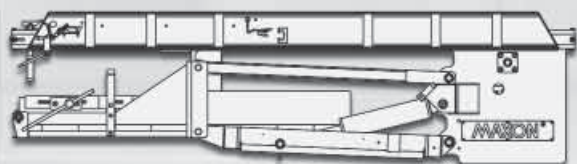


M-13-03
REV. E
JULY 2018

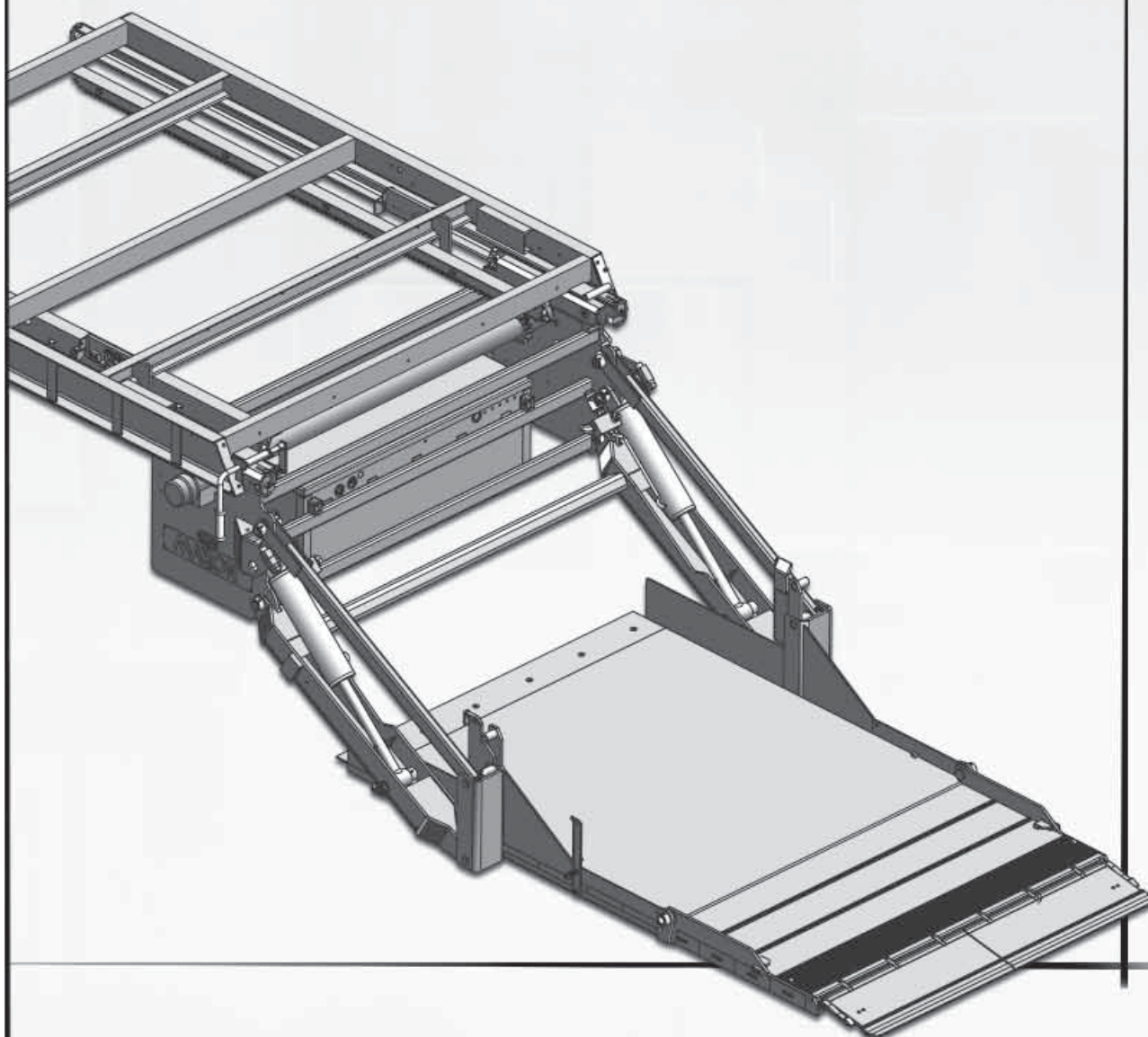


MAXON®

RA Series

MAINTENANCE MANUAL

RA-35 & RA-45



MAXON[®]

LIFT CORP.

11921 Slauson Ave.
Santa Fe Springs, CA. 90670

CUSTOMER SERVICE:

TELEPHONE (562) 464-0099 TOLL FREE (800) 227-4116

FAX: (888) 771-7713

NOTE: For latest version of all Manuals (and replacements), download the Manuals from Maxon's website at www.maxonlift.com.

WARRANTY/ RMA POLICY & PROCEDURE

LIFTGATE WARRANTY

Type of Warranty: Full Parts and Labor

Term of Warranty: Standard Liftgates - 2 years from ship date or 6,000 cycles
Premium Liftgates - 2 years from ship date or 10,000 cycles

This warranty shall not apply unless the product is installed, operated and maintained in accordance with MAXON Lift's specifications as set forth in MAXON Lift's Installation, Operation and Maintenance manuals. This warranty does not cover normal wear, maintenance or adjustments, damage or malfunction caused by improper handling, installation, abuse, misuse, negligence, or carelessness of operation. In addition, this warranty does not cover equipment that has had unauthorized modifications or alterations made to the product.

MAXON agrees to replace any components which are found to be defective during the first 2 years of service, and will reimburse for labor based on MAXON's Liftgate Warranty Flat Rate Schedule. (Copy of the Flat Rate is available at www.maxonlift.com.)

All warranty repairs must be performed by an authorized MAXON warranty facility. For any repairs that may exceed \$500, including parts and labor, MAXON's Technical Service Department must be notified and an "Authorization Number" obtained.

All claims for warranty must be received within 30 Days of the repair date, and include the following information:

1. Liftgate Model Number and Serial Number
2. The End User must be referenced on the claim
3. Detailed Description of Problem
4. Corrective Action Taken, and Date of Repair
5. Parts used for Repair, Including MAXON Part Number(s)
6. MAXON R.M.A. # and/or Authorization # if applicable (see below)
7. Person contacted at MAXON if applicable
8. Claim must show detailed information i.e. Labor rate and hours of work performed

Warranty claims can also be placed online at www.maxonlift.com. Online claims will be given priority processing.

All claims for warranty will be denied if paperwork has not been received or claim submitted via Maxon website for processing by MAXON's Warranty Department within 30 days of repair date.

All components may be subject to return for inspection, prior to the claim being processed. MAXON products may not be returned without prior written approval from MAXON's Technical Service Department. Returns must be accompanied by a copy of the original invoice or reference with original invoice number and are subject to a credit deduction to cover handling charges and any necessary reconditioning costs. **Unauthorized returns will be refused and will become the responsibility of the returner.**

Any goods being returned to MAXON Lift must be pre-approved for return, and have the R.M.A. number written on the outside of the package in plain view, and returned freight prepaid. All returns are subject to a 15% handling charge if not accompanied by a detailed packing list. Returned parts are subject to no credit and returned back to the customer. Defective parts requested for return must be returned within 30 days of the claim date for consideration to:

MAXON Lift Corp.
10321 Greenleaf Ave., Santa Fe Springs, CA 90670
Attn: RMA# _____

MAXON's warranty policy does not include the reimbursement for travel time, towing, vehicle rental, service calls, oil, batteries or loss of income due to downtime. Fabrication or use of non Maxon parts, which are available from MAXON, are also not covered.

MAXON's Flat Rate Labor Schedule takes into consideration the time required for diagnosis of a problem.

All Liftgates returned are subject to inspection and a 15% restocking fee. Any returned Liftgates or components that have been installed or not returned in new condition will be subject to an additional reworking charge, which will be based upon the labor and material cost required to return the Liftgate or component to new condition.

PURCHASE PART WARRANTY

Term of Warranty: 1 Year from Date of Purchase.

Type of Warranty: Part replacement only. MAXON will guarantee all returned genuine MAXON replacement parts upon receipt and inspection of parts and original invoice.

All warranty replacements parts will be sent out via ground freight. If a rush shipment is requested, all freight charges will be billed to the requesting party.

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SUMMARY OF CHANGES: M-13-03, REVISION E

PAGE	DESCRIPTION OF CHANGE
COVER	Updated REV and date of release.
9,10	Added lubrication instructions to preventive maintenance tasks & checklist.
11	Inserted RA lubrication chart.

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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.

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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, faceshield 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.
- 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

