LEYMAN
LIFT GATES
Innovation. Service. Solutions.

Owner's Manual

LHLP3500G Hide-A-Way®

Tuckunder Style

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INTRODUCTION

This manual contains the operating procedures on the equipment your company is using that was manufactured by Leyman Manufacturing Corporation.

Past experience has indicated that it is most unwise to operate these units without proper instructions which should be instituted by the purchaser.

While these products have certain safety features engineered into their design, they are all operated by human beings. Therein lies the problem of safety and one should always have caution in mind when operating this or any other machine that has parts that weight several hundred pounds.

Again, let us remind you that there are moving parts on this product that weight several hundred pounds. These parts, when not under proper control can cause physical damage to the operator. Because of the weights that are involved: carelessness and neglect of training can make these units dangerous.

Do not overload this product. Maintain it properly. Stand clear of moving parts. Operate as instructed.

This lift gate has a long life expectancy and will take some abuse. Use good judgment when operating this equipment.

PLEASE FILL IN FOR YOUR RECORDS

Customer:	
Model:	LHLP3500G-8060CS
Capacity:	3500 lbs.
Type:	Hide-A-Way
Power:	12 volts
Platform:	Two piece
Serial #:	
Options:	_____ _____ _____ _____
Hydraulic Pressure:	2,500 psi MAX. at by-pass

WHEN PLACING PARTS ORDER, YOU WILL NEED THE SERIAL NUMBER AND MODEL OF THE LIFT GATE.

WORDS OF CAUTION

1. Before any maintenance is performed on this unit, read and understand this manual completely.

2. Do not stand in front or behind the platform when lowering from the stored position or when operating the gate in folded position.

3. Make sure the ground is clear under the platform when lowering, check the area around the gate for any persons before operating the gate.

4. This lift gate should operate smoothly and the only noise that you should be heard is the power unit. Any audible sounds other than normal power unit operation sound should be thoroughly inspected and the cause of noise should be pin-pointed and corrected.

5. Never exceed the rated load capacity of this gate.

6. Always load as close to the center of the platform and close to the truck or trailer sill.

7. Do not allow persons to operate the unit unless they have been properly trained to do so.

8. Inspect the hydraulic cylinders seals for leakage every six (6) months.

9. Inspect hydraulic lines for cracks or deterioration every six (6) months.

10. Check the level of the hydraulic oil in the power unit tank once a month.

11. Clean the hydraulic power unit strainer and in-line filter every three (3) months.

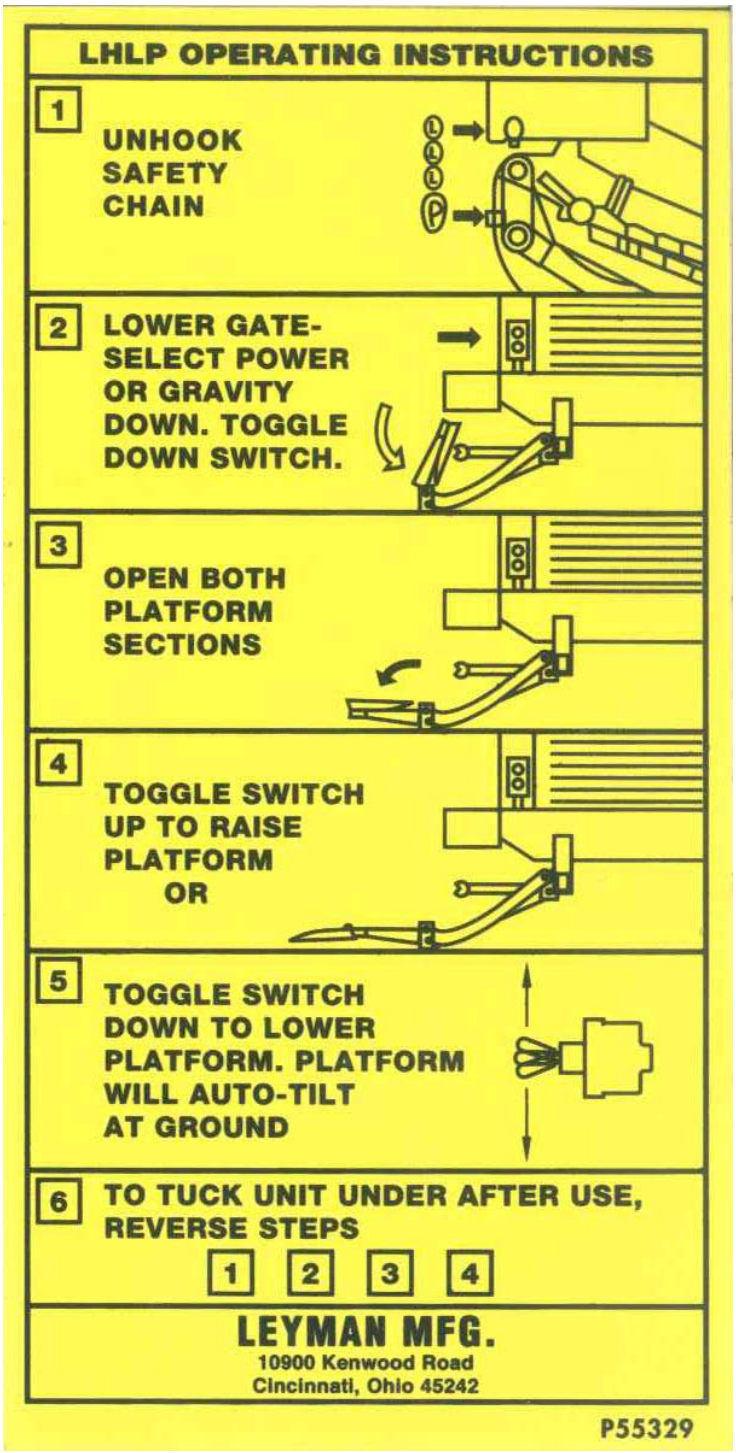
12. Always disconnect the battery from the power source before servicing the unit.

13. Use only factory authorized parts for replacement.

WARNING: SINCE THIS GATE HAS POLYMER GREASELESS BEARINGS IN THE SOME OF THE MAIN PIVOT POINTS, (TENSION ARM, COMPRESSION ARM AND CYLINDER PIVOTS) ATTACH GROUND WIRE CLOSE TO WHERE YOU ARE WELDING OR YOU WILL DAMAGE CYLINDER AND OTHER COMPONENTS.

