



# Dominos RA-45 Rebuild Kit Installation Guide

For Serial # 14113796453 to 2003546973

## Parts List for Kit # 209214-01

Part Number	Description	Qty	Where used
040104	SPLIT LOOM 3/4" BLACK	8	Page 11
208153	TIE, PLASTIC 4" (18 LB)	16	Page 15, Page 11
224342	FITTING, GREASE 1/4" SELF DRILL	6	Page 27 (These are extra grease fittings)
264507	UP AND DOWN DECAL	5	Pages 29 - 32
269339	SWITCH, SOLENOID MTR STARTER, 12 V	2	Page 22
901003	NUT, NYLON 10-24 2B ZC	6	Page 14, Page 23
090249-19	GUSSET PLATE, STL, 1/2 X 2 X 1.38" LG	2	Page 13
209205-01	KIT, STEP PIN REPLACEMENT, RA	1	Page 13
210044-02	KIT, RA ROLLERS, 2" OD	1	Page 16, Page 19
212004-01	KIT, FLANGED BUSHING, RA	1	Page 9 (Contains grease fittings for Mainframe pins)
220388-05	DECAL 4500# CAPACITY	1	Pages 29 - 32
260916-06	BEARING, SELF LUBE 1"DIA X 1.00"	6	Page 10
263891-01	BUTT SPLICE 16 GA, INS W/ADHESIVE	8	Page 15
282522-01	DECAL SHEET, SM WARN & CAUTION	1	Pages 29 - 32
282664-01	DECAL, RA OPER INSTRUCTION	1	Pages 29 - 32
282682-02	DECAL, CAUTION, SLIDER POSN	1	Pages 29 - 32
282683-02	DECAL, CAUTION CLEARANCE	1	Pages 29 - 32
282721-01	DECAL, IN & OUT SWITCH	1	Pages 29 - 32
282724-01	DECAL, SHEET, RA	1	Pages 29 - 32
283730-03	PIN, 5.13" LG X 1" DIA	2	Page 11
284356-103G	LIFTFRAME ASSY 82",GALV,W/H	1	Page 10
284384-01G	PARALLEL ARM ASSY, GALV	2	Page 12
284924-01	LEVER ROD WELDMNT, RA	1	Page 18
284925-01	PROTECTOR ARM, LEVER WELDMNT	1	Page 18
285509-01-100	ASSY SWITCH UP-DOWN, NO PLATE	4	Page 21
285512-01	SW&CBL ASSY MOL 6POSN, UP-DOWN	1	Page 20
285512-02	SW&CBL ASSY MOL 6POSN, IN-OUT	1	Page 20
286133-01	LIMIT SWITCH ASSY, NORMALLY CLOSED	1	Page 17
297617-01	HOSE ASSY, .38, SAE#6, 25" LG	1	Page 11
297617-02	HOSE ASSY, .38, SAE#6, 22" LG	3	Page 11
900007-7	SCREW, PH PAN HD, ZC 10-24X1	6	Page 14, Page 23
904719-06	PIN, ROLL, Ø.188 X .75LG, SS	1	Page 18
905033-4	ROLL PIN .250 O.D.X1.75"LG	2	Page 10, Page 12
907207-02	CIRCUIT BREAKER, 150A PB TRIP	1	Page 26
908062-01	BEARING, SELF LUBE, ø.38 X .25	1	Page 16

Comply with the following **WARNINGS** and **SAFETY INSTRUCTIONS** while maintaining Liftgates. See Operation Manual for operating safety requirements.

## **⚠ WARNING**

- Do not stand, or allow obstructions, under the platform when lowering the Liftgate. **Be sure your feet are clear of the Liftgate.**
- Keep fingers, hands, arms, legs, and feet clear of moving Liftgate parts (and platform edges) when operating the Liftgate.
- **Correctly stow platform when not in use. Extended platforms could create a hazard for people and vehicles passing by.**
- **Disconnect Liftgate power cable from battery** before repairing or servicing Liftgate.
- If it is necessary to stand on the platform while maintaining the Liftgate, keep your feet and any objects clear of the inboard edge of the platform. Your feet or objects on the platform can become trapped between the platform and the Liftgate extension plate.
- Recommended practices for welding on steel parts are contained in the current **AWS (American Welding Society) D1.1 Structural Welding Code - Steel**. Damage to Liftgate and/or vehicle, and personal injury could result from welds that are done incorrectly.
- Recommended practices for welding on aluminum parts are contained in the current **AWS (American Welding Society) D1.2 Structural Welding Code - Aluminum**. Damage to Liftgate and/or vehicle, and personal injury could result from welds that are done incorrectly.
- Recommended practices for welding galvanized steel are contained in the current **AWS (American Welding Society) D19.0 Welding Zinc-Coated Steel**. Damage to Liftgate and/or vehicle, and personal injury can result from welds that are done incorrectly.



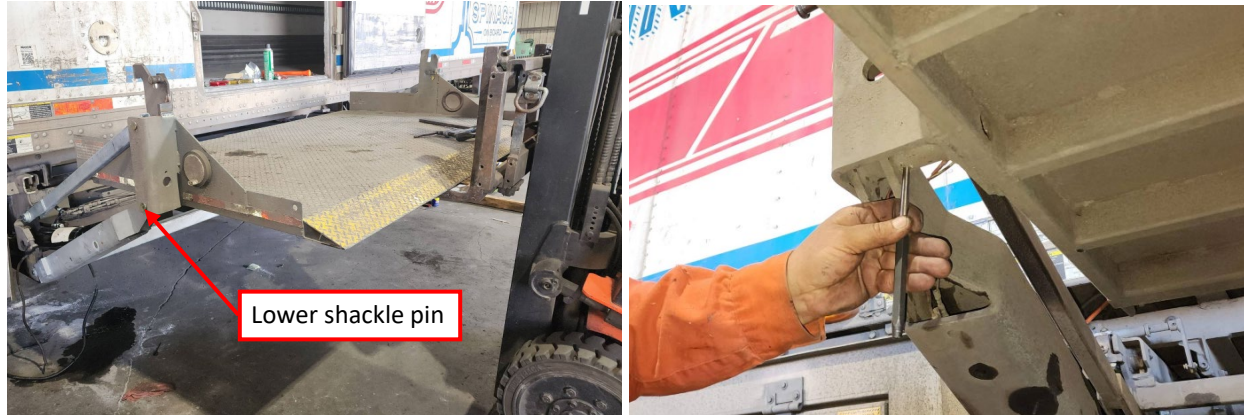
## **SAFETY INSTRUCTIONS**

- Read and understand the instructions in this **Maintenance Manual** before performing maintenance on the Liftgate.
- Before operating the Liftgate, read and understand the operating instructions in **Operation Manual**.
- Comply with all **WARNING** and instruction decals attached to the Liftgate.
- Keep decals clean and legible. If decals are illegible or missing, replace them. Free replacement decals are available from **Maxon Customer Service**.
- Consider the safety and location of bystanders and location of nearby objects when operating the Liftgate. Stand to one side of the platform while operating the Liftgate.
- Do not allow untrained persons to operate the Liftgate.
- Wear appropriate safety equipment such as protective eyeglasses, face shield and clothing while performing maintenance on the Liftgate and handling the battery. Debris from drilling and contact with battery acid may injure unprotected eyes and skin.
- Be careful working by an automotive type battery. Make sure the work area is well ventilated and there are no flames or sparks near the battery. Never lay objects on the battery that can short the terminals together. If battery acid gets in your eyes, immediately seek first aid. If acid gets on your skin, immediately wash it off with soap and water.
- If an emergency situation arises (vehicle or Liftgate) while operating the Liftgate, release the control switch to stop the Liftgate.
- A correctly installed Liftgate operates smoothly and reasonably quiet. The only noticeable noise during operation comes from the power unit while the platform is raised. Listen for scraping, grating and binding noises and correct the problem before continuing to operate Liftgate.
- Lower Liftgate platform to ground before repairing or servicing Liftgate.
- Use only **Maxon Authorized Parts** for replacement parts. Provide Liftgate model and serial number information with your parts order. Order replacement parts from:

**MAXON LIFT CORP. Customer Service**  
**11921 Slauson Ave., Santa Fe Springs, CA 90670**

**Online: [www.maxonlift.com](http://www.maxonlift.com)**  
**Express Parts Ordering: Phone (800) 227-4116 ext. 4345**  
**Email: Ask your Customer Service representative**

1. Run the platform out and raise to access roll pins in lower shackle pins. Temporarily support the platform with forklift or jack stand while removing roll pins. Do not remove the lower pins at this time.



2. Lower platform onto 4 x 4 blocks. Position the blocks below the left-hand and right-hand towers as shown.



3. Remove the roll pins from the upper shackle pins. Remove RH and LH upper pins.



4. Remove RH and LH lower pins.



5. Disconnect AMP connector from platform lights and pull connector back through the shackle hole on both sides.



6. Remove the platform.



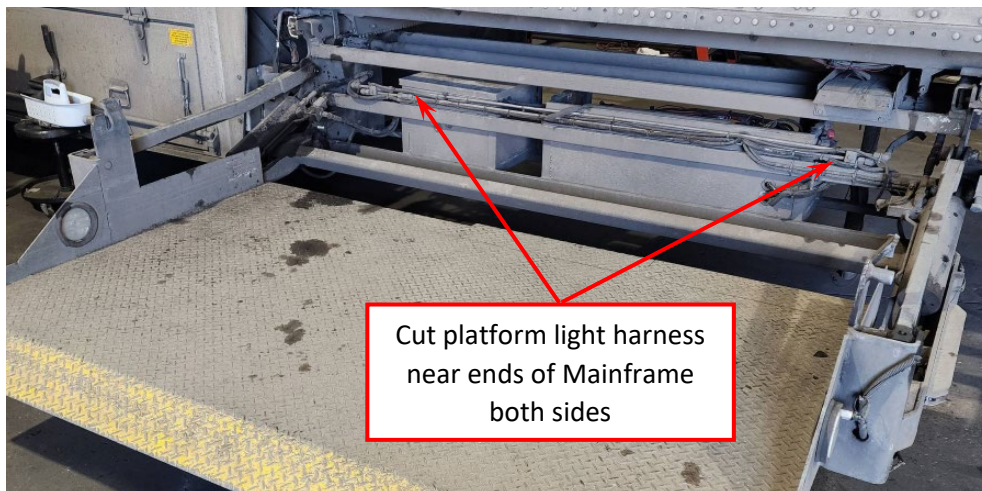
7. Remove the roll pins from the Mainframe-Parallel arm pins and remove RH and LH Parallel Arms. The old Parallel Arms can be discarded. They will be replaced with new parts.



8. Use a 3/16" drill bit to drill out light bar rivets. Remove the light bar and all light bar harness ties from the Liftframe.



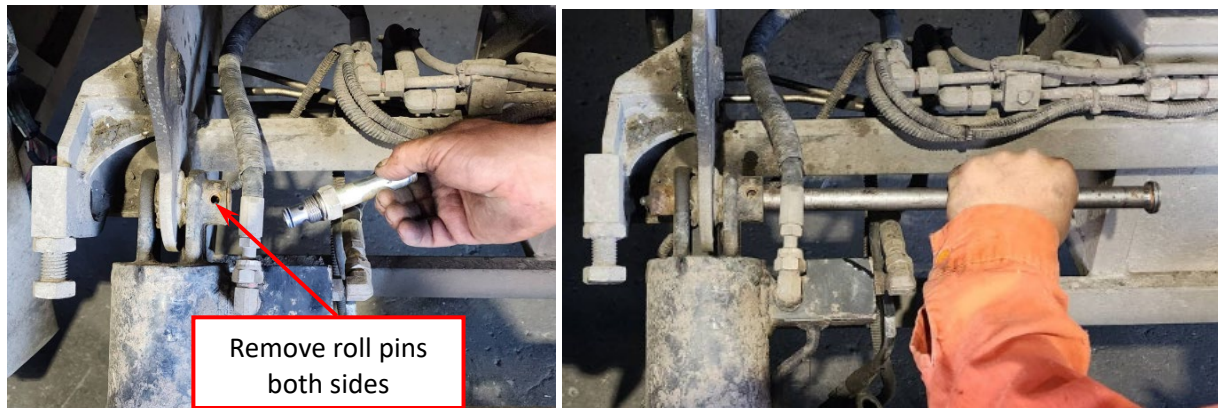
9. Cut the platform light harness near the ends of Mainframe and pull the harness out of the Liftarm. Repeat for the other side. The light harness will be reconnected after replacing the Liftframe.