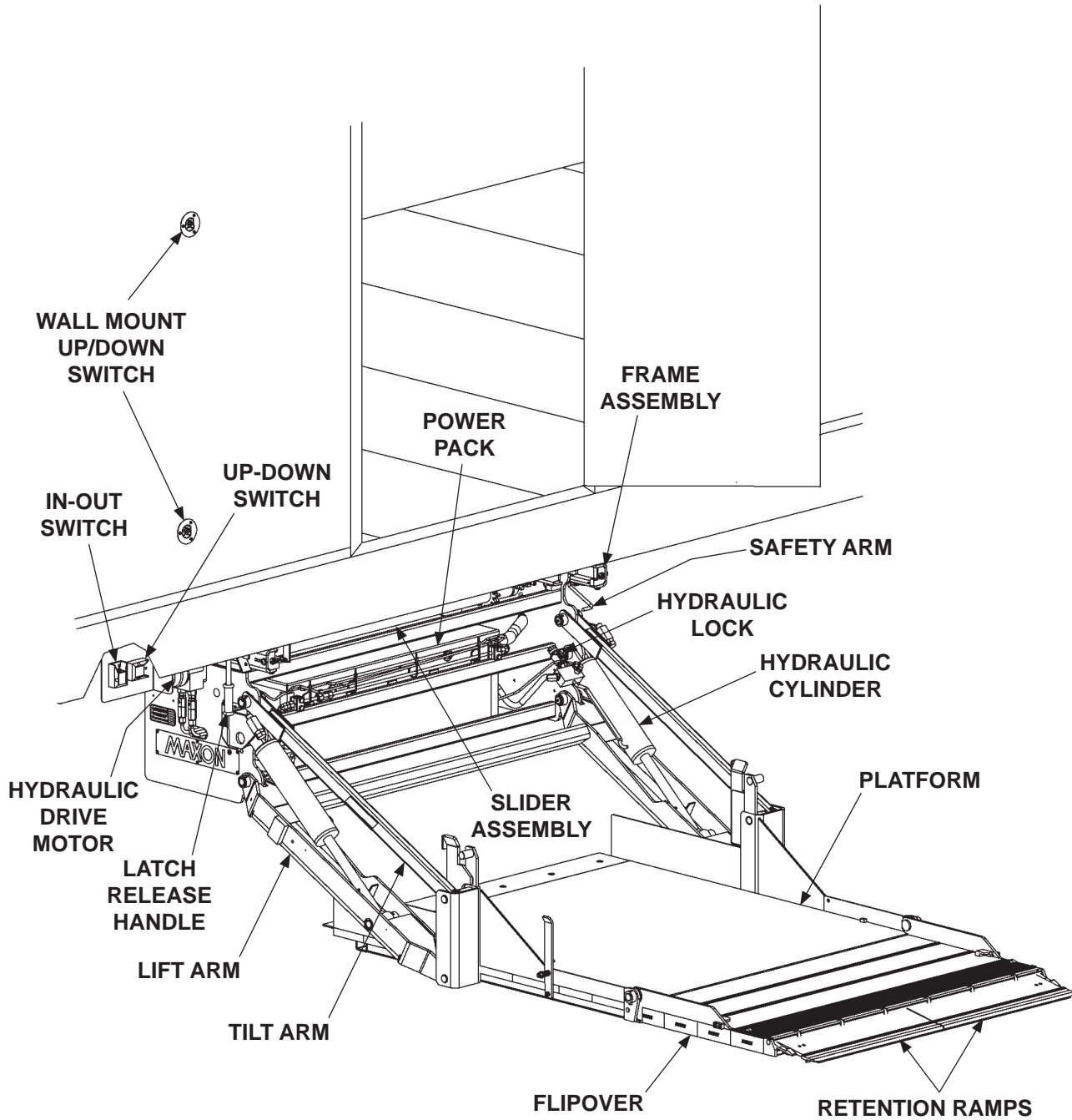
Express Parts Ordering: Phone (800) 227-4116 ext. 4345

Email: Ask your Customer Service representative

LIFTGATE TERMINOLOGY

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PERIODIC MAINTENANCE

PERIODIC MAINTENANCE CHECKS

⚠ WARNING

Never operate the Liftgate if parts are loose or missing.

NOTE: Make sure vehicle is parked on level ground while performing the maintenance checks.

Quarterly or 1250 Cycles (whichever occurs first)

Check the hydraulic fluid level in the pump reservoir. Refer to the **CHECKING HYDRAULIC FLUID** procedure in the **PERIODIC MAINTENANCE** section.

If hydraulic fluid appears contaminated, refer to the **CHANGING HYDRAULIC FLUID** procedure in the **PERIODIC MAINTENANCE** section.

Keep track of the grade of hydraulic fluid in the pump reservoir and never mix two different grades of fluid.

Check all hoses and fittings for chafing and fluid leaks. Tighten loose fittings or replace parts as required.

Check electrical wiring for chafing and make sure wiring connections are tight and free of corrosion. Use dielectric grease to protect electrical connections.

Check that all **WARNING** and **instruction decals** are in place. Also, make sure decals are legible, clean and undamaged.

Check that all bolts, nuts, and roll pins are in place. Make sure roll pins protrude evenly from both sides of hinge pin collar. Replace fasteners and roll pins if necessary.

Check for debris and dirt buildup on the slider rollers and rails. Clean out any buildup of dirt and debris.

Pump EP chassis grease in each lube fitting on the cylinders, arms, rollers & limit switch lever until grease starts oozing from ends of the bearings. The lubrication diagram on the **PERIODIC MAINTENANCE CHECKLIST SHEET** shows where to find the lube fittings. Wipe off excess grease with a clean lint-free cloth.

CAUTION

Damaged cylinder seals and contaminated hydraulic fluid can result from painting the polished portion of the cylinder rod. To prevent damage, protect the exposed polished portion of the cylinder rod while painting.

Check for rust and oily surfaces on Liftgate. If there is rust or oil on Liftgate, clean it off. Touch up the paint where bare metal is showing. MAXON recommends using the aluminum primer touchup paint.

Semi-annually or 2500 Cycles (whichever occurs first)

Visually check the platform hinge pins for excessive wear and broken welds. See **PARTS BREAKDOWN** section for replacement parts. Also, do the **Quarterly or 1250 Cycles** maintenance checks.

PERIODIC MAINTENANCE CHECKLIST

NOTE: Make sure vehicle is parked on level ground while performing maintenance checks.

Quarterly or 1250 Cycles (whichever occurs first)

- Check the level and condition of the hydraulic fluid.
- Visually check all hoses and fittings for chafing and fluid leaks. Tighten loose fittings or replace parts as required.
- Check electrical wiring for chafing and make sure wiring connections are tight and free of corrosion. Use dielectric grease to protect electrical connections.
- Check that all **WARNING and instruction decals** are in place. Also, make sure decals are legible, clean, and undamaged.
- Check that all bolts, nuts, and roll pins are in place. Make sure roll pins protrude evenly from both sides of hinge pin collar. Replace fasteners and roll pins if necessary.
- Check for debris and dirt buildup on the slider rollers and rails. Clean out any buildup of dirt and debris.
- Check for rust and oily surfaces on Liftgate. If there is rust or oil on Liftgate or if the Liftgate is dirty, clean it off. Touch up the paint where bare metal is showing. Refer to the paint system **CAUTION** and recommended touchup kit on the preceding page.
- Pump EP chassis grease in each lube fitting on the cylinders, arms, rollers & limit switch lever until grease starts oozing from ends of the bearings. Refer to lubrication diagram on the next page. Wipe off excess grease with a clean lint-free cloth.

Semi-annually or 2500 Cycles (whichever occurs first)

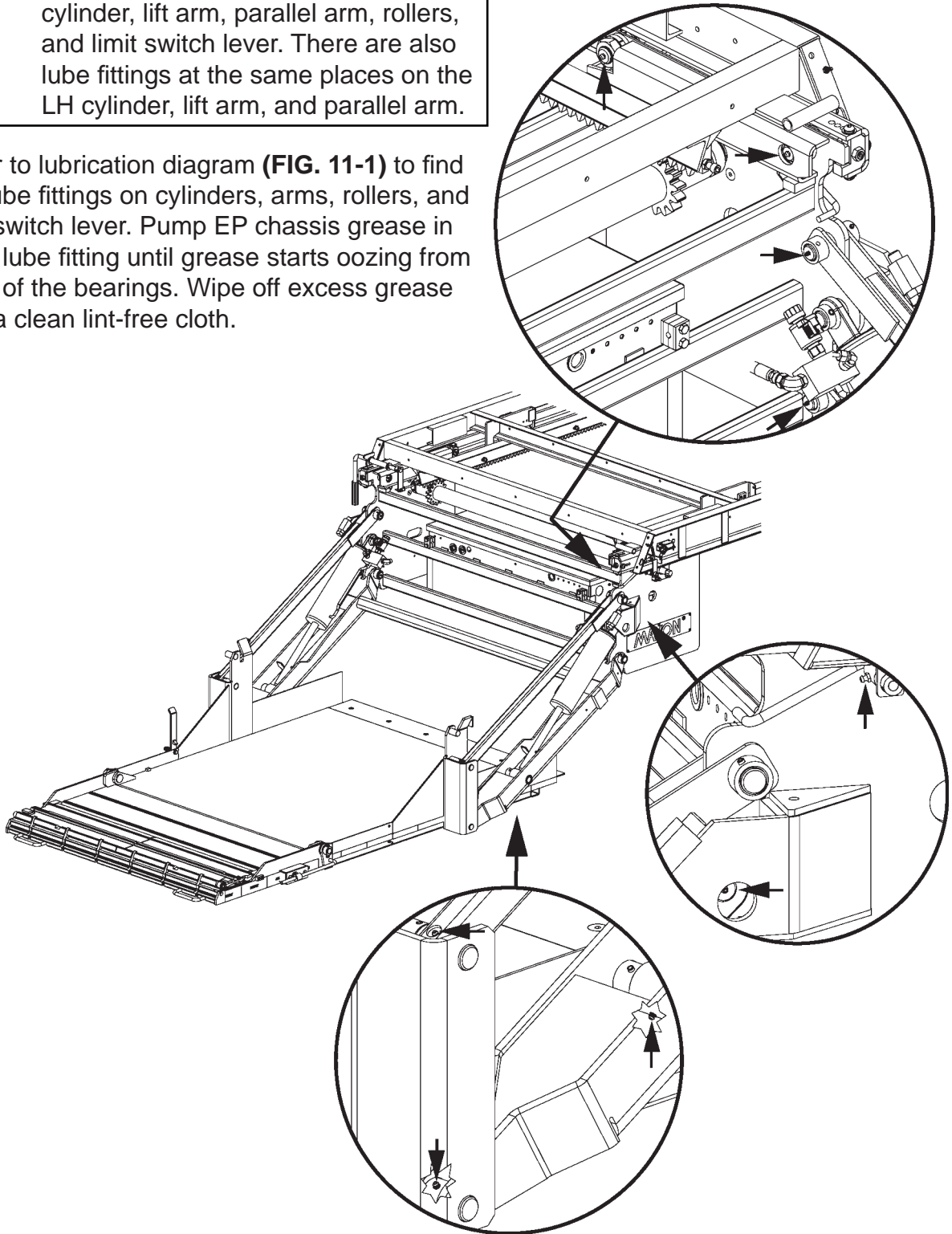
- Visually check the platform hinge pins for excessive wear and broken welds.
- Do the **Quarterly or 1250 Cycles Checks** on this checklist.

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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
FIG. 11-1**

PERIODIC MAINTENANCE

CHECKING 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.

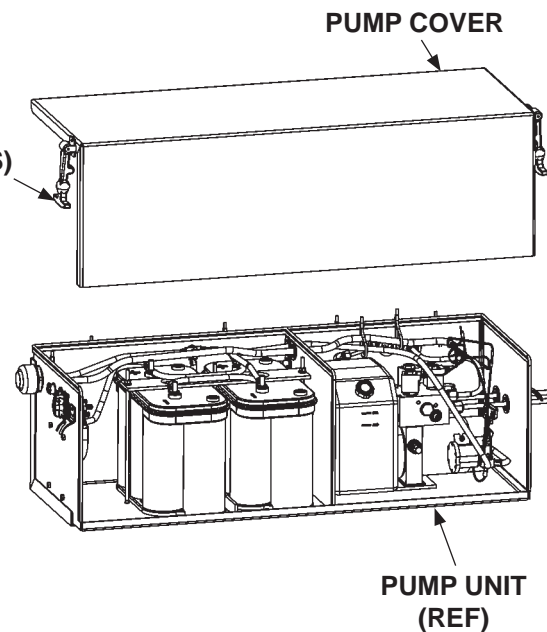
1. Unstow and lower Liftgate to ground.
2. Unlatch and remove pump cover (**FIG. 12-1**).
3. Check the hydraulic fluid level in reservoir as follows. With Liftgate on ground, level should be as shown in **FIG. 13-1**.

