

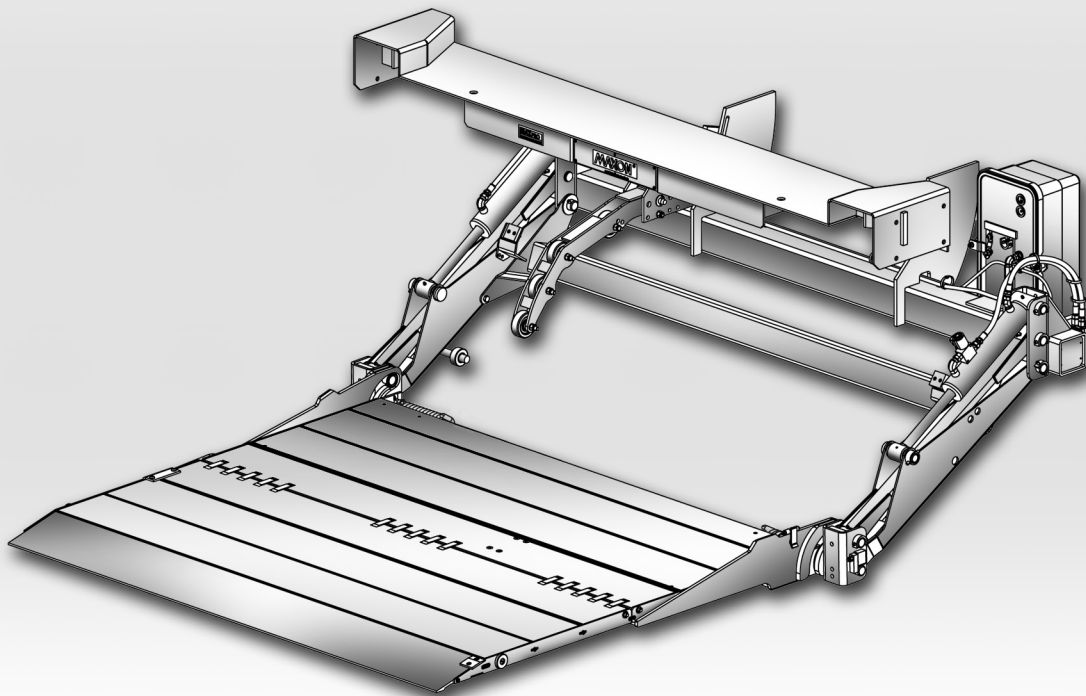
M-04-04
REV. K
FEBRUARY 2016



MAXON[®] GPTLR Series

MAINTENANCE MANUAL

GPTLR-25, GPTLR-33, GPTLR-44, & GPTLR-55



TUK-A-WAY[®]
LIFT GATE SERIES

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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 returnee.**

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-04-04, REVISION K

PAGE	DESCRIPTION OF CHANGE
COVER	Updated REV & date of release.
45	Corrected part number for item 23.
17	Removed AMSOIL AWF-05 from recommended hydraulic oils.
	Removed Parts Breakdown section.

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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.
- Welding on galvanized parts gives off especially hazardous fumes. Comply with WARNING decal on the galvanized part (**FIG. 8-1**). To minimize hazard remove galvanizing from weld area, provide adequate ventilation, and wear suitable respirator.

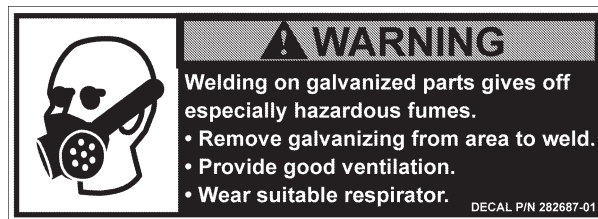


FIG. 8-1

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:

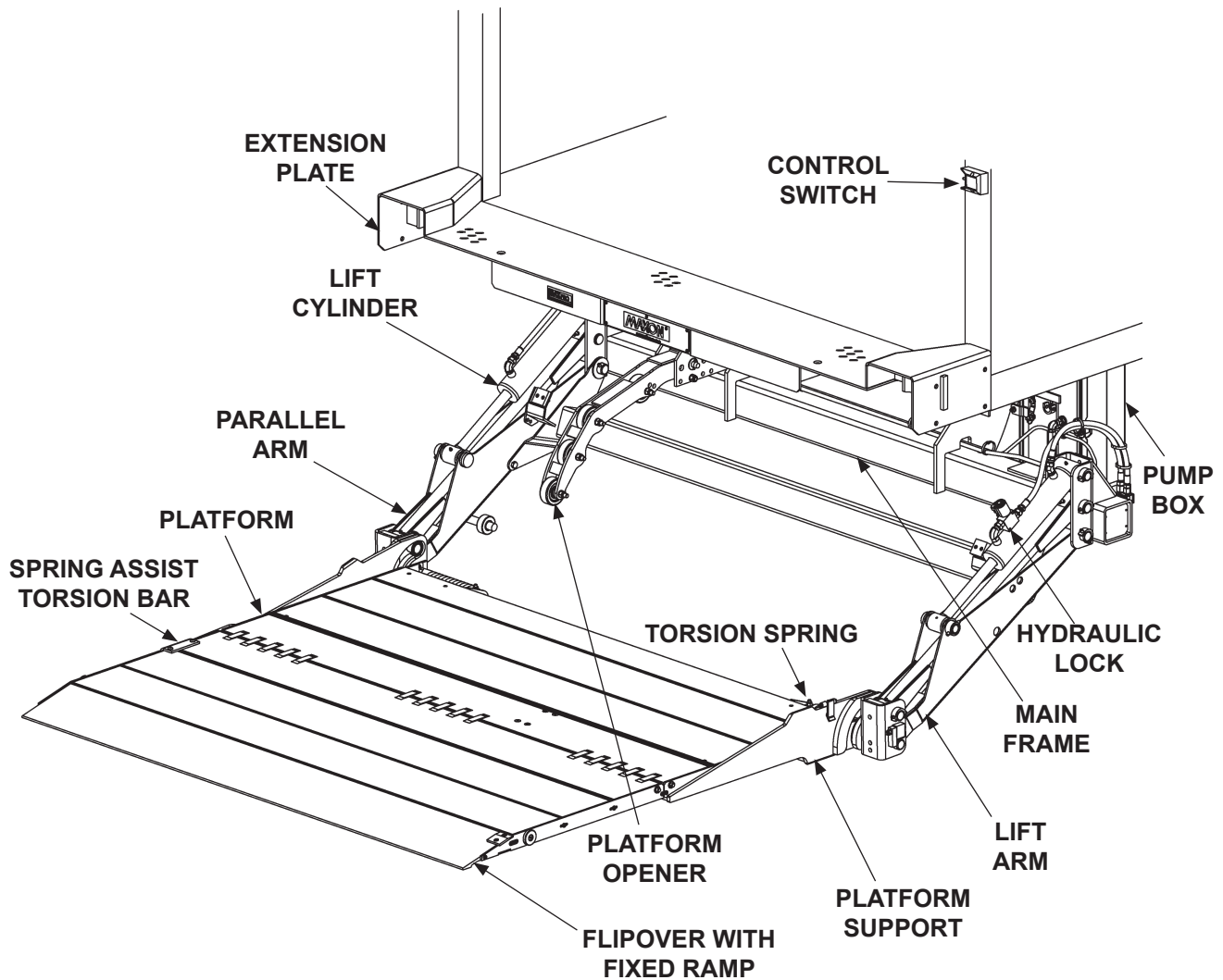
MAXON LIFT CORP. Customer Service
11921 Slauson Ave., Santa Fe Springs, CA 90670

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. Never mix two different grades of fluid.

Check all hoses and fittings for chafing and fluid leaks. Make sure hydraulic lock is in place and undamaged. Replace if necessary.

Check electrical wiring for chafing and make sure wiring connections are tight and free of corrosion.

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

Check that all roll pins are in place and protrude evenly from both sides of hinge pin collar. Replace roll pins if necessary.

Check both platform torsion springs to make sure there is grease between the coils. If grease is not visible in the valley between each coil, apply spray-on white lithium grease. Unfold & fold platform. If platform feels heavy while starting to fold, do **PLATFORM TORSION SPRING ADJUSTMENT** in the **PERIODIC MAINTENANCE** section of this manual.

Pump EP chassis grease in each lube fitting on the cylinders and arms 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 kit, P/N 908134-01.

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

PERIODIC MAINTENANCE CHECKS - Continued

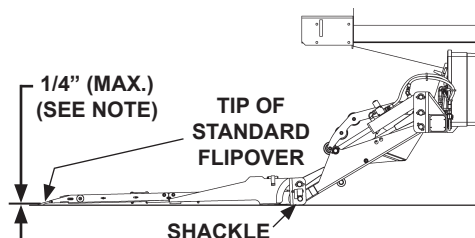
Annually or 5000 Cycles (whichever occurs first)

Visually check the entire Liftgate for excessively worn parts and broken welds, especially hinge pins. See **PARTS BREAKDOWN** section for replacement parts.

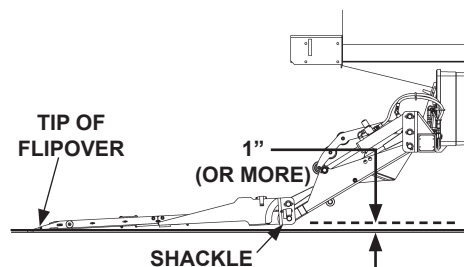
Check the platform and flipover as follows. Unfold the platform and flipover. Raise the platform to vehicle bed height and then lower it to the ground. Check if the shackles and tip of flipover touch the ground at the same time (**FIG. 12-1**). With the shackles touching, tip of a ramp-style flipover may be no more than 1/4" above the ground. A flipover equipped with retention ramp may have a maximum 2" of ground clearance at the tip of the flipover.

If the shackles are 1" or more above the ground when the tip of the flipover is touching the ground (**FIG. 12-2**), perform the **ADJUST PLATFORM** procedure in the **Installation Manual (M-04-06)**. If the adjustment does not correct the problem, check pins and bearings at the pivot points on both sides of the Liftgate (**see FIG. 12-3**). See **PARTS BREAKDOWN** section for replacement parts.

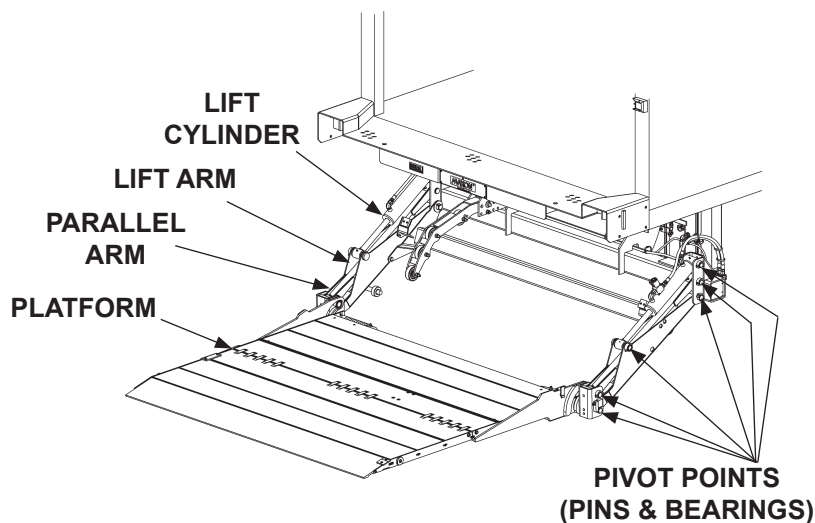
Also, for aluminum flipovers equipped with single retention ramp and for steel flipovers, ensure latch is in place, undamaged, and working correctly. See **PARTS BREAKDOWN** section for replacement parts.