10. Remove roll pins from cylinder rod end and remove cylinder rod pins. Remove cylinder rod pins from Liftframe.

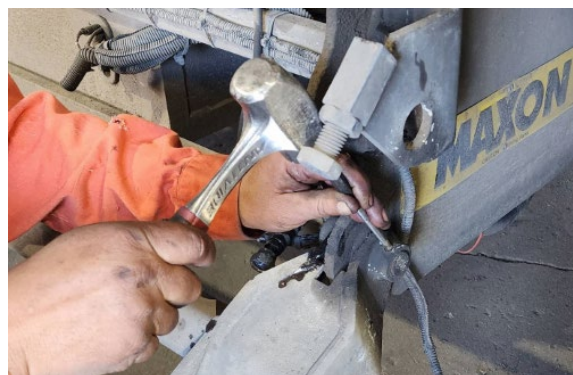


11. Remove cylinder base end roll pins. Remove the cylinder lock valve to access cylinder pin and remove cylinder pins.



12. Disconnect hoses from cylinders and set cylinders to the side. They will be reused unless new cylinders are specified for your rebuild.

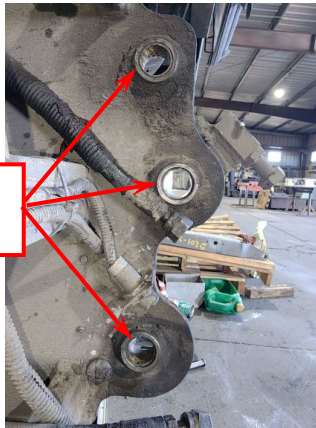
13. Remove roll pins from Liftframe/Mainframe pins and remove Liftframe /Mainframe pins.



14. Remove the Liftframe from Mainframe. The old Liftframe can be discarded. It will be replaced with a new part.

15. Remove bearings from the six pin holes.

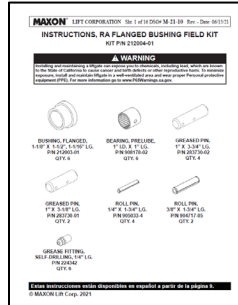
Remove bearings  
(Both sides)



Use bearing driver to remove  
old bearings (Both sides)

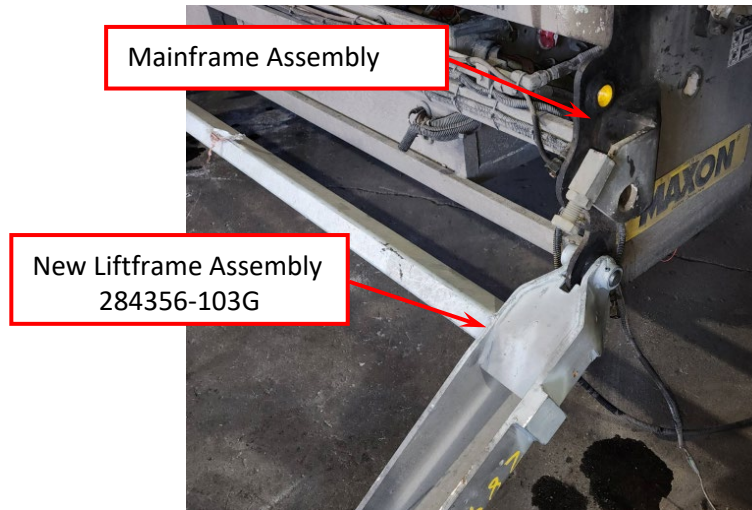


16. Inspect Mainframe pin bushings for damage. If bushing has worn through the metal backing or has a badly worn pin, as shown below, you will need to use kit # 212004-01 to repair the damaged mainframe holes before proceeding. Follow the instructions in the kit, then return to this guide to continue with the rebuild.

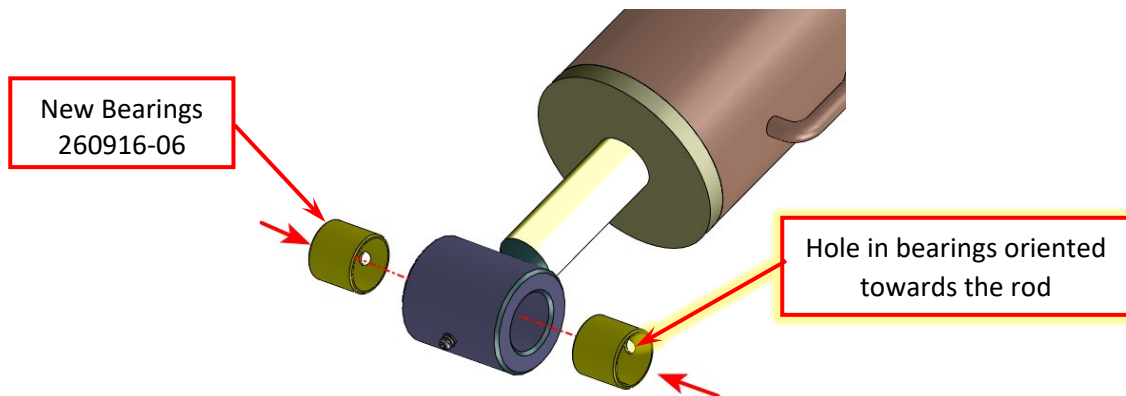


If bearings or pins are not damaged, clean holes and insert new bearings provided in kit # 212004-01

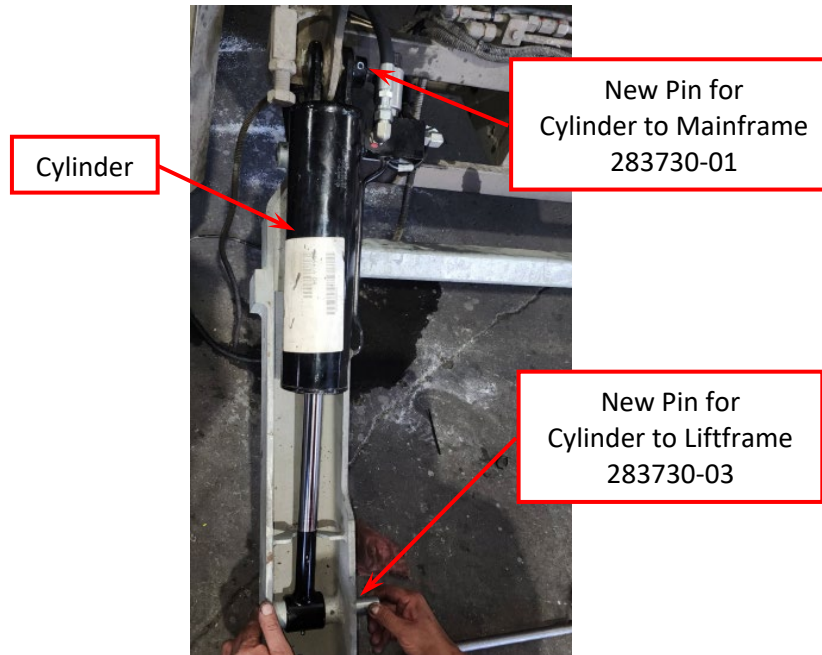
17. Use the new Liftframe pins, part # 283730-02, 1" dia. x 3.75" long, from the flanged bushing kit # 212004-01 to install new Liftframe Assembly, part # 284356-103G to the Mainframe Assembly. Secure with ¼" x 1.75" roll pins.



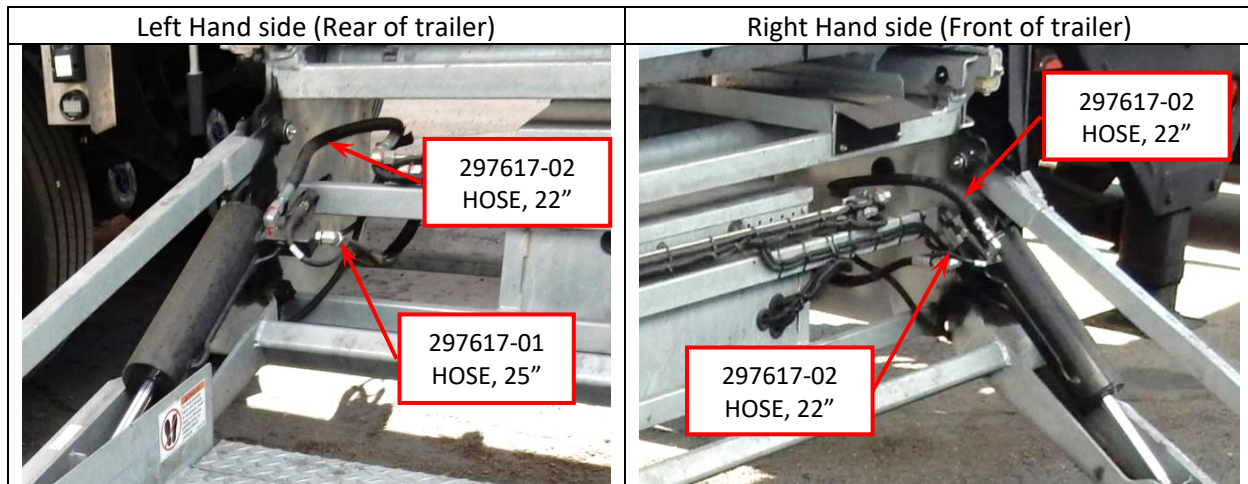
18. Replace cylinder rod cross tube bearings, 1.125" OD x 1" ID x 1" long, part # 260916-06, on both cylinders. Use a bearing driver to remove old bearings from rod cross tube, clean rod cross tube ID, and insert new bearings on both sides of the rod cross tube. The hole in the bearings should be oriented towards the rod, as shown below.



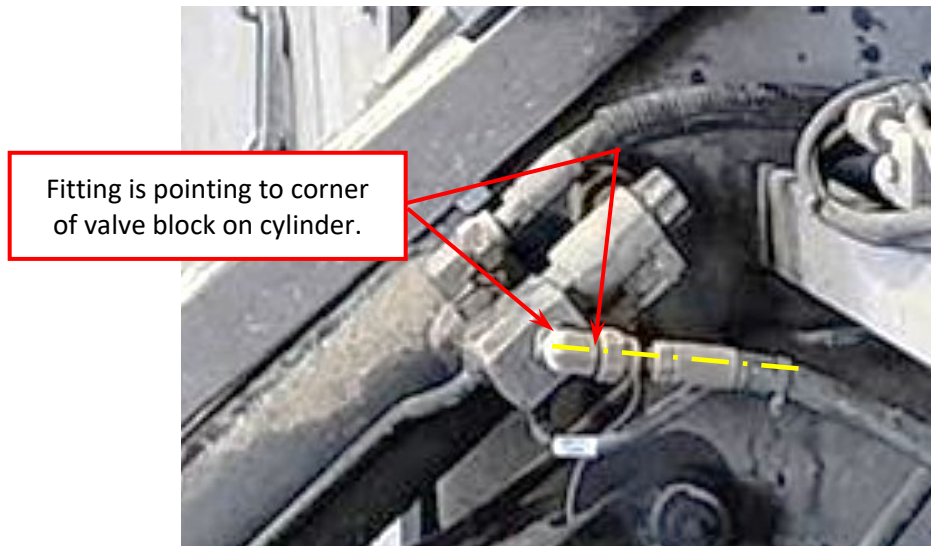
19. Use the new Cylinder pins, part # 283730-03, 1" dia. x 5.13" to install the cylinders to the Liftframe Assembly. Secure with 3/8" x 1.75" roll pins.
20. Use the new Cylinder pins, part # 283730-01, 1" dia. x 3.13" from the flanged bushing kit # 212004-01, to connect the Cylinders to the Mainframe Assembly. Secure with 3/8" x 1.75" roll pins.



