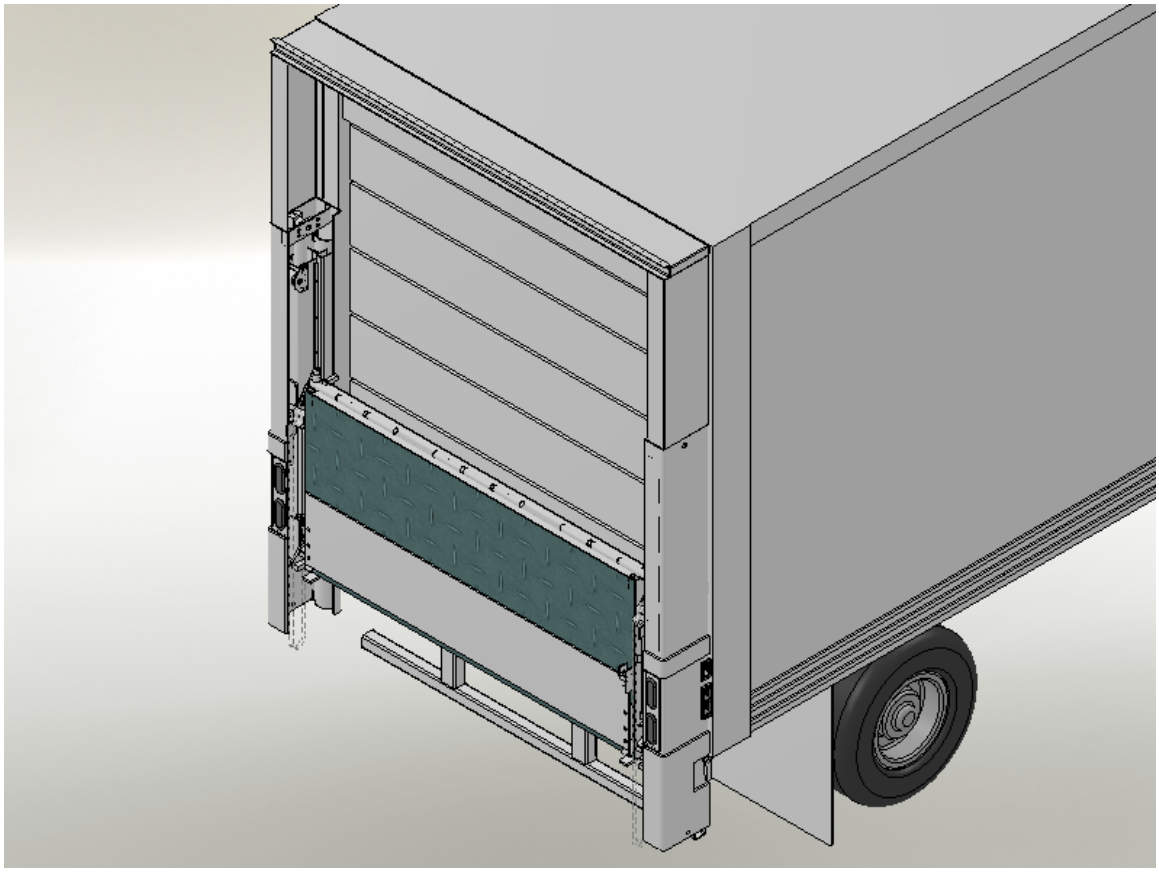
LEYMAN
LIFT GATES
Innovation. Service. Solutions.

Owner's Manual

FDC-CR Power Down on Demand

Fold-A-Vador®
Rail Gate



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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 instruction, 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 weigh several hundred pounds.

Again, let us remind you that there are moving parts on this product that weigh several hundred pounds. These parts, when not under proper control, can cause physical damage to 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: _____
CAPACITY: _____
TYPE: _____
POWER: **12** VOLT_____
PLATFORM: _____
SERIAL: _____
OPTIONS _____
_____
_____
_____

MAXIMUM HEIGHT: 56”
HYDRAULIC PRESSURE: **AT BY-PASS** 2,500 PSI AT THE PUMP
AMP DRAW: **AT BY-PASS** 235, UNLOADED 135

POWER DOWN ON DEMAND

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

WORDS OF CAUTION

1. BEFORE ANY MAINTENANCE IS PERFORMED ON THIS UNIT, READ AND UNDERSTAND THIS MANUAL COMPLETELY.

2. DO NOT STAND ON OR BEHIND THE PLATFORM WHEN OPERATING GATE IN THE FOLDED POSITION.

3. DO NOT STAND IN FRONT OF THE PLATFORM WHEN LOWERING FROM VERTICAL POSITION OR OPERATING IN ANY MANNER.

4. MAKE SURE THE GROUND IS CLEAR UNDER THE PLATFORM WHEN LOWERING.

5. CHECK THE AREA AROUND THE UNIT FOR ANY PERSONS BEFORE OPERATING THE LIFT GATE.

6. NEVER EXCEED THE RATED LOAD CAPACITY OF THIS GATE. DO NOT OVERLOAD - MAXIMUN RATED CAPACITY IS BASED ON AN EVENLY DISTRIBUTED LOAD OVER THE PLATFORM FLAT SURFACE.

7. ALWAYS LOAD AS CLOSE TO THE CENTER OF THE PLATFORM AND AS CLOSE TO THE CENTER OF THE TRUCK SILL AS POSSIBLE.

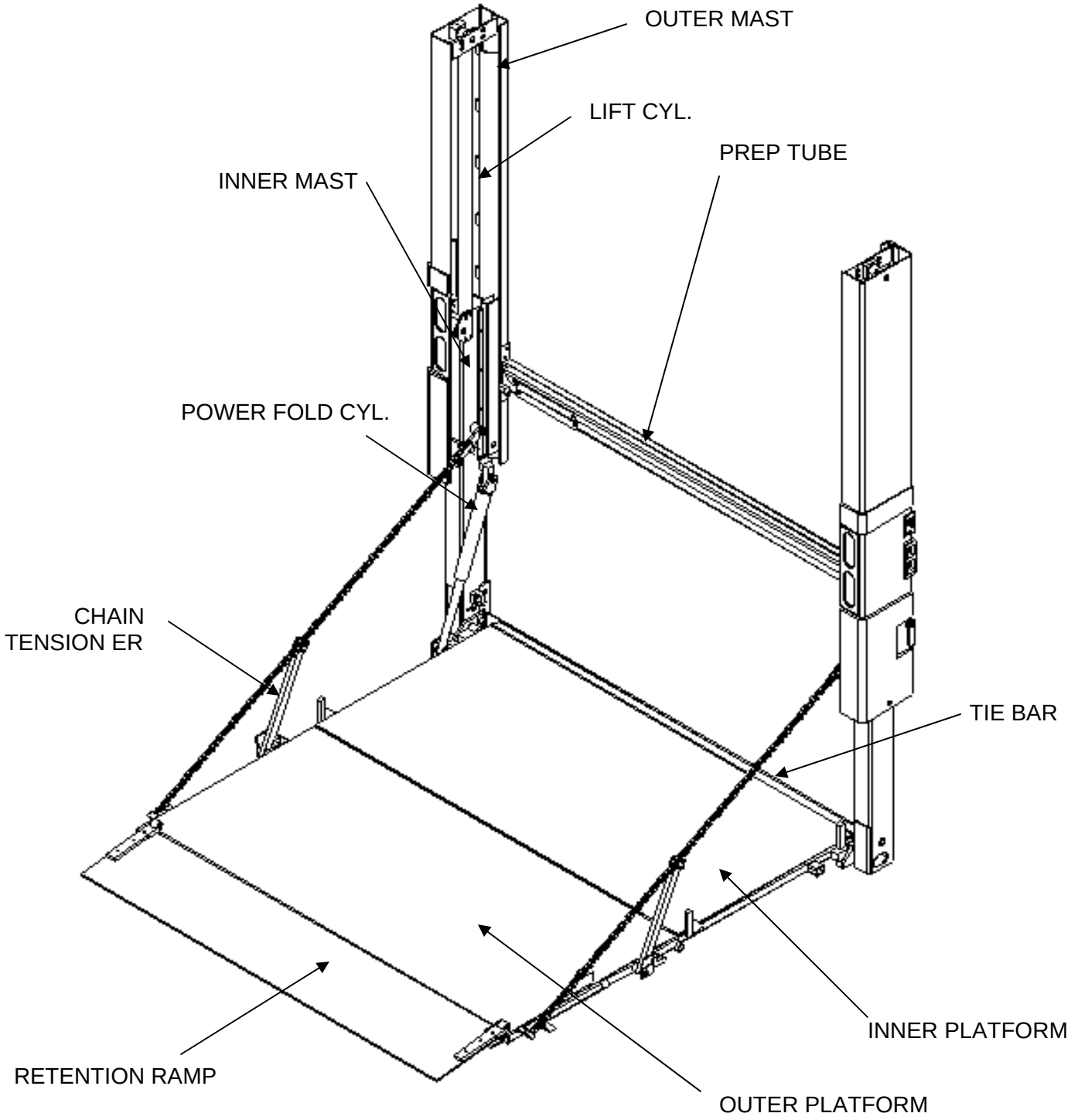
8. DO NOT ALLOW PERSONS TO OPERATE THE UNIT UNLESS THEY HAVE BEEN PROPERLY TRAINED TO DO SO.

9. USE ONLY FACTORY AUTHORIZED PARTS FOR REPLACEMENT.

THIS MANUAL REFLECTS MOST CHANGES AND UPDATES OF MATERIALS THAT ARE COMMON TO THIS TYPE OF LIFT GATE. SOME MAY DIFFER DUE TO INDIVIDUAL CUSTOMER REQUIREMENTS. THIS MANUAL HAS BEEN ESTABLISHED TO REFLECT THE COMMON ITEMS.

WARNING: THIS GATE HAS POLYMER GREASELESS BEARINGS IN THE PLATFORM PIVOTS, AND CYLINDER. WHEN WELDING BE SURE TO GROUND DIRECTLY TO THE COMPONENT BEING WELDED.

GENERAL TERMINOLOGY



OPERATING THE LIFT GATE

Before operating the lift, read and understand this decal, Urgent Warning decal and Owner's manual.

Do not stand behind lift gate while unfolding or using platform.

To unfold the platform from over-the-road position

1. Toggle the DOWN switch to lower platform.
2. Lower the platform until arrow indicates FOLD / UNFOLD region. Toggle both UNFOLD switches. Gate will unfold.

To dock load

1. Toggle the DOWN switch to lower platform.
2. Continue lowering until platform rests on dock level stops.

WARNING! Never use the platform as a "bridge" to a dock or other vehicle. Platform can fold unexpectedly and cause injury.

To lower platform, use the down switch only.

To raise platform, use the up switch only.

Safe loading of platform

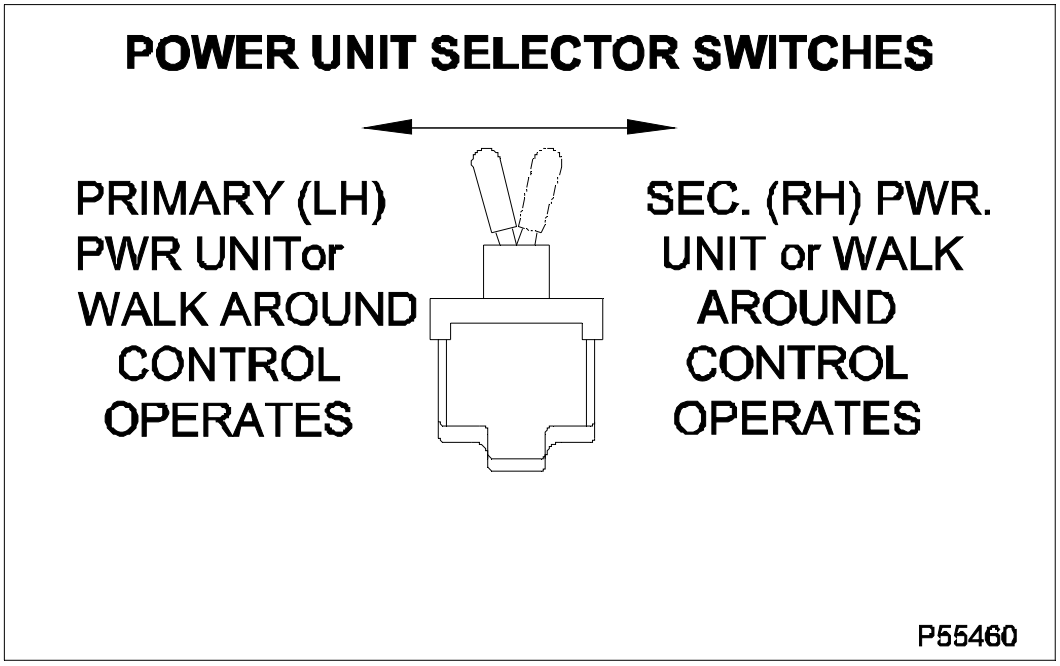
1. Cart stop or retention ramp must be in place whenever lifting or lowering a load. Also, see the Urgent Warning decal.

To fold platform

1. Raise the platform until arrow indicates FOLD / UNFOLD region. Then toggle both FOLD switches until platform completely folds. Raise platform until gate hits Up Stops and arrow indicates locked position. Do not move vehicle unless gate is in locked position.

OPERATING THE DUAL POWER UNIT

Use the power unit Selector Switches to choose which power unit runs using the gate switches. Primary Power Unit is in front. Secondary Power Unit is in the rear. The emergency Walk-Around Pushbutton control will only operate the Secondary Power Unit. Switches MUST be to the right for proper Walk-Around Pushbutton operation. The Maintenance Minder 2® Controller functions with both power units. If you wish to put equal operating time on each power unit, use the Maintenance Minder 2 service intervals (3000 lifts) as the guide for changing the power unit Selector Switches.



RECOMMENDED HYDRAULIC OILS*

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

HYDRAULIC TANK CAPACITY
2 ½ gallons

LUBRICATION	
Grease	Level 1 Normal Conditions NLGI #2 Lithium base grease Level 2 Cold Conditions NLGI #1 Lithium base grease DO NOT USE CHASSIS or 5th WHEEL GREASE
Rollers at Inner Masts	CAUTION! Do not over-grease to avoid seal damage
Hinge Barrels (center of platform)	W.W. Grainger – Part #6Y834 – Needle Nose Adapter
Retention Ramp hold-up tab shaft	W.W. Grainger – Part #6Y834 – Needle Nose Adapter
Dry Lubricant, if needed	ZEP45 (do not use corrosive lubricants like WD40, etc.)

*ISO 15 petroleum based fluid required; see chart for manufacturer cross reference. If necessary, use higher viscosity oil when temperatures are near 100° F.

