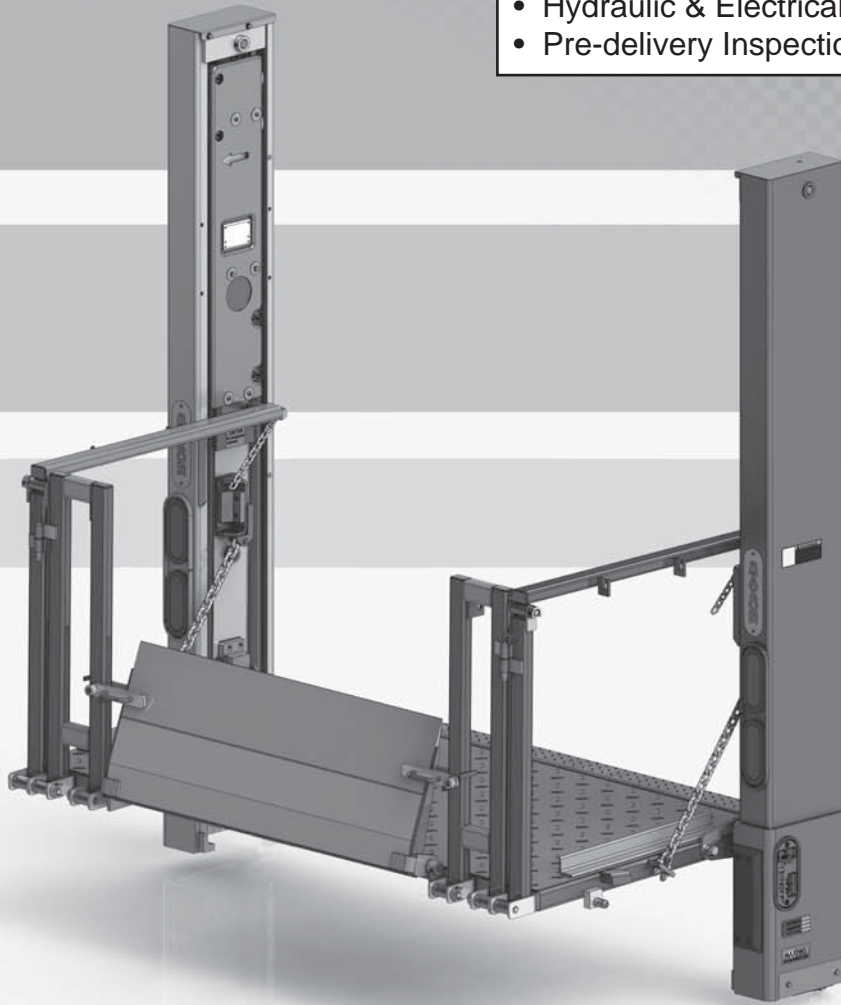


M-14-21  
REV. B  
FEBRUARY 2016

**Installation Manual Contains:**

- Warnings & Safety Instructions
- Requirements - Body Strength & Installed Liftgate
- Liftgate Installation Components
- Liftgate Component Installation Instructions
- Hydraulic Fluid Filling Instructions
- Decals
- Hydraulic & Electrical System Diagrams
- Pre-delivery Inspection Form



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**MAXON**  
**LIFT CORP.**

To find **maintenance & parts** information for your **BMR-CS Liftgate**, go to [www.maxonlift.com](http://www.maxonlift.com). Click the **PRODUCTS**, **COLUMNLIFT** & **BMR-CS** buttons. Open the **Maintenance Manual** in the **PRODUCT DOCUMENTATION** window.

# BMR-CS

## INSTALLATION MANUAL

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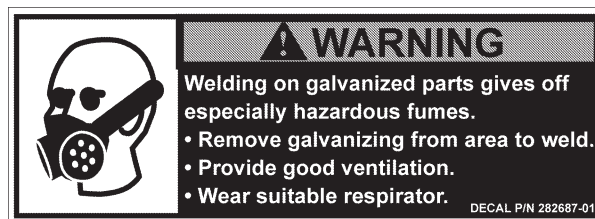
## SUMMARY OF CHANGES: M-14-21, REVISION B

PAGE	DESCRIPTION OF CHANGE
COVER	Updated REV and date.
30,32	Added NOTE about hose with yellow bands.
33	Updated taillight connectors to the current design.
66-69	Relay fuse changed to 2 AMP on electrical schematics.

Comply with the following **WARNINGS** and **SAFETY INSTRUCTIONS** while installing 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.**
- **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.
- **Remove all rings, watches and jewelry before doing any electrical work.**
- 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 Liftgate extension plate.
- 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.
- Welding on galvanized parts gives off especially hazardous fumes. Comply with WARNING decal on the galvanized part (**FIG. 5-1**). To minimize hazard remove galvanizing from weld area, provide adequate ventilation, and wear suitable respirator.



**FIG. 5-1**

## 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 or children 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.

# VEHICLE REQUIREMENTS

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

## BODY STRENGTH

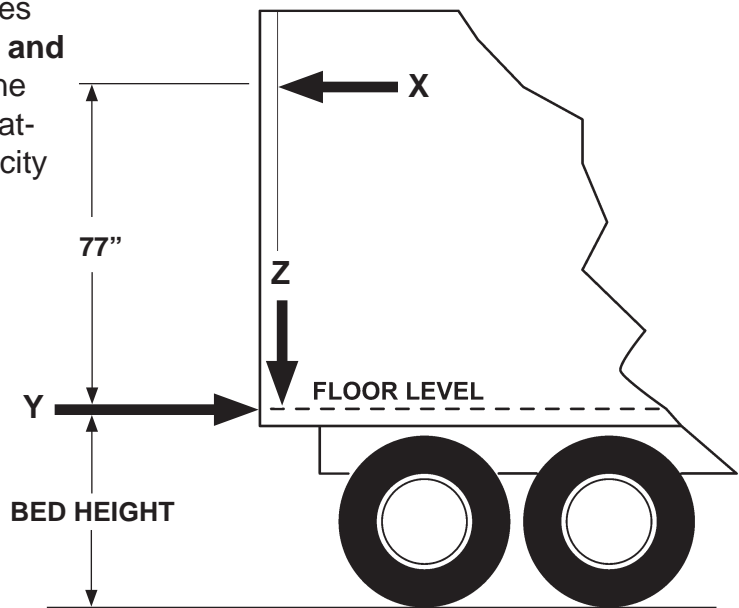
### ⚠ WARNING

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

**NOTE:** Maximum operating bed height for body is **56" (Unloaded)**. Minimum bed height is **platform width plus 5" (Loaded)**. Do not install this Liftgate on vehicle bodies equipped with swing open doors.

The BMR-CS is a body-mounted Liftgate that puts forces on the side walls of truck and trailer bodies (**FIG. 7-1**). For correct installation, truck and trailer bodies must be strong enough to withstand the tension, compression and shear forces shown in **FIG. 7-1**. Use **TABLES 8-1 and 8-2** on the following page to determine the forces that apply to the type of platform, size of platform, and load capacity of your Liftgate.

**X= Tension on each sidewall**  
**Y= Compression on each sidewall**  
**Z= Shear on each sidewall**



**FIG. 7-1**

## VEHICLE REQUIREMENTS - Continued

### BODY STRENGTH - Continued

MODEL CAPACITY	P/F SIZE	(X)(Y) LBS.	(Z) LBS.
BMR-CS35 3500 LBS. (GALVANIZED PLATFORM)	36" & 42"	1043	3786
BMR-CS44 4400 LBS. (GLAVANIZED PLATFORM)	36" & 42"	1262	4461

**TABLE 8-1**

MODEL CAPACITY	P/F SIZE	(X)(Y) LBS.	(Z) LBS.
BMR-CS35 3500 LBS. (ALUMINUM STD & KNURLED PLATFORM)	36" & 42"	964	3510
BMR-CS44 4400 LBS. (ALUMINUM STD & KNURLED PLATFORM)	36" & 42"	1183	4185

**TABLE 8-2**

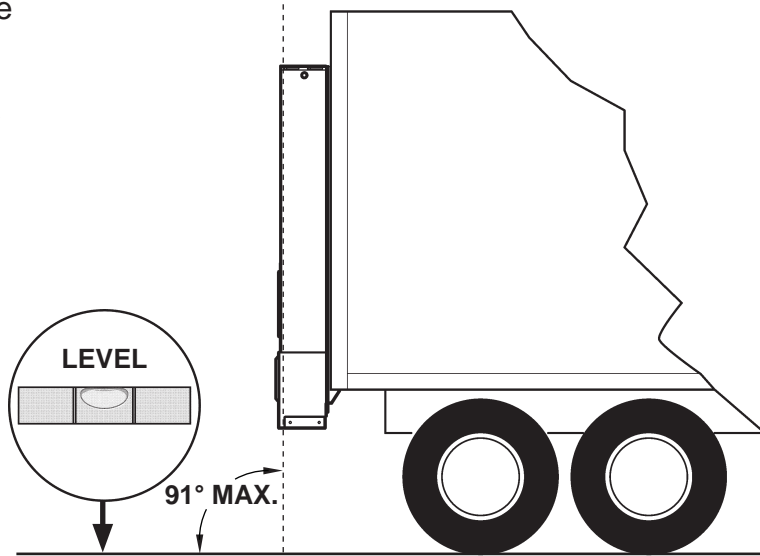


# VEHICLE REQUIREMENTS - Continued

## INSTALLED LIFTGATE

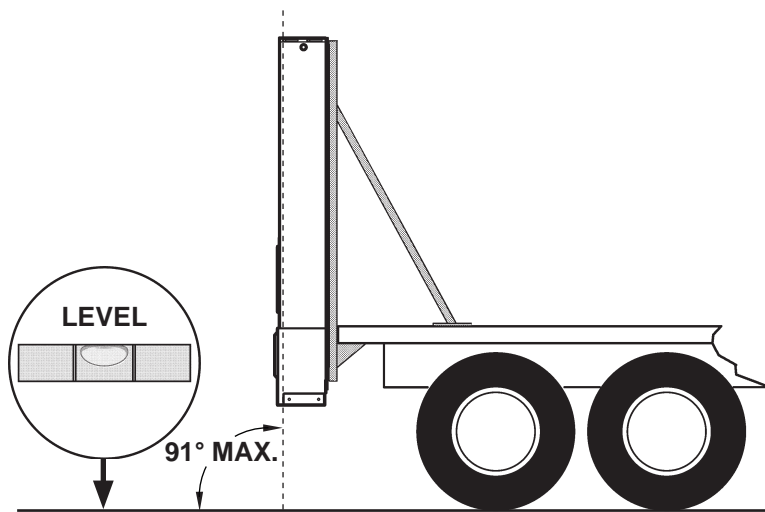
**NOTE:** If Liftgate columns exceed a 91 degree angle from level ground when installed on body, or if columns cannot be mounted flush against rear of vehicle, a steel filler may be used to bridge gap between vehicle body and Liftgate columns. Make sure the added materials and welds meet the **BODY STRENGTH**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

With the vehicle parked on level ground, the columns of the BMR-CS must be perpendicular to the ground (vertical) for the Liftgate to operate correctly (FIGS. 9-1 and 9-2).



LIFTGATE INSTALLED ON VAN BODY (COLUMNS SHOWN PERPENDICULAR TO LEVEL GROUND)

FIG. 9-1



LIFTGATE INSTALLED ON FLAT BED (COLUMNS & SUPPORTS SHOWN PERPENDICULAR TO LEVEL GROUND)

FIG. 9-2

# LIFTGATE INSTALLATION COMPONENTS

Each BMR-CS Liftgate includes items shown in FIG. 10-1.

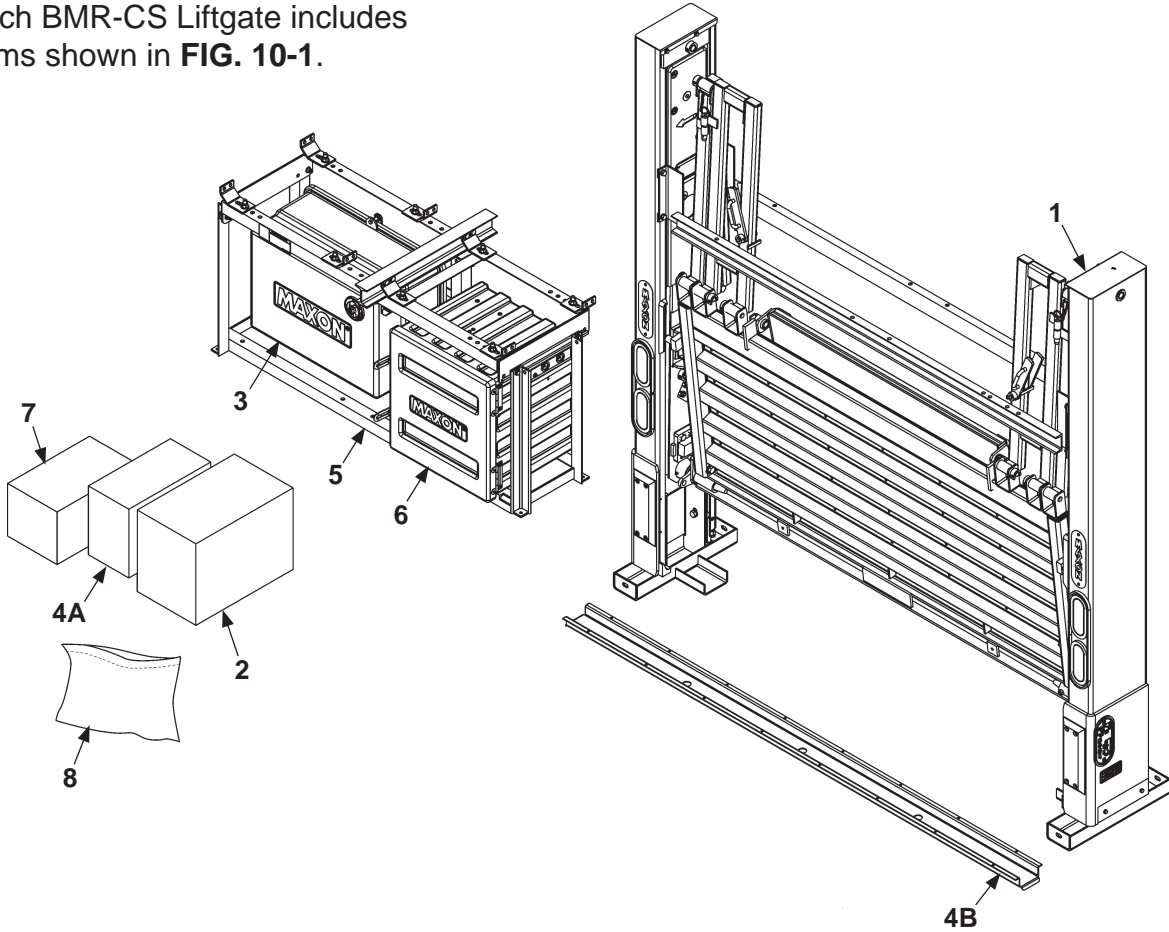


FIG. 10-1

DESCRIPTION	
1	BMR-CS Liftgate.
2	Hardware parts bag, mounting bracket parts bag, hydraulic lines & fittings, wiring harness, power cable, molded switch control box.
3	Pump box assembly.
4A	Pump installation kit (3', 10', 15', 20' or 28').
4B	Channel guard (for 10', 15', 20' or 28' installation kits only)
5	Frame for pump box with optional battery box is shown. A shorter frame is also available for mounting single pump box or an optional battery box.
6	Battery box (optional)
7	Optional equipment
8	Instruction manuals and decals

