517, 7681271, 7823239, 7841823, 7877831, 7914042, 8006811, 8065770, 8141189, 8191194, 8286757, 8287223, 8303235, 8307956, 8443474, 8464384, 8464846, 8465245, 8497761, 8499897, 8544130, 8547234, 8590087, 8590673, 8616826, 8657551, 8662535, 8678736, 8690087, 8905198, 9010501, 9096170, 9096397, 9126775, 9139384, 9145273, 9150367, 9174811, 9227799, 9230419 and may be covered by additional pending U.S. and foreign patent applications.

RITE-HITE®, THINMANTM, SAFE-T-LIP®, HYDRACHEK®, WHEEL-LOKTM, DOK-LOK®, DUAL-DOK®, SAFE-T-STRUTTM, DOK-COMMANDER®, JUMBOTM, HYDRA-RITETM, SAFE-T-GATE®, RITE-VUTM LIGHT COMMUNICATION SYSTEM and SMOOTH TRANSITION DOK SYSTEM™, are trademarks of Rite-Hite®.

FCC Compliance

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

NOTE: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference
- (2) This device must accept any interference received, including interference that may cause undesirable operation.

SAFETY IDENTIFICATIONS

! DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

! WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

! CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which can cause damage to the equipment, personal property and/or the environment, or cause the equipment to operate improperly.

NOTE: A note is used to inform you of important installation, operation, or maintenance information.

! WARNING

When working with electrical or electronic controls, make sure that the power source has been locked out and tagged according to regulations and approved local electrical codes.

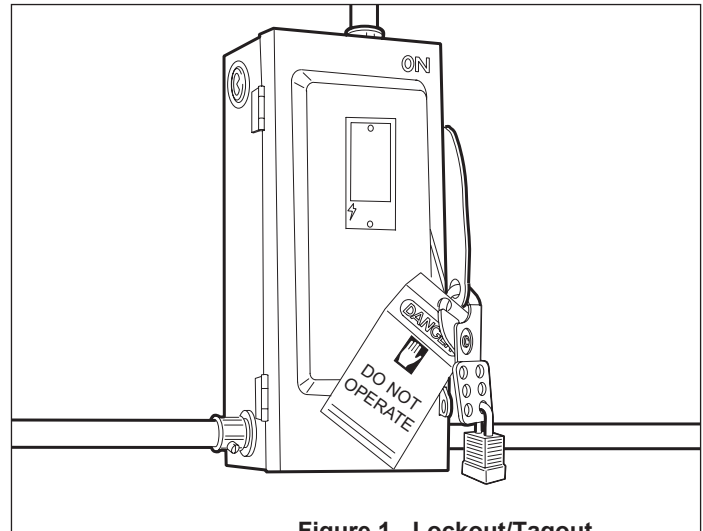


Figure 1 - Lockout/Tagout

OWNER RESPONSIBILITY

1. The owner should recognize the inherent danger of the interface between dock and transport vehicle. The owner should, therefore, train and instruct operators in the safe use of dock equipment in accordance with the information provided below. The manufacturer shall publish, provide to the initial purchaser, and make the following information readily available to owners:
 - Installation instructions
 - Recommended initial and periodic inspections procedures
 - Maintenance procedures
 - Operating instructions
 - Descriptions or specifications for replaceable or repairable parts
 - Tables identifying the grade (slope) for all variations of length or configuration of the dock equipment, and
 - Information identifying the maximum uncontrolled drop encountered upon sudden removal of support while within the working range of the equipment.

It shall be the responsibility of the owner to verify that the material listed in this section has been received and that it is made available for the instruction and training of personnel entrusted with the use or maintenance of the dock equipment.
2. When a transport vehicle is parked at a loading dock, it is important that the vehicle is relatively perpendicular to the dock face and in close contact with at least one of the dock bumpers.
3. Nameplates, cautions, instructions, and posted warnings shall not be obscured from the view of operating or maintenance personnel for whom such warnings are intended.
4. Manufacturer's recommended periodic maintenance and inspection procedures in effect at date of shipment shall be followed, and written records of the performance of these procedures should be kept.
5. As with any piece of machinery, dock equipment requires routine maintenance, lubrication, and adjustments. Your local Rite-Hite representative offers owners the option of a Planned Maintenance Program (P.M.P.). As part of this service, your local Rite-Hite representative will do all routine maintenance, lubrication, and adjustments.
6. Dock equipment that is structurally damaged shall be removed from service, inspected by a manufacturer's authorized representative, and repaired as needed before being placed back in service.
7. The manufacturer shall make available replacement nameplates, caution/instruction labels, and operating/maintenance manuals upon request of the owner. The owner shall see that all nameplates, caution/instruction markings or labels are in place and legible, and that the appropriate operating/maintenance manuals are provided to users.
8. Modifications or alterations of dock equipment shall be made only with written permission of the original manufacturer. These changes shall also satisfy all safety recommendations of the original equipment manufacturer for the particular application of the dock equipment.
9. In order to be entitled to the benefits of the standard product warranty, the dock equipment must have been properly installed, maintained and operated within its rated capacities and/or specific design parameters, and not otherwise abused.
10. It is recommended that trailers equipped with air ride suspensions should remove the air from the suspension to minimize trailer bed drop, prior to loading or unloading.
11. When industrial trucks are driven on and off transport vehicles during the loading and unloading operation, the brakes on the transport vehicle shall be applied and wheel chocks or a positive restraining device shall be engaged.
12. It is recommended that an adequate stabilizing device or devices be employed at the front of the trailer in all cases where a trailer is being loaded or unloaded with the trailer resting on its support legs (landing gear) rather than a tractor fifth wheel or a converter dolly.
13. In selecting dock equipment, it is important to consider not only present requirements but also future plans or adverse environments.

DEFINITION AND FUNCTION

The GWL-2300 vehicle restraint is a truck and trailer locking system used to help secure trucks and trailers to the face of a loading dock. The engagement mechanism is positioned by the trailer as it approaches the loading dock. The locking arm assembly, which blocks the rear wheel of the truck or trailer, can then be engaged by pressing the LOCK push button.

This prevents forward movement of the truck/trailer that may create an unsafe void between the face of the dock and the rear end of the truck/trailer as the forklift travels from the loading dock onto the trailer; and creates an obstruction noticeable (via outside lights) to the truck driver, should the driver accidentally try to pull the truck/trailer away while it is being serviced.

NOTE: There is no need to hold button to maintain its function. Once a button is depressed, the GWL-2300 vehicle restraint will lock or unlock for a preset time interval.

The normal mode of the restraint is the locking arm assembly stored at the far end (away from the dock) with the barrier arm on the approach. Inside lights should be on red and outside lights should be on green.

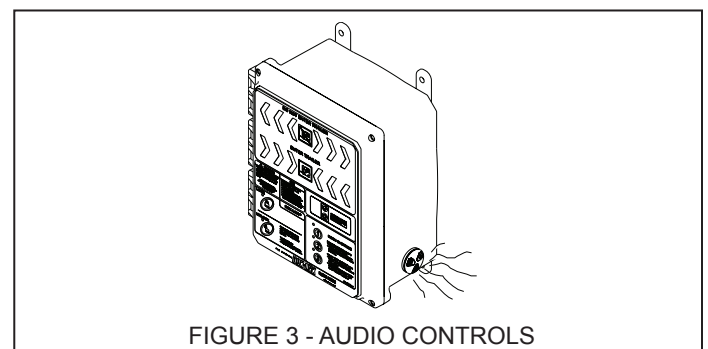
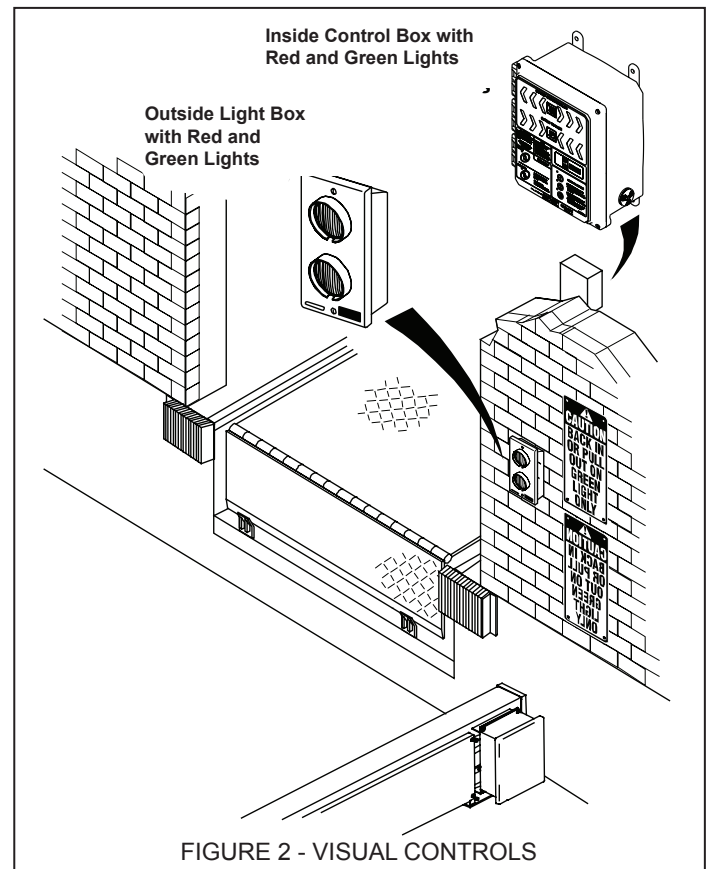
The proper activation of the barrier and the locking mechanism is monitored by:

Visual Control

One set of green and red lights located inside the building for the dock personnel, and one set located outside the building for the truck driver. See Figure 2.

Audio Control

A horn will sound at the inside of the building, warning the forklift operator if there is no R.I.G. present, or if the engagement is improper. In this case, the trailer must be secured by other means (wheel chocks, etc.) prior to servicing trailer. See Figure 3.



FEATURES

See Figure 3 for locations of these features.

Hydraulic Cylinder

Moves the Lifting Rails back and forth, thus raising or lowering the locking pawl into place.

Barrier Shaft

The shaft which serves as the restraining obstruction in front of the rearmost tire. It is connected to the locking arm assembly.

Barrier Ramp

The assembly that the barrier shaft stores in. Barrier ramp is used to protect the barrier shaft when a truck/trailer backs into place.

Frame Assembly

The main weldment which is bolted onto the approach. It acts as a guide/rail for the locking arm assembly, trigger trolley, and lock trolley.

Locking Arm Assembly

The assembly which is rotated up into its UP position when a trailer backs into the dock.

Locking Arm Trolley Assembly

Locking arm trolley assembly holds the locking arm assembly to the frame and houses the pawl assembly.

Lifting Rails

The component which is pushed by the hydraulic cylinder. It rides upon diagonal slotted plates along the frame. The vertical motion drives the locking pawl into the ratchet.

Pawl Assembly

Assembly which is driven upward into the ratchet by the Lifting Rails when the unit is locked.

Trigger Assembly

Component which is contacted by the rearmost tire of a trailer. When a tire engages the trigger, it will pull the locking arm assembly into its UP position, and pull the locking arm assembly along the frame assembly.

Trigger Trolley Assembly

The trigger trolley assembly holds the trigger assembly to the frame.

Extension Springs

The extension springs connect the locking arm trolley to the trigger trolley.

Lock Sensor (SW1)

Communicates to the control box whether or not the unit is locked. (Not shown, See pages 24 & 26)

Unlock Sensor (SW2)

Communicates to the control box whether or not the unit is unlocked. (Not shown, See pages 24 & 26)

PAWL HOLD DOWN

Mechanically senses if a trailer tire is present when the locking arm is raised.

Control Box, Outside Light Box, and Signage

The combination of these components are used to control the function of the GWL-2300 Wheel Restraint and provide audio/visual communication to the dock attendant and the trailer driver.

FEATURES

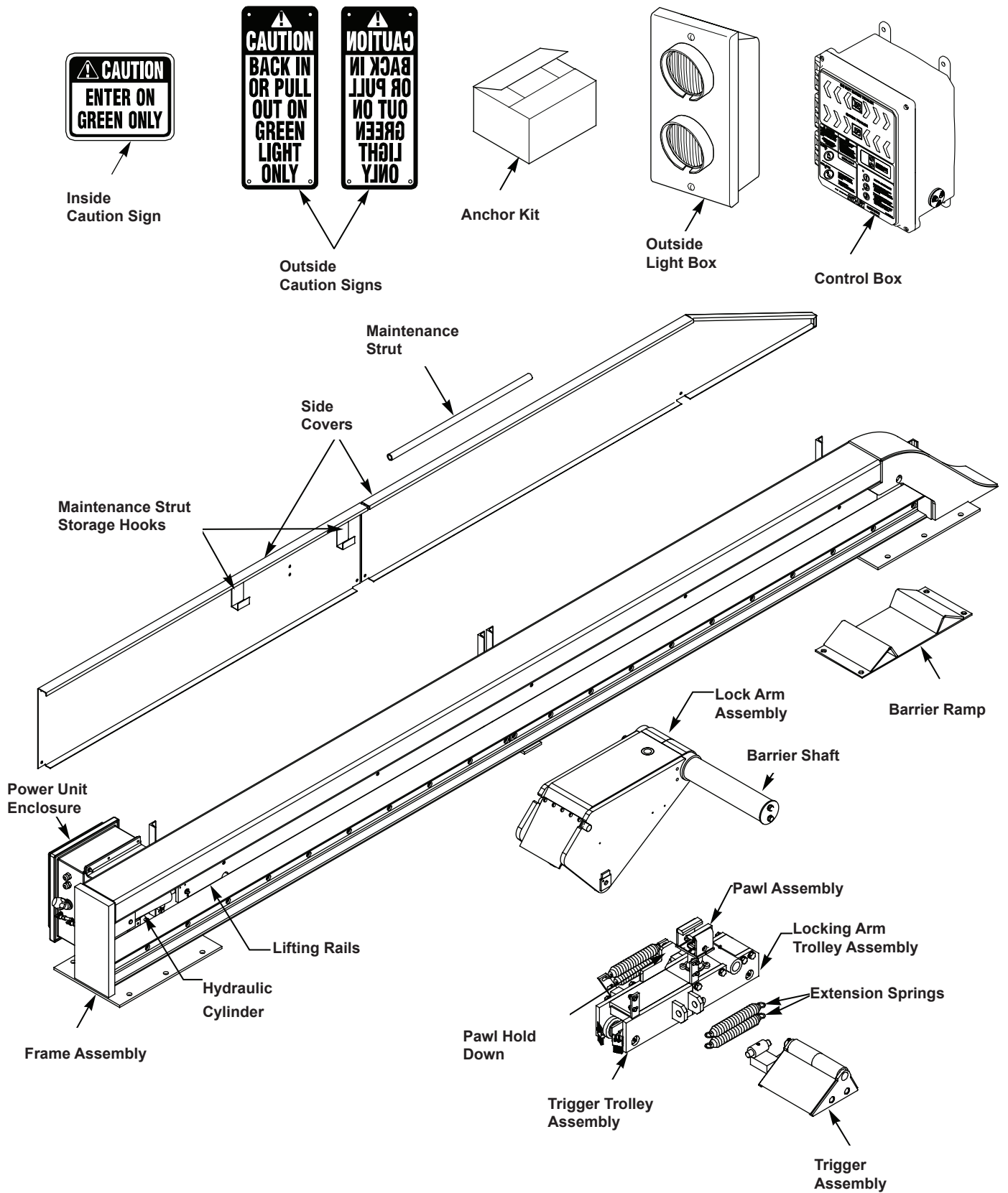


FIGURE 4 - FEATURES OF GWL-2300

OPERATING PROCEDURES

Stored Position / Restraint UNLOCKED

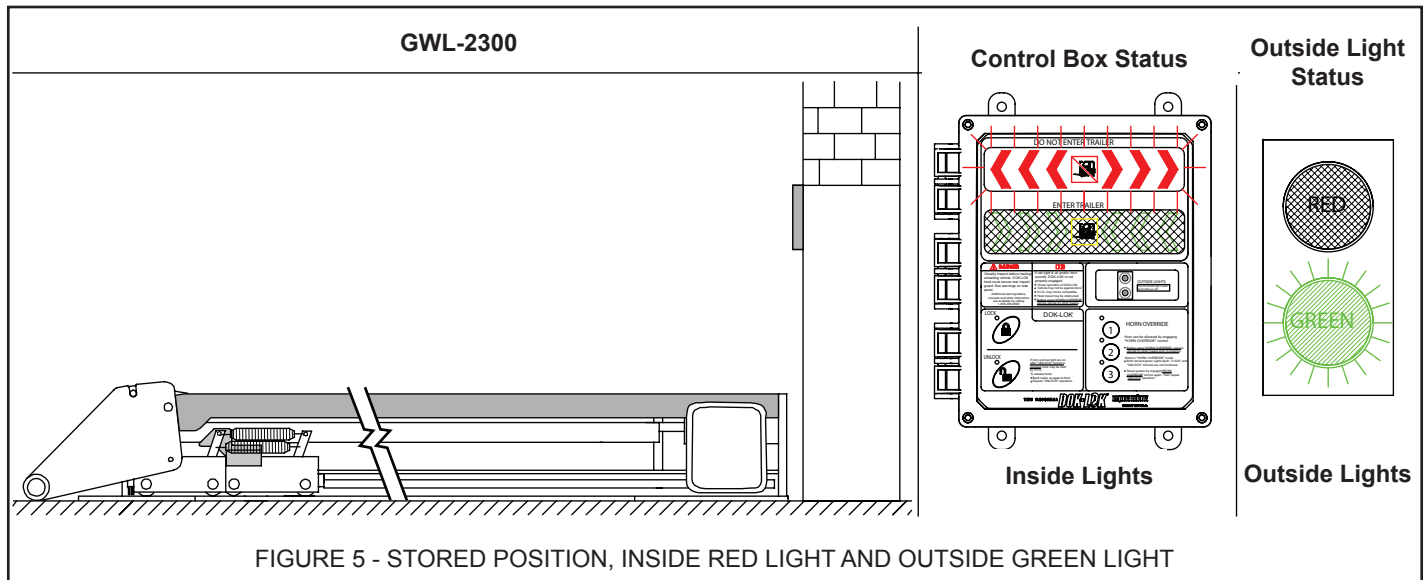
If the GWL-2300 vehicle restraint is in the UNLOCKED position (shaft assembly is down and stored in barrier ramp), the Light Communication System should give the following signals:

1. OUTSIDE light flashing GREEN, which indicates that a vehicle may pull into or out of the loading bay.
2. INSIDE light flashing RED, which indicates that loading or unloading is not permitted, since the truck is not secured against the building. See Figure 5.

Restraint Locking, LOCK Button Pressed

It is assumed that the loading bay is empty (no truck). The outside GREEN light and the inside RED light are flashing, the barrier is down. A truck can now approach the loading position. As the truck backs in, it will activate the trigger, causing the locking arm to come up. The mechanism will automatically adjust to the correct wheel size. The truck will move locking arm and trolleys into position automatically. When the truck is parked firmly against the bumpers, the operator can lock the vehicle.

To lock the vehicle, the LOCK button must be depressed momentarily. The outside light will change instantly from GREEN to RED. The inside light will remain steady RED until the locking mechanism is engaged properly. Once it is engaged, the inside light will change to GREEN. The truck may now be serviced. The light communication and truck position are shown in Figure 6.



OPERATING PROCEDURES

Restraint LOCKED

If the GWL-2300 vehicle restraint is in the LOCKED position with the barrier up and the locking mechanism engaged properly, the Light Communication System should give the following signals:

1. OUTSIDE light flashing RED, indicating that the truck driver is not permitted to leave.
2. INSIDE light flashing is GREEN, indicating that the truck may now be loaded or unloaded. See Figure 6.

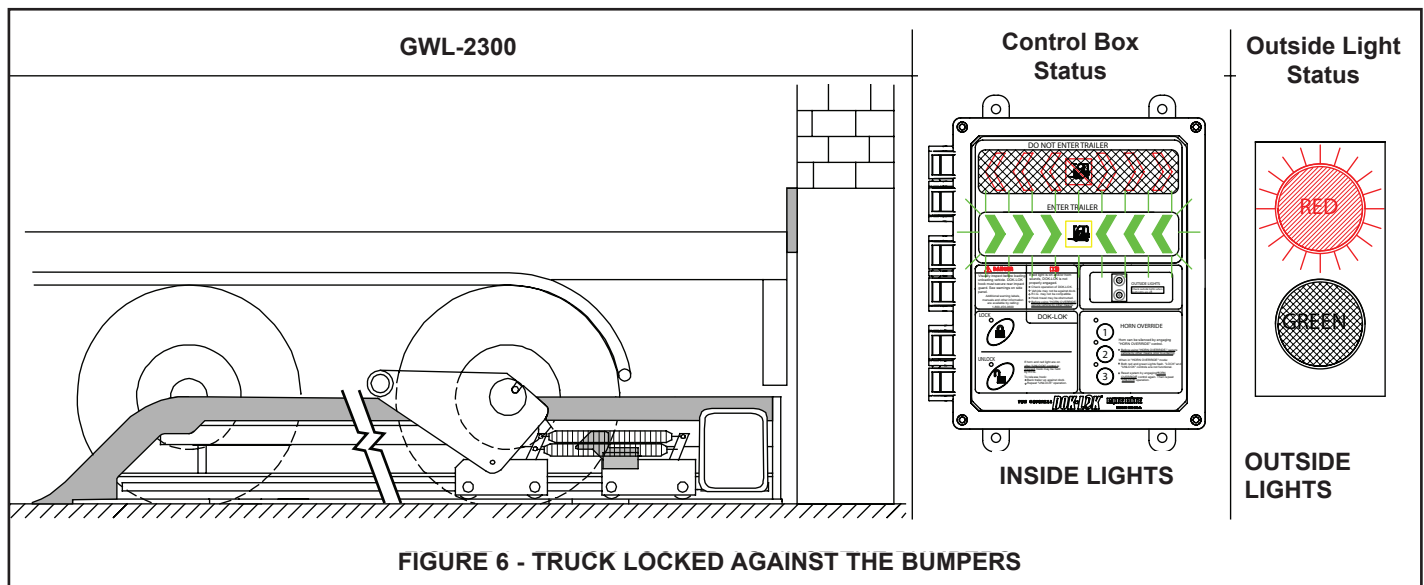
NOTE: If testing without a trailer present, make sure to manually separate trolleys so pawl hold down is disengaged.

Restraint UNLOCKING, UNLOCK Button Pressed

In order to release the truck after completion of the loading/unloading process, the UNLOCK pushbutton must be pressed. The inside light will turn instantly to steady RED, while the outside light remains flashing RED until the locking mechanism is disengaged. The outside light will turn to flashing GREEN, allowing the truck to depart. The truck will automatically move the locking arm to the stored position when departing.