NOTE: If the hydraulic fluid in the reservoir is contaminated, do the **CHANGING HYDRAULIC FLUID** procedure in this section.

CAUTION

Do not fill reservoir above the **FULL** mark. Hydraulic fluid can overflow from the reservoir.

LATCHES
(2 PLACES)



REMOVE/REINSTALL PUMP COVER
FIG. 12-1

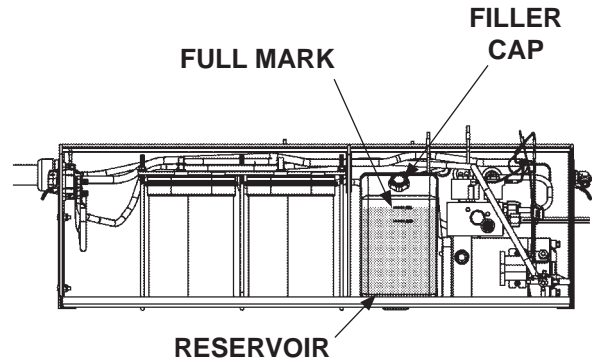
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4. If needed, add fluid to the reservoir as follows. Remove filler cap (**FIG. 13-1**). Fill the reservoir with hydraulic fluid to the FULL mark (**FIG. 13-1**). Reinstall filler cap (**FIG. 13-1**).

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

5. Reinstall and latch the pump cover (**FIG. 12-1**).



POWER UNIT FLUID LEVEL
FIG. 13-1

ISO 32 HYDRAULIC OIL	
RECOMMENDED BRANDS	PART NUMBER
CHEVRON	HIPERSYN 32
KENDALL	GOLDEN MV
SHELL	TELLUS S2 V32
EXXONMOBIL	UNIVIS N-32, DTE-24

TABLE 13-1

ISO 15 OR MIL-H-5606 HYDRAULIC OIL	
RECOMMENDED BRANDS	PART NUMBER
CHEVRON	FLUID A, AW-MV-15
KENDALL	GLACIAL BLU
SHELL	TELLUS S2 V15
EXXONMOBIL	UNIVIS HVI-13
ROSEMEAD	THS FLUID 17111

TABLE 13-2

PERIODIC MAINTENANCE 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

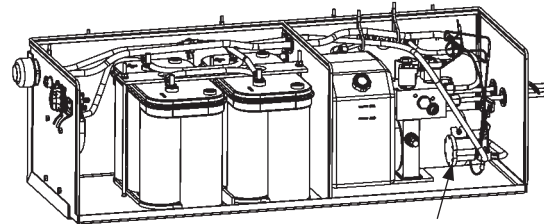
See **TABLES 13-1 & 13-2** for recommended brands.

1. Unstow and lower Liftgate to ground.

PUMP COVER

LATCHES
(2 PLACES)

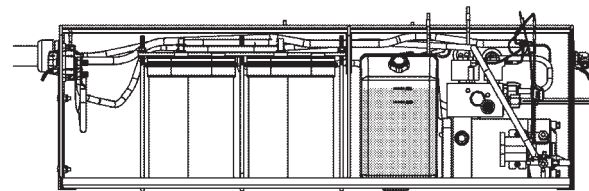
2. Unlatch and remove the pump cover
(FIG. 14-1).



PUMP UNIT
(REF)

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).



DRAIN PLUG

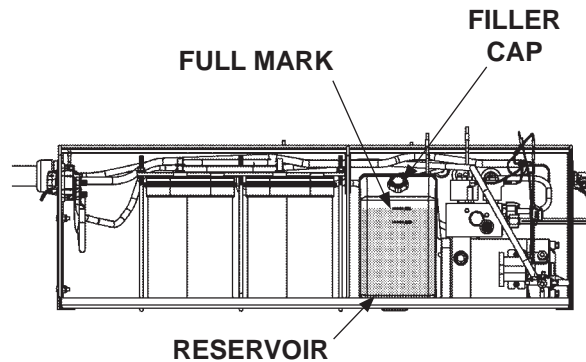
POWER UNIT
FIG. 14-2

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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.

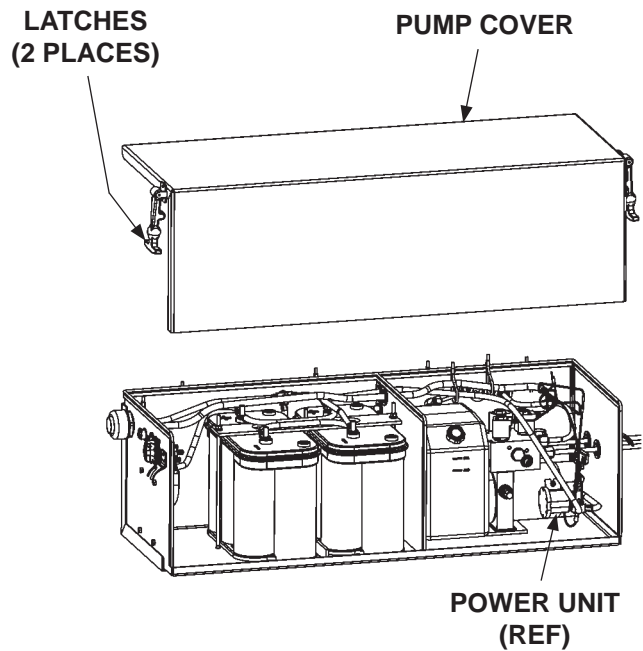


POWER UNIT FLUID LEVEL
FIG. 15-1

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**).



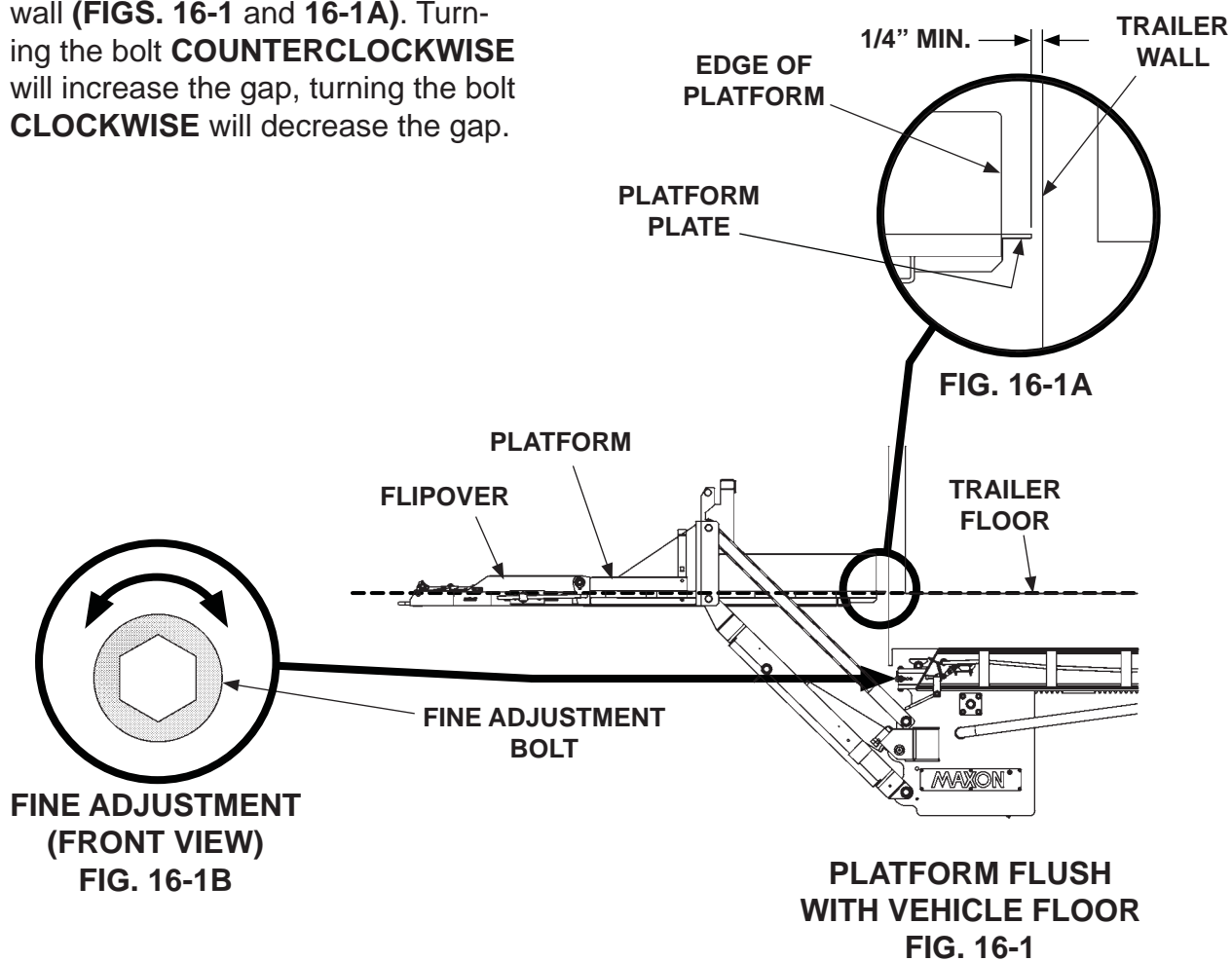
REINSTALL PUMP COVER
FIG. 15-2

PLATFORM GAP & STOP ADJUSTMENT

NOTE: Refer to **Operating Instructions** decal and applicable **WARNING & CAUTION** decals.

NOTE: Park vehicle on level ground and unload vehicle before doing this procedure.