TABLE 10-1

# 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](mailto:cservice@maxonlift.com)**

BMR MODEL	MANUAL & DECAL KIT
BMR-CS35	288878-35-100
BMR-CS44	288878-44-100

**TABLE 11-1**

BMR MODEL	PART BOX	3 FT PUMP BOX INSTALL KIT	10 FT PUMP BOX INSTALL KIT	15 FT PUMP BOX INSTALL KIT	20 FT PUMP BOX INSTALL KIT	28 FT PUMP BOX INSTALL KIT
BMR-CS35 PD BMR-CS44 PD	296805-02 (WELD-ON)	288880-11	288880-12	288880-13	288880-14	288880-15

**TABLE 11-2**

BMR MODEL	PART BOX	3 FT PUMP BOX INSTALL KIT	10 FT PUMP BOX INSTALL KIT	15 FT PUMP BOX INSTALL KIT	20 FT PUMP BOX INSTALL KIT	28 FT PUMP BOX INSTALL KIT
BMR-CS35 GD BMR-CS44 GD	296805-01 (WELD-ON)	288880-01	288880-02	288880-03	288880-04	288880-05

**TABLE 11-3**

## COMPONENTS - Continued

BMR MODEL	OPTIONS							
	SINGLE PUMP ASSY	SECOND PUMP KIT	HYDRAULIC OIL UNIVIS HV1-13	FRAME, PUMP OR BATTERY BOXES	HEADER KIT (ADJUSTABLE)	HEADER KIT (RECESSED DOME LAMP)	DOME LAMP RECESSED - MOUNT	DOME TIMER SWITCH
BMR-CS35 GD BMR-CS44 GD	287670-12	287675-01	284098-01	288180-11G SINGLE FRAME (GALVANIZED)	289190-02 (GALVANIZED)	289188-11 (GALV, 96" WIDE VEHICLE)	906589-01-100 (ONLY FOR HEADER KITS WITH RECESSED MOUNTS FOR DOME LAMPS)	3' REACH 295880-01
BMR-CS35 PD BMR-CS44 PD				287660-12				288810-11G DUAL FRAME 3 BATT BOX (GALVANIZED)

**TABLE 12-1**

BMR MODEL	OPTIONS						
	AUXILIARY CONTROL	HAND HELD CONTROL	CYCLE COUNTER	POWER & GROUND CABLES	CONSPICUITY (REFLECTIVE) TAPE	NON-SKID COATING	PUMP PRESSURE GAUGE
BMR-CS35 GD BMR-CS44 GD	289850-11	289840-01	289537-01	BASIC INSTALLATION 295263-01	295261-01	281531-100 (NOT FOR GALVANIZED PLATFORMS)	295895-01
BMR-CS35 PD BMR-CS44 PD				289850-12			

**TABLE 12-2**

**MAXON**<sup>®</sup> 11921 Slauson Ave. Santa Fe Springs, CA. 90670 (800) 227-4116 FAX (888) 771-7713

## COMPONENTS - Continued

BMR MODEL	BATTERY BOX & CHARGING OPTIONS						
	BATTERY BOX (BATTERIES NOT INCLUDED)	BATTERY 12V HD AGM	BATTERY BOX MOUNTING FRAME	TRUCK CHARGE LINE	2/0 AWG CABLE TRUCK CHARGE LINE	TRAILER CHARGE LINE FOR USE WITH-OUT TRAIL CHARGER	TRACTOR CHARGE LINE FOR USE WITH OR WITHOUT TRAIL CHARGER
BMR-CS35 BMR-CS44	2 BATTERIES 269560-01	267318-01	SINGLE GALV FRAME FOR 2 BATTERIES 287990-01G	280290	285860-01	SINGLE POLE 280275-01	SINGLE POLE 280275-03
	2 BATTERIES (INCLUDES DC-DC CONVERTER) 289988-01					DUAL POLE 280275-02	DUAL POLE 280275-04
	3 BATTERIES 269950-01		SINGLE GALV FRAME FOR 3 BATTERIES 287929-01G			SINGLE/DUAL POLE FOR NOSE BOX 280275-06	SINGLE & DUAL POLE WITH ADAPTER 280275-04
	3 BATTERIES (INCLUDES DC-DC CONVERTER) 289988-02		1/0 AWG DUAL POLE WITH SINGLE NOSE BOX 280275-08				

**TABLE 13-1**

BMR MODEL	DIRECT TRAIL CHARGER OPTIONS			
	DIRECT WITH DUAL POLE CONNECTIONS	DIRECT, DUAL COMBINATION CONNECTIONS	DIRECT, 7-WAY CONNECTIONS	DIRECT, REFRIGERATED OR STRAIGHT TRUCK CONNECTIONS
BMR-CS35 BMR-CS44	295219-01 (DIRECT-01)	295220-01 (DIRECT-02)	295211-01 (DIRECT-03)	295972-01 (DIRECT-04)

**TABLE 13-2**

BMR MODEL	SELECT TRAIL CHARGER OPTIONS			
	SELECT WITH REFRIGERATED & DUAL POLE CONNECTIONS	SELECT WITH DUAL POLE & 7-WAY CONNECTIONS	SELECT WITH DUAL COMBINATION & 7-WAY CONNECTIONS	SELECT WITH DUAL COMBINATION, REFRIGERATED & 7-WAY CONNECTIONS
BMR-CS35 BMR-CS44	295210-01 (SELECT-21)	295217-01 (SELECT-24)	295218-01 (SELECT-25)	296170-01 (SELECT-32)

**TABLE 13-3**

BMR MODEL	MISCELLANEOUS OPTIONS		
	DIRECT / SELECT BYPASS	MANUAL HOLDER	BATTERY STATE OF CHARGE INDICATOR
BMR-CS35 BMR-CS44	295221-01 (BYPASSES TRAIL CHARGER OR DISCONNECTS BATTERIES FROM CHARGING SYSTEM)	286328-01 (INSTALLS IN BATTERY BOX)	908171-01-100 (INSTALLS ON BATTERY BOX)

**TABLE 13-4**

**MAXON**<sup>®</sup> 11921 Slauson Ave. Santa Fe Springs, CA. 90670 (800) 227-4116 FAX (888) 771-7713

# STEP 1 - PREPARE VEHICLE IF REQUIRED

**NOTE:** Perform the following step for flatbed vehicle body only. If vehicle body is not a flatbed, skip this step.

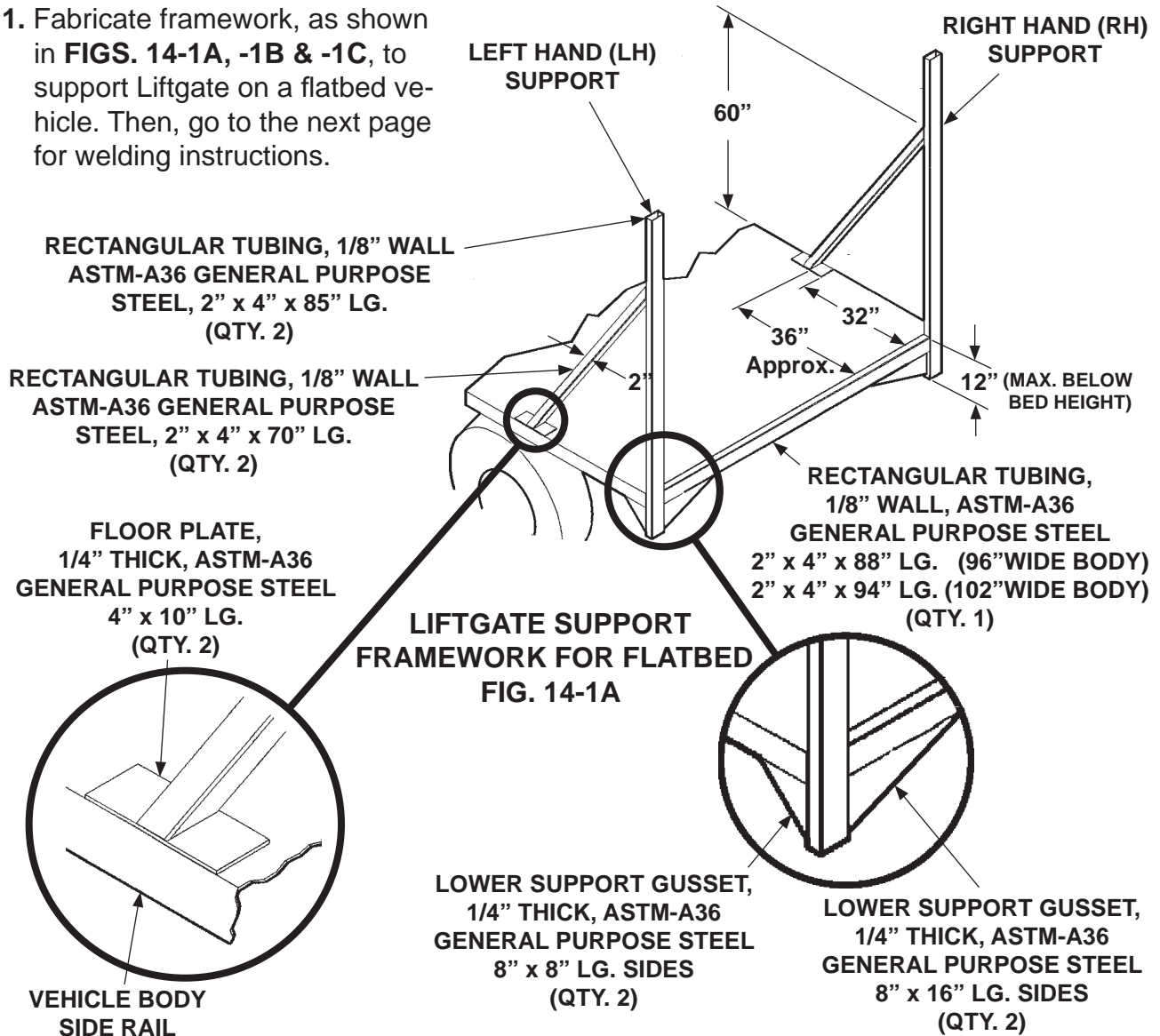
**NOTE:** LH and RH supports must be perpendicular to level ground. See **VEHICLE REQUIREMENTS, INSTALLED LIFTGATE.**

**NOTE:** Materials for support framework are not provided with Liftgate.

## ⚠ WARNING

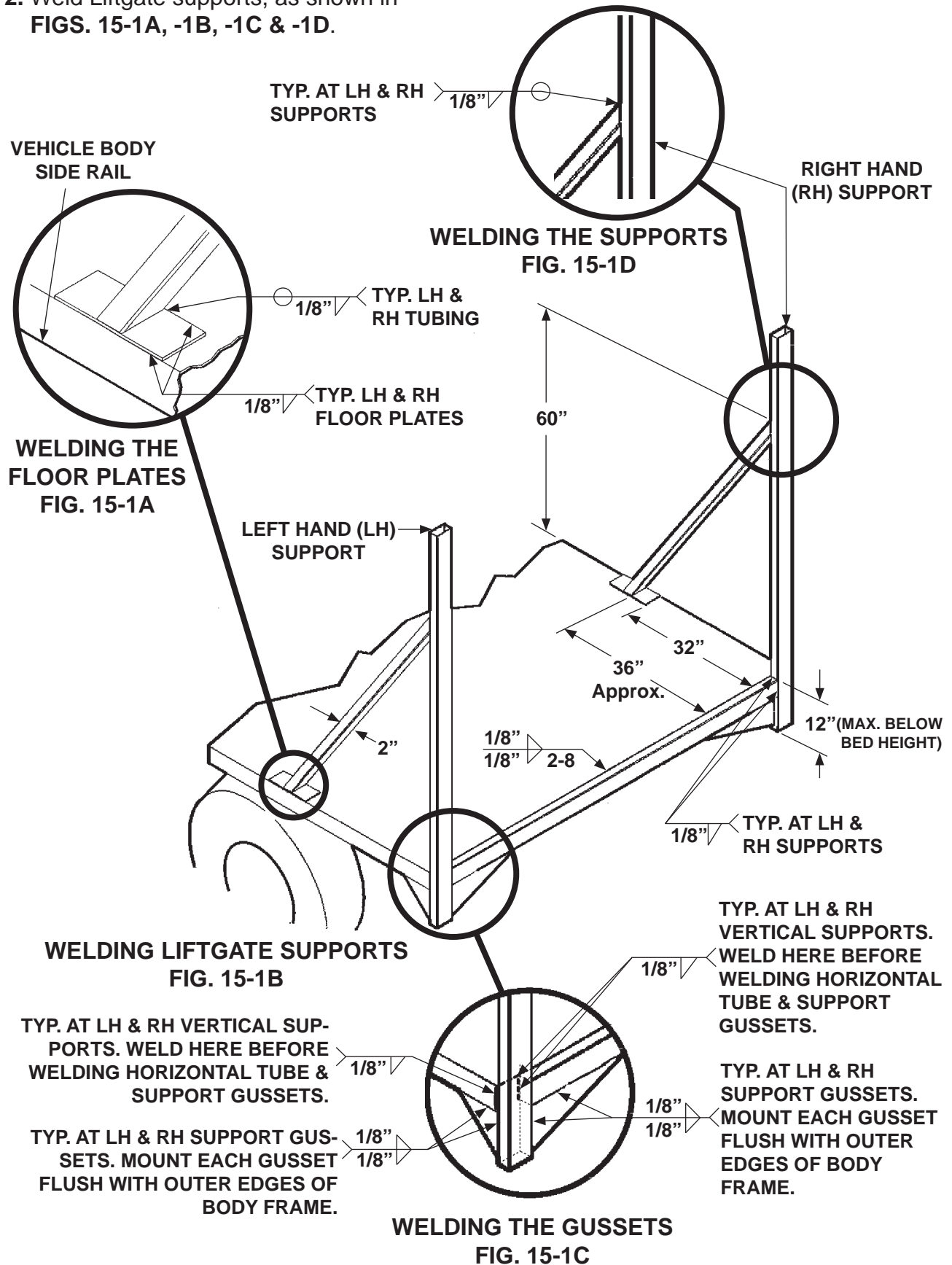
Recommended practices for welding on steel parts are contained in the current AWS (American Welding Society) D1.1 Structural Welding Code - Steel. Damage to Liftgate and/or vehicle, and personal injury can result from welds that are done incorrectly.

1. Fabricate framework, as shown in **FIGS. 14-1A, -1B & -1C**, to support Liftgate on a flatbed vehicle. Then, go to the next page for welding instructions.



# STEP 1 - PREPARE VEHICLE IF REQUIRED - Continued

2. Weld Liftgate supports, as shown in FIGS. 15-1A, -1B, -1C & -1D.



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## STEP 2 - POSITION LIFTGATE WELD LIFTGATE TO BODY

### ⚠ 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.

**NOTE:** Before welding extension plate to vehicle body, make sure:

- Inboard edge of extension plate is flush with the top of sill on vehicle body.
- Top surface of extension plate is level with the ground.