NOTICE

On occasion the truck/trailer may move forward during servicing putting pressure on the pawl assembly. If an unlock "Fault" occurs the truck/trailer may need to be positioned firmly against the dock bumpers to release the pressure on the pawl assembly.



OPERATING PROCEDURES

FAULT State from LOCKING State

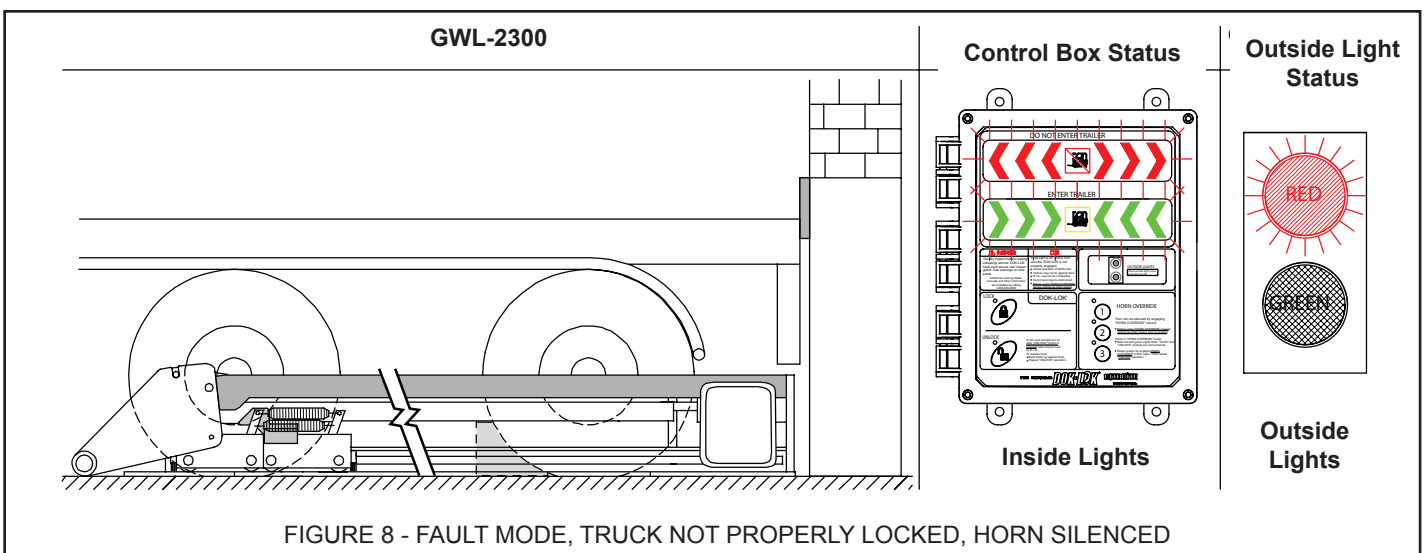
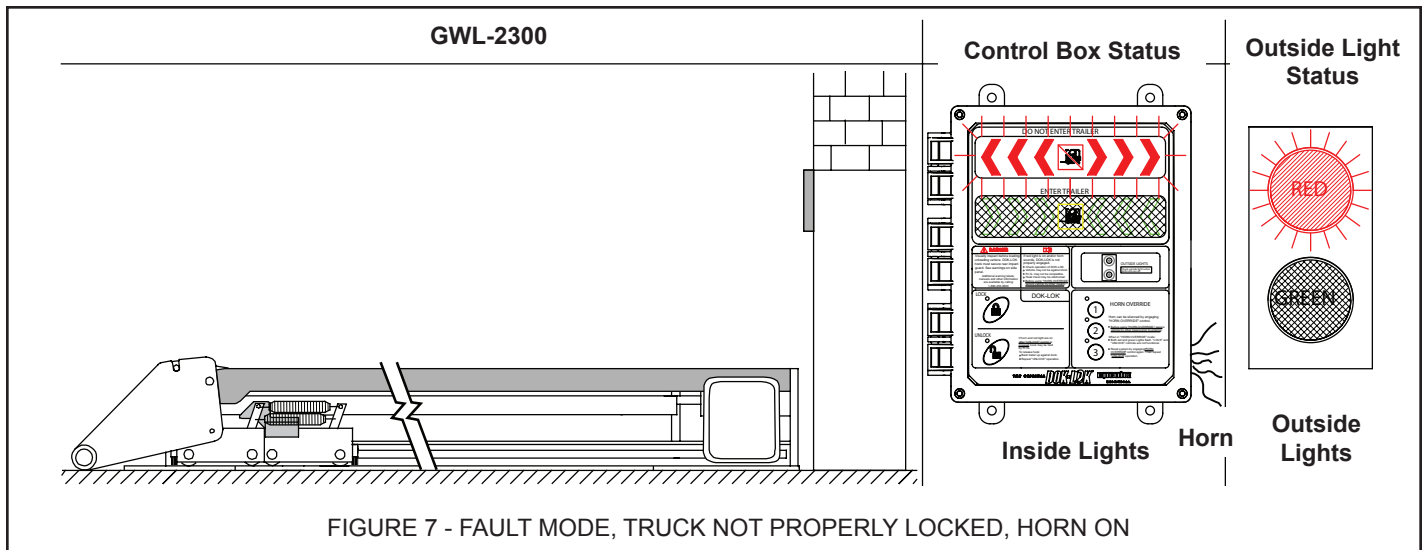
In case the locking mechanism can not engage properly, the alarm will sound. The outside and inside lights will show flashing RED. The light communication, alarm and truck position are shown in Figure 7.

HORN OVERRIDE State, HORN OVERRIDE Code Entered or HORN OVERRIDE Button Pressed after Securing Trailer by Alternate Means

DANGER

Before operating "HORN OVERRIDE", secure trailer by other means.

The horn may be silenced AFTER the trailer has been secured by other means. This can be done by entering the horn silence code. Both inside lights will now flash (red and green) and all control buttons are inactive. See Figure 8. Once service is completed, enter the horn silence code and press the unlock push button. The truck/trailer may now depart once GWL-2300 unlocks.



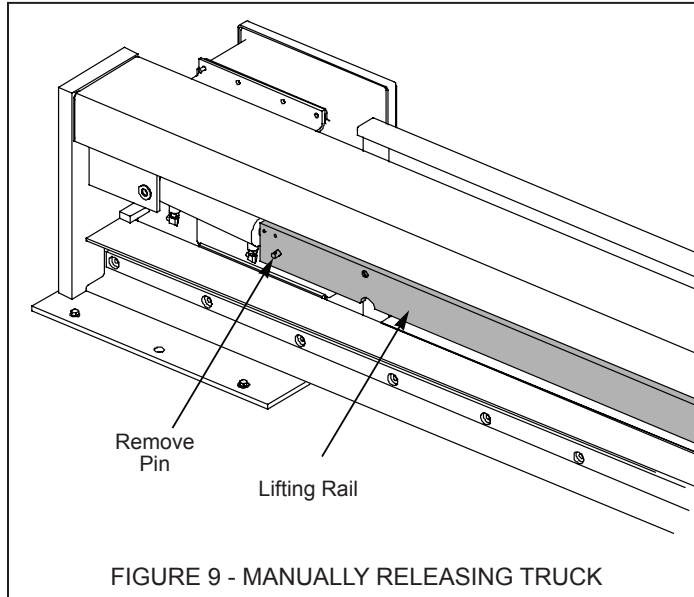
OPERATING PROCEDURES

Vehicle Release During Loss of Power



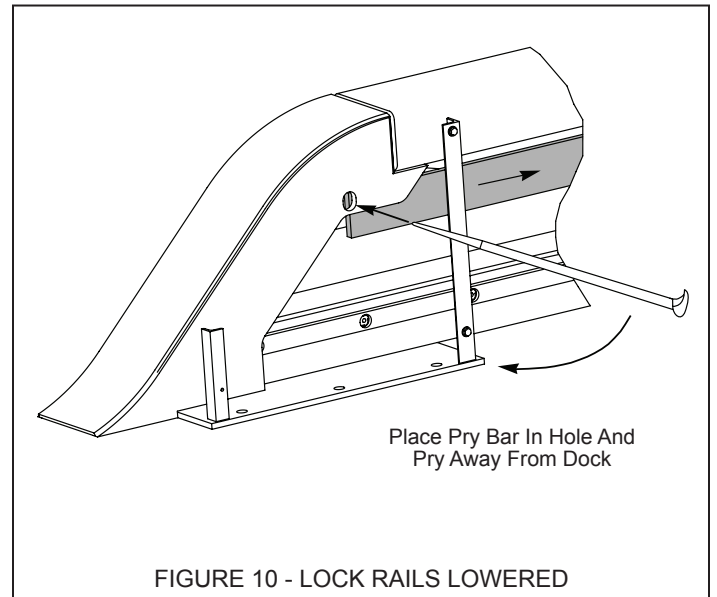
Do not remove lock arm when a truck tire is present.

During loss of power, the GWL-2300 vehicle restraint will not automatically disengage the vehicle being serviced. The truck must be manually released by the following method. See Figures 9.



Procedure

1. Lockout/Tagout controls.
2. Remove pin which connects the hydraulic cylinder to the Lifting Rails. See Figure 9.
3. Place pry bar in hole between end of lifting rail and frame hole as shown in figure 10. Pry away from the dock, lowering the lifting rails and disengaging the locking pawl.
4. Do not use equipment until reassembled.



OPERATING PROCEDURES

Snow Removal Procedure

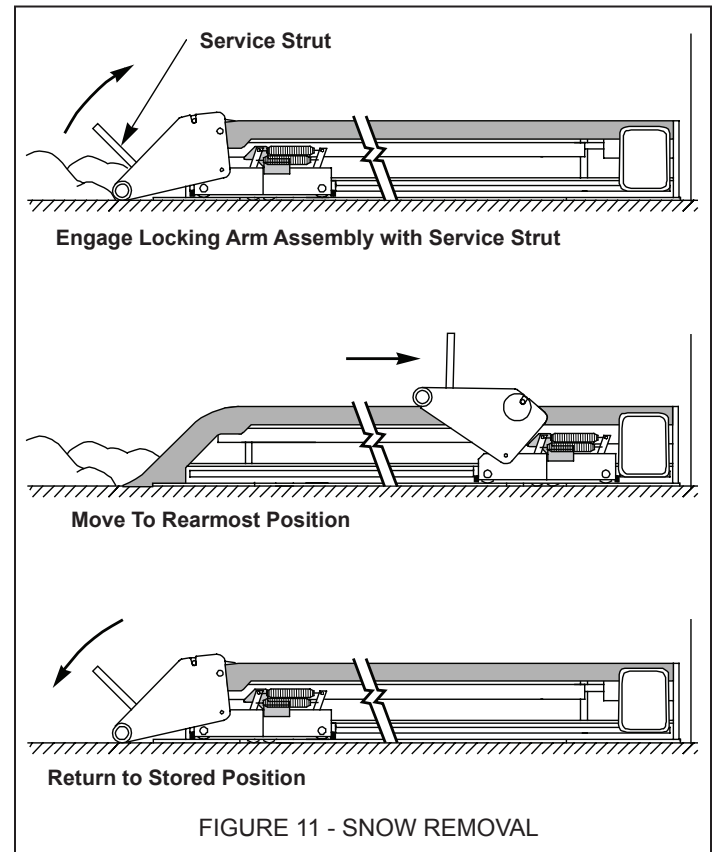
WARNING

Wheel guides, locking arm assembly, trigger, or frame assembly may be buried underneath snow, thus not visible. Unseen obstructions may cause damage to equipment and/or bodily harm during snow removal if they should come into contact with the snow removal equipment.

In the event of snow fall, please follow the procedure below to clear and remove snow from the truck approach.

Procedure

1. Using the service strut, move the locking arm assembly all the way towards the dock face. See Figure 11.
2. Back drag snow from the approach. Be sure not to hit the wheel guides, locking arm assembly, trigger, barrier ramp and frame assembly with the plow.
3. Return the locking arm assembly to the stored position after completion of snow removal.
4. Remove snow against dock by alternate means (shovel, snowblower, etc.).
5. Manually clean on and around unit to prevent ice build-up.



Recommended Liquid De-Icer:

Any Calcium-Chloride based liquid de-icer.

MAINTENANCE

(Based on typical applications of 8 trucks per day)

! DANGER

When working with electrical or electronic controls, make sure that the power source has been locked out and tagged according to approved local electrical codes.

Post safety warnings and barricade work area, at dock level and at ground level, to prevent unauthorized use of the dock position.

! WARNING

A safe work place requires all lights and the horn to be working properly. DO NOT use DOK-LOK vehicle restraint if parts are broken or missing.

NOTICE

Maintenance may be required more frequently at loading docks exposed to harsh environments (extreme climates, corrosive chemicals, frequency of usage exceeding 8 trucks per day, etc.). Consult RITE-HITE if these conditions exist for accelerated maintenance requirements.

NOTE: Your local RITE-HITE® representative provides a Planned Maintenance Program (P.M.P.) which can be fitted to your specific operation. Call your local representative.

Daily

1. Remove dirt, snow, ice and debris around GWL-2300 vehicle restraint.
2. Verify inside, outside lights and horn are working.
3. Replace damaged or missing light bulbs and lenses.
4. Repair, remount, or replace outside and inside signs as required.
5. Inspect dock bumpers. Missing bumpers must be replaced.

90 Days

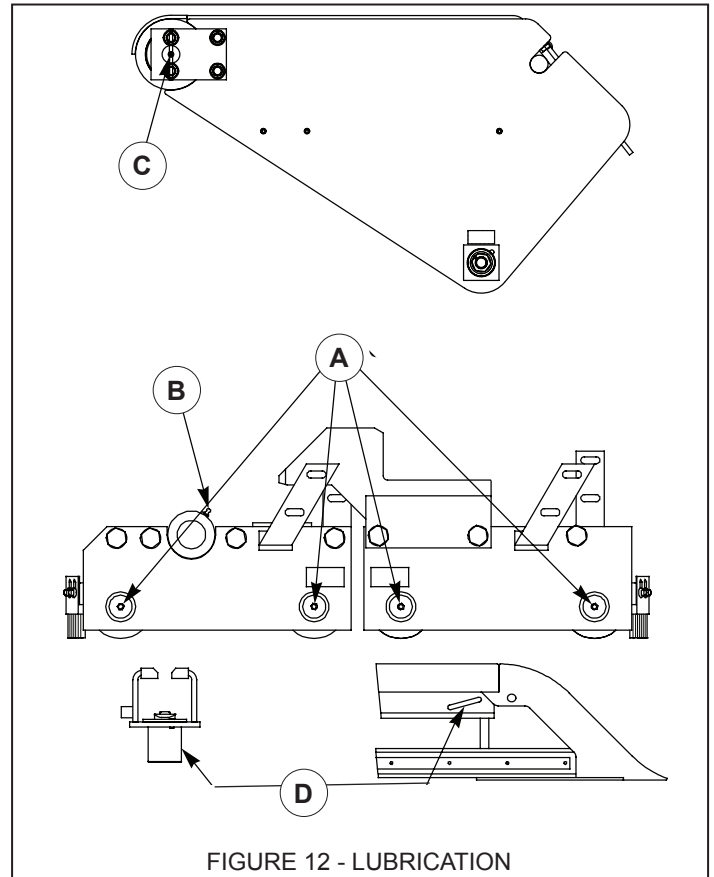


FIGURE 12 - LUBRICATION

1. Perform all Daily maintenance.
2. See Figure 12. Grease rollers at fittings located on both sides of trolleys (8 places) (A), lock arm (B) and barrier roller (C). Use Mobilith SHC220 No. 2 grease or equivalent temperature range lithium based grease (Two (2) to three (3) pumps with a grease gun).
3. Lubricate Pawl Guide Shaft and Lifting Rail Slots with a Dry Spray Lubricant (D) with a Dry Spray Lubricant DO NOT USE Moly-Based Grease.
4. Check the trigger and rollers for damage, ensure rollers spin freely.
5. Check brushes on trolleys and replace as necessary.
6. Inspect outside junction box, light box and power unit enclosure. They should be rigidly mounted. If loose or damaged, inspect all wires and wire connections.
7. Inspect flexible conduit from GWL-2300 vehicle restraint to junction box. Look for kinks, crushed areas, etc.
8. Perform operational test after all maintenance repairs are complete.

MAINTENANCE

180 Days

1. Do all the Daily and 90 Day maintenance.
2. Tighten the anchor bolts to 100 ft-lbs.
3. Check barrier roller tube for damage.
4. Check if all the bolts on the UHMW strip are tight.
5. Manually push the locking arm weldment along the length of the frame to verify smooth operation. If sticky, check for proper lubrication.

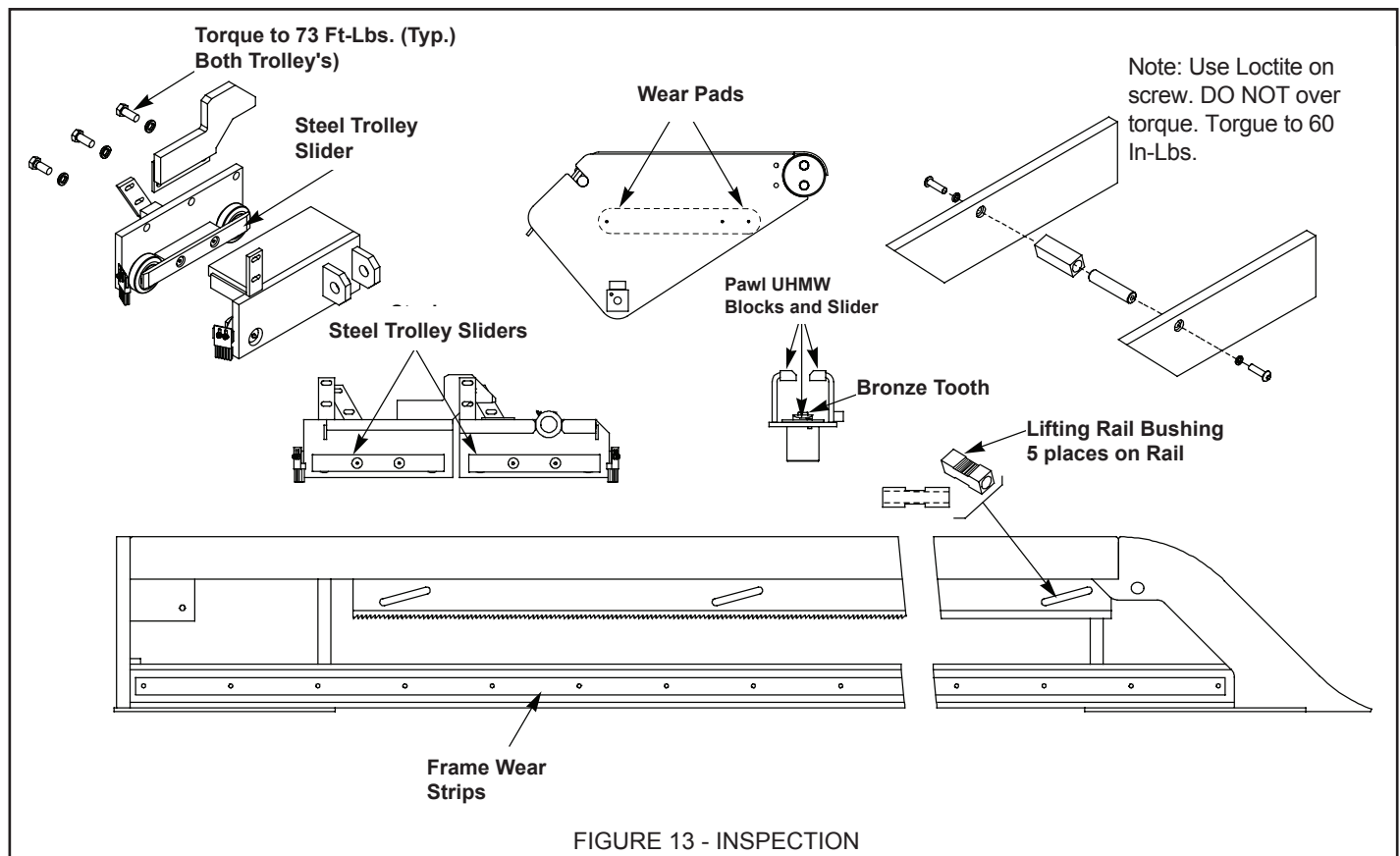
360 Days

1. Do all Daily, 90 and 180 Day maintenance.
2. Operate unit in (5) different places to ensure the locking mechanism engages properly.
3. Disassemble both the locking arm and trigger trollies and inspect internal sliders for wear. Replace as necessary. See Figure 13.
4. Inspect wear pads in locking arm assembly. See Figure 13.

NOTICE

Dock equipment must be protected by 4in [100mm] thick bumpers. **WORN, TORN, LOOSE, OR MISSING BUMPERS MUST BE REPLACED.**

5. Inspect pawl mechanism for wear on sliders.
6. Inspect bronze tooth on locking pawl.
7. Verify decals are present and legible, replace as required.
8. Inspect lifting rail bushings for wear and replace if worn through to pin hole.



TROUBLESHOOTING

DANGER

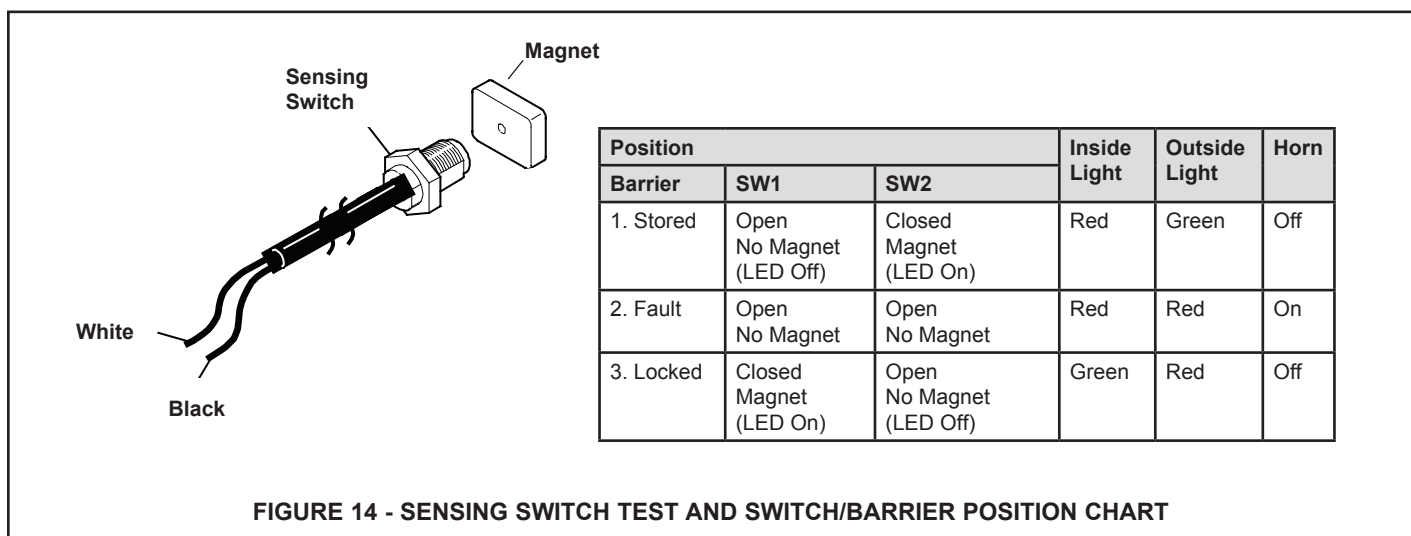
When working with electrical or electronic controls, make sure that the power source has been locked out and tagged according to OSHA regulations and approved local electrical codes.