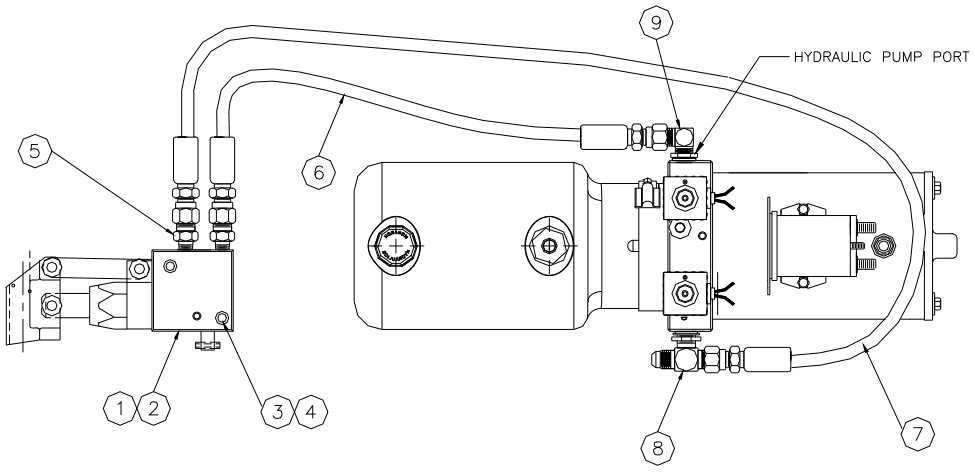
LHLP 3500G OPERATING INSTRUCTIONS

- Before operating the lift gate, read and understand this decal, urgent warning decal and the Owner manual.
- Do not stand behind the lift gate while unfolding or using the platform.



OPERATING THE HAND PUMP (OPTIONAL)

1. Optional Hand Pump is located inside power unit box.
2. Insert handle into pump and stroke to raise.
3. Twist valve at pump base counter-clockwise to lower.
4. Close valve (turn clockwise) at pump base when finished.



RECOMMENDED OILS AND LUBRICATION

HIDE-A-WAY® TUCKUNDER STYLE GATE MODEL LHLP3500G

HYDRAULIC OILS	MANUFACTURER	TYPE	TEMP. RANGE
Level 1 Normal Conditions	Mobile	DTE 11	-15º F to + 150º F
	Shell	TELLUS-T15	-15º F to + 150º F
	Chevron	RYKON ISO-15	-15º F to + 150º F
Level 2 Cold Conditions	Mobile	AERO-HFA	-50º F to + 80º F
	Shell	AERO FLUID#4	-50º F to + 80º F
	Chevron	AVIATION-A	-50º F to + 80º F

HYDRAULIC TANK CAPACITY
3.60 quarts

LUBRICATION	
Grease	Militec #1 (or Lithium base NLGI grade 1 grease)

BATTERIES
Two (2) 12 V D.C. Group 31 Heavy-Duty lead acid DUAL PURPOSE, or AGM

ELECTRICAL COMPONENT CONNECTIONS
Use Fluid Film Rust and Corrosion Protection by Eureka, except on Start Solenoid. On Start Solenoid, use Color Guard by Loctite, or Liquid Electrical Tape.

AMPERAGE DRAW OF MOTOR
When raising platform (empty) approximately 120 AMP @ 12 volts. At bypass approximately 250 AMP @ 12 volts

LIFTING PRESURE SETTING
With platform at floor level and pump in bypass 2500 psi

MINIMUM VEHICLE FLOOR HEIGHT LADEN
46” vehicle floor height

MAXIMUM VEHICLE FLOOR HEIGHT UNLADEN
59” vehicle floor height

APPROXIMATE TIME EMPTY AT 80º F WITH 2 BATTERIES SPECIFIED
Time up: 17 – 19 seconds Time down: 17-19 seconds (power down)

PREVENTIVE MAINTENANCE SCHEDULE

MAINTENANCE BY MONTHS

COSTUMER:		
LOCATION:		
VEHICLE:	**MODEL:**	**SERIAL#:**

✓= OK A=ADJUSTED N= NOT APLICABLE ✖= REPAIR

3 mos.	6 mos.	12 mos.	MOTOR – PUMP COMPONENTS
			Check battery(ies) for water level and corrosion.
			Check battery(ies) for proper charge level. CHARGE LEVEL:
			Check the voltage of battery(ies).
			Check all wiring connections for corrosion and tightness.
			Check solenoids for loose fittings and operation.
			Check reservoir for correct amount of fluid (platform on ground and tilted)
			Inspect fuse links and/or circuit breakers and replace if necessary.
			Check the charge line or power line and connections.
			Remove and clean all pump solenoids cartridges.
			Replace hydraulic fluid in reservoir.
			Check and adjust the relief valve setting.
			Check brushes and armature in motor.
			Check amperage draw of motor.
3 mos.	**6 mos.**	**12 mos.**	**LUBRICATION**
			Lubricate pivot points using specified grease.
			Steam clean the lifting gear.
3 mos.	**6 mos.**	**12 mos.**	**STRUCTURE INSPECTION**
			Raise and lower the lift gate. Check both power and gravity down operations.
			Check lifting gear for impact damage. Repair if necessary.
			Check up and down cylinder for leaks. Repack or replace if necessary
			Inspect for broken and/or missing roll pins.
			Inspect for worn bushings and/or bearings. Replace if necessary.
			Steam clean gate. Repair any structural welds as needed.
			Repaint where needed and replace any worn or missing safety decals.