* **DO NOT USE brake fluid or ATF.**

LIFT GATE SPECIFICATION

BATTERIES
Two (2) 12 V D.C. Group 31 Heavy Duty Lead Acid Dual Purpose or AGM

ELECTRICAL COMPONENTS CONNECTIONS
Use Fluid Film Rust & 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 140 AMPS @ 13.5 volts. At bypass approximately 240 AMPS @ 13.5 volts

LIFTING PRESSURE SETTING
With platform at floor level and pump in bypass 2500 PSI Power down circuit in bypass 500 PSI

MINIMUM VEHICLE FLOOR HEIGHT LADEN
With Inner Platform 42” – vehicle floor height 46”

MAXIMUM VEHICLE FLOOR HEIGHT UNLADEN
With Inner Platform 42” – vehicle floor height 56”

APPROXIMATE TIMES EMPTY AT 80° F WITH 2 GROUP 31 BATTERIES
Time up: 24 – 26 seconds Time down(gravity down): 24 –26 seconds Time down(power down): 14 – 17 seconds

PREVENTATIVE MAINTENANCE SCHEDULE

MAINTENANCE by CYCLES

FDC MODELS

DATE:

CUSTOMER		**GATE MODEL #**	
LOCATION		**GATE SERIAL #**	
VEHICLE #		**SERVICED BY**	

√ = OK X = REPAIR A = ADJUSTED N = NOT APLICABLE

3000	*MOTOR / PUMP COMPONENTS*	*3000*	*MOTOR / PUMP COMPONENTS*
	Check batteries for corroded, loose or broken connections		Check charge line/power line for corroded, loose or broken connections
	Check batteries for proper voltage level and charging		Check amp draw of motor with fully charged batteries and tight clean connections
	Check all wiring in pump box for corroded, loose or broken connections		Check all ground wires for corroded, loose or broken connections
	Check solenoid valves for proper operation		Check pressure setting of relief valve (two valves in power down pumps)
			After all wiring connections in pump and battery box have been cleaned, protect from corrosion using materials listed in Lift Gate Specification section.
	Check reservoir for proper oil level - Gate open and up at floor level, 4" from top of tank.		Operate both power units to verify proper operation.
	Inspect circuit breakers and fuses for proper operation		Check all fittings / hoses in power unit for tightness and leaks

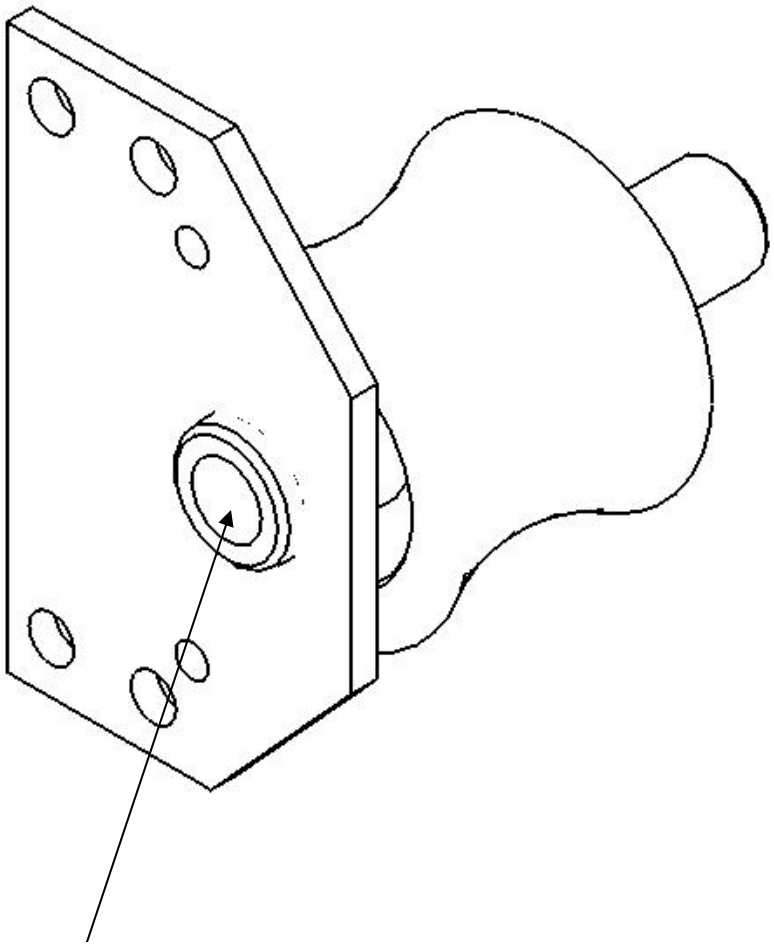
3000	*STRUCTURAL COMPONENTS*	*3000*	*STRUCTURAL COMPONENTS*
	Check switches for proper operation, check connections for tightness and corrosion		Remove hydraulic guard for fold cylinder line and check for loose / missing clamps, frayed lines, and proper alignment
	Check all fittings/hoses on cylinders for tightness and leaks		Check lift gate for proper operation up and down
	Check fold cylinder for leaks / worn rod seal		Check lift gate for proper operation folding and unfolding
	Check for broken/missing roll pins at fold cylinder, and primary/secondary platform pin		Check for impact damage on inner/outer masts
	Check snap rings on lift and fold cylinder pins		Check for loose / missing bolts at platform pins, rollers, and bottom cylinder pins
	Check for broken torsion spring at platform		Check and re-weld any cracked / broken welds
	Check aluminum platform for loose bolts on side brackets and threaded plugs at hinge pins		Replace all safety and warning labels as needed

3000	*LUBRICATION*		*PERIODIC CHECK LIST*
	Grease roller bearings at grease holes on roller shaft with recommended grease. DO NOT OVER-GREASE	**12000**	Check all pivot point bushings for wear or damage
	Grease primary / secondary platform hinge pin at grease holes, plus Retention Ramp Hold-up Tab shaft support.	**16000**	Flush hydraulic system and change hydraulic oil
			Clean and repaint as necessary

MAINTENANCE MINDER² READINGS MENU 2			
Screen 1 # Lifts	**Screen 3 Service Faults**	**Screen 4 Low Voltage Faults**	**Screen 6 High Temperature Faults**

Check owner's manual for proper hydraulic oil, motor amp draw and pressure setting of power unit

LUBRICATING THE ROLLERS



Lubricate roller through grease fitting mounted on roller shaft. (Picture shows isolated roller assembly but it can be greased when mounted on inner mast). **CAUTION! DO NOT OVER-GREASE ROLLERS OR DAMAGE TO BEARING SEALS MAY OCCUR.**

TROUBLE SHOOTING CHART

The following troubleshooting chart covers the standard and dual power unit used with the FDC®.

PROBLEM	PROBABLE CAUSE	REMEDY
Platform will not go up or reach the floor of the vehicle.	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 the battery. 2. Connect the slave line properly. 3. Fill the power unit tank. 4. Clean and check switch connections in power unit box.
Platform will not lower.	1. Battery is low. 2. Poor switch connections. 3. Check lowering valve "D"	1. Recharge the battery. 2. Clean and check switch connections in power unit box. 3. Clean/replace as necessary. Try manual overrides.
Platform does not go up smoothly.	1. Insufficient oil in power unit tank. 2. Air lock in hydraulic system. 3. Dirt or foreign material in guides. 4. Mechanical wear.	1. Fill tank. 2. Run platform to stop. Open up vent plugs in each cylinder while power unit is running. Close vent plugs and refill the tank. 3. Clean guides with steam and check for excessive wear, obstructions, and burrs. 4. Replace worn parts.
Platform creeps down.	1. Hydraulic leak. 2. Cylinder piston seal failing. 3. Check lowering valve "D"	1. Check all hoses and fittings. 2. Replace cylinder or seals. 3. Clean / replace as necessary. Manual over-ride must be IN and turned CLOCKWISE.
Platform goes down slowly.	1. Incorrect hydraulic oil in system for cold weather. 2. Excessive wear of mechanical components. 3. Restriction in hydraulic system.	1. Use recommended viscosity for hydraulic oil. 2. Insure free movement of all mechanical parts. 3. Check all hydraulic system components.
Platform goes up crooked.	1. Equalizer valve is out of adjustment. 2. Air trapped in one of the cylinders. 3. Tie bar is bent.	1. Adjust equalizer valve. 2. Bleed air out of the cylinders. 3. Replace the tie bar.

TROUBLE SHOOTING CHART (Cont.)

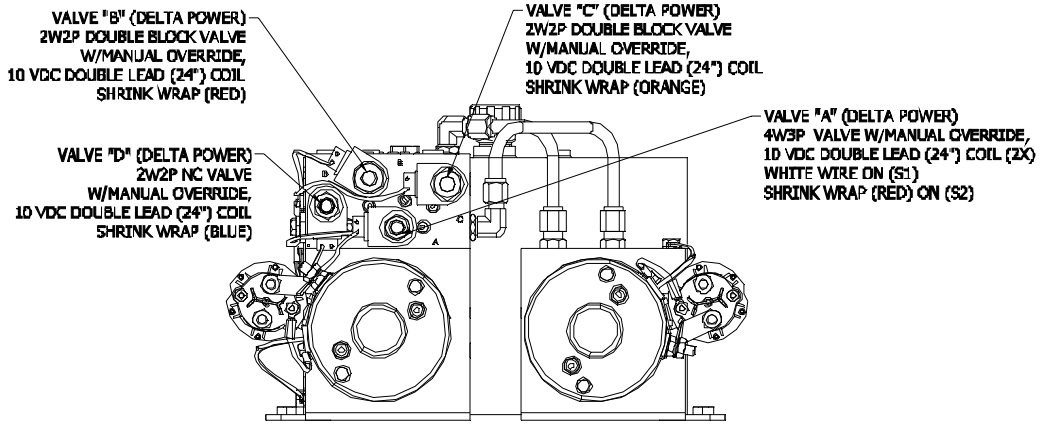
The following troubleshooting chart covers the standard and dual power unit used with the FDC®.

PROBLEM	PROBABLE CAUSE	REMEDY
Platform comes down crooked.	1. Dirt in flow control, not adjustable. 2. Restriction in hydraulic line for lift cylinder. 3. Mechanical bind on one side of gate. 4. Tie bar is bent.	1. Clean / replace flow control valves (matched pair) as necessary. 2. Clean hydraulic line and bleed cylinders. 3. Clean and inspect inner mast and rollers. Check wear of parts and replace if necessary. 4. Replace tie bar.
Gate will not lift the rated load.	1. Hydraulic pump is worn. 2. Battery is too low. 3. Pressure relief valve not set properly at 2500 psi.	1. Change the pump. 2. Recharge the battery to full charge. 3. Adjust pressure relief valve.
Pump will not operate.	1. Battery too low. 2. Electrical hookup to motor not making contact. 3. Control switches are not properly connected at power unit. 4. Maintenance Minder 2® Controller has shut down the system due to low voltage. Must maintain 8 volts minimum under load.	1. Recharge the battery and check to be sure that the slave line has a good connection. 2. Clean connections and re-tighten. 3. Check switches for proper connections. Check for proper operation. 4. Use the “Last Lift Menu” to read maximum and minimum voltages. Recharge battery.

GENERAL TROUBLE SHOOTING TIPS

LIFTGATE

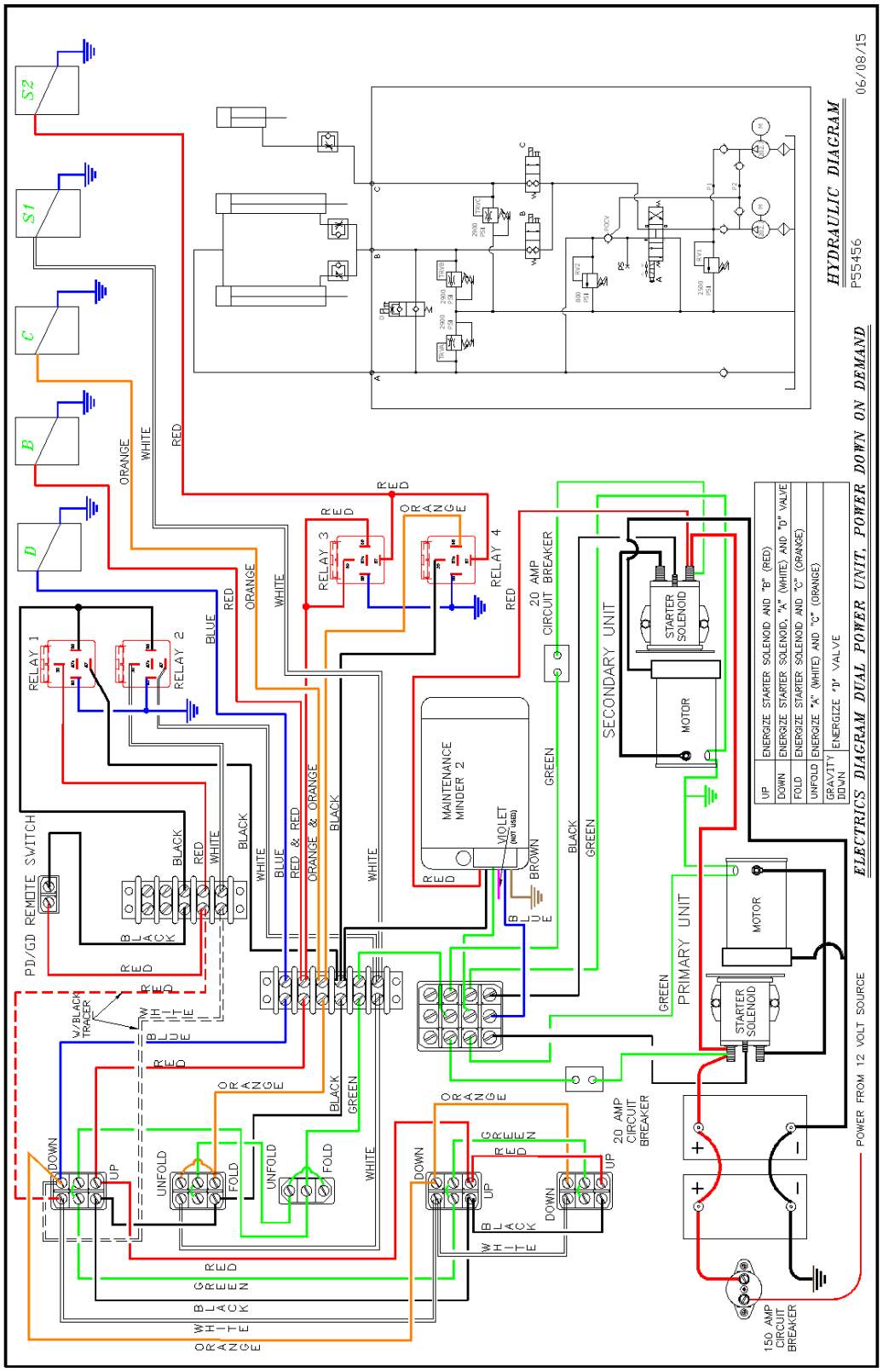
1. This gate can run up or down crooked 1” to 1-1/2” without hurting the gate.
2. Equalizer Valve – for adjusting the up stroke only, when the gate is loaded.
3. Flow Control Valves – for controlling the down stroke only. A partially blocked flow control valve will reduce oil flow from one side, causing the platform to become progressively unlevel as the gate is lowered. Clean or replace in sets.
4. Bent Tie Bar – how to tell if it is bent: raise the platform to the full up position (level with the truck floor). Push the down switch. If the tie bar is bent, one side will always drop quicker than the other side immediately, and that side will always lag when the gate is raised. If bent, the tie bar will need to be replaced. If bent, see the Maintenance Manual for information about the procedure. **BEFORE ADJUSTING OR ATTEMPTING TO FIX ANY OF THE FOUR ITEMS LISTED ABOVE, CHECK THE FOLLOWING FIRST:**
   a. Check for bent inner mast.
   b. Check to see if the back edge of the platform is hitting or binding against the floor level tube.
5. Premature motor failure is almost always caused by low batteries – batteries without the capacity to maintain the correct voltage during the operation of the gate.
6. Inadequate grounding is also a major reason for motor failure.



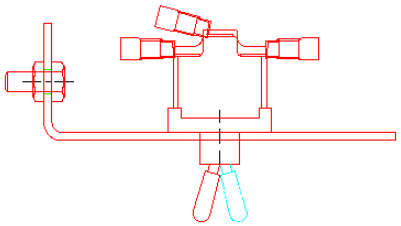
GENERAL TROUBLE SHOOTING TIPS (Cont.)

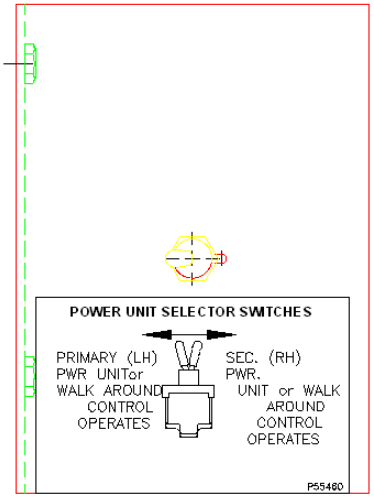
Operation desired	Symptoms	Directions to identify problem.	Did the gate do the desired operation?	Diagnosis
Up	The gate does not go up but the motor runs	Manually override two-way locking valve “B” (See figure below)	Yes	“B” Valve or wiring is defective. Return valve to non overridden position once you have the gate in the stored position.
			No	Pump is bad.
Power / Gravity Down	The gate does not go down, but motor runs	Manually override locking valve “D” (See figure below)	Yes	“D” Valve or wiring is defective. Return valve to non overridden position once gate is in desired position.
			No	“A” Valve or wiring is defective.
Fold	The gate does not fold but the motor runs	Manually override two-way locking valve “C” (See figure below)	Yes	“C” Valve or wiring is defective. Take the gate to the stored position using the push and hold override button.
			No	Pump is bad.
Unfold	The gate does not unfold	Manually override Two-way locking valve “C” (Check that platform has cleared the unfold locks on both sides).	Yes	“C” Valve or wiring is defective. Take the gate to the stored position using the push and hold override button.
			No	“A” Valve or wiring is defective.