### CAUTION

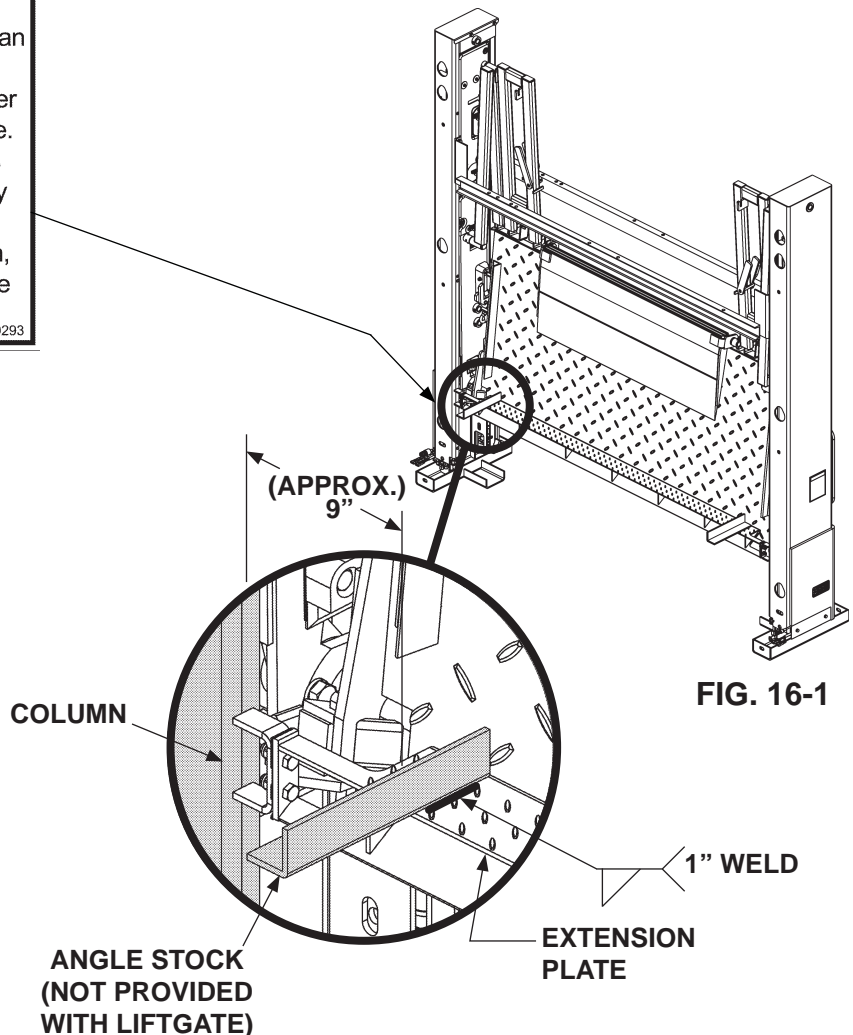
Comply with welding CAUTION decals on the LH & RH runners.

### CAUTION

Electrical components and metal parts on this liftgate can be severely damaged by connecting an electric welder to liftgate at the wrong place. To prevent damage, always connect ground lead directly to the component being welded (e.g. runner, column, platform) and as close to the weld as possible.

P/N 260293

1. Weld 2 pieces of 10" X 2" angle stock to the top surface of the extension plate near the LH column as shown in **FIGS. 16-1 and 16-1A**. Repeat for RH column. The angle stock helps keep extension plate flush with top of vehicle bed while installing Liftgate.



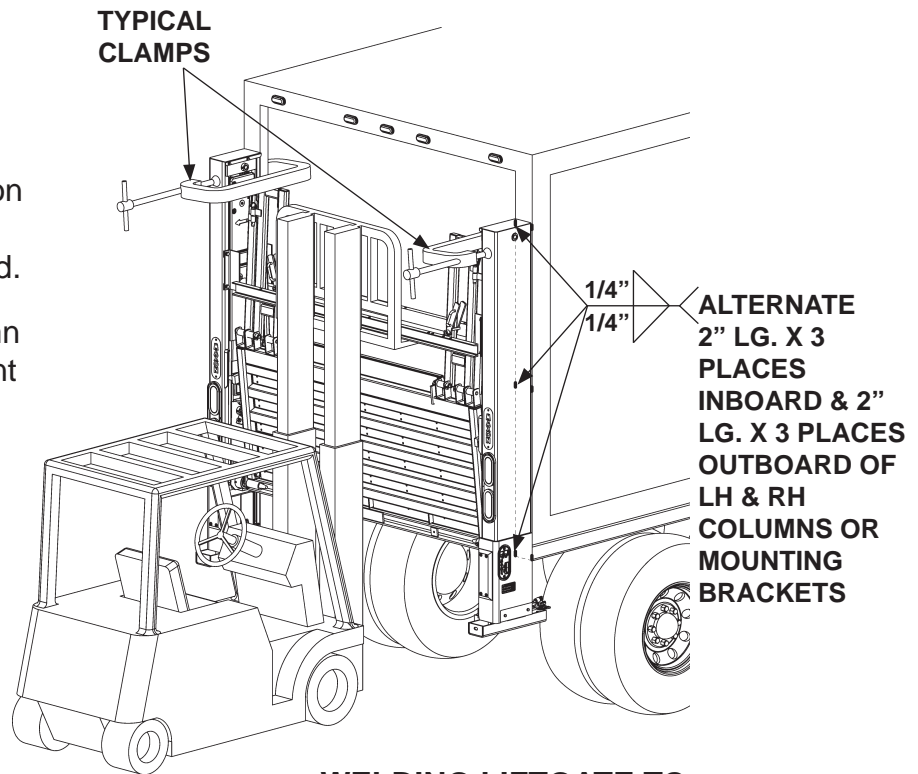
**FIG. 16-1A**



## STEP 2 - POSITION LIFTGATE - Continued

### WELD LIFTGATE TO BODY - Continued

2. Use overhead hoist or forklift to center Liftgate against the vehicle (**FIG. 17-1**). Let angle stock, welded to extension plate, rest on the top surface of the vehicle bed.
3. Clamp top of each column to vehicle body to prevent gap (**FIG. 17-1**).



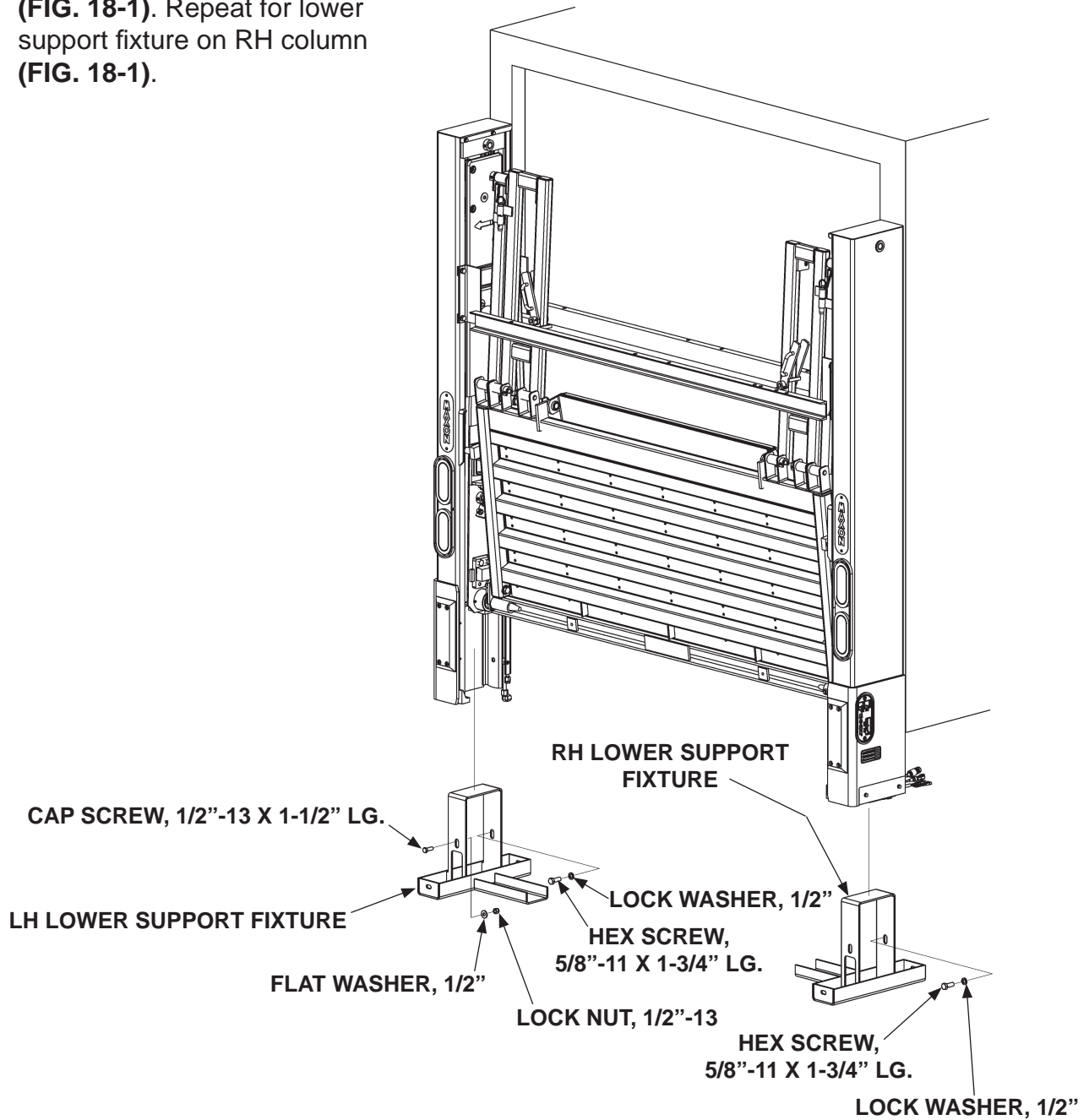
**WELDING LIFTGATE TO  
VEHICLE  
FIG. 17-1**

4. Weld the RH and LH columns to vehicle body as shown in **FIG. 17-1**.
5. Remove clamp from each of the columns. Then, move forklift away from work area.

# STEP 3 - REMOVE UPPER AND LOWER SUPPORT FIXTURES

**NOTE:** Use short wrenches for unbolting lower support fixtures.

1. Unbolt and remove lower support fixture from LH column (**FIG. 18-1**). Repeat for lower support fixture on RH column (**FIG. 18-1**).



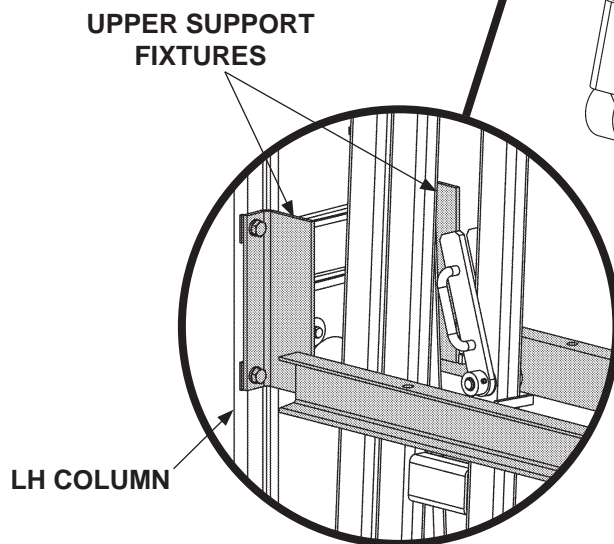
**REMOVING LOWER SUPPORT FIXTURES  
FIG. 18-1**

## STEP 3 - REMOVE UPPER AND LOWER SUPPORT FIXTURES - Continued

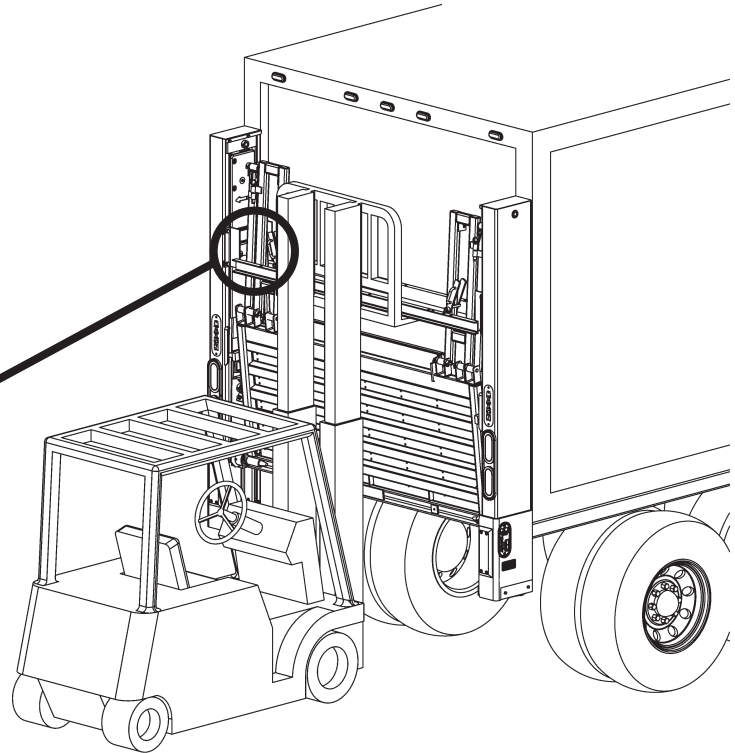
### ⚠ CAUTION

Upper support fixtures are heavy. To prevent injury to installer and damage to Liftgate, use forklift or hoist to hold support fixtures during removal.

2. Stow the platform as shown in **FIG. 19-1**.
3. Position forklift or hoist to hold upper support fixtures as shown in **FIG. 19-1**.
4. Unbolt the 2 upper support fixtures from the LH column (**FIGS. 19-1 and 19-1A**). Repeat for RH column. Use forklift to remove upper support fixtures from work area.



**FIG. 19-1A**

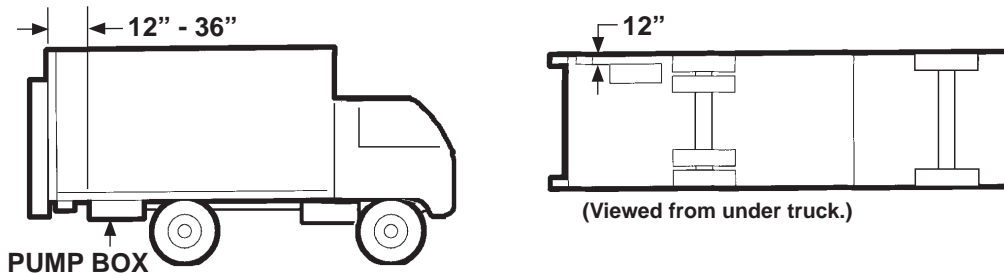


**FIG. 19-1**

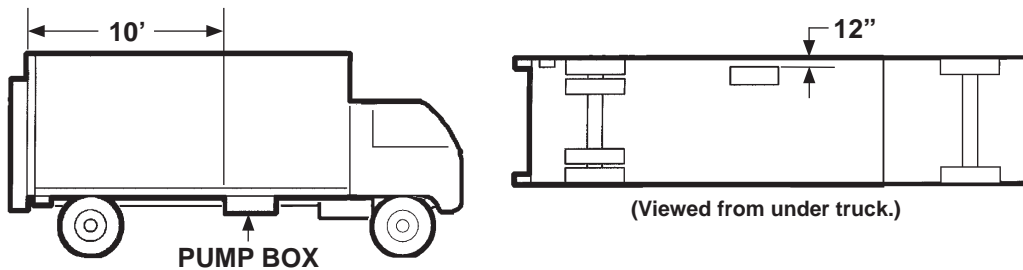
## STEP 4 - POSITION PUMP BOX FRAME

**NOTE:** Make sure pump box is closer to Liftgate than battery box (if installed) and pump box cover opens toward curb-side of vehicle. Also, make sure hydraulic hoses are installed without straining hoses. Distance from pump box to Liftgate is limited by lengths of hydraulic hoses and wiring harness supplied with Liftgate.