WARNING

To prevent personal injury use extreme care when working with electrically powered equipment. Follow all safety instructions. Disconnect all power, and keep body away from moving parts. Use caution with compressed air; foreign materials can be blown through the skin or into the eyes. Use only approved air nozzles and do not exceed recommended air pressure.

Problem	Probable Cause	Remedy
1. Cylinder does not extend when LOCK pushbutton is pushed	Main fuse blown	Check motor fuse 10FU1.
	Power unit power supply.	Check voltage to transformer, bridge rectifier, etc.
	Hydraulic system	Check fluid level and hydraulic lines for leaks.
2. No lights, but 120V incoming power.	Blown power supply fuse	Replace fuse. 11FU1
3. Unit goes into fault about 8 seconds after LOCK pushbutton is pushed, with actuator moving	Bad SW1 (Lock sensor).	Replace SW1 (lock sensor).
	SW1 wiring.	Verify wiring per electrical schematic on following pages.
	Bronze "snaggle tooth" on pawl is damaged.	Disassemble locking arm trolley and replace snaggle tooth if required.
	Barrier is too low, pawl is not engaging rack.	Back trailer firmly against bumpers. Trailer bogeys may be too far forward to service.

TROUBLESHOOTING

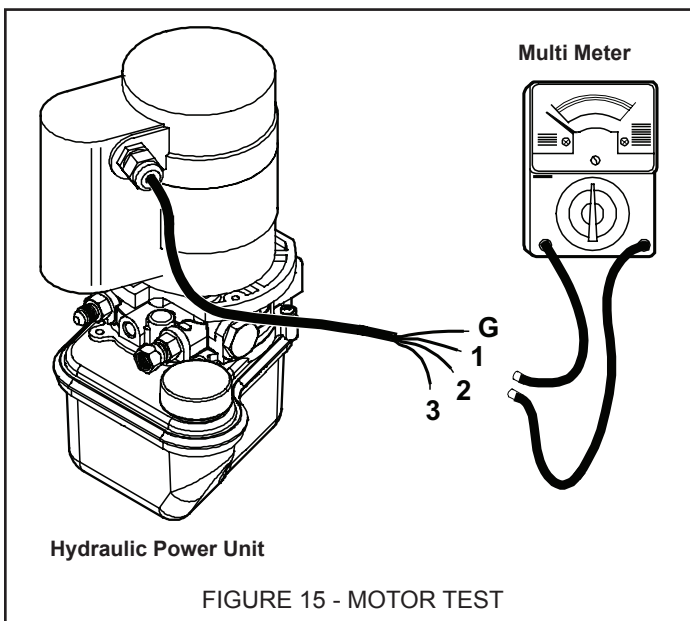


Sensing Switch Test Procedure

1. Set multimeter to "RX1" scale for "Continuity Test"
2. Attach multimeter leads to white and black wires of mag. reed switch connector. You should have:
 - Magnet present – a "Full Scale" meter reading.
 - Magnet not present – no meter reading.

Motor Test Procedure

1. BAD O/L: Little or infinite ohm reading (no needle movement) between lead 1 and 2, 1 and 3. Set multimeter to ohms.
2. OPEN WINDING: Infinite ohms (no needle movement) between lead 2 and 3. Check between leads 1 and 2 or 1 and 3 to determine which winding is open.
3. MECHANICAL BINDING: Motor hums. Motor leads show continuity between all windings. Hydraulic cylinder does not move.



TROUBLESHOOTING

LED Status Chart

GWL-2300 GLOBAL WHEEL LOK	MICRO CONTROL BOARD												POWER BOARD					
	INPUTS			OUTPUTS									OUTPUTS					
	FIELD	PUSH BUTTONS		INSIDE RED LIGHT [ISR]	INSIDE GREEN LIGHT [ISG]	CORNER-VU RED LIGHT [CVU RD]	CORNER-VU GREEN LIGHT [CVU GRN]	LEVELER-VU RED LIGHT [LVU RD]	LEVELER-VU GREEN LIGHT [LVU GRN]	OUTSIDE RED LIGHT [OSR]	OUTSIDE GREEN LIGHT [OSG]	DOK-LOK HORN [HORN]	RESTRAINT OVERLOAD LED [YELLOW]	RELAY	MOTOR OUTPUT #1 [M1/LOCK]	MOTOR OUTPUT #2 [M2/UNLOCK]	115/230VAC	12VDC POWER SUPPLY OK
TERMINAL BLOCK NO.	J13.1	J13.2	J14.3	J7.16	J7.17	J12.1	J12.2	J12.3	J12.4	J11.2	J11.1	J7.19	N/A	J9.3	J10.3	J5.4	J5.3	J2.1-6
POWER BOARD LEDES	LD20	LD23	LD30	LD17	LD19	LD11	LD13	LD18	LD12	LD49	LD48	LD15	LD50	LD9	LD10	LD2	LD1	LD7
MICRO CONTROL BOARD LEDES																		
01.01.00 LOCKED STATE	T	F	?	-	F	P	P	F	P	P	F	F	F	T	T	F	F	T
01.01.01 LOCKING SEQUENCE	F	F	?	-	T	F	F	P	F	P	F	F	F	F	T	T	F	T
01.02.00 UNLOCKED STATE	F	T	?	-	P	F	F	P	F	F	P	F	F	F	T	F	F	T
01.02.01 UNLOCKING SEQUENCE	F	F	ITL	-	T	F	F	P	F	P	F	F	F	F	T	F	F	T
01.04.00 FAULT STATE	?	?	?	-	P	F	F	P	P	P	F	P	F	F	F	F	F	T
01.04.01 FAULT SILENCED STATE	?	?	?	-	M	A	A	A	A	P	F	F	F	T	T	F	F	T
01.11.00 OVERLOAD FAULT STATE	?	?	?	-	P	F	F	P	P	P	F	K	T	F	F	F	F	T
NO.	STATE / SEQUENCE NO.																	

KEY
? - VARIES DEPENDING ON OPERATION
A - ALTERNATING
F - OFF
ITL - INTERLOCK INPUT ON

MOTOR OVERLOAD RESET PROCEDURE

If Yellow LED LD50 is illuminated and the Dok-Lok Horn is Chirping, system is in an Overload Fault State.

To reset the motor overload:

- 1) Press and Horn Silence #2 Button until Horn Chirps (Approximately 5 Seconds). OR
- 2) Press and Release Restraint O/L Button on Micro Controller Board.

When the motor overload has been reset, the Yellow LD50 LED will turn off and normal operation resumes. If Dok-Lok motor still does not run after resetting the overload, check Motor Fuse 10FU1.

TROUBLESHOOTING

LED Status Chart *Continued*

GWL-2300 GLOBAL WHEEL LOK FILL MODE	MICRO CONTROL BOARD										POWER BOARD				
	INPUTS					OUTPUTS					OUTPUTS				
	PUSH BUTTONS					12VDC					115/230VAC				
	LOCK PUSH BUTTON	UNLOCK PUSH BUTTON	HORN SILENCE PUSH BUTTON	INSIDE RED	INSIDE GREEN	CORNER-VU RED	CORNER-VU GREEN	LEVELER-VU RED	LEVELER-VU GREEN	OUTSIDE RED	OUTSIDE GREEN	RESTRAINT ALARM	MOTOR OUPUT #1 [M1/LOCK]	MOTOR OUPUT #2 (M2/UNLOCK)	12VDC POWER SUPPLY OK
				J7.16	J7.17	J12.1	J12.2	J12.3	J12.4	J11.2	J11.1	J7.19	J5.4	J5.3	J2.1-6
	MEMBRANE			-	-	-	-	-	-	-	-	-	LD2	LD1	J2.1-6
		LD52		LD17	LD19	LD11	LD13	LD18	LD12	LD49	LD48	LD15	LD1	LD3	LD7
01.15.14	FILL MODE SEQUENCE			T	F	T	F	T	F	P	F	C	F	F	T
01.15.15	SERVICE MOTOR UP	M		T	F	T	F	T	F	P	F	C	T	F	T
01.15.16	SERVICE MOTOR DOWN			T	F	T	F	T	F	P	F	C	F	T	T
NO.	STATE / SEQUENCE NO.														

KEY
C - CHIRP ON STATE ENTRY
F - OFF
P - PULSING / FLASHING
T - STEADY ON

TROUBLESHOOTING

Setting Horn Override Code

1. Press and hold DIAGNOSTIC button until the horn chirps (approximately five seconds).

NOTE: To change code or enter diagnostic modes without opening the control box cover, press and hold the “1” and “3” buttons on the cover until the horn chirps.

2. Enter the factory preset HORN OVERRIDE code: 1223. (horn will chirp)
3. Enter the new HORN OVERRIDE code. The code can be one to four numbers in length.
4. Once the new code has been entered, press the LOCK button.
5. Controls reset with new HORN OVERRIDE code enabled.

If code has been forgotten, follow the above procedure and enter a new code.

DANGER

Post safety warnings and barricade work area, at dock level and at ground level, to prevent unauthorized use of the dock position.

Fill and Bleed Hydraulics

Diagnostic mode may be entered while the restraint is in any state. To enter diagnostic mode:

1. Using the maintenance strut, position the locking arm assembly to a “locked” (up) position. Separate the locking arm trolley and trigger trolley manually to simulate a truck is at the dock. See figure 8.
2. Fill hydraulic reservoir using the supplied (MIL-H-5606) hydraulic fluid.
3. Press and hold the diagnostic button inside the control box until the horn chirps.
4. Once horn chirps enter code 1-1-1-1 by using the buttons on the face of the control box. Controls are now in FILL mode. Holding the LOCK and UNLOCK button will run the pump forward and reverse.
5. Cycle the vehicle restraint to remove air from the system. Add remaining hydraulic fluid. Stop cycling once the cylinder extends and retracts without hesitation.
6. Press diagnostic button inside control box to exit FILL mode.

CAUTION

Stand clear when you push the locking arm to its stored position. The arm should only be moved by hand for the initial installation and test procedure by authorized and trained personnel. NEVER leave the arm in the elevated position.

TROUBLESHOOTING

Diagnostics

Diagnostic mode may be entered while the restraint is in any state. To enter diagnostic mode:

1. Press and hold DIAGNOSTIC button until the horn chirps (approximately five seconds).
2. Press LOCK button.
3. Press UNLOCK button.
4. The horn chirps and the outside light is flashing RED. The controls are in the first step of diagnostic mode.

NOTE: The outside red light will remain flashing at all times except Step 10.

5. Start at Step 1 in the Diagnostic Table. If the equipment Outputs do not match the table, use the Troubleshooting section.

If no buttons are pressed within a five minute period, the controls will automatically exit to power up. To exit the diagnostic mode at any time, press the DIAGNOSTIC button.

GWL-2300 DIAGNOSTIC I/O WALK THRU SEQUENCE [IF EQUIPPED]		BASE MICRO CONTROLLER BOARD															POWER BOARD					
		OUTPUTS															OUTPUTS					
		12VDC															RELAY					
		INSIDE RED LIGHT [SR]	INSIDE GREEN LIGHT [SG]	CORNER-VU RED LIGHT [CVU RD]	CORNER-VU GREEN LIGHT [CVU GRN]	LEVELER-VU RED LIGHT [LVU RD]	LEVELER-VU GREEN LIGHT [LVU GRN]	PEDESTRIAN-VU AMBER [PVU LT]	PEDESTRIAN-VU ALARM [PVU ALM]	OUTSIDE RED LIGHT [OSR]	OUTSIDE GREEN LIGHT [OSG]	DOK-LOK HORN [HORN]	MWL ACTUATOR [MWL ACTR]	OUTSIDE ALARM [MWL ALM]	UNIDOX ITC [UD ITC OUT]	GREEN LIGH INTERLOCK [GLT ITC]	K1 - GREEN LIGHT INTERLOCK	K2 - SECURITY SYSTEM INTERFACE [IF EQUIPPED]	MOTOR OUTPUT #1 [M1/LOCK]	MOTOR OUTPUT #2 [M2/UNLOCK]	12VDC POWER SUPPLY OK	
STEP	TERMINAL BLOCK NO.	J7.16	J7.17	J12.1	J12.2	J12.3	J12.4	J12.6	J12.5	J11.2	J11.1	J7.19	J15.2	J15.3	J15.4	J15.5	J9.3	J10.3	J5.4	J5.3	J2.1-6	
	POWER BOARD LEDs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LD2	LD1	LD7	
	MICRO CONTROL BOARD LEDs	LD17	LD19	LD11	LD13	LD18	LD12	LD16	LD14	LD49	LD48	LD15	LD37	LD40	LD20	LD39	LD9	LD10	LD1	LD3	-	
1	DIAGNOSTICS ENTERED	F	F	F	F	F	F	F	F	F	P	F	C	F	F	F	F	F	F	F	F	T
2	CHECK INSIDE RED	T	F	F	F	F	F	F	F	F	P	F	F	F	F	F	F	F	F	F	F	T
3	CHECK INSIDE GREEN	F	T	F	F	F	F	F	F	P	F	F	F	F	F	F	F	F	F	F	F	T
4	CHECK CORNER-VU RED	F	F	T	F	F	F	F	F	P	F	F	F	F	F	F	F	F	F	F	F	T
5	CHECK CORNER-VU GREEN	F	F	F	T	F	F	F	F	P	F	F	F	F	F	F	F	F	F	F	F	T
6	CHECK LEVELER-VU RED	F	F	F	F	T	F	F	F	P	F	F	F	F	F	F	F	F	F	F	F	T
7	CHECK LEVELER-VU GREEN	F	F	F	F	F	T	F	F	P	F	F	F	F	F	F	F	F	F	F	F	T
8	CHECK PEDESTRIAN-VU AMBER	F	F	F	F	F	F	T	F	P	F	F	F	F	F	F	F	F	F	F	F	T
9	CHECK PEDESTRIAN-VU ALARM	F	F	F	F	F	F	F	T	P	F	F	F	F	F	F	F	F	F	F	F	T
10	CHECK OUTSIDE RED LIGHT	F	F	F	F	F	F	F	T	P	F	F	F	F	F	F	F	F	F	F	F	T
11	CHECK OUTSIDE GREEN LIGHT	F	F	F	F	F	F	F	F	P	T	F	F	F	F	F	F	F	F	F	F	T
12	CHECK DOK-LOK HORN	F	F	F	F	F	F	F	F	P	F	T	F	T	F	F	F	F	F	F	F	T
13	CHECK MWL ACTUATOR AND UNIDOX OUTPUTS	F	F	F	F	F	F	F	F	P	F	F	T	F	T	F	F	F	F	F	F	T
14	CHECK GREEN LIGHT INTERLOCK OUTPUTS	F	F	F	F	F	F	F	F	P	F	F	F	F	T	T	F	F	F	F	F	T
15	CHECK K2 RELAY	F	F	F	F	F	F	F	F	P	F	F	F	F	F	T	F	F	F	F	F	T
16	HORN CHIRPS SIGNALING END OF SEQUENCE	F	F	F	F	F	F	F	F	P	F	C	F	F	F	F	F	F	F	F	F	T

PRESS LOCK TO ADVANCE, UNLOCK TO REVERSE
(REFER TO TROUBLESHOOTING GUIDE IF OUTPUT DOESN'T MATCH)

TROUBLESHOOTING GUIDE	
STEPS	ACTIONS
2-3, 12	CHECK POWER SUPPLY LED & POWER SUPPLY FUSE ON POWER CIRCUIT BOARD CHECK CONTROL HARNESS CONNECTION AT CHEVRON AND MICRO CONTROLLER BOARDS
4-11	CHECK POWER SUPPLY LED & POWER SUPPLY FUSE ON POWER CIRCUIT BOARD CHECK LIGHT BULB, WIRING AND TERMINAL BLOCK CONNECTIONS
13-15	CHECK POWER SUPPLY LED & POWER SUPPLY FUSE ON POWER CIRCUIT BOARD CHECK TERMINAL BLOCK CONNECTIONS

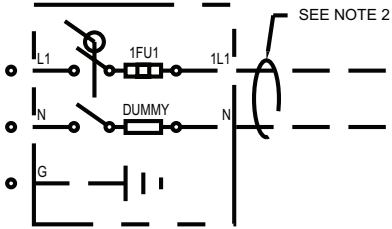
KEY	
C	HORN CHIRP
F	OFF
P	PULSING / FLASHING
T	STEADY ON

ELECTRICAL

FROM CUSTOMER MAIN POWER & SAFETY PROTECTION DEVICE.

110-120v. 1PH. 60HZ./208-240v. 1PH. 50HZ.

