

MLA buttons.

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SUMMARY OF CHANGES: M-22-04 REVISION A

PAGE	DESCRIPTION OF CHANGE		
Cover	Updated REV and date of release.		
29	Increased quantity (8) of WARNING decal (P/N 212428-01) on WARNINGS, CAUTIONS & INSTRUCTIONS DECAL SHEET (P/N 212428-01).		
30	Updated DECALS and PLATES to show SAFETY INSTRUCTIONS DECAL (P/N 212502-01).		

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

Installing and maintaining a liftgate can expose you to chemicals, including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, install and maintain liftgate in a well-ventilated area and wear **proper Personal protective equipment (PPE)**. For more information go to **www.P65Warnings.ca.gov**.

- 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.
- Make sure vehicle battery power is disconnected while installing Liftgate. Connect vehicle battery power to the Liftgate only when installation is complete or as required in the installation instructions.
- If it is necessary to stand on the platform while operating 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 main frame step.
- Never perform unauthorized modifications on the Liftgate. Modifications may result in early failure of the Liftgate and may create hazards for Liftgate operators and maintainers.
- 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 can result from welds that are done incorrectly.
- Recommended practices for welding galvanized steel are contained in the current AWS (American Welding Society) D19.0 Welding Zinc-Coated Steel. Damage to Liftgate and/or vehicle, and personal injury can result from welds that are done incorrectly.

SAFETY INSTRUCTIONS

- Read and understand the instructions in this Installation Manual before installing 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 and lowered. Listen for scraping, grating and binding noises and correct the problem before continuing to operate Liftgate.

NOTICE

- Maxon Lift is responsible for the instructions to correctly install **MAXON** Liftgates on trucks only.
- Liftgate installers, not Maxon Lift, are responsible for reviewing and complying with all applicable Federal, State, and Local regulations pertaining to the truck.

NOTE: Installer is responsible for ensuring vehicle meets Federal, State, and Local standards and regulations.

BODY STRENGTH

Consult truck body manufacturer for truck body strength data. Make sure the forces created by the Liftgate are within the limits prescribed by the truck body manufacturer.

NOTE: Maximum Operating Bed Height (Unloaded) for body varies depending on platform. Refer to TABLE 6-1. Maximum Bed Height is 54" (Unloaded). Minimum Bed Height is 36" (Loaded). Do not install this Liftgate on vehicle bodies equipped with swing open doors.

The MLA is a body-mounted Liftgate that puts forces on the side walls of truck bodies (FIG. 6-1). For correct installation, truck bodies must be strong enough to withstand the tension, compression and shear forces shown in FIG. 6-1. Use TABLE 6-1 to determine the forces that apply to your Liftgate.

X= Tension on each sidewall

Y= Compression on each sidewall

Z= Shear on each sidewall

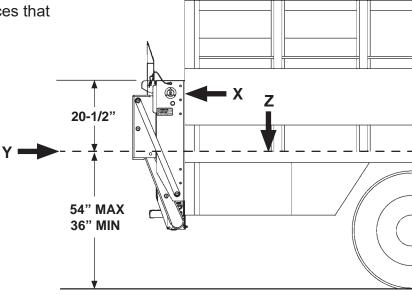


FIG. 6-1

MODEL CAPACITY	(X) (Y) LB	(Z) LB
MLA-66, 1600 LB	2600	2000
MLA-86, 2000 LB	TBD	TBD

TABLE 6-1

VEHICLE REQUIREMENTS - Continued

NOTE: Dimensions are provided as reference for fitting Liftgate to body.

NOTE: Make sure vehicle is parked on level ground while preparing vehicle and installing Liftgate.

1. Check for correct clearances (FIG. 7-1) on vehicle to prevent interference between vehicle and Liftgate.

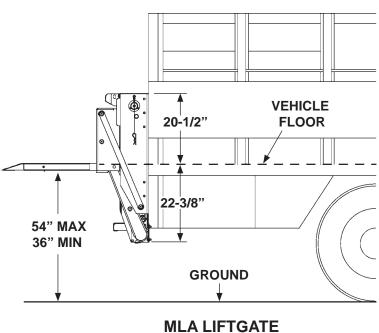


FIG. 7-1

VEHICLE REQUIREMENTS - Continued INSTALLED LIFTGATE

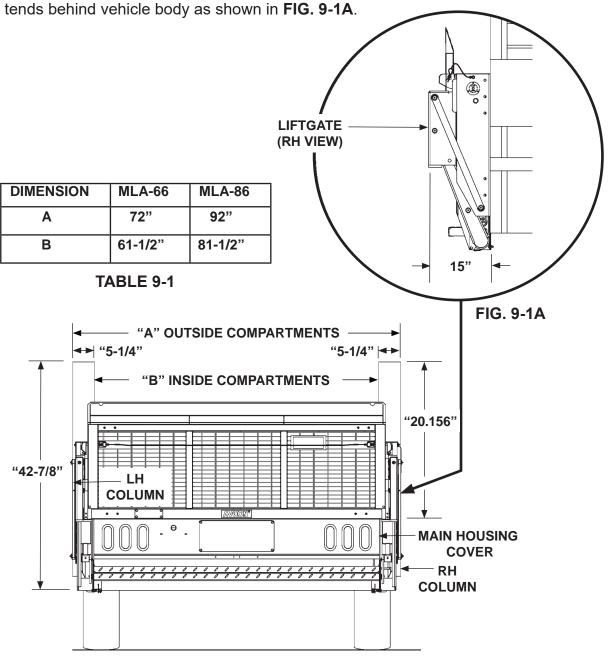
NOTE: If Liftgate columns exceed a 91 degree angle from level ground when installed on body, or if columns cannot be mounted flush against rear of vehicle, a steel filler may be used to bridge gap between vehicle body and Liftgate columns. Make sure the added materials and welds meet the **BODY STRENGTH** requirements shown on the previous pages.

1. With the vehicle parked on level ground, the columns of the MLA must be perpendicular to the ground (vertical) for the Liftgate to operate correctly (FIG. 8-1).