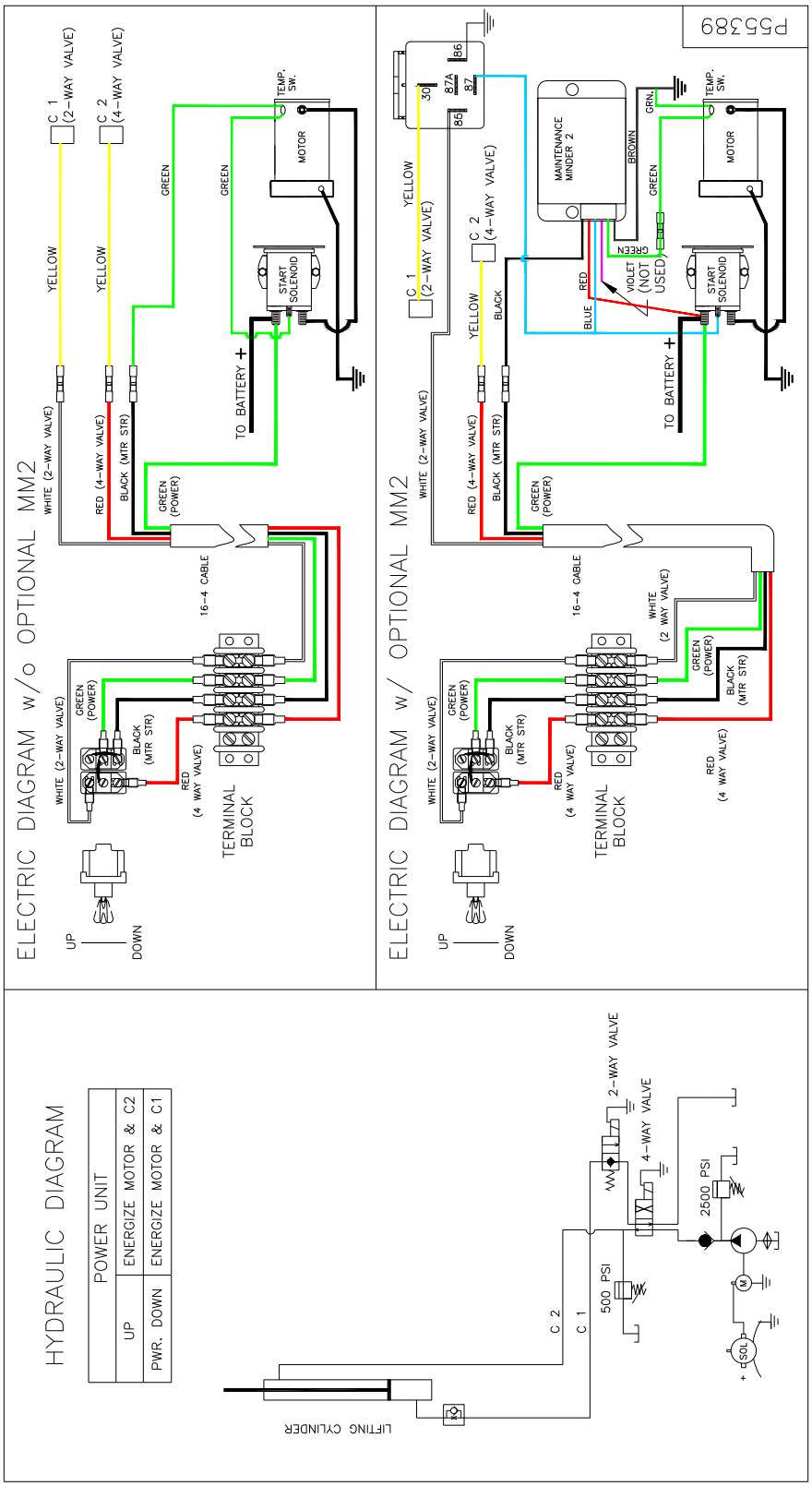
SERVICED BY: _____ DATE: _____

INSPECTION NOT REQUIRED INSPECT

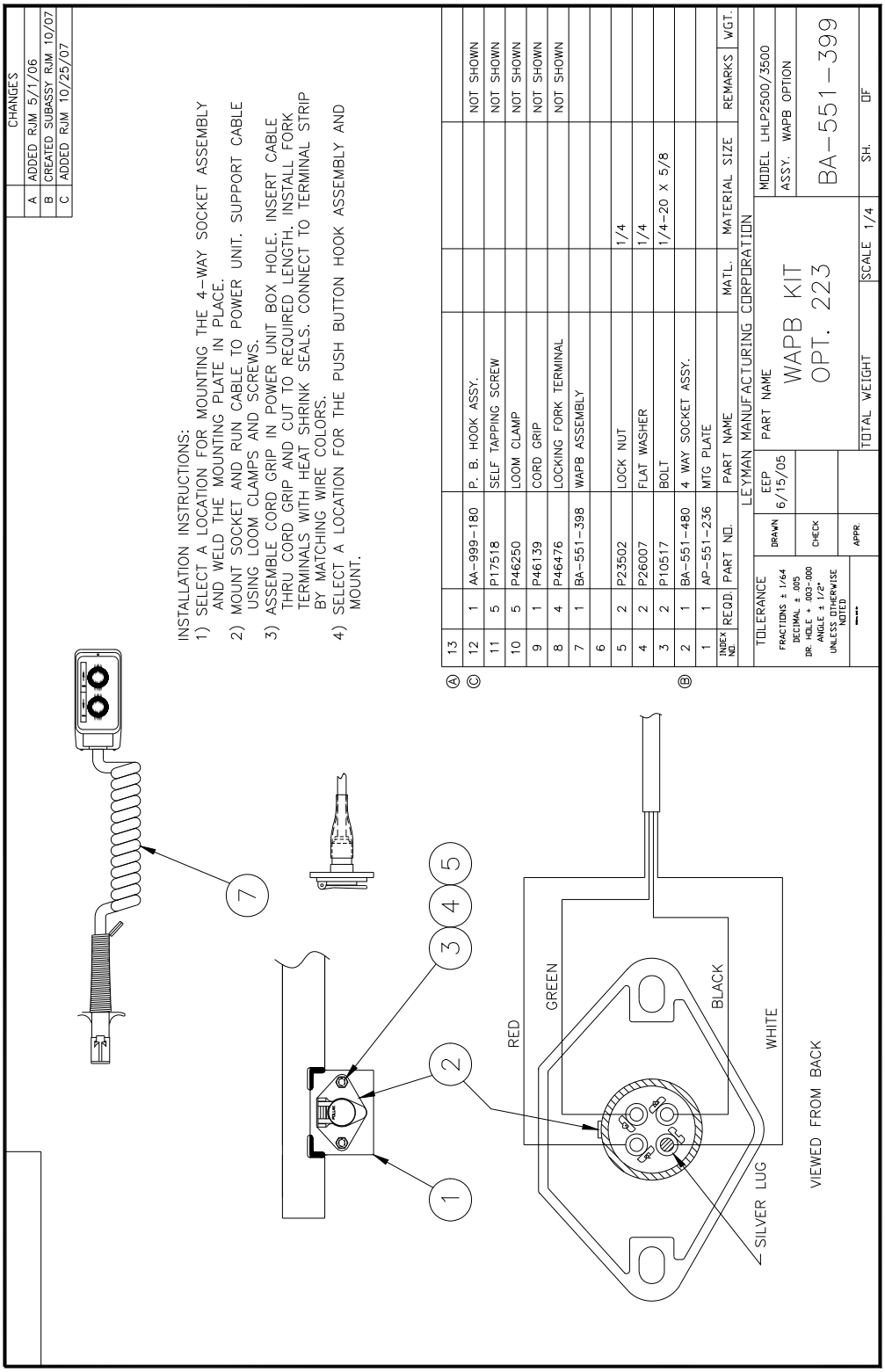
TROUBLE SHOOTING CHART LHLP3500G

PROBLEM	POSIBLE CAUSE	SOLUTION
The platform will not go up or reach floor level.	1. Battery is low 2. Slave line is disconnected or connections are loose (battery and motor). 3. Insufficient oil in power unit tank 4. Poor switch connections	1. Recharge battery 2. Connect the slave line property. 3. Fill the power unit tank 4. Clean and check switch connections.
Platform will not lower	1. Battery is low 2. Poor switch connections 3. Check lowering valve (2-way valve).	1. Recharge battery 2. Clean and check switch connections. 3. Clean/replace as necessary.
Platform creeps down	1. Dirt under the ball of the check valve, the ball is pitted, worn or the spring is weak. 2. Hydraulic leak. 3. Cylinder piston seals failing.	1. Clean 2. Check all hoses and fittings. 3. Replace cylinder seals.
Platform goes down slowly	1. Excessive wear of mechanical components. 2. Restriction in hydraulic system. 3. Incorrect hydraulic oil in system for cold weather.	1. Insure free movement of all mechanical parts. 2. Check strainers on valve stems. 3. Use Mobile Aero-HFA in extreme cold weather.
Platform comes down crooked	1. Flow control valve problem. 2. Air in system.	1. Replace flow control. 2. Bleed cylinder.
Gate will not lift the rated load.	1. Hydraulic pump is worn. 2. Battery is too low. 3. Hoses switched at power unit.	1. Change the pump. 2. Recharged the battery to full charge. 3. Switch hoses.
Pump will not operate	1. Battery too low. 2. Electrical hookup to motor not making contact. 3. Control switches are not making good contact. 4. Optional Maintenance Minder2® Controller has shut down the system due to the low voltage. Must maintain 8 volts minimum under load.	1. Recharge the battery and check to be sure that slave line has a good connection. 2. Clean connection and re-tighten. 3. Clean and check the connections. 4. Use the “Last Lift Menu” data on screen to read maximum and minimum voltages, recharge battery.