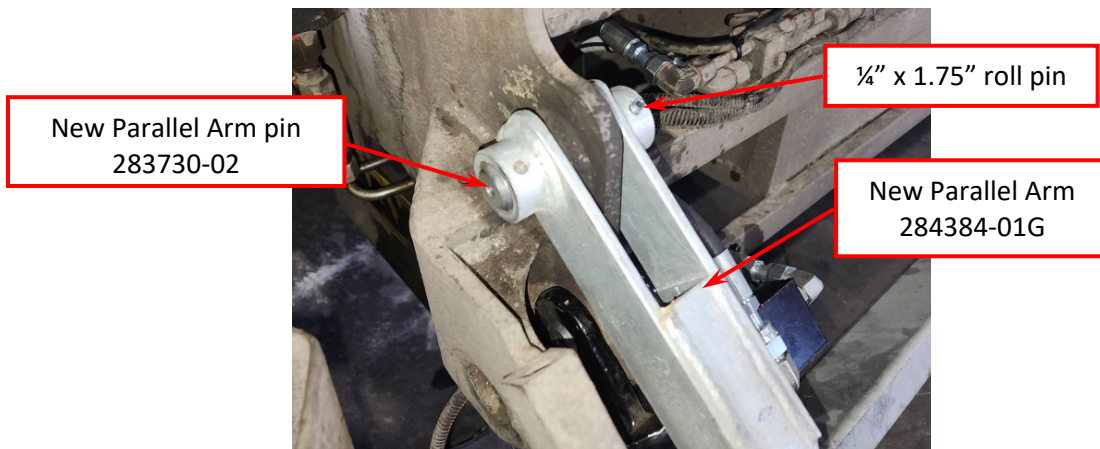
21. Replace all cylinder hydraulic hoses with the new hoses provided. Tighten hose fitting to 31 ft-lbs. (See table on page 23 for torque methods and values.) Cover the entire length of each hose with the provided 3/4" split loom, part # 040104—secure split loom to hoses with the provided tie straps, part # 208153.



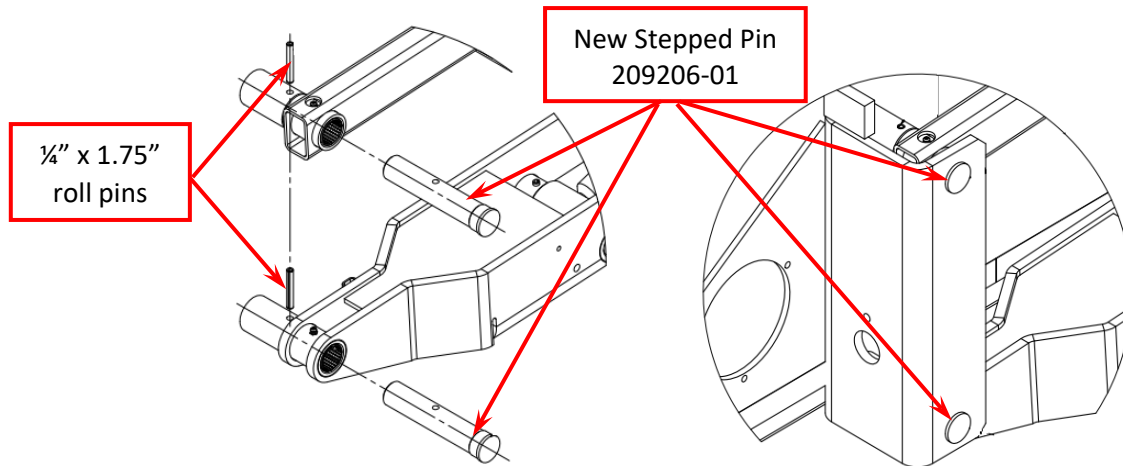
22. Be sure to position new hoses as shown to avoid interference with Mainframe.



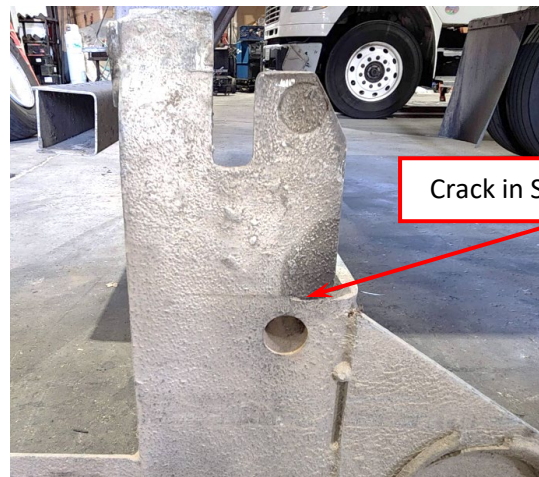
23. Use the new Parallel Arm pins, part # 283730-02, 1" dia. x 3.75" long, from the flanged bushing kit # 212004-01 to install new Parallel Arm # 284384-01G to the Mainframe Assembly. Secure with  $\frac{1}{4}$ " x 1.75" roll pins.



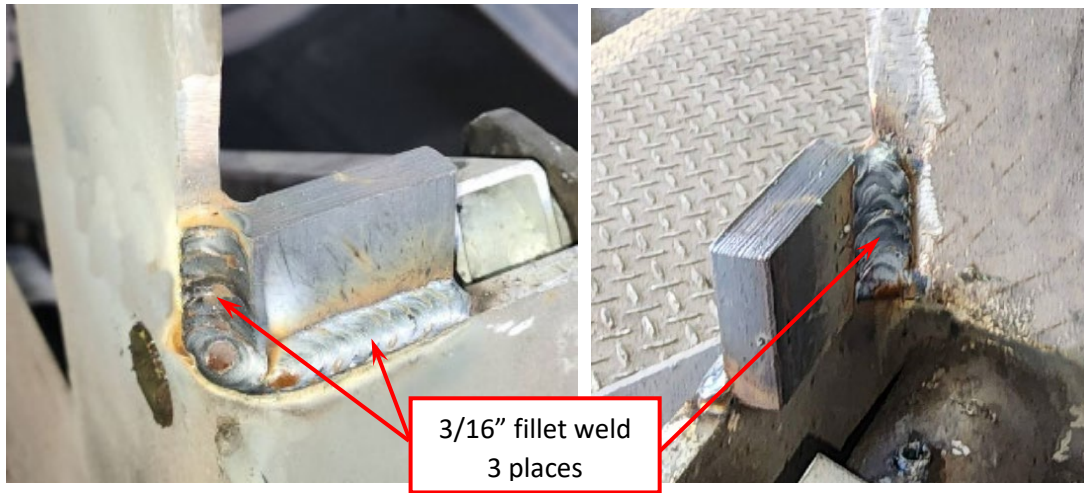
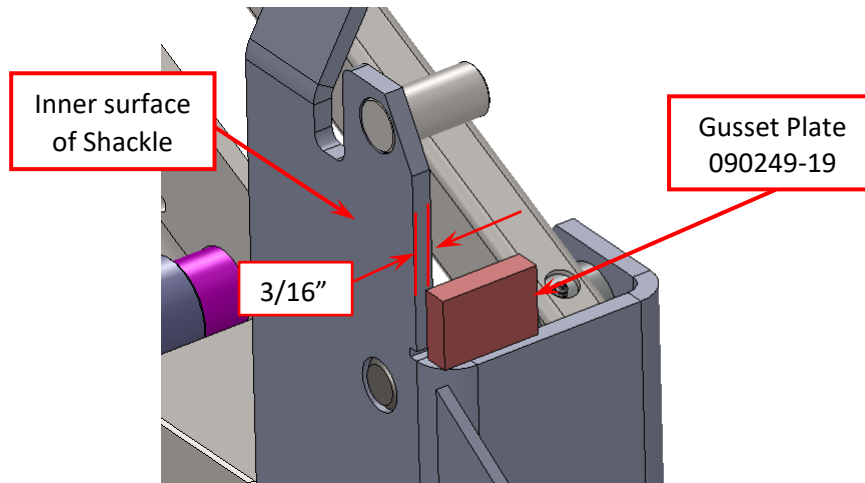
24. Reinstall platform to Liftframe Assembly and Parallel Arms using the new stepped pins in kit # 209205-01. Use the instructions in the kit to install the new stepped pins.



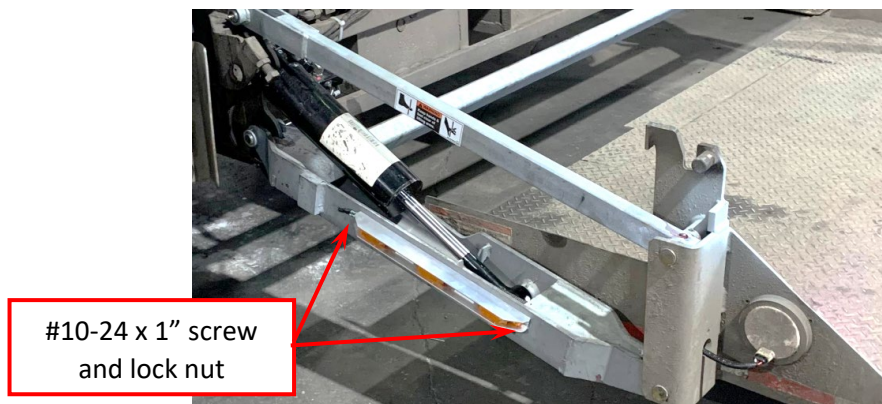
25. Inspect Shackle plates. If Shackle plate has a crack or missing top portion, you will need to order part # 212671-01, RA SHACKLE REPAIR KIT.



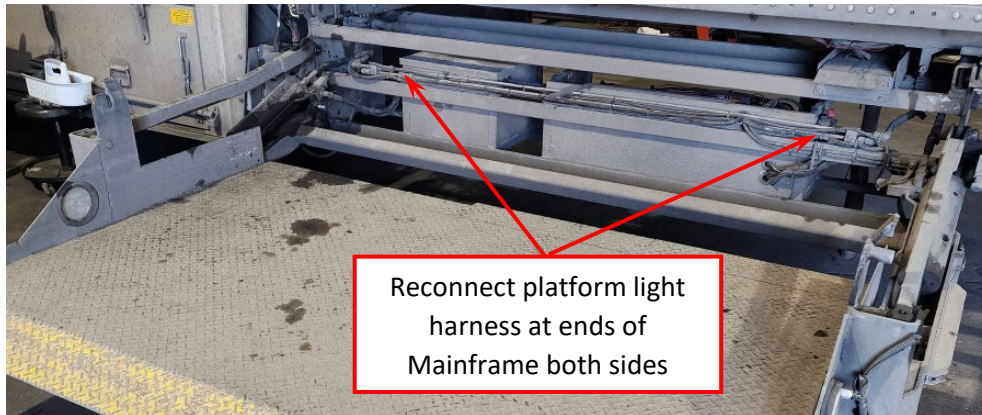
26. Add Gusset Plates, part # 090249-19, to platform shackles as shown below. Position Gusset Plate 3/16" from inner surface of Shackle and weld with 3/16 fillet weld. Right-hand side shown; repeat for left-hand side. Clean and touch up with cold galvanizing compound.



27. Route platform work light/light bar through new Liftframe Assembly. Attach light bars to Liftframe with the provided #10-24 x 1" screw, part # 900007-7, and lock nut, part # 901003. Tighten to 15 in-lbs.