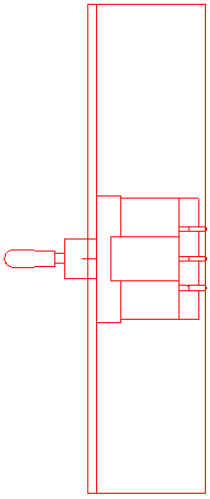
ELECTRICAL DIAGRAM

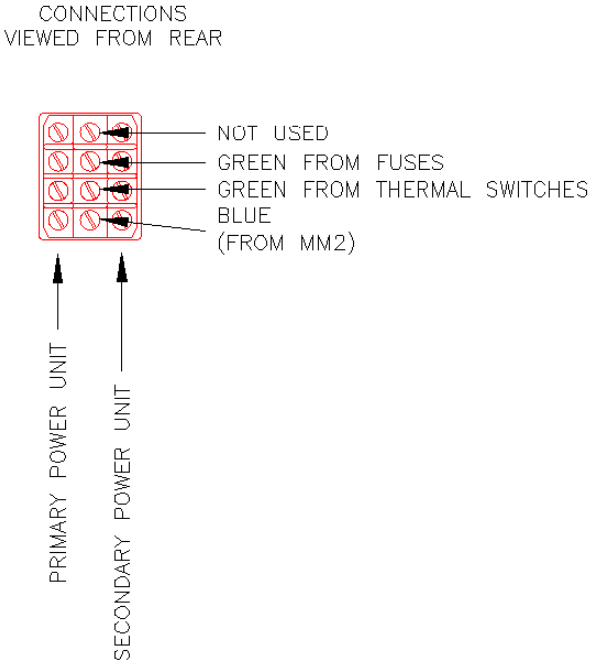


DUAL POWER UNIT

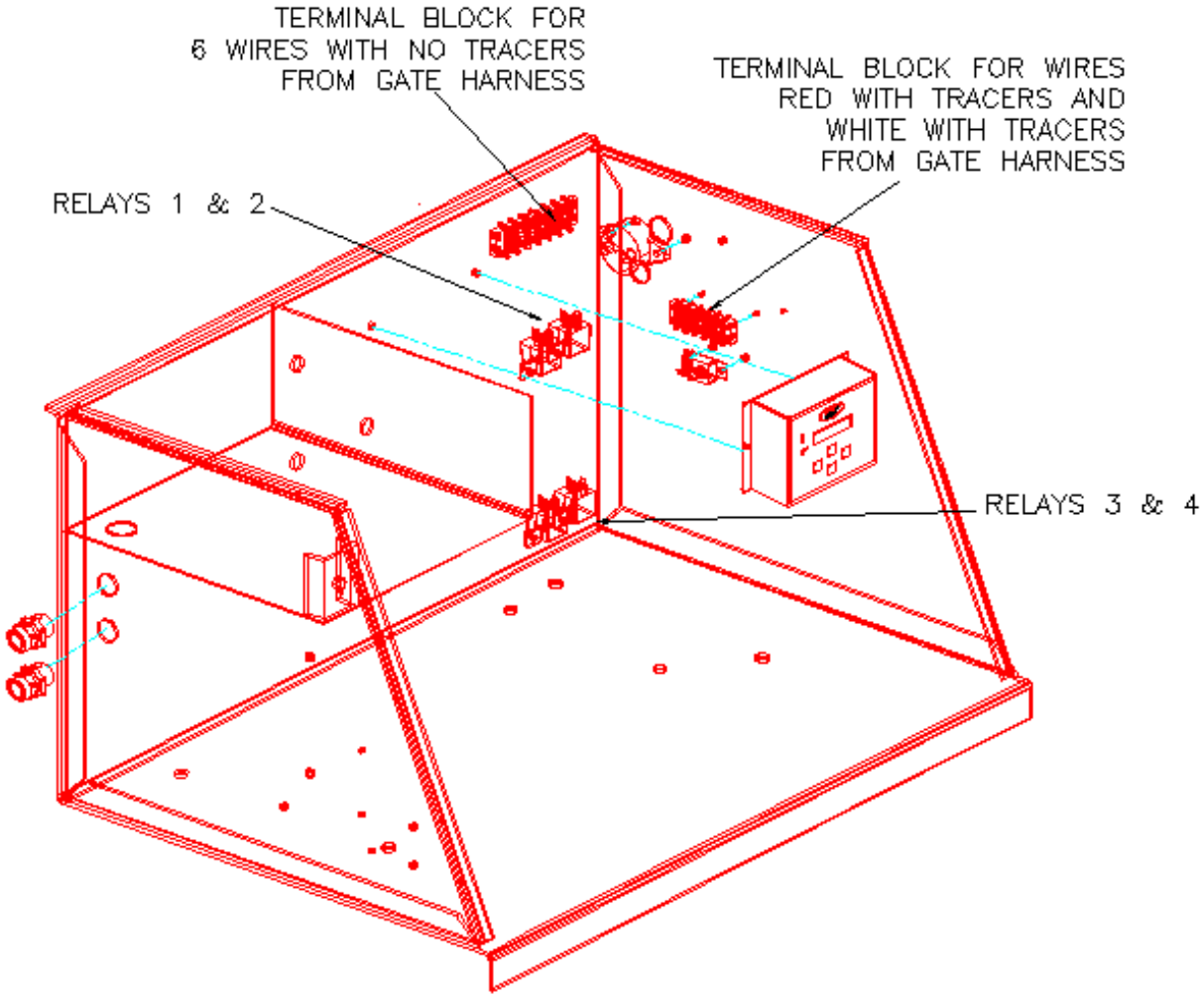






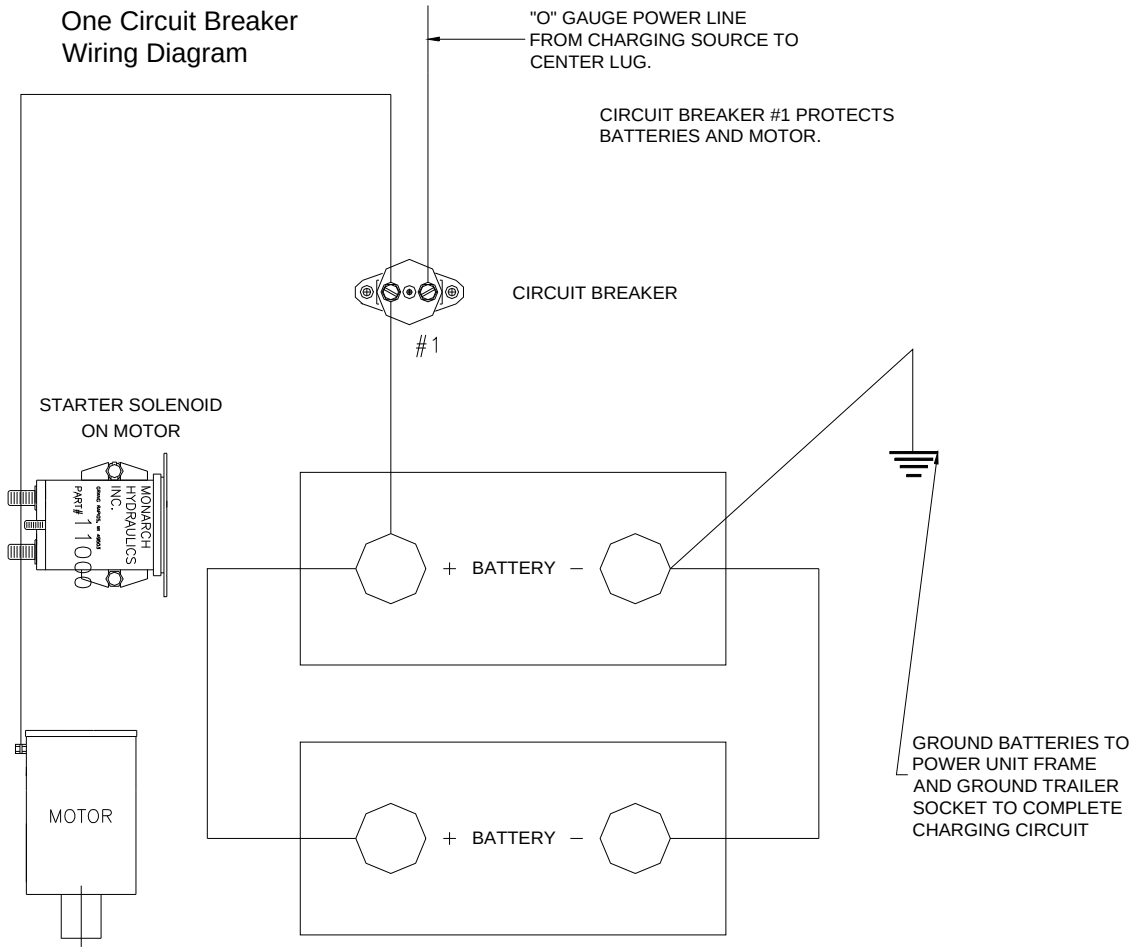


DUAL POWER UNIT CONNECTIONS (Cont.)



BATTERY HOOK UP

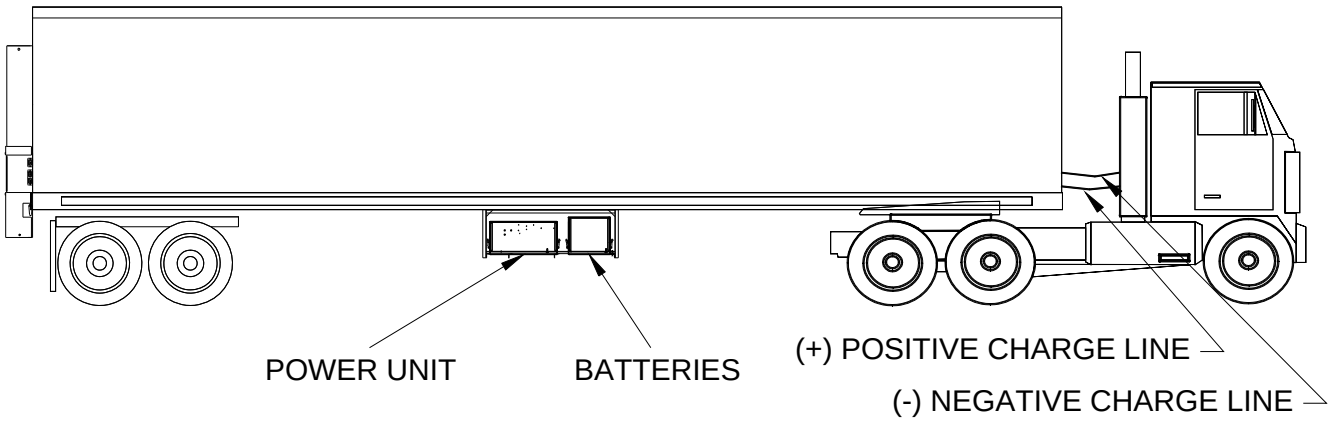
We recommend batteries with the following specifications:
12 Volt Heavy Duty Lead Acid Dual Purpose or AGM
B.C.I. Group – Size 31
Terminal Type – TS
Cold Cranking Amps - 580



FAILURE TO USE CORRECT BATTERIES WILL VOID WARRANTY

Place rubber pads under each battery to prevent movement, and securely tighten Battery Clamp.

GROUNDING RECOMMENDATIONS FOR TRACTOR/ TRAILER



The MAINTENANCE MINDER 2® controller requires that a minimum of 8 volts be maintained under load in order for the FDC® power unit to operate. Utilization of a single positive cable does not provide sufficient ground. Therefore, our recommendation for grounding tractor/trailers with a FDC® gate is as follows:

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

NOTE:
The use of a battery charger as the sole power source to operate a FDC® is unauthorized and will prevent the FDC® from working properly. The lift gate must always be operated in conjunction with at least one (1) 12-volt dual purpose heavy-duty lift gate battery. A minimum of 10.5 volts must be maintained in order for the valves to operate.

MAINTENANCE MINDER 2® OVERVIEW

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 from 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 and hold 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.

(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 number when maintenance is due)
Motor ON (total motor run time in minutes for this maintenance period)
Service Fault (number of times gate was operated 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 – see reset instructions on previous page)

(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 the 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.

BLEEDING THE LIFT CYLINDERS

The FDC® is shipped with the cylinders pre-filled with hydraulic fluid from the factory. *The cylinders must be bled before making any other adjustments.*

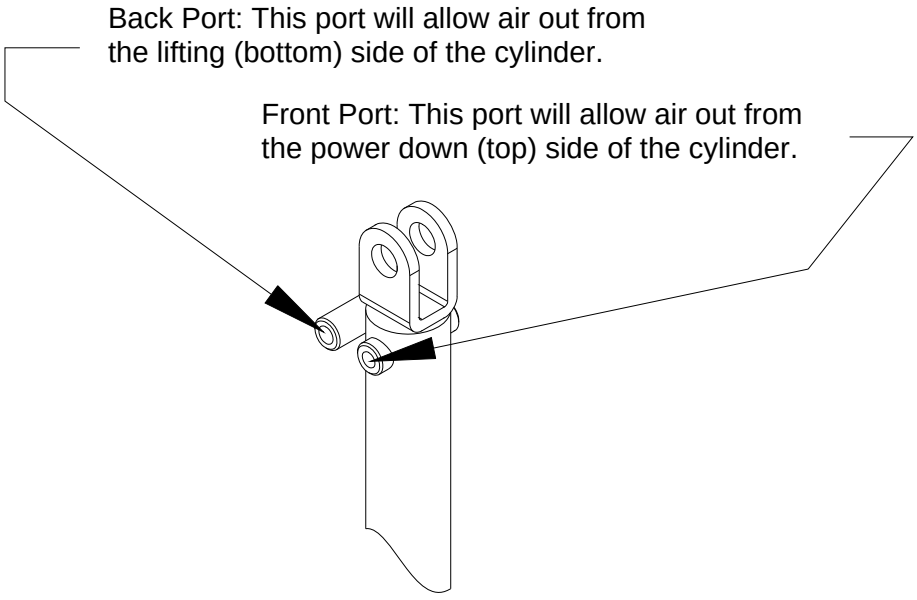
To Bleed the Lifting Cylinder – Bottom Side:

1 Unfold and lower the platform to the full down position. **CYLINDERS SHOULD BE EXTENDED TO THEIR FULL LENGTH (GATE EXTENDED DOWN 56") TO REMOVE AS MUCH AIR FROM THE BOTTOM SIDE OF THE CYLINDER AS POSSIBLE. DEPENDING ON THE FLOOR HEIGHT OF THE VEHICLE, IT MAY BE NECESSARY TO RAISE THE BODY OF THE VEHICLE OR LOWER THE GATE PLATFORM INTO A PIT TO ACHIEVE MAXIMUM CYLINDER EXTENSION.**
2 Loosen the plugs in the back ports (ports closest to the vehicle body), but do not remove completely.
3 Activate the pump just long enough to produce an air-free stream of oil from the ports.
4 Re-tighten the plugs in the ports, raise the platform to the full up position, and check the oil level in the reservoir tank. The oil level should be approximately 4" from top of the tank.