**PLATFORM & SHACKLES
TOUCHING THE GROUND**
FIG. 12-1



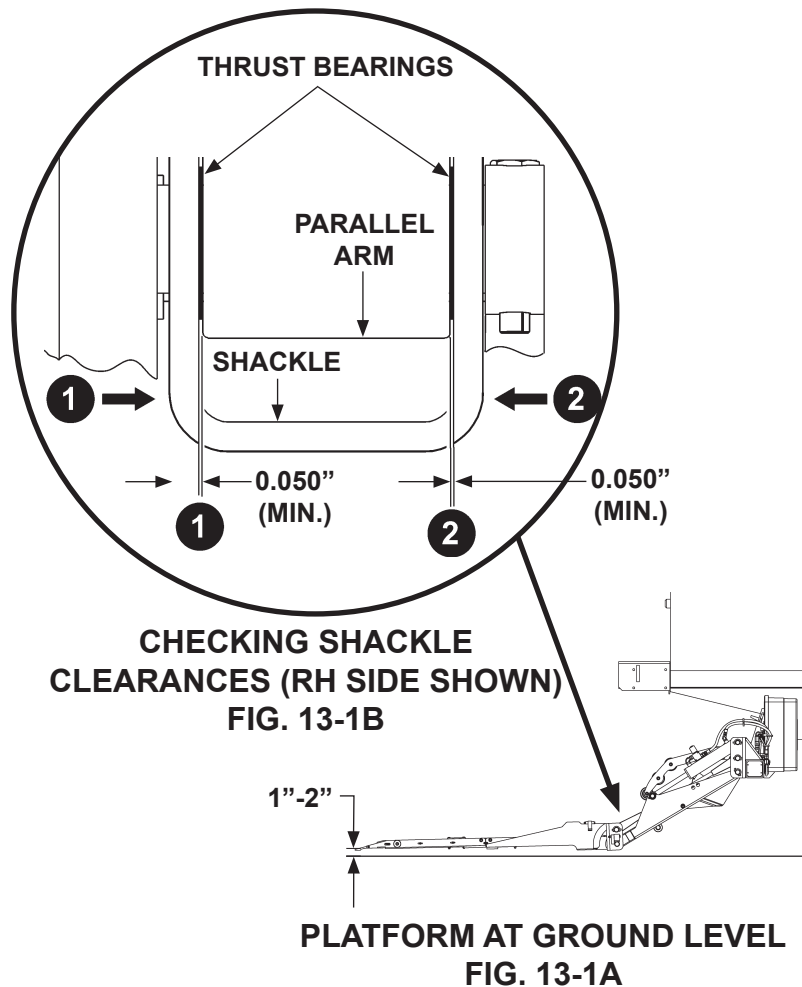
**SHACKLES NOT TOUCHING
THE GROUND**
FIG. 12-2



PIVOT POINTS TO CHECK
FIG. 12-3

To prevent unnecessary wear on parallel arms, check for worn thrust bearings as follows. Position the platform 1"-2" above ground (**FIG. 13-1A**). Push against the shackle (**Item 1, FIG. 13-1B**) and measure clearance (**Item 1, FIG. 13-1B**). Then, push against other side of shackle (**Item 2, FIG. 13-1B**) and measure clearance (**Item 2, FIG. 13-1B**). Repeat for LH side shackle. If clearance is less than 0.050", replace thrust bearing. See **PARTS BREAKDOWN** section for replacement parts.

Also, do the **Semi-annual or 2500 Cycles** and **Quarterly or 1250 Cycles** checks.



PERIODIC MAINTENANCE

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, and check hydraulic lock.
- ☐ Check electrical wiring for chafing and make sure wiring connections are tight and free of corrosion.
- ☐ Check that all **WARNING and instruction decals, nonskid stickers, and safety striping** are in place. Also, make sure decals are legible and decals, nonskid, and safety striping are clean and undamaged.
- ☐ Check that all roll pins are in place and protrude evenly from both sides of hinge pin collar. Replace roll pins if necessary.
- ☐ 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.
- ☐ Check both platform torsion springs to make sure there is grease in the valley between each coil. If grease is not visible, apply spray-on white lithium grease to the valley between each coil. Unfold & fold platform. If platform feels heavy while starting to fold, do **PLATFORM TORSION SPRING ADJUSTMENT** in the **PERIODIC MAINTENANCE** section of this manual.
- ☐ Pump EP chassis grease in each lube fitting on the cylinders and arms 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.

Annually or 5000 Cycles (whichever occurs first)

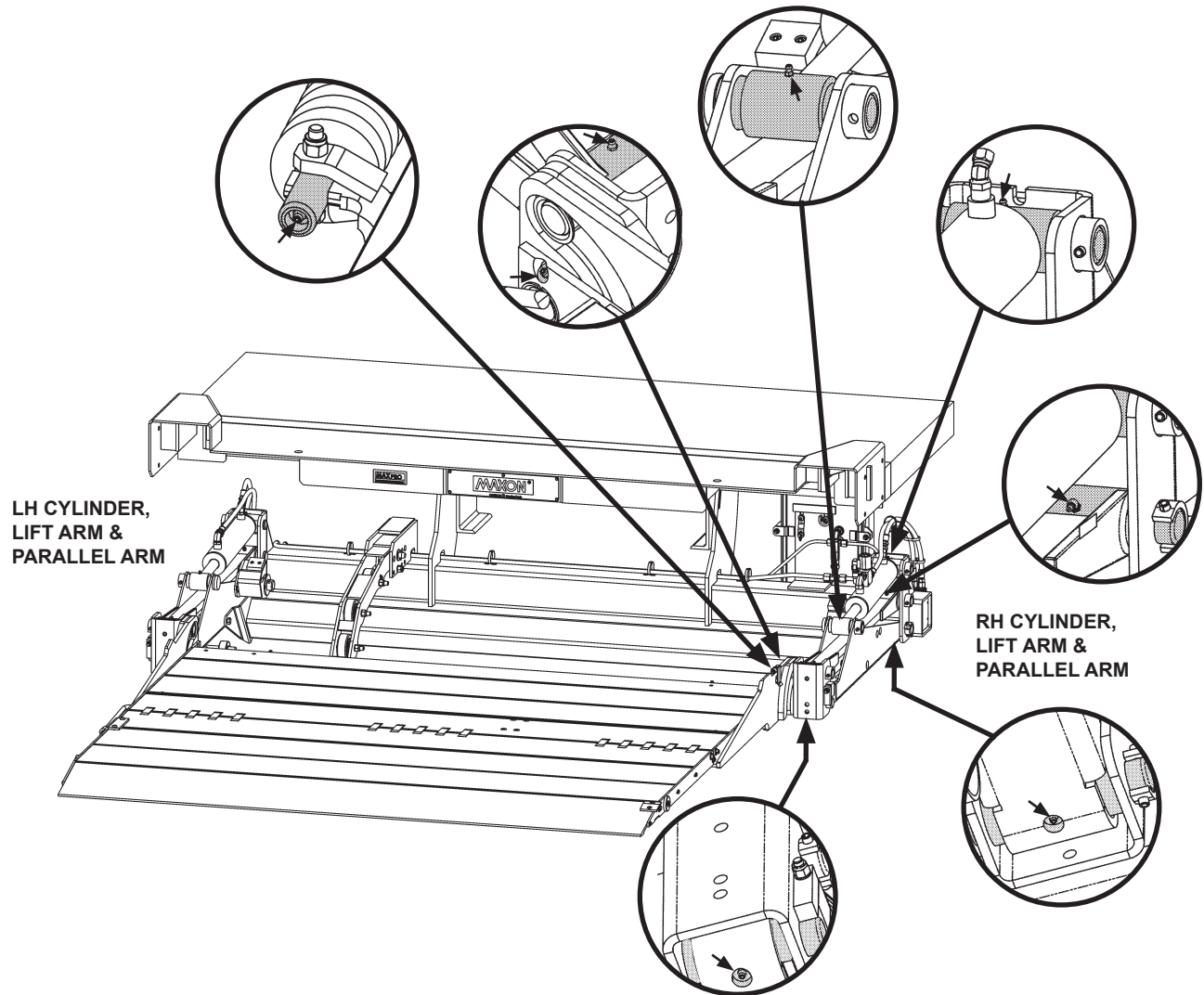
- ☐ Visually check the entire Liftgate for excessively worn parts and broken welds, especially hinge pins.
- ☐ Visually check platform & flipover. (See the **PERIODIC MAINTENANCE CHECKS** topic for more information.)
- ☐ Visually check the thrust bearings on the shackles.
- ☐ Do the **Semi-annual or 2500 Cycles Checks** on this checklist.
- ☐ Do the **Quarterly or 1250 Cycles Checks** on this checklist.

For more details pertaining to this checklist, see the **PERIODIC MAINTENANCE CHECKS** section in this Maintenance Manual.

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NOTE: Lube fittings are shown for the RH cylinder, lift arm, and parallel arm. There are also lube fittings at the same places on the LH cylinder, lift arm, and parallel arm. Refer to the **PERIODIC MAINTENANCE CHECKS** and **PERIODIC MAINTENANCE CHECKLIST** for the recommended grease and maintenance interval.



**GPTLR LUBRICATION DIAGRAM
FIG. 15-1**

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 17-1 & 17-2** for recommended brands.

1. Unfasten and remove pump cover (**FIG. 16-1**).
2. Check the hydraulic fluid level in reservoir as follows. With Liftgate stowed, or platform at vehicle bed height, level should be as shown in **FIG. 16-2**.

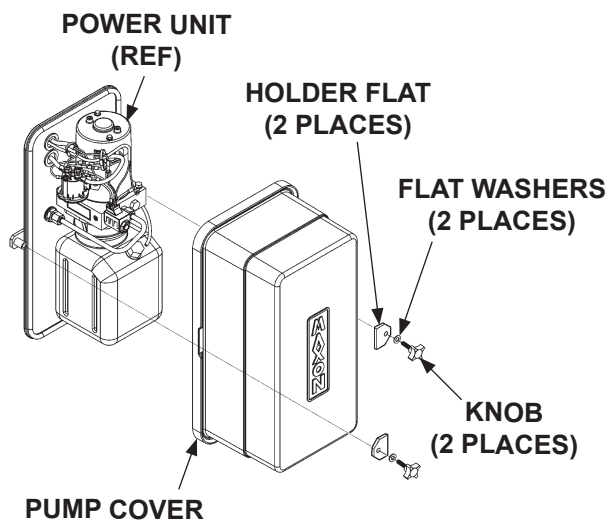
NOTE: If the hydraulic fluid in the reservoir is contaminated, do the **CHANGING HYDRAULIC FLUID** procedure in this section.

3. If needed, add fluid to the reservoir as follows. Pull out (no threads) filler cap (**FIG. 16-2**). Fill the reservoir with hydraulic fluid to level shown in **FIG. 16-2**. Reinstall filler cap (**FIG. 16-2**).

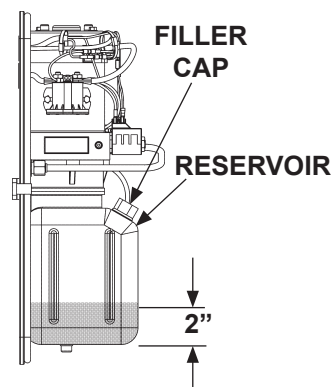
CAUTION

Pump cover must be correctly secured to prevent it from becoming a hazard. To secure pump cover, the long side of the holder flats must butt against pump cover as shown in the illustration.

4. Reinstall and fasten pump cover as shown in **FIG. 16-1**. Hand tighten knobs.



**UNFASTENING / FASTENING PUMP COVER
FIG. 16-1**



**POWER UNIT FLUID LEVEL
FIG. 16-2**

ISO 32 HYDRAULIC OIL	
RECOMMENDED BRANDS	PART NUMBER
CHEVRON	HIPERSYN 32
KENDALL	GOLDEN MV
SHELL	TELLUS S2 V32
EXXON	UNIVIS N-32
MOBIL	DTE-13M, DTE-24, HYDRAULIC OIL-13

TABLE 17-1

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
EXXON	UNIVIS HVI-13
MOBIL	DTE-11M
ROSEMEAD	THS FLUID 17111

TABLE 17-2

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.

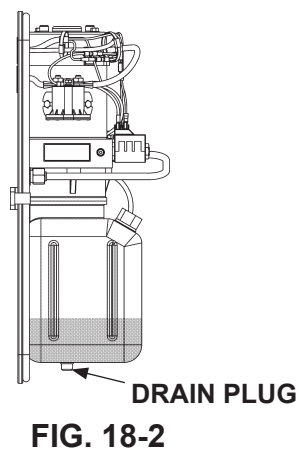
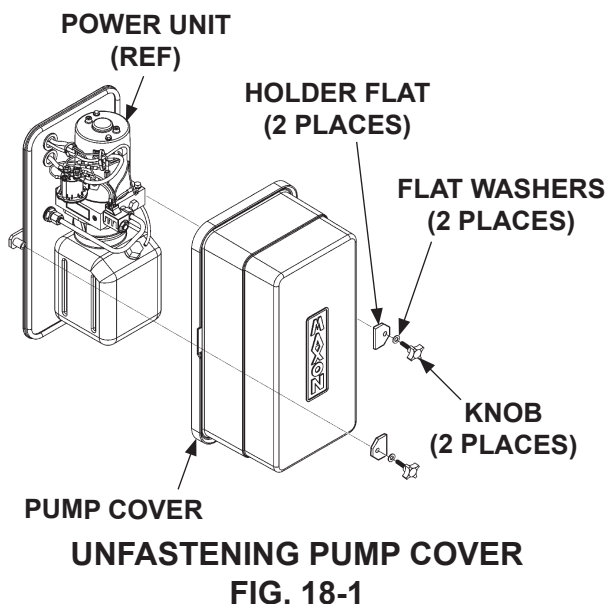
+50 to +120 Degrees F - Grade ISO 32

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

See **TABLES 17-1 & 17-2** for recommended brands.