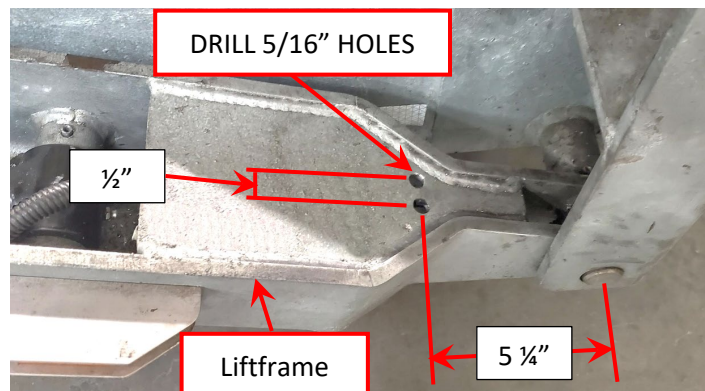


28. Use the provided sealed heat-shrink butt splices, part # 263891-01, to reconnect platform light harness where it was cut in step 9.



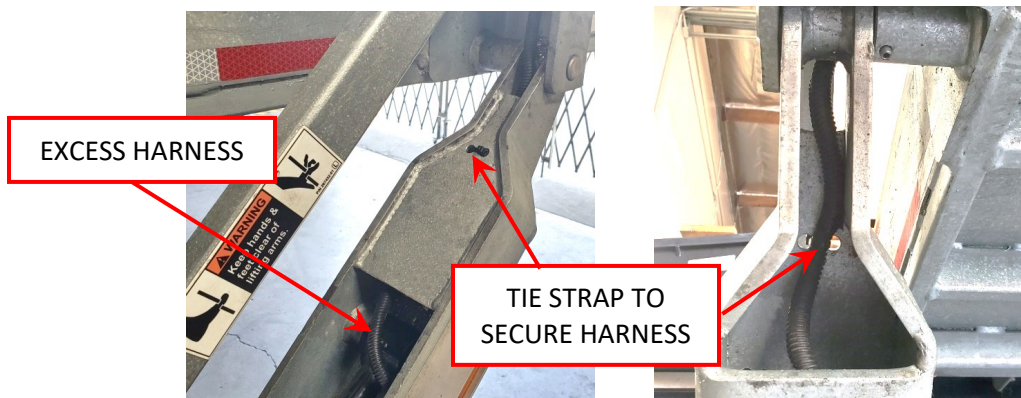
29. Position platform so Liftframe is parallel with the ground.

30. Drill two 5/16" holes, as shown below. Be careful not to damage harness when drilling. Clean and Deburr as needed to remove sharp ends that may cut the ties.



31. Raise platform to bed level.

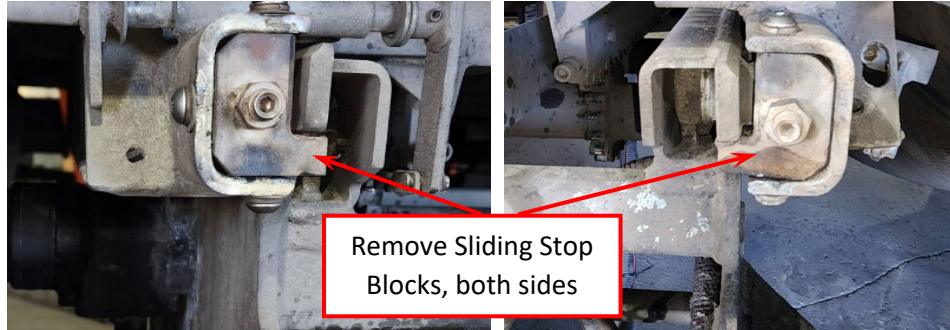
32. Pull excess harness back towards cylinder rod end and use plastic tie strap, part # 208153, through the two drilled holes to secure harness to top inside of lift arm.



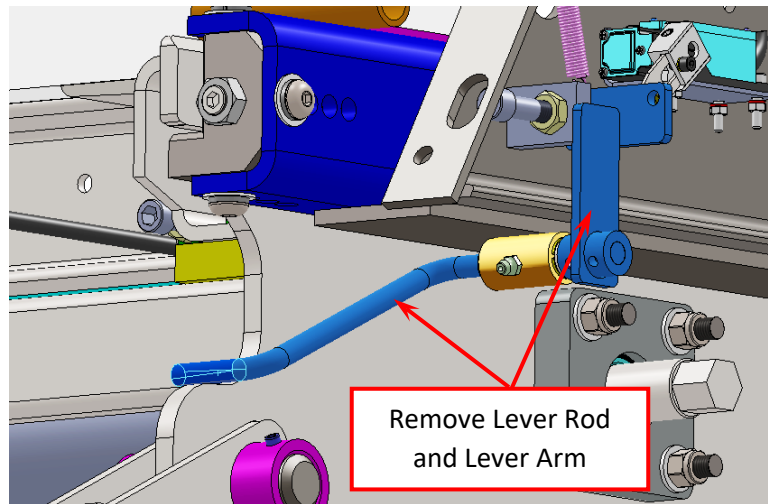
33. Repeat steps for the other side of Liftframe.

34. Cycle platform to the out position.

35. Remove Sliding Stop Blocks.



36. Remove Lever Rod and Lever Arm.

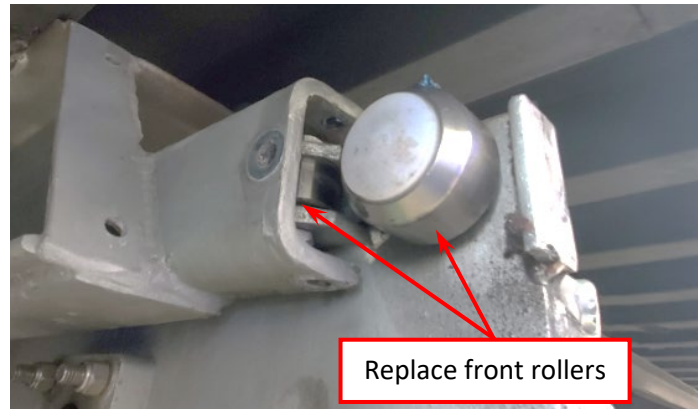


37. While using a forklift under the platform for support, jog the "OUT" switch to slide the Mainframe approximately 4" out of the front of the slide rails exposing the front rollers.

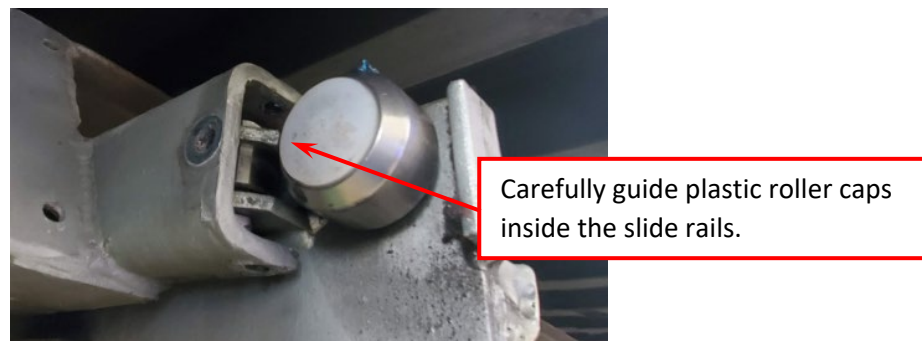




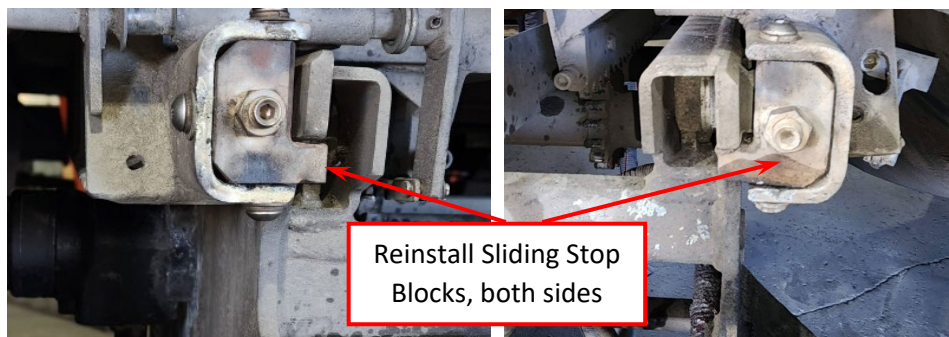
38. Replace the front rollers using the instructions in kit # 210044-02, RA 2" Roller kit.



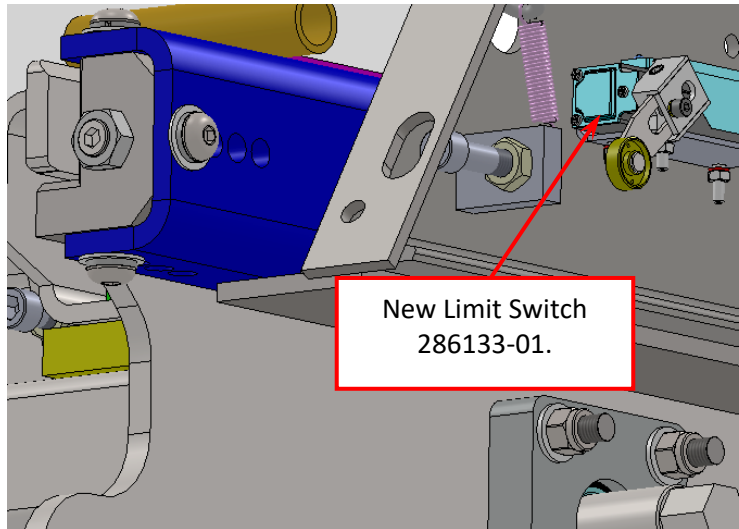
39. While using a forklift under the platform for support, jog the "IN" switch to slide the Mainframe back into the slide rail. Go slow, and keep Mainframe centered so plastic roller caps go inside the slide rails.



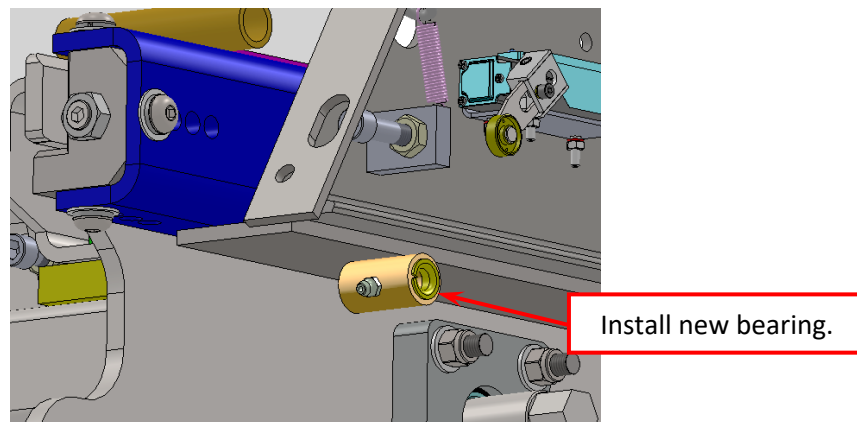
40. Reinstall the front Sliding Stop Blocks with exiting bolts. Tighten to 16-18 ft-lbs.