Position pump box frame (or optional battery box) on the ground where it will be welded to vehicle body in the next step. Make sure pump box (and battery box if supplied) are securely bolted to the frame. Typical installations are shown in **FIGS. 20-1, 20-2, 21-1, 21-2 and 21-3.**

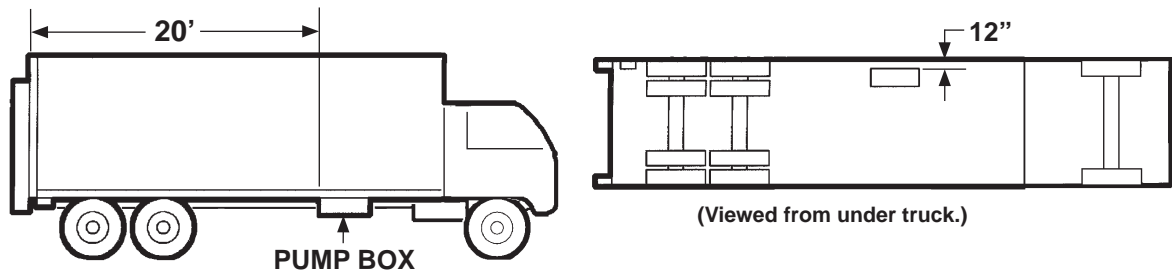


**TYPICAL 3 FT. INSTALLATION  
FIG. 20-1**



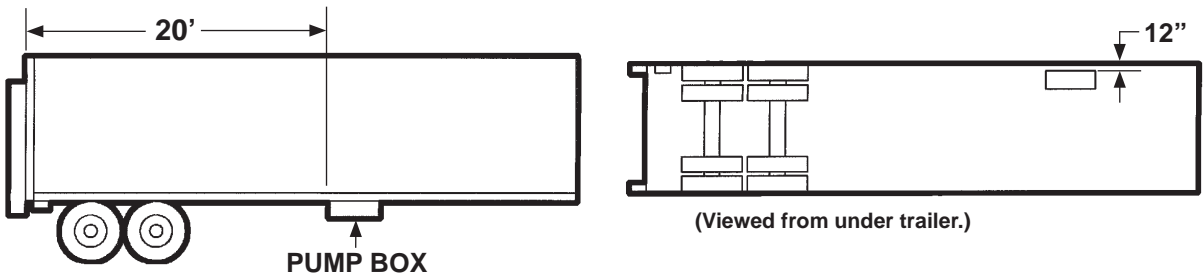
**TYPICAL 10 FT. INSTALLATION  
FIG. 20-2**

# STEP 4 - POSITION PUMP BOX FRAME - Continued



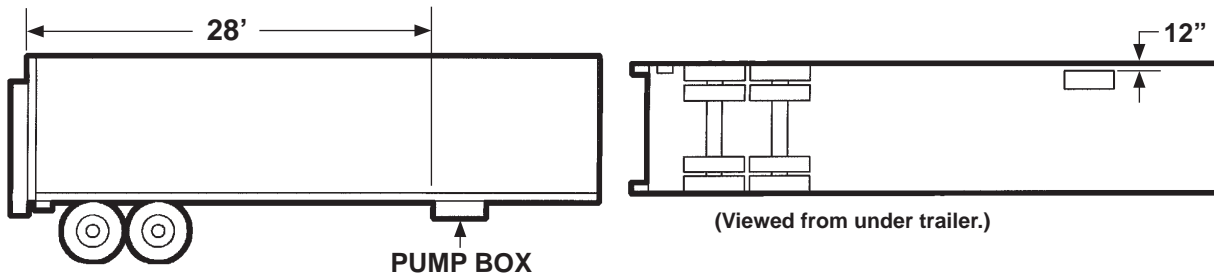
TYPICAL 20 FT. INSTALLATION

FIG. 21-1



TYPICAL 20 FT. INSTALLATION

FIG. 21-2



TYPICAL 28 FT. INSTALLATION

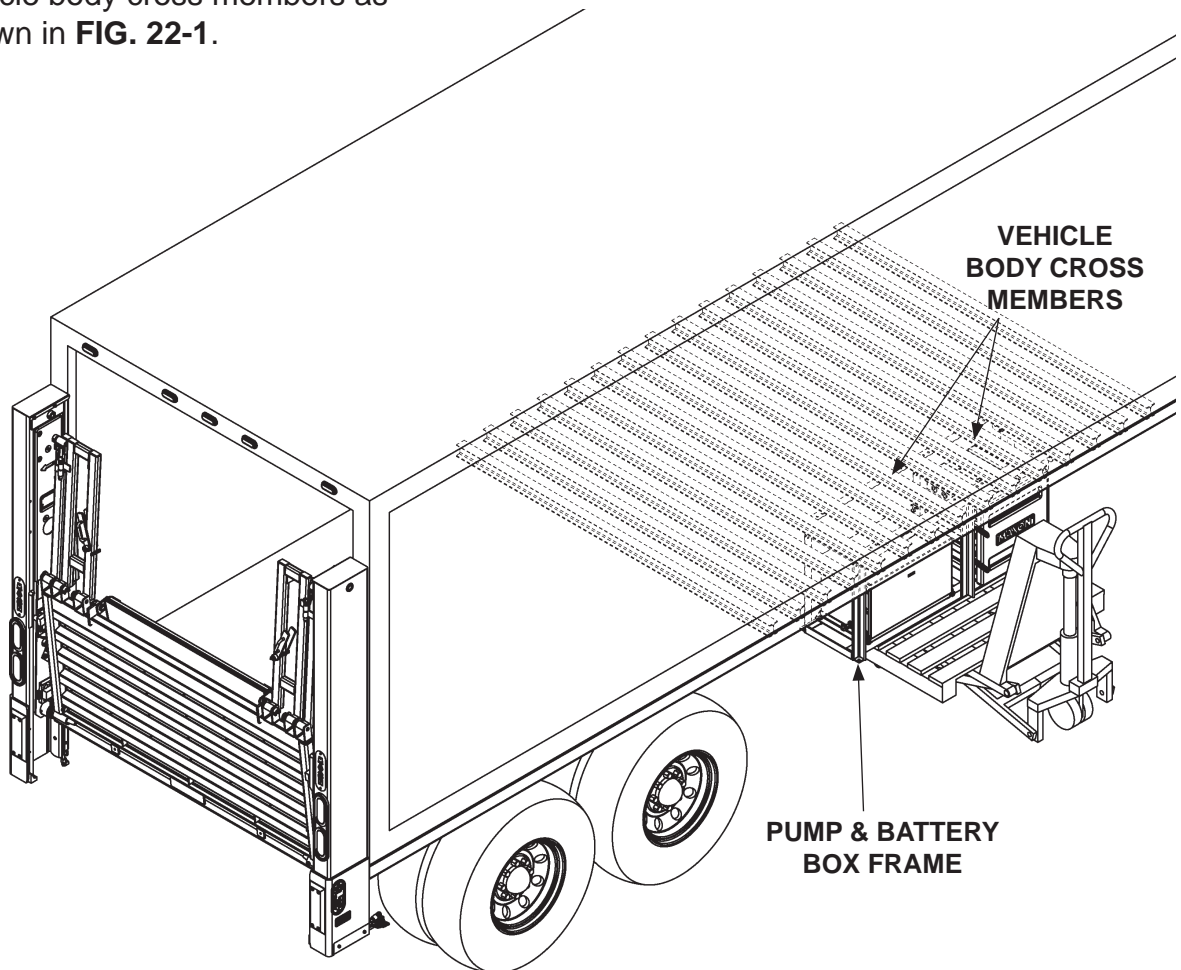
FIG. 21-3

## STEP 5 - ATTACH PUMP & BATTERY BOX FRAME TO VEHICLE

**NOTE:** There are 2 methods to mount pump and battery box frame to vehicle frame.

- Bolt pump and battery box frame to hanger brackets welded to vehicle frame.
- Weld pump and battery box frame to vehicle frame.

1. Use floor jack or equivalent lifting device to place pump and battery box frame in position on vehicle body cross members as shown in **FIG. 22-1**.



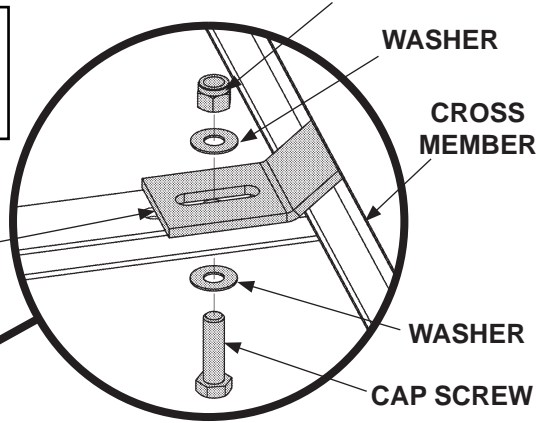
TRAILER WITH PUMP & BATTERY BOX FRAME  
FIG. 22-1

**NOTE:** If pump and battery box frame is to be welded directly to cross members on vehicle body, skip **instructions 2 through 4**. Continue with **instruction 5**.

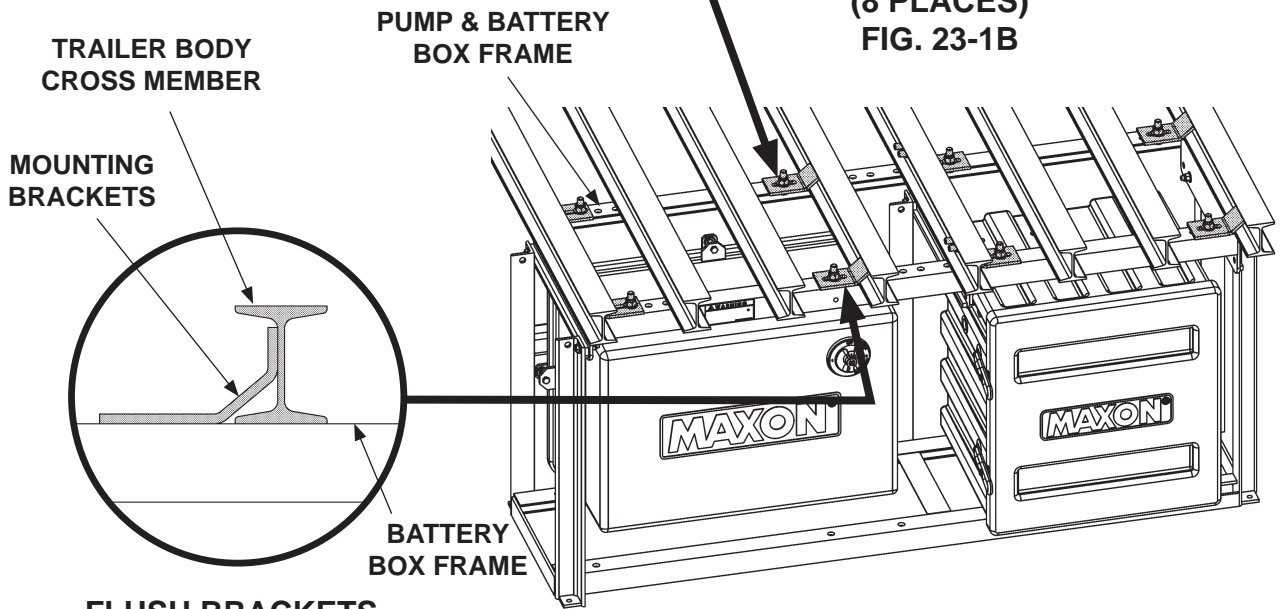
# STEP 5 - ATTACH PUMP & BATTERY BOX FRAME TO VEHICLE - Continued

**NOTE:** Do instructions 3 through 5 if hanger brackets are being used to mount pump and battery box frame on vehicle.

2. Select holes on top of battery box frame to align mounting brackets flush to cross members. Refer to **FIGS. 23-1 & 23-1A** for trailers and **FIG. 23-2** for trucks. Bolt mounting brackets to battery box frame as shown in **FIG. 23-1B**. Torque each bolt and lock nut to **85-128 lb-ft.**

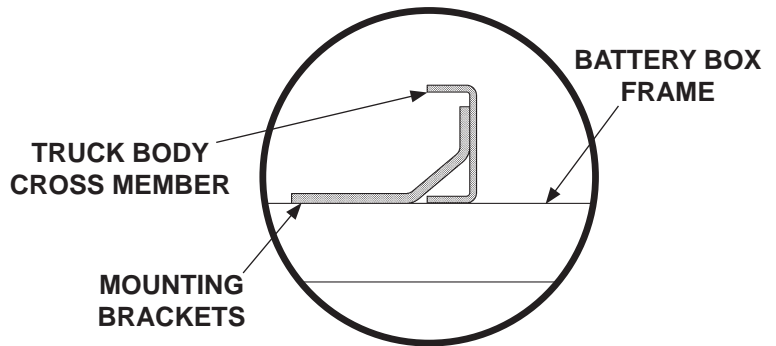


**BOLTING BRACKETS  
(8 PLACES)  
FIG. 23-1B**



**FLUSH BRACKETS  
FOR TRAILERS  
(8 PLACES)  
FIG. 23-1A**

**ALIGNING PUMP & BATTERY  
BOX FRAME  
FIG. 23-1**



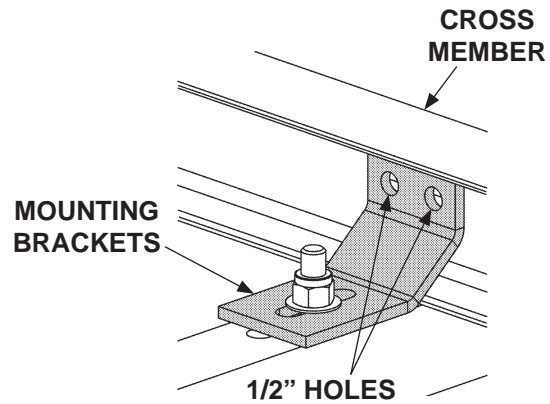
**FLUSH BRACKETS FOR TRUCKS  
(8 PLACES)  
FIG. 23-2**

11921 Slauson Ave. Santa Fe Springs, CA. 90670 (800) 227-4116 FAX (888) 771-7713  
**MAXON**

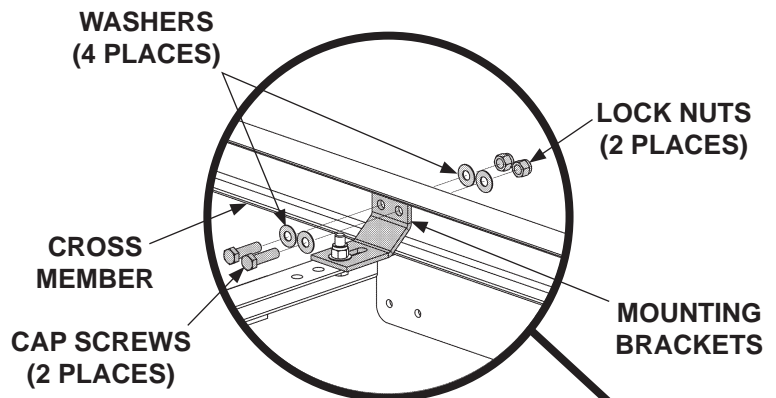
# STEP 5 - ATTACH PUMP & BATTERY BOX FRAME TO VEHICLE - Continued

**NOTE:** If welding mounting brackets to cross members, skip **instruction 3**.

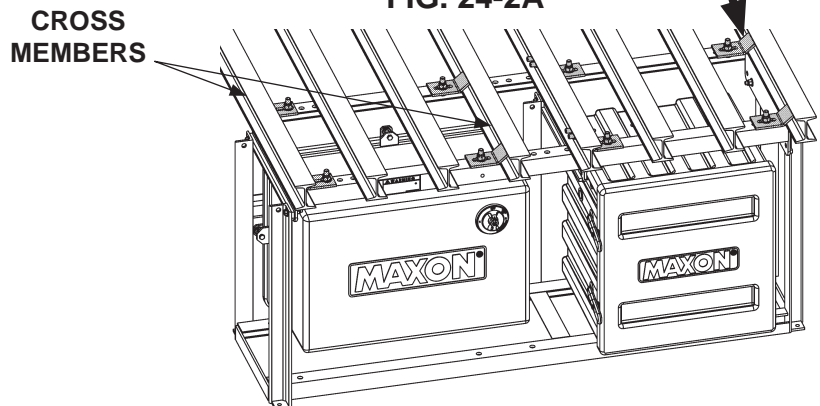
- Using mounting brackets as a template mark and drill holes through cross members (**FIG. 24-1**). Bolt mounting brackets to cross members as shown in **FIGS. 24-2 and 24-2A**. Torque bolts and lock nuts to **85-128 lb-ft**.