LIFTGATE INSTALLED ON TRUCK BODY (COLUMNS SHOWN PERPENDICULAR TO LEVEL GROUND) FIG. 8-1

VEHICLE REQUIREMENTS - Continued

2. With Liftgate centered on vehicle body, each column should fit on the corner posts of vehicle body with little or no offset (FIG. 9-1). See TABLE 9-1. Some offset from corner posts is allowed on the inboard side of the columns. Liftgate in stow position extends behind vehicle body as shown in FIG. 9-1A.



LIFTGATE COLUMNS FITTED TO BODY CORNER POSTS WITH LITTLE OR NO OFFSET FIG. 9-1

LIFTGATE INSTALLATION COMPONENTS

NOTE: Make sure you have components and parts before you start installing Liftgate. Compare parts in the part box and each kit box with packing list enclosed in each box. If parts and components are missing or incorrect, call:

Maxon Customer Service Call (800) 227-4116 or Send e-mail to cservice@maxonlift.com

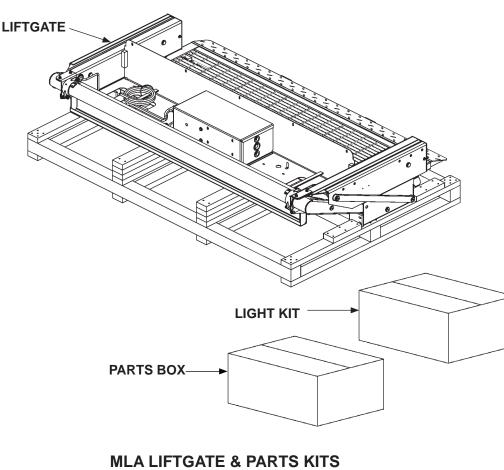


FIG. 10-1

To find **maintenance & parts** information for your **MLA Liftgate**, go to **www.maxonlift. com**. Click the **PRODUCTS**, **LIGHT DUTY & MLA** buttons. Open the **Maintenance Manual** in the **PRODUCT DOCUMENTATION** window. For parts, click on the **PARTS PORTAL**, **LIGHT DUTY & MLA** buttons.

ITEM	NOMENCLATURE OR DESCRIPTION		PART NUMBER
REF	MLA PARTS BOX	1	212433-01
1	CIRCUIT BREAKER, 150 AMP	1	907207-02
2	SCREW, SELF TAPPING, 1/4"-20 X 5/8" LG.	2	900705-02
3	COPPER LUG, 4 GA, 3/8"	4	907278-01
4	HEAT SHRINK TUBING, 3/4" X 1-1/2" LG.	4	253316-04
5	MAXON 24/7 SUPPORT DECAL	1	298634-01
6	GREASE FITTING, 1/4", SELF-DRILLING	8	224342
7	CABLE ASSEMBLY, 2 GA, RED, 5/16", 3/8" RING, 33" LG.	1	285506-12

TABLE 11-1

ITEM	NOMENCLATURE OR DESCRIPTION		PART NUMBER
REF	MLA STOP, TURN & TAILLIGHTS KIT, FOREIGN & DOMESTIC	1	212835-01
1	OVAL LED LAMP, STOP, TURN & TAILLIGHT	4	285371-02
2	OVAL LED LAMP, STOP, TURN & TAILLIGHT	2	285371-01
3	STOP, TURN & TAILLIGHT PIGTAIL, 16 GA, 11" LG.	4	212832-01
4	BACKUP PIGTAIL, 16 GA, 11" LG.	2	212833-01
5	GROMMET	6	261687-01
6	BUTT SPLICE, 16 GA	16	263891-01
7	LICENSE PLATE LIGHT, TRUCK LIGHT	1	906466-01

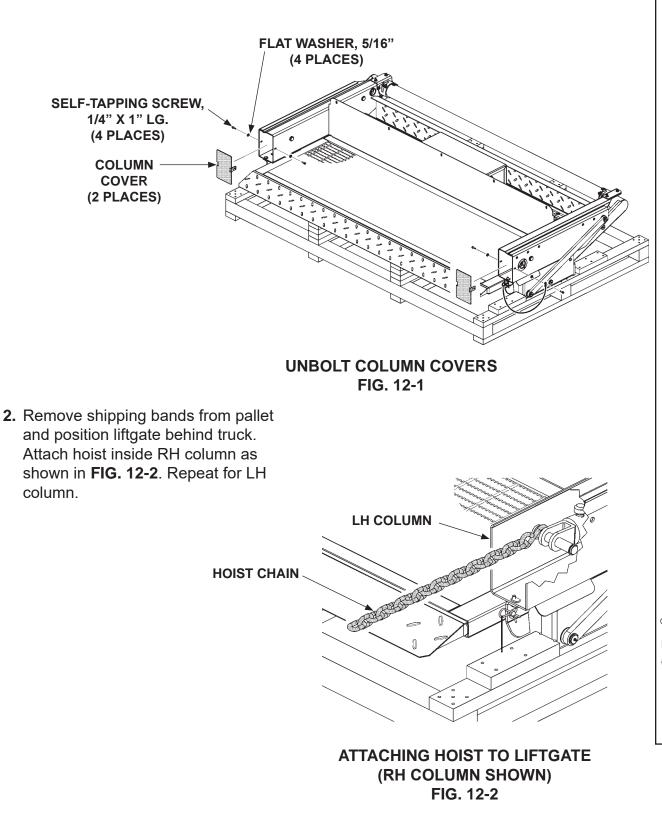
TABLE 11-2

ITEM	NOMENCLATURE OR DESCRIPTION	QTY	PART NUMBER
REF	MLA MANUALS KIT	1	212874-01
1	INSTALLATION MANUAL	1	M-22-04
2	OPERATION MANUAL	1	M-22-05