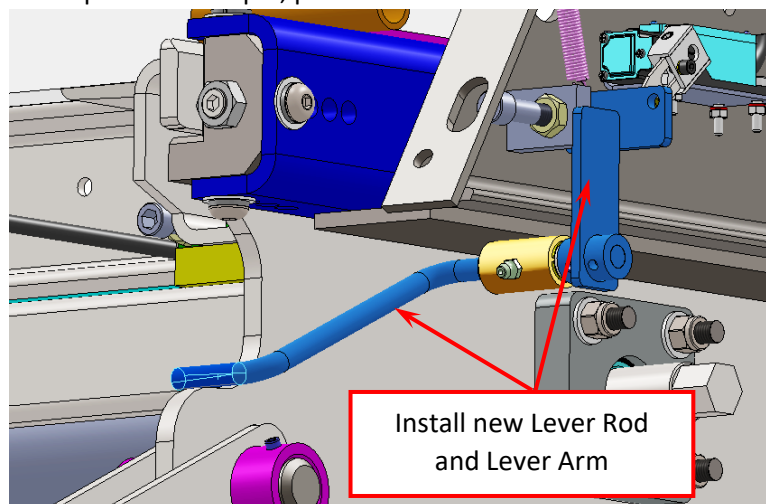
41. Install new Limit Switch, part # 286133-01.



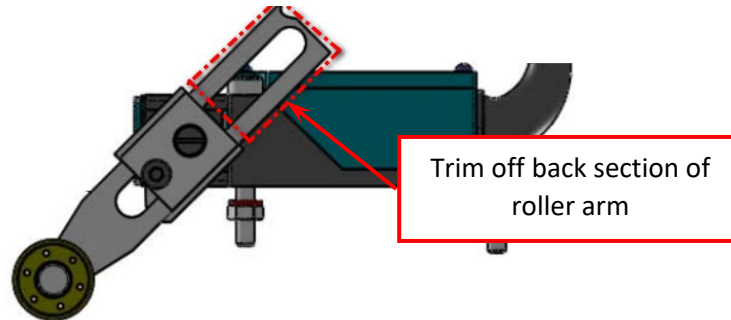
42. Install new bearing in Lever Rod tube, part # 908062-01, 3/8" dia. X .25" long.



43. Install new Limit Switch Lever Rod, and Lever Arm provide. 284924-01, Lever Rod, and 284925-01, Lever Arm. Secure with provided roll pin, part # 904719-06.

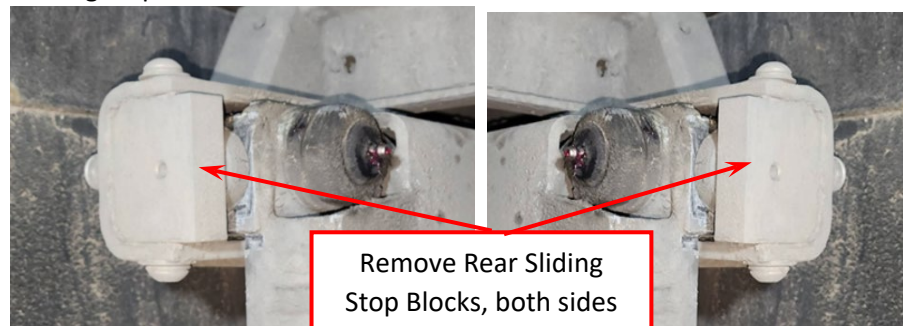


44. After Limit Switch is adjusted to engage correctly with Lever Arm, trim excess material from Limit Switch roller arm.

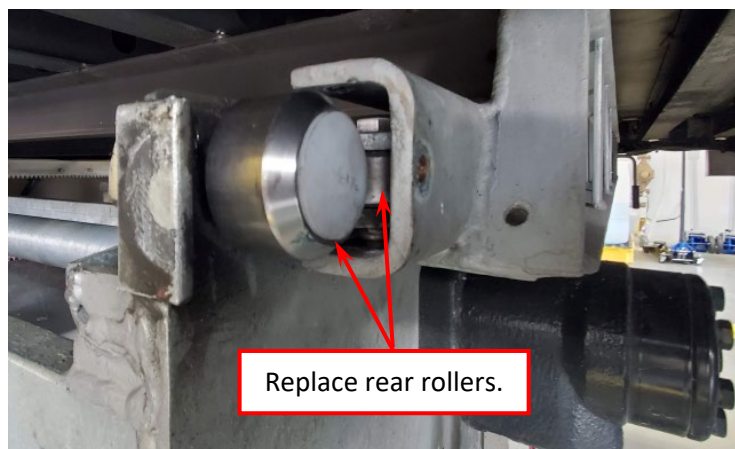


45. Run platform all the way in under the trailer.

46. Remove rear sliding stop blocks.

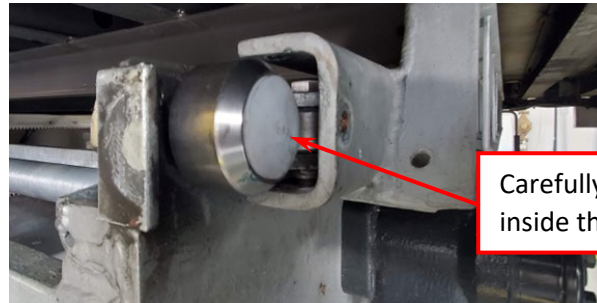


47. While using a forklift under the platform for support, jog the "IN" switch to slide the Mainframe approximately 4" out the rear of the slide rails exposing the rear rollers.



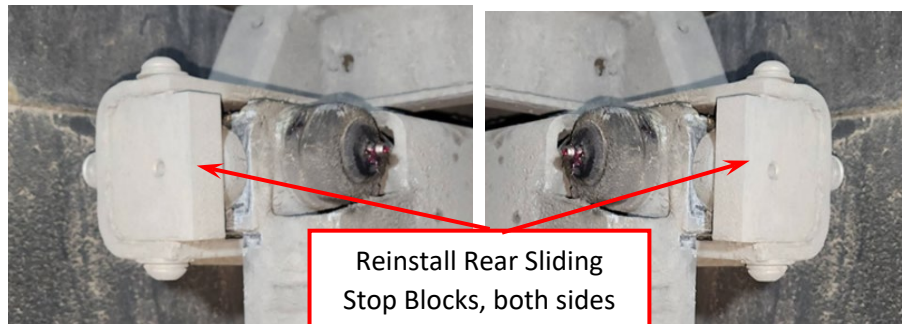
48. Replace the rear rollers using the instructions in kit # 210044-02, RA 2" Roller kit.

49. While using a forklift under the platform for support, jog the "OUT" switch to slide the Mainframe back into the slide rail. Go slow, and be careful to have Mainframe centered so plastic roller caps go inside the slide rails.



Carefully guide plastic roller caps inside the slide rails.

50. Reinstall rear Sliding Stop Blocks with exiting bolts. Tighten to 16-18 ft-lbs.



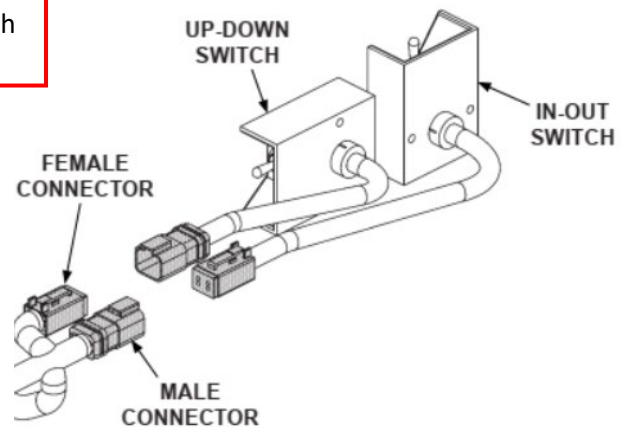
Reinstall Rear Sliding Stop Blocks, both sides

51. Replace main up/down switch and in/out switch.

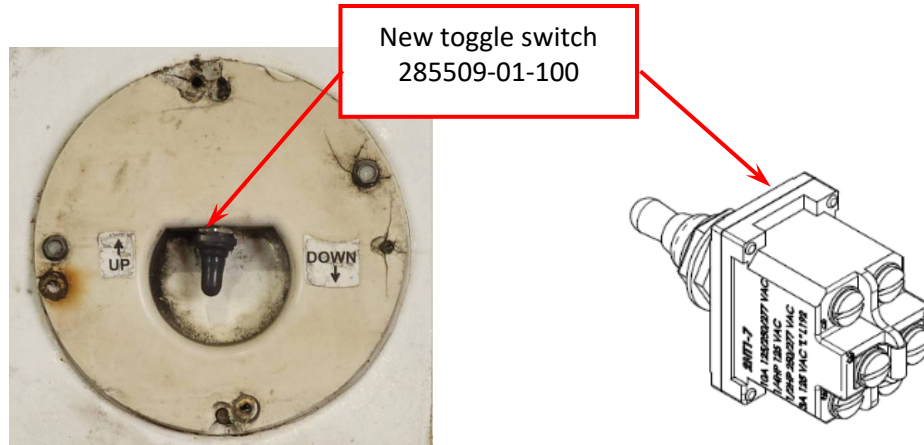


New UP/DWN Switch  
285512-01

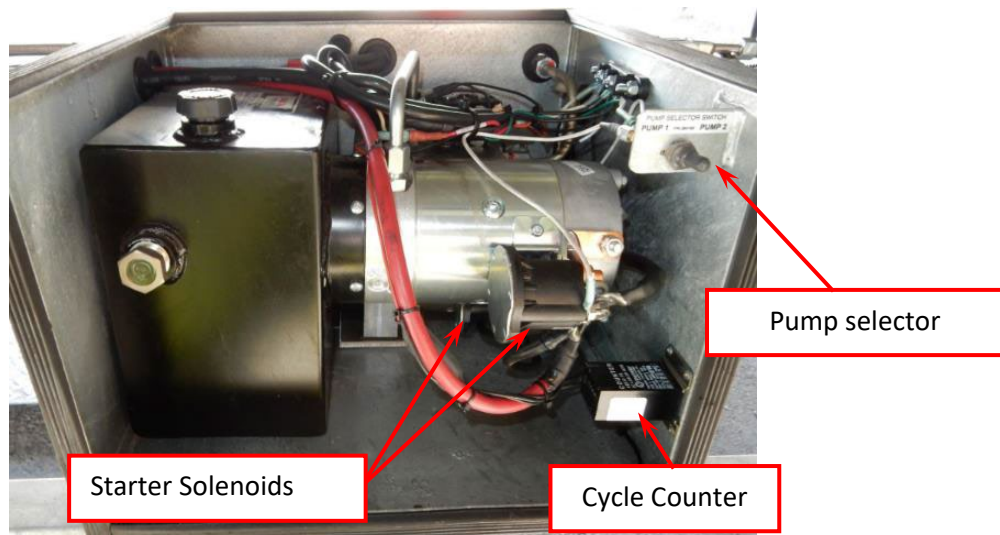
New IN/OUT Switch  
285512-02



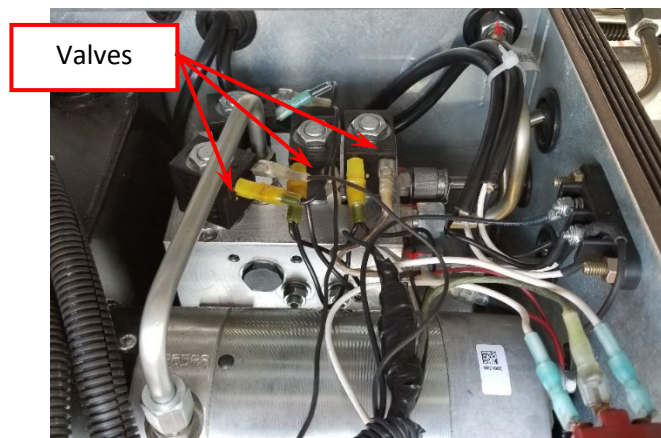
52. Replace two external wall toggle switches and two internal wall toggle switches. Remove switch cup from wall and replace toggle switch with new toggle switch with half boot, part # 285509-01-100. Spray switch terminals with electrical insulating varnish. Reinstall cup and caulk around perimeter of cup.