To Bleed the Lifting Cylinders – Top Side

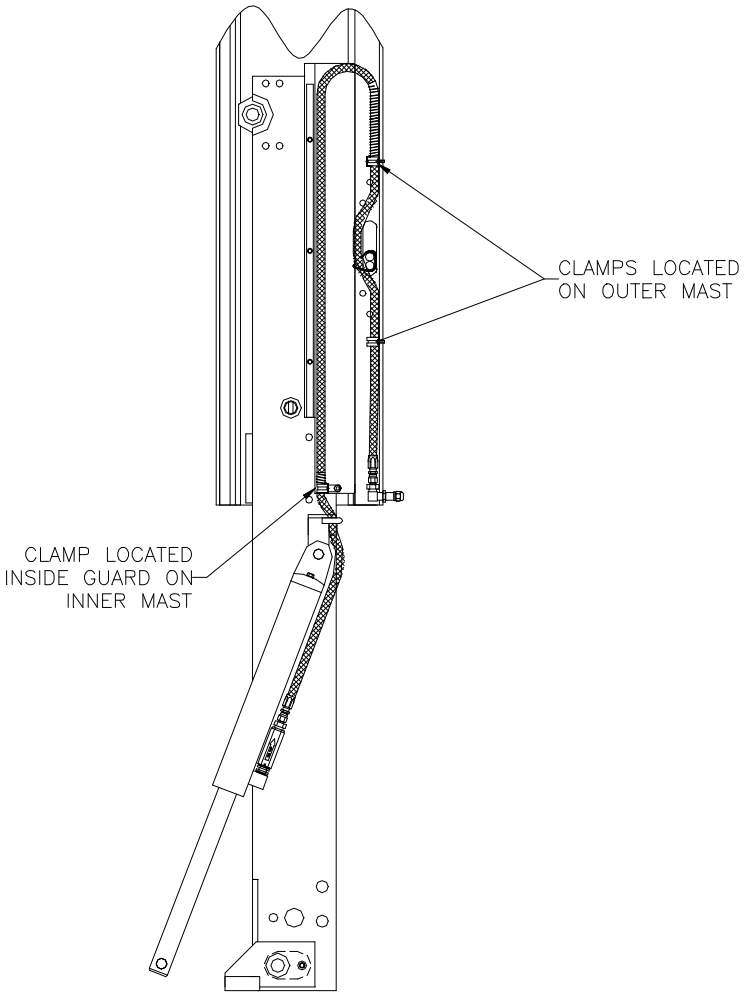
1. Unfold and raise the platform to the full up position to remove as much air from the top side of the cylinder as possible.
2. Loosen the plugs in the front ports (ports furthest from the vehicle body) but do not remove completely.
3. Activate the pump (DOWN) just long enough to produce an air-free stream of oil from the ports.
4. Retighten the plugs in the ports, raise the platform to the full up position if not already there, and check the oil level in the reservoir tank. The oil level should be approximately 4" from top of the tank.

NOTE: FOR POWER DOWN GATES, OIL LEVEL SHOULD ALWAYS BE CHECKED WITH THE PLATFORM UNFOLDED AND RAISED ALL THE WAY UP.



TO BLEED THE POWER FOLD CYLINDER

1. Unfold and lower the platform down to the ground.
2. Loosen the hose at the cylinder but do not remove completely.
3. Activate the pump just long enough to product an air free stream of oil from the hose.
4. Re-tighten the hose and check the oil level in the reservoir tank. Note: hold line while tightening to ensure it does not twist.
5. Fold and unfold the platform several times. The platform should now fold and unfold smoothly.



CHECK OIL LEVEL AFTER BLEEDING THE CYLINDER:
Check with platform unfolded and up at bed height.

ADJUSTMENT OF THE EQUALIZER VALVE

NOTE:
Before making any adjustments, read the General Trouble Shooting Tips page to be sure this is the problem. **Do NOT adjust Equalizer Valve in an attempt to compensate for a bent Tie Bar, bad roller, or other mechanical issue.**

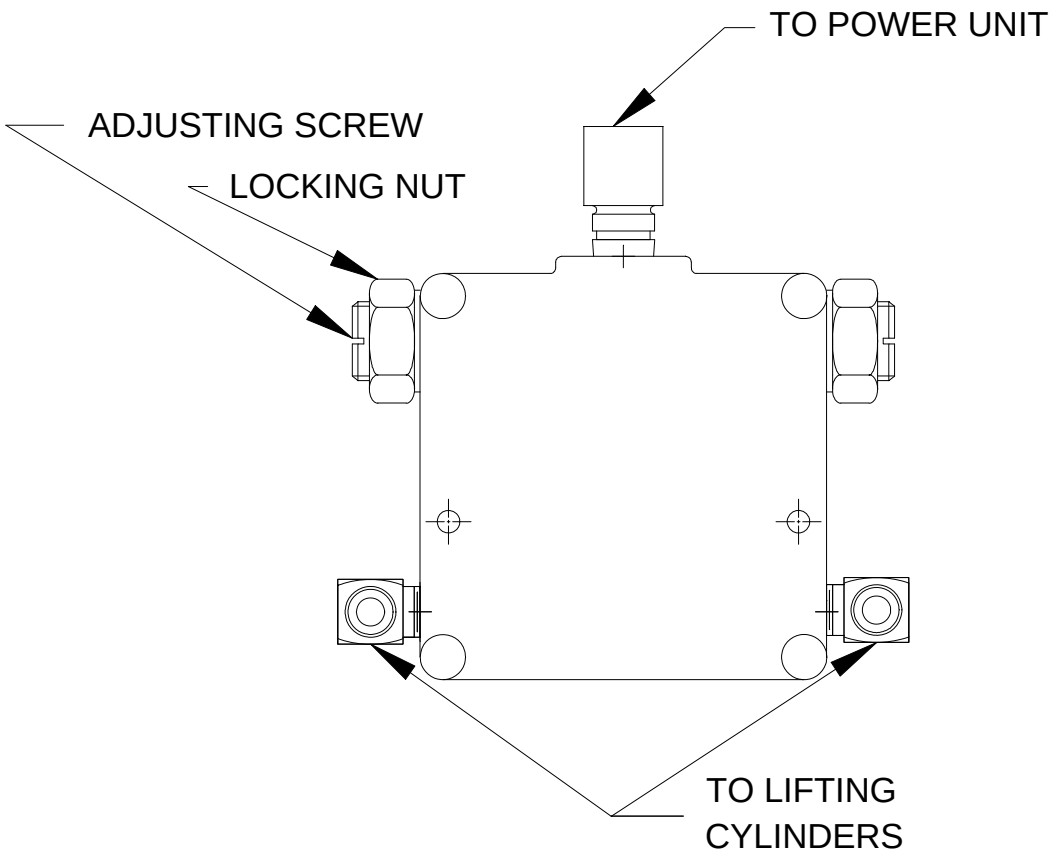
Remember adjusting the equalizer valve will control the ***up*** stroke only.

Locate the equalizer valve. Equalizer valve is mounted on power unit frame, behind the power unit box.

Back off the lock nut on the side that is running slow (lagging) turn the adjusting screw out ¼ turn, lock nut and try. Repeat if necessary.

Although this can be done with no load on the platform, it normally helps to have a light load on the platform.

NOTE:
Turn the adjusting screw in = decreases the flow of oil
Turn the adjusting screw out = increases the flow of oil



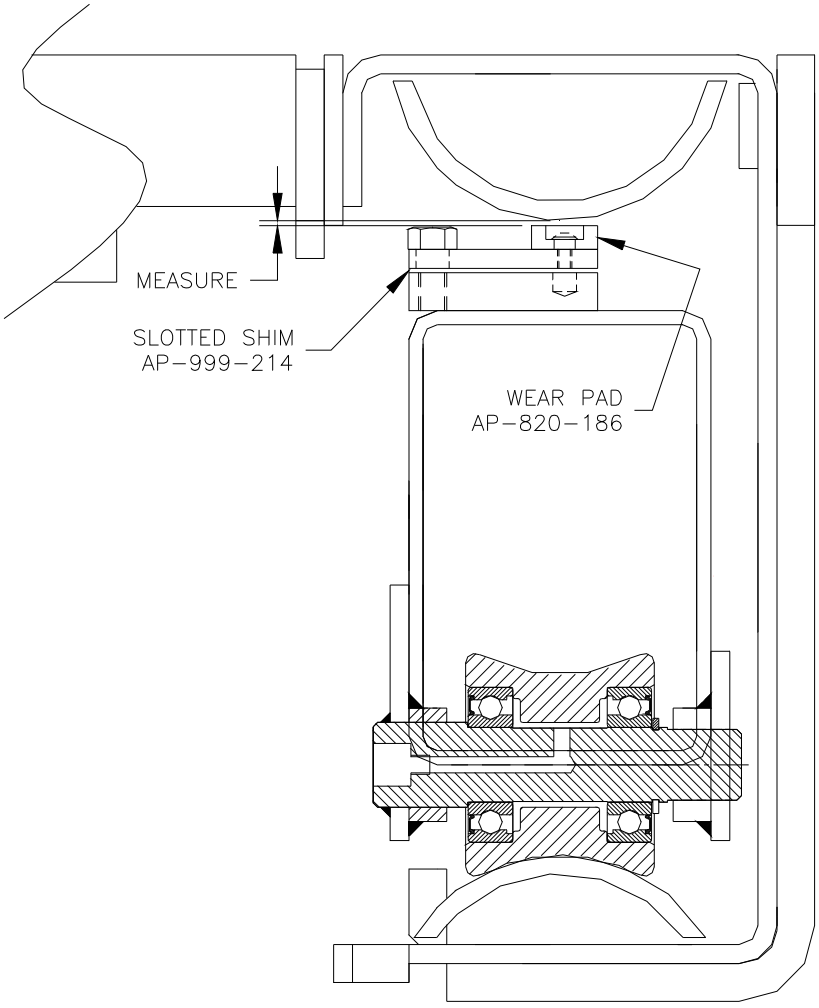
INNER MAST WEAR PAD ADJUSTMENT

If platform comes down evenly when **UNFOLDED**, but comes down crooked when **FOLDED**, this could indicate the Inner Mast Wear Pads need adjustment. There is a Wear Pad opposite each roller on the Inner Mast (total of four Wear Pads)

FOLLOW THESE STEPS TO CHECK THE INNER MAST WEAR PAD ADJUSTMENT:

1. **PLATFORM MUST BE UNFOLDED TO MEASURE WEAR PAD CLEARANCE.** Unfold the platform and run lift gate UP and DOWN at least one complete trip to assure rollers are seated in their track. Rollers must be completely seated in order to obtain a correct measurement at each Wear Pad.
2. Measure Wear Pad clearance at each location (total of 4 Wear Pads) with the platform unfolded in three (3) different positions – all the way up, in a middle position, and all the way down on the ground. You will have a total of 12 Wear Pad clearance measurements – three for each Wear Pad. Write the readings down for easy reference.
3. Refer to the diagram on the following page, and take clearance measurements at each Wear Pad using a Feeler Gauge. As an example, the top Wear Pad on the curb side might have clearance measurements of 0.080” (gate in top position), 0.092” (middle position), and 0.100” (gate at ground). Slotted Shim AP-999-214 is 0.060” thick, so one more shim can be added, since all three readings for this Wear Pad exceed 0.060”. If any of the three measurements were near 0.060” or less, then no shims could be added.
4. To add shims, loosen the 3/8-16 Hex Head Cap Screws using a 9/16 open end wrench. Insert additional shims, then tighten 3/8-16 screws. The objective is to shim each Wear Pad as close as possible, without the Wear Pad touching the track at any position (top, middle, or ground position).
5. After shim adjustments are complete at all four Wear Pad locations, run platform UP and DOWN unfolded to verify correct operation. Then fold platform and run gate UP and DOWN folded to verify correct operation.

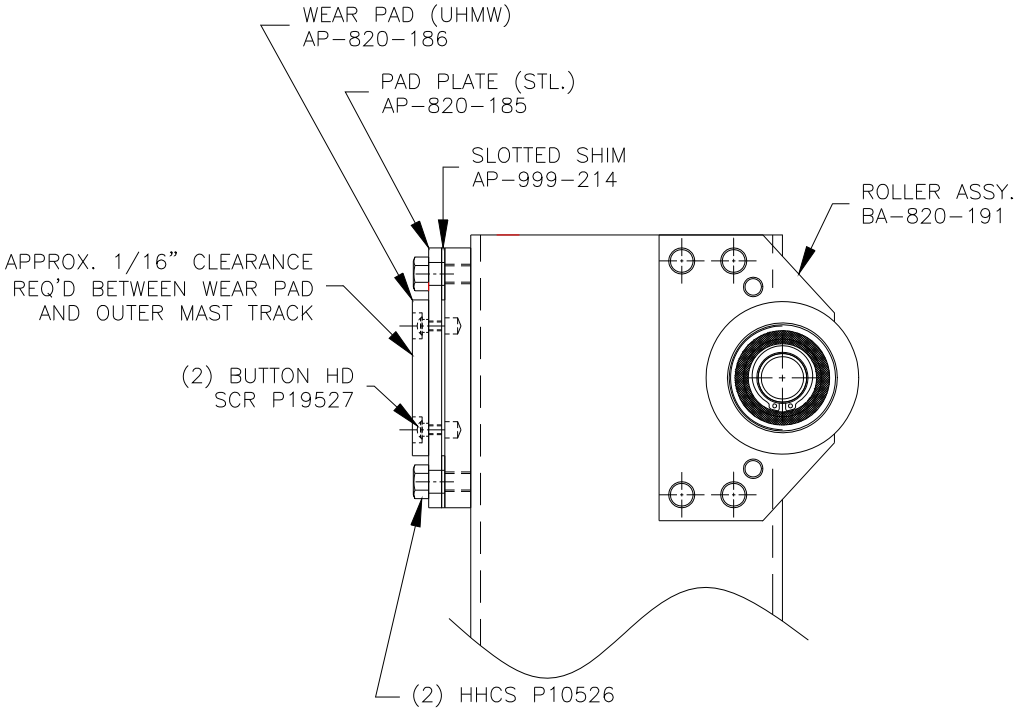
INNER MAST WEAR PAD ADJUSTMENT (cont.)



ALL MEASUREMENTS MUST BE
TAKEN WITH PLATFORM UNFOLDED

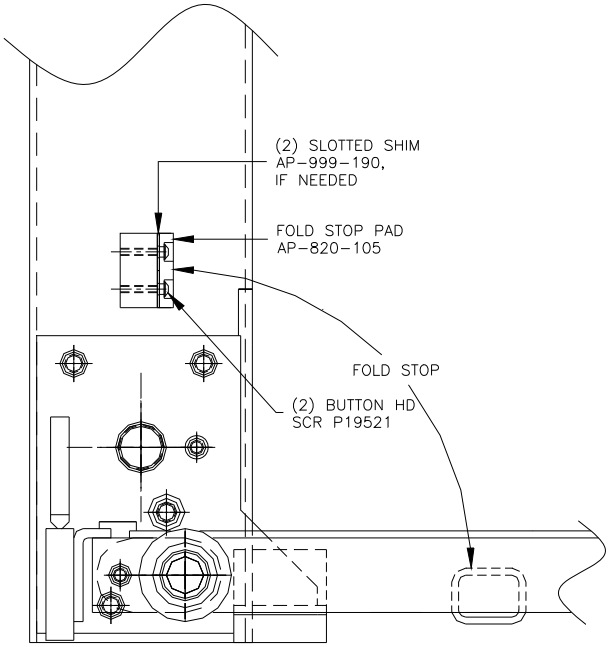
CURB SIDE MAST VIEWED FROM ABOVE

INNER MAST WEAR PAD PARTS



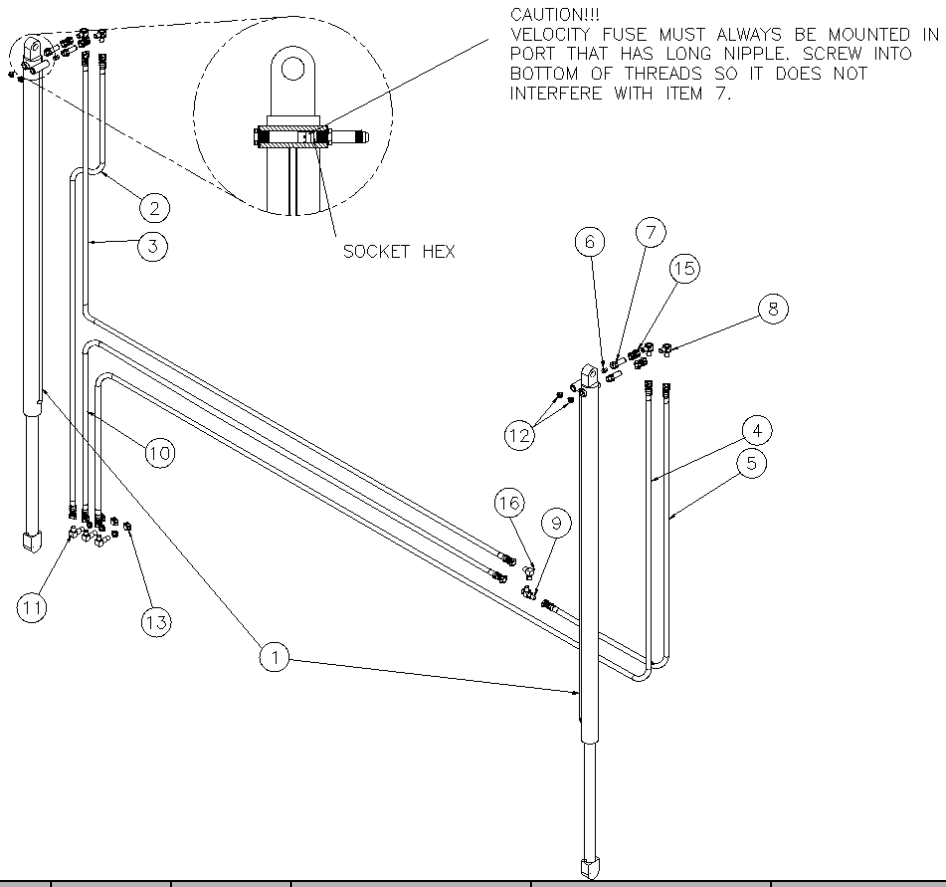
CHECK WEAR PAD CLEARANCE WITH PLATFORM UNFOLDED. RUN PLATFORM UP AND DOWN TO SEAT ROLLERS. CHECK CLEARANCE WITH GATE POSITIONED AT DIFFERENT VERTICAL LOCATIONS.