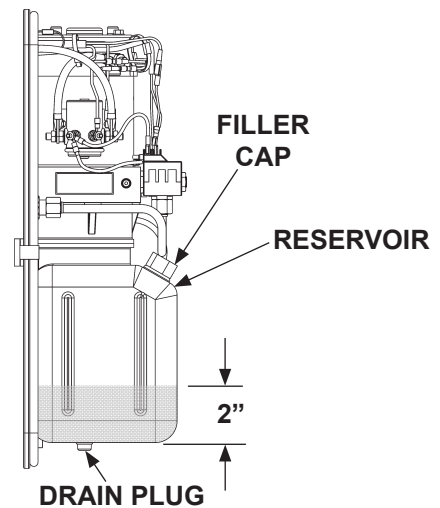
GRAVITY DOWN & POWER DOWN LIFTGATES

1. Unfasten and remove pump cover (FIG. 18-1). Place empty 5 gallon bucket under drain plug (FIG. 18-2).



GRAVITY DOWN LIFTGATES

1. Lower platform to ground. Pull out (no threads) drain plug (**FIG. 19-1**). Drain hydraulic fluid from system. Reinstall drain plug.
2. Pull out (no threads) filler cap (**FIG. 19-1**) and refill reservoir with hydraulic fluid to level shown in **FIG. 19-1**. Reinstall filler cap (**FIG. 19-1**).
3. Stow the Lift and do the **CHECKING HYDRAULIC FLUID** procedure in this section of the manual.



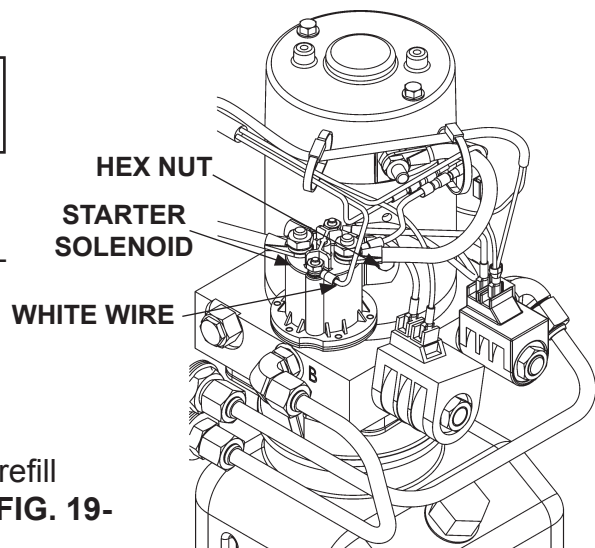
GRAVITY DOWN PUMP & MOTOR
FIG. 19-1

POWER DOWN LIFTGATES

1. Open and raise platform to vehicle bed height. Pull out (no threads) drain plug (**FIG. 19-1**). Drain hydraulic fluid.

NOTE: MAXON recommends using dielectric grease on all electrical connections.

2. Disconnect the white wire (**FIG. 19-2**) from starter solenoid. Lower the platform while draining the remaining hydraulic fluid from system. Reinstall drain plug. Reconnect the white wire to starter solenoid.
3. Pull out (no threads) filler cap (**FIG. 19-1**) and refill reservoir with hydraulic fluid to level shown in **FIG. 19-1**. Reinstall filler cap (**FIG. 19-1**).
4. Stow the Lift and do the **CHECKING HYDRAULIC FLUID** procedure in this section of the manual.



POWER DOWN PUMP
FIG. 19-2

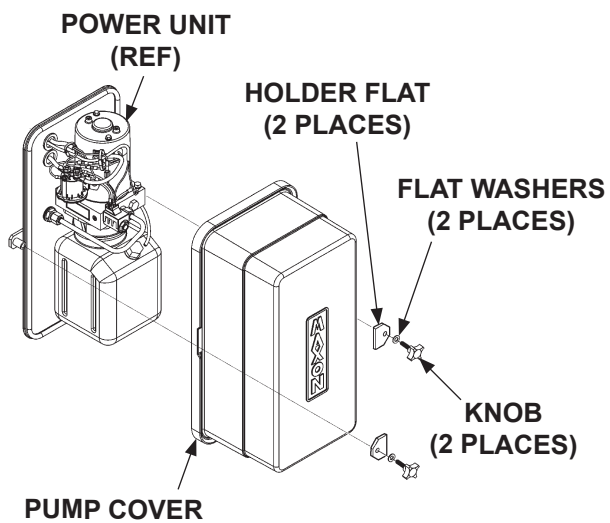
PERIODIC MAINTENANCE

GRAVITY DOWN & POWER DOWN LIFTGATES

CAUTION

Pump cover must be correctly secured to prevent it from becoming a hazard. To secure pump cover, the long side of the holder flats must butt against pump cover as shown in the illustration.

Reinstall and fasten pump cover as shown in **FIG. 20-1**. Hand tighten knobs.



FASTENING PUMP COVER

FIG. 20-1

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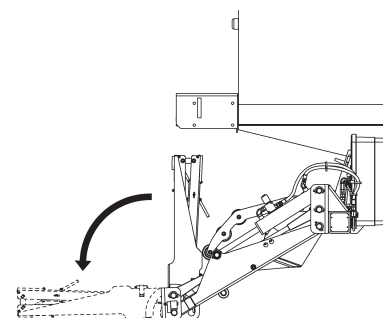
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PERIODIC MAINTENANCE

PLATFORM TORSION SPRING ADJUSTMENT

NOTE: Perform the following adjustment if platform feels heavy as you start to fold it for stowing. If adjusted as follows, the torsion springs will reduce the amount of effort you need to start folding the platform.

1. Make sure vehicle is parked on level ground. **LOWER** the Liftgate to the ground and unfold platform only (**FIG. 22-1**).

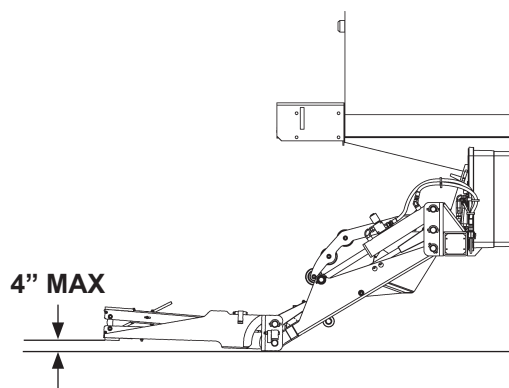


UNFOLDING PLATFORM
FIG. 22-1

NOTE: A properly adjusted platform will stay on ground or horizontal position when open flipover is being folded. Acceptable force to fold the platform is 40 lbs max.

NOTE: Bottom of unfolded platform should be 4" or less above the ground. If distance is more than 4", and platform can be folded and unfolded with ease, the greater distance is allowed and no adjustment is necessary.

2. Measure the distance between the bottom block of the platform and the ground (**FIG. 22-2**).

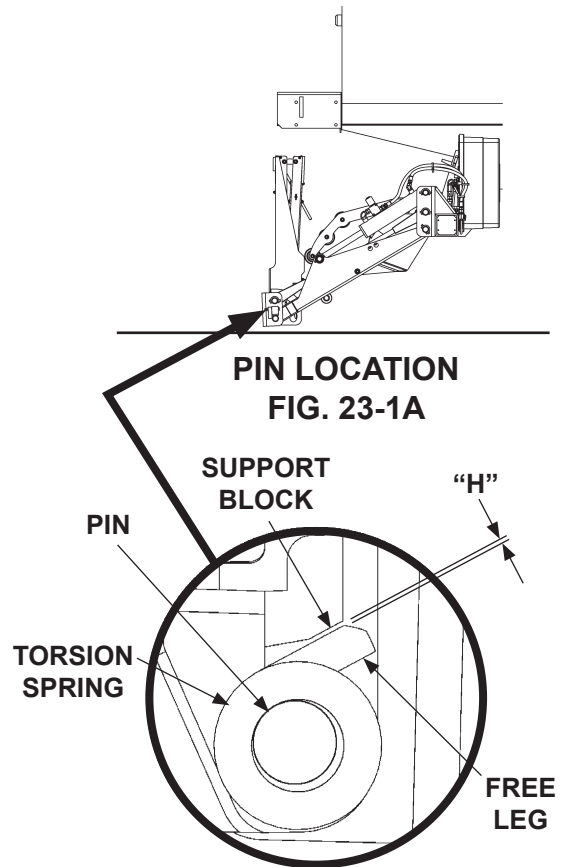


PLATFORM 0-4" ABOVE GROUND
FIG. 22-2

⚠ WARNING

To prevent possible injury and damage to Liftgate, have another qualified person hold platform in position to keep it from falling open.

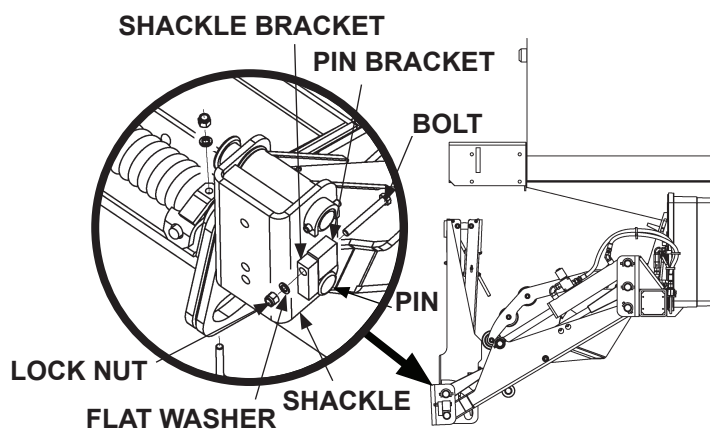
3. Position platform and flipover to 90 degrees, $+2 / -0$ degrees (**FIG. 23-1A**). Get a second person to hold the platform in place while you take measurements.
4. On RH side of platform, position the torsion spring so it rests on pin (**FIGS. 23-1A & 23-1B**). Make sure free leg of torsion spring is parallel to chamfered surface on support block (**FIG. 23-1B**). Measure gap "H" between leg of the torsion spring and support block (**FIG. 23-1B**). Get enough 1/16" shim washers (Kit items), to equal measured gap.



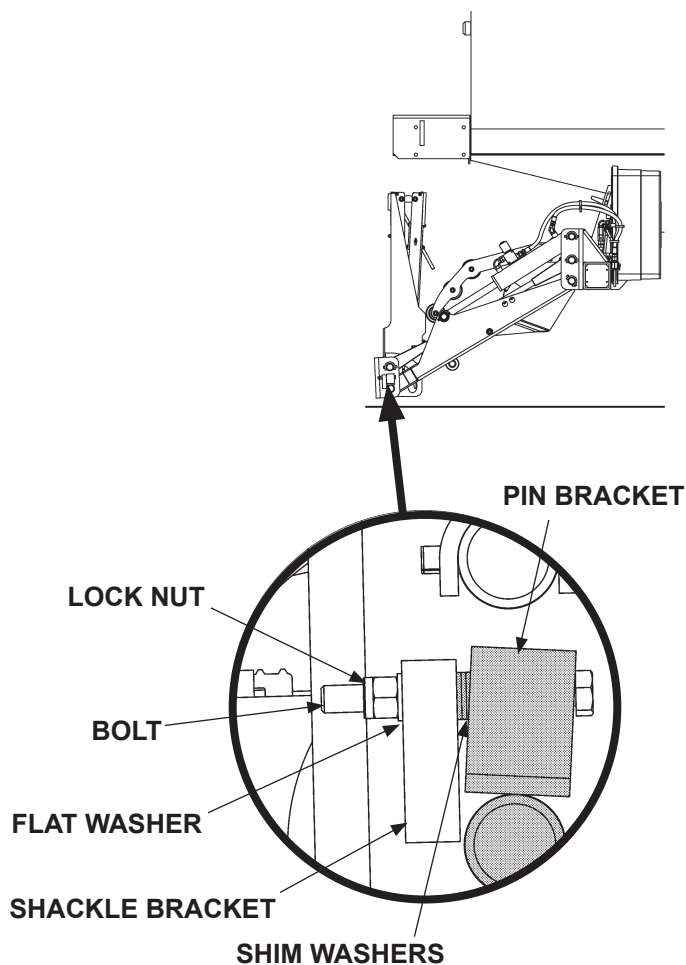
**CORRECTLY POSITIONED
PLATFORM & FLIPOVER
FIG. 23-1B**

PLATFORM TORSION SPRING ADJUSTMENT - Continued

5. If necessary, adjust the torsion springs to lower the platform to 4" or less above the ground. Unbolt pin bracket (FIG. 24-1). Then, rotate the pin bracket away from the shackle bracket until the free leg of the torsion spring makes contact with the new block welded to the platform support. Then, using shim washers that equal the gap "H" measured in step 14, insert the shim washers between pin bracket and shackle bracket (FIGS. 24-1 and 24-2.). Bolt shim washers in place between pin bracket and shackle bracket (FIG. 24-2). Tighten bolt and lock nut.
6. Repeat steps 2, 3, and 4 for the LH torsion spring.
7. Repeat step 1 to check clearance of bottom of platform above the ground.