53. Disconnect wires from power unit. (valve coils, starter solenoids, and pump selector switch)



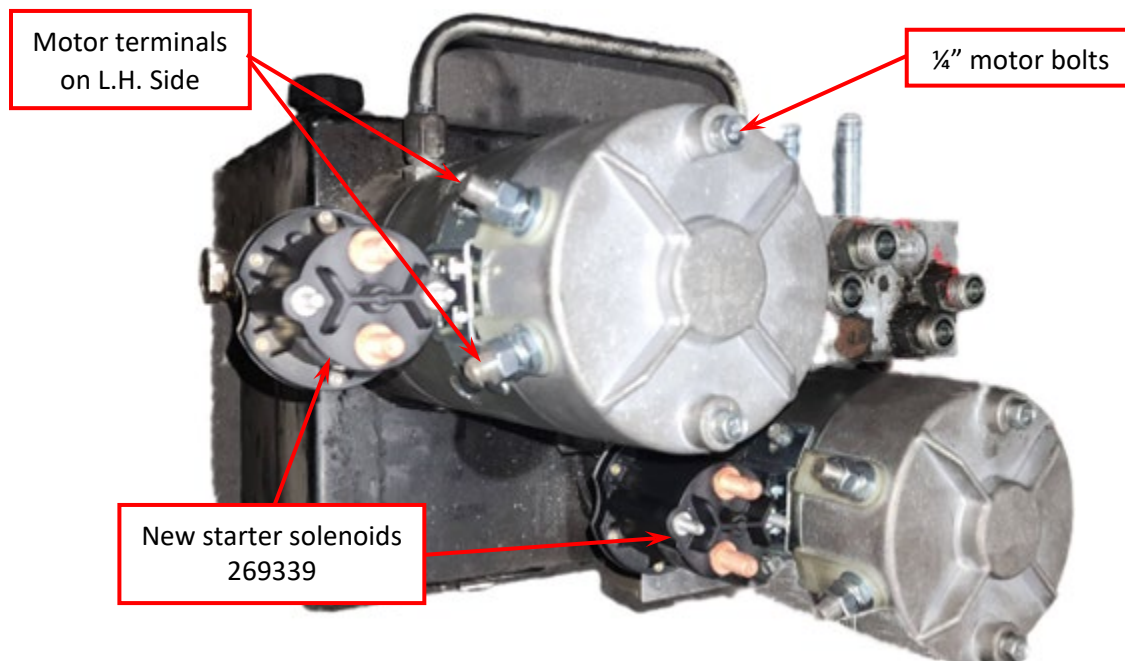
54. Drill out rivets attaching cycle counter to side wall. Set cycle counter to the side.



55. Disconnect hydraulic hard lines from power unit.
56. Remove power unit from enclosure.
57. Power unit 12 Vdc motors are not included in this kit. If 12 Vdc motors have been ordered for the liftgate you are working on they should be replaced now while the power unit is removed.

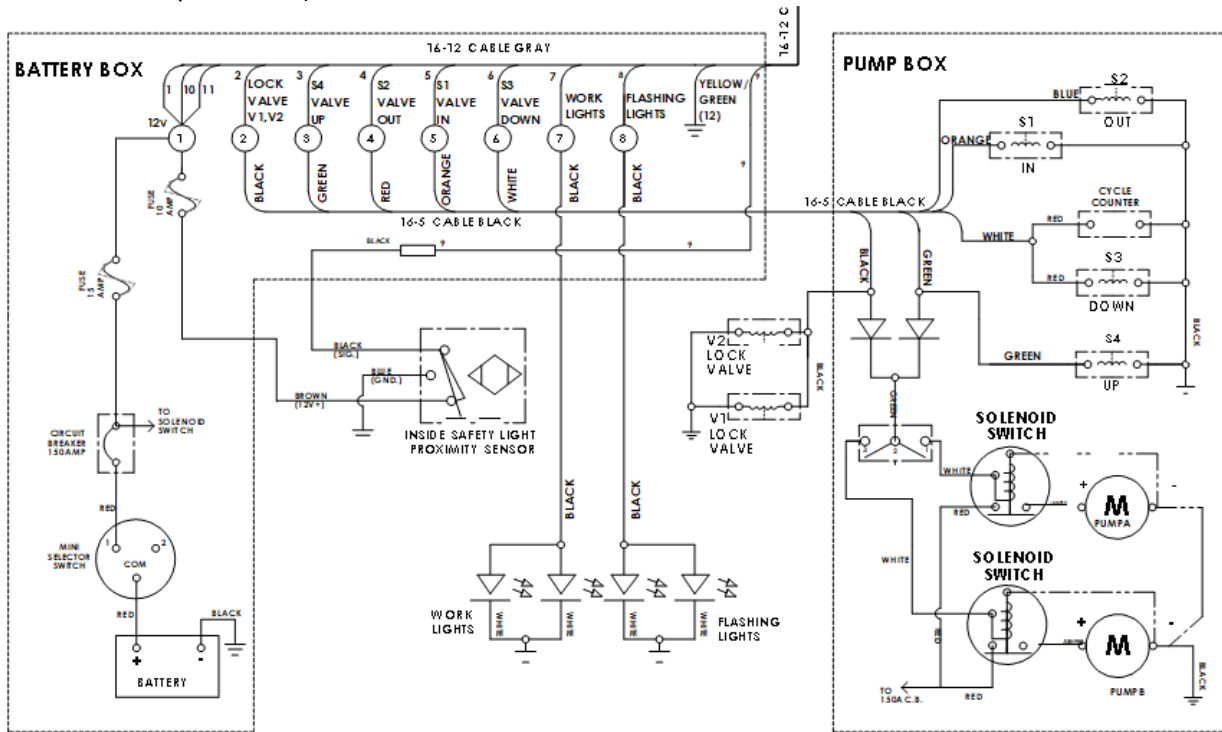
Replacing Motors:

- a) Remove the two ¼" bolts on end of the motor.
  - b) Wiggle the end of the motor back and forth while pulling it away from the power unit base to remove the motor.
  - c) Install the new motor by aligning the slot in the motor shaft with the tang on the pump shaft. Make sure that the motor terminals are oriented on the left-hand side of the motor when viewed from the bolted end of the motor.
  - d) Tighten the ¼" motor bolts to 55 in-lbs.
  - e) Repeat for the second motor.
58. Replace both starter solenoids, reusing the hardware and copper bus bars from the old solenoids. (Torque requirements are in the chart on the next page.)



59. Reinstall power unit in pump box. Use 2 pcs of the provided #10-24 x 1" screw, part # 900007-7, and lock nut, part # 901003 to reattach cycle counter to pump box. Tighten to 15 in-lbs.

60. Reconnect all hydraulics lines and electrical connections. (See table on page 23 for electrical connection torque values.)



## Hydraulic Hose Fitting Torque

## Electrical Values, Power Unit

### JIC 37°

Size	Thread	FFWR Method	ft-lb	Nm	
-4	1/4"	7/16-20	2	13	18
-6	3/8"	9/16-18	1-1/2	22	30
-8	1/2"	3/4-16	1-1/2	42	57

### ORFS (O-ring face seal)

Size	Thread	FFWR Method	ft-lb	Nm	
-4	1/4"	9/16-18	1/2 to 3/4	19	26
-6	3/8"	11/16-16	1/2 to 3/4	31	42
-8	1/2"	13/16-16	1/2 to 3/4	42	57

FFWR = Flats From Wrench Resistance

Flats Method Tighten the nut lightly with a wrench (approximately 30 in.lb.), clamping the tube flare between the fitting nose and the sleeve. This is considered the Wrench Resistance (WR) position. Starting from this position, tighten the nut further by the number of flats from Tables above. A flat is referred to as one side of the hexagonal tube nut and equates to 1/6 of a turn.

Motor Solenoid Switch	
Coil Resistance:	5.4Ω @ 70°F. ±15%
Ampere: (Across #10 coil terminal studs)	2.2A @ 12.5V
#10 Coil terminal torque:	10-15 lb.-in max.
5/16" Contact terminal torque:	30-35 lb.-in max.
Hyd. Solenoid Valves (S1, S2, S3, S4)	
Coil Resistance: (Across male quick connects)	4.0Ω @ 70°F. ±15%
Ampere:	3.1A @ 12.5V / 2.5A @ 10V
Coil nut torque:	15-45 lb.-in
Valve cartridge torque:	25-30 lb.-ft max.
Hyd. Solenoid Lock Valve	
Coil Resistance:	8.0Ω @ 70°F. ±15%
Ampere:	1.5A @ 12.5V
Coil nut torque:	15-45 lb.-in
Valve cartridge torque:	18.5-22 lb.-ft max.
Relays (5 pin)	
Coil Resistance: (Across terminals 85 & 86)	90Ω @ 70°F. ±10%
Ampere:	133mA @ 12V
Motor Starter Switch	Hyd. Solenoid Lock Valve
#10 Coil terminals	Coil nut
5/16" Contact terminals	Valve cartridge nut

## 61. Change hydraulic fluid

**CHANGING HYDRAULIC FLUID****CAUTION**

Keep dirt, water and other contaminants from entering the hydraulic system. Before opening the hydraulic fluid reservoir filler cap, drain plug and hydraulic lines, clean up contaminants that can get in the openings. Also, protect the openings from accidental contamination.

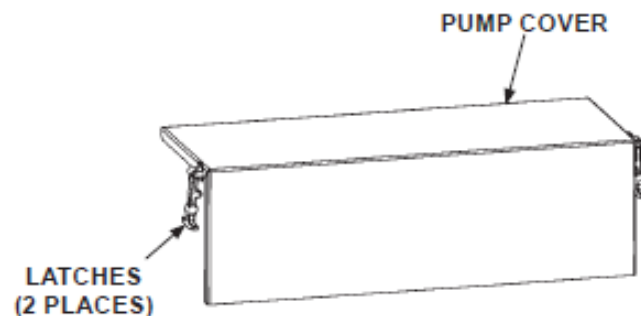
**NOTE:** Use correct grade of hydraulic fluid for your location.

+50 to +120 Degrees F - Grade ISO 32

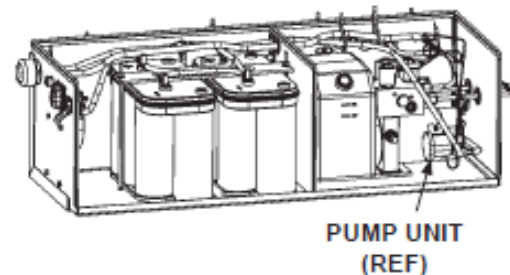
Below + 70 Degrees F - Grade ISO 15 or MIL-H-5606

See **TABLES 13-1 & 13-2** for recommended brands.

1. Unstow and lower Liftgate to ground.

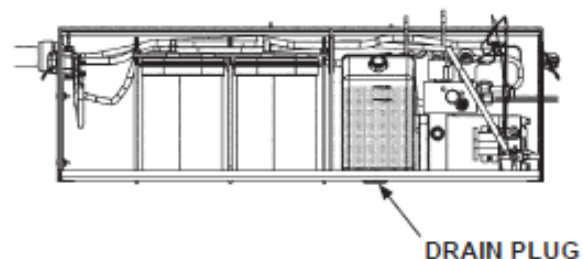


2. Unlatch and remove the pump cover (FIG. 14-1).



**REMOVE PUMP COVER**  
**FIG. 14-1**

3. Place empty 5 gallon bucket under drain plug (FIG. 14-2). Remove drain plug (FIG. 14-2). Drain hydraulic fluid. Re-install drain plug (FIG. 14-2).