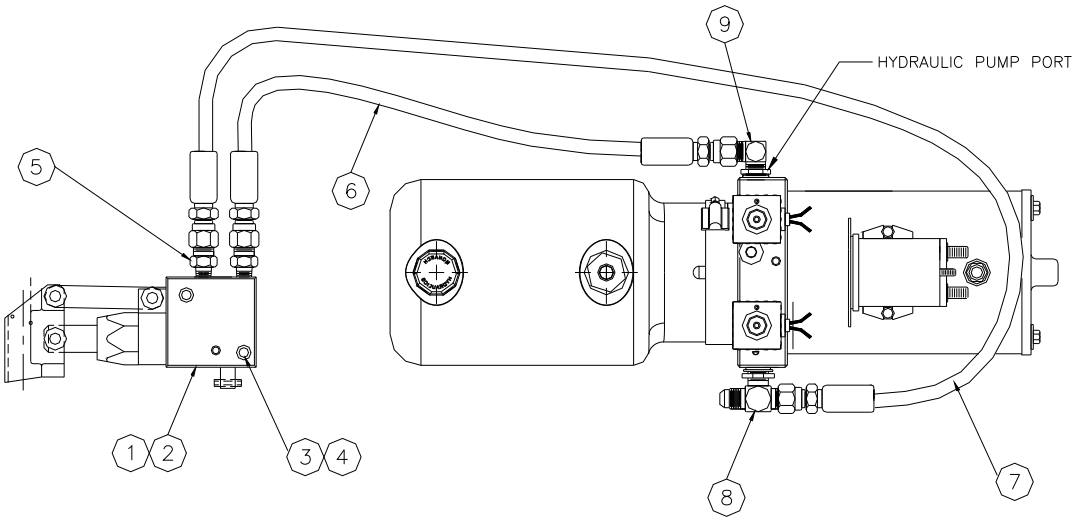
ELECTRICAL & HYDRAULIC DIAGRAM



WALK AROUND PUSH BUTTON OPTION



EMERGENCY HAND PUMP OPTION 224



ITEM #	QTY	PART #	DESCRIPTION
1	1	P33902	Hand pump with handle
2	1	AA-658-249	Spacer block
3	2	P16504	¼-20 SHCS
4	2	P23502	Lock nut
5	2	P34006	Adapter
6	1	AT-501-354-018	Hydraulic hose
7	1	AT-501-354-035	Hydraulic hose
8	1	P34076	Tee
9	1	P34020	90 Deg. Elbow
10	2	P17518	Self Tapping Screw

HAND PUMP OPERATIONS

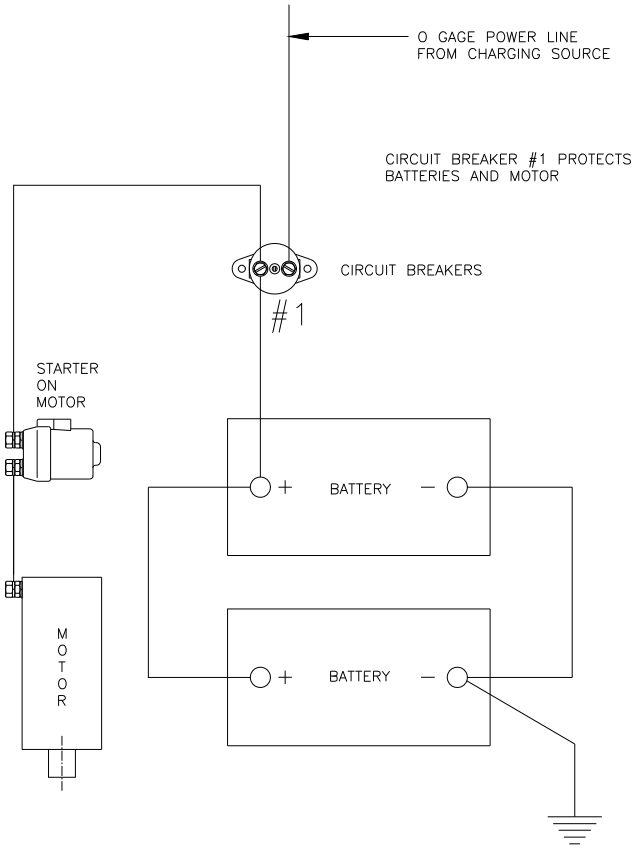
1) INSERT HANDLE INTO HAND PUMP TO RAISE.
2) TWIST VALVE AT PUMP BASE TO LOWER
3) CLOSE VALVE AT PUMP BASE WHEN FINISHED

BATTERY HOOK UP

WE RECOMMEND BATTERIES WITH THE FOLLOWING SPECIFICATION:

- 12 Volt Heavy Duty Dual Purpose or AGM
- B.C.I. Group – Size 31
- Terminal Type – TS
- Cold Cranking Amp - 580

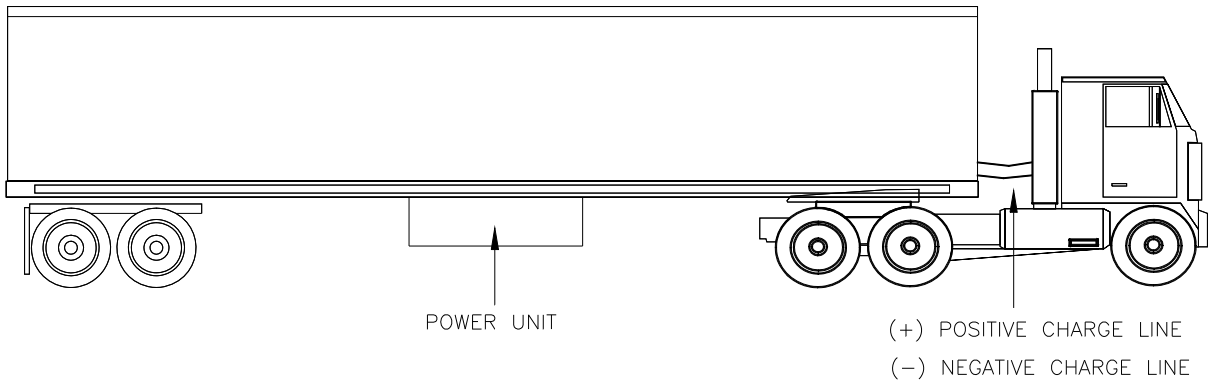
ONE CIRCUIT BREAKER
WIRING DIAGRAM



FAILURE TO USE CORRECT BATTERIES WILL VOID WARRANTY

CHARGE LINE RECOMMENDATIONS

FOR TRACTOR & TRAILER



Utilization of a single positive cable does not provide sufficient ground. Therefore, our recommendations for grounding trailers with a LHLP gate are as follow:

Two (2) cables: one (1) positive and one (1) negative, both running to the tractor batteries.