**MARK AND DRILL  
FIG. 24-1**



**BOLTING BRACKETS  
(8 PLACES)  
FIG. 24-2A**



**BOLTING PUMP & BATTERY  
BOX FRAME  
FIG. 24-2**



## STEP 5 - ATTACH PUMP & BATTERY BOX FRAME TO VEHICLE - Continued

### ⚠ 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.

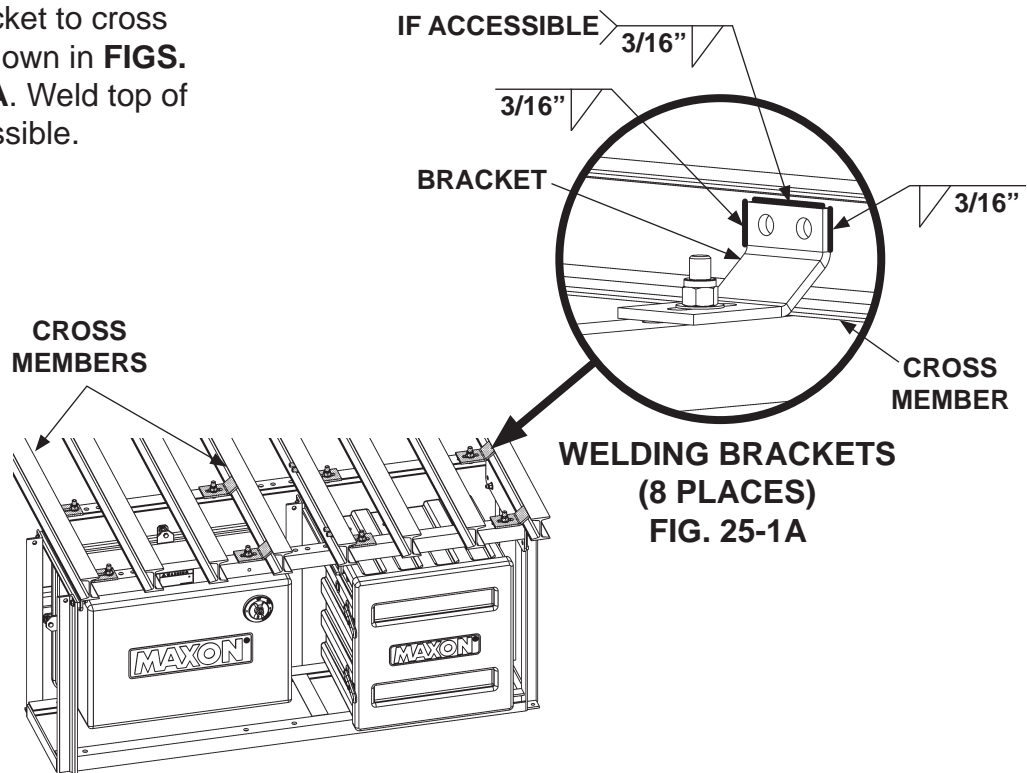
### CAUTION

To prevent pump box components from being damaged by electric current from welding, connect welder grounding cable to the part being welded.

### CAUTION

Cover pump box and optional battery box with flame-resistant covering before welding pump box frame to vehicle.

4. Weld each bracket to cross members as shown in **FIGS. 25-1 and 25-1A**. Weld top of bracket if accessible.



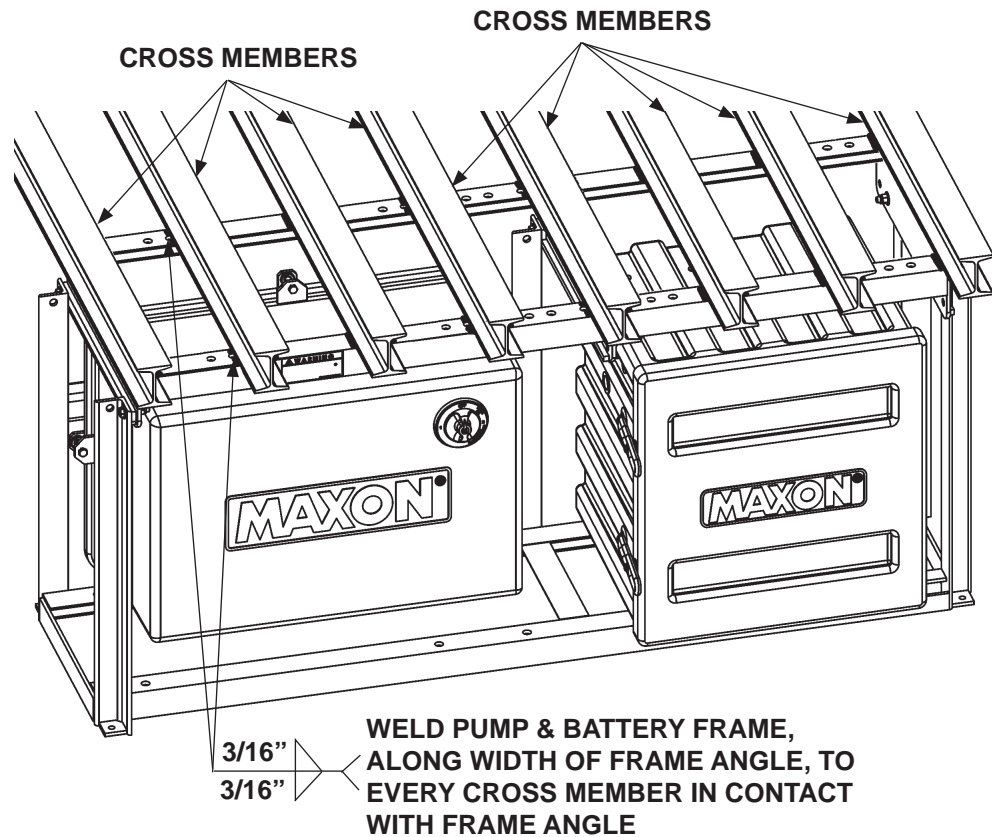
**BOLTING PUMP & BATTERY BOX FRAME**  
FIG. 25-1

**GO TO THE END OF STEP 5 & OBSERVE THE WARNING ABOUT HYDROGEN GAS BUILD-UP. THEN GO TO STEP 6.**

# STEP 5 - ATTACH PUMP & BATTERY BOX FRAME TO VEHICLE - Continued

**NOTE:** Any methods not shown in this section, for welding mounting brackets to cross members, must be approved by body or trailer manufacturer.

5. Position pump and battery box frame on vehicle frame cross members (**FIG. 26-1**). Weld pump and battery box frame to crossmembers as shown in **FIG. 26-1**.

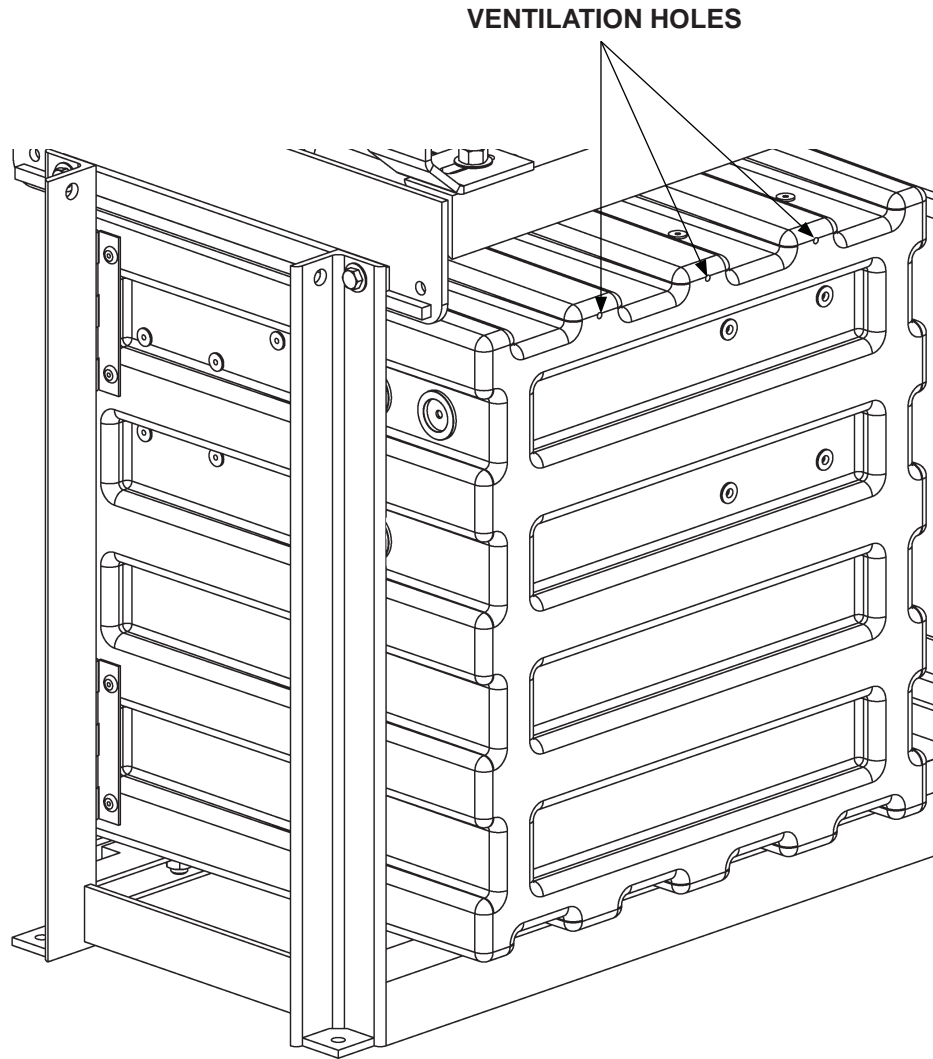


**ALIGNING PUMP & BATTERY BOX FRAME TO WELD ON CROSS MEMBERS**  
**FIG. 26-1**

## STEP 5 - ATTACH PUMP & BATTERY BOX FRAME TO VEHICLE - Continued

### ⚠ WARNING

Explosive hydrogen gas from charging batteries can accumulate in battery box if not vented from the box. To prevent hydrogen gas from accumulating, ensure the 3 ventilation holes in battery box are not plugged or covered.



**BATTERY BOX ASSEMBLY  
(REAR VIEW SHOWN)  
FIG. 27-1**

## STEP 6 - RUN HYDRAULIC LINES & ELECTRIC CABLES

### CAUTION

Always route hydraulic hoses and electrical wiring clear of moving parts, brake lines, sharp edges and exhaust systems. Avoid making sharp bends in hoses and wiring. Make sure that bends in the electrical wiring are 1" or more away from electrical connector. Attach securely. If drilling is necessary, first check behind the drilling surface so you do not damage any fuel lines, vent lines, brake lines or wires.

**NOTE:** The hydraulic cylinders in the Liftgate are filled with hydraulic fluid and bled at the factory. To keep air out of the hydraulic system, follow instructions carefully for installing hydraulic system components.

**NOTE:** The fold and unfold hydraulic hoses are the same. To avoid confusion when running hoses through the channel, MAXON recommends taping both ends of one of the hoses for easy identification.

1. Get hydraulic hoses, hydraulic tee, channel guard (if required) and plastic ties from parts box and pump box installation kit. Run hydraulic hoses from LH and RH columns to pump box. Connect hydraulic hoses as shown in **FIG. 29-1** and **TABLES 30-1 and 30-2** for Gravity Down Liftgate or **FIG. 31-1** and **TABLES 32-1 and 32-2** for Power Down Liftgate.
2. Get molded extension cable from pump box installation kit. Run the molded extension cable from RH column to pump box as shown in **FIG. 33-1**.
3. If channel guard is required, bolt up one side of the channel (**FIGS. 29-1, 31-1 and 33-1**) to vehicle body. Leave bolts loose until all hydraulic hoses (**FIGS. 29-1 and 31-1**) and wiring harness (**FIG. 33-1**) are run through channel. After hoses and wiring harness are run, bolt up second side of channel and tighten all bolts and nuts. Use plastic ties to secure runs of hydraulic hoses and wiring harness that are outside of channel guard.