INNER MAST FOLD STOP PARTS



HYDRAULIC PARTS REPLACEMENT

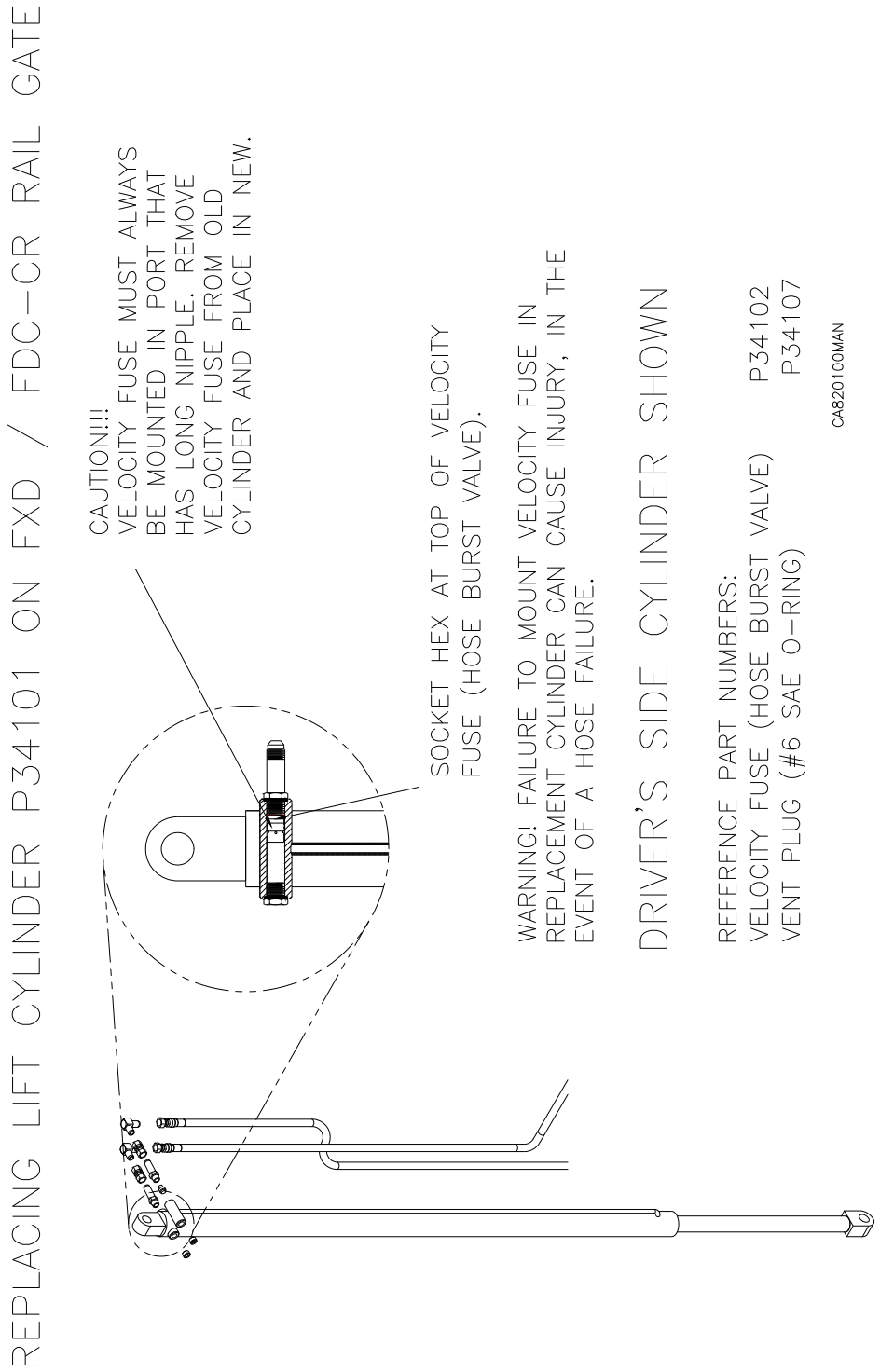
Index No.	Qty Req'd	Part Number	Part Name	Remarks
1	2	P34101	Hyd. Cylinder	**SEE NEXT PAGE**
2	1	AT-501-354-081	Hydraulic Line Assy.	LH Lifting
3	1	See Chart	Hydraulic Line Assy.	LH "Down" Line
4	1	See Chart	Hydraulic Line Assy.	RH Lifting
5	1	See Chart	Hydraulic Line Assy.	RH "Down" Line
6	2	P34102	Velocity Fuse 4.5 GPM	**SEE NEXT PAGE**
7	4	P34103	Long Nipple	
8	4	P34015	Elbow	
9	1	P34145	Bulkhead Tee	
10	1	AT-501-354-027	Hydraulic Line Assy.	
11	3	P34106	Bulkhead Elbow	
12	3	P46497	¾" Split Loom	72" or 24" Lg ea.
13	4	P34058	Adapter	
14	1	P34051	Elbow	



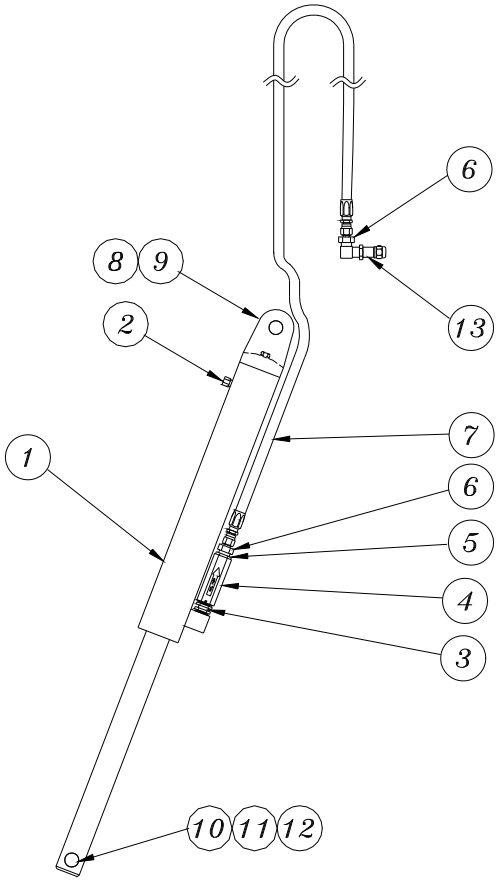
Drawing No.	Gate Width	Qty Req'd	LH "Down" Item 3	RH Lifting Item 4	RH "Down" Item 5
CA-820-467	102"	1 ea.	AT-501-365-012	AT-501-354-174	AT-501-354-074
CA-820-466	96"	1 ea.	AT-501-365-011	AT-501-365-014	AT-501-354-074

HYDRAULIC PARTS REPLACEMENT (Cont.)

MOVING VELOCITY FUSE (HOSE BURST VALVE) FROM OLD TO NEW CYLINDER WHEN REPLACING LIFTING CYLINDER P34101

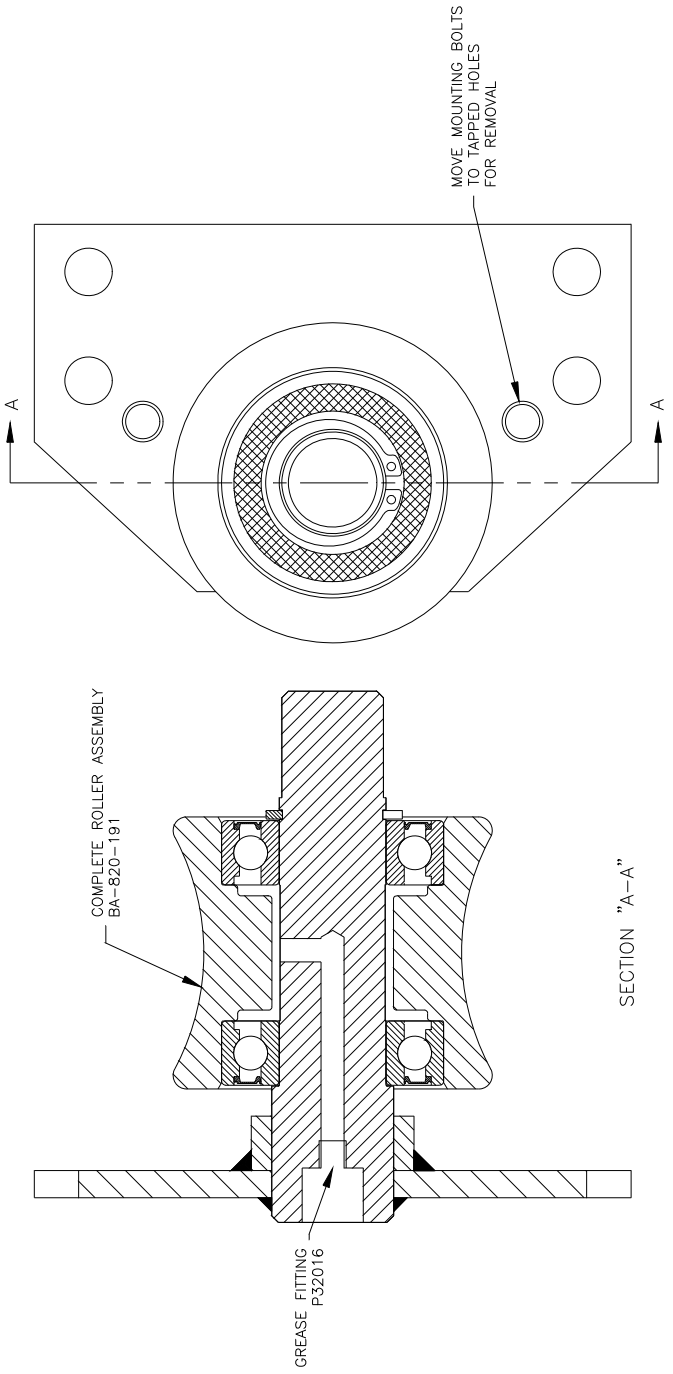


POWER FOLD PARTS REPLACEMENT



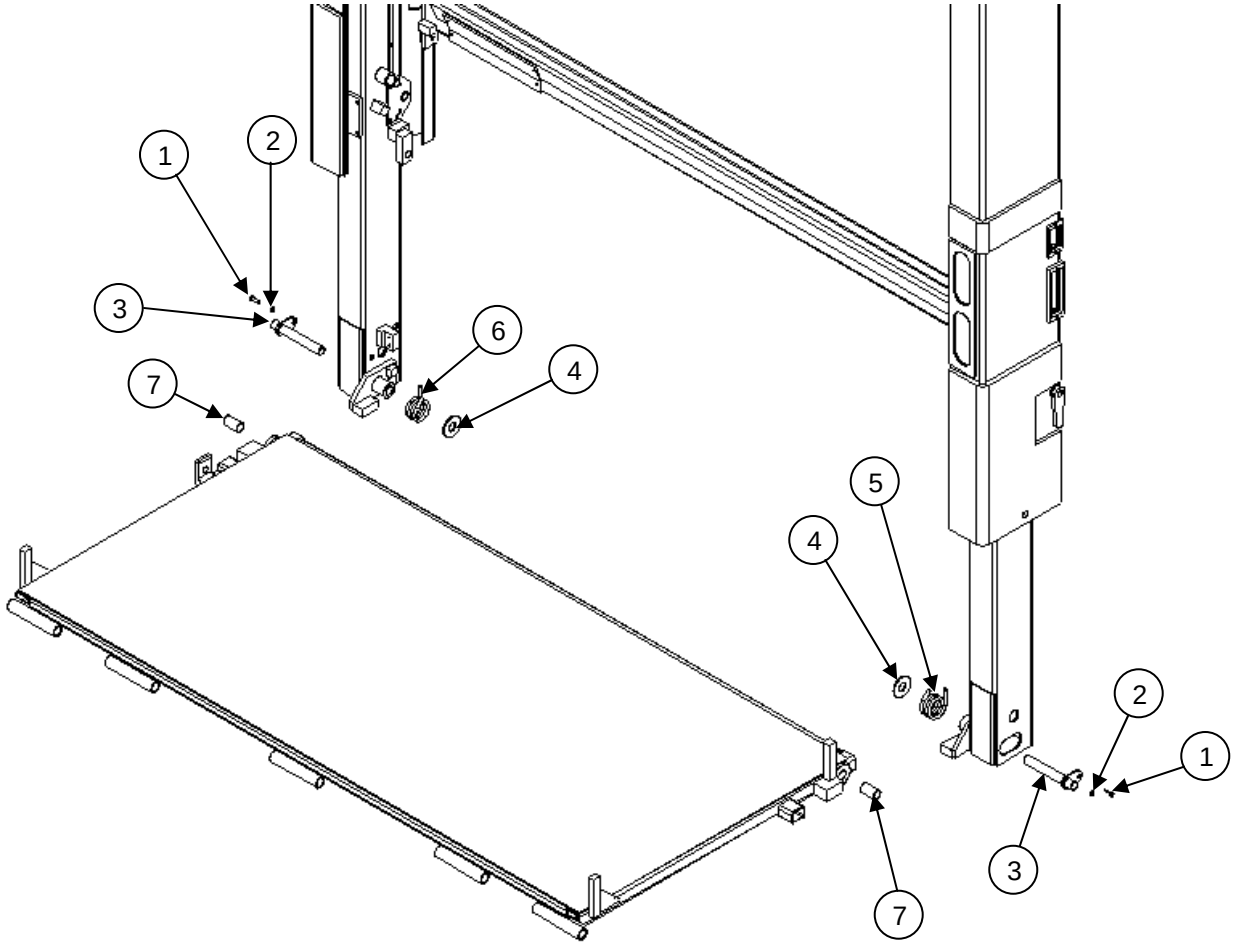
Index No.	Qty Req'd	Part Number	Part Name
1	1	P34108	Hyd. Cylinder
2	1	P33915	Breather Vent – 1/8 NPT
2	1	P33646	Breather Vent – 3/8 NPT
3	1	P34050	Straight Nipple
4	1	P34147	Flow Control Valve
5	1	P34044	Straight Nipple
6	2	P34110	Adapter
7	1	AT-501-410-079	Hose Assembly 1/4
8	1	AP-820-097	Top Ram Pin
9	2	P24019	Retaining Ring
10	1	S754-005.500	Bottom Ram Mtg Pin
11	1	P47532	Spirol Pin
12	4	P26019	Washer
13	3	P34106	Bulkhead Elbow