The Maintenance Minder 2® controller (optional) requires that a minimum of 8 volts be maintained under load in order for the LHLP 3500G to operate.

NOTE:

The use of a battery charger as the sole power source to operate the LHLP is **unauthorized** and will prevent the LHLP from working properly. The lift gate must always be operated in conjunction with a least one (1) 12 volt heavy duty lift gate battery. The LHLP Power Unit must be properly grounded. A 5/16" Ground Screw is provide on the pump block to connect a ground wire to the vehicle frame.

MAINTENANCE MINDER 2® OVERVIEW (OPTIONAL)

Power unit is equipped with the Maintenance Minder 2® Controller. It will:

- Automatically keep track of maintenance intervals and warn the user when maintenance is due, based on the number of lifts.
- Record low voltage occurrences.
- Record of high temperature faults.
- Record of maximum run time faults, when a single operation exceeded the maximum continuous run time limit.
- Give helpful trouble-shooting information on MENU 4, "Last Lift Info".

FAULTS CODES

A decal in the power unit enclosure lists the following signal codes for these faults:

1 BEEP	Service Fault (reached the number of lifts when maintenance is due)
2 BEEPS	Low Voltage Fault (check battery condition and power line connections)
3 BEEPS	Max. Time Fault (exceeded the maximum continuous run time allowed)
4 BEEPS	High Temperature Fault (unit will not run until motor cools)

All faults signals will be repeated FOUR times, except the service fault signal. Controller will prevent power unit form operating during the time period when a fault signal is sounding (about 5 to 10 sec.) except for the service fault signal. The controller is also equipped with an anti-doorbelling feature, which prevents rapid ON/OFF operation of the power unit.

RESETTING after MAINTENANCE IS PERFORMED

To RESET the Maintenance Minder 2® after maintenance has been performed:

1. Go to MENU 2, hit "ENTER", and toggle down to the "Reset All Info" screen.
2. Press the hidden RESET button under Maintenance Minder 2® logo at top of faceplate.
3. Follow the instructions on the screen regarding a second button, which must be pressed to complete the reset operation.

MAINTENANCE MINDER 2® CONTROLLER MENUS

(Press MENU)
MENU 1 – LIFT GATE INFO
(Press ENTER, then ARROW DOWN for each item)
Model Number, Serial Number, Manufacture Date, Vehicle ID, Hardware Version, Firmware Version, Software Version.

(Press MENU and ARROW DOWN once)
MENU 2 – PERIOD INFO (data for current maintenance period)
(Press ENTER, then ARROW DOWN for each item)
Number of Lifts (gives the number during this maintenance interval and the set of number when maintenance is due)
Motor ON (total motor run time in minutes for this maintenance period)
Service Fault (number of times gate was operate while PAST the maintenance limit)
Max. Time Faults (times motor exceeded its maximum allowable continuous run time)
High Temperature Faults (Times thermal switch in motor tripped, if switch provided)
Low Voltage Faults (times low voltage occurred)
Reset all Info (Reset data after performing maintenance, once maintenance limit is reached – instructions will flash on screen after limit reached)

MAINTENANCE MINDER 2® CONTROLLER MENUS

(Press MENU and ARROW DOWN twice)
MENU 3 – LIFE TIME INFO (data for the total life time of the gate)
(Press ENTER, then ARROW DOWN for each item)
Same items will appear as under PERIOD INFO, except this is LIFE TIME data.
Reset History (reviews history for each maintenance interval)
Press ENTER, then ARROW DOWN to show history. Most recent period is highest#. Screen shows Period #, # of Lifts, and Total Run Time in minutes.

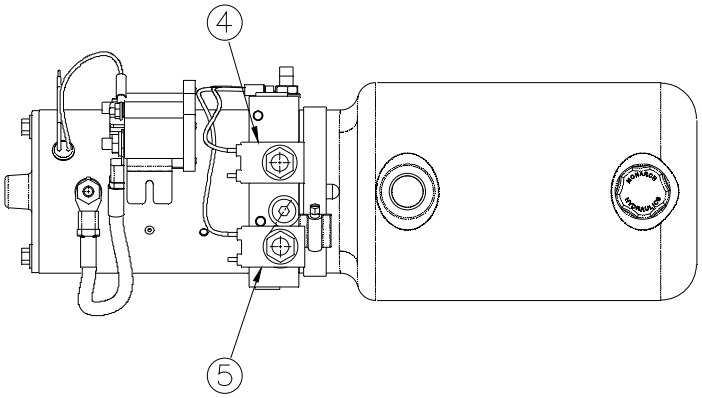
(Press MENU and ARROW DOWN three times)
MENU 4 – LAST LIFT INFO (Trouble Shooting Screen – it records data that occurred during the last lift made)
(Press ENTER, then ARROW DOWN for each item)
Supply Voltage (first voltage is the minimum voltage that occurred during the last lift – if below 6 volts gate will stop / second voltage is the supply voltage just before gate operation, must be at least 10 volts).
Motor ON (motor run time in seconds during last lift, gate will stop at 180 seconds).
Window Time (time in milliseconds during the last lift that the voltage dropped in between 6 and 8 volts – must not be any longer than 3 seconds or gate will stop).

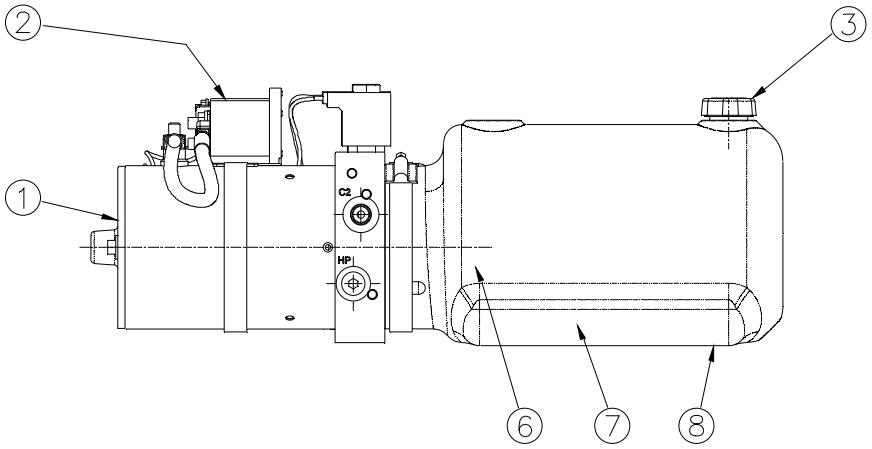
NOTE:

Controller has an anti-doorbelling feature. Motor will not operate if UP switch is toggled rapidly. This prevents welding of the start solenoid contacts.