USE 10.0A/5.0A DUAL ELEMENT TIME DELAY FUSE



FUSED DISCONNECT
(BY OTHERS)
SEE NOTE 7

POWER CIRCUIT BOARD

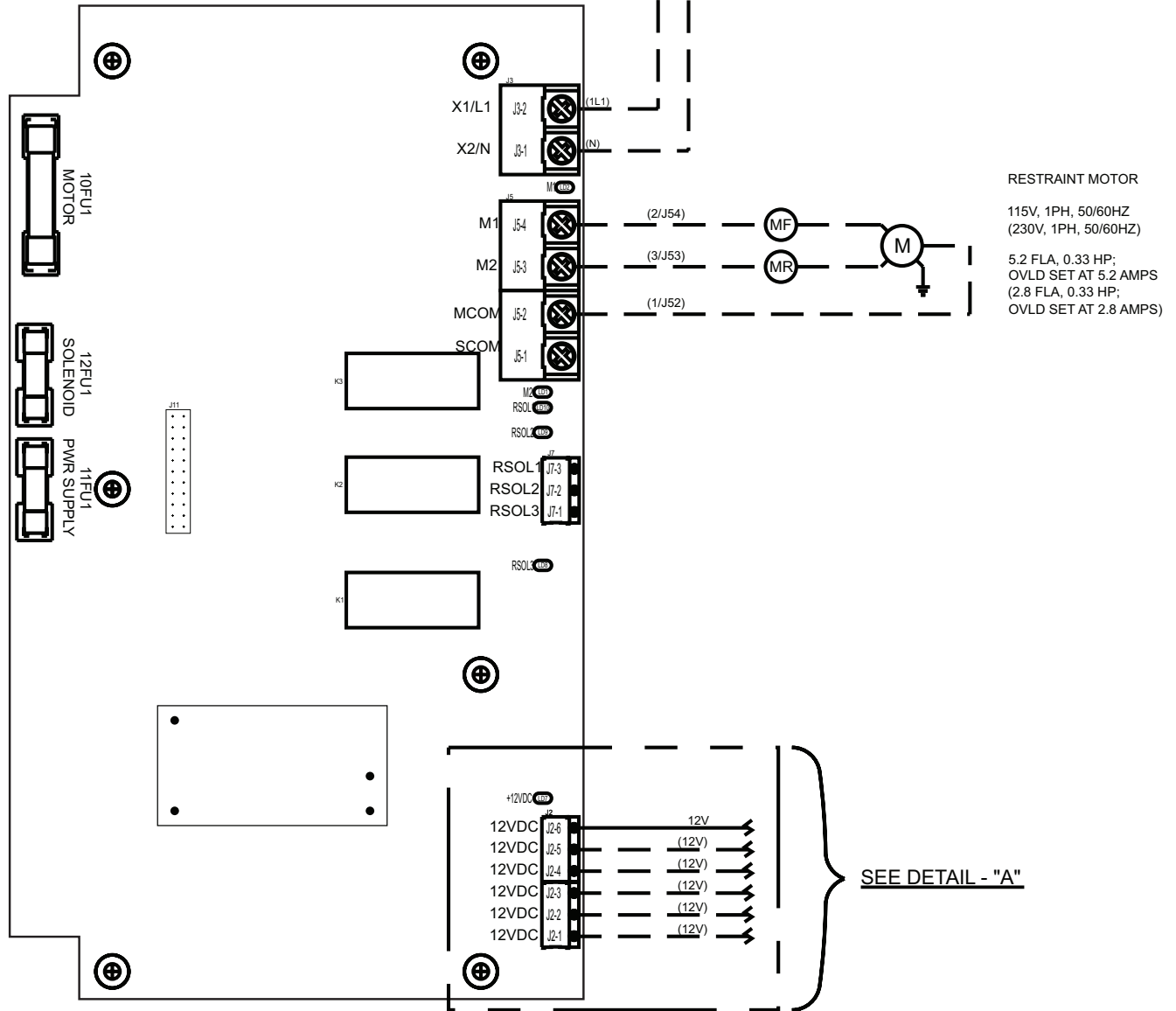


FIGURE 13 - ELECTRICAL SCHEMATIC - SECTION 1

ELECTRICAL

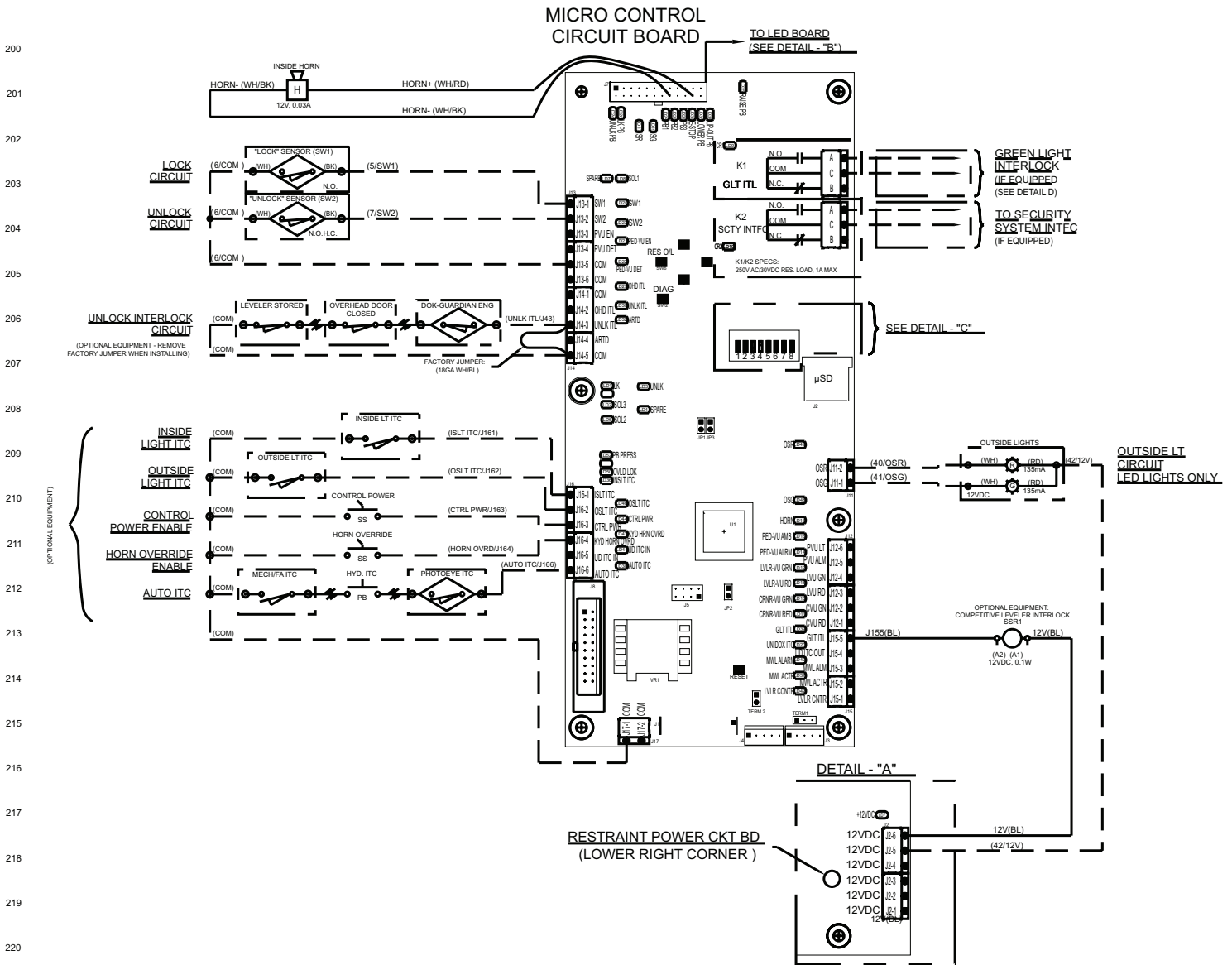
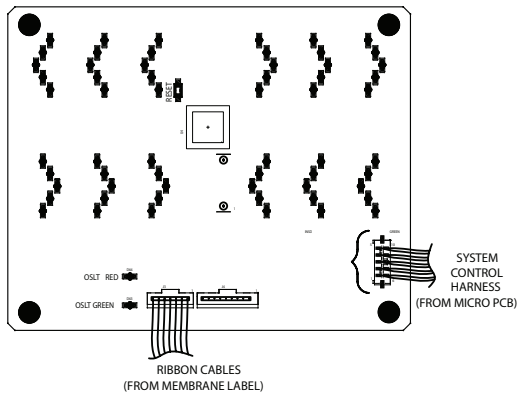


FIGURE 13 - ELECTRICAL SCHEMATIC - SECTION 2

ELECTRICAL

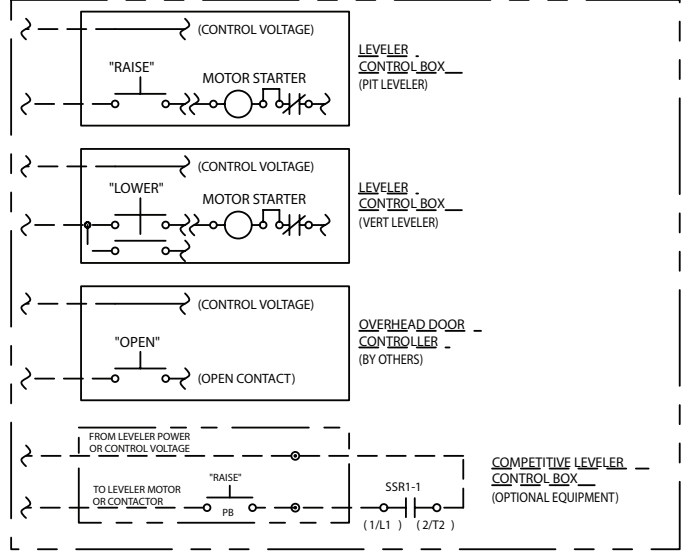
DETAIL B - BACK OF COVER



System Control Harness - MEMBRANE

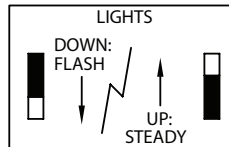
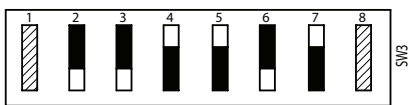
uControl Board		LED Board		Wire Color
J7	Description	J1	Description	
1	USART2_RX	1	MICROPCB_RX	BLUE
2	USART2_TX	2	MICROPCB_TX	GRAY
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13	12V [Vext]	5	12V [Vext]	RED
14	OSG INDICATOR	9	OSG INDICATOR	WHITE/GREEN
15	OSR INDICATOR	10	OSR INDICATOR	WHITE/ORANGE
16	ISR	8	ISR	ORANGE
17	ISG	7	ISG	GREEN
18				
19	HORN [-]			WHITE/BLACK
20	GND	4	DIGITAL GND	WHITE/BLUE
21	RESERVED	6	RESERVED	BLACK
22	USART2_RTS	3	MICROPCB_RTS	WHITE
23	12V [HORN +]			WHITE/RED
24				

DETAIL - "D" GREEN LIGHT INTERLOCK VARIATIONS



DETAIL - "C" MICRO CONTROL BOARD DIP SWITCH SETTINGS

DIP SWITCH	FACTORY SETTING	OPTION/FUNCTION
1	DOWN	FACTORY USE
2	DOWN	INSIDE RED LIGHT
3	DOWN	INSIDE GREEN LIGHT
4	UP	CORNER & LEVELER-VU RED
5	UP	CORNER & LEVELER-VU GREEN
6	DOWN	OUTSIDE LIGHTS - RED/GREEN
7	UP	PEDESTRIAN-VU
8	UP	CODED HORN OVERRIDE
	DOWN	STANDARD HORN OVERRIDE



1. INSTALL PER LOCAL ELECTRICAL CODES. REFER ALL INSTALLATION AND SERVICE TO QUALIFIED PERSONNEL.
2. ALL INCOMING POWER (FROM DISCONNECT TO CONTROL BOX) AND MOTOR FIELD WIRING TO BE MINIMUM #14GA. 60/75°C COPPER WIRE, INSULATED SUFFICIENTLY FOR INCOMING VOLTAGE.
3. ALL CONTROL FIELD WIRING TO BE MINIMUM #14GA. 60/75°C COPPER WIRE ONLY, INSULATED SUFFICIENTLY FOR INCOMING VOLTAGE.
4. ALL INTERNAL WIRING TO BE #14GA. MINIMUM FOR POWER CIRCUITS AND CIRCUIT BOARD POWER, #16GA. MINIMUM FOR CONTROL CIRCUITS, 90°C, RED COPPER WIRE UNLESS OTHERWISE NOTED, INSULATED SUFFICIENTLY FOR INCOMING VOLTAGE.
5. TORQUE REQUIREMENTS:
-PCB TERMINAL BLOCK POWER (J3/J5): 7.0 LB-IN
-PCB TERMINAL BLOCK ALL OTHER: 4.0 LB-IN
-GROUND TERMINAL: 35 LB-IN
6. L51 & L52 PROVIDED BY RITE-HITE WITH VEHICLE RESTRAINT. OTHER FIELD DEVICES ARE OPTIONAL. SEE SPECIFIC ELECTRICAL SCHEMATIC.
7. FUSED DISCONNECT NOTES:
-FUSED DISCONNECT IS NOT PROVIDED BY RITE-HITE PRODUCTS CORPORATION. DISCONNECT MUST BE PROVIDED BY OTHERS AND INSTALLED PER LATEST EDITION OF UL508A AND NEC REQUIREMENTS.
-A BRANCH CIRCUIT DISCONNECT SHALL BE LOCATED WITHIN A 50 FT. RADIUS AND BE VISIBLE FROM THE CONTROL BOX LOCATION. (REFERENCE LATEST EDITION OF NEC, SECTION 430)
8. CLASS 1 CONTROL CIRCUIT.

- LEGEND:**
- DENOTES WIRE CONNECTIONS THRU TERMINAL BLOCK.
 - DENOTES FIELD WIRES.
 - DENOTES WIRE NUT CONNECTION.
 - ⊂ DENOTES MALE/FEMALE PLUG CONNECTOR.

FIGURE 13 - ELECTRICAL SCHEMATIC - SECTION 3

ELECTRICAL

CORNER/LEVELER-VU WIRING

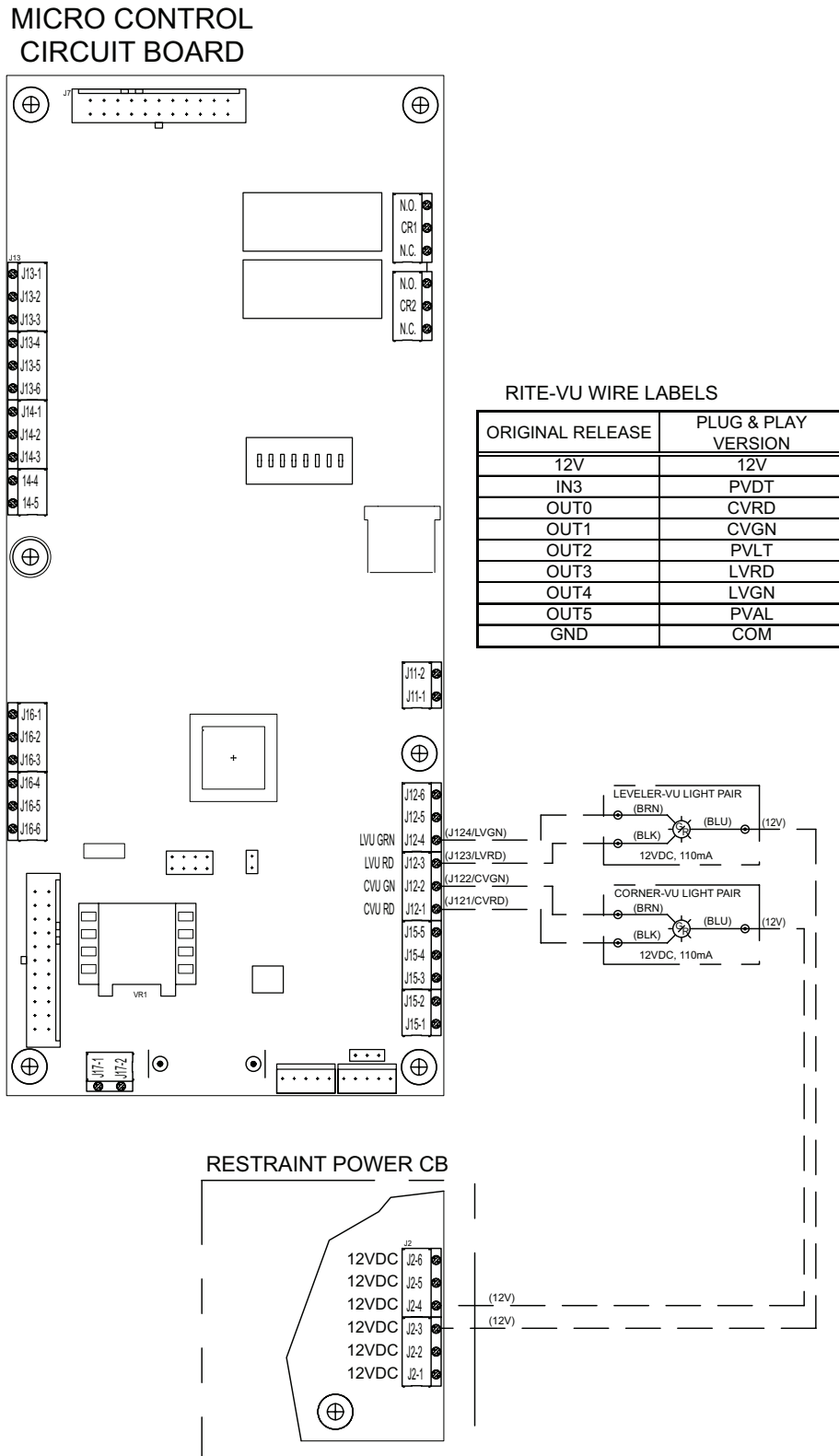
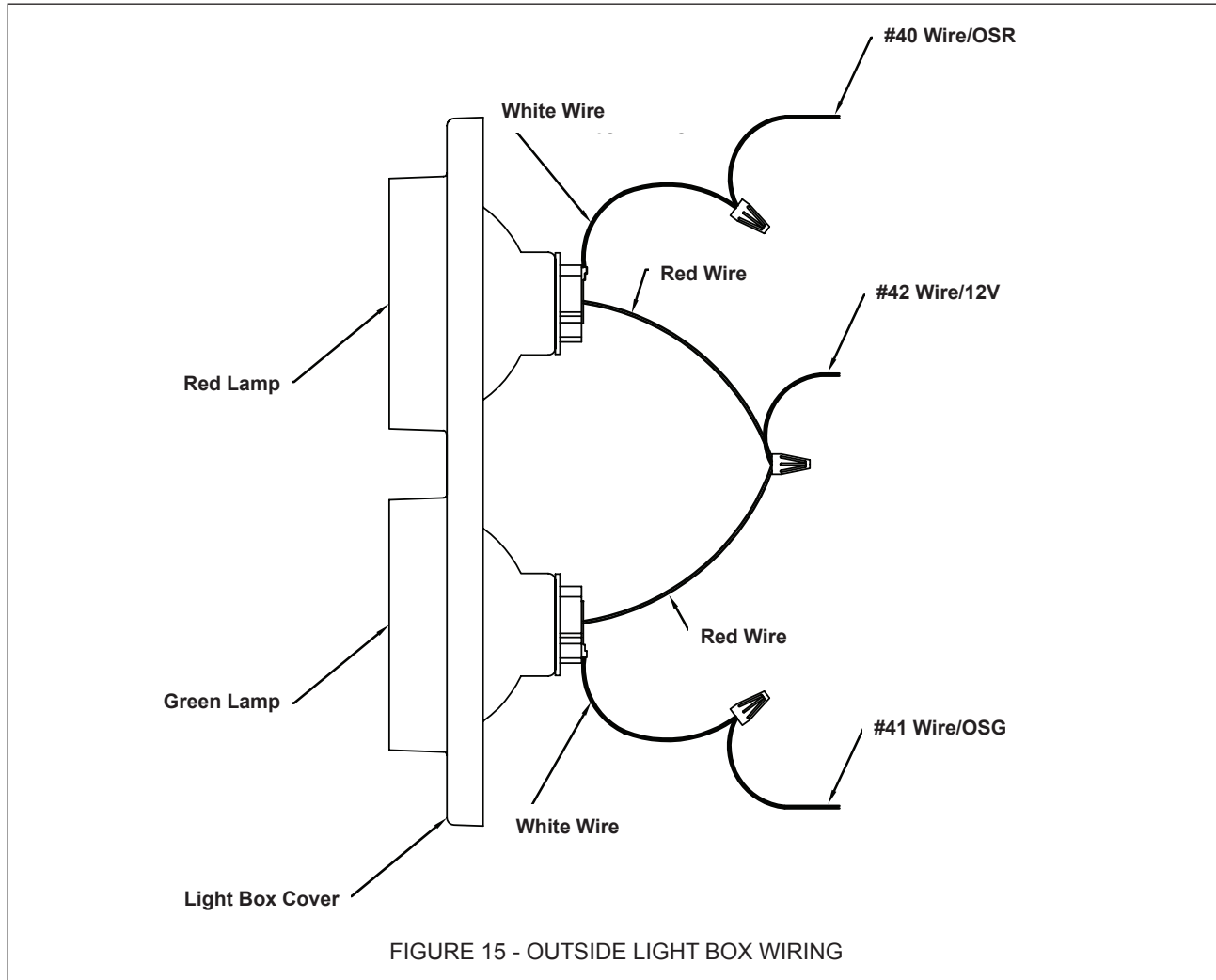


FIGURE 13 - ELECTRICAL SCHEMATIC - SECTION 4

ELECTRICAL

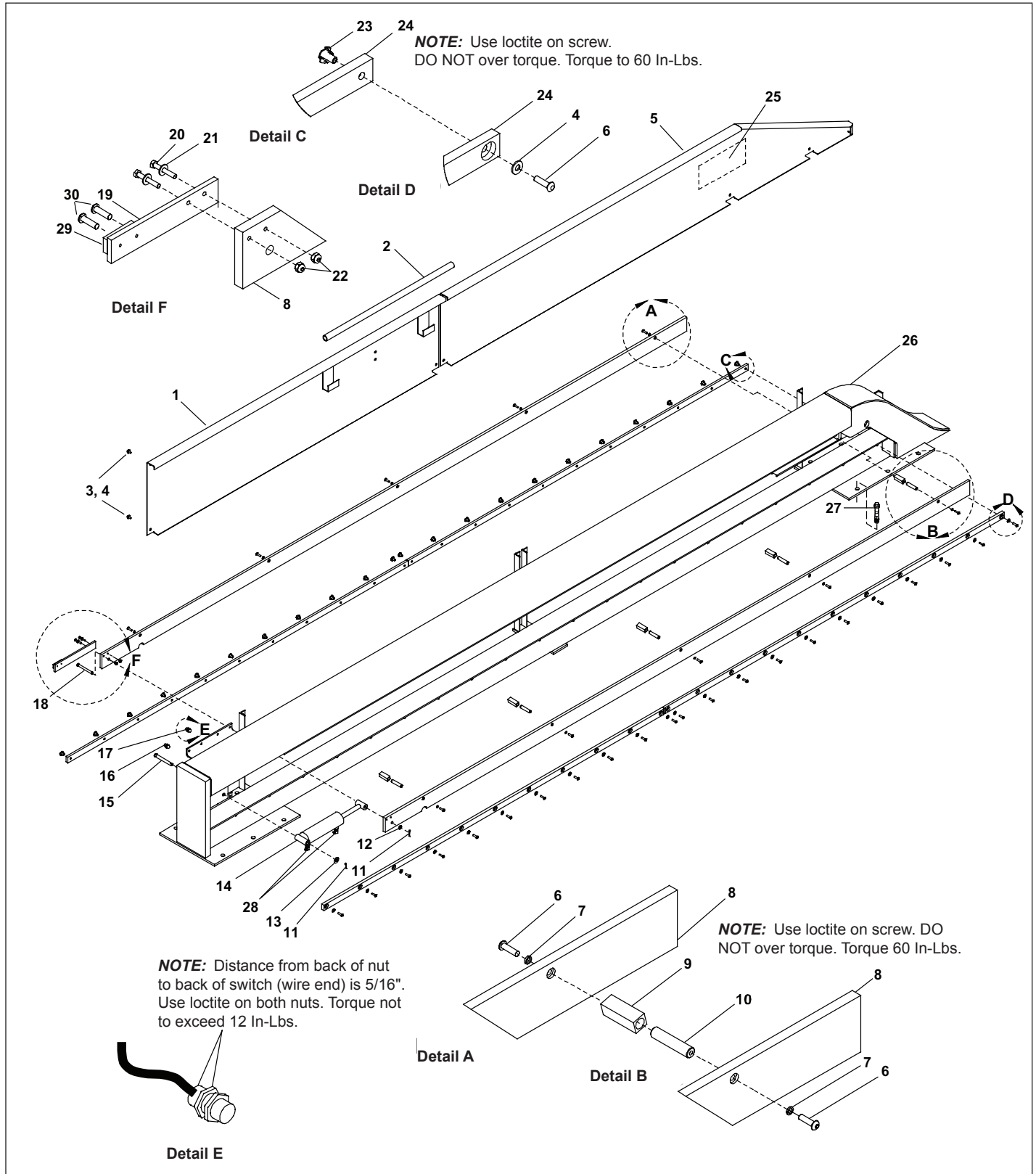
Outside Light Box Wiring



NOTE: Must use LED Outside Lights.