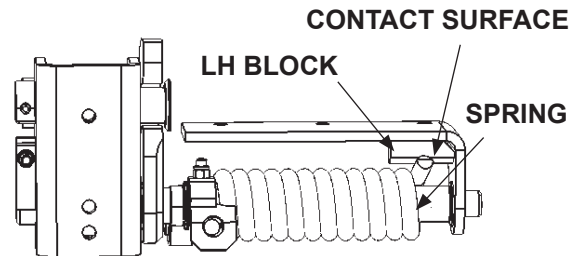
**ADJUST PLATFORM
FIG. 24-1**



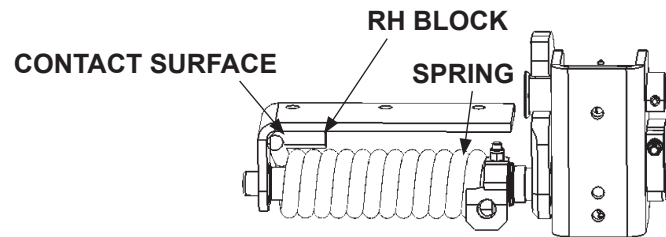
**SHIMMING TORSION SPRING
FIG. 24-2**

NOTE: If shimming is not possible, the spring contact surface on the new stops may be ground in small 1/16" increments to lower the platform closer to the ground.

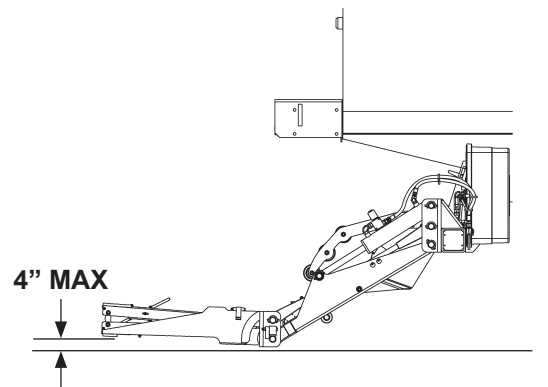
8. If shimming is not possible, grind the contact surface on the support blocks (**FIGS. 25-1 and 25-2**) in small 1/16" increments to lower the platform to 4" or less, between bottom block and the ground (**FIG. 25-3**).



GRINDING LH BLOCK
FIG. 25-1



GRINDING RH BLOCK
FIG. 25-2



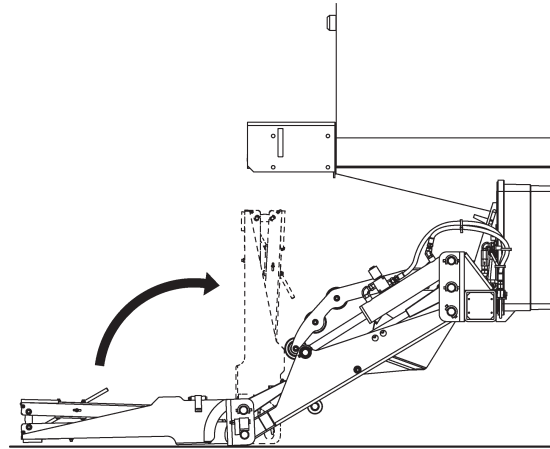
PLATFORM 0-4" ABOVE GROUND
FIG. 25-3

PLATFORM TORSION SPRING ADJUSTMENT - Continued

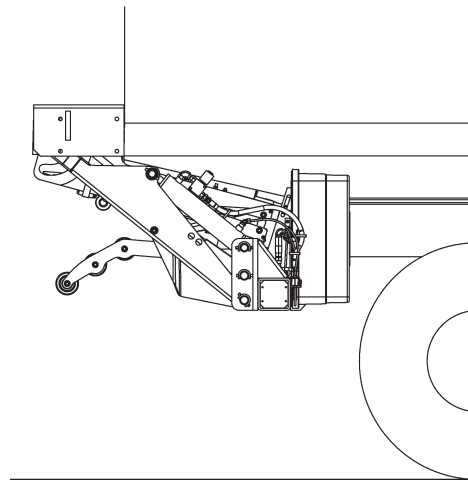
CAUTION

Stow Liftgate under hydraulic pressure.

9. Fold platform as shown in **FIG. 26-1**.
Then, stow Liftgate as shown in **FIG. 26-2**.



FOLDING PLATFORM
FIG. 26-1



LIFTGATE STOWED
FIG. 26-2

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PERIODIC MAINTENANCE REPLACING PLATFORM TORSION SPRING

NOTE: The following procedure shows how to replace torsion spring on RH side of platform. Use this procedure for replacing torsion spring on the LH side.

1. Fold flipover onto platform.
2. Fold platform.
3. Raise Liftgate to a convenient work height to gain access and release tension on the torsion spring.

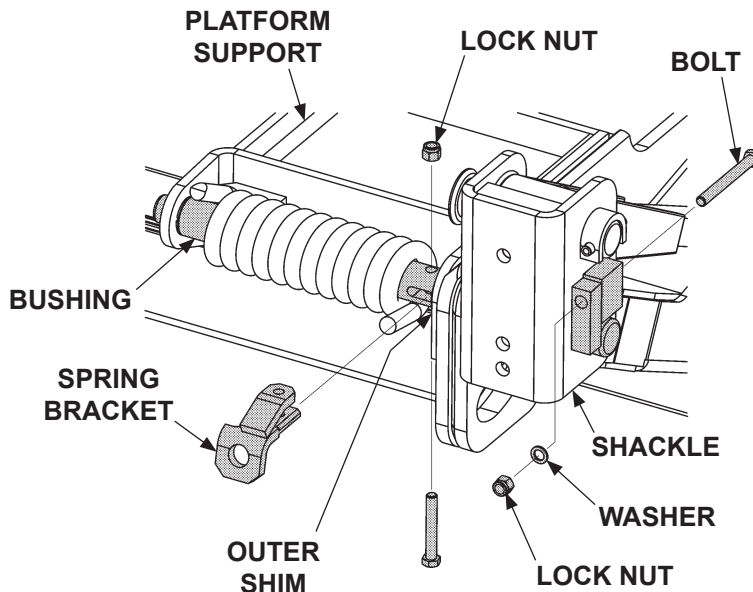


FIG. 28-1

! CAUTION

To prevent injury and equipment damage, make sure there is no tension on torsion spring before removing hinge pin.

4. Unbolt hinge pin from shackle and spring bracket (FIG. 28-1). Remove bolts, washers, and lock nuts. Drive the hinge pin out board toward the shackle just enough to free the torsion spring and bushing (FIG. 28-2). Remove the torsion spring.

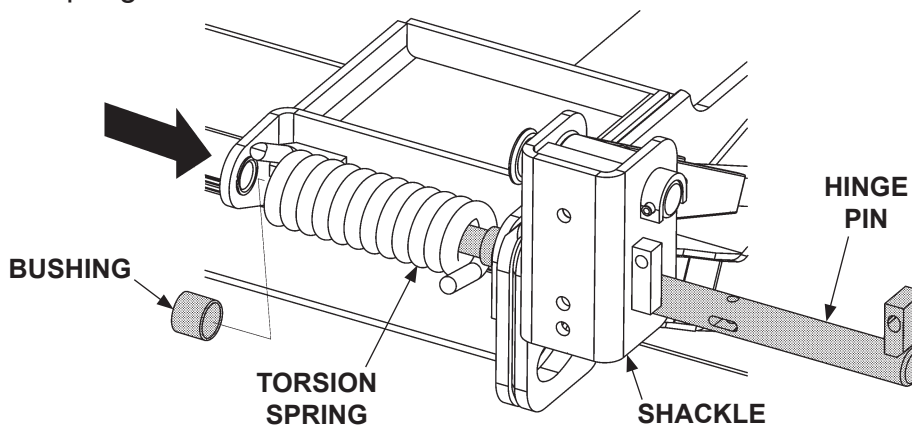


FIG. 28-2

5. Install the new torsion spring and bushing as shown in **FIG. 29-1**. Make sure non-chamfered leg of the spring is inserted in the spring bracket (**FIG. 29-1**). Make sure chamfered leg of the spring is visible and resting against the platform support (**FIG. 29-1**).
6. Drive the hinge pin into correct position through the platform support as shown in **FIG. 29-1**. Line up the bolt hole in the hinge pin with the hole in the shackle and spring bracket. Bolt the hinge pin to platform support and spring bracket with bolts, washers, lock nuts (**FIG. 29-1**). Torque the 3/8"-16 spring pin bolt and 3/8"-16 spring bracket bolt **35 to 52 lbs.-ft.**
7. Do the **PLATFORM TORSION SPRING ADJUSTMENT** in this manual.
8. Operate the Liftgate according to instructions in **Operation Manual** to make sure it operates correctly.

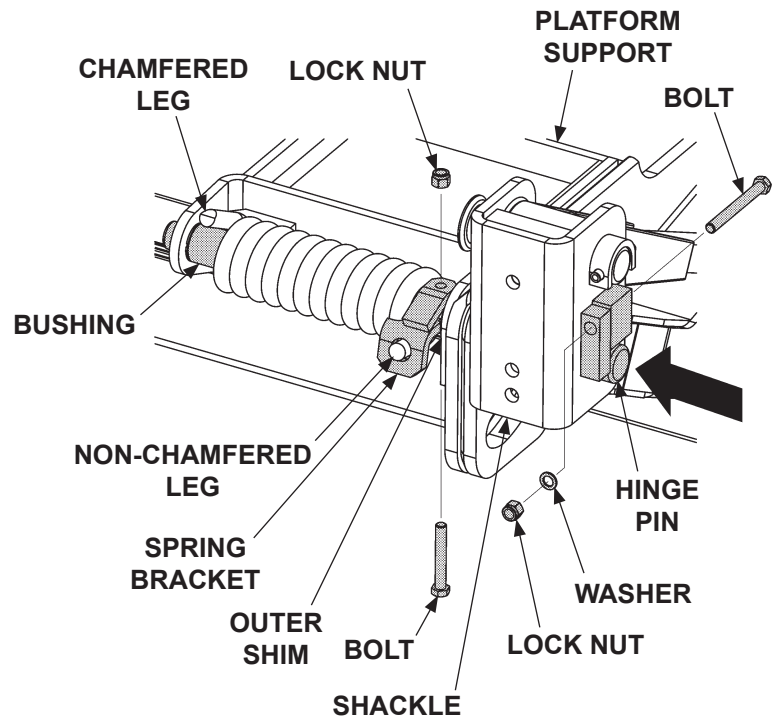


FIG. 29-1

DECALS

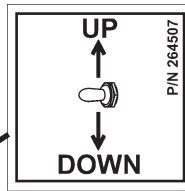
CAUTION
Always stand clear of platform area.
P/N 282522-01 (F)

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 dealer before you attempt to operate the 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
(SMALL, WARNING & CAUTION)
P/N 282522-01**



**CONTROL SWITCH
DECAL
P/N 264507**

OPERATING INSTRUCTIONS

OPERATE	STOW
<p>PUSH CONTROL SWITCH</p> <p>1 MUST TOUCH GROUND</p>	<p>RAISE PLATFORM FOLD & LATCH FLIPOVER</p> <p>1 (SEE CAUTION)</p>
<p>UNFOLD PLATFORM</p> <p>2</p>	<p>FOLD PLATFORM</p> <p>2</p>
<p>UNLATCH & UNFOLD FLIPOVER</p> <p>3</p>	<p>PUSH CONTROL SWITCH</p> <p>3</p>
<p>RAISE/LOWER</p> <p>4</p>	<p>STOWED</p> <p>4</p>

DECAL, P/N 251867-09

**INSTRUCTION DECAL
P/N 251867-09**

THE MAXIMUM CAPACITY
OF THIS LIFT IS

POUNDS

WHEN THE LOAD IS
CENTERED ON PLATFORM

**CAPACITY DECAL
(SEE TABLE 30-1)**

CAPACITY DECALS	
CAPACITY	PART NO.
2500 LBS.	220382
3300 LBS.	220388-02
4400 LBS.	253155
5500 LBS.	253161

TABLE 30-1

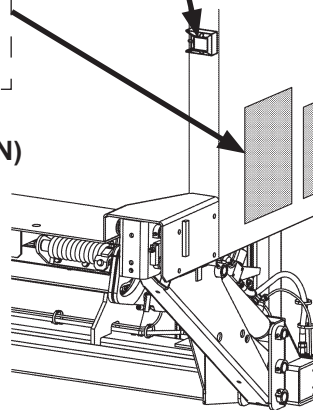


FIG. 30-1

WARNING
A Liftgate extending from a moving vehicle could injure bystanders & damage property. Stow liftgate in correct transit position before moving vehicle.