POWER UNIT PARTS

BEFORE 10-2015

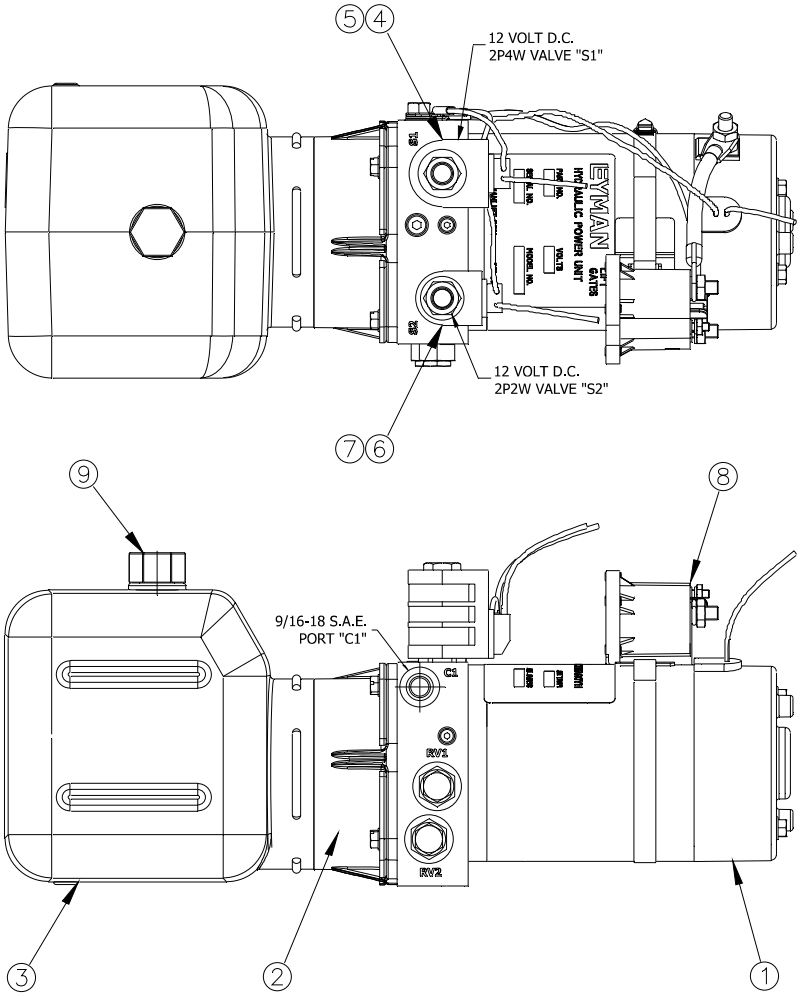




ITEM #	PART #	DESCRIPTION
	P34073	Power Unit (complete)
1	P33992A	Motor
2	P34016	Start Solenoid
3	LH150015	Breather Cap
4	P34121	C1, 2 Way, 2 Pos. Solenoid Valve
5	P34026	C2, 4 Way, 2 Pos. Solenoid Valve
6	P34056	Pump Kit
7	P34089	Suction Screen
8	P34100	Poly Tank

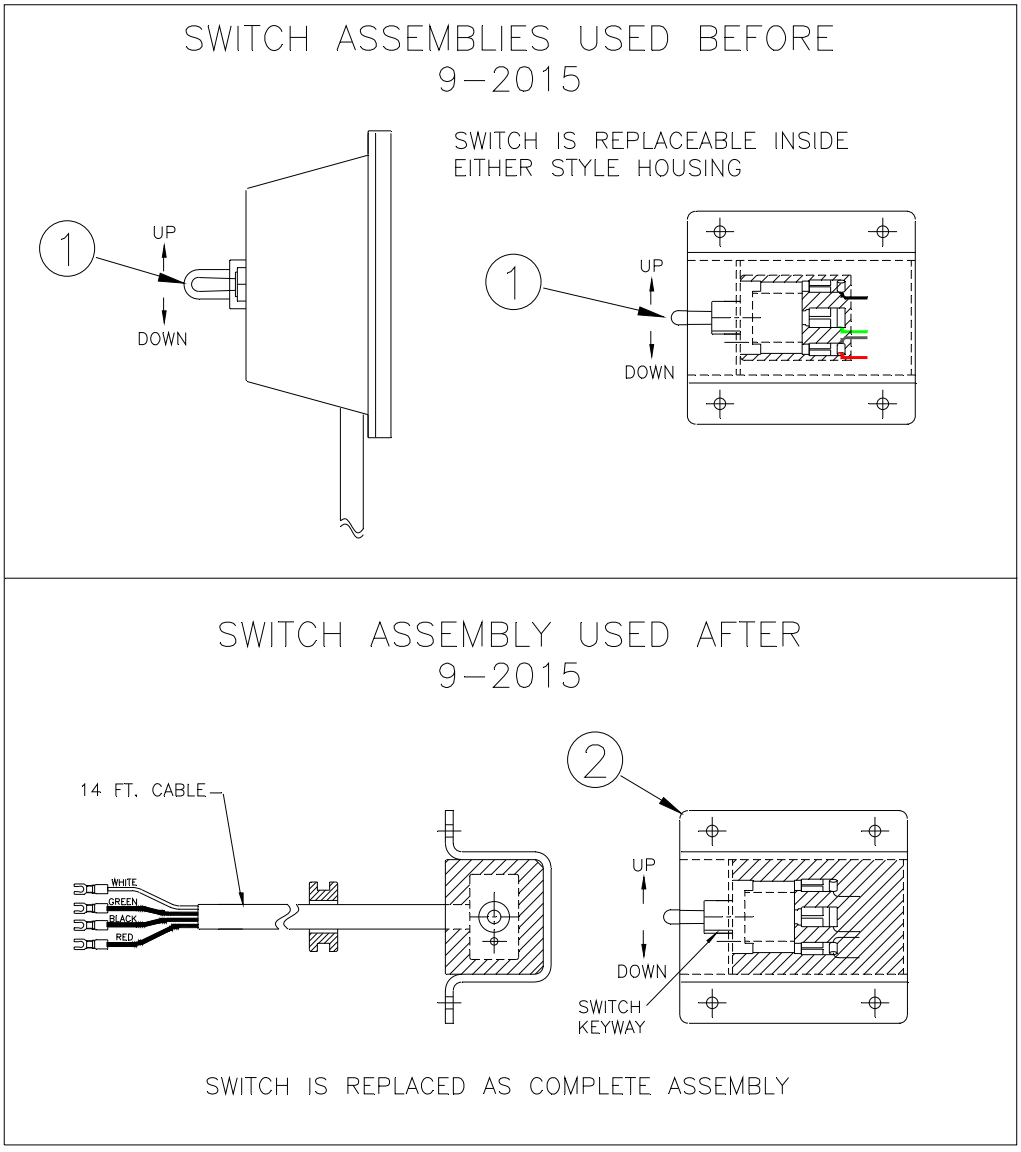
POWER UNIT PARTS

AFTER 10-2015



ITEM	PART NO.	DESCRIPTION
	P34219	Power Unit (complete)
1	P34221	Motor
2	P34222	Pump Kit
3	P34229	Reservoir Tank
4	P34230	C2 Valve Stem 2P4W
5	P34231	C2 Coil (Size 10)
6	P34232	C1 Valve Stem 22P2W
7	P34233	C1 Coil (Size 8)
8	P34016	Starter Solenoid
9	P34234	Breather Fill Cap