PARTS

Track Assembly

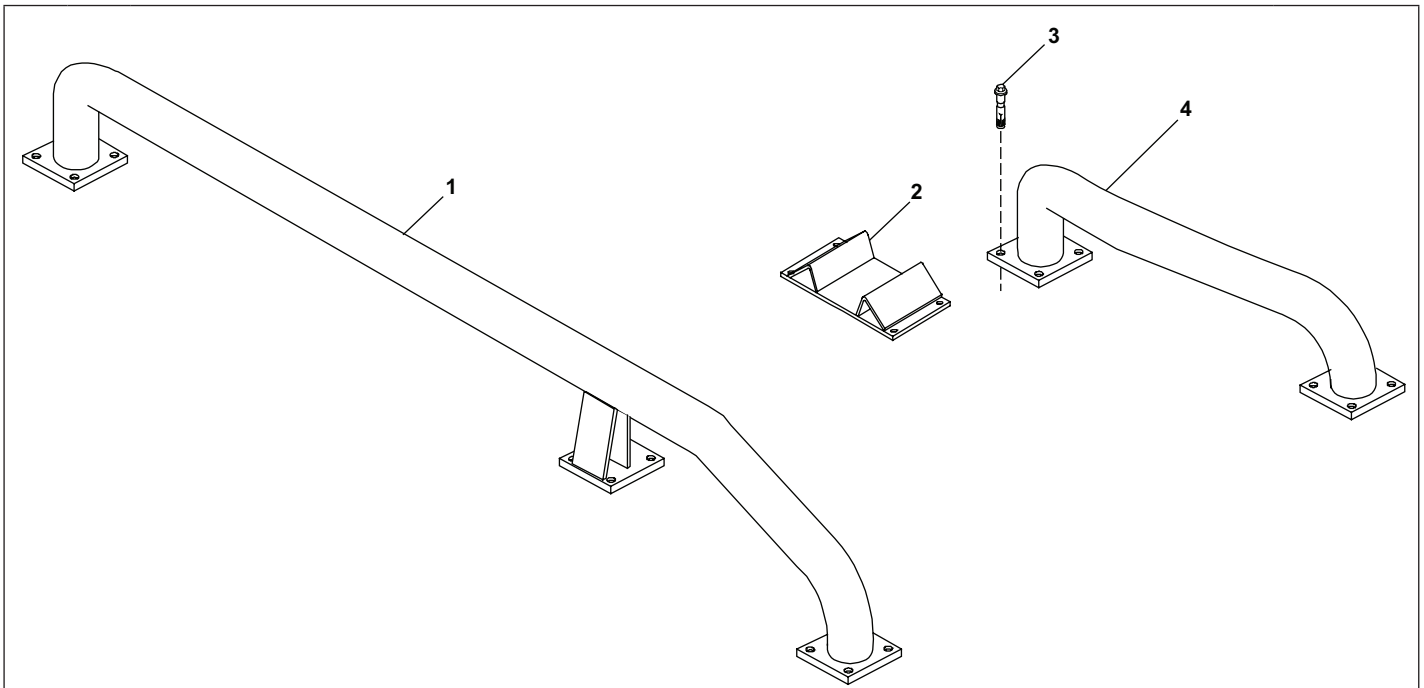


PARTS**Track Assembly** *Continued*

#	QTY	DESCRIPTION	PART #
1	1	Back Side Cover	106944
2	1	Maintenance Strut	106943
3	9	Hex. Cap Screw 1/4"-20 x 1/2" Long Stainless Steel	106939
4	35	Washer 1/4" Stainless Steel	106956
5	1	Front Side Cover	106947
6	32	Screw .250-20 x .875" Cap Button, Stainless Steel	106918
7	10	1/4" Lock Washer	51802
8	2	Lifting Rail	112735
9	5	Lifting Rail Bushing	112307
10	5	Pin .5 x 2.25 Threaded Ends 17-4PH	112738
11	2	Cotter Pin	109268
12	1	Flat Washer .375	106953
13	2	Flat Washer .500	51706
14	1	Cylinder Assembly (Includes Fittings)	112323
15	1	Clevis Pin .5 x 3.5L	112755
16	1	Unlock Switch, Magnetic Reed Switch	134626
17	1	Lock Switch, Magnetic Reed Switch	134625
18	1	Clevis Pin, .375 x 3.5L	106952
19	1	Limit Switch Flag Assembly (Includes items 29 & 30)	106955
20	2	Bolt #10-24 x 1.25	110691
21	2	Washer #10 Flat	106867
22	2	Nut #10-24	50597
23	22	Nut .250-20 Tee Barrel	106849
24	4	UHMW Wear Strip	130220
25	1	Decal - Safety Foot	64410
26	1	GWL-2300 Frame Weldment	112582
27	11	Anchor Bolt 5/8" x 4"	53150
28	2	90 Degree Hydraulic Fitting	16920
29	1	Magnet	134131
30	2	Screw #6-32X .50L Mach Flat Head Slotted	107636

PARTS

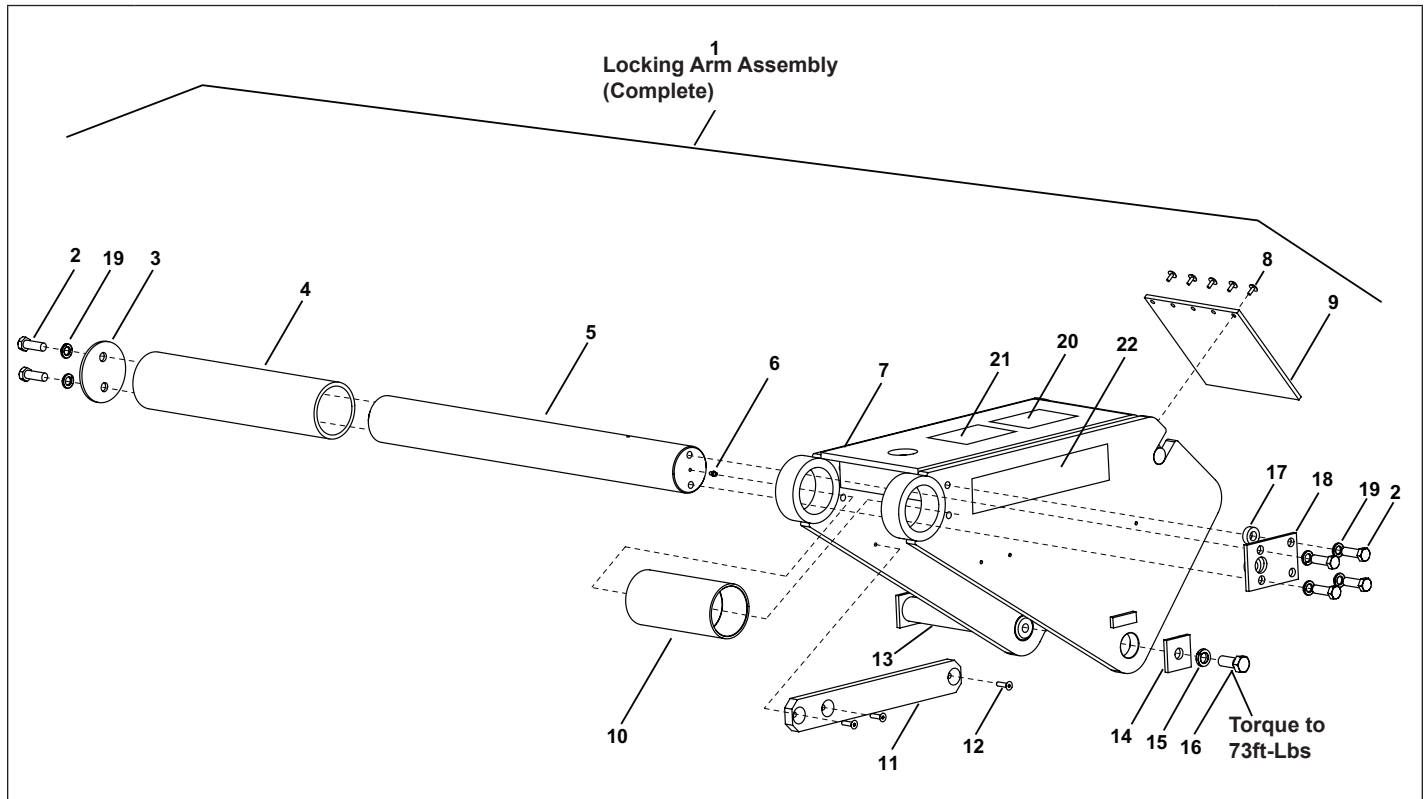
Wheel Guides and Barrier Ramp – Left Hand



#	QTY	DESCRIPTION	PART #
1	1	Wheel Guide Long	100262
2	1	Barrier Ramp	107633
3	24	Anchor Bolt 5/8" x 4"	53150
4	1	Wheel Guide Short	100263

PARTS

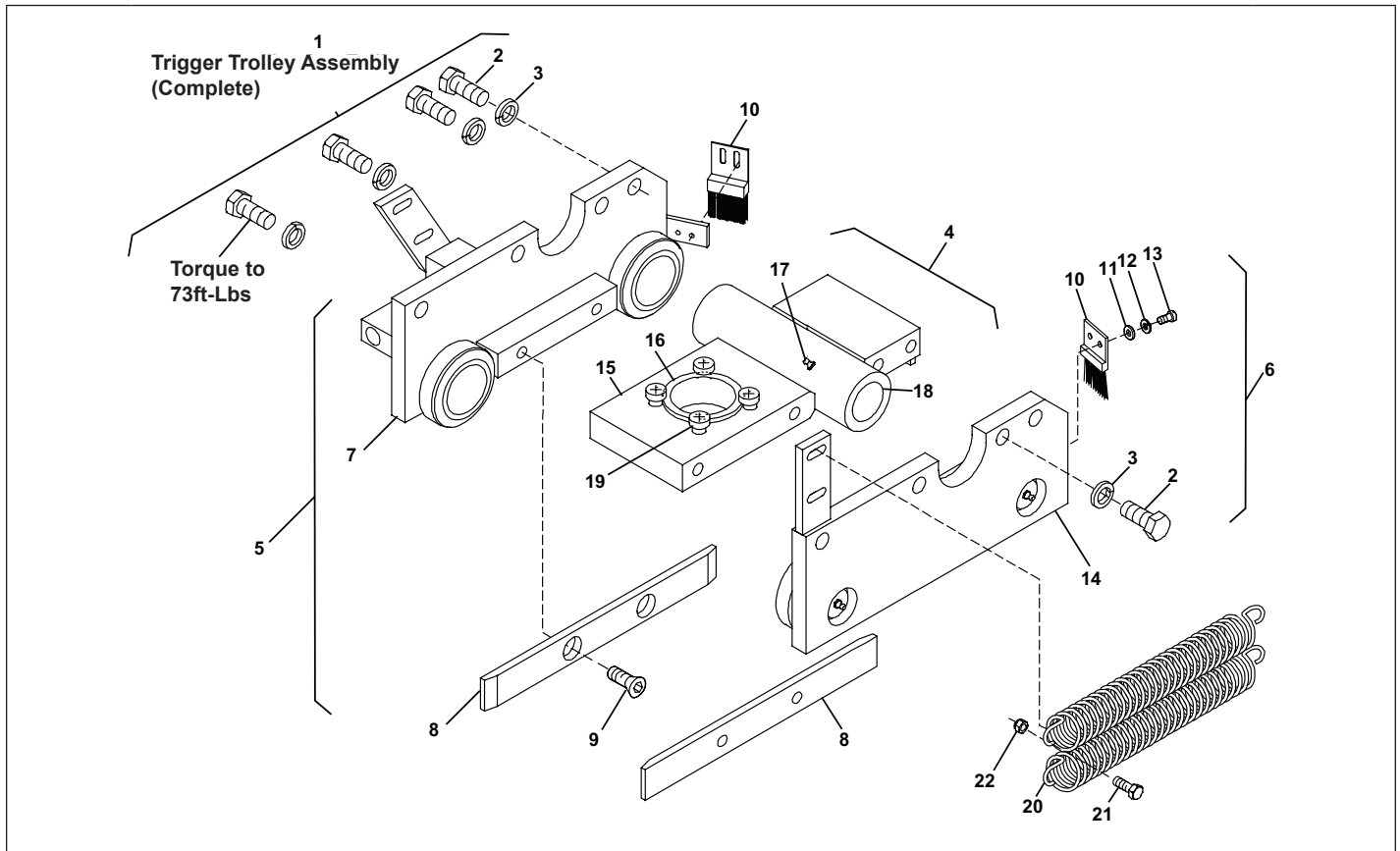
Locking Arm Assembly



#	QTY	DESCRIPTION	PART #
1	1	Locking Arm Assembly - Complete (Includes items 2-20)	120032
2	6	Screw Hex Head 1/2"-13 x 1-1/2" Long (Grade 8)	51608
3	1	Locking Arm Tube Retainer	122510
4	1	Round Tube 15-5/8" Long	122509
5	1	Locking Arm Shaft	122863
6	1	Grease Fitting	51169
7	1	Locking Arm Weldment	120031
8	5	Screw, Machine 1/4"-20 x 1/2" Long	104618
9	1	Cover Flap	104620
10	1	Bearing Tube Assembly	106839
11	2	Wear Pad	112952
12	6	Screw, Flat Head 1/4"-20 x 1" Long	106852
13	1	Trolley Pin Weldment	106930
14	1	Square Washer, 5/8" ID x 2" x 2" x 1/4" thick	106931
15	1	Lockwasher, 5/8" ID	106936
16	1	Screw, Hex. Head 5/8"-11 x 1-1/2" Long	106935
17	2	Spacer	120029
18	1	Retainer	120028
19	6	Lockwasher, 1/2" ID	51831
20	1	Decal - Caution Manual Release	113931
21	1	Decal - Hand Safety	64245
22	1	Decal - Logo GWL23	113928

PARTS

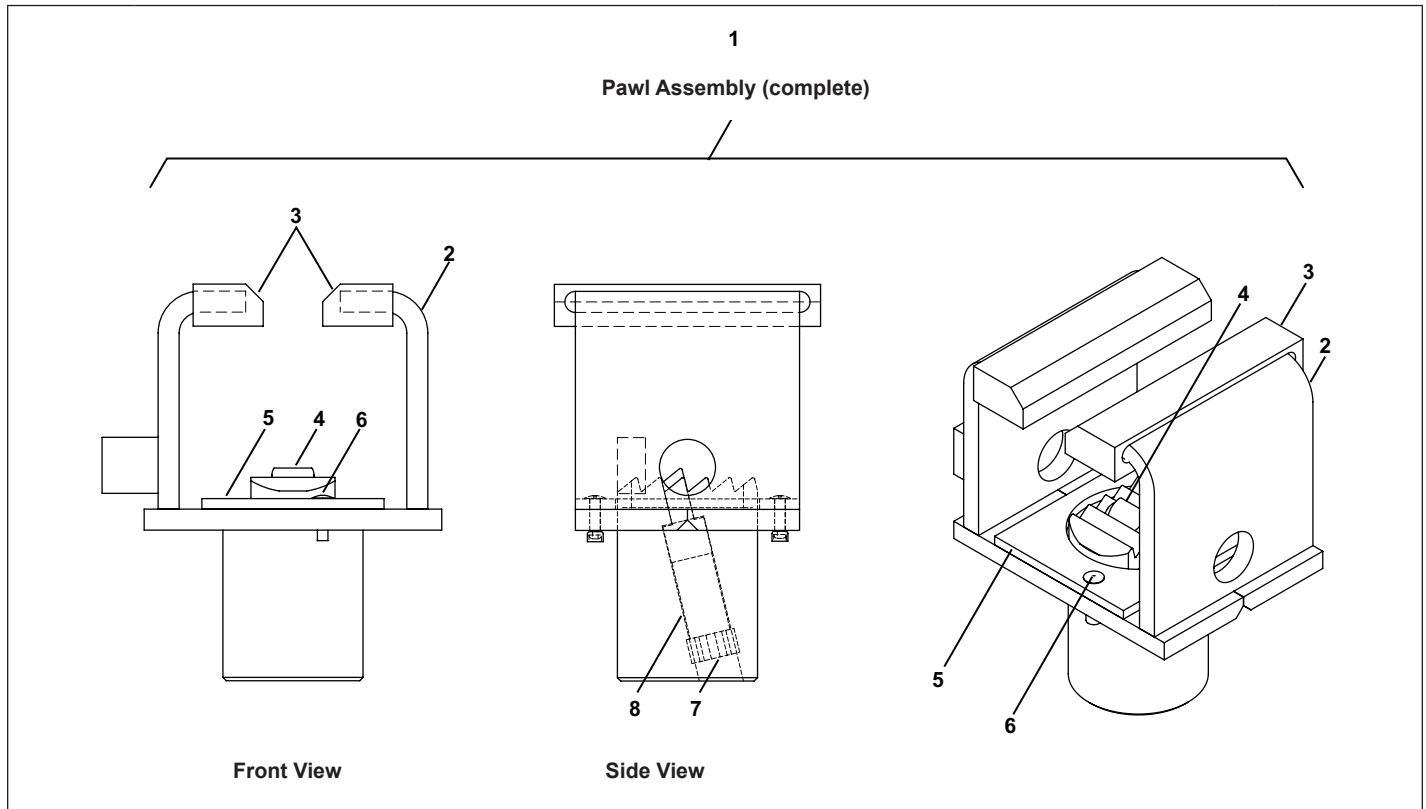
Locking Arm Trolley



#	QTY	DESCRIPTION	PART #
1	1	Locking Arm Trolley Assembly - Complete (Includes Items 2 - 19)	109234
2	8	Screw, Hex. Head 5/8-11 x 1-1/2" Long Stainless Steel	106935
3	8	Lockwasher 5/8" ID Stainless Steel	106936
4	1	Spool Assembly (Includes Items 15 - 19)	106917
5	1	Trolley Assembly- Right (Includes Parts 7 - 13)	106863
6	1	Trolley Assembly - Left (Includes Parts 8 - 14)	106869
7	1	Trolley Weldment - Right	106853
8	2	Slider Bar	112479
9	4	Screw, Countersunk Hex. 3/8-16 x 1" Long Stainless Steel	106865
10	2	Bearing Brush	106916
11	4	Flat Washer, Beam Brush #10 Stainless Steel	106867
12	4	Lockwasher, Beam Brush #10 Stainless Steel	106868
13	4	Screw, Slotted Hex. #10-32 x 1/2" Long Stainless Steel	106866
14	1	Trolley Weldment - Left	106870
15	1	Spool Weldment	106872
16	1	Pawl Bearing	106874
17	1	Grease Fitting	109696
18	2	Spool Bearing	106862
19	4	Truss Head Screw	114744
20	2	Extension Spring	146443
21	4	Screw, Hex. Head 3/8-16 x 1" long stainless steel	106906
22	4	Hex. Nut 3/8-16 Serr. Flange ZP	51564

PARTS

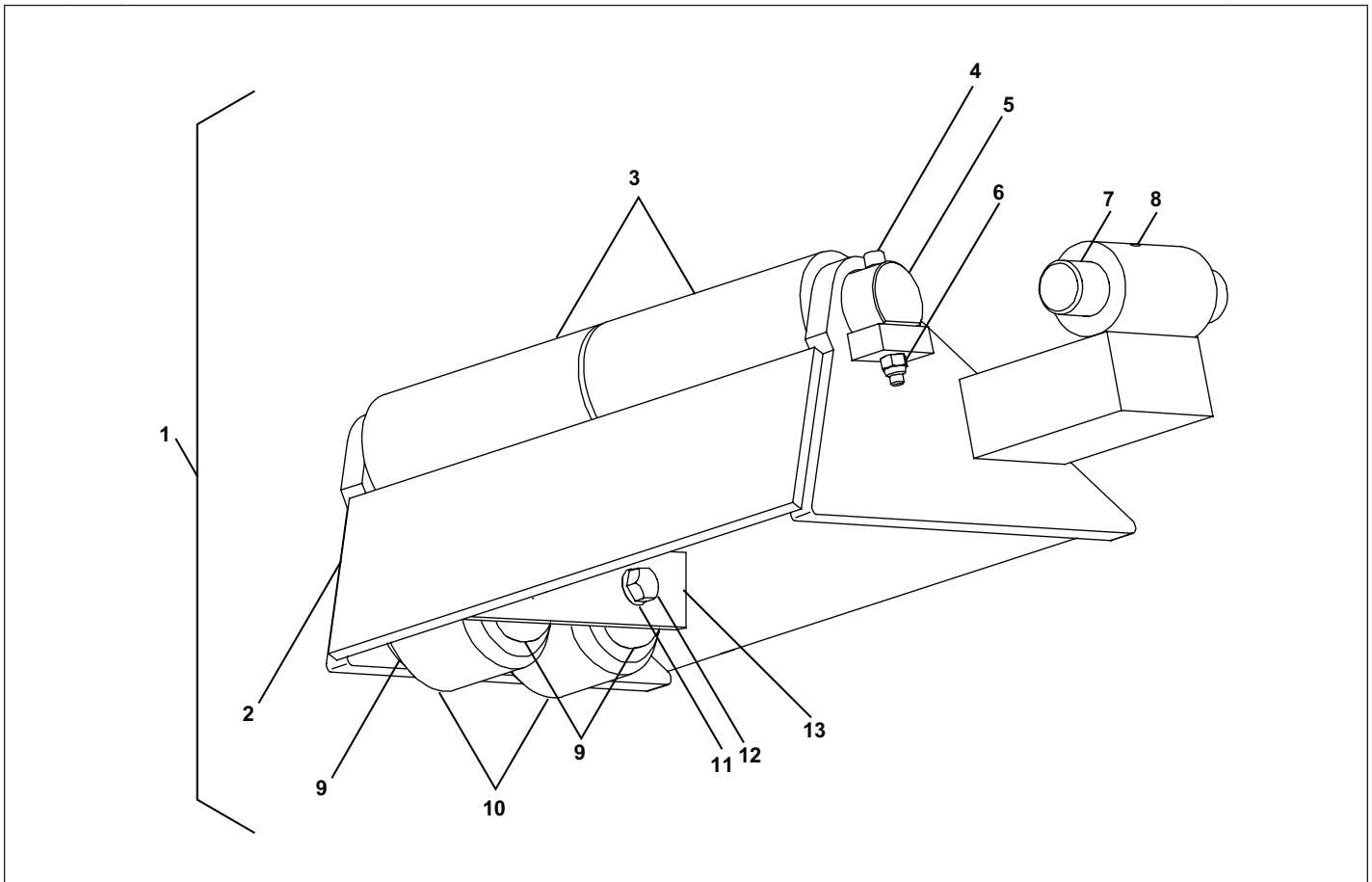
Pawl Assembly



#	QTY	DESCRIPTION	PART #
1	1	Pawl Assembly - Complete	112584
2	1	Pawl Weldment	112585
3	2	UHMW Slider	112756
4	1	Snaggletooth	106922
5	1	Pawl Wear Pad	106934
6	2	Pop Rivet	106954
7	1	Hex. Jam Set Screw 7/8"-9 x 7/16" Long	106929
8	1	Spring 3/4" x 1-1/2" Long	106928