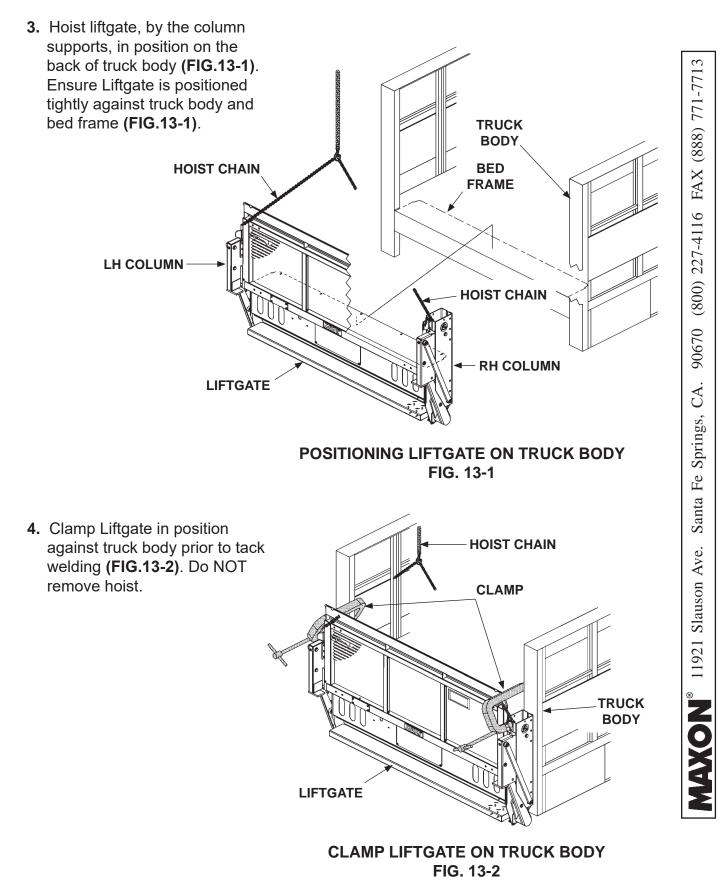
TABLE 11-3

STEP 1 - POSITION LIFTGATE

1. Unbolt column covers **(FIG. 12-1)**. Retain column covers and fasteners for reuse.



STEP 1 - POSITION LIFTGATE - Continued

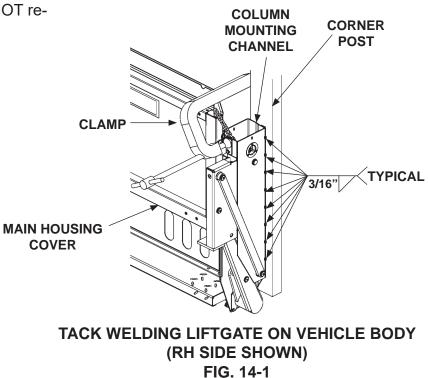


STEP 1 - POSITION LIFTGATE - Continued TACK WELDING LIFTGATE TO BODY

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, can result from welds that are done incorrectly.

NOTE: Before welding Liftgate mounting channels to vehicle body, make sure:

- Liftgate is centered on the truck body, lip flush with truck floor, and column mounting channels are square and tight against truck body.
- Inboard edge at top of main housing is flush with the top of the rear sill on truck body.
- Top surface of main housing is level with the ground.
- Tack weld the RH and LH column mounting channels to truck body corner post as shown in FIG. 14-1. Remove clamps, but DO NOT remove hoist.



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С

150 AMP CIRCUIT

BREAKER

STEP 2 - RUN POWER & GROUND CABLES

A CAUTION

Never route an energized wire. Make sure the vehicle battery is disconnected. Always route electrical wires clear of moving parts, brake lines, sharp edges and exhaust systems. Keep power and ground wires separated. Avoid making sharp bends in wiring. Attach securely. If drilling is necessary, first check behind the drilling surface to prevent damage to any fuel lines, vent lines, brake lines or wires.

NOTE: Ensure the lug end of each cable is long enough to reach the power (+) and ground (-) terminal connections on truck battery and Liftgate power unit in main housing, without straining the cable connections.

NOTICE

MAXON recommends installing the optional Cab Cutoff Switch Kit, P/N 286691-01.

- Install 150 AMP circuit breaker (Kit item) inside the engine compartment near truck battery (+) terminal and away from moving parts (FIG. 15-1). Allow enough room for power and ground cables to be run and for easy access to circuit breaker.
- 2. Pull the (+) and (-) power and ground cables through the back of main frame housing. Leave about 2" of slack, for power and ground cables inside main frame housing.
- **3.** Route power and ground cables along truck frame to truck battery (**FIG. 15-1**). Pull extra power and ground cable beyond the battery terminals. Then, separate positive (+) cable end from negative (-) cable end.
- **4.** Secure power and ground cables to truck frame with fasteners and wire ties (not included).

EU). LIFTGATE POWER (+) CABLE

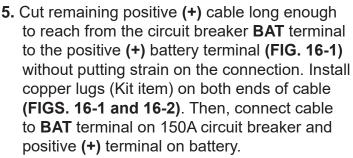
ROUTING POWER & GROUND CABLES FROM TRUCK BATTERY TO LIFTGATE FIG. 15-1

STEP 2 - RUN POWER & GROUND CABLES - Continued

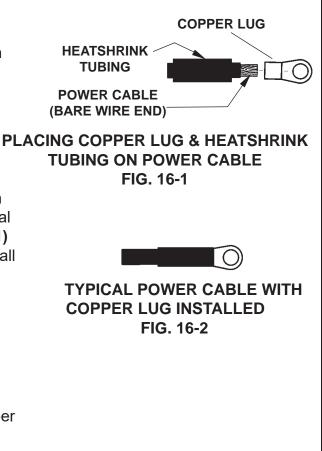
A CAUTION

Make sure vehicle battery cables are disconnected before connectiong liftgate power (+) and ground (-) cables to vehicle battery.