SWITCH WIRING COMPONENTS

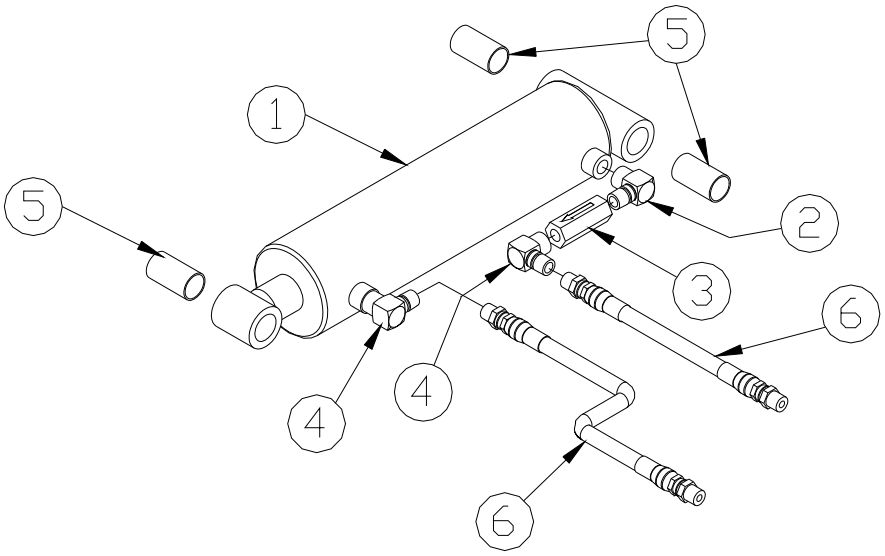


ITEM	PART NO.	DESCRIPTION
1	AA-551-546	Replacement switch (switch only) before 9-2015
2	BA-551-620	Switch assembly (complete) after 9-2015

NOTE: BA-551-620 can be used to replace older switch supplied before 9-2015.

HYDRAULIC ASSEMBLY

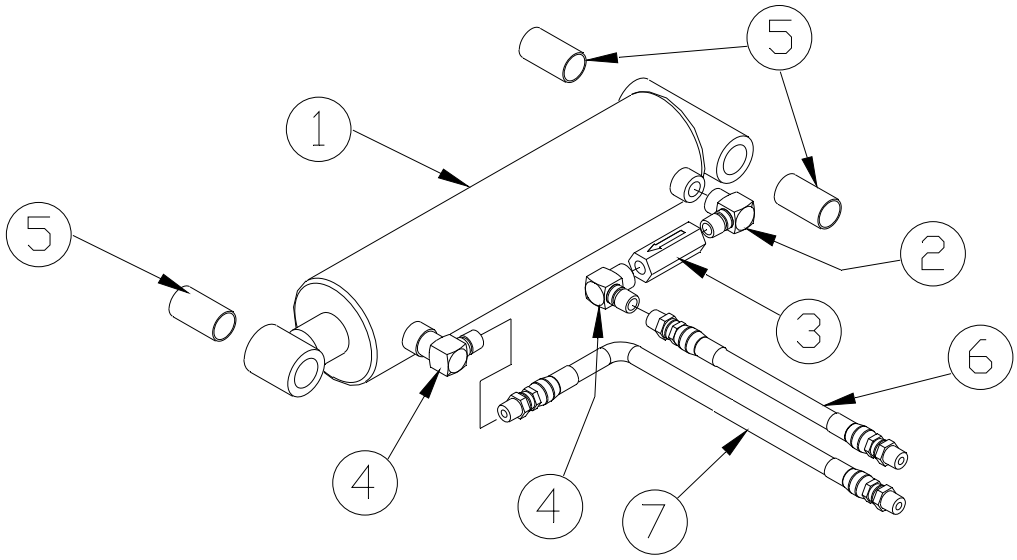
Before 9-2014 Power Unit Box Remote Mounted



ITEM #	QTY.	PART #	DESCRIPTION
1	1	P34071	Cylinder
2	1	P33217	3/8” 90 Elbow
3	1	P33984	2.8 GPM Flow Control Valve
4	2	P34005	Adapter Elbow 3/8 NPT - 9/16-18
5	3	P43578	Greaseless Bushings
6	2	AT-501-354-110	Hydraulic Hose.

HYDRAULIC ASSEMBLY

After 9-2014 Power Unit Box Mounted On Gate



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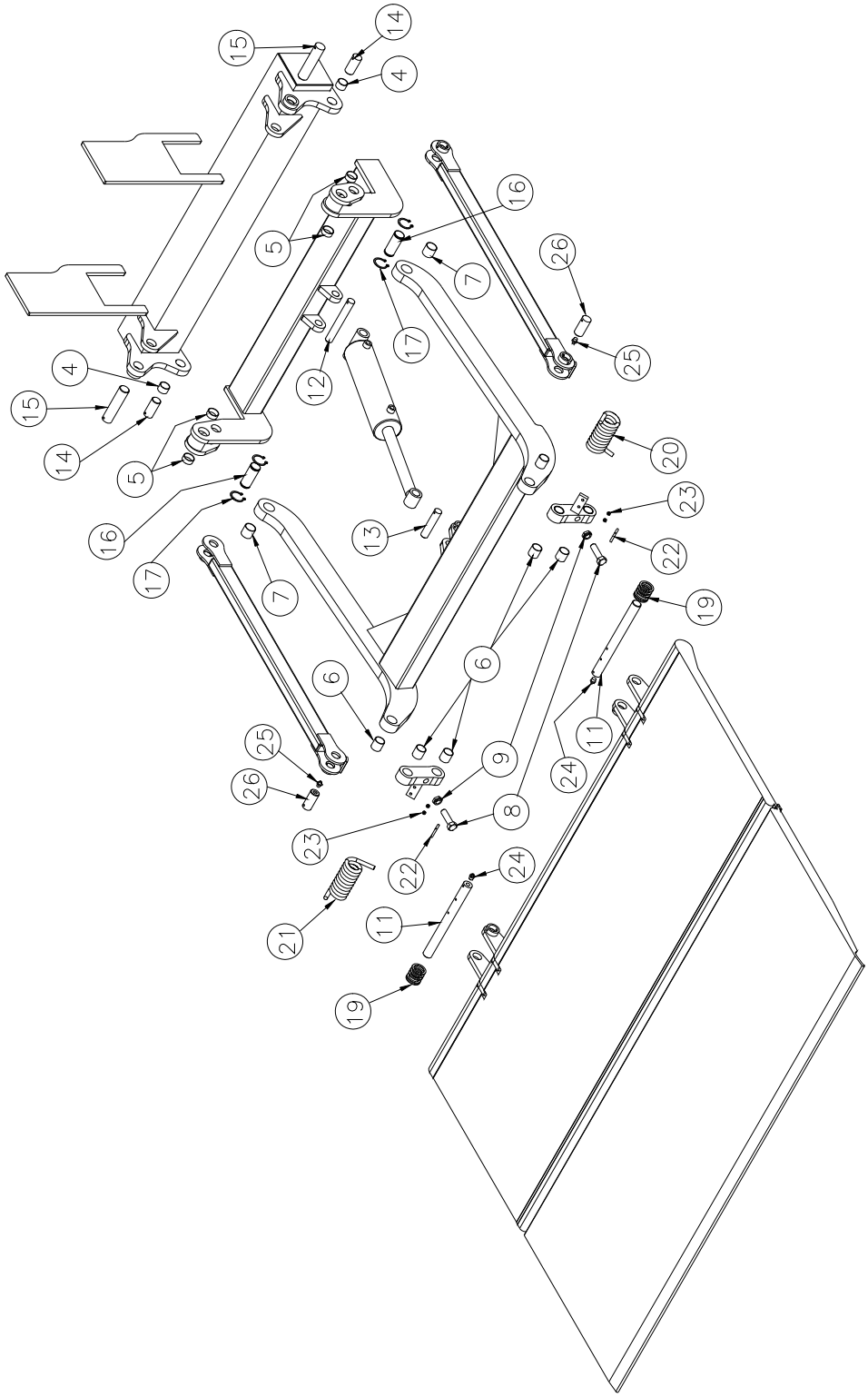
4	2	P34005	Adapter Elbow 3/8 NPT - 9/16-18
5	3	P43578	Greaseless Bushings
6	1	AT-501-354-027	Hydraulic Hose.
7	1	AT-501-354-036	Hydraulic Hose.