# STEP 6 - RUN HYDRAULIC LINES & ELECTRIC CABLES - Continued

## RUN GRAVITY DOWN HYDRAULIC LINES

**NOTE:** See TABLES 30-1 & 30-2 for information on the numbered hoses in this illustration.

**CAUTION**  
Before connecting hoses, ensure face seal o-rings are in place.

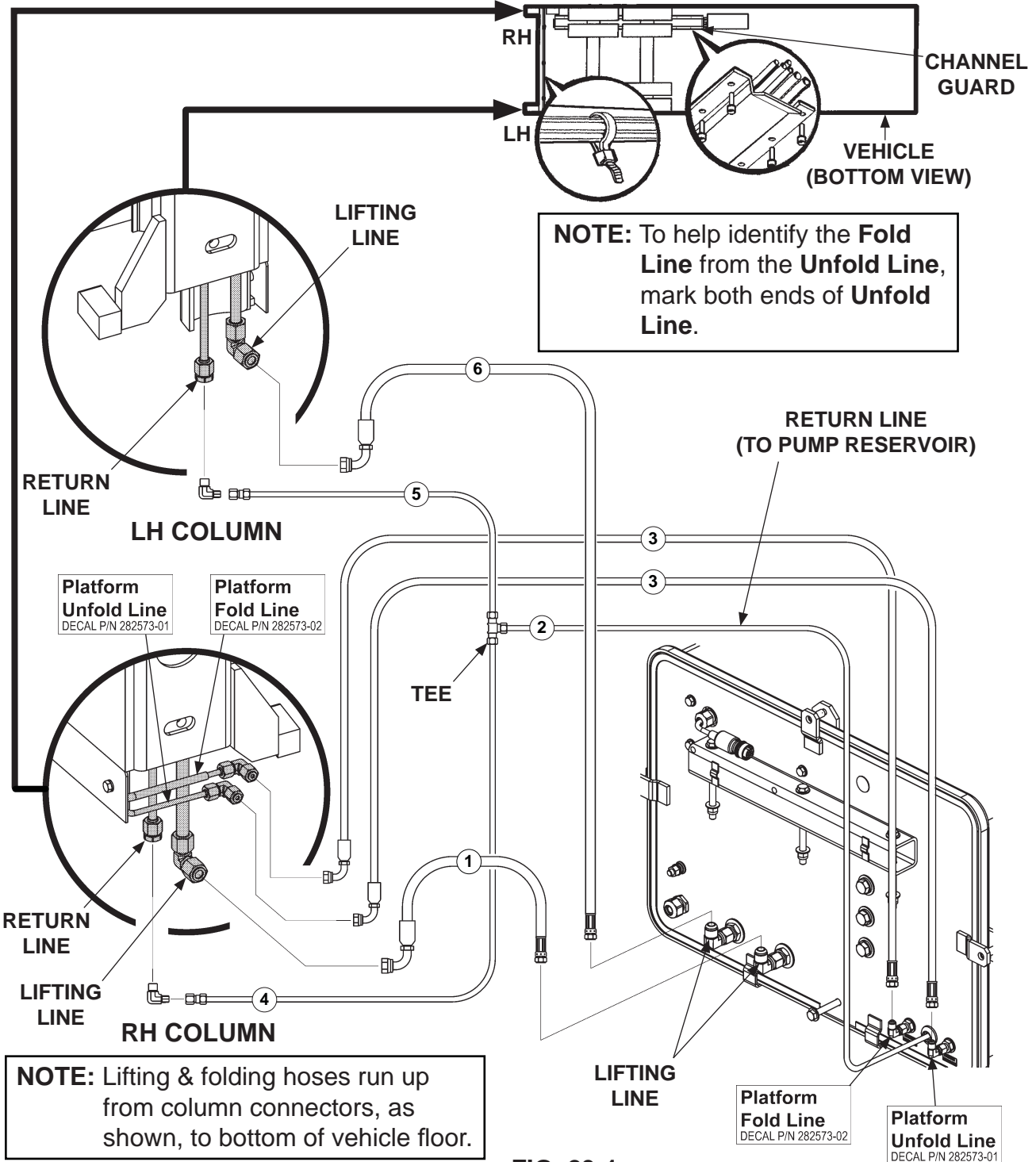


FIG. 29-1

# STEP 6 - RUN HYDRAULIC LINES & ELECTRIC CABLES - Continued

## RUN GRAVITY DOWN HYDRAULIC LINES

**NOTE:** Each pump extension kit contains 2 hoses of the same length (**item 3**). One hose is for the **Platform Fold Line** and the second hose is for the **Platform Unfold Line**. One hose has a yellow band on each connector to help connect the 2 hoses to the correct fittings. For example, connect hose with yellow bands to the **Fold Line** on the RH column and the **Fold Line** on the back of the pump box.

GRAVITY DOWN PUMP BOX INSTALLATION: REQUIRED HOSES & PLASTIC TUBING			
	3 FT.	10 FT.	15 FT.
1	HP 3/8" X 64" LG.	HP 3/8" X 196" LG.	HP 3/8" X 256" LG.
2	PLASTIC 3/8" OD X 84" LG.	PLASTIC 3/8" OD X 192" LG.	PLASTIC 3/8" OD X 192" LG.
3	HP 1/4" X 56" LG.	HP 1/4" X 188" LG.	HP 1/4" X 248" LG.
4	PLASTIC 3/8" OD X 24" LG.		
5	PLASTIC 3/8" OD X 108" LG.		
6	HP 3/8" X 142" LG.	HP 3/8" X 274" LG.	HP 3/8" X 334" LG.

**TABLE 30-1**

GRAVITY DOWN PUMP BOX INSTALLATION: REQUIRED HOSES & PLASTIC TUBING		
	20 FT.	28 FT.
1	HP 3/8" X 316" LG.	HP 3/8" X 412" LG.
2	PLASTIC 3/8" OD X 192" LG.	PLASTIC 3/8" OD X 420" LG.
3	HP 1/4" X 308" LG.	HP 1/4" X 404" LG..
4	PLASTIC 3/8" OD X 24" LG.	
5	PLASTIC 3/8" OD X 108" LG.	
6	HP 3/8" X 394" LG.	HP 3/8" X 490" LG.

**TABLE 30-2**

# STEP 6 - RUN HYDRAULIC LINES & ELECTRIC CABLES - Continued

## RUN POWER DOWN HYDRAULIC LINES

**NOTE:** See TABLES 32-1 & 32-2 for information on the numbered hoses in this illustration.

**CAUTION**  
Before connecting hoses, ensure face seal o-rings are in place.

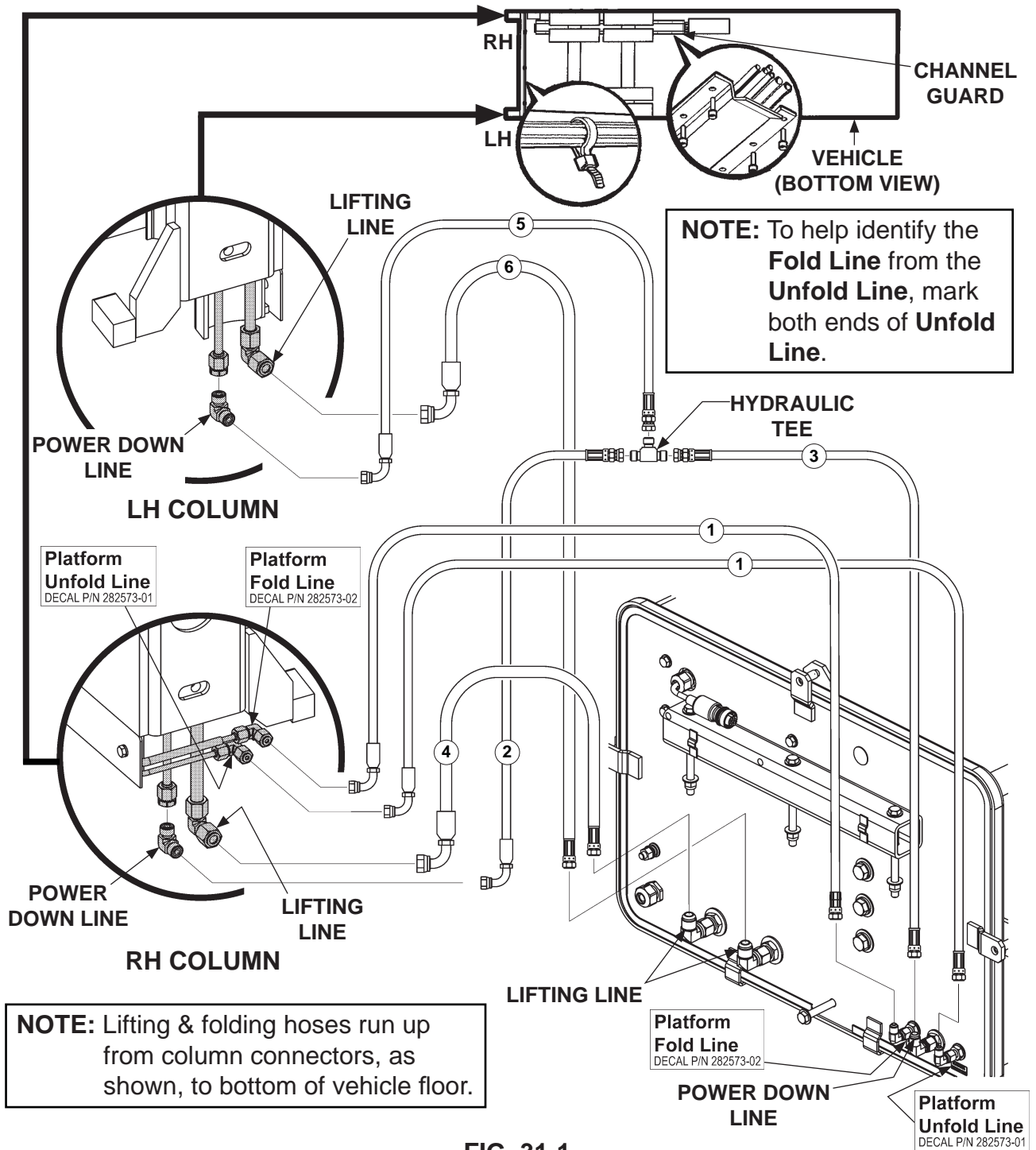


FIG. 31-1

# STEP 6 - RUN HYDRAULIC LINES & ELECTRIC CABLES

## - Continued

### RUN HYDRAULIC LINES

**NOTE:** Each pump extension kit contains 2 hoses of the same length (**item 1**). One hose is for the **Platform Fold Line** and the second hose is for the **Platform Unfold Line**. One hose has a yellow band on each connector to help connect the 2 hoses to the correct fittings. For example, connect hose with yellow bands to the **Fold Line** on the RH column and the **Fold Line** on the back of the pump box.

POWER DOWN PUMP BOX INSTALLATION: REQUIRED HOSES			
	3 FT.	10 FT.	15 FT.
<b>1</b>	HP 1/4" X 56" LG.	HP 1/4" X 188" LG.	HP 1/4" X 248" LG.
<b>2</b>	HP 1/4" X 24" LG.		
<b>3</b>	HP 1/4" X 34" LG.	HP 1/4" X 166" LG.	HP 1/4" X 226" LG.
<b>4</b>	HP 3/8" X 64" LG.	HP 3/8" X 196" LG.	HP 3/8" X 256" LG.
<b>5</b>	HP 1/4" X 100" LG.		
<b>6</b>	HP 3/8" X 142" LG.	HP 3/8" X 274" LG.	HP 3/8" X 334" LG.

**TABLE 32-1**

POWER DOWN PUMP BOX INSTALLATION: REQUIRED HOSES		
	20 FT.	28 FT.
<b>1</b>	HP 1/4" X 308" LG.	HP 1/4" X 382" LG.
<b>2</b>	HP 1/4" X 24" LG.	
<b>3</b>	HP 1/4" X 286" LG.	HP 1/4" X 404" LG.
<b>4</b>	HP 3/8" X 316" LG.	HP 3/8" X 412" LG.
<b>5</b>	HP 1/4" X 100" LG.	
<b>6</b>	HP 3/8" X 394" LG.	HP 3/8" X 490" LG.

**TABLE 32-2**



# STEP 6 - RUN HYDRAULIC LINES & ELECTRIC CABLES - Continued RUN ELECTRIC CABLES

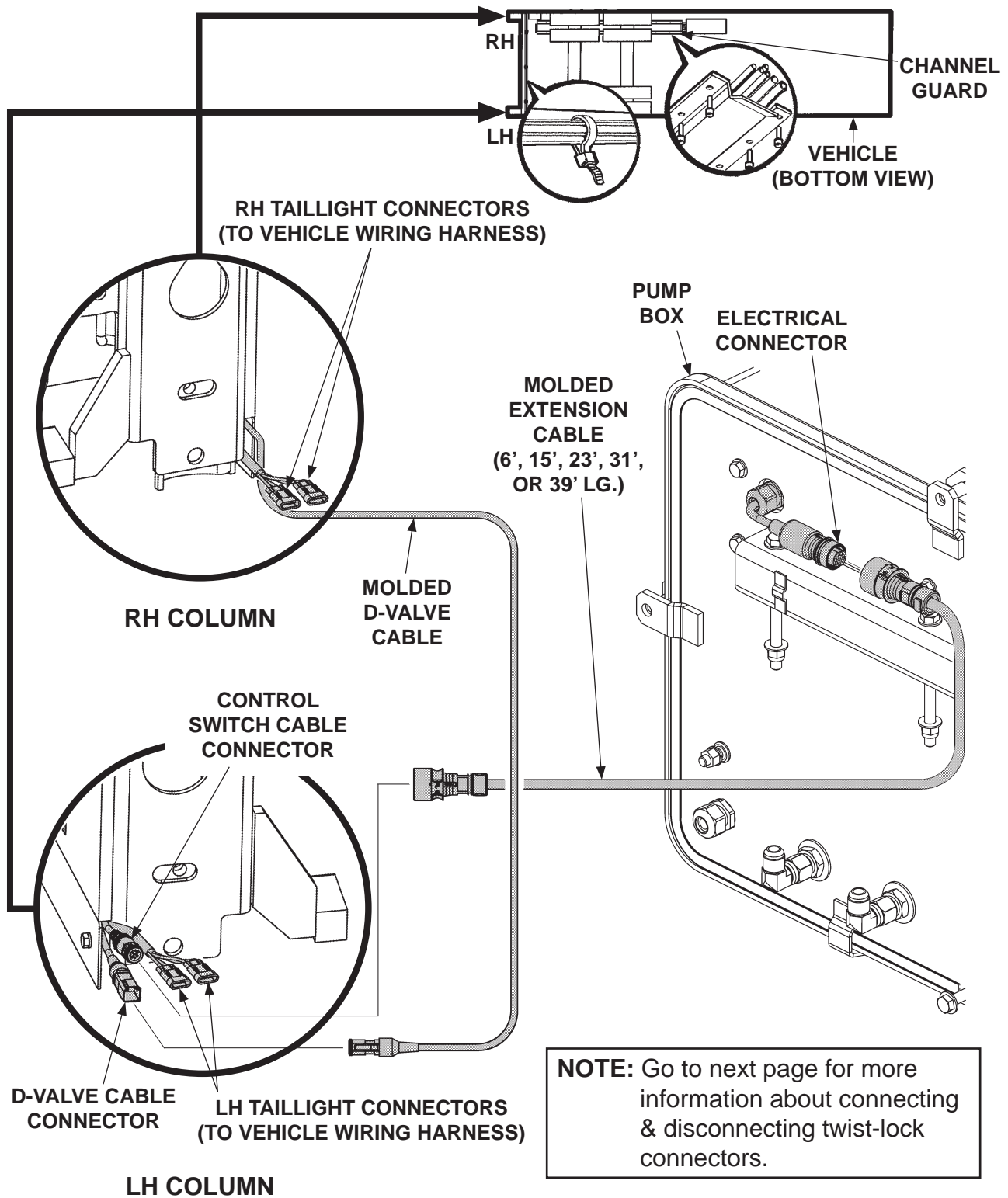


FIG. 33-1

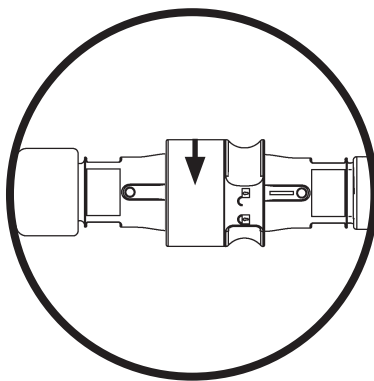
# STEP 6 - RUN HYDRAULIC LINES & ELECTRIC CABLES - Continued

## WIRING HARNESS TWIST-LOCK CONNECTORS

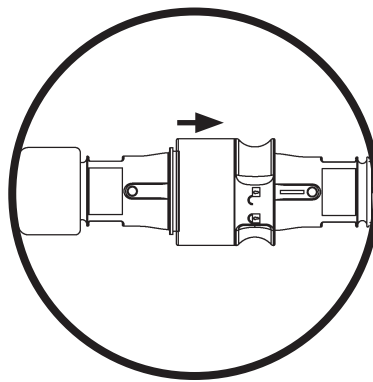
### CAUTION

Before connecting, ensure connectors are clean inside. Ensure there is a thin coating of dielectric grease on face of receptacle, and there is no dielectric grease on connector contacts.