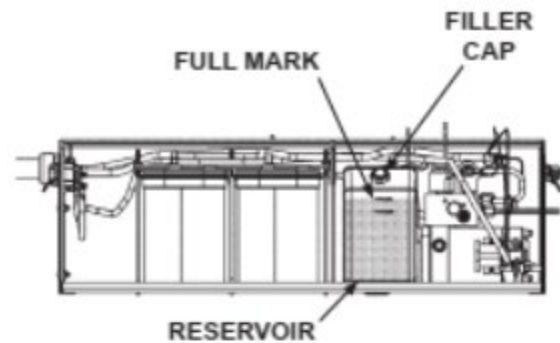


**POWER UNIT**  
**FIG. 14-2**



4. Remove filler cap (FIG. 15-1). Add 1.85 gallons (7.4 qt) of hydraulic fluid to reservoir. Hydraulic fluid should be at the FULL mark (FIG. 15-1). Reinstall filler cap (FIG. 15-1).

5. Stow the lift and do the **CHECKING HYDRAULIC FLUID** procedure in this section of the manual.

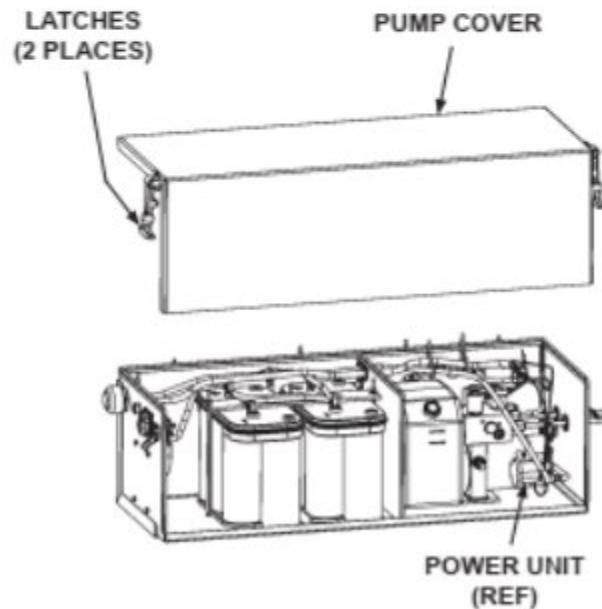


**POWER UNIT FLUID LEVEL**  
FIG. 15-1

### CAUTION

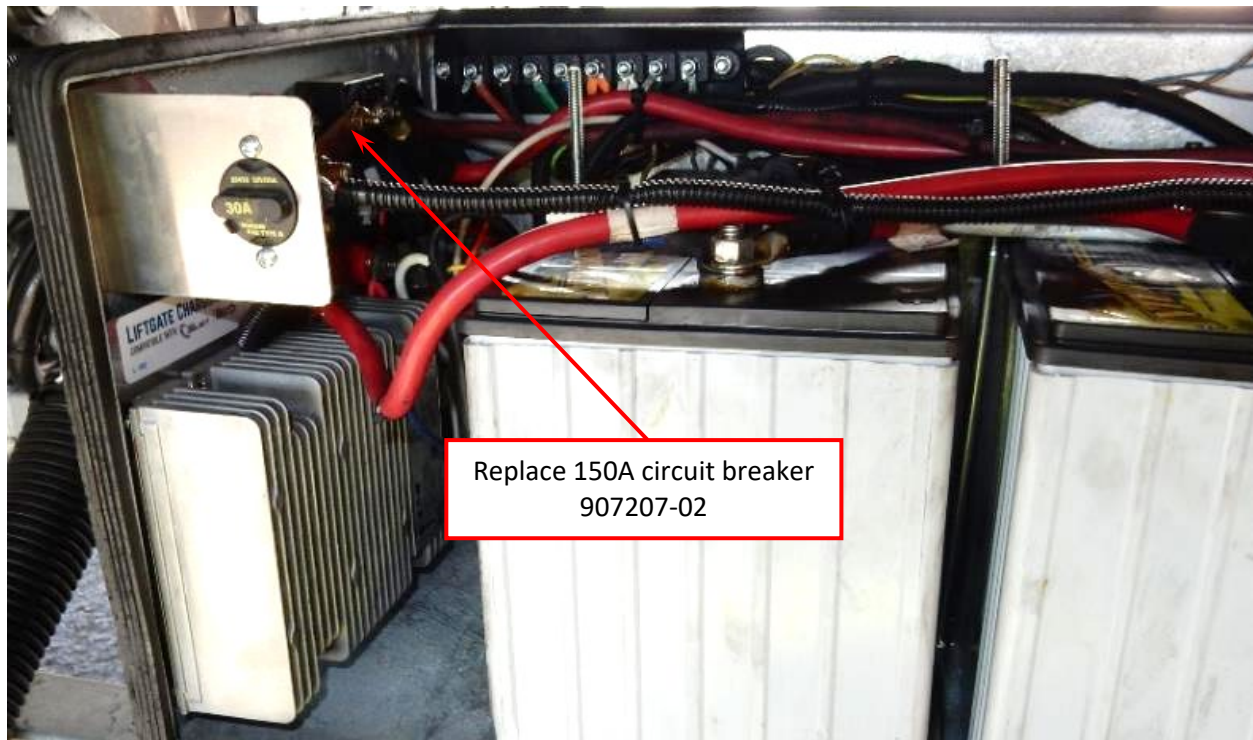
Pump cover must be correctly secured to prevent it from becoming a hazard. Ensure pump cover is latched to pump box.

6. Reinstall and latch the pump cover (FIG. 15-2).



**REINSTALL PUMP COVER**  
FIG. 15-2

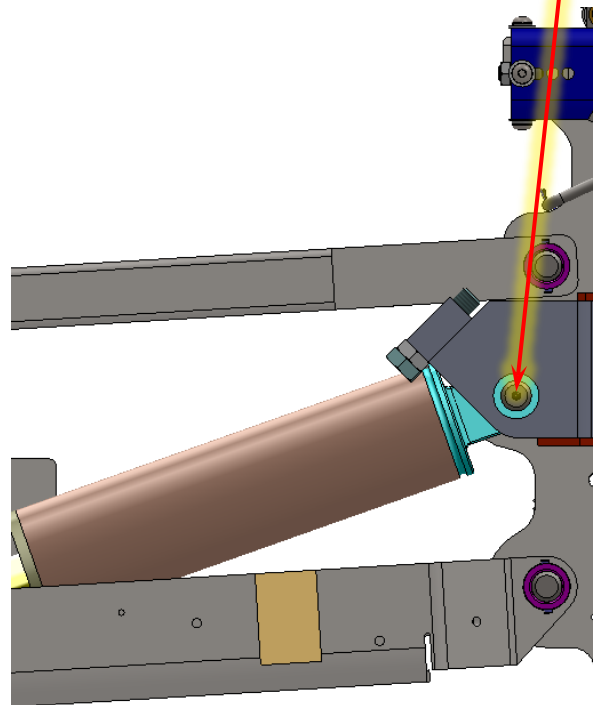
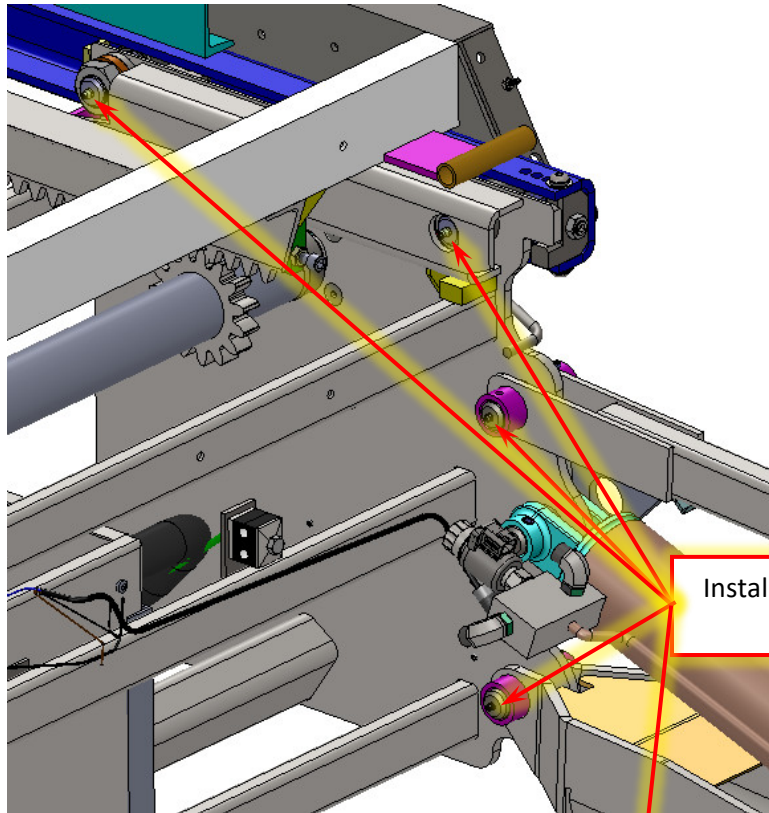
62. Replace 150 amp circuit breaker on left-hand side of battery box.



63. Clean and tighten all battery connections. Spray all exposed terminals with electrical insulating varnish. Check that battery hold-downs are tightened, preventing battery movement.



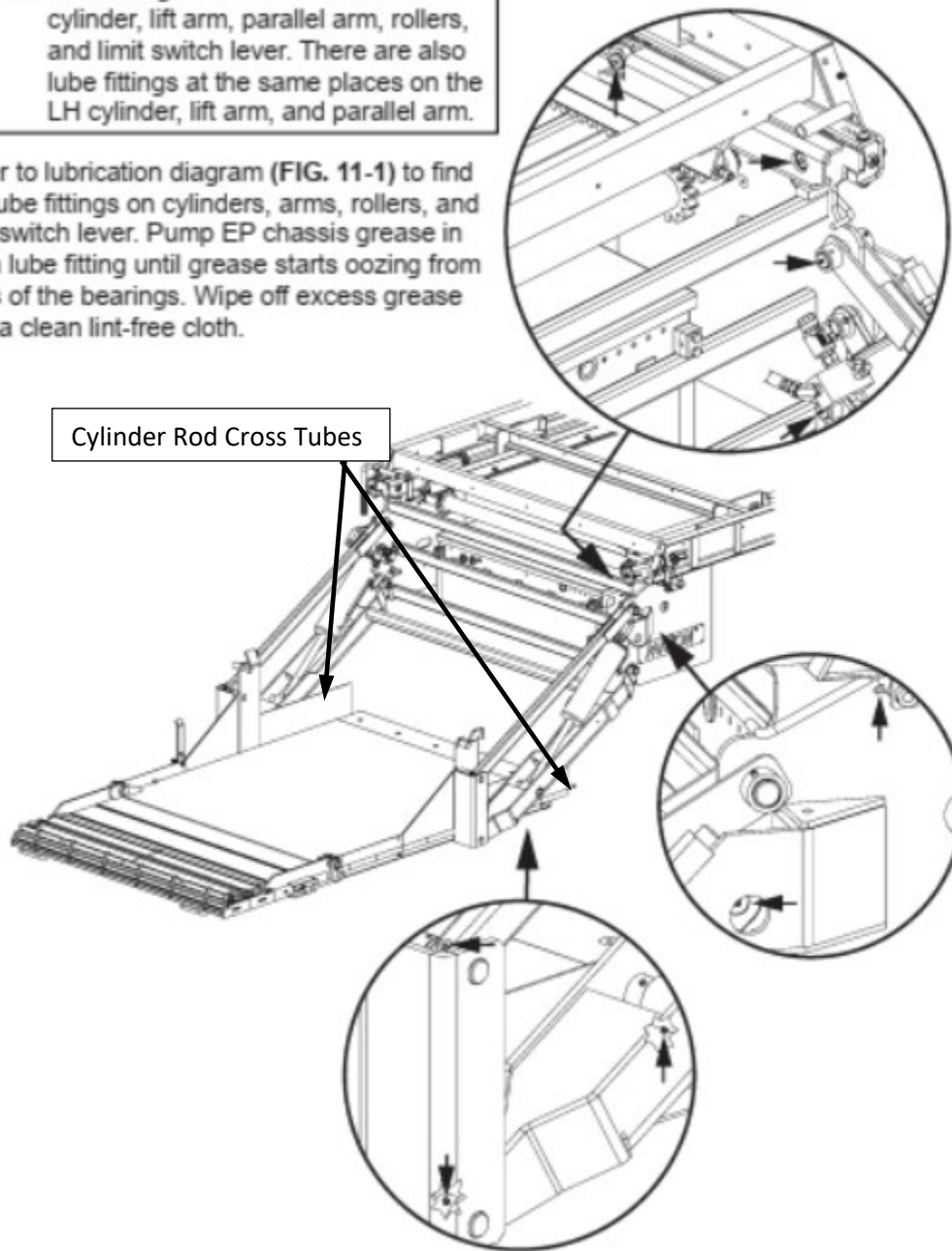
64. Install the provided new grease fittings, part # 224342, in all pins, 10 places.  
Right-hand shown. Repeat for left-hand side.