PIVOT PINS, BUSHINGS, SPRINGS



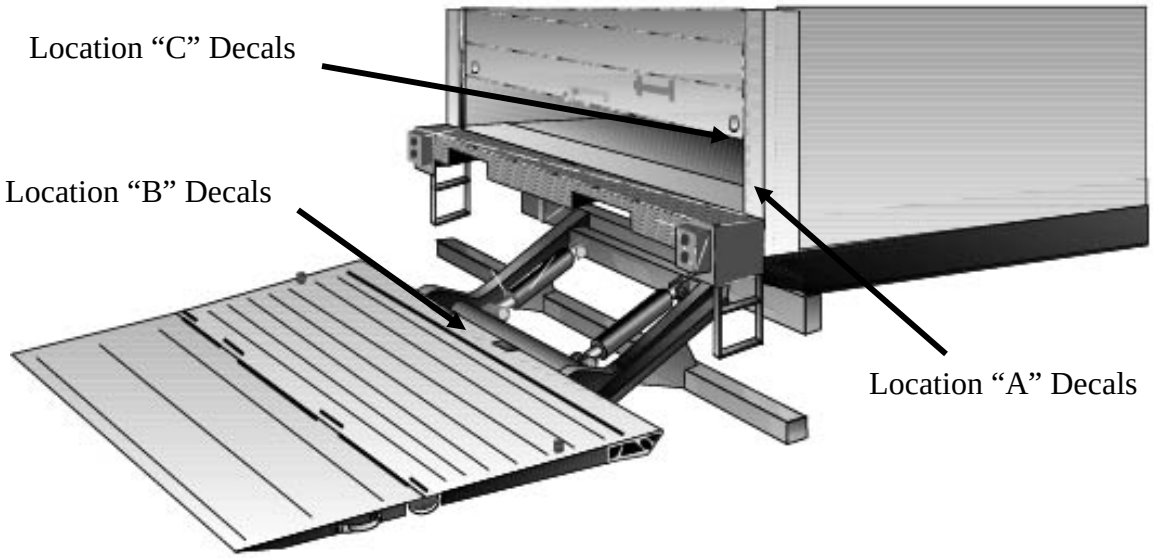
PIVOT PINS, BUSHINGS, SPRINGS

ITEM #	QTY	PART #	DESCRIPTION	REMARKS
1	1	BA-711-114	Pivot Bracket for Radius Arm	NOT SHOWN
2	1	P14517	Soc Head Set screw ½-13 x 2 for Rad. Arm	NOT SHOWN
3	1	P23533	Hex Jam Nut ½-13 for Radius Arm	NOT SHOWN
4	2	P43596	BRG 1-1/4 ID x 1-3/8 OD x 7/8 LG.	
5	4	P43593	BRG 1-3/8 ID x 1-1/2 OD x 1-3/8 LG	
6	6	P43608	Pre-lubricated Bearing 1-1/4 ID x 1-3/8 OD	1-3/8 LG
7	2	P43594	BRG 1-3/8 ID x 1-1/2 OD x 1-3/8 LG	
8	2	P10070	HHCS ¾-10 x 1-3/4 LG. Plated	
9	2	P22500	Nut Hex Jam ¾-10	
10	1	BA-712-157	Radius Arm Assembly, less Roller	NOT SHOWN
11	2	BP-712-125	Platform Bracket Pin	
12	1	AP-800-227	Base End Pin	
13	1	AP-800-233	Rod End Pin	
14	2	AP-712-044	Compression Arm Pin	
15	2	AP-712-047	Tilt Tube Pin	
16	2	AP-712-046	Tension Arm Pin	
17	4	P24024	Retaining Ring	
18	1	AP-711-101	Radius Arm Pin	NOT SHOWN
19	24	P26028	Nylon Washer Nom 2 OD x 1-1/2 ID x 1/8	
20	1	P25206	RH Spring	
21	1	P25207	LH Spring	
22	2	P17566	U-Bolt ¼ x 1 x 1-3/4 LG	
23	4	P23502	Lock Nut ¼-20	
24	2	P32017	Grease Fitting ¼ NPT	
25	2	P32016	Grease Fitting ¼ - 28	
26	2	AP-712-104	Compression Arm Pin – Cam End	
27	1	P37553	Radius Arm Roller	NOT SHOWN
28	1	P11029	Hex Bolt for Roller	NOT SHOWN
29	1	P23511	Lock Nut for Roller	NOT SHOWN

INSTALLING SAFETY DECALS

IMPORTANT !

All decals should be positioned so they can be seen with the LHLP-3500G both in operation and in rest position, and must NEVER be covered by components or elements of the vehicle (hooks, locks, cloths, etc.).



Location “A”

DESCRIPTION	DIMENSIONS	PART #
Urgent Warning	4 ½” x 4 ½”	P55199
After using Lift Gate	4” x 2”	P55201
READ & UNDERSTAND	4” x 3”	P55203
LHLP Operation Instructions	6” x 3”	P55329
CAUTION Maximum Load 3500 lbs	4” x 7”	P55381

Location “B” (on face of tension arm tube with gate UP)

DESCRIPTION	DIMENSIONS	PART #
Secure Latch	4” x 2”	P55202

Location “C”, on the UP/DOWN switch box (only if gray switch box used)

DESCRIPTION	DIMENSIONS	PART #
UP – DOWN POWER DOWN	3 1/8” X 1 3/8”	P55221

If any decals are missing or become damaged, free replacements are always available from LEYMAN.

NOTES