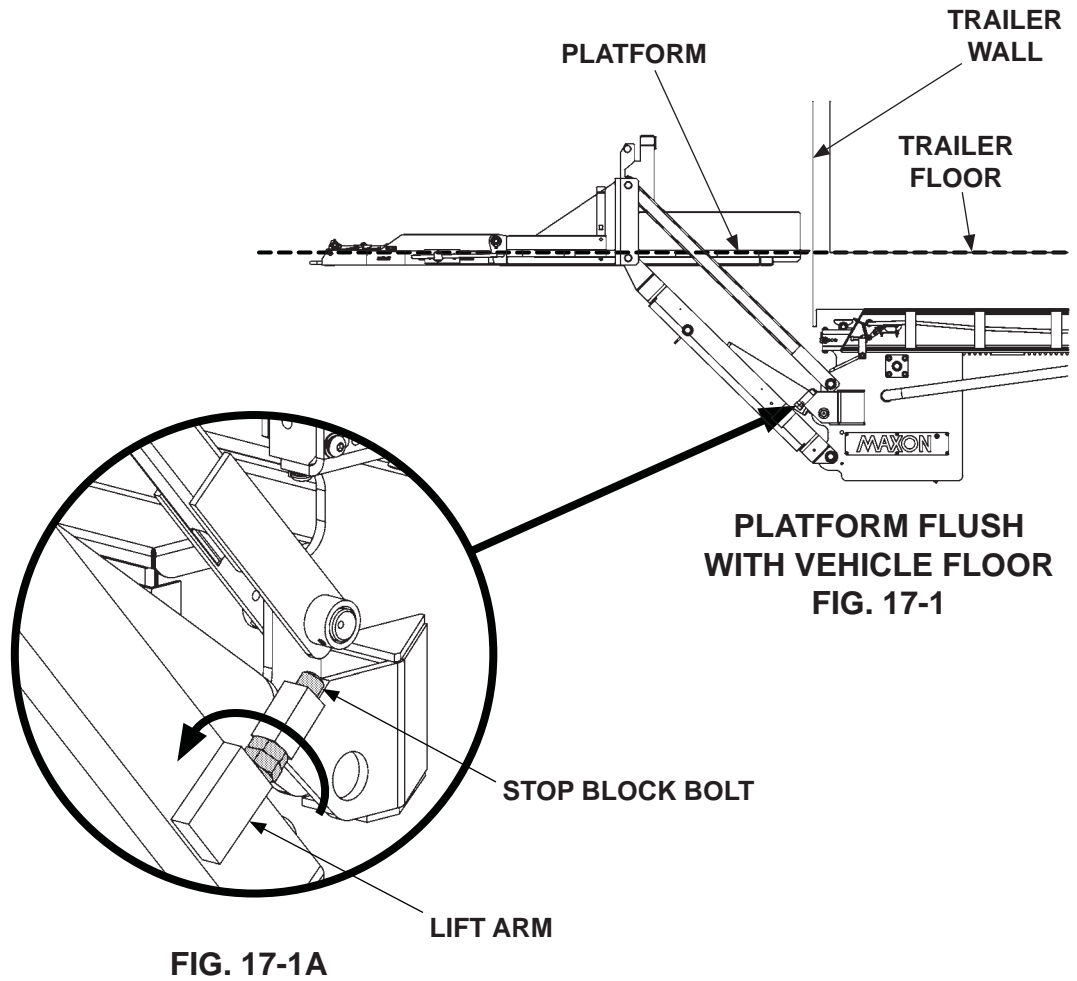
1. Run slide assembly out and unfold the flipover. Then, raise platform to floor level making sure not to hit trailer wall (**FIG. 16-1**). If necessary, trim platform plate (**FIG. 16-1A**).
2. Turn the fine adjustment bolt (**FIG. 16-1B**) to get the minimum 1/4" distance from edge of platform to trailer wall (**FIGS. 16-1 and 16-1A**). Turning the bolt **COUNTERCLOCKWISE** will increase the gap, turning the bolt **CLOCKWISE** will decrease the gap.



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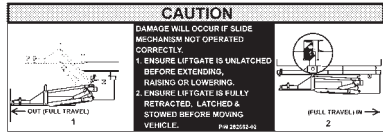
3. With platform at floor level, turn stop block bolts **COUNTERCLOCKWISE** until butted against each lift arm as shown in **FIGS. 17-1** and **17-1A**. This will prevent the platform from hitting the trailer wall.



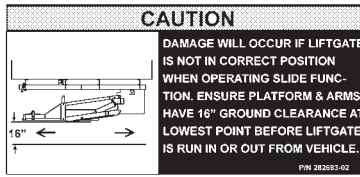
DECALS

MAXON

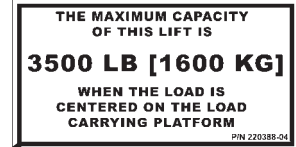
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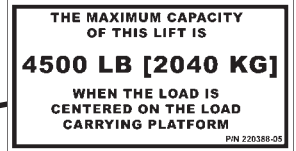
**CAUTION DECAL
P/N 282682-02**



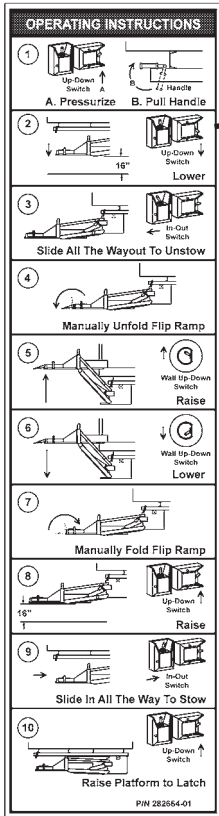
**CAUTION DECAL
P/N 282683-02**



**CAPACITY DECAL
(RA-35 ONLY)
P/N 220388-04**



**CAPACITY DECAL
(RA-45 ONLY)
P/N 220388-05**



**OPERATION DECAL
P/N 282664-01**



**FAMILY OWNED DECAL
P/N 283445-01**



SERIAL PLATE (REF)

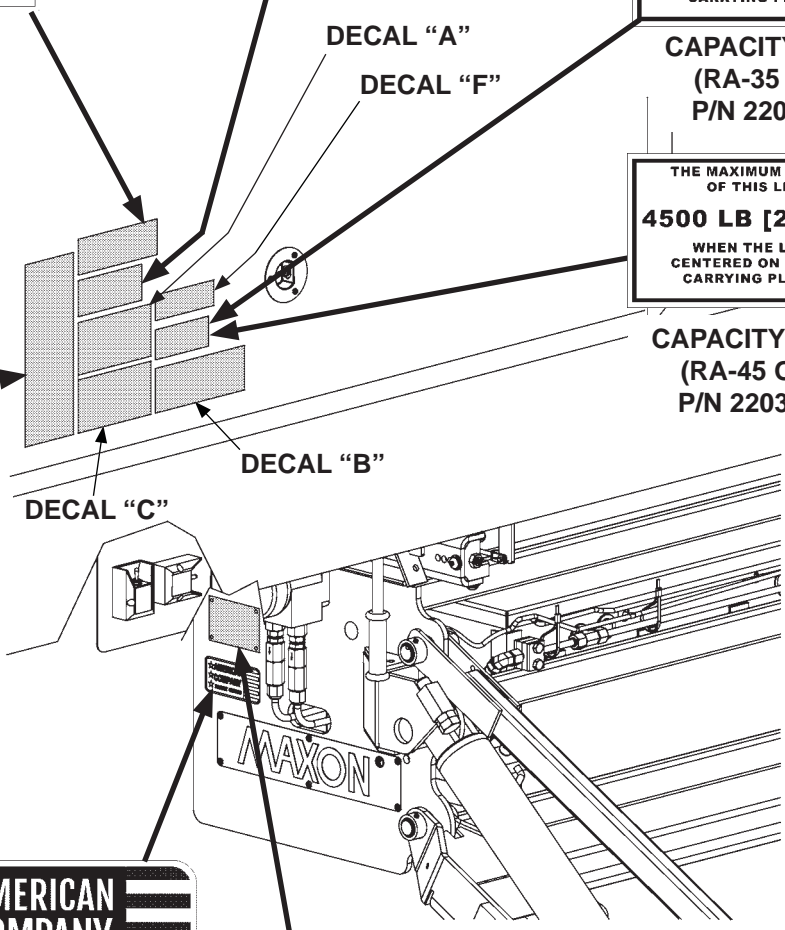


FIG. 18-1

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 or call Customer Service at (800) 227-4116. 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.