- **NOTE:** Before connecting battery cables to 150A circuit breaker, apply a thin coating of dielectric grease to all terminals and lugs.
- **NOTE:** For detaled information on electrical connections, refer to **SYSTEMS DIA-GRAMS, ELECTRICAL & HYDRAULIC SCHEMATIC** section in this manual.
- 4. Cut positive (+) cable to the length required to reach the AUX terminal of the circuit breaker (FIG. 16-1), without putting strain on the connection. Install copper lug (Kit item) (FIGS. 16-1 and 16-2). Then, connect to AUX terminal on 150A circuit breaker.

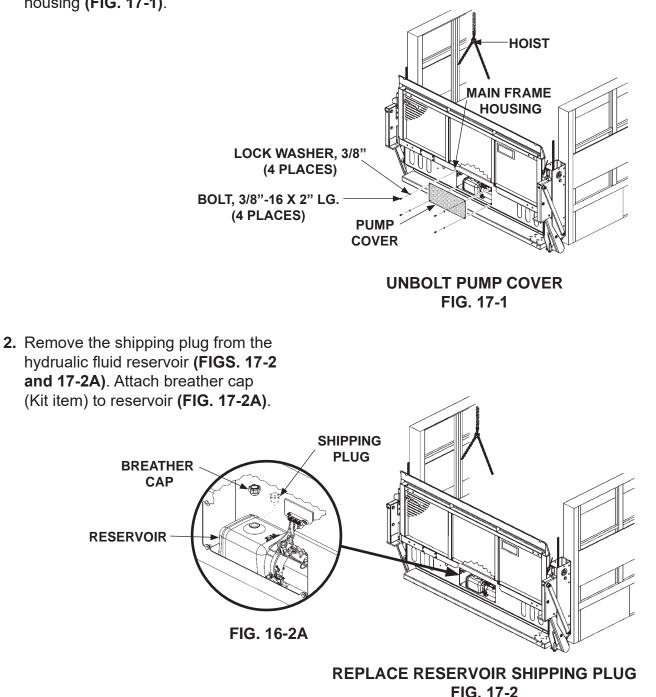


 Cut negative (-) cable to length required to reach negative (-) battery terminal without putting strain on the connection. Install copper lug (Kit item) (FIGS. 16-1 and 16-2). Then, connect cable to negative (-) terminal on battery.



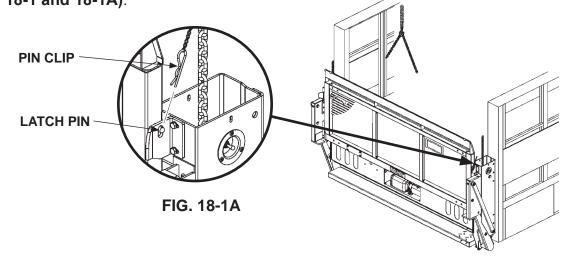
STEP 3 - PREPARING LIFTGATE FOR FINAL WELDING

1. Unbolt the pump cover on the main frame housing (FIG. 17-1).



STEP 3 - PREPARING LIFTGATE FOR FINAL WELDING -Continued

3. Remove pin clip from the platform latch pin (FIGS. 18-1 and 18-1A).

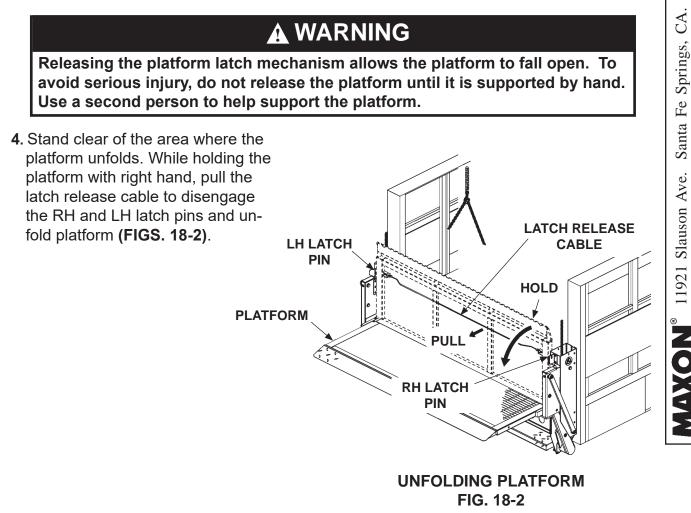


REMOVE PLATFORM PIN CLIP FIG. 18-1

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A WARNING

Releasing the platform latch mechanism allows the platform to fall open. To avoid serious injury, do not release the platform until it is supported by hand. Use a second person to help support the platform.

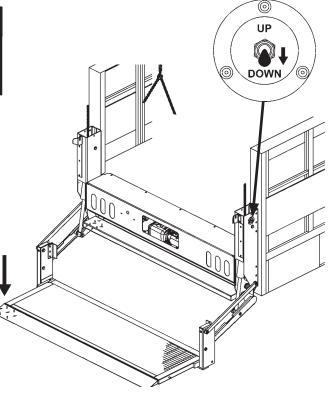


STEP 3 - PREPARING LIFTGATE FOR FINAL WELDING -Continued

A WARNING

Before lowering platform, make sure area surrounding platform is clear of people and objects.

5. Use control switch (DOWN) to lower platform to the ground (FIG. 19-1). Release switch when platform reaches the ground.



LOWERING PLATFORM TO THE GROUND FIG. 19-1

- 6. Use control switch (UP) to raise platform from the ground to bed height (FIG. 19-2). Release switch when platform reaches bed height.
- **7.** Ensure Liftgate operates smoothly. Correct any operating problems before final welding.





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STEP 4 - FINISH WELDING LIFTGATE TO VEHICLE

A WARNING

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 can result from welds that are done incorrectly.

CAUTION

When using an electric welder, connect the welder ground to one of the parts being welded, as close to the weld as possible. Failure to comply could result in damage to cylinders and electrical parts.

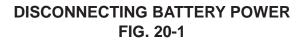
CAUTION

Prevent damage to hydraulic hoses. Before welding next to hydraulic hoses, protect the hoses with a heat-resistant cover.