DECAL, P/N 282847-02

**STOW WARNING DECAL
P/N 282847-02**

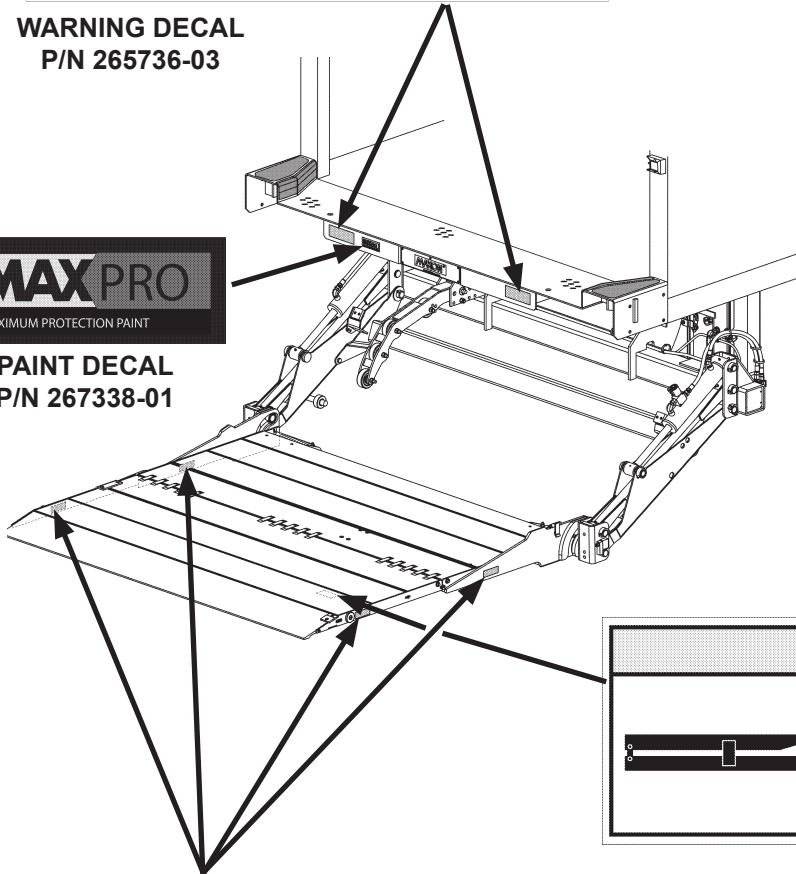
FIG. 30-1



WARNING DECAL
P/N 265736-03



PAINT DECAL
P/N 267338-01



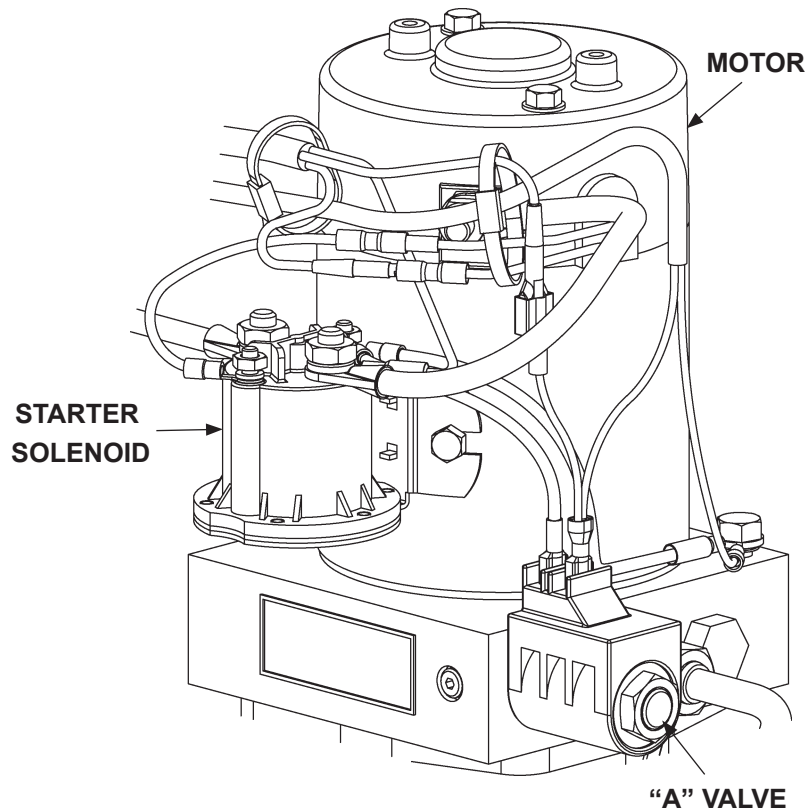
CAUTION DECAL
(FLIPOVER EQUIPPED WITH LATCH ONLY)
P/N 267694-01



WARNING DECAL
P/N 265736-02

FIG. 31-1

SYSTEM DIAGRAMS **PUMP & MOTOR SOLENOID OPERATION (GRAVITY DOWN)**

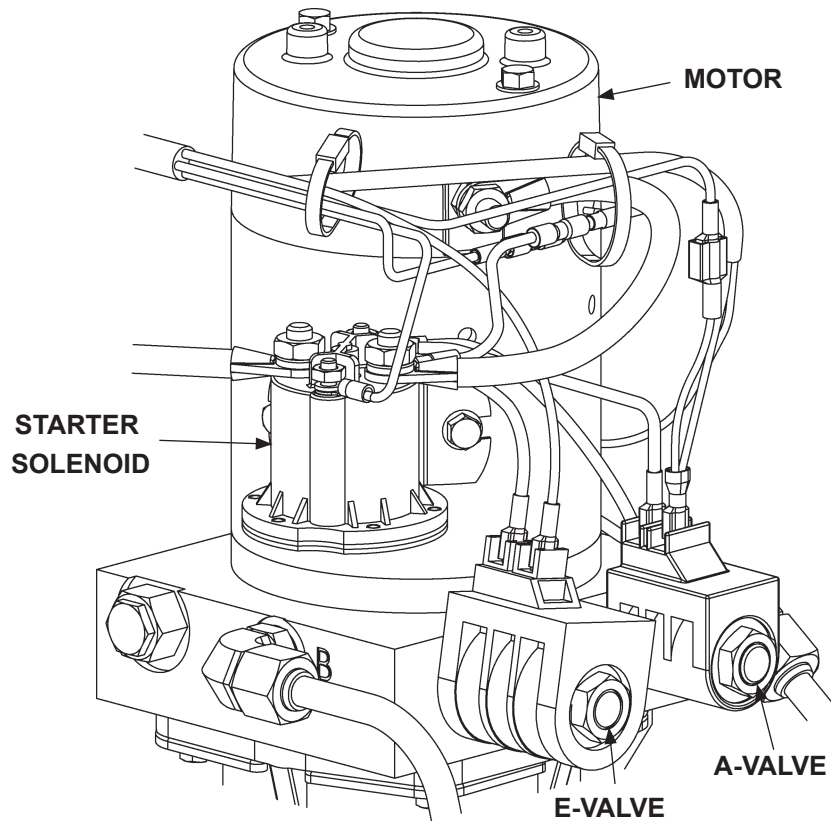


GRAVITY DOWN POWER UNIT
FIG. 32-1

POWER UNIT MOTOR & SOLENOID OPERATION				
LIFTGATE FUNCTION	PORT	SOLENOID OPERATION (✓ MEANS ENERGIZED)		
		MOTOR	VALVE "A"	LOCK VALVE
RAISE	A	✓	-	-
LOWER	VENT	-	✓	✓
REFER TO VALVES SHOWN ON HYDRAULIC SCHEMATIC				

TABLE 32-1

PUMP & MOTOR SOLENOID OPERATION (POWER DOWN)



POWER DOWN POWER UNIT
FIG. 33-1

POWER UNIT MOTOR & SOLENOID OPERATION					
LIFTGATE FUNCTION	PORT	SOLENOID OPERATION (✓ MEANS ENERGIZED)			
		MOTOR	VALVE "A"	VALVE "E"	LOCK VALVE
RAISE	A	✓	-	✓	-
LOWER	B	✓	✓	-	✓
REFER TO VALVES SHOWN ON HYDRAULIC SCHEMATIC					

TABLE 33-1

HYDRAULIC SCHEMATIC (GRAVITY DOWN)

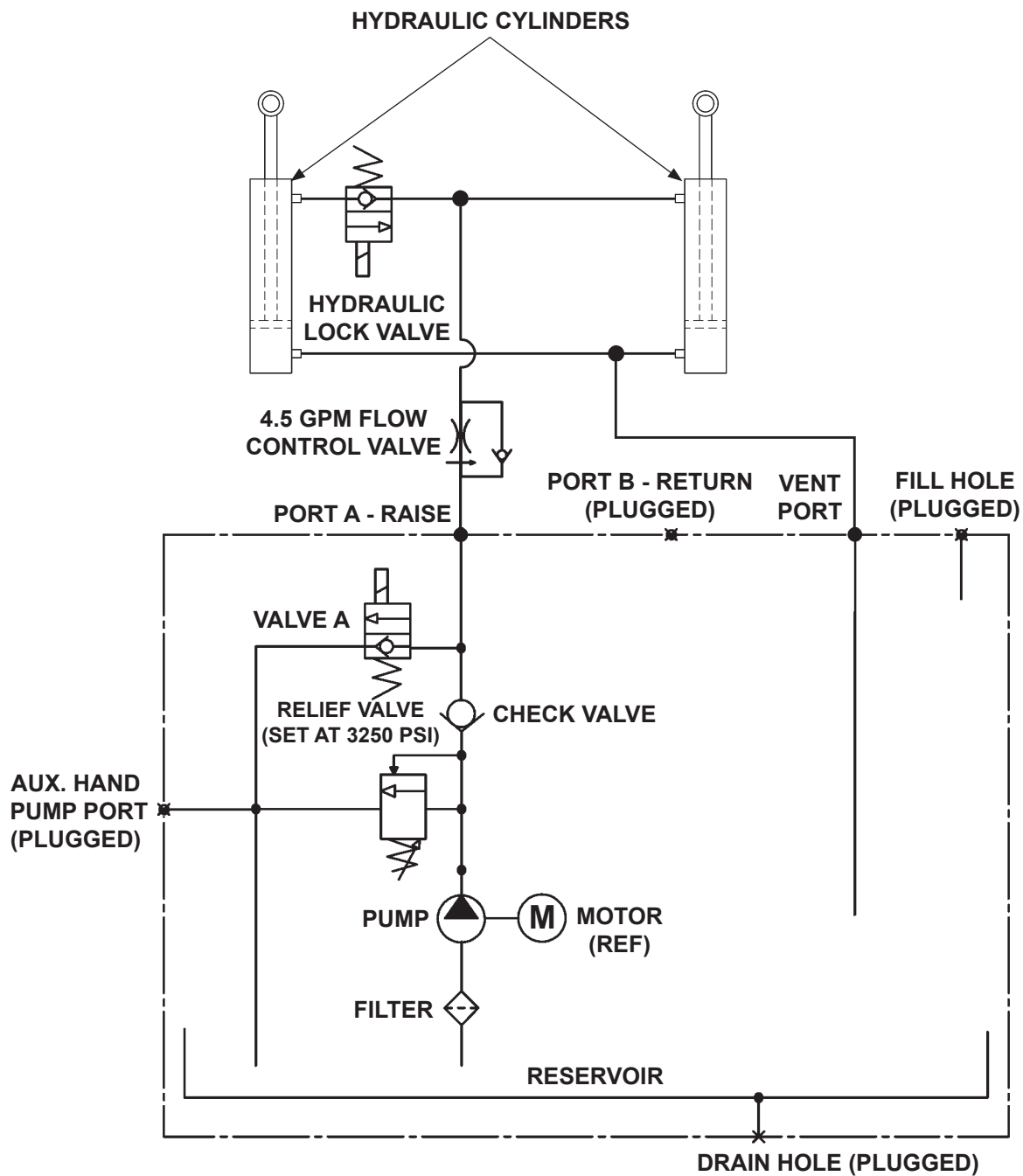


FIG. 34-1

HYDRAULIC SCHEMATIC (POWER DOWN)