REPLACEMENT ROLLER

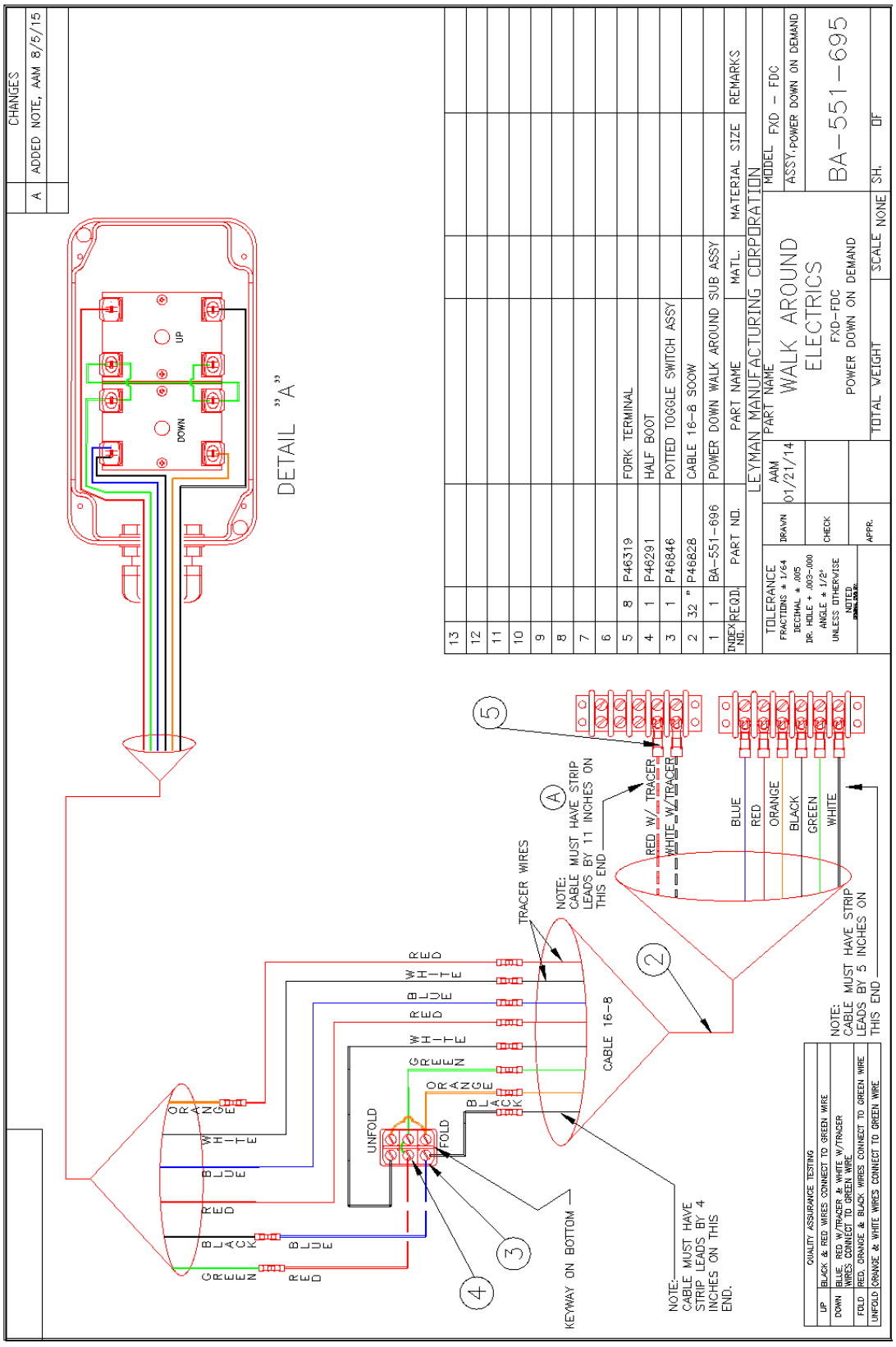


REPLACEMENT ROLLER IS ONLY SOLD AS A COMPLETE ASSEMBLY UNDER PART NO. BA-820-191. SPECIAL EQUIPMENT IS REQUIRED TO MOUNT BEARINGS ON ROLLER AND SHAFT TO AVOID BEARING DAMAGE. THIS CAN ONLY BE PROPERLY DONE AT OUR FACTORY.

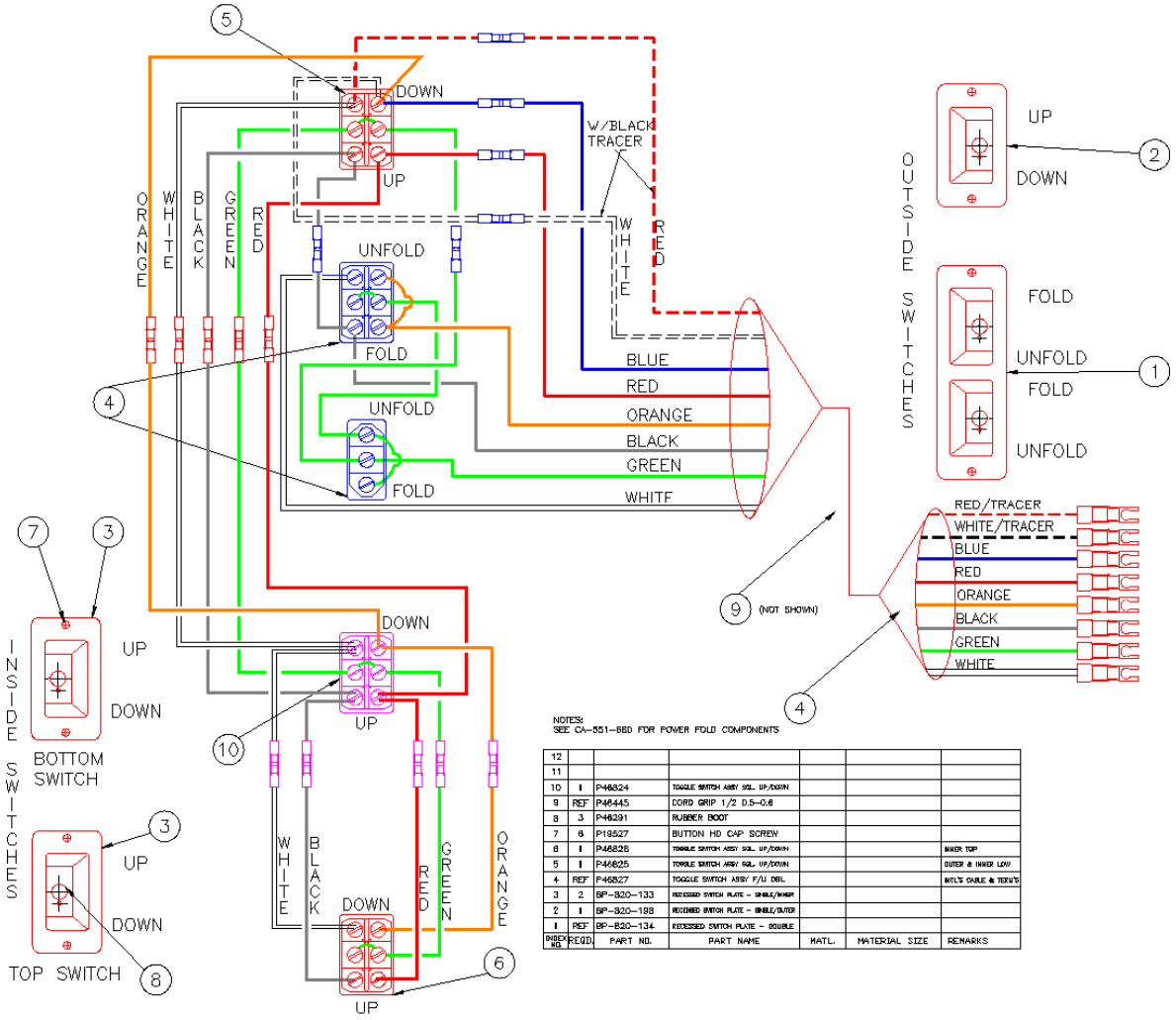
PLATFORM PINS AND BUSHINGS



Index No.	Qty.	Part Number	Part Name	Material Size/Notes
1	2	P10501	Bolt	3/8-16 x 1 G2
2	2	P26017	Washer Lock Split 3/8	3/8
3	2	BA-820-086	Shaft Assembly	
4	6	P26521	Spacer Washer	1”
5	1	P25217	Torsion Spring RH	
6	1	P25218	Torsion Spring LH	
7	2	P43578	Platform Bearing	


CHANGES
A ADDED NOTE, AAM 8/5/15
DETAIL "A"
UP
DOWN
BA-551-695
WALK AROUND ELECTRICS
FXD-FDC
POWER DOWN ON DEMAND
LEYMAN MANUFACTURING CORPORATION
INDEX NO. | QTY. | PART NO. | PART NAME | MATL. | MATERIAL SIZE | REMARKS
1 | 1 | BA-551-696 | POWER DOWN WALK AROUND SUB ASSY
2 | 32 " | P46828 | CABLE 16-8 SOOW
3 | 1 | P46846 | POTTED TOGGLE SWITCH ASSY
4 | 1 | P46291 | HALF BOOT
5 | 8 | P46319 | FORK TERMINAL
TOLERANCE FRACTIONS ± 1/64 DECIMAL ± .005 DR. HOLE + .003-.000 ANGLE ± 1/2° UNLESS OTHERWISE NOTED
DRAWN AAM 01/21/14
CHECK
APPR.
MODEL FXD - FDC
ASSY: POWER DOWN ON DEMAND
TOTAL WEIGHT
SCALE NONE
SH. OF
QUALITY ASSURANCE TESTING
UP BLACK & RED WIRES CONNECT TO GREEN WIRE
DOWN BLUE, RED W/TRACER & WHITE W/TRACER WIRES CONNECT TO GREEN WIRE
FOLD RED, ORANGE & BLACK WIRES CONNECT TO GREEN WIRE
UNFOLD ORANGE & WHITE WIRES CONNECT TO GREEN WIRE
NOTE: CABLE MUST HAVE STRIP LEADS BY 5 INCHES ON THIS END
NOTE: CABLE MUST HAVE STRIP LEADS BY 4 INCHES ON THIS END.
KEYWAY ON BOTTOM
TRACER WIRES
NOTE: CABLE MUST HAVE STRIP LEADS BY 11 INCHES ON THIS END
RED W/ TRACER
WHITE W/TRACER
BLUE
RED
ORANGE
BLACK
GREEN
WHITE
CABLE 16-8
UNFOLD
FOLD
ORANGE
WHITE
BLUE
RED
BLACK
BLUE
GREEN
RED
WHITE
BLUE
RED
GREEN
ORANGE
BLACK

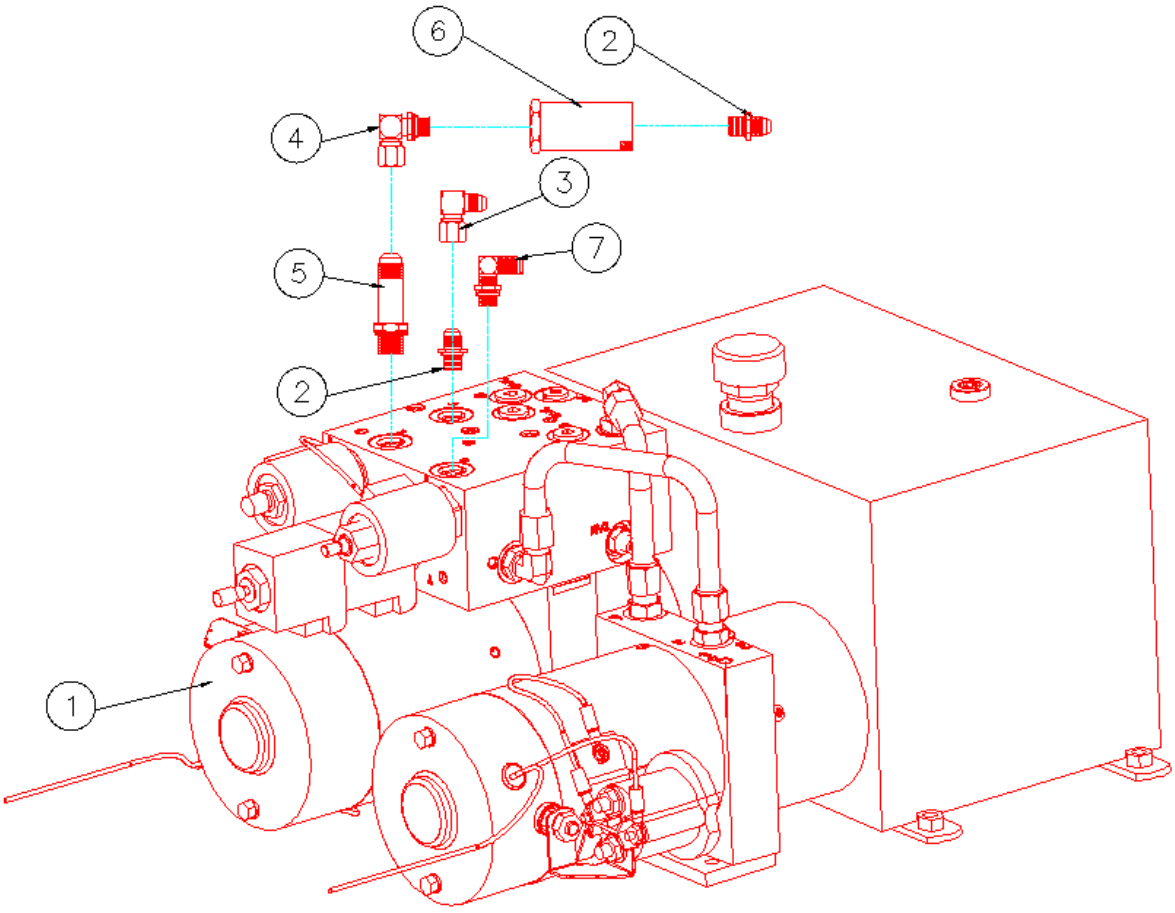
SWITCH WIRING



NOTES:
SEE CA-551-660 FOR POWER FOLD COMPONENTS

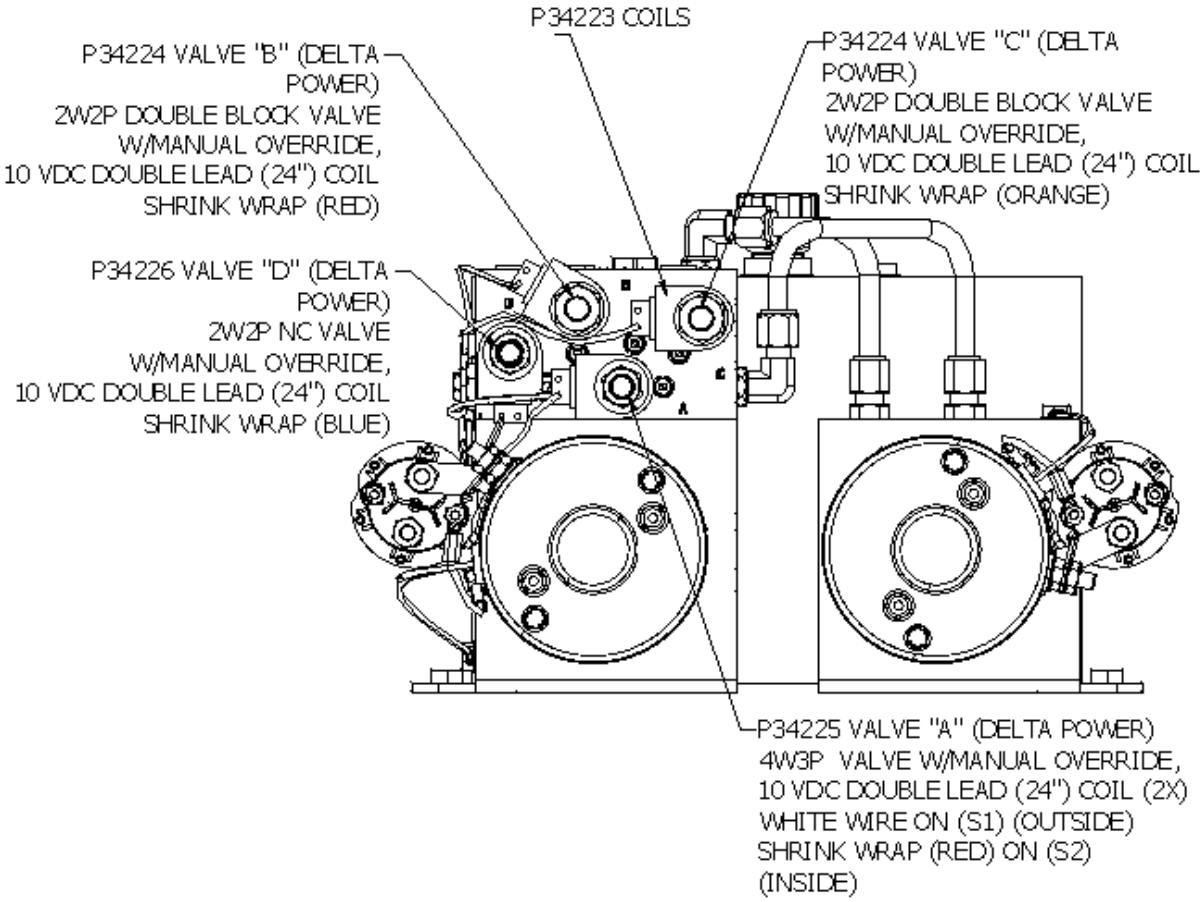
INDEX NO	REQD.	PART NO.	PART NAME	MATL.	MATERIAL SIZE	REMARKS
12						
11						
10	1	P46824	TOGGLE SWITCH ASSY SGL UP/DOWN			
9	REF	P46445	CORD GRIP 1/2 D.5-0.8			
8	3	P46291	RUBBER BOOT			
7	6	P19527	BUTTON HD CAP SCREW			
6	1	P46826	TOGGLE SWITCH ASSY SGL UP/DOWN			INNER TOP
5	1	P46825	TOGGLE SWITCH ASSY SGL UP/DOWN			OUTER & INNER LOW
4	REF	P46827	TOGGLE SWITCH ASSY F/U DBL			WIRE CABLE & TERM'S
3	2	BP-820-133	RECESSED SWITCH PLATE - SINGLE/INNER			
2	1	BP-820-198	RECESSED SWITCH PLATE - SINGLE/OUTER			
1	REF	BP-820-134	RECESSED SWITCH PLATE - DOUBLE			