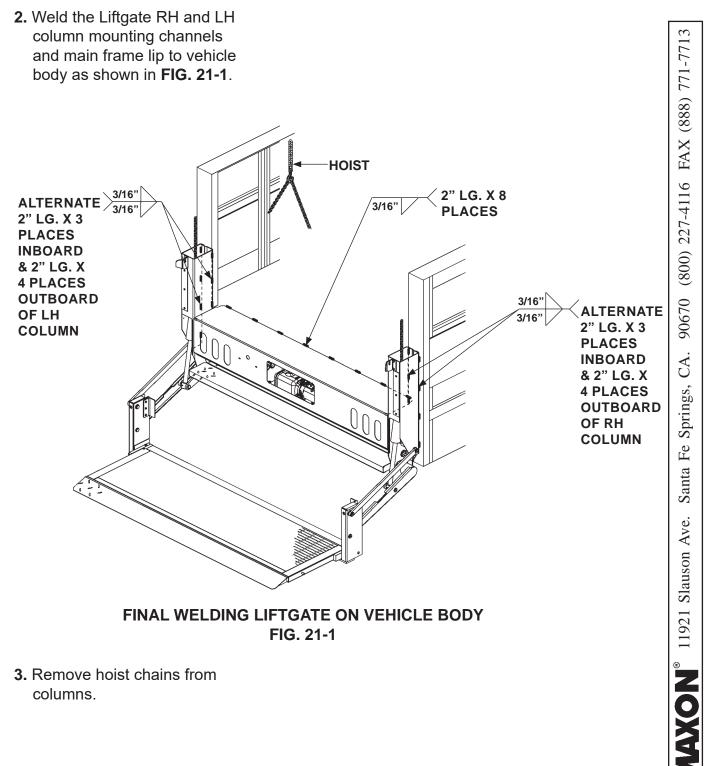
CAUTION

Prevent damage to the platform. Before welding, protect platform from welding spatter by using a heat-resistant cover.

- **NOTE:** If Liftgate mounting channels cannot be mounted flush against rear of vehicle, a filler such as tubing, channel, or plate stock may be used to bridge gap between vehicle body and Liftgate columns. Make sure the added materials and welds meet the **BODY STRENGTH REQUIREMENTS** indicated in this manual.
- **1.** Disconnect power to the pump by disconnecting negative (-) and positive (+) cables from battery **POSITIVE (+) BATTERY CABLE** (FIG. 20-1). Reinstall nuts on NUT negative (-) and positive (+) battery terminals. **POSITIVE (+)** BATTERY POST **NEGATIVE (-) BATTERY CABLE NEGATIVE (-) BATTERY POST** BATTERY



STEP 4 - FINISH WELDING LIFTGATE TO VEHICLE -Continued

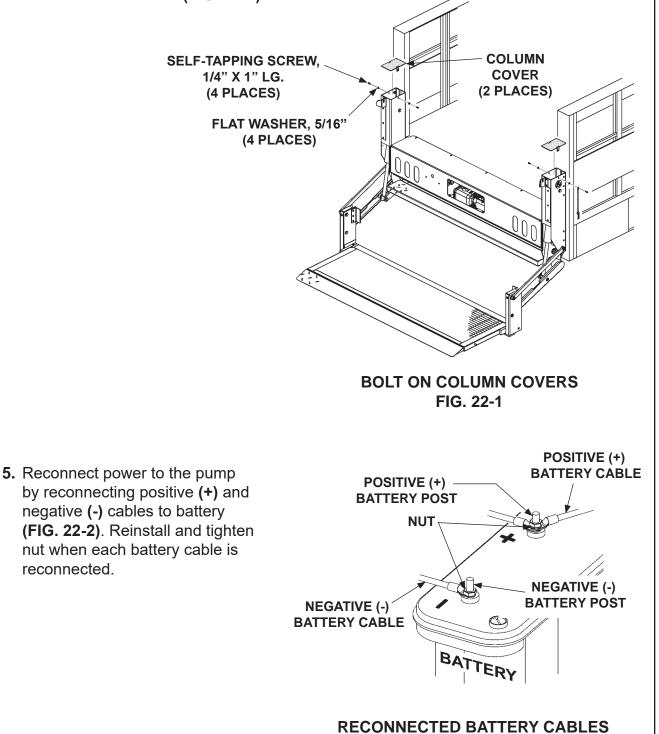


3. Remove hoist chains from columns.

STEP 4 - FINISH WELDING LIFTGATE TO VEHICLE -Continued

4. Bolt on column covers (FIG. 22-1).

reconnected.



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FIG. 22-2

STEP 5 - CHECKING HYDRAULIC FLUID

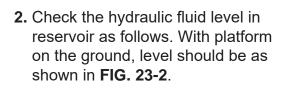
CAUTION

Keep dirt, water and other contaminants from entering the hydraulic system. Before opening the hydraulic fluid reservoir breather cap and hydraulic lines, clean up contaminants that can get in the openings. Also, protect the openings from accidental contamination. Never mix synthetic fluids with conventional hydraulic fluids. Hydraulic system must be purged if the fluids are mixed.

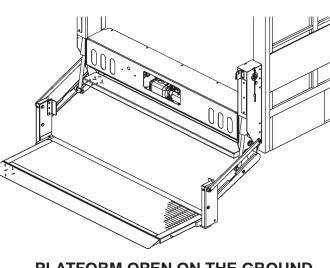
CAUTION

Hydraulic system is filled at the factory with correct amount of oil. It is unnecessary to add more oil except as required for periodic maintenance of the Liftgate. See TABLE 23-1 for recommended brands ISO 32 oil.

 Unfold and lower platform to the ground (FIG. 23-1). Refer to Operation Manual for detailed operating instructions.

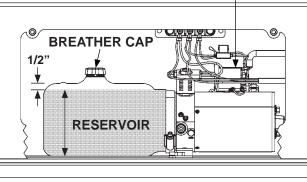


 If needed, add fluid to the reservoir as follows. Remove breather cap (FIG. 23-2). Fill the reservoir with hydraulic fluid to level shown in FIG. 23-2. Reinstall breather cap.