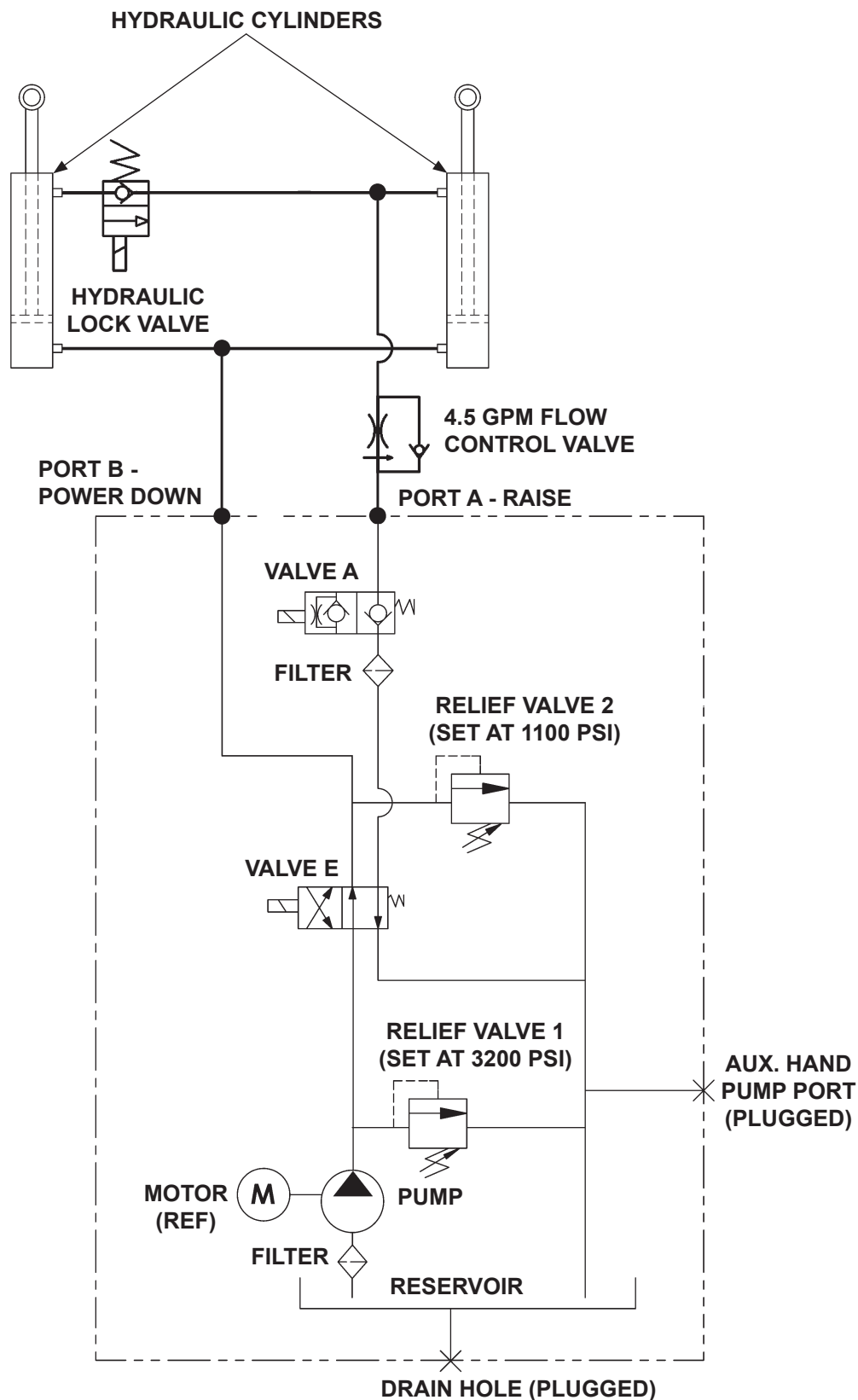


FIG. 35-1

ELECTRICAL SCHEMATIC (GRAVITY DOWN)

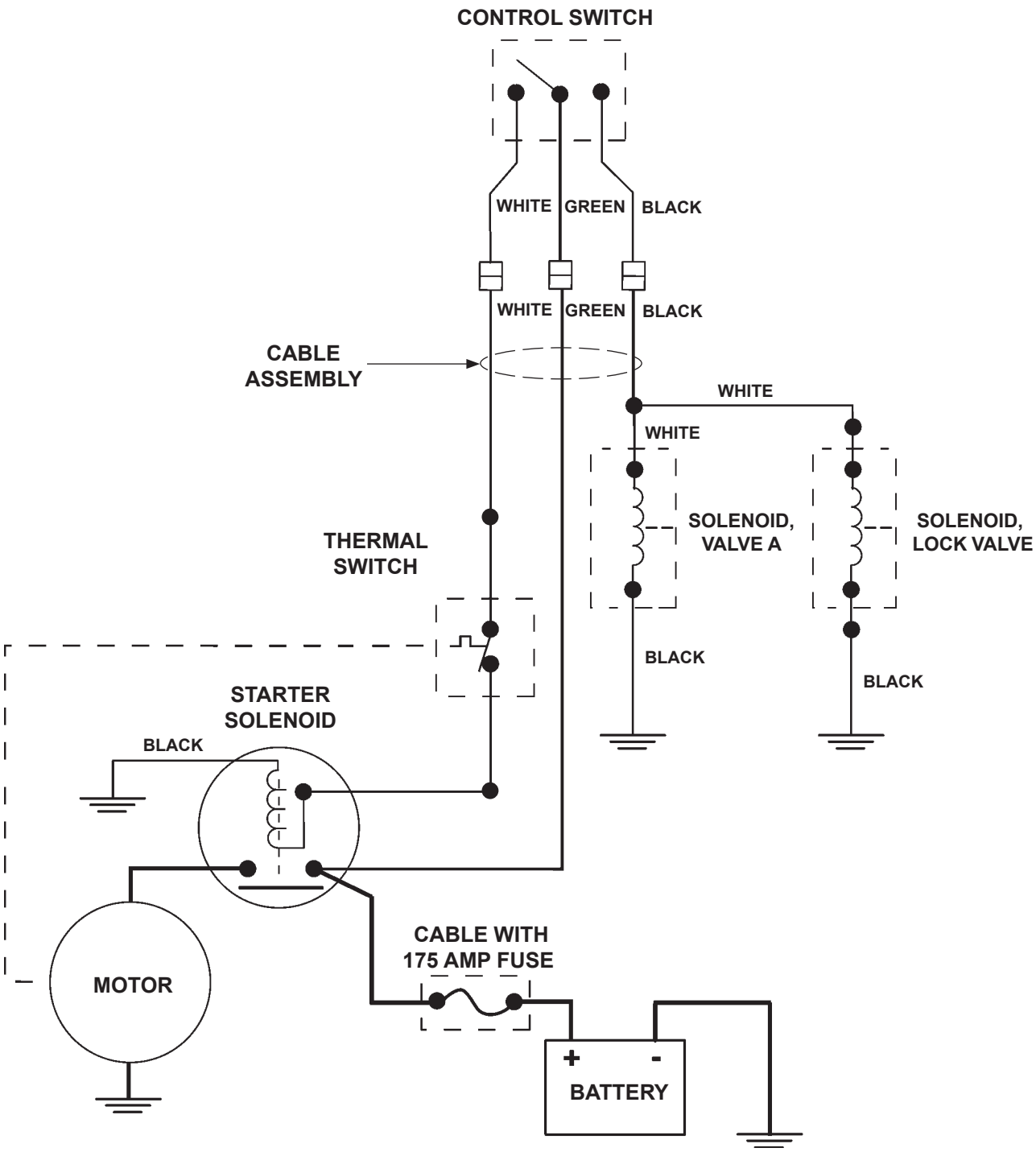


FIG. 36-1

ELECTRICAL SCHEMATIC (POWER DOWN)

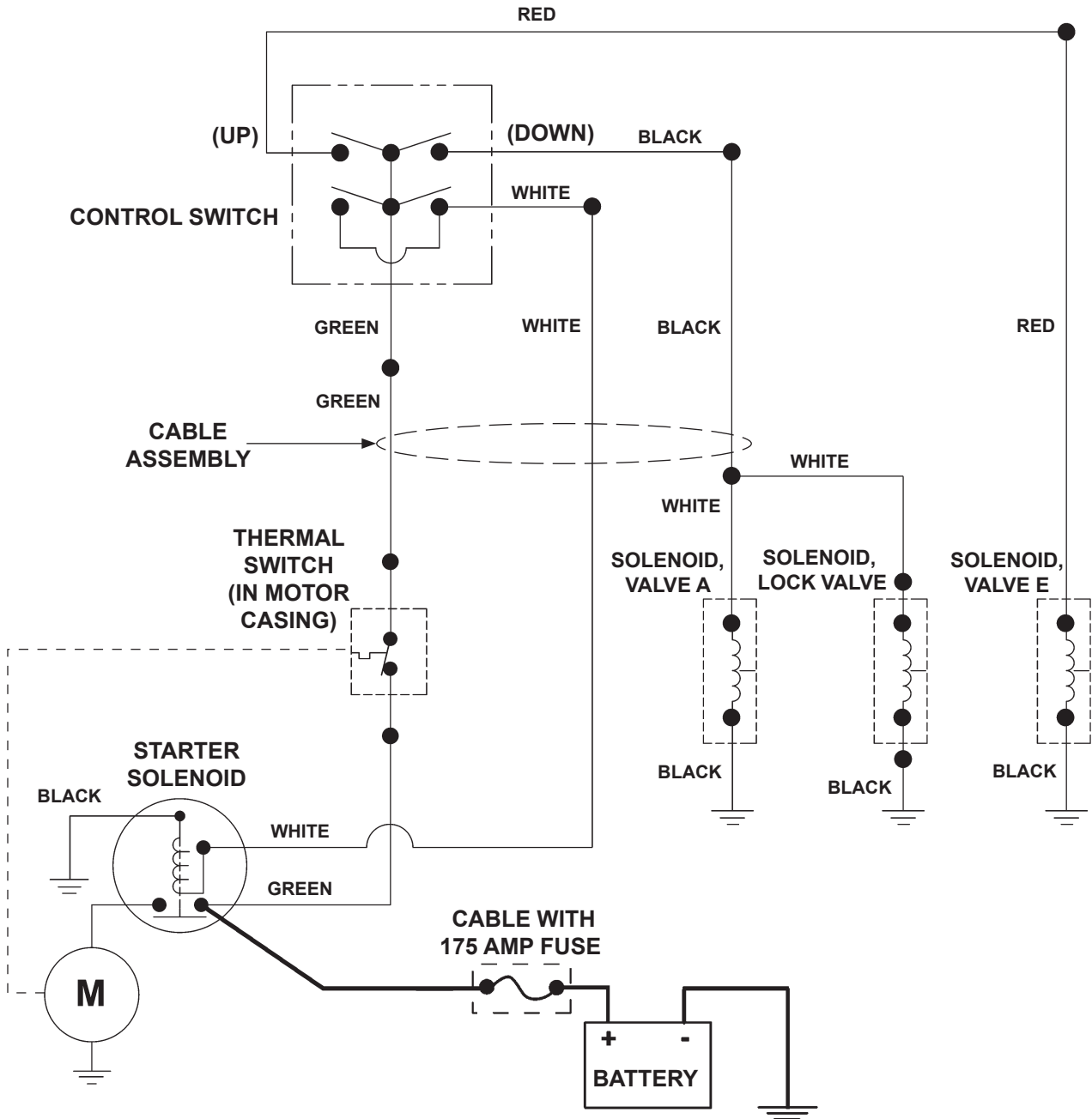


FIG. 37-1

RECOMMENDED BOLT TORQUES

CAUTION

The torque values in the following table are provided for torquing grade 8 bolts on Liftgate mechanical parts. To prevent damage, never use the information in this table for torquing electrical or hydraulic hose connections on the pump assembly.

GRADE 8 BOLT TIGHTENING TORQUE	
DIAMETER & THREAD PITCH	TORQUE
1/4"-20	10-14 LBS.-FT.
1/4"-28	11-16 LBS.-FT.
5/16"-18	20-29 LBS.-FT.
5/16"-24	22-33 LBS.-FT.
3/8"-16	35-52 LBS.-FT.
3/8"-24	40-59 LBS.-FT.
7/16"-14	56-84 LBS.-FT.
7/16"-20	62-93 LBS.-FT.
1/2"-13	85-128 LBS.-FT.
1/2"-20	96-144 LBS.-FT.
9/16"-12	123-184 LBS.-FT.
9/16"-18	137-206 LBS.-FT.
5/8"-11	170-254 LBS.-FT.
5/8"-18	192-288 LBS.-FT.
3/4"-10	301-451 LBS.-FT.
3/4"-18	336-504 LBS.-FT.