65. Grease all pins.

**NOTE:** Lube fittings are shown for the RH cylinder, lift arm, parallel arm, rollers, and limit switch lever. There are also lube fittings at the same places on the LH cylinder, lift arm, and parallel arm.

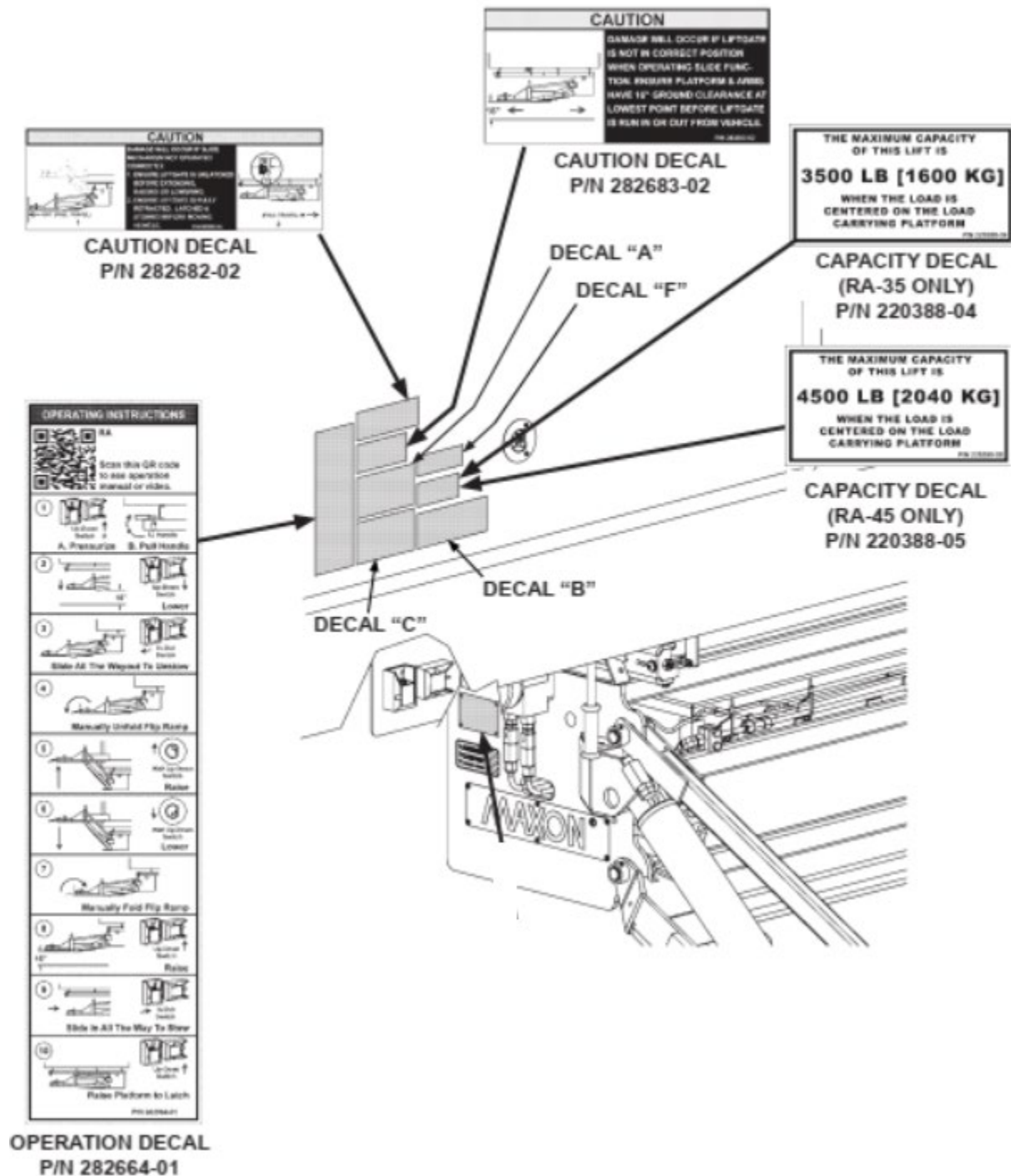
Refer to lubrication diagram (FIG. 11-1) to find the lube fittings on cylinders, arms, rollers, and limit switch lever. Pump EP chassis grease in each lube fitting until grease starts oozing from ends of the bearings. Wipe off excess grease with a clean lint-free cloth.



**RA LUBRICATION DIAGRAM**

66. Attach new decals.

## ATTACH DECALS



**ATTACH DECALS - Continued**


**CAUTION**

Always stand clear of platform area.

P/N 282522-01 (F)



**WARNING**

Read this information carefully.

- Improper operation of this Liftgate can result in serious personal injury. If you do not have a copy of the operating instructions, please obtain them from your employer, distributor, or lessor before you attempt to operate Liftgate.
- If there are signs of improper maintenance, damage to vital parts, or slippery platform surface, do not use the Liftgate until these problems have been corrected.
- If you are using a pallet jack, be sure it can be maneuvered safely.
- Do not operate a forklift on the platform.
- Do not allow any part of yours or your helper's body to be placed under, within or around any portion of the moving Liftgate, or its mechanisms, or in a position that would trap them between the platform and the ground or truck when the Liftgate is operated.
- If a helper is riding the platform with you, make sure you are both doing so safely and that you are not in danger of coming in contact with any moving or potentially moving obstacles.
- **USE GOOD COMMON SENSE**
- If load appears to be unsafe, do not lift or lower it.

For a free copy of other manuals that pertain to this model Liftgate, please visit our website at [www.maxonlift.com](http://www.maxonlift.com) or call Customer Service at (800) 327-4716. P/N 282522-01 (C)

**SAFETY INSTRUCTIONS**

Read all decals and operation manual before operating liftgate.

1. Do not use liftgate unless you have been properly instructed and have read, and are familiar with, the operating instructions.
2. Be certain vehicle is properly and securely braked before using the liftgate.
3. Always inspect this liftgate for maintenance or damage before using it. Do not use liftgate if it shows any sign of damage or improper maintenance.
4. Do not overload.
5. Make certain the area in which the platform will open and close is clear before opening or closing the platform.
6. Make certain platform area, including the area in which loads may fall from platform, is clear before and at all times during operation of liftgate.
7. This liftgate is intended for loading and unloading of cargo only. Do not use this liftgate for anything but its intended use.

P/N 282522-01 (A)



**WARNING**

Liftgate hazards can result in crushing or falling.

Keep hands and feet clear of pinch points.

If riding liftgate, make sure load is stable and footing is solid.

P/N 282522-01 (B)

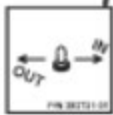
Read and understand all instructions and WARNINGS before use.

**DECAL SHEET**  
**P/N 282522-01**

DECAL  
P/N 282713-01



DECAL  
P/N 264507



DECAL  
P/N 282721-01

DECAL "J"

DECAL "I"

DECAL  
"L"

DECAL  
"L"

DECAL  
"F"

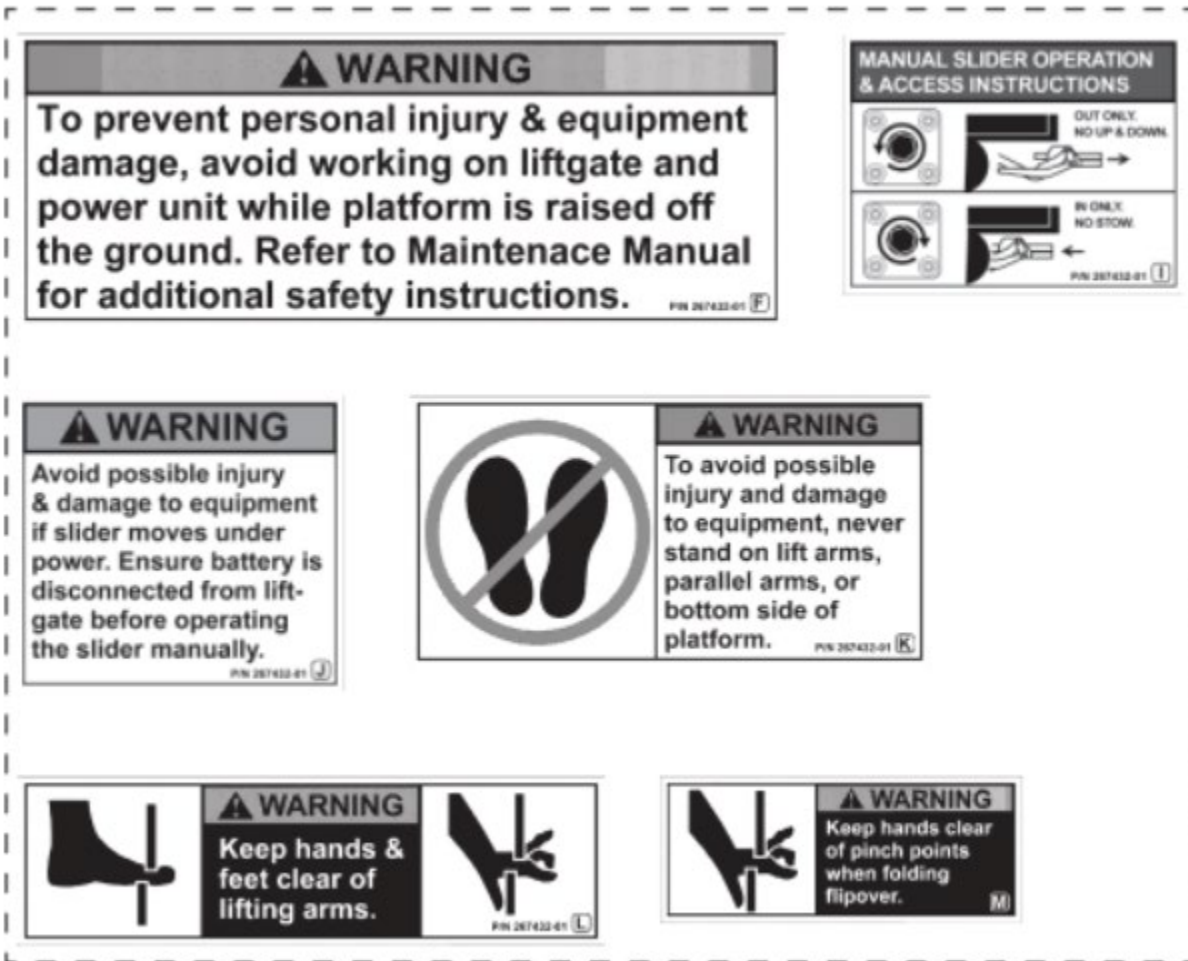
DECAL  
"M"

DECAL  
"K"

DECAL  
"M"

DECAL  
"K"

**DECAL POSITIONS - Continued**



**DECAL SHEET**  
**P/N 282724-01**