PLATFORM OPEN ON THE GROUND FIG. 23-1

> POWER UNIT (REF)



POWER UNIT FLUID LEVEL (FIG. 23-2)

STEP 5 - CHECKING HYDRAULIC FLUID - Continued

HYDRAULIC OIL, ISO 32		
RECOMMENDED BRANDS PART NUMBER		
CHEVRON	CHEVRON AV MV32	
U.S. PRESTIGE	PRESTIGE AW HVI 32	
MOBIL OIL	MOBIL DTE 10 EXCEL 32	
ROSEMEAD	ROSEMEAD MV150	

TABLE 24-1

CAUTION

Main housing pump cover must be secured correctly to prevent it from becoming a hazard.

4. Bolt on pump cover (FIG. 24-1). Torque the 3/8"-16 cover bolts from 16 to 24 lb-ft.

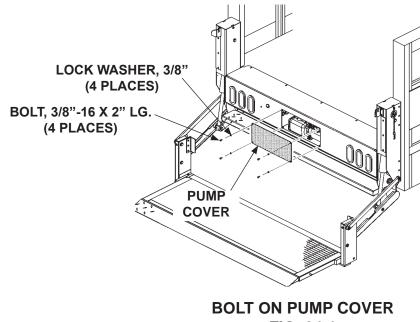
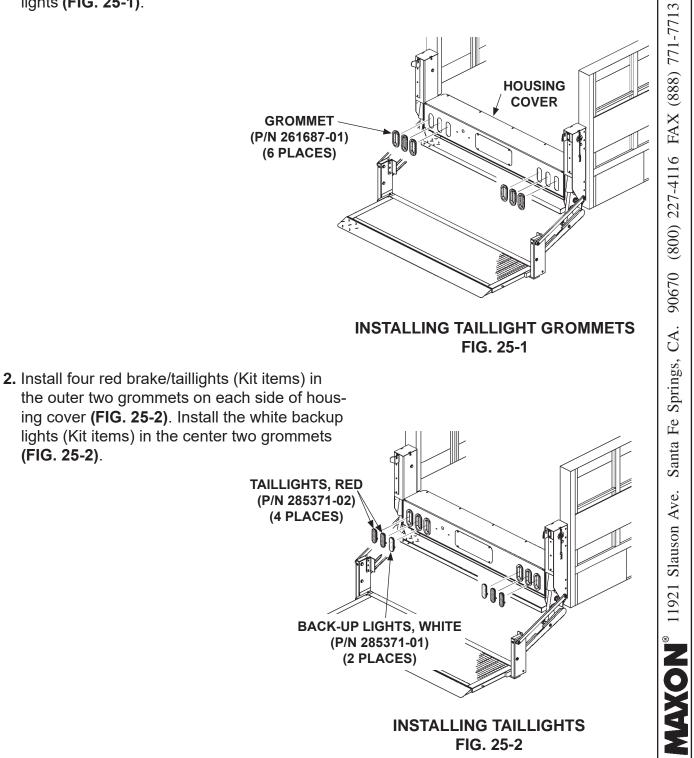


FIG. 24-1

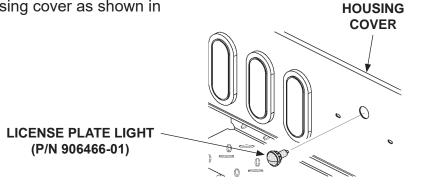
STEP 6 - INSTALLING TAILLIGHTS

1. Install rubber grommets (Kit items) into the housing cover openings for the brake and backup taillights (FIG. 25-1).



STEP 6 - INSTALLING TAILLIGHTS - Continued

3. Install license plate light (Kit item) in the hole on the LH side of housing cover as shown in FIG. 26-1.



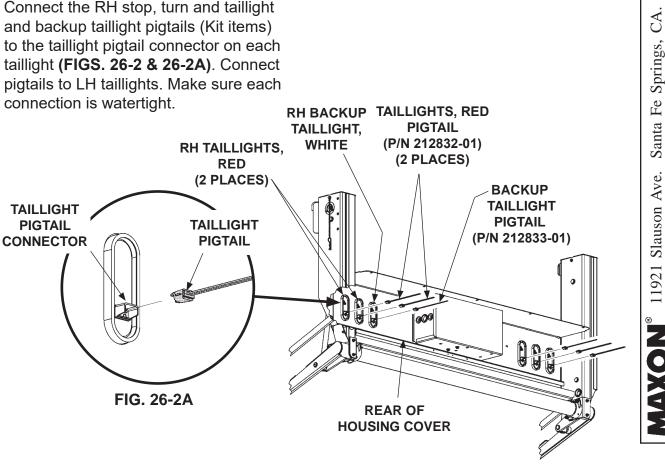
INSTALLING LICENSE PLATE LIGHT FIG. 26-1

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CAUTION

Route enough of the taillights cable inside the main housing to prevent strain on wiring harness connections for taillights on the housing cover.

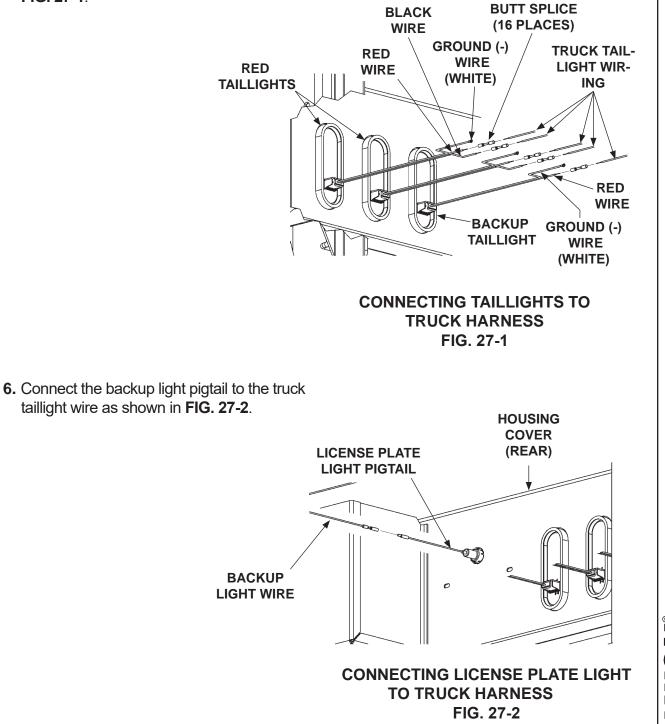
4. Connect the RH stop, turn and taillight and backup taillight pigtails (Kit items) to the taillight pigtail connector on each taillight (FIGS. 26-2 & 26-2A). Connect pigtails to LH taillights. Make sure each connection is watertight.