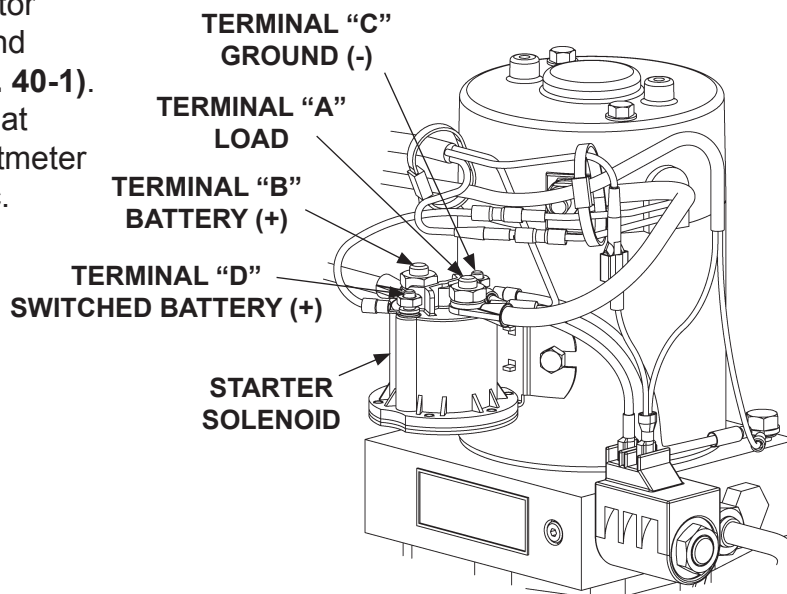
TABLE 38-1

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TROUBLESHOOTING

PLATFORM WILL NOT RAISE & MOTOR WILL NOT RUN

1. Connect voltmeter between motor solenoid terminal "B" and ground wires connection on pump (**FIG. 40-1**). Verify that full battery voltage is at "B". Recharge the battery if voltmeter indicates less than 12.6 volts dc.



GRAVITY DOWN POWER UNIT
FIG. 40-1

2. Touch a jumper wire to terminals "B" & "D" (**FIG. 40-1**). If motor runs, check control switch, the switch connections, and white wire. Check and correct wiring connections or replace the control switch.
3. Touch heavy jumper cables to terminals "A" & "B" (**FIG. 40-1**).
 - a. If motor runs, replace the motor solenoid.
 - b. If motor does not run, repair or replace the pump motor.

PLATFORM WILL NOT RAISE, BUT MOTOR RUNS

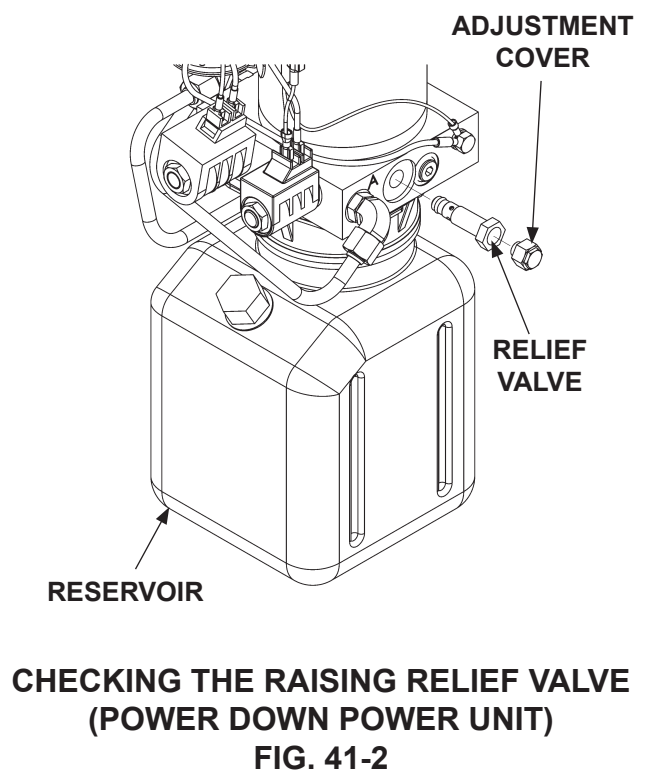
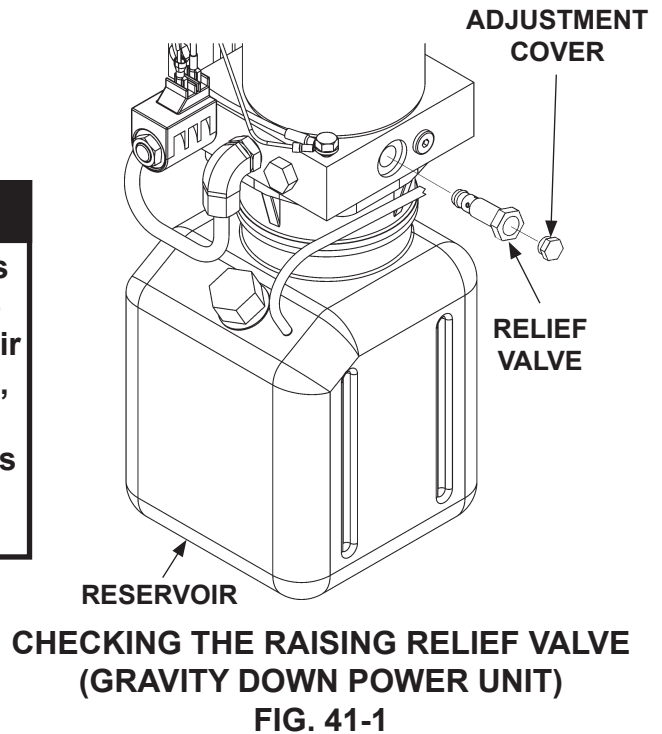
1. Do the **CHECKING HYDRAULIC FLUID** procedure in this manual. If necessary, add hydraulic fluid.
2. Check for structural damage and replace worn parts.

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 (FIGS. 41-1 and 41-2). Clean or replace filter, if necessary.

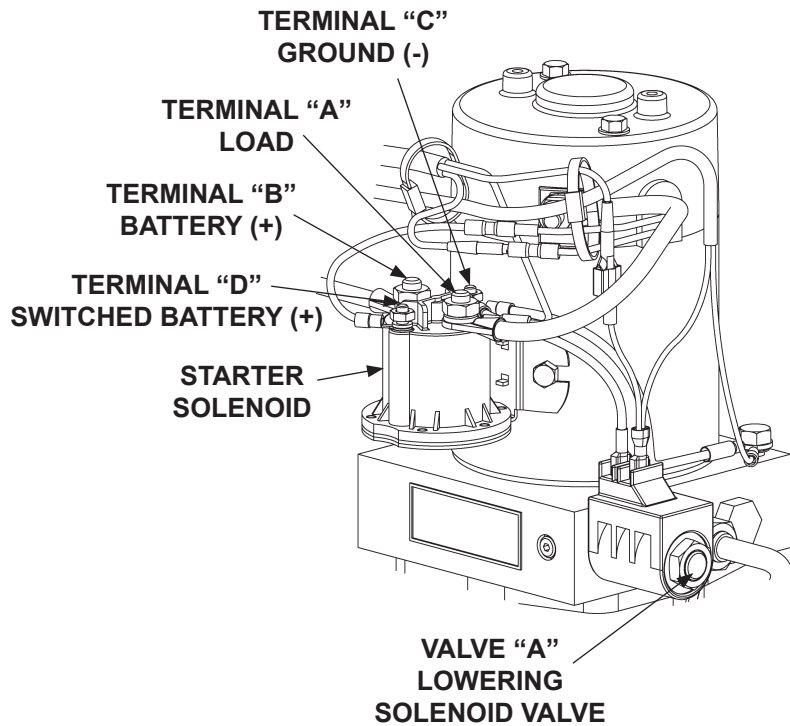
4. Check for dirty raising relief valve (FIGS. 41-1 and 41-2). Clean or replace relief valve if necessary.



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. 42-1**). If voltmeter reads battery voltage, check for faulty wiring or toggle switch.



GRAVITY DOWN POWER UNIT
FIG. 42-1

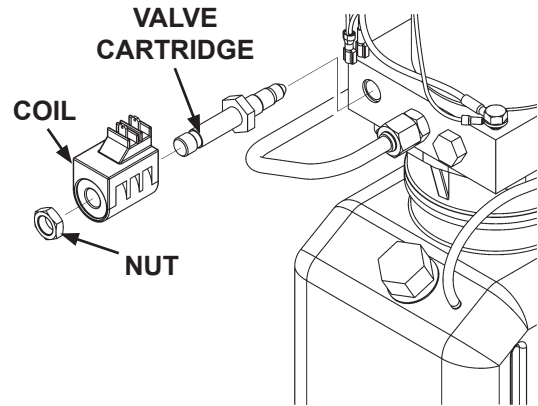
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CAUTION

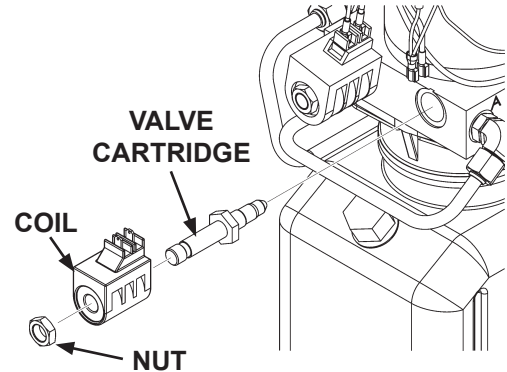
Keep dirt, water and other contaminants from entering the hydraulic system. Before opening the hydraulic fluid reservoir filler cap, drain plug and hydraulic lines, clean up contaminants that can get in the openings. Also, protect the openings from accidental contamination during maintenance.

2. Make sure platform is on the ground. Remove lowering solenoid valve (**FIGS. 43-1 and 43-2**). Push on the plunger in the valve by inserting small screwdriver in the open end (**FIG. 43-3**). If the plunger does not move with a smooth, spring-loaded action (approximately 1/8"), replace the valve cartridge. **Reinstall lowering solenoid valve. Torque valve cartridge to 30 lbs.-ft. and hex nut to 30 lbs.-in.**



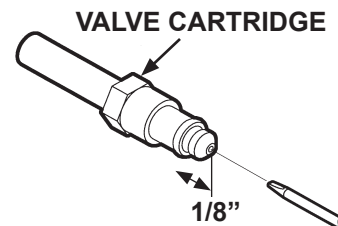
**REMOVING SOLENOID VALVE
(GRAVITY DOWN POWER UNIT)**

FIG. 43-1



**REMOVING SOLENOID VALVE
(POWER DOWN POWER UNIT)**

FIG. 43-2



CHECKING SOLENOID VALVE
FIG. 43-3

3. Check the hydraulic cylinder. With the platform at vehicle floor level, remove the hydraulic line from the **LOWER** port on the cylinder (**FIG. 43-4**). Hold the control switch in the "**RAISE**" position for two seconds while you watch for hydraulic fluid at the **LOWER** port. A few drops of hydraulic fluid escaping the port is normal. However, if fluid streams out, piston seals are worn. Replace seals.

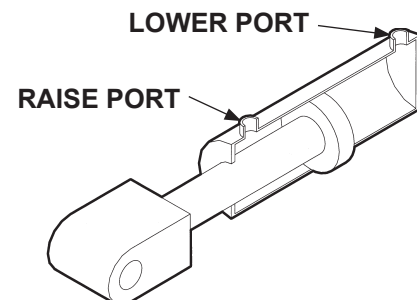
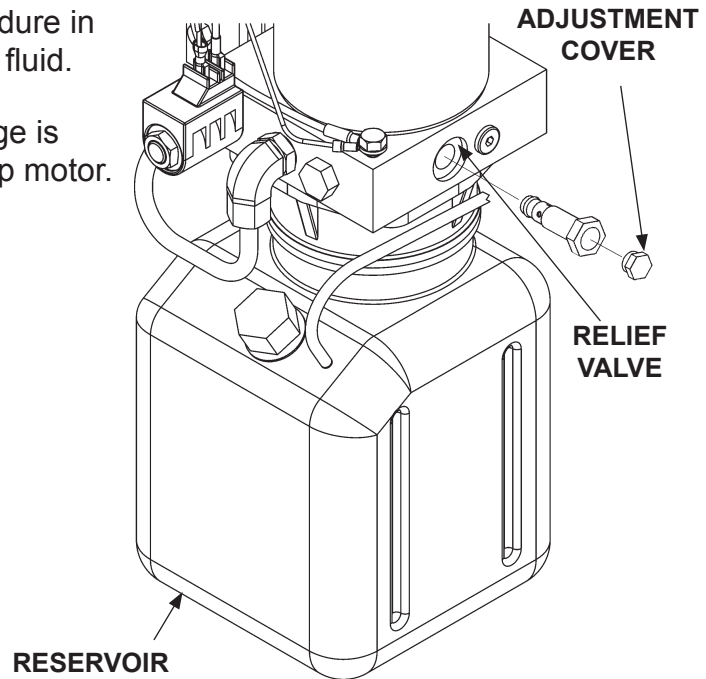


FIG. 43-4

TROUBLESHOOTING

PLATFORM RAISES PARTIALLY AND STOPS

1. Lower the opened 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.

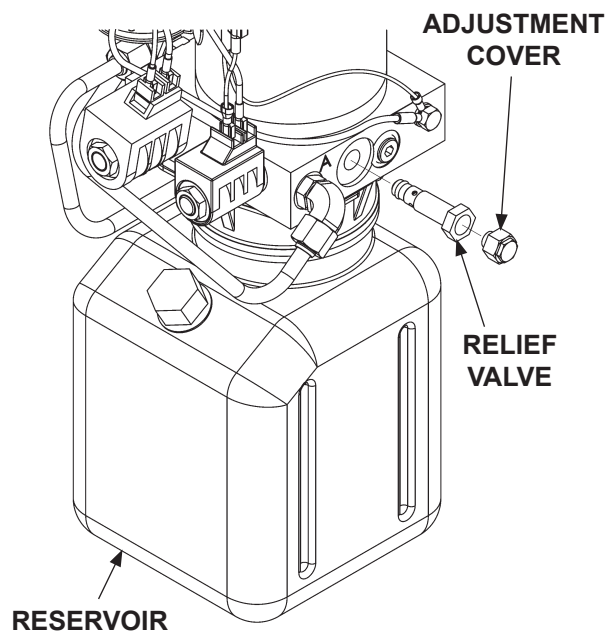


**CHECKING THE RAISING RELIEF VALVE
(GRAVITY DOWN POWER UNIT)**
FIG. 44-1

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 (FIGS. 44-1 and 44-2). Clean or replace relief valve, if necessary.