PARTS

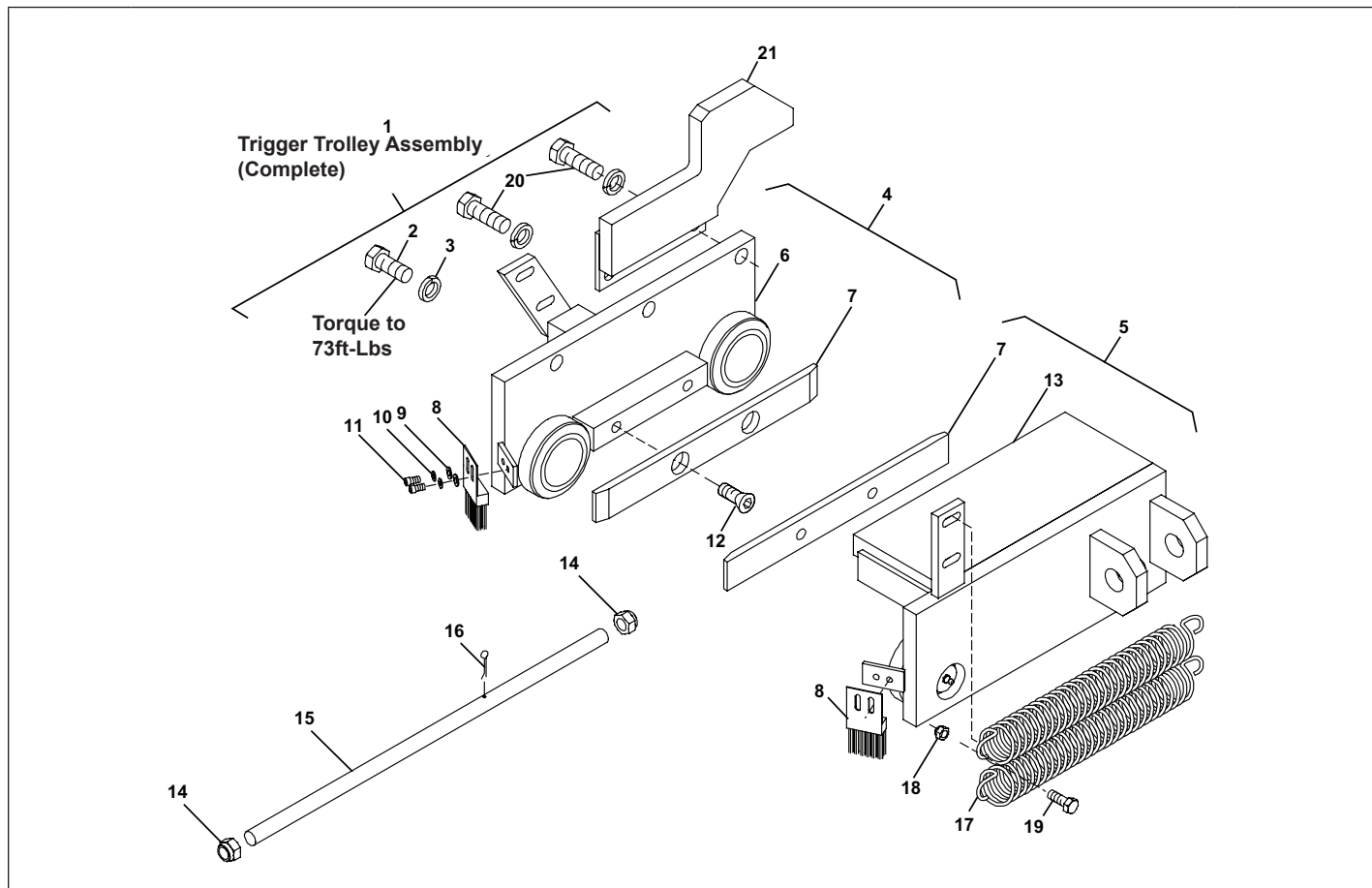
Trigger Trolley Assembly



#	QTY	DESCRIPTION	PART #
1	1	Trigger Assembly – Complete	106893
2	1	Trigger Weldment	106894
3	2	Round Tube 2-1/2" OD, 1-1/2" ID x 5-1/8" Long	106913
4	1	Cap Screw 1/4-20 x 2-1/4" Long Stainless Steel	106908
5	1	Shaft 1-7/16" Dia. x 12-1/4" Long	106910
6	1	Nylock Nut 1/4"-20 Stainless Steel	106880
7	1	Clevis Pin 1" Dia. x 4-1/2" Long	106914
8	1	Cap Screw 1/4"-20 x 3/8" Long Stainless Steel	106909
9	4	Washer	51721
10	2	Trigger Roller	106912
11	2	Lockwasher 3/8" Stainless Steel	106907
12	2	Hex. Screw 3/8"-16 x 1" Long Stainless Steel	106906
13	1	Trigger Gusset	106911

PARTS

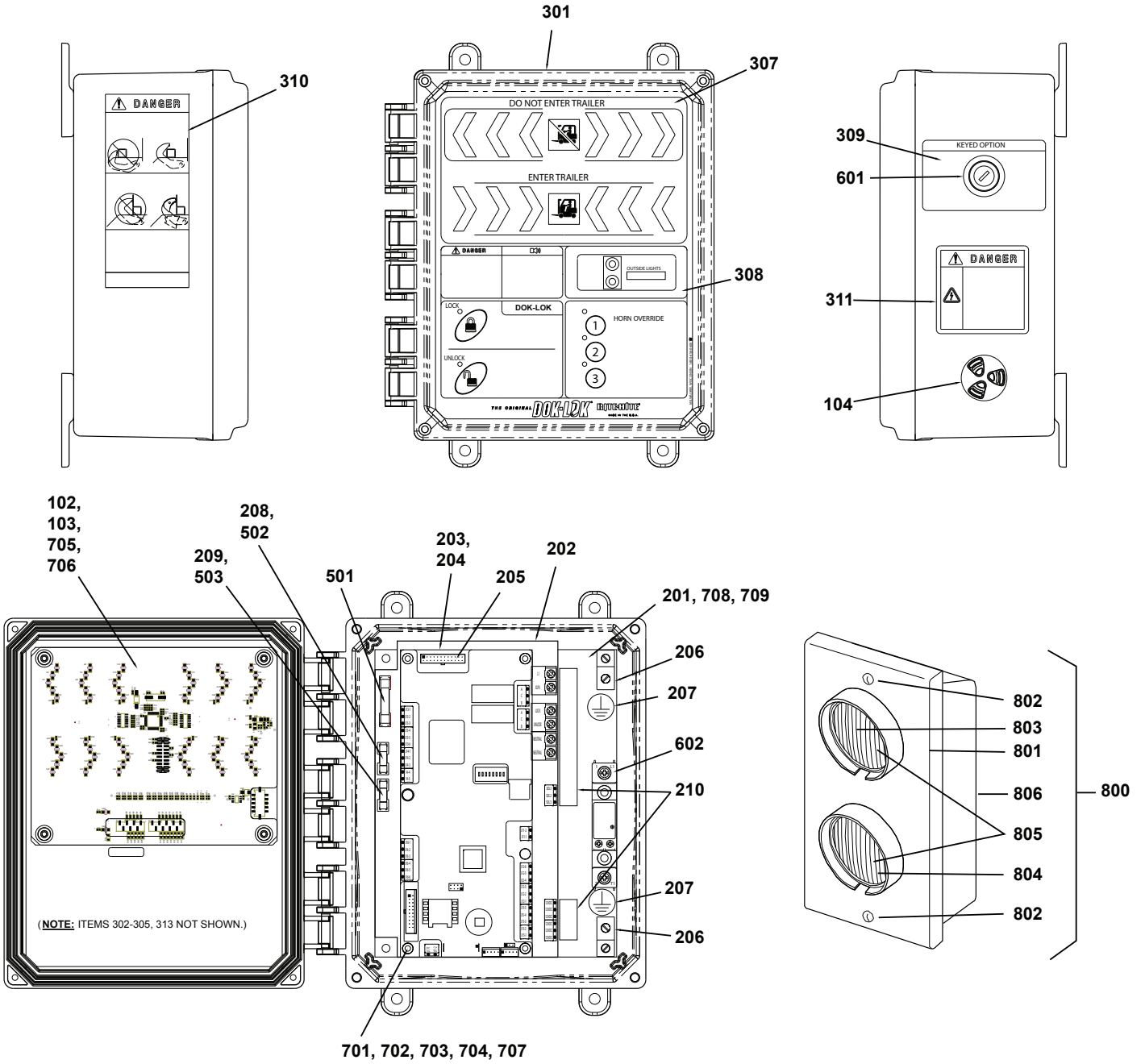
Trigger Trolley Assembly



#	QTY	DESCRIPTION	PART #
1	1	Trigger Trolley Assembly - Complete (Includes Items 2 - 13)	109233
2	1	Screw, Hex. Head 5/8-11 x 1-1/2" Long Stainless Steel	106935
3	3	Lockwasher 5/8" I.D. Stainless Steel	106936
4	1	Trigger Trolley Assembly - Right (Includes Parts 6 - 12)	106890
5	1	Trigger Trolley Assembly - Left (Includes Parts 7 - 13)	106885
6	1	Trigger Trolley Weldment - Right	106891
7	2	Slider Bar	112479
8	2	Bearing Brush	106916
9	4	Flat Washer, Beam Brush #10 Stainless Steel	106867
10	4	Lockwasher, Beam Brush #10 Stainless Steel	106868
11	4	Screw, Slotted Hex. #10-32 x 1/2" Long Stainless Steel	106866
12	4	Screw, Countersunk Hex. 3/8-16 x 1" Long Stainless Steel	106865
13	1	Trigger Trolley Weldment - Left	106886
14	2	Nylock Hex. Nut 5/8-11 Stainless Steel	106951
15	1	Threaded Rod 5/8" x 22" Long Stainless Steel	106950
16	1	Cotter Pin 1/8" x 1" Long Stainless Steel	109268
17	2	Extension Spring	146443
18	4	Hex. Nut 3/8-16 Serr. Flange ZP	51564
19	4	Screw, Hex. Head 3/8-16 x 1" Long Stainless Steel	106906
20	2	Screw Hex. Head 5/8-11 x 1-3/4" Long Stainless Steel	119778
21	1	Pawl Hold Down	118838

PARTS

Electrical

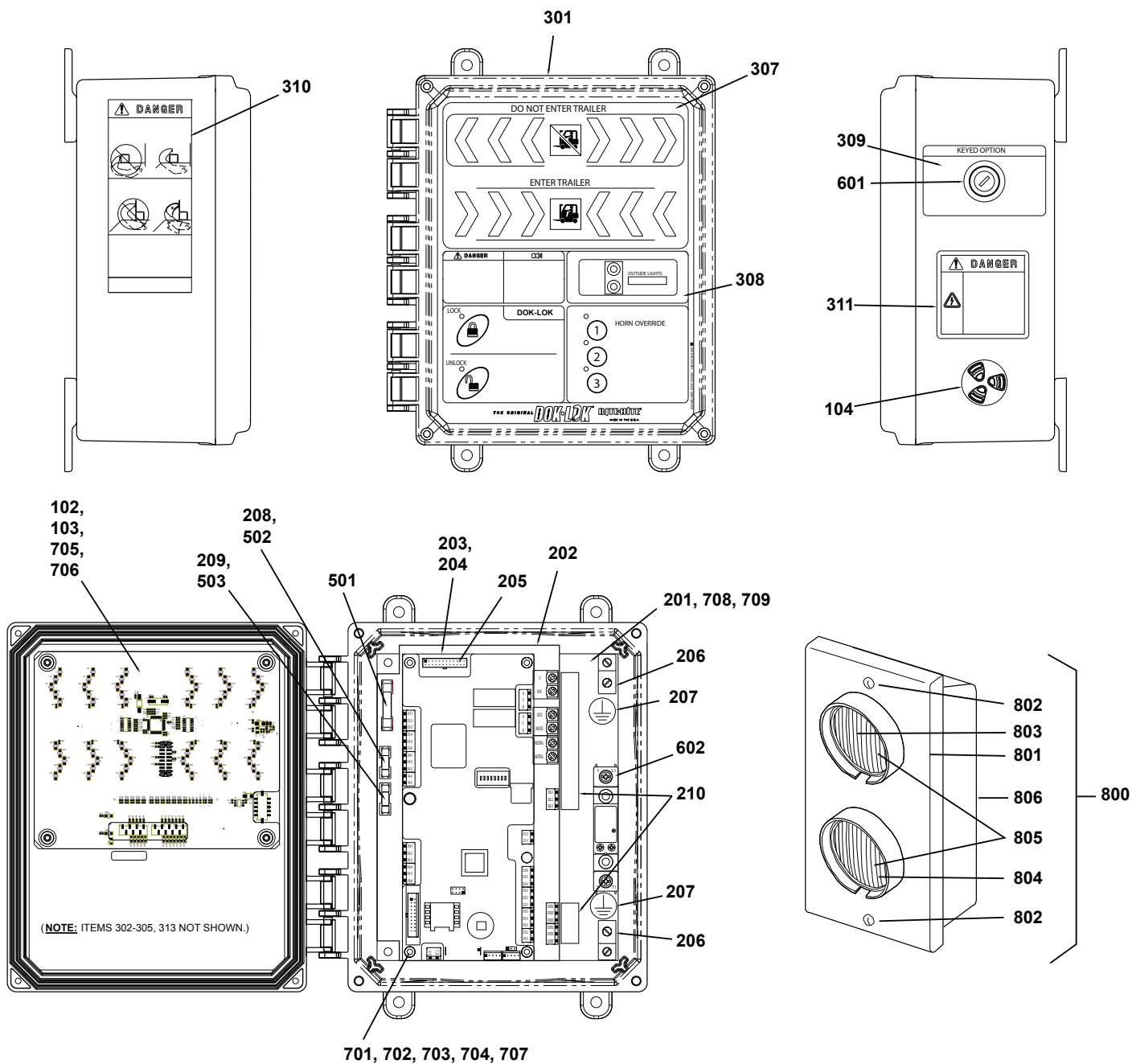


PARTS**Electrical** *Continued*

#	QTY	DESCRIPTION	PART #
1	1	Control box assembly, Complete (Consult Rite-Hite for specific part number)	863.xxx
102	1	LED chevron/outside light monitor circuit board	141579
103	1	LED chevron/outside light monitor circuit board cover	144835
104	1	Horn, 12VDC, N4X	141573
201	1	Pre-drilled control box sub panel	144757
202	1	Power circuit board, Blank	141580
	1	Power circuit board, Including Fuses (115 Volt Power)	142126-04
	1	Power circuit board, Including Fuses (230 Volt Power)	142126-05
203	1	Standard Micro Control Board, Including Advanced Controls	141578-861D106
	1	Micro Control Board with Program Options (Consult Rite-Hite for specific part number)	141578-xxx
204	1	Micro circuit board cover	144802
205	1	Control wiring harness	144864-01
206	2	Ground lug	55902
207	2	Ground lug decal	105454
208	1	Fuse cover, 5mm x 20mm	144544
209	1	Fuse cover, 5mm x 20mm	144544
210	1	Panel decals	146324
301	1	Standard Enclosure with decals, English	865.105
	1	Enclosure with decals other than above (Consult Rite-Hite for specific part number)	865.xxx
302	1	Electrical schematic decal (Consult Rite-Hite for specific part number)	870.xxx
303	1	Fuse replacement decal	144849
304	1	Full load amperage and voltage/phase decal (Consult Rite-Hite for specific part number)	872.xxx
305	1	Program configuration decal (Consult Rite-Hite for specific part number)	862.xxx
307	1	Cover decal with membrane push buttons	141499
308	1	DOK-LOK inlay decal, 5 button coded horn override (Advanced Control Package)	141502
	1	DOK-LOK inlay decal, 3button horn override (Less Advanced Control Package)	144803
309	1	Horn override enable decal (If equipped)	144831
	1	Control power ON/OFF decal (If equipped)	144829
	1	Unlock enable decal (If equipped)	144830
310	1	Danger/warning decal	144843
311	1	Lockout/tagout/multiple disconnect warning decal	114331
313	1	Circuit board UL rating decal	144859
501	1	5A time delay fuse, 0.25" x 1.25" (115V control box)	57419
		2.5A time delay fuse, 0.25" x 1.25" (230V control box)	126964
502	1	1A time delay fuse, 5mm x 20mm (115V control box)	142092
		0.5A time delay fuse, 5mm x 20mm (230V control box)	145216
503	1	0.5A time delay fuse, 5mm x 20mm	145216
601	1	Selector switch, keyed (If equipped)	125194
602	1	Solid state relay, 12VDC, 75A, with hardware (If equipped)	144877
701	6	Standoff, Male/Female, #6-32, 0.75" length	142100
702	6	Standoff, Male/Female, #6-32, 1.625" length	142101

PARTS

Electrical *Continued*

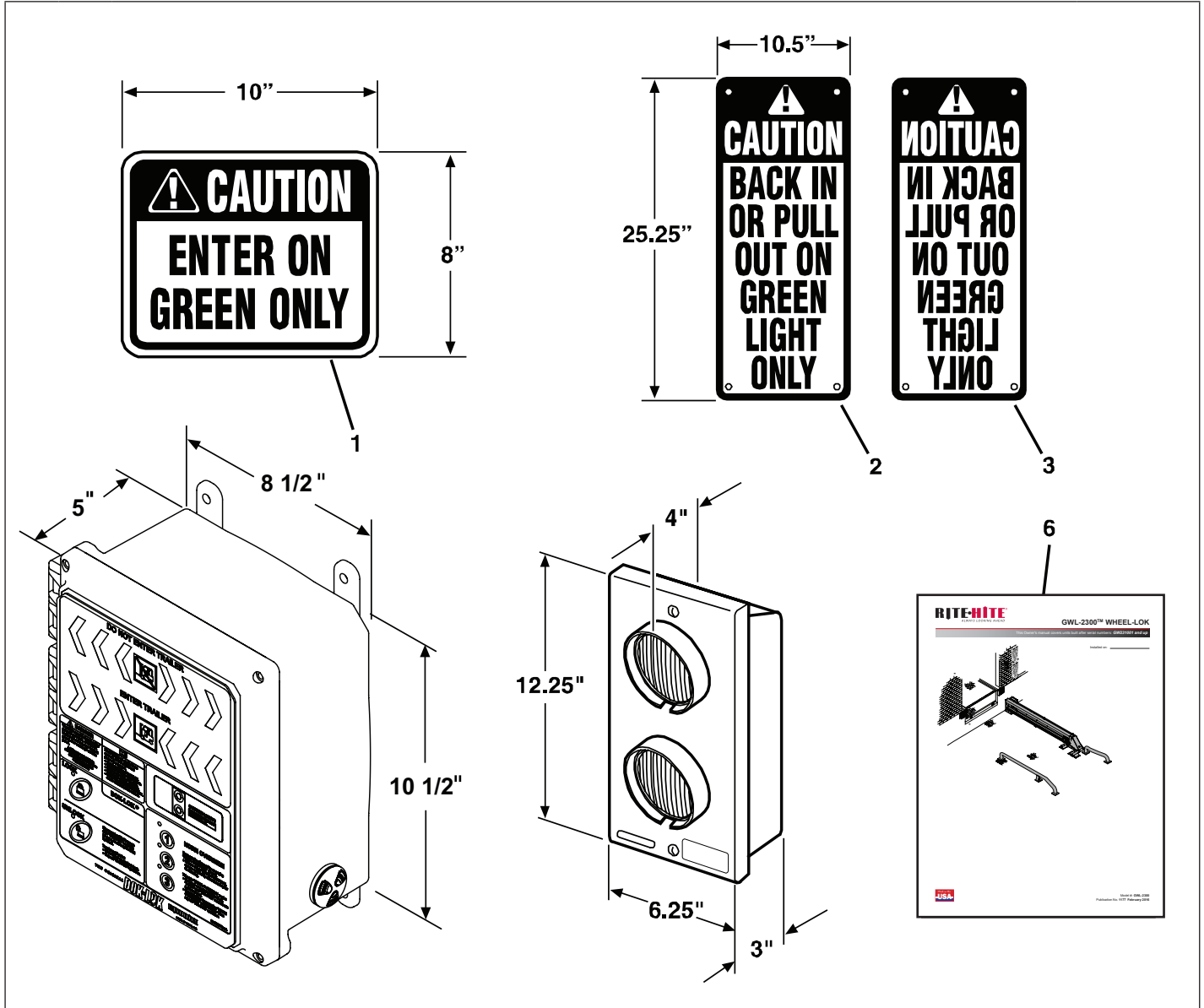


PARTS**Electrical** *Continued*

#	QTY	DESCRIPTION	PART #
703	6	Screw, round head, #6-32, 0.25" length	133366
704	6	Lock washer, #6	51826
705	4	Rubber grommet	142102
706	4	Screw, black trim washer, #8-32, 0.5" length	146031
707	4	Standoff, Male/Female, #6-32, 0.875" length	115871
708	4	Screw, Round Head, #10-32, 0.5" length	51628
709	4	Lock Washer, #10	51762
800	1	LED Outside Light Assembly, Complete	115798
801	1	LED Outside Light Assembly, Doesn't Include Base	128458
802	2	Screw, round head #6-32, 0.75" length	18364
803	1	LED Outside Light Bulb, Red	128448
804	1	LED Outside Light Bulb, Green	128449
805	2	LED Light Socket	116894
806	1	Outside Light Enclosure Base	18277

PARTS

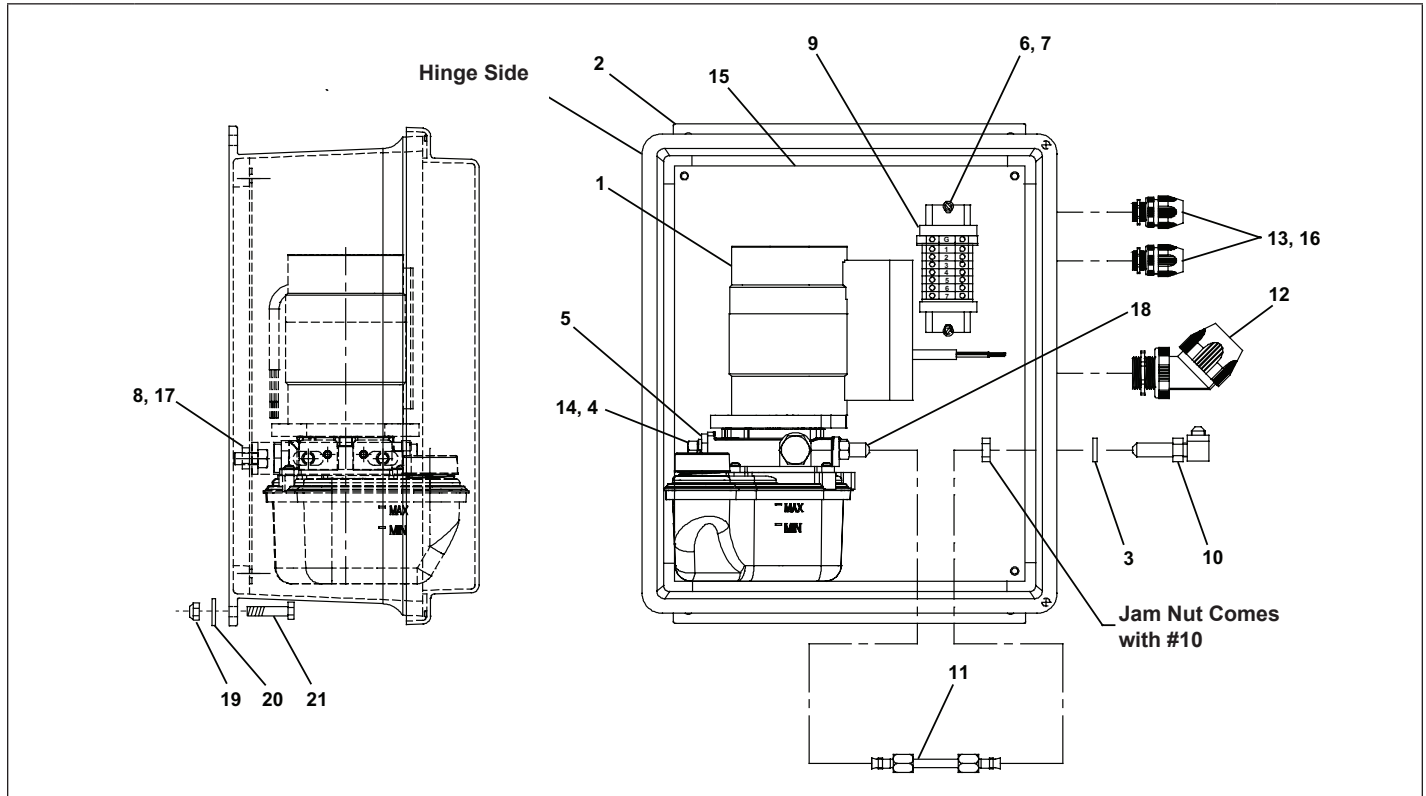
Miscellaneous



#	QTY	DESCRIPTION	PART #
1	1	Interior Warning Sign	56095
2	1	Narrow Sign (normal letters)	56112
3	1	Narrow Sign (mirror letters)	56113
4	1	GWL-2300 Owners Manual	Pub. 1177