CONNECTING TAILLIGHTS TO PIGTAILS FIG. 26-2

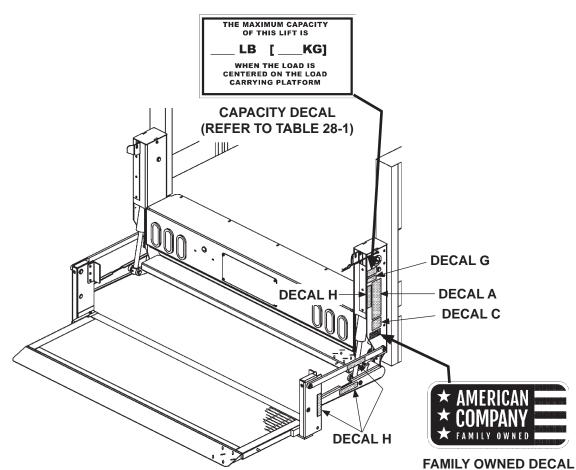
STEP 6 - INSTALLING TAILLIGHTS - Continued

5. Connect the taillights pigtails to the truck taillight harness using butt splices (Kit items) as shown in **FIG. 27-1**.



NOTE: Decals are preinstalled at factory. Decal location shown for reference.

NOTE: Ensure there is no residue, dirt or corrosion where decals are attached. If necessary, clean surface before replacing decals.



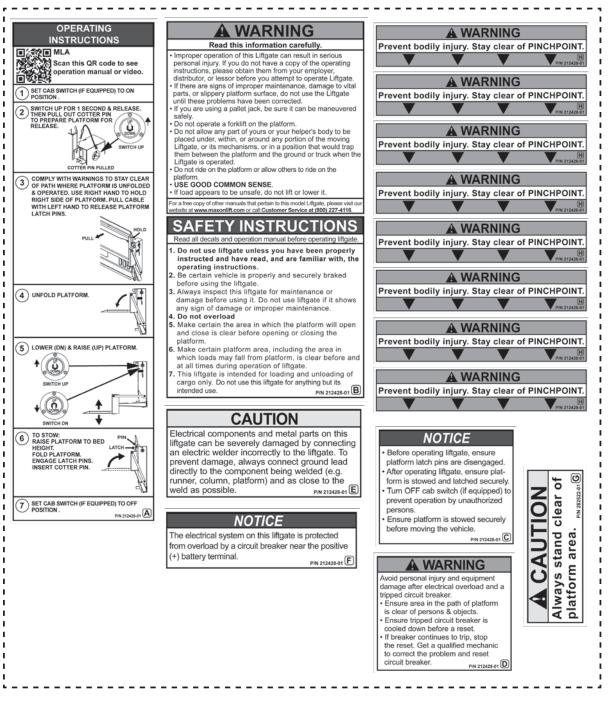
P/N 283445-01

MLA LIFTGATE (CURB SIDE) FIG. 28-1

MODEL	ORDER P/N	DECAL "CAPACITY"
MLA-66	224751	1600 LBS. (725 KG)
MLA-86	220387	2000 LBS. (907 KG)