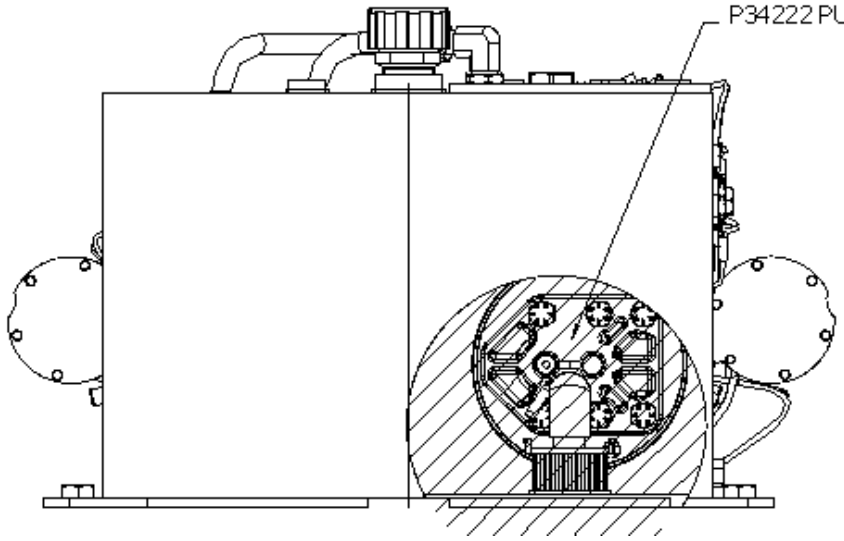
POWER UNIT PARTS



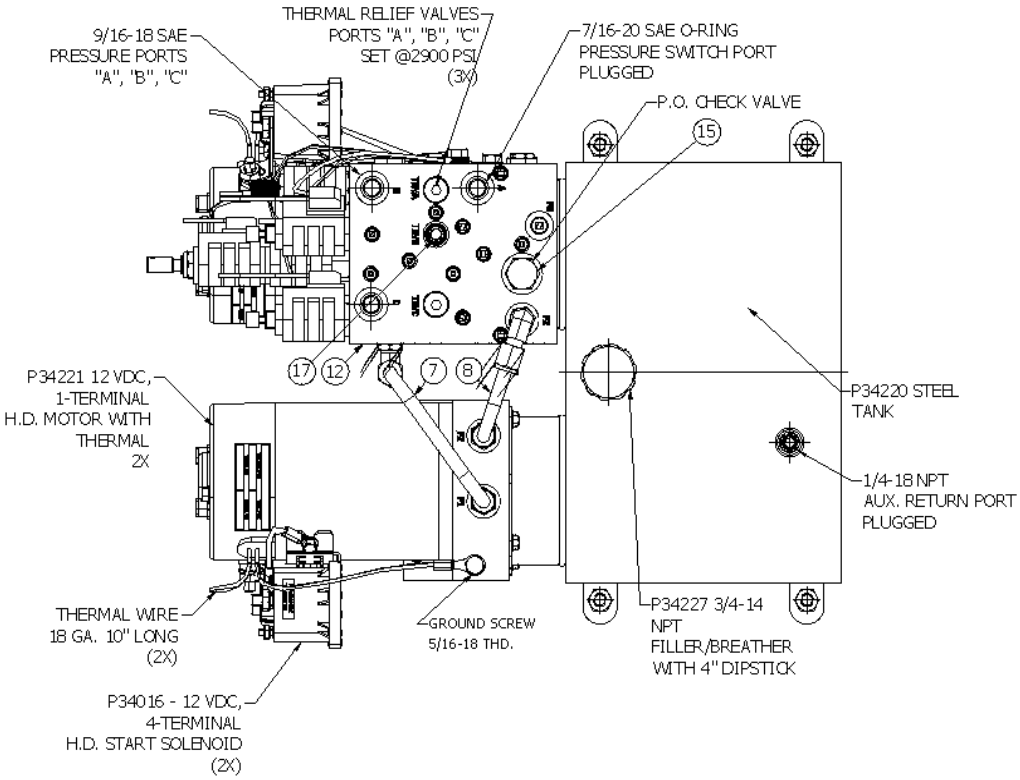
7	1	P34020	ELBOW		90 DEG ELB SAE O-RING - 9/16 18M 37 DEG
6	1	P34046	FILTER		
5	1	P34103	LONG NIPPLE		9/16-18SAEORB M -9/16-18JIC M
4	1	P34045	ADAPTER		9/16 SAE 37 DEG (F) - TO 9/16 SAE ORB (M)
3	1	P34051	ELBOW		9/16-18 JIC(M) - 9/16-18 JIC (F)
2	2	P34044	ADAPTER		9/16 SAE ORB(M) -9/16 JIC (M)
1	1	P34216	MTE HYDRAULIC PWR UNIT		