**CHECKING THE RAISING RELIEF VALVE
(POWER DOWN POWER UNIT)**
FIG. 44-2

5. Check the hydraulic cylinder. With the platform at vehicle floor level, remove the hydraulic line from the **LOWER** port on the cylinder (**FIG. 45-1**). Hold the control switch in the “**RAISE**” position for two seconds while you watch for hydraulic fluid at the **LOWER** port. A few drops of hydraulic fluid escaping the port is normal. However, if fluid streams out, piston seals are worn. Replace seals.

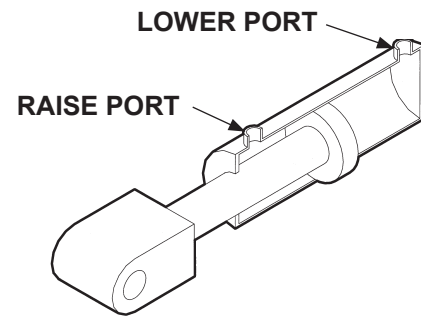


FIG. 45-1

6. Check pump oil filter in the reservoir (**FIGS. 41-1 and 41-2**). Clean or replace filter, if necessary.

TROUBLESHOOTING

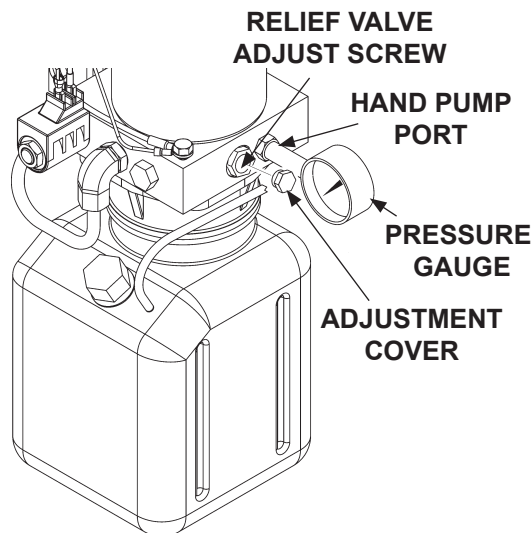
LIFTGATE WILL NOT LIFT RATED CAPACITY

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.

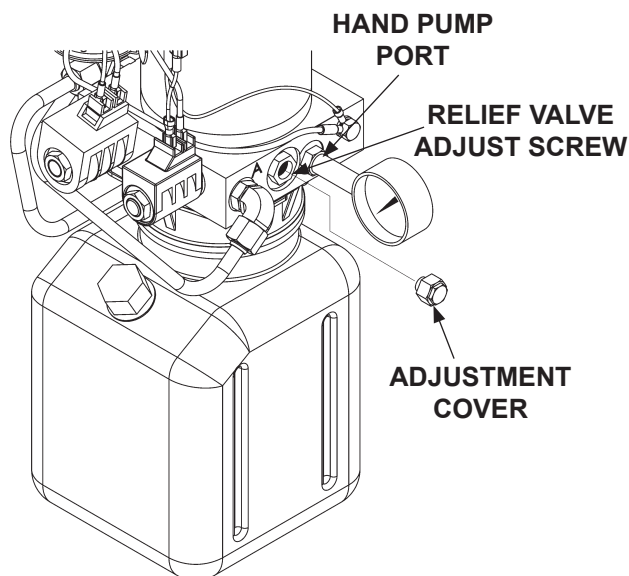
CAUTION

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 3200 PSI relief valve as follows. With platform on the ground, remove plug from hand pump port (**FIGS. 46-1 and 46-2**). Install 0-4000 PSI pressure gauge in the hand pump port (**FIGS. 46-1 and 46-2**). Remove cover for access to relief valve. Hold the control switch in the “**RAISE**” position. Adjust the relief valve until the gauge reads 3200 PSI (**FIGS. 46-1 and 46-2**). 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.



**ADJUSTING RAISING RELIEF VALVE
(GRAVITY DOWN POWER UNIT)
FIG. 46-1**



**ADJUSTING RAISING RELIEF VALVE
(POWER DOWN POWER UNIT)
FIG. 46-2**

5. Check the hydraulic cylinder. With the platform at vehicle floor level, remove the hydraulic line from the **LOWER** port on the cylinder (**FIG. 47-1**). Hold the control switch in the “**RAISE**” position for two seconds while you watch for hydraulic fluid at the **LOWER** 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 3200 PSI or lift the load capacity with a minimum of 12.6 volts available, the pump is worn and needs to be replaced.

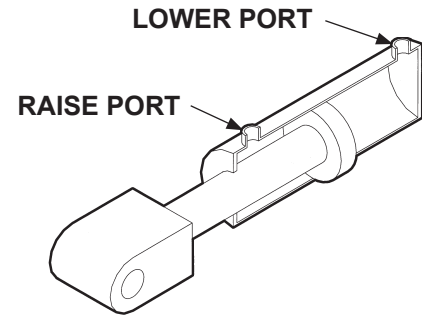
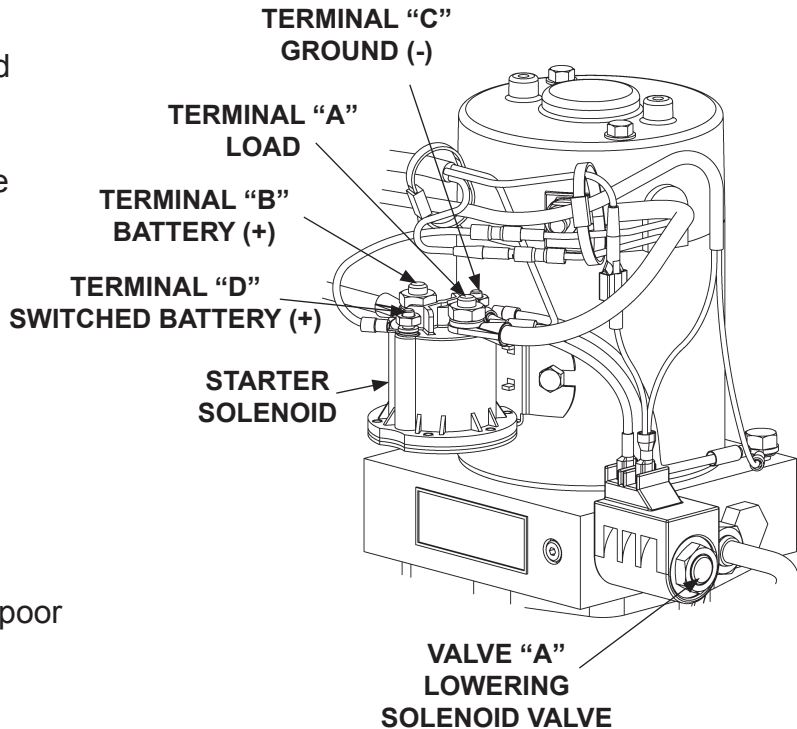


FIG. 47-1

TROUBLESHOOTING

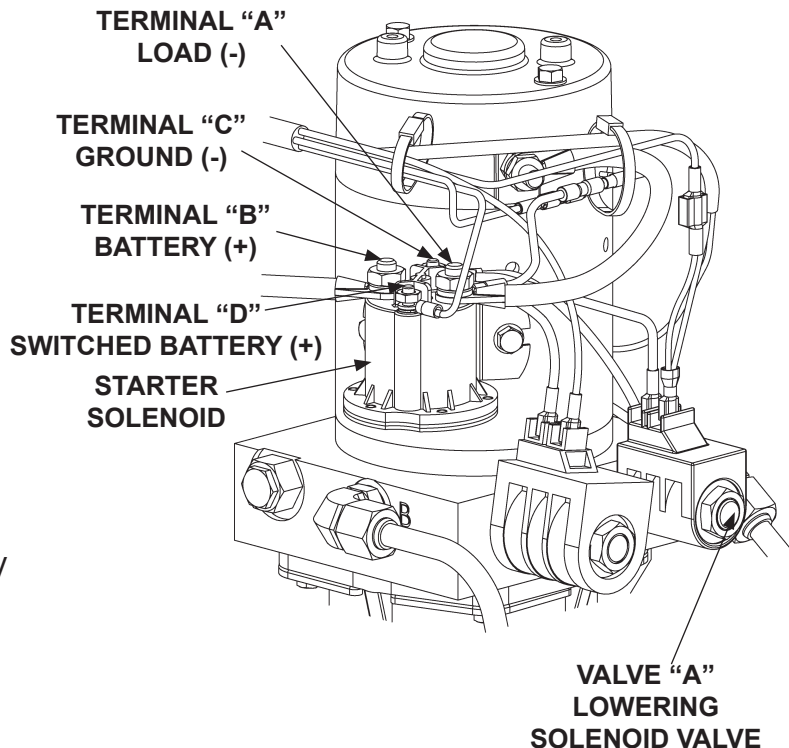
PLATFORM WILL NOT LOWER, LOWERS TOO SLOWLY, OR TOO QUICKLY

1. Connect voltmeter (+) lead to motor solenoid terminal **"B"** and the (-) lead to the ground wires connection on pump (**FIG. 48-1**). 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.



**GRAVITY DOWN POWER UNIT
FIG. 48-1**

3. Check if the **"D"** terminal and **"A"** (lowering) solenoid valve are getting battery voltage (**FIG. 48-2**). Connect voltmeter negative (-) lead to ground (-) wires connection on pump and positive (+) lead to the **"D"** terminal (**FIG. 48-2**). Hold control switch in the **"LOWER"** position. Then, connect voltmeter (+) lead to (+) terminal on the **"A"** (lowering) solenoid valve (**FIG. 48-2**). 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.



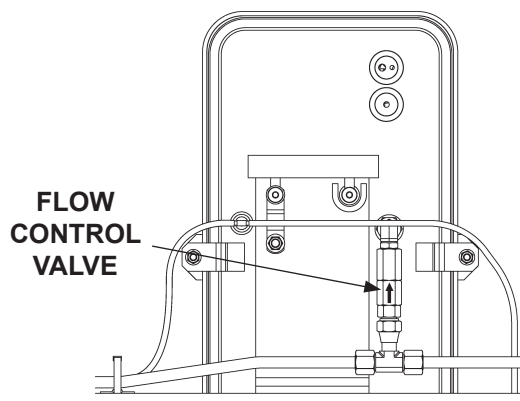
**POWER DOWN POWER UNIT
FIG. 48-2**

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.

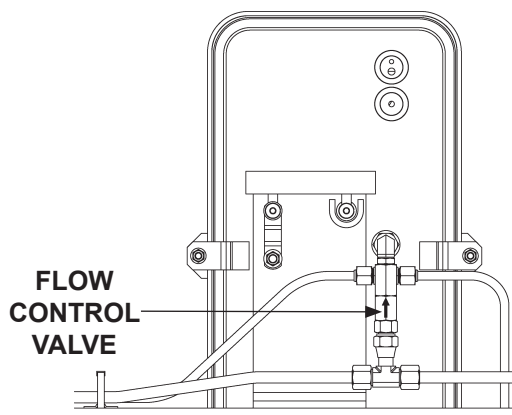
CAUTION

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



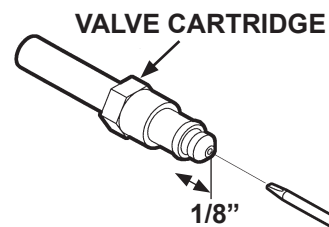
FLOW CONTROL VALVE ON BACK OF GRAVITY DOWN PUMP ASSEMBLY
FIG. 49-1

4. Make sure platform is on the ground. Check the flow control valve as follows. Remove flow control valve (**FIG. 49-1**). 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.



FLOW CONTROL VALVE ON BACK OF POWER DOWN PUMP ASSEMBLY
FIG. 49-2

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. 49-3**). 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 lbs.-ft. and hex nut to 30 lbs.-in.**



CHECKING SOLENOID VALVE
FIG. 49-3