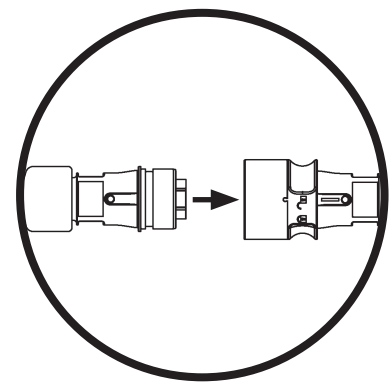
Refer to illustrations below for disconnecting, checking for dielectric grease, and reconnecting twist-lock style connectors.



**TWIST COUPLING RING TO UNLOCK**  
**FIG. 34-1**

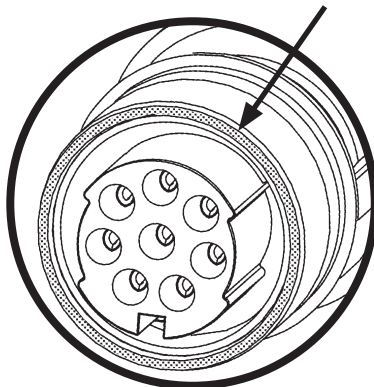


**PULL COUPLING RING TO DISENGAGE**  
**FIG. 34-2**



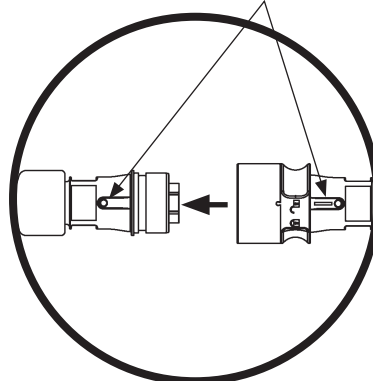
**PULL CONNECTORS TO DISCONNECT**  
**FIG. 34-3**

ENSURE THERE IS A THIN COATING OF DIELECTRIC GREASE ON THIS SHADED AREA

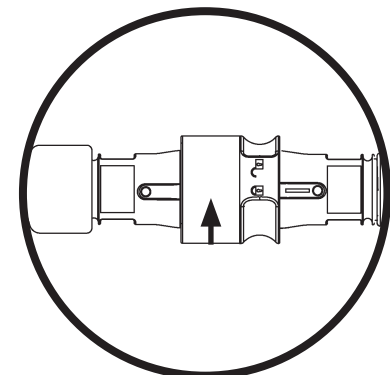


**DIELECTRIC GREASE ON RECEPTACLE**  
**FIG. 34-4**

ALIGN MARKS



**ALIGN & CONNECT**  
**FIG. 34-5**



**TWIST TO LOCK**  
**FIG. 34-6**

# STEP 7 - CONNECT GROUND CABLE

## GROUNDING TO TRUCK FRAME

**NOTE:** Make sure the Liftgate power unit, all batteries on the vehicle for power unit, and taillights on Liftgate are connected correctly to a common ground.

1. Bolt ground cable to the ground stud on pump box (**FIG. 35-1**).

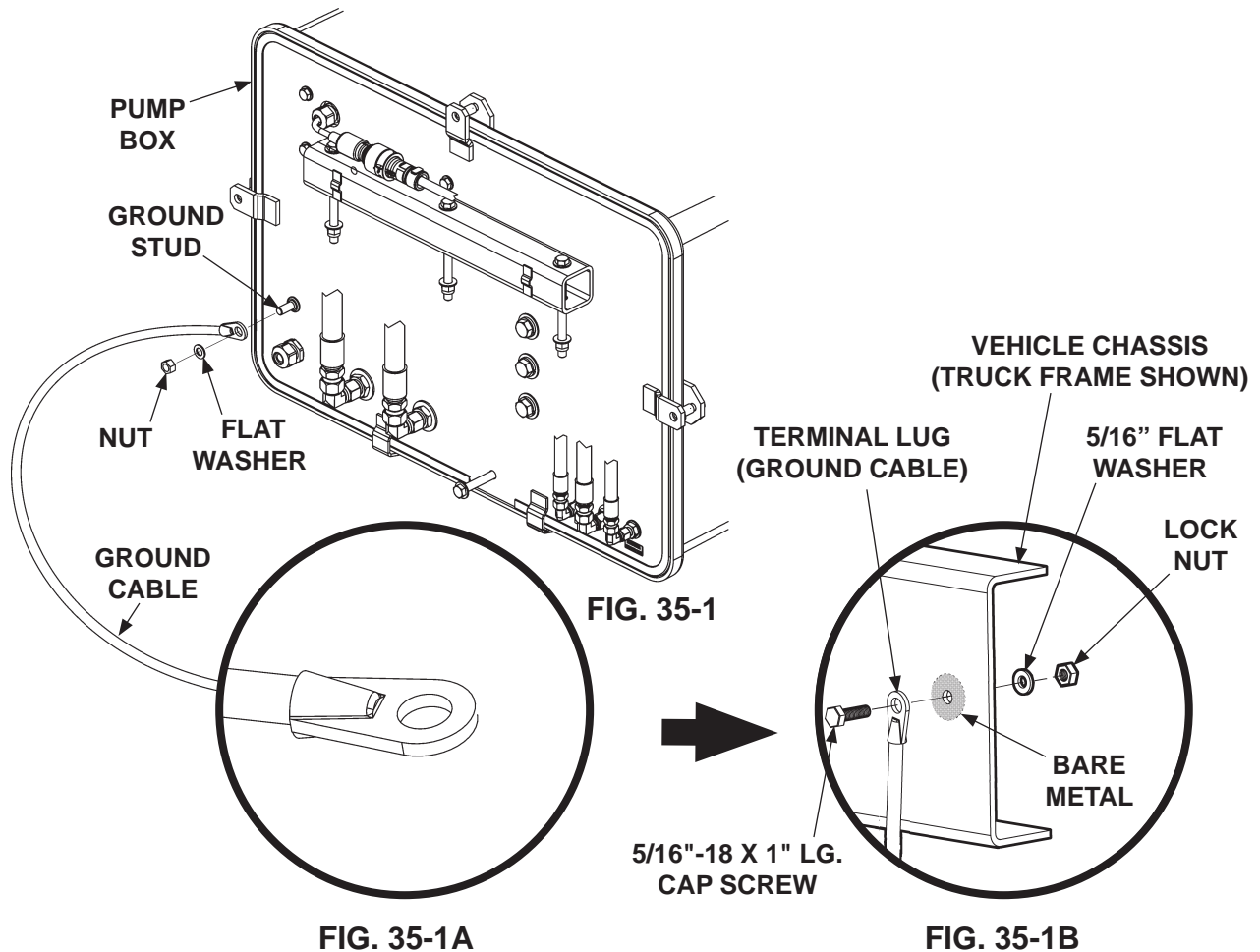
**NOTE:** If there is an existing grounding point on truck frame, use it to connect ground cable and skip the step for drilling a hole.

2. Extend the ground cable to reach vehicle frame (**FIG. 35-1B**) without putting tension on cable (after connection). Connect to an existing grounding point if available.
3. If necessary, drill a 11/32" (0.343") hole in vehicle frame for bolting the ground cable terminal lug (**FIG. 35-1B**).

**NOTE:** Clean the ground cable connection point on the frame down to bare metal.

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

4. Bolt the ground cable terminal lug to vehicle frame as shown in **FIG. 35-1B**.



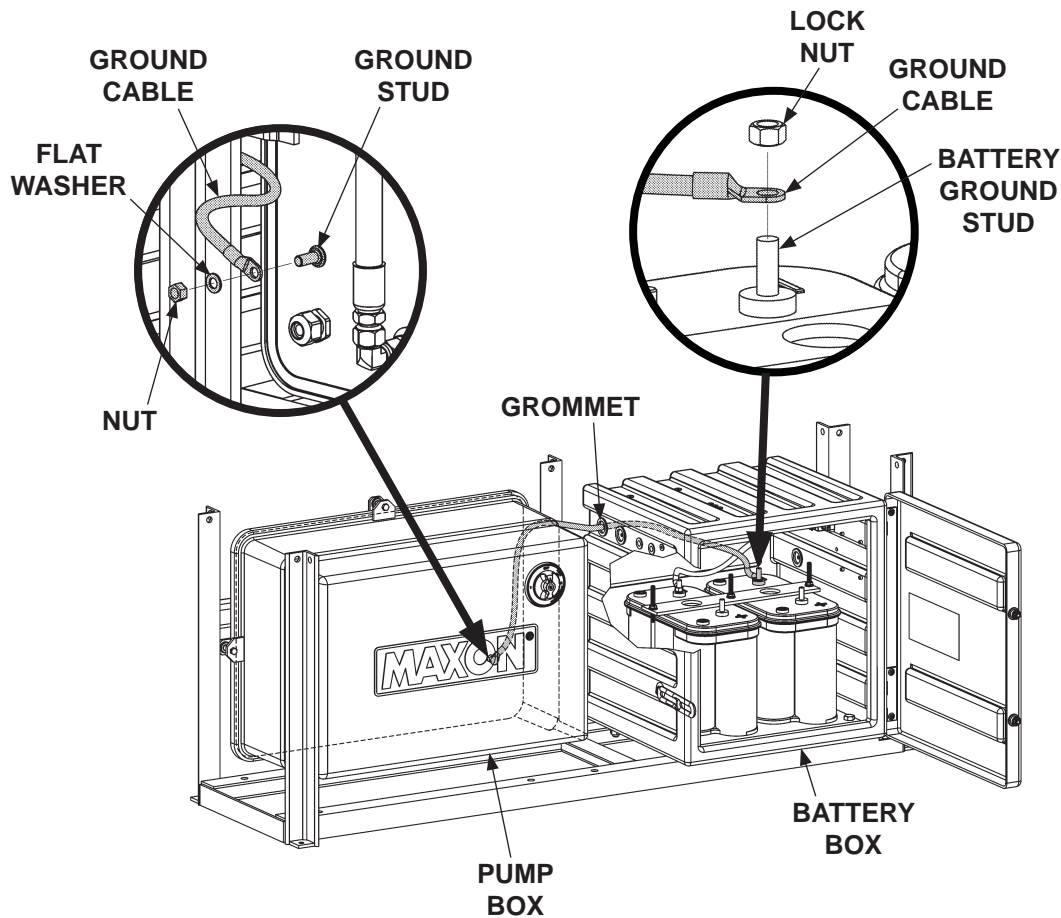
11921 Slauson Ave. Santa Fe Springs, CA. 90670 (800) 227-4116 FAX (888) 771-7713  
**MAXON**

## STEP 7 - CONNECT GROUND CABLE - Continued

### GROUNDING TO BATTERY BOX (IF EQUIPPED)

**NOTE:** Make sure the Liftgate power unit, battery box and batteries, taillights on Liftgate, and vehicle charging system are connected correctly to a common ground. For trailers, if possible, use 2-pole charge line to connect charging system on tractor to the Liftgate batteries.

1. Attach ground cable to ground stud outside the pump box (**FIG. 36-1**). Tighten nut.



**FIG. 36-1**

2. Route ground cable behind pump box to the grommet on the side wall of battery box (**FIG. 36-1**). Then, pull ground cable through grommet to the battery ground stud (**FIG. 36-1**).

**NOTE:** Ensure battery box is connected by cable to common ground on vehicle.

3. Attach ground cable to battery ground stud (**FIG. 36-1**). Tighten lock nut.

## STEP 8 - RUN CHARGE LINES

### ⚠ CAUTION

Never route an energized wire. Make sure battery is disconnected. Always route electrical wires clear of moving parts, brake lines, sharp edges and exhaust systems. Avoid making sharp bends in wiring. Attach securely. If drilling is necessary, first check behind the drilling surface so you do not damage any fuel lines, vent lines, brake lines or wires.

**NOTE:** Make sure cable is long enough to reach master disconnect switch on Liftgate pump box (or circuit breaker in optional battery box, if installed) without putting tension on the cable.

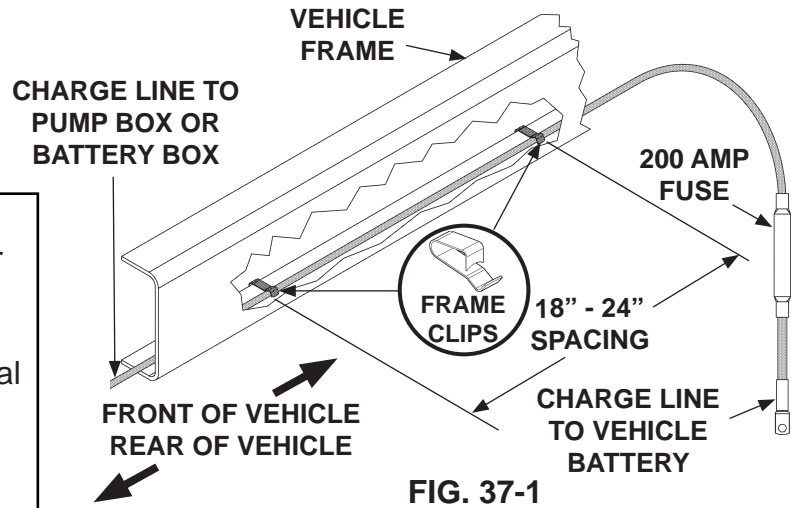


FIG. 37-1

1. Install vehicle charge line by running the line along the inside of vehicle frame (FIG. 37-1). Make sure **200 amp fuse** (FIG. 37-1) end of cable is by the vehicle battery. Run the charge line from vehicle battery to Liftgate pump box master disconnect switch (FIG. 37-2) or 150 amp circuit breaker in optional battery box (FIG. 37-3), if installed. Use frame clips (parts box item) and plastic ties (as required) from charge line kit to secure cable.

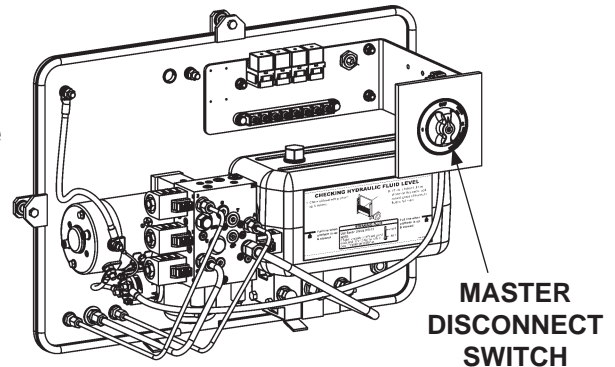


FIG. 37-2

2. If Liftgate comes with:

- Single Pole Tractor Charge Line Kit
- Single Pole Trailer Charge Line Kit
- Dual Pole Tractor Charge Line Kit
- Dual Pole Trailer Charge Line Kit

Install charge line according to **Instruction Sheet** contained in each kit.