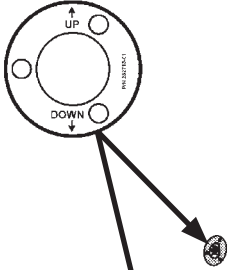


DECAL SHEET
P/N 282522-01
FIG. 19-1

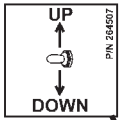
DECALS - Continued

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**DECAL
 P/N 282713-01**



**DECAL
 P/N 264507**



**DECAL
 P/N 282721-01**

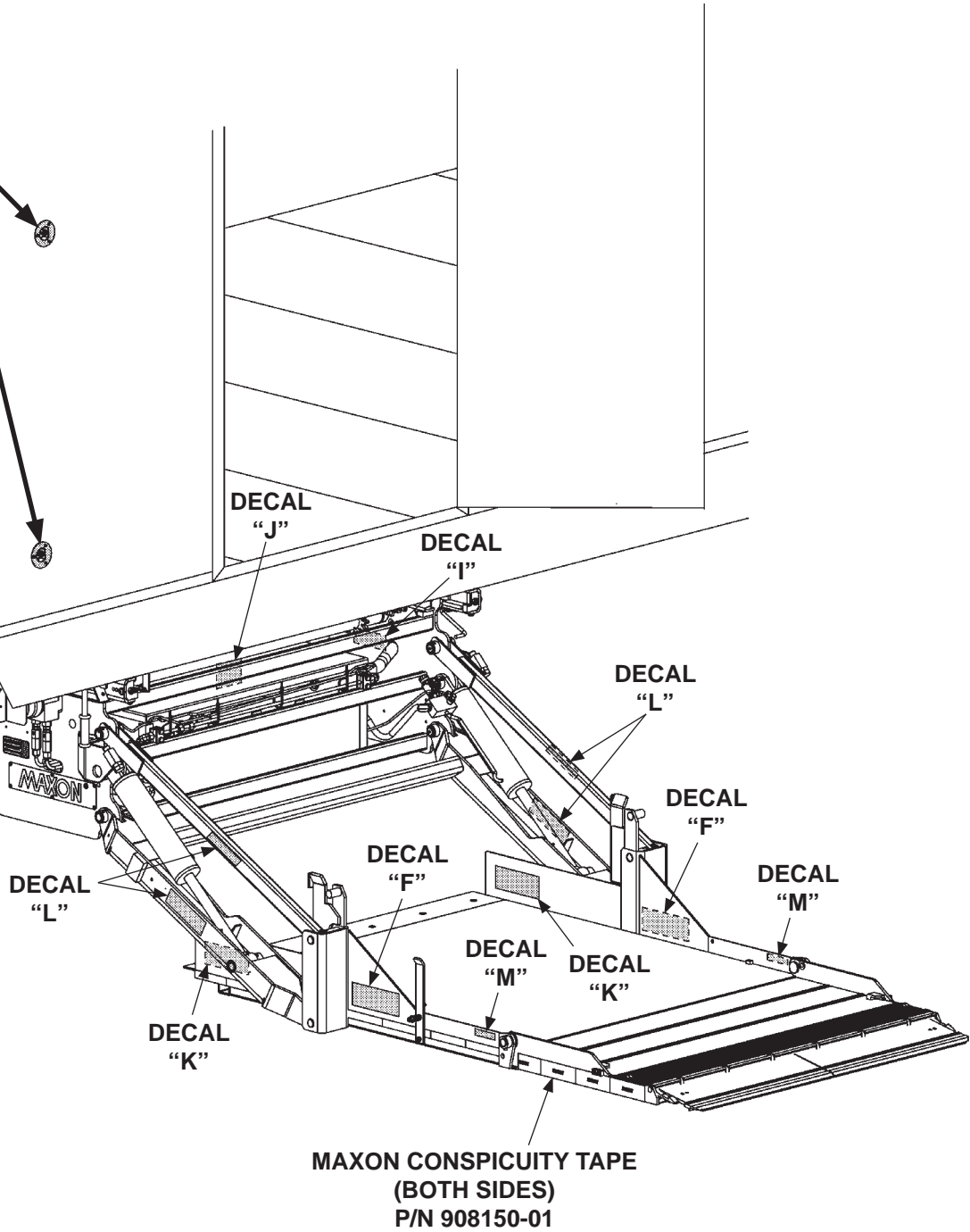


FIG. 20-1

⚠ WARNING

To prevent personal injury & equipment damage, avoid working on liftgate and power unit while platform is raised off the ground. Refer to Maintenance Manual for additional safety instructions.

P/N 267432-01 **F**

MANUAL SLIDER OPERATION & ACCESS INSTRUCTIONS

OUT ONLY. NO UP & DOWN.

IN ONLY. NO STOW.

P/N 267432-01 **I**

⚠ WARNING

Avoid possible injury & damage to equipment if slider moves under power. Ensure battery is disconnected from liftgate before operating the slider manually.

P/N 267432-01 **J**

⚠ WARNING

To avoid possible injury and damage to equipment, never stand on lift arms, parallel arms, or bottom side of platform.

P/N 267432-01 **K**

⚠ WARNING

Keep hands & feet clear of lifting arms.

P/N 267432-01 **L**

⚠ WARNING

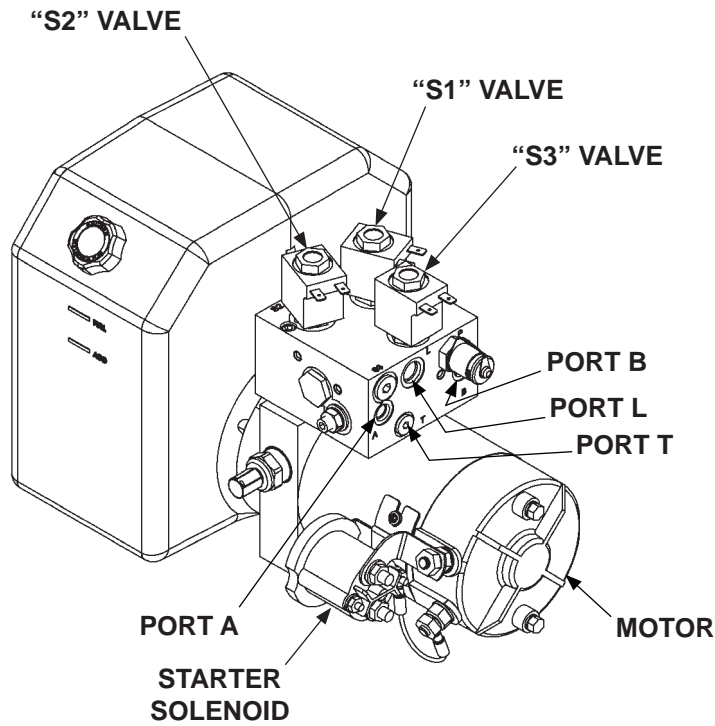
Keep hands clear of pinch points when folding flipover.

M

DECAL SHEET
 P/N 282724-01
 FIG. 21-1

SYSTEM DIAGRAMS

PUMP & MOTOR SOLENOID OPERATION



**PUMP AND MOTOR
FIG. 22-1**

POWER UNIT MOTOR & SOLENOID OPERATION						
LIFTGATE FUNCTION	PORT	SOLENOID OPERATION (✓ MEANS ENERGIZED)				
		MOTOR	VALVE "S1"	VALVE "S2"	VALVE "S3"	LOCK VALVE
RAISE	L	✓	-	-	-	✓
LOWER	T	-	-	-	✓	✓
SLIDE OUT	A	✓	-	✓	-	-
SLIDE IN	B	✓	✓	-	-	-