PARTS

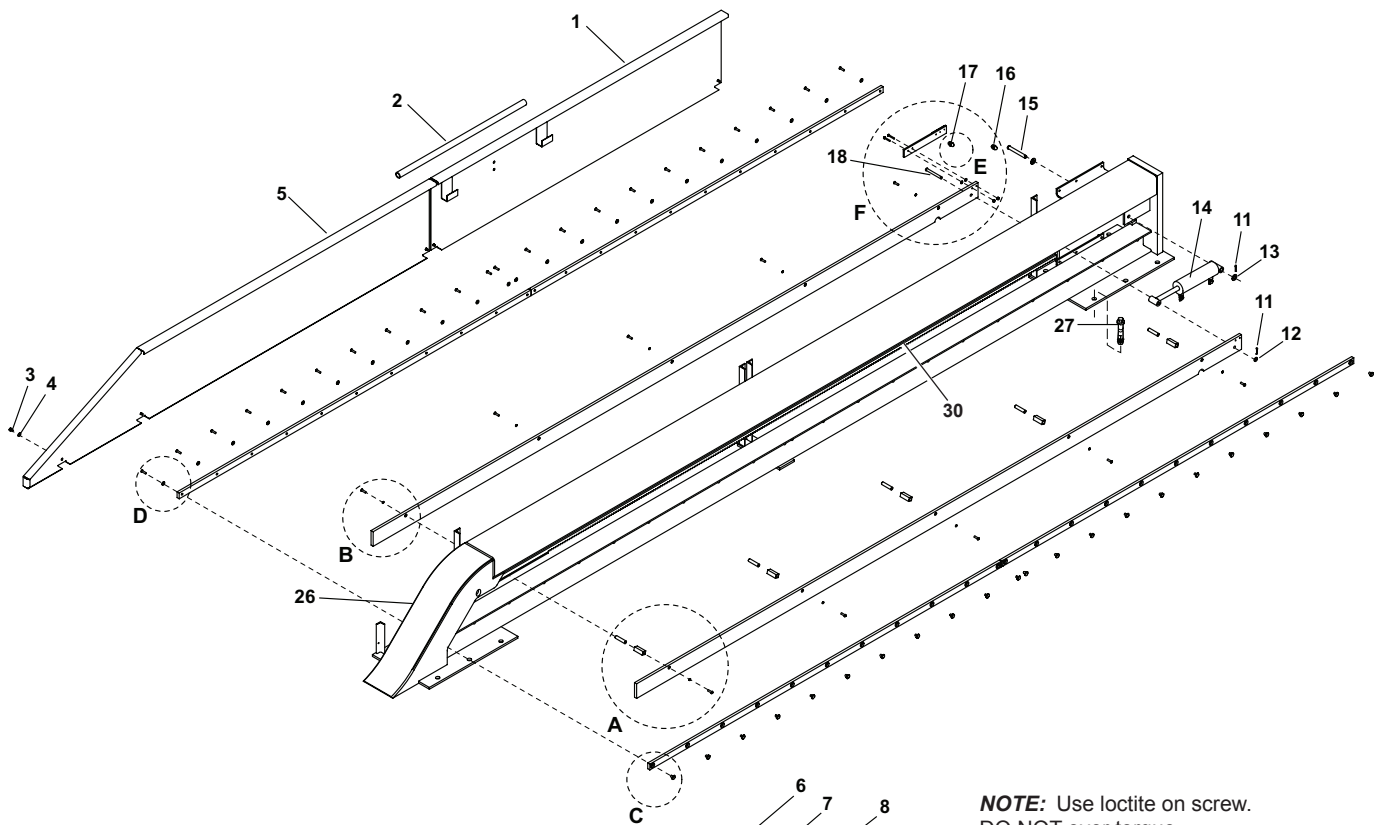
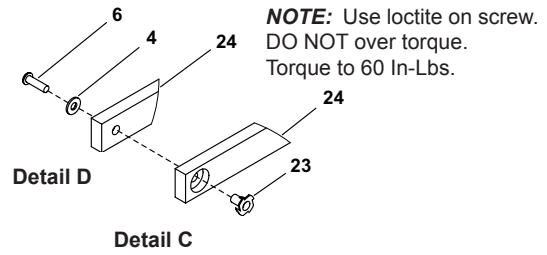
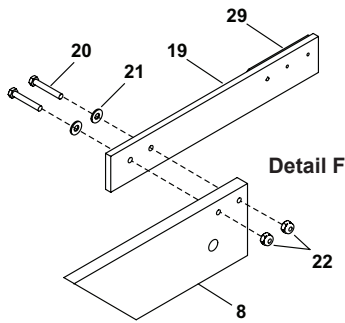
Hydraulic Power Unit



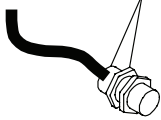
#	QTY	DESCRIPTION	PART #
1	1	Power Unit 120/1ph/.33hp	112318
	1	Power Unit 208-240/1ph/.33hp	129474
	1	Reservoir (for part number 112318 only)	118589
2	1	14x12x8 N4XF Enclosure	112313
3	2	.375ID x .750OD Seal	107134
4	2	Bolt .375-16 x .75	58108
5	1	Mounting Bracket	107131
6	2	Screw #8-32 x .5L	51699
7	2	Lock Washer #8	51839
8	2	Hex Nut	51534
9	1	Terminal Block Assembly	112304
10	2	90 deg. hydraulic fitting	112706
11	2	Hydraulic Hose Assembly	112881
12	1	LiquidTite Fitting, 45 deg. .75-14	112882
13	2	Cord Grip	112345
14	2	Lock Washer .375	51773
15	1	Back Panel	112305
16	2	O-ring gasket	113637
17	2	Bolt .312-18 x .75	51670
18	2	Hydraulic Fittings	117513
19	4	Nut 1/4"-20 Hex FLG	51552
20	4	Washer 1/4" Stainless Steel	106956
21	4	Screw 1/4"-20 x 1-1/4" Long Cap Hex	51650
22	1	Hydraulic Hose to Cylinder 14.5L (Not Shown)	112754
23	1	Hydraulic Hose to Cylinder 18L (Not Shown)	112324

PARTS

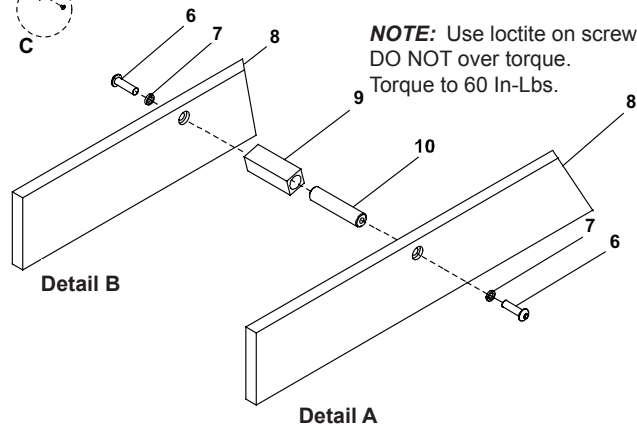
Track Assembly – Left Hand



NOTE: Distance from back of nut to back of switch (wire end) is 5/16". Use loctite on both nuts. Torque not to exceed 12 In-Lbs.



Detail E

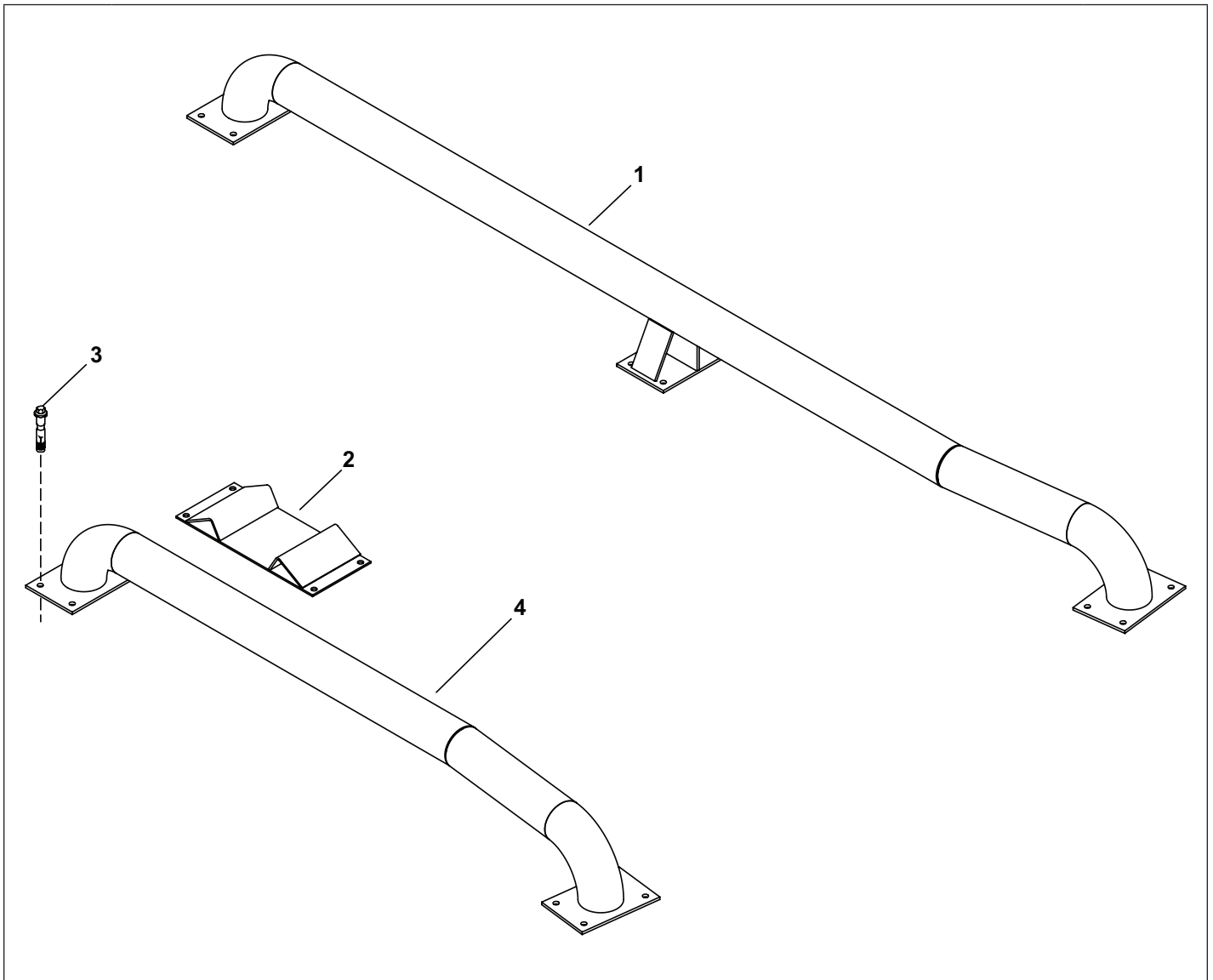


PARTS**Track Assembly – Left Hand** *continued*

#	QTY	DESCRIPTION	PART #
1	1	Back Side Cover	109898
2	1	Maintenance Strut	106943
3	9	Hex. Cap Screw 1/4"-20 x 1/2" Long Stainless Steel	106939
4	35	Washer 1/4" Stainless Steel	106956
5	1	Front Side Cover	109899
6	32	Screw .250-20 x .875" Cap Button, Stainless Steel	106918
7	10	1/4" Lock Washer	51802
8	2	Lifting Rail	112735
9	5	Lifting Rail Bushing	112307
10	5	Pin .5 x 2.25 Threaded Ends 17-4PH	112738
11	2	Cotter Pin	109268
12	1	Flat Washer .375	106953
13	2	Flat Washer .500	51706
14	1	Cylinder Assembly (Includes Fittings)	112323
15	1	Clevis Pin .5 x 3.5L	112755
16	1	Unlock Switch, Mag. Res.	134626
17	1	Lock Switch, Mag. Res.	134625
18	1	Clevis Pin, .375 x 3.5L	106952
19	1	Limit Switch Flag Assembly	110006
20	2	Bolt #10-24 x 1.25	110691
21	2	Washer #10 Flat	106867
22	2	Nut #10-24	50597
23	22	Nut .250-20 Tee Barrel	106849
24	4	UHMW Wear Strip	130220
25	1	Decal - Safety Foot	64410
26	1	GWL-2300 Frame Weldment	109903
27	11	Anchor Bolt 5/8" x 4"	53150
28	2	90 Degree Hydraulic Fitting	16920
29	1	Magnet	107121
30	1	Kit, Long Main Ratchet Bar	114048

PARTS

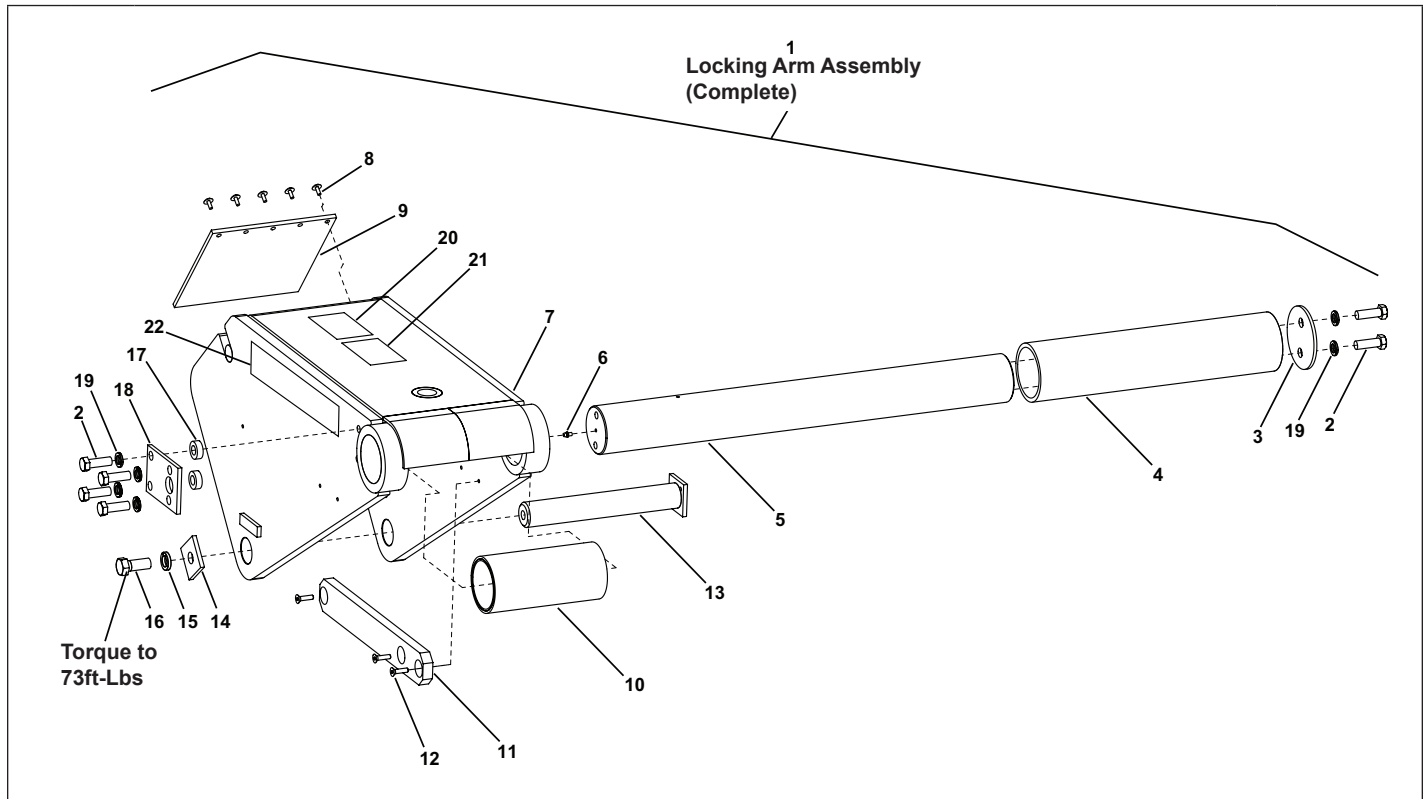
Wheel Guides and Barrier Ramp – Left Hand



#	QTY	DESCRIPTION	PART #
1	1	Wheel Guide Long	110072
2	1	Barrier Ramp	107633
3	24	Anchor Bolt 5/8" x 4"	53150
4	1	Wheel Guide Short	110073

PARTS

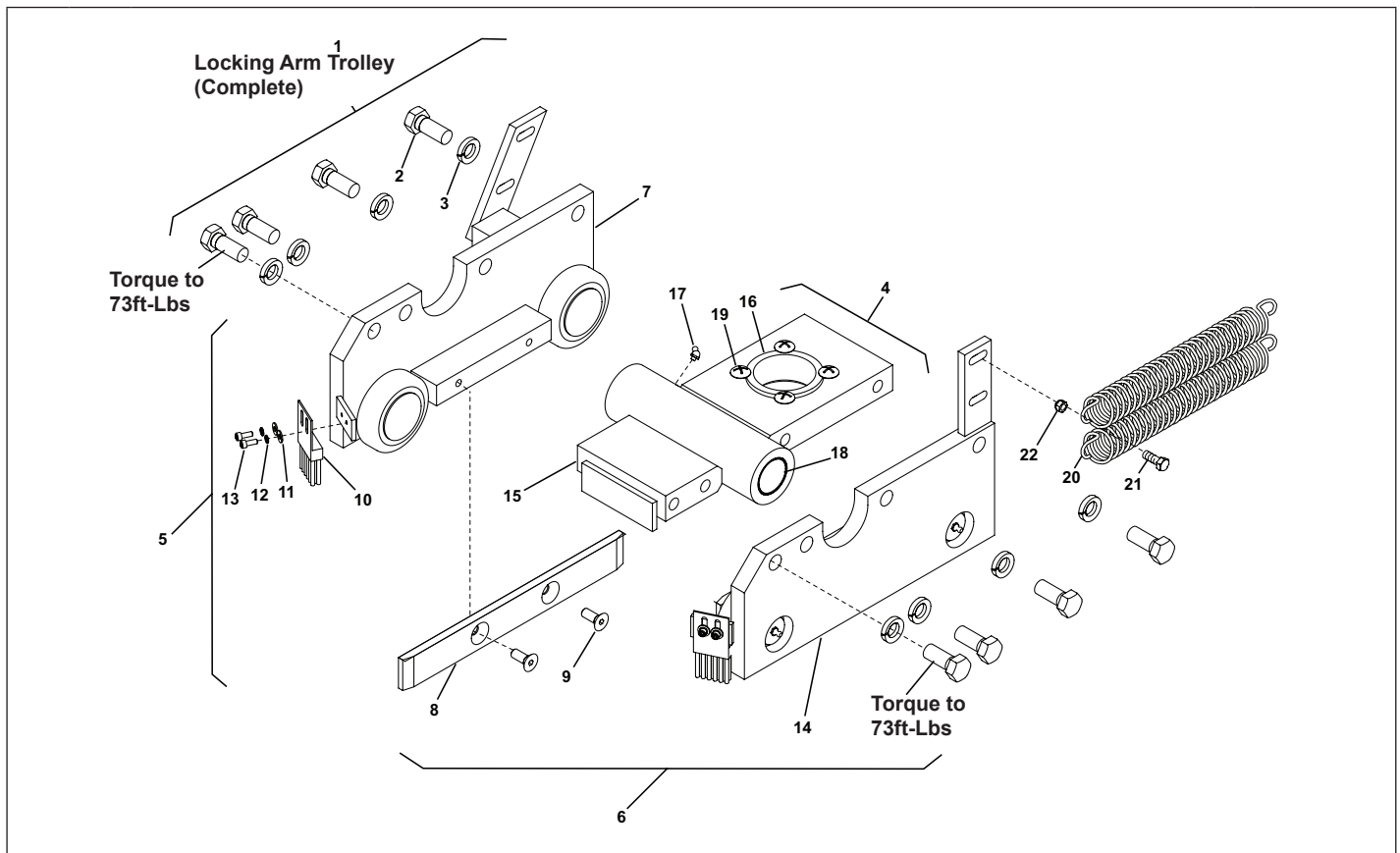
Locking Arm ASM – Left Hand



#	QTY	DESCRIPTION	PART #
1	1	Locking Arm Assembly - Complete (Includes items 2-20)	121345
2	6	Screw Hex Head 1/2"-13 x 1-1/2" Long (Grade 8)	51608
3	1	Locking Arm Tube Retainer	122510
4	1	Round Tube 14-13/16" Long	122509
5	1	Locking Arm Shaft	122863
6	1	Grease Fitting	51169
7	1	Locking Arm Weldment	120031
8	5	Screw, Machine 1/4"-20 x 1/2" Long Stainless Steel	104618
9	1	Cover Flap	104620
10	1	Bearing Tube Assembly	106839
11	2	Wear Pad	112952
12	6	Screw, Flat Head 1/4"-20 x 1" Long Stainless Steel	106852
13	1	Trolley Pin Weldment	106930
14	1	Square Washer, 5/8" ID x 2" x 2" x 1/4" thick	106931
15	1	Lockwasher, 5/8" ID Stainless Steel	106936
16	1	Screw, Hex. Head 5/8"-11 x 1-1/2" Long Stainless Steel	106935
17	2	Spacer	120029
18	1	Retainer	120028
19	6	Lockwasher, 1/2" ID Stainless Steel	51831
20	1	Decal - Caution Manual Release	113931
21	1	Decal - Hand Safety	64245
22	1	Decal - Logo GWL23	113928