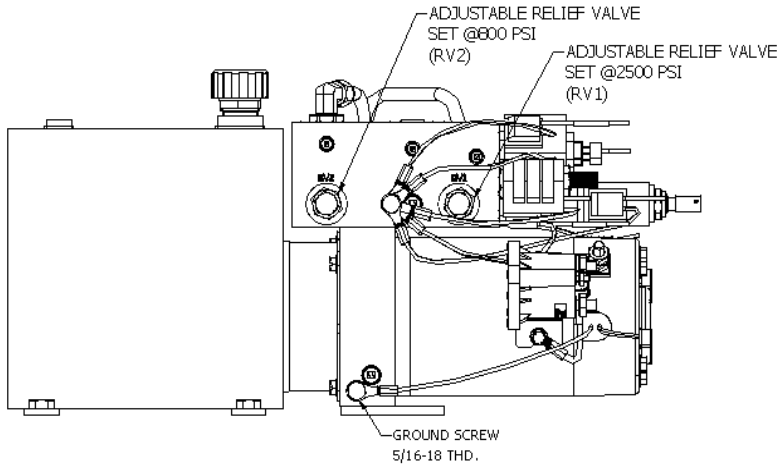
POWER UNIT PARTS



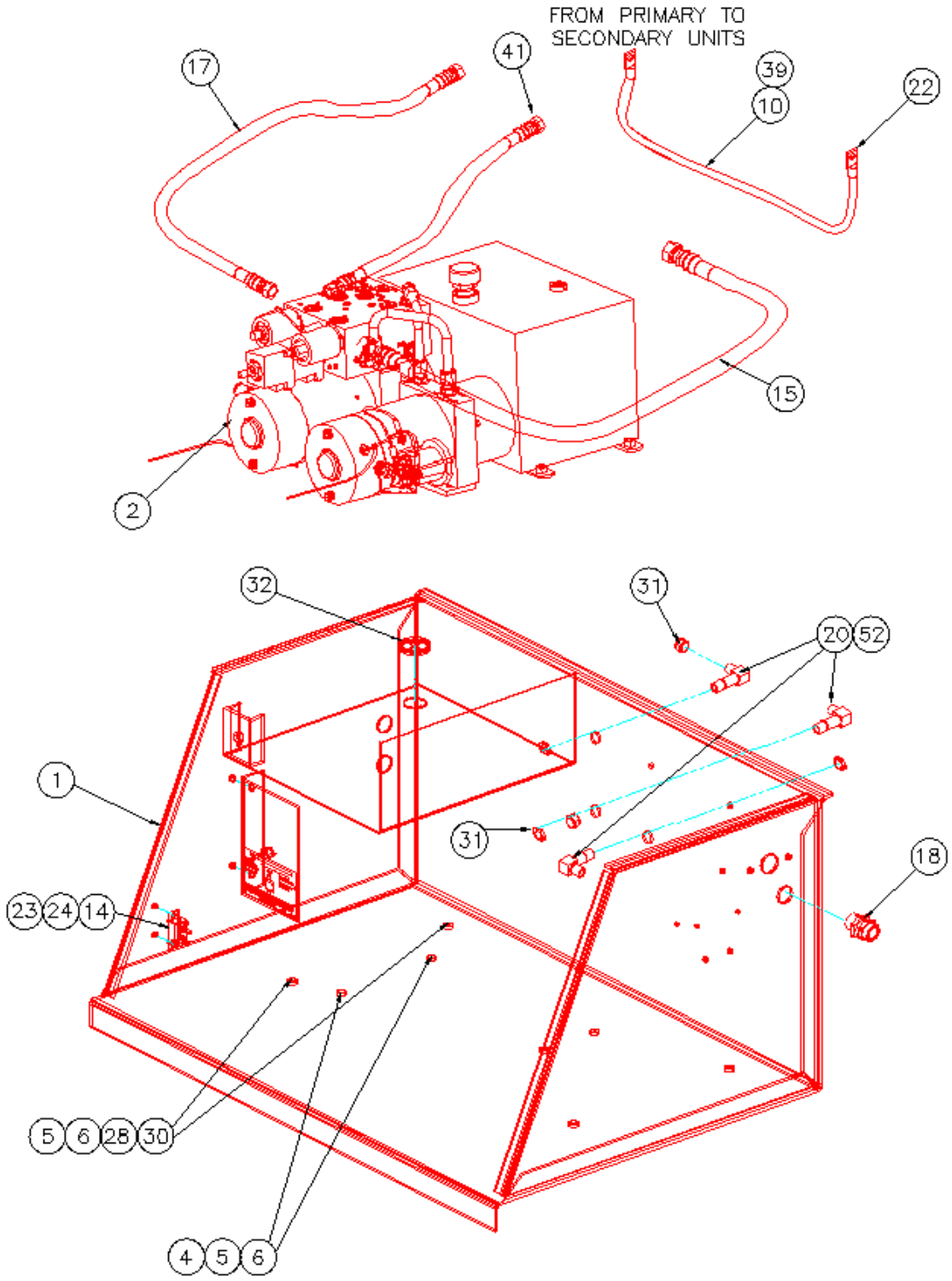


POWER UNIT PARTS

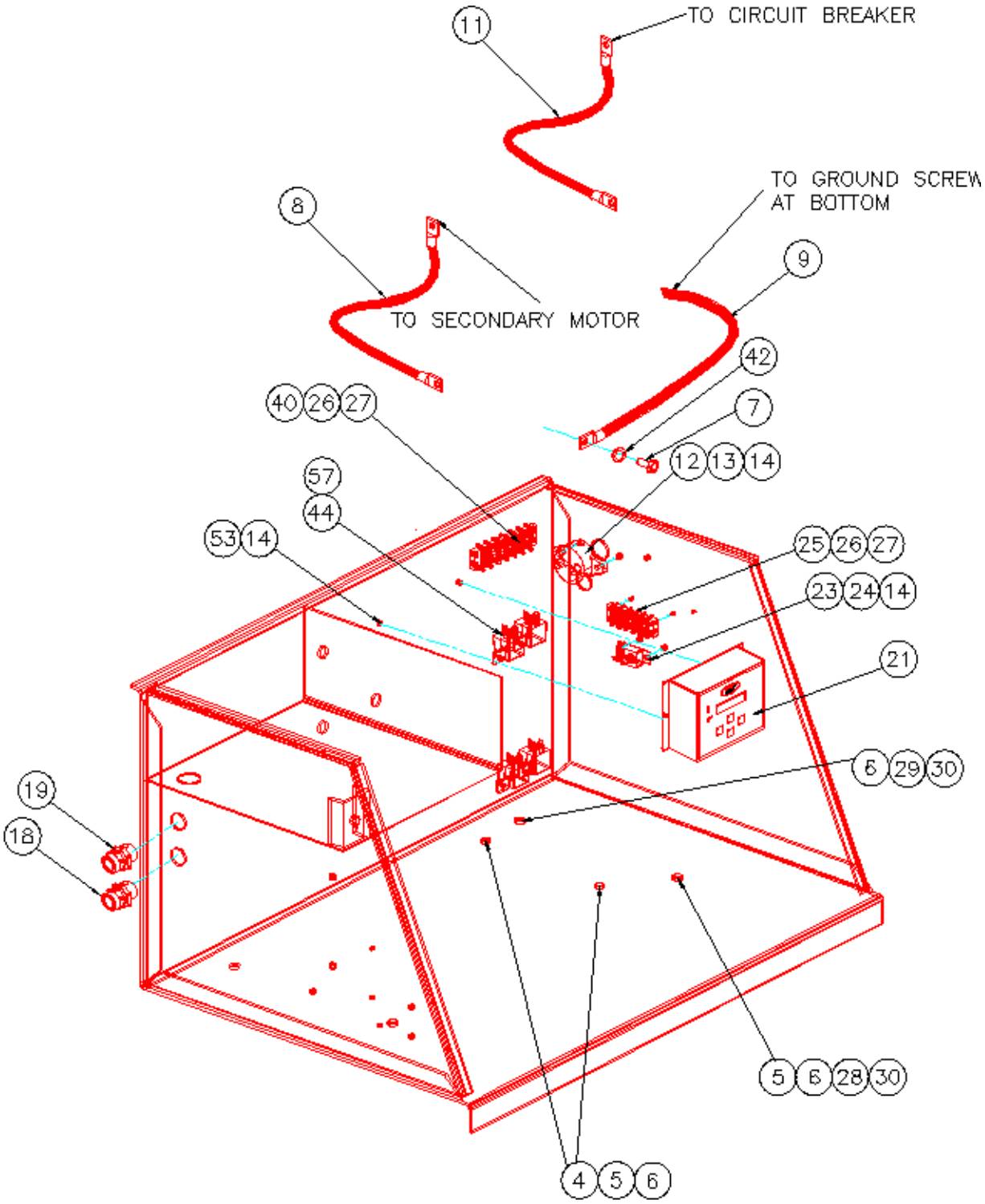




POWER UNIT ASSEMBLY

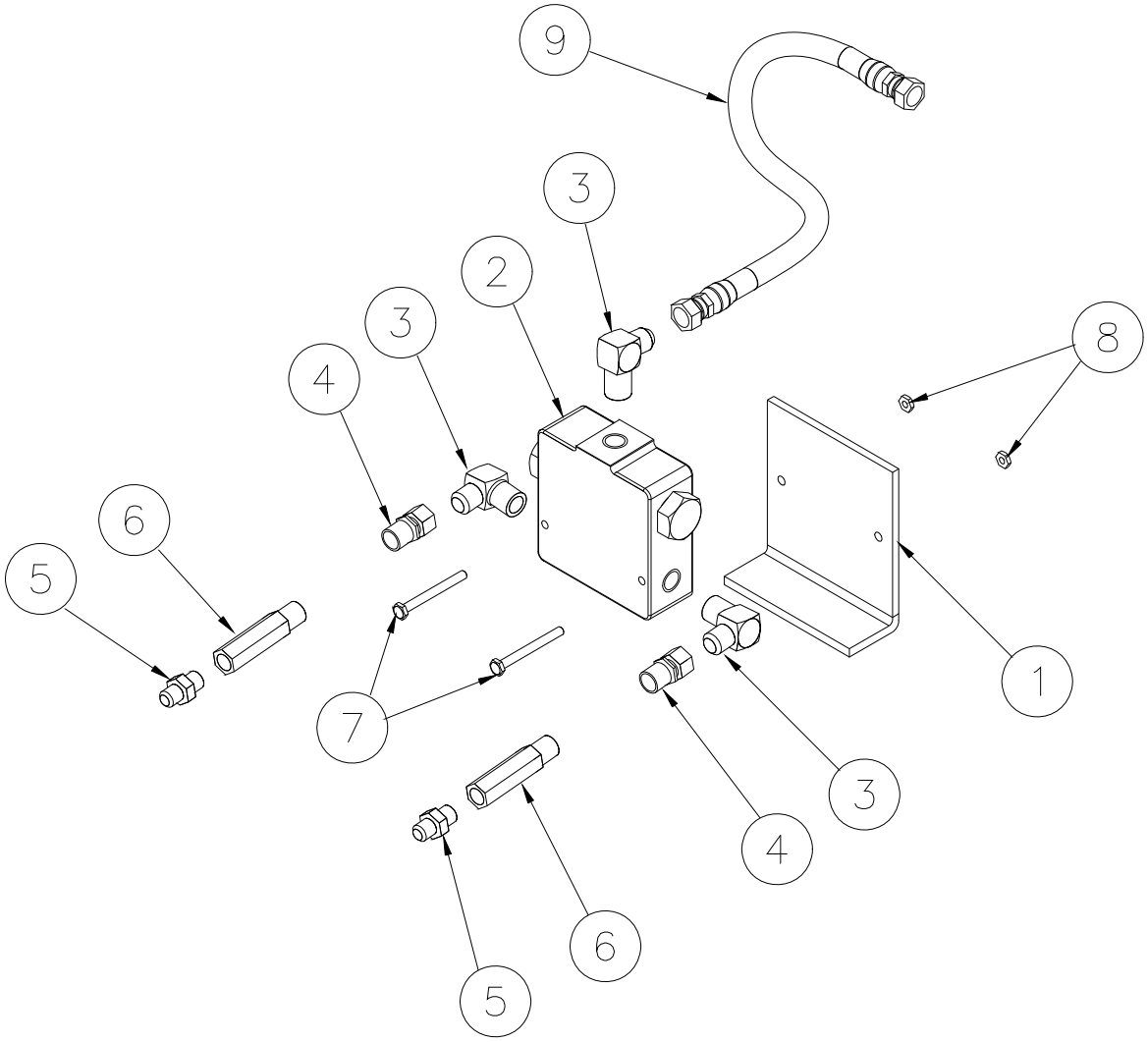


POWER UNIT ASSEMBLY



INDEX NO.	REQD.	PART NO.	PART NAME	MATL.	MATERIAL SIZE	REMARKS	WGT.
57	4	P17518	SELF TAPPING SCREW				
56	4	P46818	LOOM CLAMP – 1"		TO SECURE BUNDLE OF WIRES		
55							
54							
53	2	P19534	RD HD MACHINE SCREW				
52	3	P26004	FLAT WASHER		1/2		
51							
50							
49	1	P55185	FOLD/UNFOLD DECAL				
48							
47							
46							
45							
44	4	P46487	RELAY				
43	1	P55454	GENERAL TIPS – PWR. DN.				
42	1	P27027	LOCK WASHER		5/16		
41	1	AT-501-354-020	HOSE ASSY – DOWN PORT				
40	1	P46449	TERMINAL BLOCK				
39	1	P46485	1/2 IN SPLIT NYLON LOOM		26 IN		
38	1	P55456	ELEC/HYD DIAGRAM DECAL				
37	1	BA-551-695	WALK AROUND ELECTRICS				
36	1	P48007	FOAM TAPE		122 IN		
35	1	P55338	FAULT CODES DECAL				
34	1	P55337	IMPORTANT INSTRUCTION DECAL				
33	1	CA-551-719	POWER UNIT ELEC. ASSY				
32	1	P25053	GROMMET				
31	2	P34004	CAP NUT		9/16-18 37 DEG		
30	4	P23501	LOCK NUT		3/8-16		
29	1	P23538	NUT		3/8-16 PLTD		
28	3	P11021	BOLT		3/8-16 X 1 G-5		
27	4	P23535	NYLON INSERT LOCK NUT				
26	4	P19519	RD HD MACHINE SCREW				
25	1	P46474	TERMINAL BLOCK				
24	4	P19501	RD HD MACHINE SCREW				
23	2	P46236	20 AMP CIRCUIT BREAKER				
22	8	P46403	BATTERY TERMINAL		3/8-16		
21	1	P46608H	MAINTENANCE MINDER				
20	3	P34106	BULKHEAD ELBOW		9/16-18 JIC (M) BOTH ENDS		
19	1	P46445	CORD GRIP		1/2 0.4 – 0.5		
18	2	P46139	CORD GRIP		1/2 0.5 – 0.6		
17	1	AT-501-354-024	HOSE ASSY – FOLD PORT				
16	8	P46279	HEAT SHRINK TUBING				
15	1	AT-501-354-027	HOSE ASSY – UP PORT				
14	8	P23504	10-24 LOCK NUT				
13	2	P18519	10-24 X 1 SCREW				
12	1	P46405	CIRCUIT BREAKER				
11	1	P46127	BATTERY CABLE – RED		12 IN		
10	1	P46127	BATTERY CABLE – RED		26 IN		
9	1	P46627	BATTERY CABLE – BLACK		12 IN		
8	1	P46127	BATTERY CABLE – RED		21 IN		
7	1	P10534	HH CAP SCREW		5/16-18 X 3/4		
6	11	P26501	FLAT WASHER		3/8		
5	7	P26017	SPLIT LOCK WASHER		3/8		
4	4	P10526	HEX BOLT		3/8-16 X 3/4		
3							
2	1	CA-501-468	MTE HYDRAULICS PWR UNIT FOR	DUAL			
1	1	CA-658-377	ENCLOSURE ASSY				

DIVIDER VALVE / FLOW CONTROLS

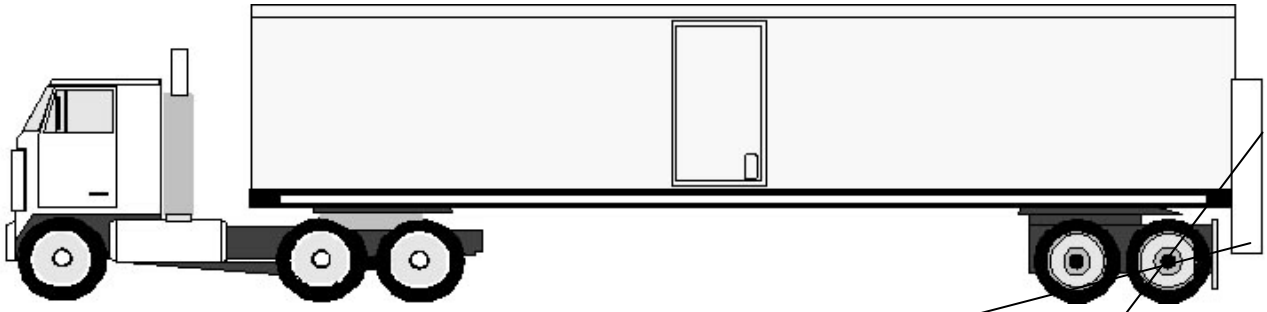


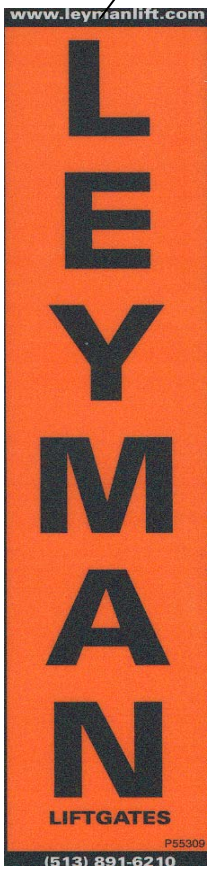
Index No.	Qty.	Part Number	Part Name
1	1	AP-811-718	Div. Valve Mtg. Brkt.
2	1	P33547H	Divider Valve
3	3	P34128	Elbow
4	2	P34042	Straight Adapter
5	2	P34044	Straight Adapter
6	2	P34159	2.8 Flow Control Valve (matched set)
7	2	P10508	Bolt (1/4-20)
8	2	P23502	Lock Nut
9	1	AT-501-354-013	Hose Assembly

INSTALLATION OF THE WARNING SIGNS/DECALS

STREET SIDE DECALS

Warning Signs and Decals will be replaced at any time
FREE OF CHARGE



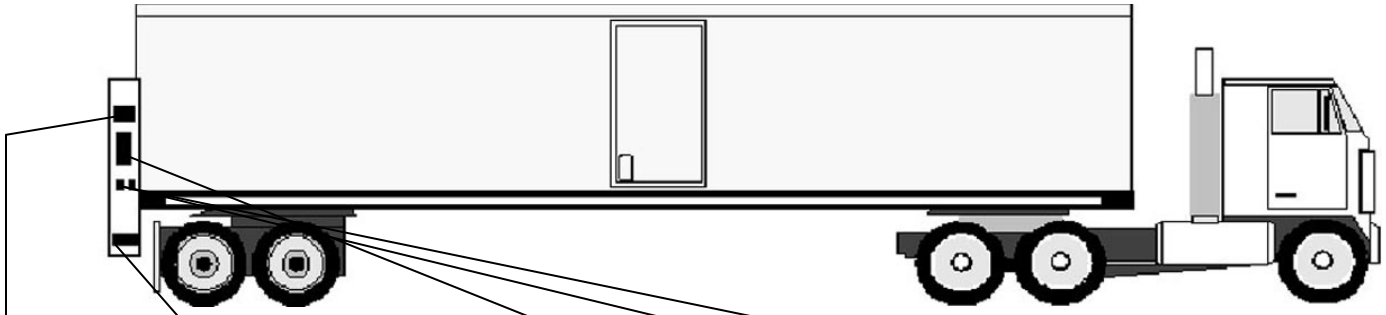


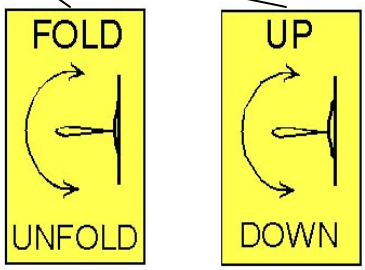
Will receive two of these decals. One goes on each side at bottom of outer mast

INSTALLATION OF THE WARNING SIGNS/ DECALS

CURB SIDE DECALS

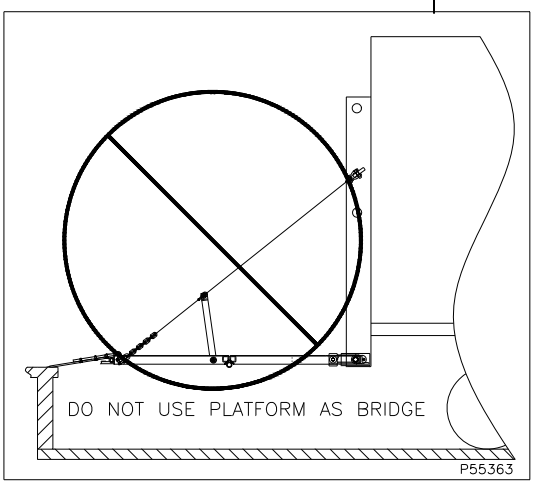
Warning Signs and Decals will be replaced at any time
FREE OF CHARGE





Mount each decal next to the corresponding toggle switch. Make sure you mount three UP/DOWN decals (two on the inside of the outer mast) and two FOLD/UNFOLD decals (next to the dual switch plate).

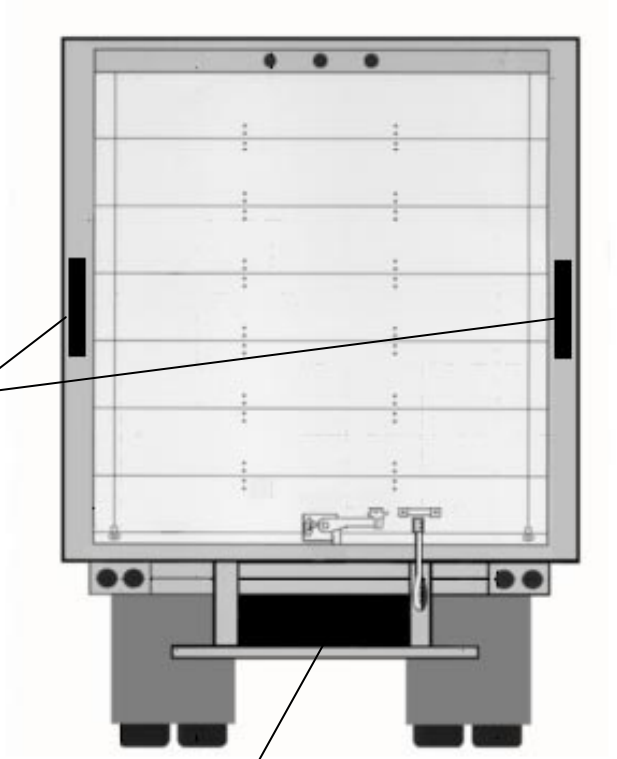
Will receive two of these decals. One goes on outer mast as marked, the other goes on inner mast next to the switch



INSTALLING SAFETY DECALS

REAR OF VEHICLE DECALS

Warning Signs and Decals will be replaced at any time
FREE OF CHARGE

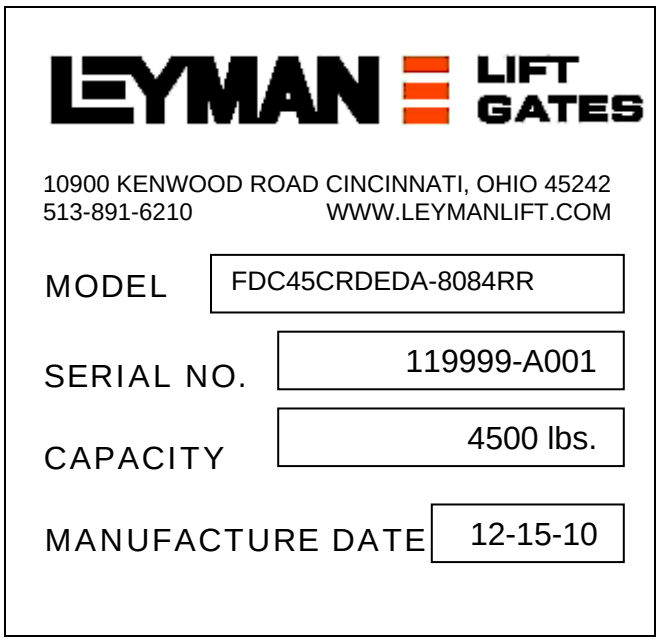


Will receive two of these decals
One goes on each side of the outer mast

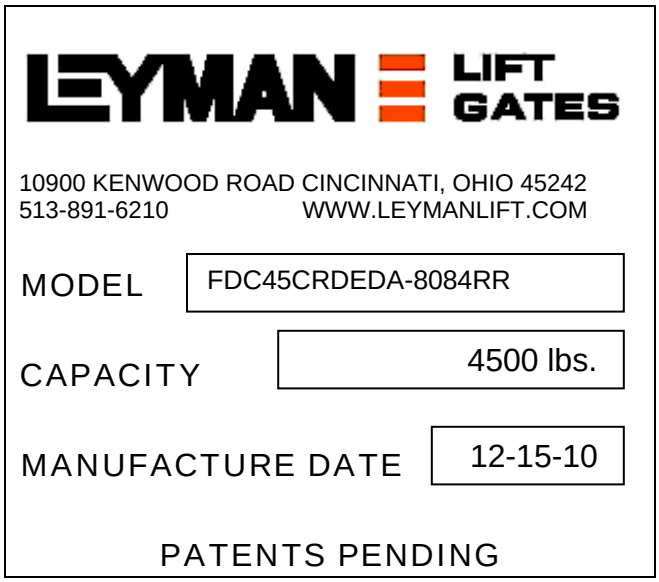
MODEL AND SERIAL NUMBER TAGS

Serial No. is also located in MENU 1 of
Maintenance Minder 2

Serial number tag is located inside power unit box.



Model number tag is located on the left-hand outer mast.



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