REFER TO VALVES SHOWN ON
HYDRAULIC SCHEMATIC

TABLE 22-1

HYDRAULIC SCHEMATIC

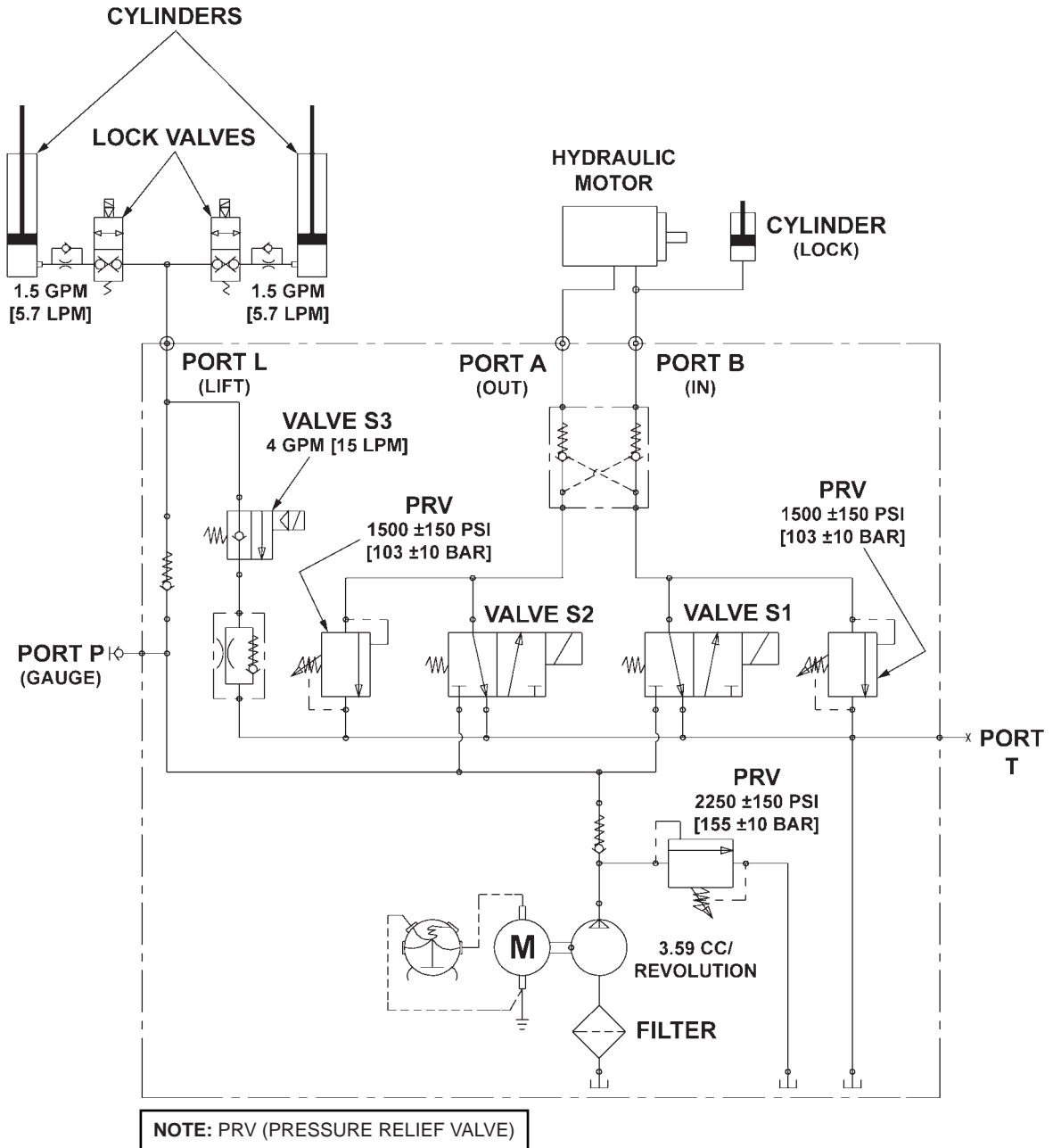


FIG. 23-1

SYSTEM DIAGRAMS - Continued

ELECTRICAL SCHEMATIC

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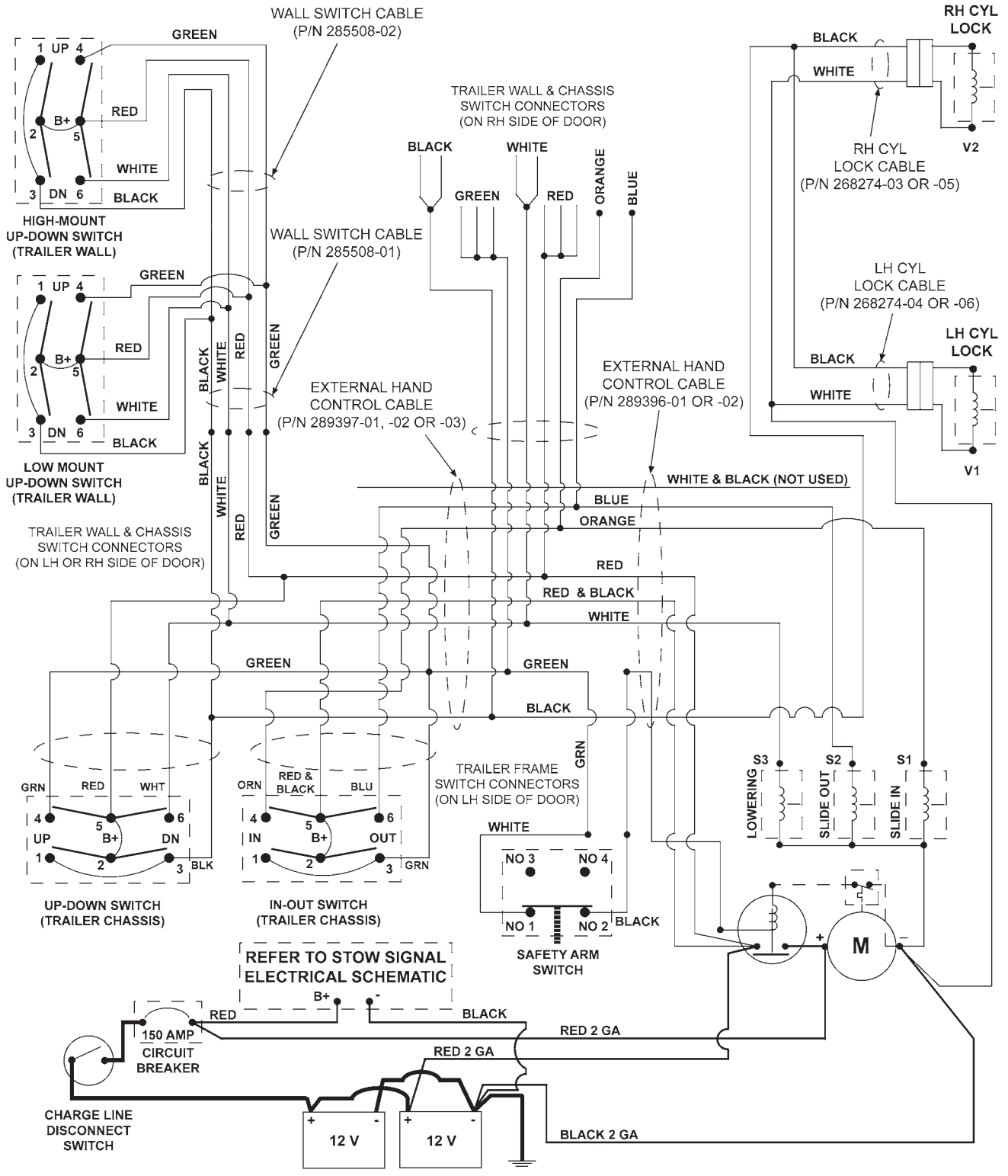


FIG. 24-1

STOW SIGNAL ELECTRICAL SCHEMATIC

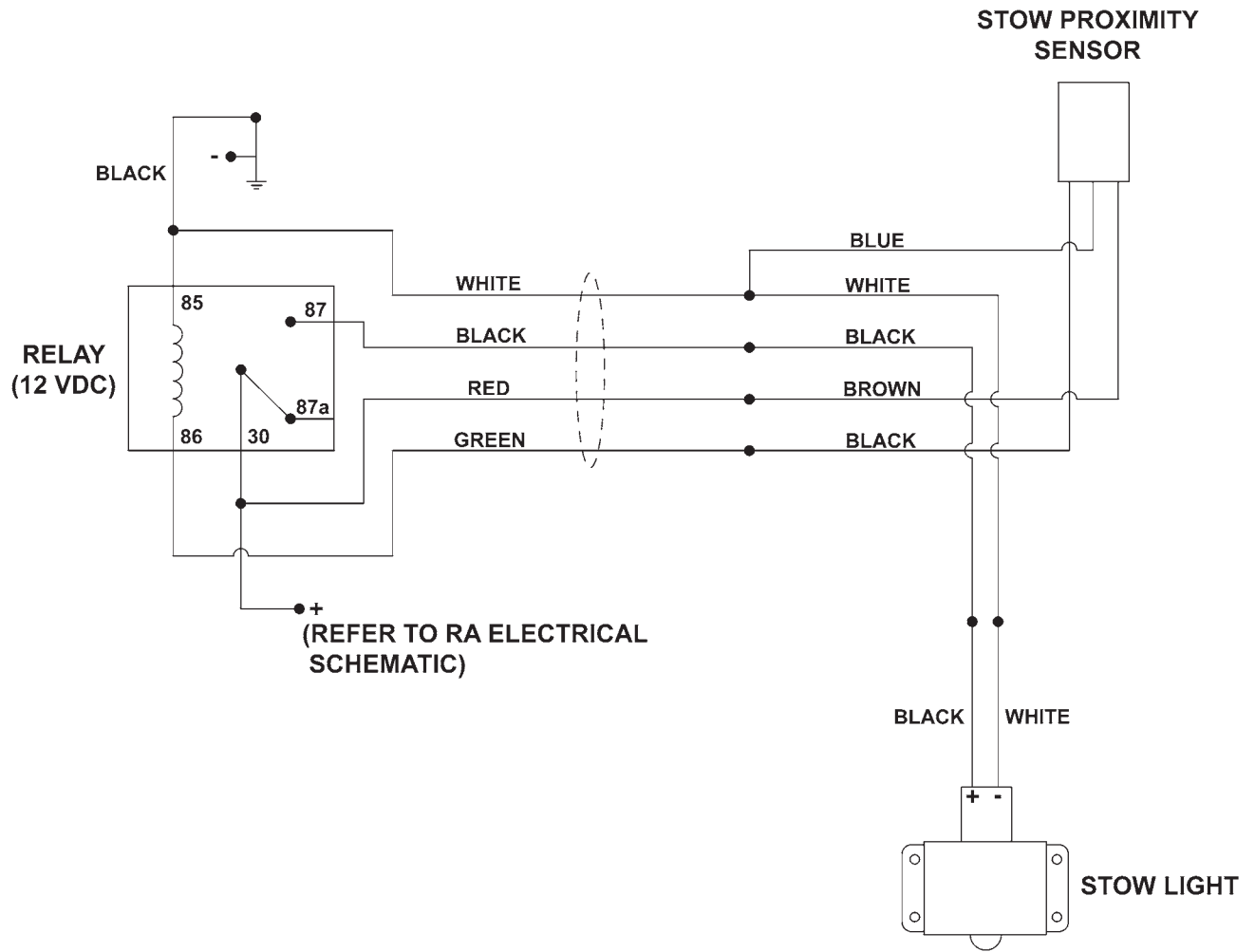
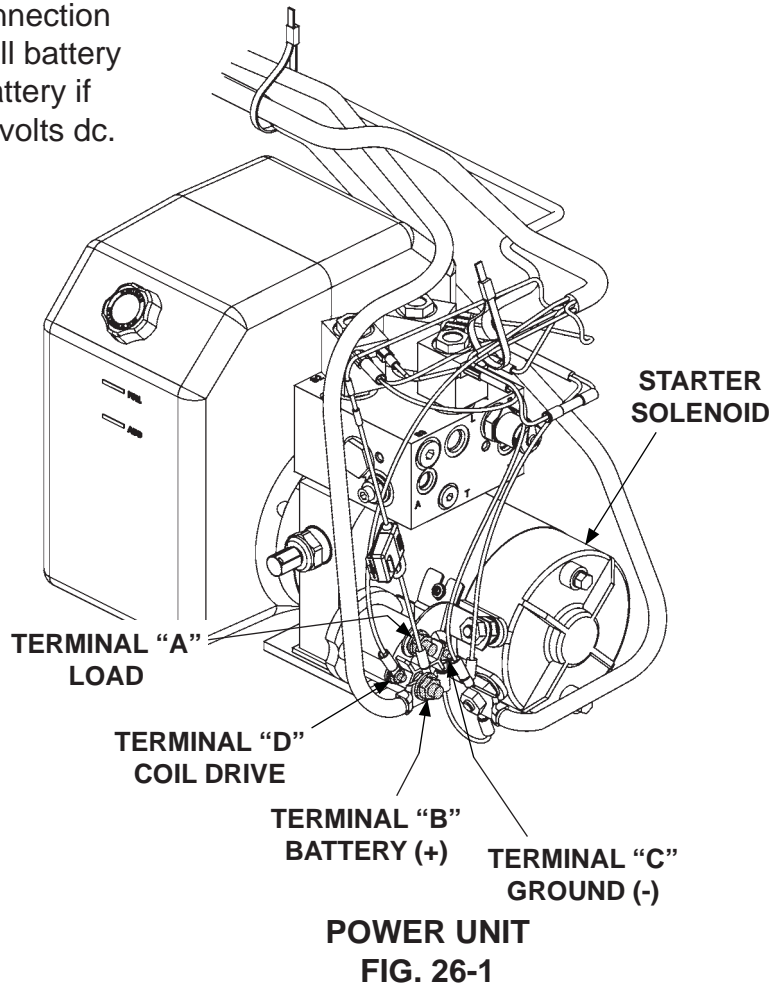


FIG. 25-1

TROUBLESHOOTING

PLATFORM WILL NOT RAISE & MOTOR WILL NOT RUN

1. Connect voltmeter between motor solenoid terminal “B” and ground wires connection on pump (**FIG. 26-1**). Verify that full battery voltage is at “B”. Recharge the battery if voltmeter indicates less than 12.6 volts dc.