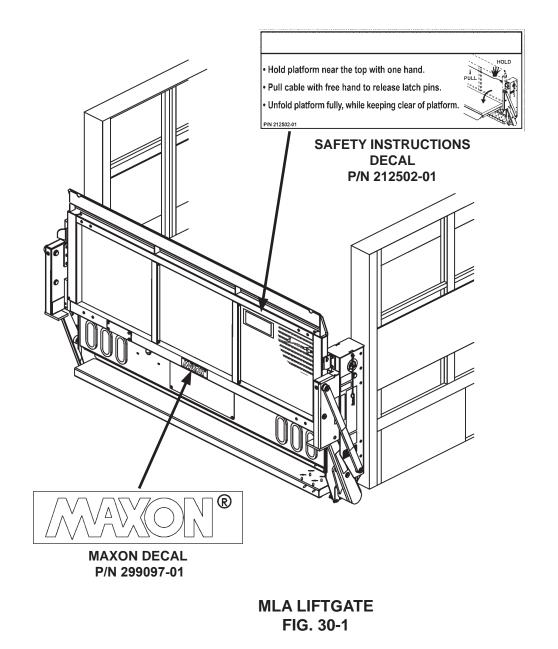


DECALS - Continued



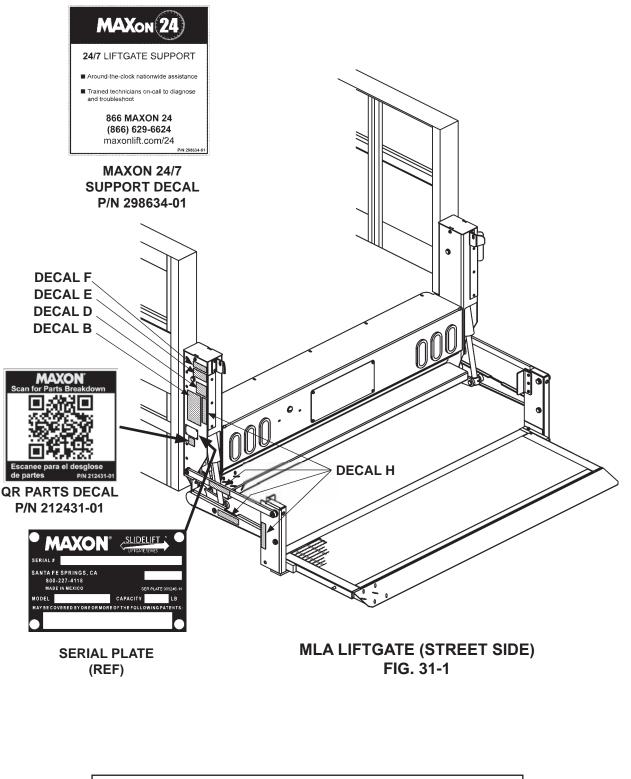
WARNINGS, CAUTIONS & INSTRUCTIONS DECAL SHEET P/N 212428-01 FIG. 29-1

NOTE: Preferred decal layout is shown. Decals on the Liftgate are attached at the factory, except for the 24/7 SUPPORT decal. The 24/7 SUPPORT decal is placed at customer's or installer's preference.



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DECALS & PLATES - Continued



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CA.

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NOTE: MAXON 24/7 LIFTGATE SUPPORT service is only available in the Continental U.S.

SYSTEM DIAGRAMS PUMP MOTOR & VALVE OPERATION

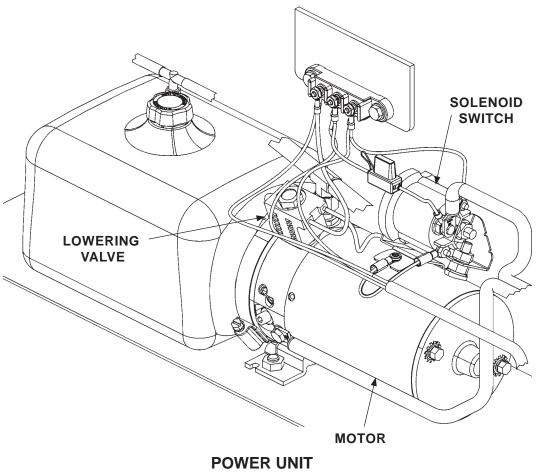


FIG. 32-1

POWER UNIT MOTOR & VALVE OPERATION				
LIFTGATE	REMOTE VALVE OPERATION (✓ MEANS ENERGIZED)			
FUNCTION	MOTOR	LOWERING VALVE	SOLENOID SWITCH	
RAISE	\checkmark			
LOWER				
REFER TO VALVES SHOWN ON HYDRAULIC SCHEMATIC				

TABLE 32-1

SYSTEM DIAGRAMS ELECTRICAL & HYDRAULIC SCHEMATIC

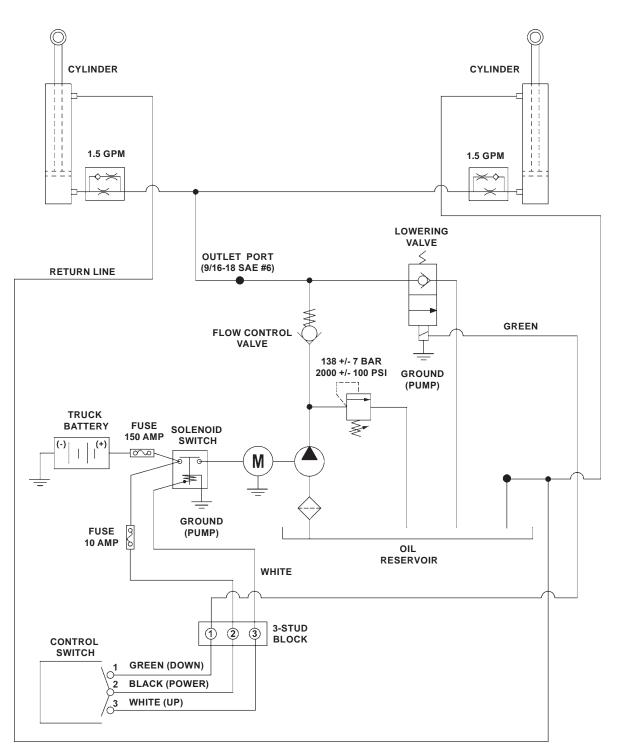


FIG. 33-1

MAXON[®] PRE-DELIVERY INSPECTION FORM

Important! This pre-delivery checklist is to aid the installer in confirming the proper installation of this Maxon product. It is not a comprehensive list and does not replace the use of the installation manual. The installer is responsible for following all instructions in the installation manual.

Model:	Date:
Serial Number:	Technician:
 Pre-Installation Inspection: Correct model Correct capacity Correct platform size Manuals & decals Structural Inspection: Liftgate is centered on vehicle & mounted per dimensions in this manual. Pump box is mounted securely. All installation welds are done per instructions in this manual. All roll pins, bolts and fasteners on liftgate are tight. All hardware & fasteners, used to secure liftgate to vehicle body, are tight. Ensure ramp on flipover touches ground when runner is 1" above ground, and platform is level 	Operation Inspection: NOTE: The following times are for 54" bed height, aluminum platform, ISO 32 oil, & temperature at 79°F. Times are for reference only and may vary for larger platforms, smaller platforms, or temperature changes. Unloaded platform lowers in 12 seconds. Unloaded platform raises in 12 seconds. Unloaded platform raises and lowers evenly. Platform stowes securely on latch pin. Decals in correct location and legible
 runner is 1" above ground, and platform is level & touching the ground. Hydraulic Inspection: Fluid is at correct level. (See CHECKING HYDRAULIC FLUID in this manual). No leaks from hydraulic fittings in pump box. No leaks in hydraulic line connections. Electrical Inspection: Individual wire connections are tight. Circuit breaker (150A) installed by truck battery. Ensure batteries are fully charged, all cable connections are tight & tiedowns are tight. Solenoid wiring connections are tight. Wiring harness connections are tight. Electrical cable connections are tight & secured clear of moving parts & sharp edges. 	 Decals in correct location and legible Verify all lights are operational Taillights, stop lights, turn lights, and backup lights turn ON and OFF correctly.