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

<table>
<thead>
<tr>
<th>PAGE</th>
<th>DESCRIPTION OF CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVER</td>
<td>Updated REV &amp; date of release.</td>
</tr>
<tr>
<td>45</td>
<td>Corrected part number for item 23.</td>
</tr>
<tr>
<td>17</td>
<td>Removed AMSOIL AWF-05 from recommended hydraulic oils.</td>
</tr>
<tr>
<td></td>
<td>Removed Parts Breakdown section.</td>
</tr>
</tbody>
</table>
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.

![WARNING Decal](image.png)

**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

- Extension Plate
- Lift Cylinder
- Control Switch
- Parallel Arm
- Platform
- Spring Assist Torsion Bar
- Torsion Spring
- Platform Opener
- Flipover with Fixed Ramp
- Pump Box
- Hydraulic Lock
- Main Frame
- Lift Arm
- Platform Support
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.
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.
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.
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.
### ISO 32 HYDRAULIC OIL

<table>
<thead>
<tr>
<th>RECOMMENDED BRANDS</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEVRON</td>
<td>HIPERSYN 32</td>
</tr>
<tr>
<td>KENDALL</td>
<td>GOLDEN MV</td>
</tr>
<tr>
<td>SHELL</td>
<td>TELLUS S2 V32</td>
</tr>
<tr>
<td>EXXON</td>
<td>UNIVIS N-32</td>
</tr>
<tr>
<td>MOBIL</td>
<td>DTE-13M, DTE-24, HYDRAULIC OIL-13</td>
</tr>
</tbody>
</table>

**TABLE 17-1**

### ISO 15 OR MIL-H-5606 HYDRAULIC OIL

<table>
<thead>
<tr>
<th>RECOMMENDED BRANDS</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEVRON</td>
<td>FLUID A, AW-MV-15</td>
</tr>
<tr>
<td>KENDALL</td>
<td>GLACIAL BLU</td>
</tr>
<tr>
<td>SHELL</td>
<td>TELLUS S2 V15</td>
</tr>
<tr>
<td>EXXON</td>
<td>UNIVIS HVI-13</td>
</tr>
<tr>
<td>MOBIL</td>
<td>DTE-11M</td>
</tr>
<tr>
<td>ROSEMEAD</td>
<td>THS FLUID 17111</td>
</tr>
</tbody>
</table>

**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.

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.
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.
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).

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
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.
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 step1 to check clearance of bottom of platform above the ground.
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).
9. Fold platform as shown in FIG. 26-1.
Then, stow Liftgate as shown in FIG. 26-2.

CAUTION
Stow Liftgate under hydraulic pressure.
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.

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

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

**CONTROL SWITCH DECAL**  
P/N 264507

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

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

**OPERATING INSTRUCTIONS**

<table>
<thead>
<tr>
<th>OPERATE</th>
<th>STOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILL CONTROL SWITCH</td>
<td>FILL PLATFORM</td>
</tr>
<tr>
<td>FILL PLATFORM &amp; LOCKED</td>
<td>FOLD PLATFORM</td>
</tr>
<tr>
<td>LATCH &amp; UNFOLD PLATFORM</td>
<td>PULL CONTROL SWITCH</td>
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<tr>
<td>UNFOLD PLATFORM</td>
<td>FOLD PLATFORM</td>
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</table>

**CAPACITY DECALS**

<table>
<thead>
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<th>CAPACITY</th>
<th>PART NO.</th>
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<tbody>
<tr>
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<tr>
<td>3300 LBS.</td>
<td>220388-02</td>
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<tr>
<td>4400 LBS.</td>
<td>253155</td>
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<tr>
<td>5500 LBS.</td>
<td>253161</td>
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**SAFETY INSTRUCTIONS**

1. Do not use lifts unless you have read and understood the operating instructions carefully.
2. Do not use lifts until the platform is fully retracted and the controls are in the operating positions.
3. Always inspect the lift before operating. If any parts appear damaged or are missing, do not use the lift.
4. Do not overreach. Always keep your body in a balanced position when operating the lift.
5. Keep hands and feet clear of pinch points.
6. Keep the lift in a clean and dry area when not in use.

**WARNING**

Liftgate hazards can result in crushing or falling. Keep hands and feet clear of pinch points.