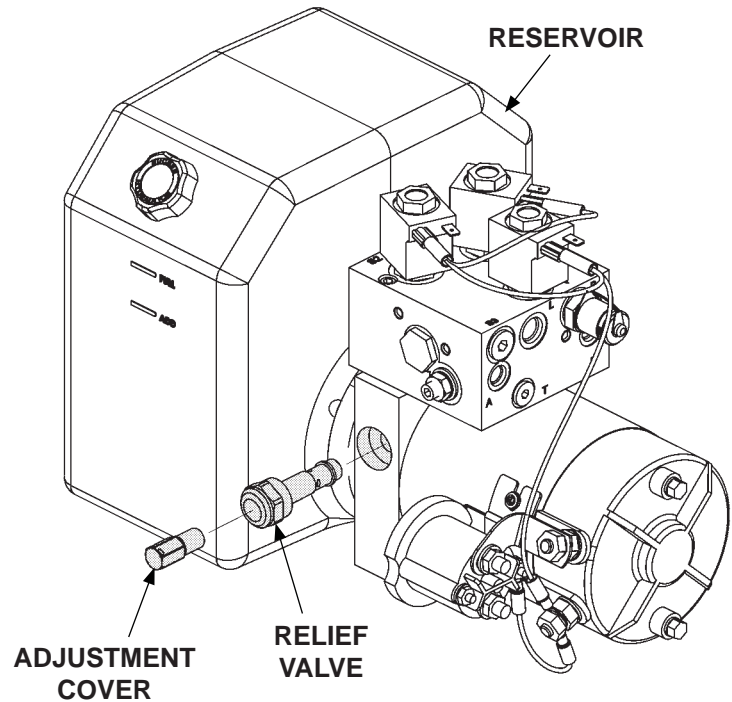
2. Touch a jumper wire to terminals “B” & “D” (**FIG. 26-1**). If motor runs, check control switch, switch connections, and fuse on red wire. The, check and correct wiring connections, replace fuse, or replace the control switch.
3. Touch heavy jumper cables to terminals “A” & “B” (**FIG. 26-1**).
 - a. If motor runs, replace the motor solenoid.
 - b. If motor does not run, repair or replace the pump motor.

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PLATFORM WILL NOT RAISE, BUT MOTOR RUNS

1. Do the **CHECKING HYDRAULIC FLUID** procedure in this manual. If necessary, add hydraulic fluid.
2. Check for structural damages and replace worn parts.



**CHECKING THE RAISING RELIEF VALVE
FIG. 27-1**

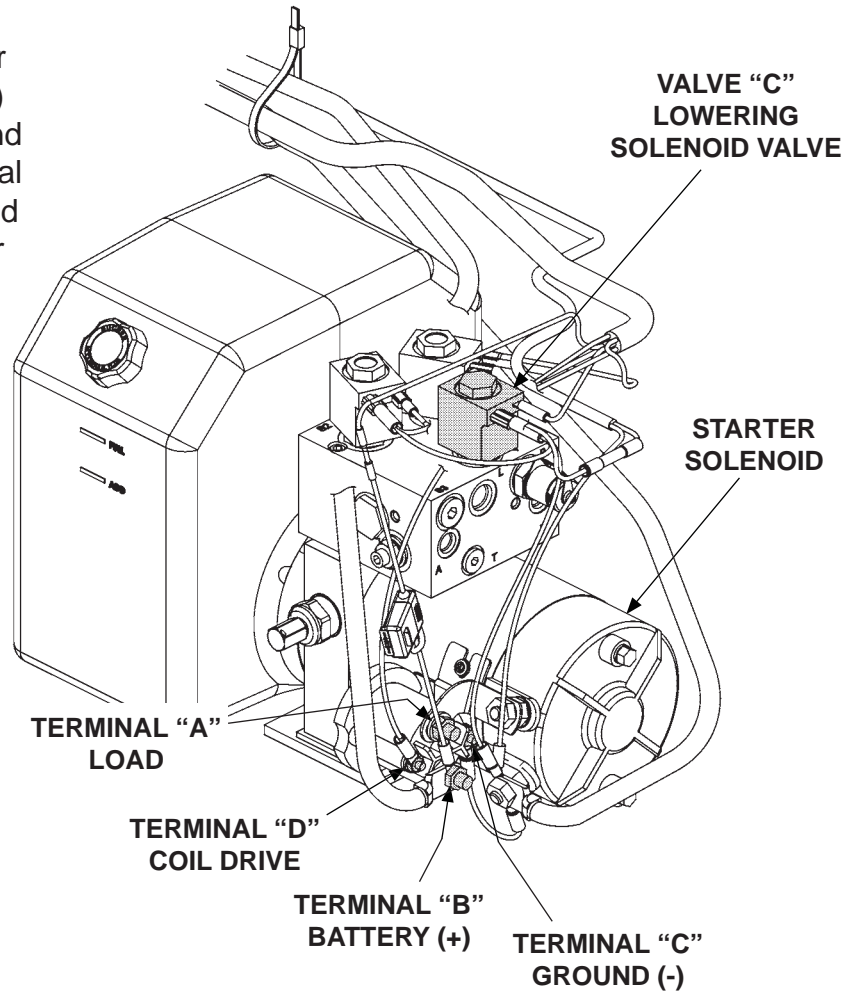
CAUTION

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 during maintenance.

3. Check pump oil filter in the reservoir (**FIG. 27-1**). Clean or replace filter if necessary.
4. Check for dirty raising relief valve (**FIG. 27-1**). Clean or replace valve if necessary.

TROUBLESHOOTING PLATFORM RAISES BUT LEAKS DOWN

1. Check if the "A" (lowering) solenoid valve is constantly energized. Connect voltmeter negative (-) lead to ground (-) wires connection on pump and positive (+) lead to (+) terminal on the "A" (lowering) solenoid valve (**FIG. 28-1**). If voltmeter reads battery voltage, check for faulty wiring or toggle switch.



**POWER UNIT
FIG. 28-1**

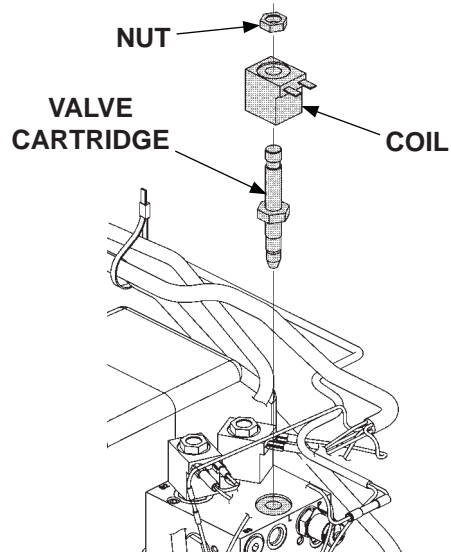
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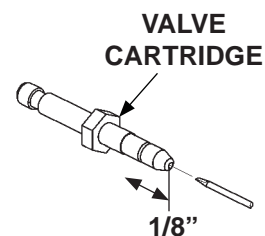
CAUTION

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 during maintenance.

2. Make sure platform is on the ground. Remove lowering solenoid valve (**FIG. 29-1**). Push on the plunger in the valve by inserting small screwdriver in the open end (**FIG. 29-2**). If the plunger does not move with a smooth, spring-loaded action (approximately 1/8"), replace the valve cartridge. **Reinstall lowering valve. Torque valve cartridge to 30 lb-ft and hex nut to 30 lb-in.**

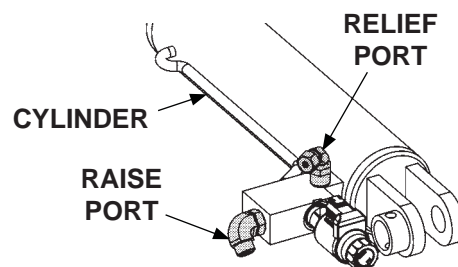


REMOVING SOLENOID VALVE
FIG. 29-1



CHECKING SOLENOID VALVE
FIG. 29-2

3. Check the hydraulic cylinder. With platform at vehicle floor level, remove the hydraulic line from the **RELIEF** port on the cylinder (**FIG. 29-3**). Hold the control switch in the **RAISE** position for two seconds while you watch for hydraulic fluid at the **RELIEF** port. A few drops of hydraulic fluid escaping the port is normal. However, if fluid streams out, piston seals are worn, Replace seals.

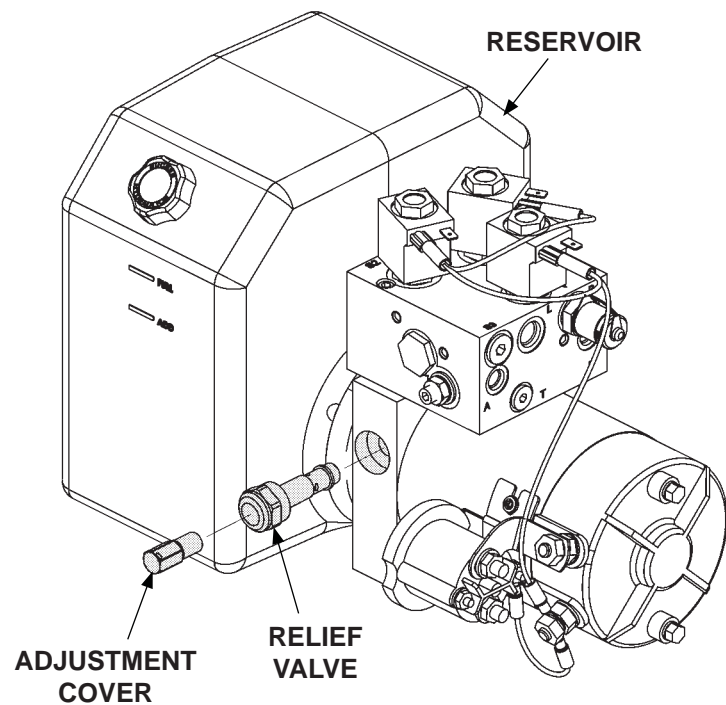


CHECKING SOLENOID VALVE
FIG. 29-3

TROUBLESHOOTING

PLATFORM RAISES PARTIALLY THEN STOPS

1. Lower the open platform to the ground. Do the **CHECKING HYDRAULIC FLUID** procedure in this manual, If necessary, add hydraulic fluid.
2. Use voltmeter to verify the battery voltage is 12.6 volts or more under load from pump motor.
3. Check for structural damage and poor lubrication. Replace worn parts.



CHECKING THE RAISING RELIEF VALVE
FIG. 30-1

CAUTION

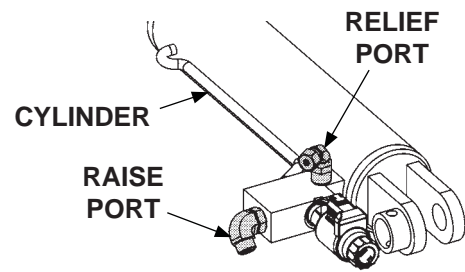
Keep dirt, water and other contaminants from entering the hydraulic system. Before opening the hydraulic fluid reservoir filler cap, drain plug and hydraulic lines, clean up contaminants that can get in the openings. Also, protect the openings from accidental contamination during maintenance.