PARTS

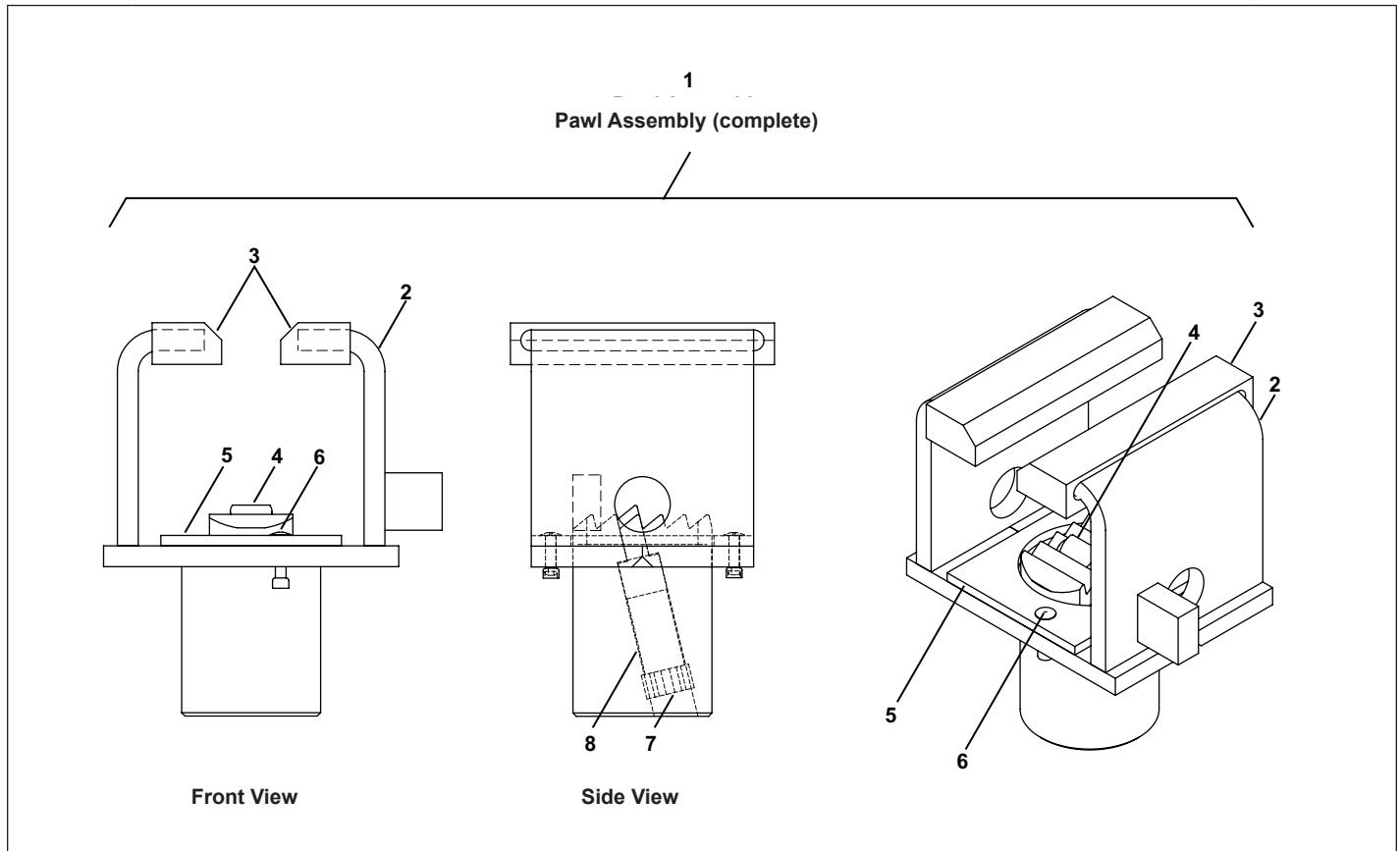
Locking Arm Trolley – Left Hand



#	QTY	DESCRIPTION	PART #
1	1	Locking Arm Trolley Assembly - Complete (Includes Items 2 - 19)	110035
2	8	Screw, Hex. Head 5/8-11 x 1-1/2" Long Stainless Steel	106935
3	8	Lockwasher 5/8" ID Stainless Steel	106936
4	1	Spool Assembly (Includes Items 15 - 19)	106917
5	1	Trolley Assembly- Left (Includes Parts 7 - 13)	110038
6	1	Trolley Assembly - Right (Includes Parts 8 - 14)	110036
7	1	Trolley Weldment - Left	110066
8	2	Slider Bar	112479
9	4	Screw, Countersunk Hex. 3/8-16 x 1" Long Stainless Steel	106865
10	2	Bearing Brush	106916
11	4	Flat Washer, Beam Brush #10 Stainless Steel	106867
12	4	Lockwasher, Beam Brush #10 Stainless Steel	106868
13	4	Screw, Slotted Hex. #10-32 x 1/2" Long Stainless Steel	106866
14	1	Trolley Weldment – Right	110037
15	1	Spool Weldment	106872
16	1	Pawl Bearing	106874
17	1	Grease Fitting	109696
18	2	Spool Bearing	106862
19	4	Truss Head Screw	114744
20	2	Extension Spring	146443
21	4	Screw, Hex. Head 3/8-16 x 1" long stainless steel	106906
22	4	Hex. Nut 3/8-16 Serr. Flange ZP	51564

PARTS

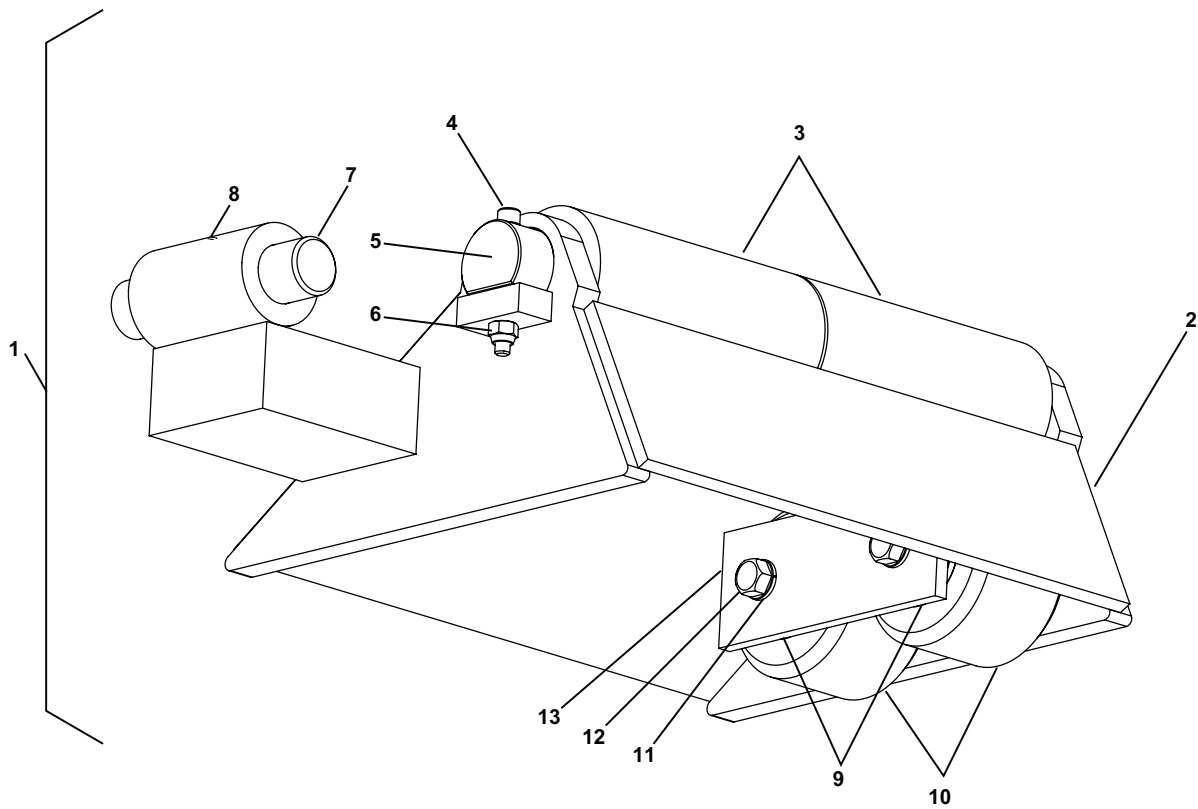
Pawl Assembly – Left Hand



#	QTY	DESCRIPTION	PART #
1	1	Pawl Assembly - Complete	127221
2	1	Pawl Weldment	127220
3	2	UHMW Slider	112756
4	1	Snaggletooth	106922
5	1	Pawl Wear Pad	106934
6	2	Pop Rivet	106954
7	1	Hex. Jam Set Screw 7/8"-9 x 7/16" Long	106929
8	1	Spring 3/4" x 1-1/2" Long	106928

PARTS

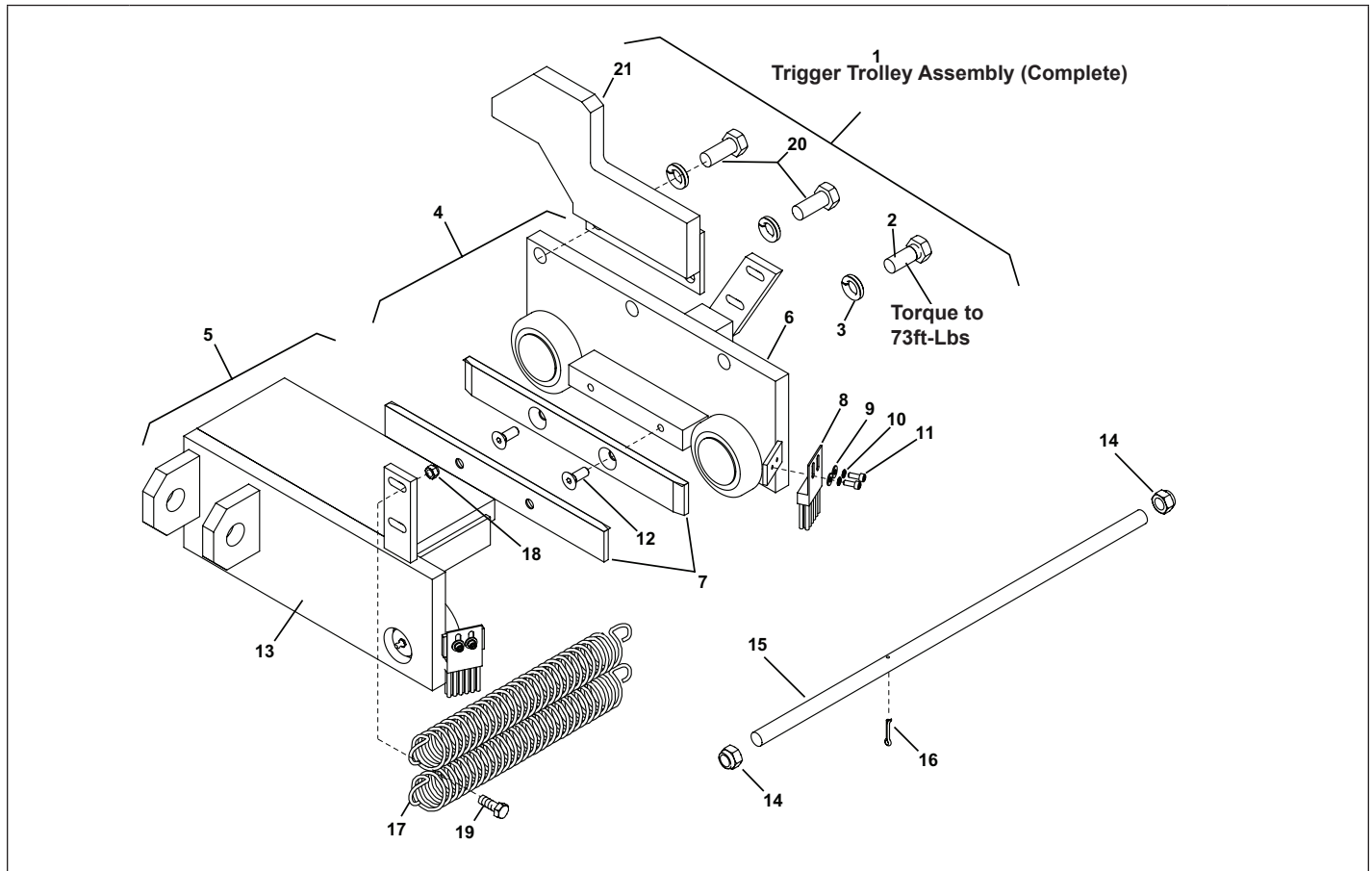
Trigger Assembly – Left Hand



#	QTY	DESCRIPTION	PART #
1	1	Trigger Assembly – Complete	108693
2	1	Trigger Weldment	108694
3	2	Round Tube 2-1/2" OD, 1-1/2" ID x 5-1/8" Long	106913
4	1	Cap Screw 1/4-20 x 2-1/4" Long Stainless Steel	106908
5	1	Shaft 1-7/16" Dia. x 12-1/4" Long	106910
6	1	Nylock Nut 1/4"-20 Stainless Steel	106880
7	1	Clevis Pin 1" Dia. x 4-1/2" Long	106914
8	1	Cap Screw 1/4"-20 x 3/8" Long Stainless Steel	106909
9	4	Washer	51721
10	2	Trigger Roller	106912
11	2	Lockwasher 3/8" Stainless Steel	106907
12	2	Hex. Screw 3/8"-16 x 1" Long Stainless Steel	106906
13	1	Trigger Gusset	106911

PARTS

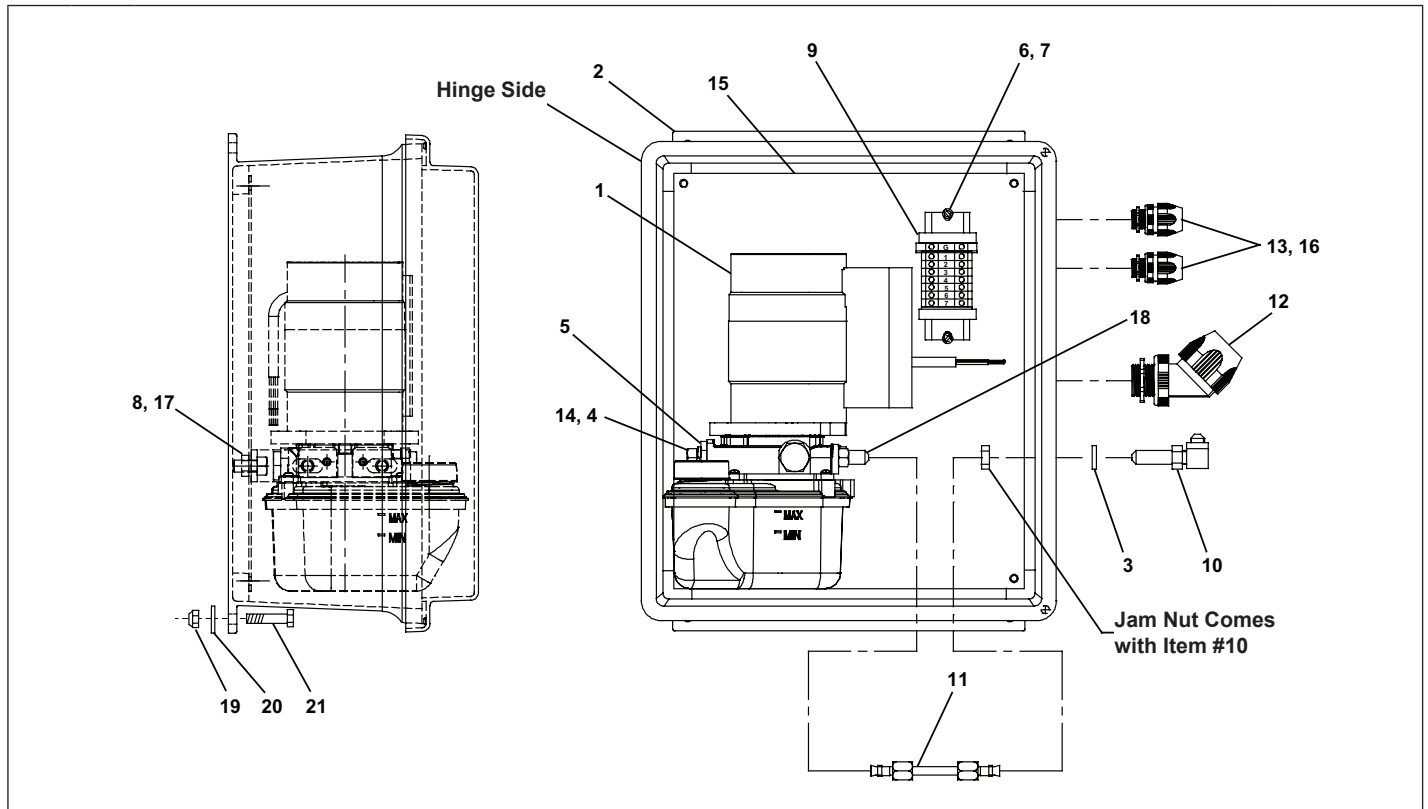
Trigger Trolley – Left Hand



#	QTY	DESCRIPTION	PART #
1	1	Trigger Trolley Assembly - Complete (Includes Items 2 - 13)	110069
2	1	Screw, Hex. Head 5/8-11 x 1-1/2" Long Stainless Steel	106935
3	3	Lockwasher 5/8" I.D. Stainless Steel	106936
4	1	Trigger Trolley Assembly - Left (Includes Parts 6 - 12)	110070
5	1	Trigger Trolley Assembly - Right (Includes Parts 7 - 13)	108705
6	1	Trigger Trolley Weldment - Left	110071
7	2	Slider Bar	112479
8	2	Bearing Brush	106916
9	4	Flat Washer, Beam Brush #10 Stainless Steel	106867
10	4	Lockwasher, Beam Brush #10 Stainless Steel	106868
11	4	Screw, Slotted Hex. #10-32 x 1/2" Long Stainless Steel	106866
12	4	Screw, Countersunk Hex. 3/8-16 x 1" Long Stainless Steel	106865
13	1	Trigger Trolley Weldment – Right	108706
14	2	Nylock Hex. Nut 5/8-11 Stainless Steel	106951
15	1	Threaded Rod 5/8" x 22" Long Stainless Steel	106950
16	1	Cotter Pin 1/8" x 1" Long Stainless Steel	109268
17	2	Extension Spring	146443
18	4	Hex. Nut 3/8-16 Serr. Flange ZP	51564
19	4	Screw, Hex. Head 3/8-16 x 1" long stainless steel	106906
20	2	Screw Hex. Head 5/8-11 x 1-3/4" Long Stainless Steel	119778
21	1	Pawl Hold Down	127219
21	4	Screw 1/4"-20 x 1-1/4" Long Cap Hex	51650

PARTS

Hydraulic Power Unit – Left Hand



#	QTY	DESCRIPTION	PART #
1	1	Power Unit 120/1ph/.33hp	129475
	1	Power Unit 208-240/1ph/.33hp	120601
2	1	14x12x8 N4XF Enclosure	120600
3	2	.375ID x .750OD Seal	107134
4	2	Bolt .375-16 x .75	58108
5	1	Mounting Bracket	107131
6	2	Screw #8-32 x .5L	51699
7	2	Lock Washer #8	51839
8	2	Hex Nut	51534
9	1	Terminal Block Assembly	112304
10	2	90 deg. hydraulic fitting	112706
11	2	Hydraulic Hose Assembly	112881
12	1	LiquidTite Fitting, 45 deg. .75-14	112882
13	2	Cord Grip	112345
14	2	Lock Washer .375	51773
15	1	Back Panel	112305
16	2	O-ring gasket	113637
17	2	Bolt .312-18 x .75	51670
18	2	Hydraulic Fittings	117513
19	4	Nut 1/4"-20 Hex FLG	51552
20	4	Washer 1/4" Stainless Steel	106956
21	4	Screw 1/4"-20 x 1-1/4" Long Cap Hex	51650
22	1	Hydraulic Hose to Cylinder 14.5L (Not Shown)	112754
23	1	Hydraulic Hose to Cylinder 18L (Not Shown)	112324

RITE-HITE Company, LLC and its affiliates (collectively "RITE-HITE") warrant that the Product sold to the Owner will be free of defects in design, materials and workmanship (ordinary wear and tear excepted) for the periods set forth below ("Limited Warranty").

One (1) Year on all mechanical and electrical parts.
One (1) Year labor, based on approved travel and labor repair times.

REMEDIES

PARTS- RITE-HITE's obligations under this Limited Warranty are limited to repairing or replacing, at RITE-HITE's option, any part which is determined by RITE-HITE to be defective during the applicable warranty period. Such repair or replacement shall be RITE-HITE's sole obligation and the Owner's exclusive remedy under this Limited Warranty.

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CLAIMS Claims under this Limited Warranty must be made (i) within 30 (thirty) days after discovery and (ii) prior to expiration of the applicable warranty period. Claims shall be made in writing or by contacting the representative from whom the Product was purchased directly. Owner must allow RITE-HITE or its agent, a reasonable opportunity to inspect any Product claimed to be defective and shall, at RITE-HITE's option, either (x) grant RITE-HITE or its agent access to Owner's premises for the purpose of repairing or replacing the Product or (y) return of the Product to the RITE-HITE, f.o.b. RITE-HITE's factory.

NOT WARRANTED RITE-HITE does not warrant against and is not responsible for wear items such as fuses, batteries, bulbs, vision and seals. No implied warranty shall be deemed to cover damages that result directly or indirectly from: (i) the unauthorized modification or repair of the Product, (ii) damage due to misuse, neglect, accident, failure to provide necessary maintenance, or normal wear and tear of the Product, (iii) failure to follow RITE-HITE's instructions for installation, failure to operate the Product within the Product's rated capacities and/or specified design parameters, or failure to properly maintain the Product, (iv) use of the Product in a manner that is inconsistent with RITE-HITE's guidelines or local building codes, (v) movement, settling, distortion, or collapse of the ground, or of improvements to which the Products are affixed, (vi) fire, flood, earthquake, elements of nature or acts of God, riots, civil disorder, war, or any other cause beyond the reasonable control of RITE-HITE, (vii) improper handling, storage, abuse, or neglect of the Product by Owner or by any third party.

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