*Read and understand all instructions and WARNINGS before use.*
FIG. 31-1

WARNING DECAL
P/N 265736-03

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

WARNING DECAL
P/N 265736-02

WARNING
KEEP HANDS CLEAR OF PLATFORM SUPPORT WHEN FOLDING FLIPOVER.
P/N 265736-02

WARNING
KEEP HANDS & FEET CLEAR WHEN LIFTGATE IS IN USE. (SEE OPERATION MANUAL.)
P/N 265736-03

PAINT DECAL
P/N 267338-01

MAX PRO
MAXIMUM PROTECTION PAINT
SYSTEM DIAGRAMS
PUMP & MOTOR SOLENOID OPERATION (GRAVITY DOWN)

GRAVITY DOWN POWER UNIT
FIG. 32-1

<table>
<thead>
<tr>
<th>LIFTGATE FUNCTION</th>
<th>PORT</th>
<th>SOLENOID OPERATION (✓ MEANS ENERGIZED)</th>
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</tr>
<tr>
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<tr>
<td>LOWER</td>
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</tbody>
</table>

REFER TO VALVES SHOWN ON HYDRAULIC SCHEMATIC

TABLE 32-1
PUMP & MOTOR SOLENOID OPERATION (POWER DOWN)

![Diagram of pump and motor solenoids](image)

TABLE 33-1

<table>
<thead>
<tr>
<th>LIFTGATE FUNCTION</th>
<th>PORT</th>
<th>SOLENOID OPERATION (✓ MEANS ENERGIZED)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MOTOR</td>
</tr>
<tr>
<td>RAISE</td>
<td>A</td>
<td>✓</td>
</tr>
<tr>
<td>LOWER</td>
<td>B</td>
<td>✓</td>
</tr>
</tbody>
</table>

REFER TO VALVES SHOWN ON HYDRAULIC SCHEMATIC

FIG. 33-1
HYDRAULIC SCHEMATIC (GRAVITY DOWN)

FIG. 34-1
HYDRAULIC SCHEMATIC (POWER DOWN)

PORT B - POWER DOWN

PORT A - RAISE

VALVE A

FILTER

RELIEF VALVE 2
(SET AT 1100 PSI)

VALVE E

RELIEF VALVE 1
(SET AT 3200 PSI)

AUX. HAND
PUMP PORT
(PLUGGED)

MOTOR
(REF)

PUMP

FILTER

RESERVOIR

DRAIN HOLE (PLUGGED)

FIG. 35-1
ELECTRICAL SCHEMATIC (GRAVITY DOWN)

CONTROL SWITCH

WHITE  GREEN  BLACK

WHITE  GREEN  BLACK

CABLE ASSEMBLY

THERMAL SWITCH

STARTER SOLENOID

CABLE WITH 175 AMP FUSE

BATTERY

FIG. 36-1
ELECTRICAL SCHEMATIC (POWER DOWN)

FIG. 37-1

- Battery
- Starter Solenoid
- Control Switch
- Cable Assembly
- Thermal Switch (in motor casing)
- Solenoid, Valve A
- Solenoid, Lock Valve
- Solenoid, Valve E
- Cable with 175 Amp Fuse

Legend:
- Red
- Black
- White
- Green
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.

<table>
<thead>
<tr>
<th>DIAMETER &amp; THREAD PITCH</th>
<th>TORQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;-20</td>
<td>10-14 LBS.-FT.</td>
</tr>
<tr>
<td>1/4&quot;-28</td>
<td>11-16 LBS.-FT.</td>
</tr>
<tr>
<td>5/16&quot;-18</td>
<td>20-29 LBS.-FT.</td>
</tr>
<tr>
<td>5/16&quot;-24</td>
<td>22-33 LBS.-FT.</td>
</tr>
<tr>
<td>3/8&quot;-16</td>
<td>35-52 LBS.-FT.</td>
</tr>
<tr>
<td>3/8&quot;-24</td>
<td>40-59 LBS.-FT.</td>
</tr>
<tr>
<td>7/16&quot;-14</td>
<td>56-84 LBS.-FT.</td>
</tr>
<tr>
<td>7/16&quot;-20</td>
<td>62-93 LBS.-FT.</td>
</tr>
<tr>
<td>1/2&quot;-13</td>
<td>85-128 LBS.-FT.</td>
</tr>
<tr>
<td>1/2&quot;-20</td>
<td>96-144 LBS.-FT.</td>
</tr>
<tr>
<td>9/16&quot;-12</td>
<td>123-184 LBS.-FT.</td>
</tr>
<tr>
<td>9/16&quot;-18</td>
<td>137-206 LBS.-FT.</td>
</tr>
<tr>
<td>5/8&quot;-11</td>
<td>170-254 LBS.-FT.</td>
</tr>
<tr>
<td>5/8&quot;-18</td>
<td>192-288 LBS.-FT.</td>
</tr>
<tr>
<td>3/4&quot;-10</td>
<td>301-451 LBS.-FT.</td>
</tr>
<tr>
<td>3/4&quot;-18</td>
<td>336-504 LBS.-FT.</td>
</tr>
</tbody>
</table>

TABLE 38-1
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.

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.

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.

**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.*
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.
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.

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.
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.

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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.

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 (GRAVITY DOWN POWER UNIT) FIG. 44-1

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.

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.

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.
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.
**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.

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.
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.

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.