4. Check for dirty raising relief valve (**FIG. 30-1**). Clean or replace relief valve, if necessary.

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5. Check the hydraulic cylinder. With platform at vehicle floor level, remove the hydraulic line from the **RELIEF** port on the cylinder (**FIG. 31-1**). Hold the control switch in the **RAISE** position for two seconds while you watch for hydraulic fluid at the **RELIEF** port. A few drops of hydraulic fluid escaping the port is normal. However, if fluid streams out, piston seals are worn. Replace seals.
6. Check pump oil filter in the reservoir line (**FIG. 31-1**). Clean or replace filter, if necessary.

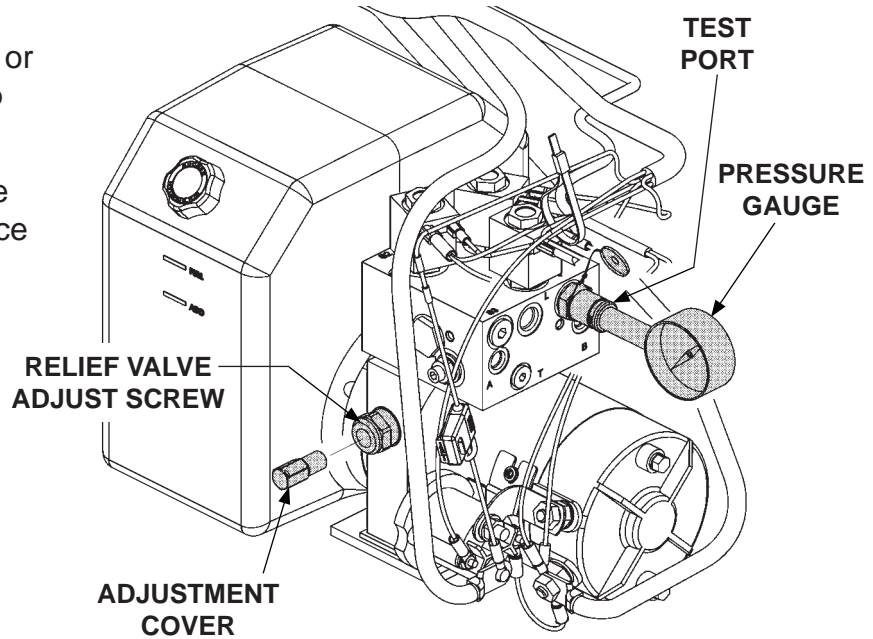


CHECKING SOLENOID VALVE
FIG. 31-1

TROUBLESHOOTING

LIFTGATE WILL NOT LIFT RATED CAPACITY

1. Use voltmeter to verify the battery voltage is 12.6 volts or more under load from pump motor.
2. Check for structural damage or lack of lubrication. Replace worn parts.



ADJUSTING RAISING RELIEF VALVE
FIG. 32-1

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 during maintenance.

3. Check the 2250 PSI pressure relief valve as follows. With platform on the ground, remove plug from test port (**FIG. 32-1**). Install 0-4000 PSI pressure gauge in the test port (**FIG. 32-1**). Hold the control switch in the "RAISE" position. Adjust the relief valve until the gauge reads 2250 +/- 150 PSI (**FIGS. 32-1**). Remove gauge and reinstall plug in the port. Then, reinstall relief valve cover.
4. Check if pump relief valve is dirty. Clean or replace relief valve, if necessary.

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5. Check the hydraulic cylinder. With the platform at vehicle floor level, remove the hydraulic line from the **RELIEF** port on the cylinder (**FIG. 33-1**). Hold the control switch in the “**RAISE**” position for two seconds while you watch for hydraulic fluid at the **RELIEF** port. A few drops of hydraulic fluid escaping the port is normal. However, if fluid streams out, piston seals are worn. Replace seals.
6. If pump cannot produce 2250 +/- 150 PSI or lift the load capacity with a minimum of 12.6 volts available, the pump is worn and needs to be replaced.

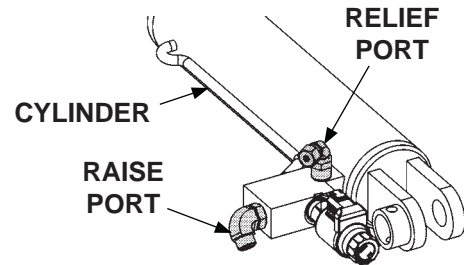
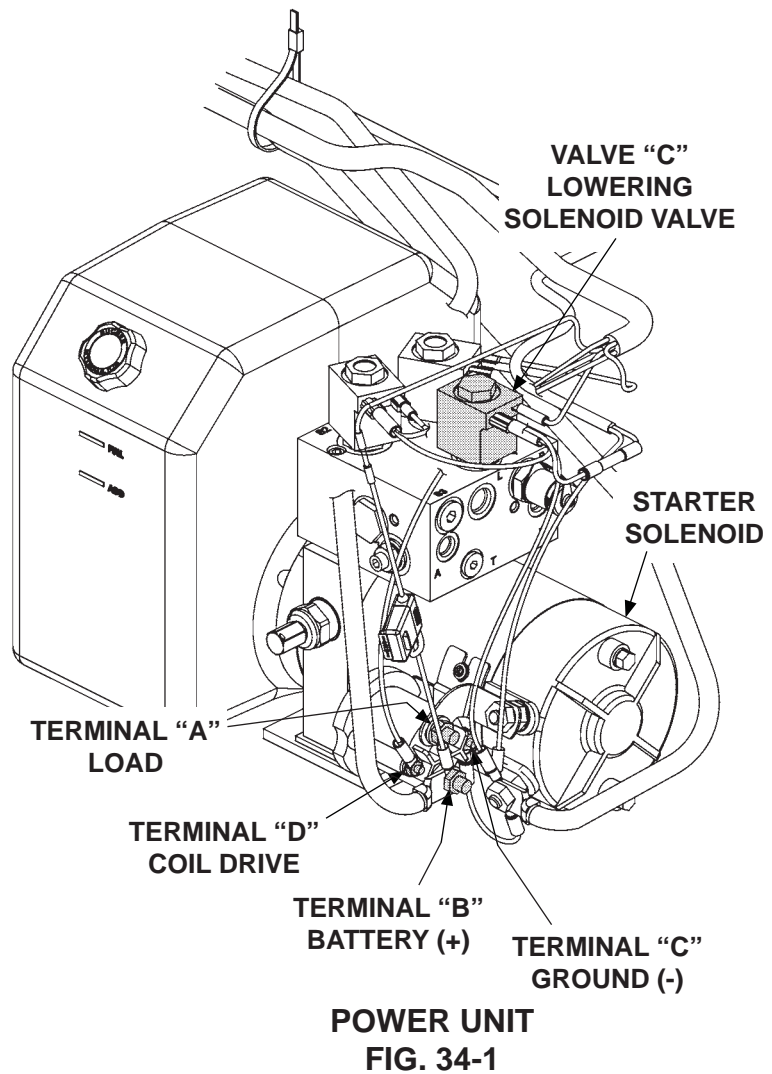


FIG. 33-1

TROUBLESHOOTING

PLATFORM WILL NOT LOWER, LOWERS TOO SLOWLY, OR TOO QUICKLY

1. Connect voltmeter (+) lead to motor solenoid terminal “B” and the (-) lead to the ground wires connection on pump (FIG. 34-1). Verify that full battery voltage is at “B”. Recharge the battery if voltmeter indicates less than 12.6 volts dc.
2. Check for structural damage or poor lubrication. Replace worn parts.
3. Check if the “D” terminal and “A” (lowering) solenoid valve are getting battery voltage (FIG. 34-1). Connect voltmeter negative (-) lead to ground (-) wires connection on pump and positive (+) lead to the “D” terminal (FIG. 34-1). Hold control switch in the “LOWER” position. Then, connect voltmeter (+) lead to (+) terminal on the “A” (lowering) solenoid valve (FIG. 34-1). If voltmeter shows a much lower reading than +12.6 volts dc or a reading of 0 volts, check for faulty control switch and wiring, battery cable, ground wire connections in pump assembly, and pump motor.



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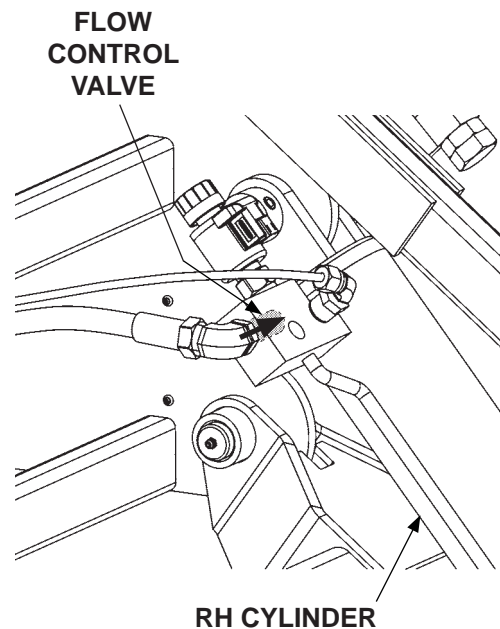
CAUTION

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 during maintenance.

CAUTION

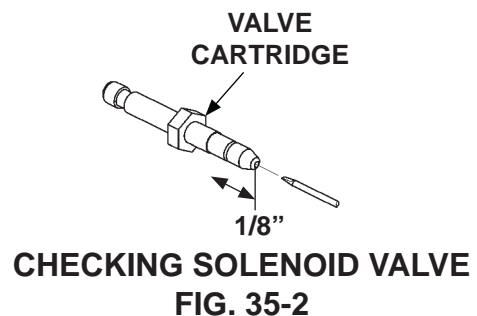
To prevent damage to flow control valve, do not disassemble the valve.

4. Make sure platform is on the ground. Check the RH flow control valve as follows. Remove flow control valve (**FIG. 35-1**). Ensure the flow control valve operates with a smooth spring-loaded action. Check for debris inside the valve. Clean or replace the flow control valve, if necessary. Reinstall flow control valve (if good) or a replacement. Do the same for the LH flow control valve.



FLOW CONTROL VALVE ON RH CYLINDER
FIG. 35-1

5. Check the lowering solenoid valve as follows. Check if filtering screen is plugged. Clean carefully if required. Push on the plunger in the valve by inserting small screwdriver in the open end (**FIG. 35-2**). If the plunger does not move with a smooth, spring-loaded action (approximately 1/8"), replace the valve cartridge. **Reinstall lowering solenoid valve (if good) or a replacement. Torque valve cartridge to 30 lb-ft and hex nut to 30 lb-in.**



CHECKING SOLENOID VALVE
FIG. 35-2