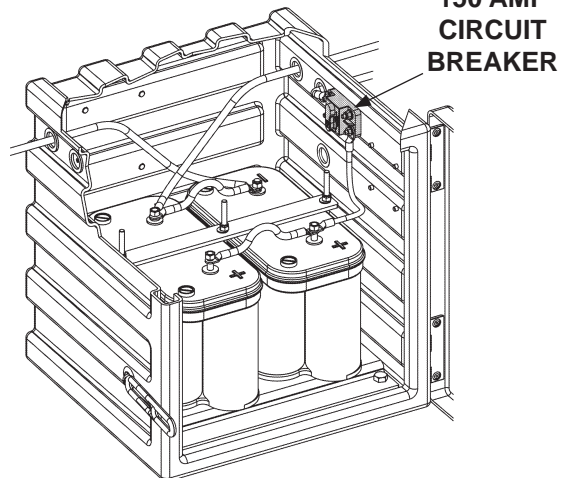
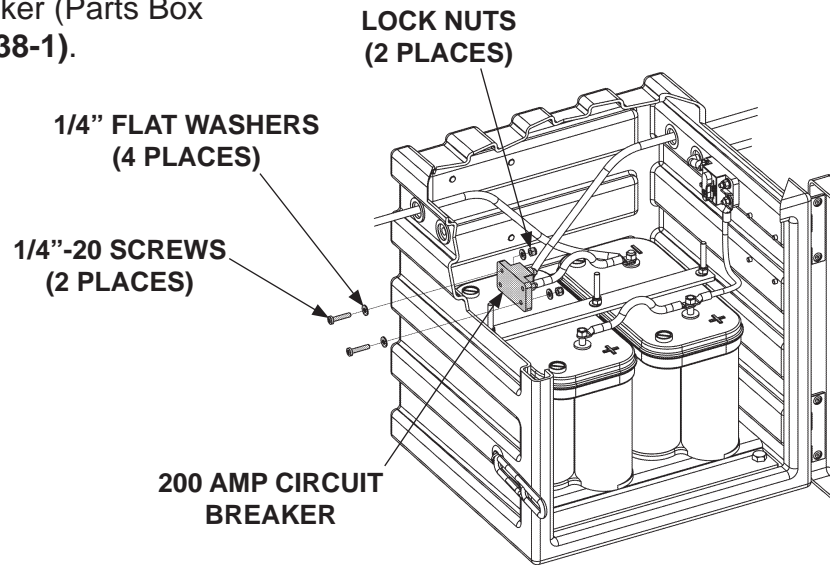


FIG. 37-3

## STEP 8 - RUN CHARGE LINES - Continued

**NOTE:** If your optional battery box is equipped with 200 amp circuit breaker and short red cable, skip instructions **3** and **4**.

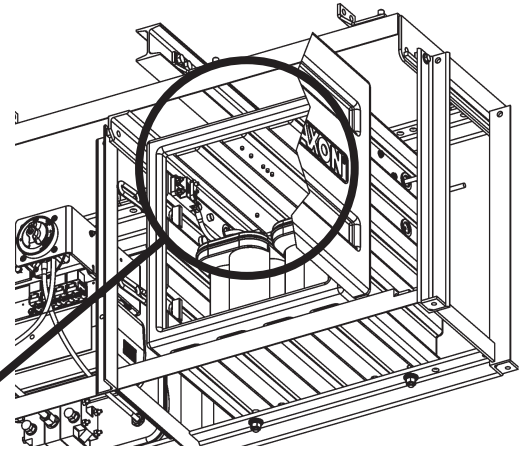
3. Bolt 200 amp circuit breaker (Parts Box item) to pump box (**FIG. 38-1**).



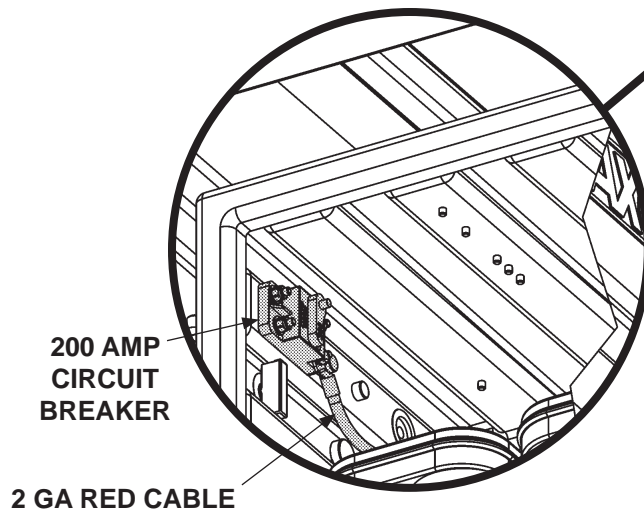
**BATTERY BOX  
FIG. 38-1**

## STEP 8 - RUN CHARGE LINES - Continued

4. Get cable (parts box) and connect to 200 amp circuit breaker as shown in **FIGS. 39-1 and 39-1A**.



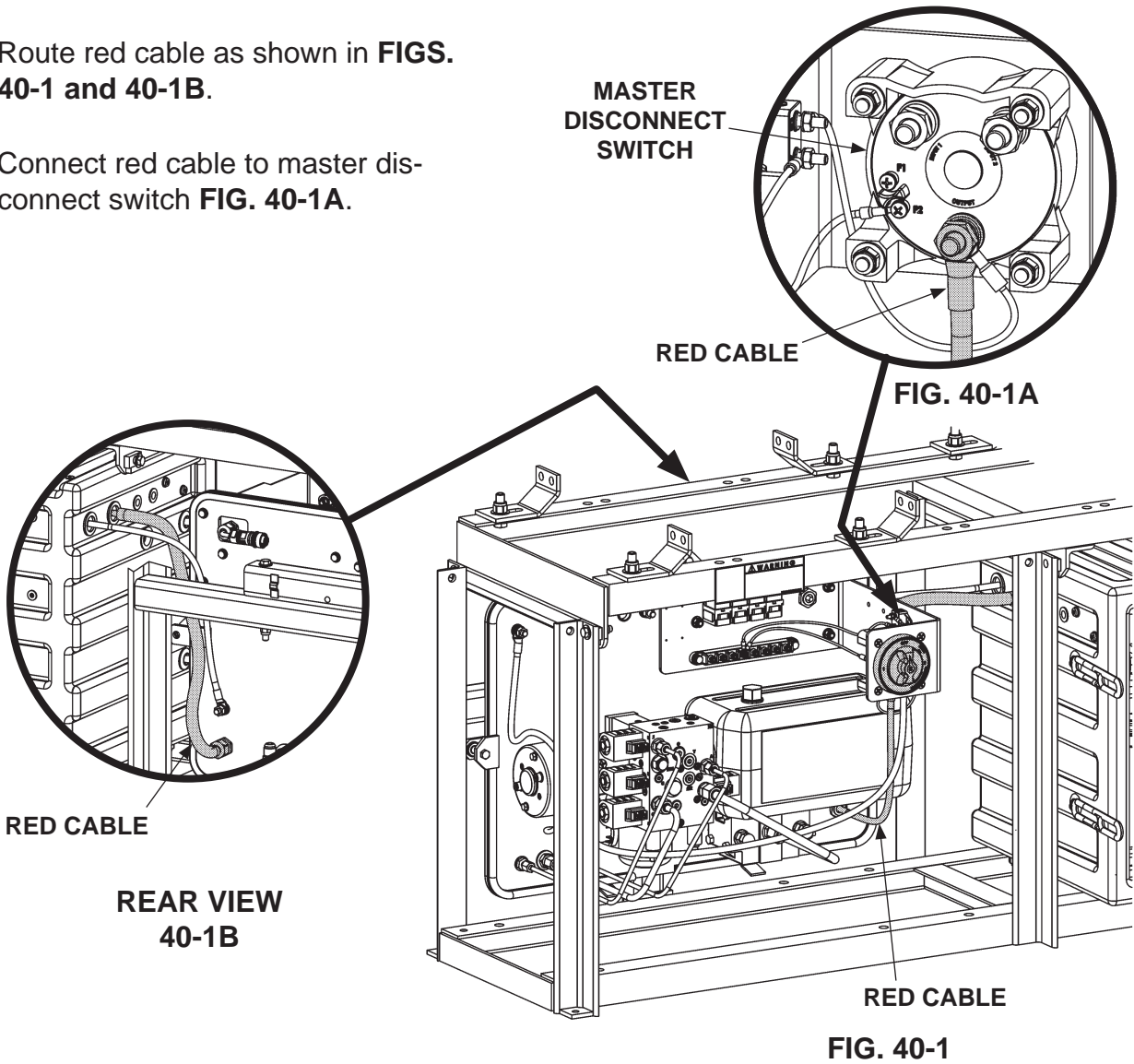
**FIG. 39-1**



**FIG. 39-1A**

## STEP 8 - RUN CHARGE LINES - Continued

5. Route red cable as shown in **FIGS. 40-1 and 40-1B**.
6. Connect red cable to master disconnect switch **FIG. 40-1A**.





# STEP 9 - CONNECT BATTERIES TO LIFTGATE

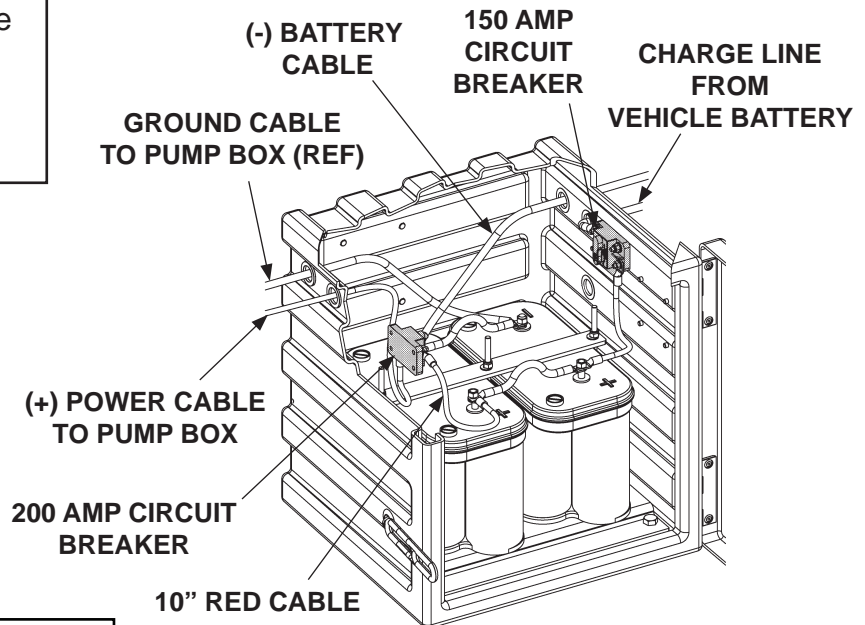
## ⚠ WARNING

To prevent injury and equipment damage, make sure (-) battery cable is disconnected and master disconnect switch is in the OFF position before connecting vehicle charge lines or power cables.

**NOTE:** For recommended 12 volt battery connections, refer to the **RECOMMENDED LIFTGATE POWER CONFIGURATION** section in this manual.

**NOTE:** Ensure batteries are full charged before operating Liftgate & before delivery to customer.

1. Disconnect (-) battery cable (FIG. 41-1) from battery.
2. If optional battery box is installed, connect vehicle charge line to unconnected terminal on master disconnect switch (FIGS. 41-2 and 41-2A).

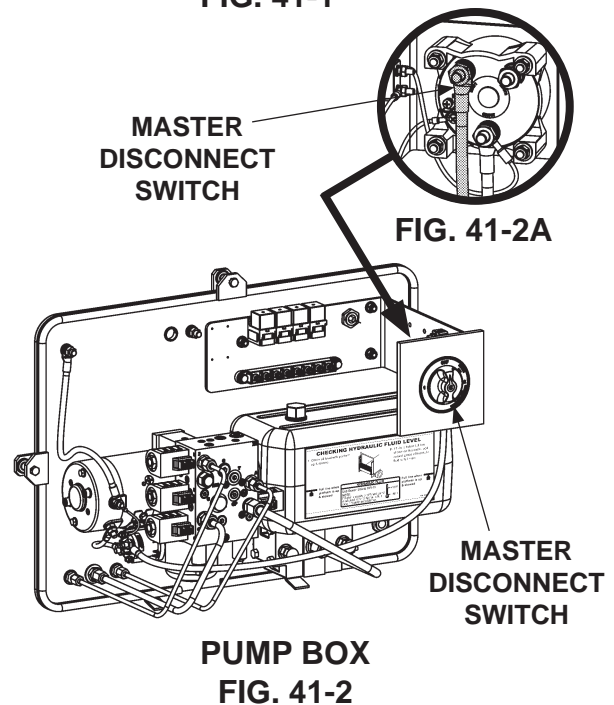


**BATTERY BOX  
FIG. 41-1**

**NOTE:** If your optional battery box has the 200 amp circuit breaker and short red cable installed, skip instruction 3.

**NOTE:** After battery cables are connected, ensure pump box cover and battery box cover (if equipped) are closed.

3. If optional battery box (FIG. 41-1) is installed, connect 10" red cable (Parts Box item) between 200 amp circuit breaker and battery (+) terminal (FIG. 41-1). Next, connect (+) power cable between 200 amp circuit breaker in battery box and master switch in the pump box (FIG. 41-2). Then, connect vehicle charge line to 150 amp circuit breaker in battery box (FIG. 41-1).



**PUMP BOX  
FIG. 41-2**

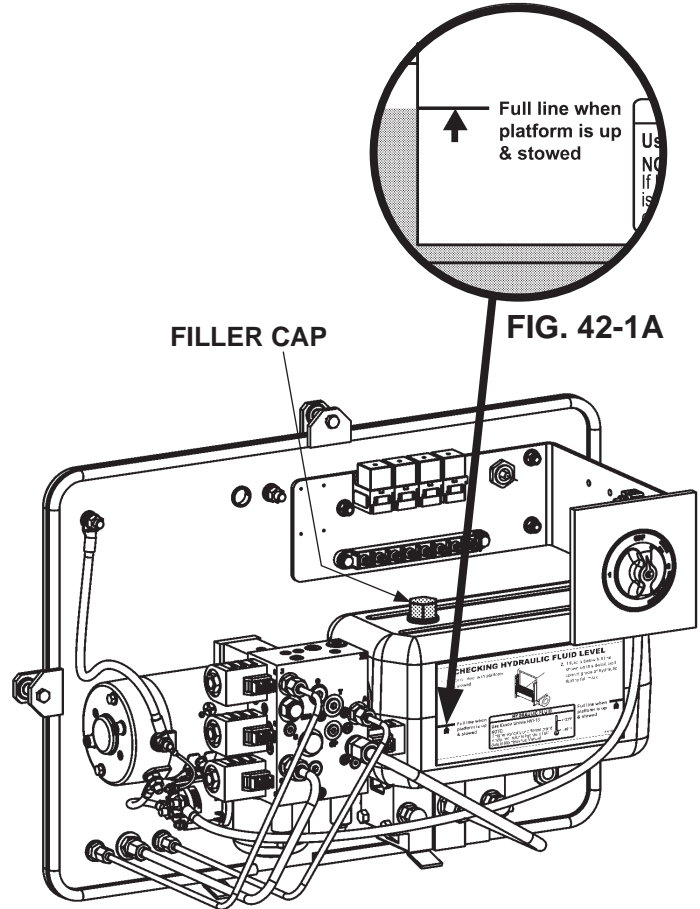
# STEP 10 - ADD HYDRAULIC FLUID TO RESERVOIR

## 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.

1. Open pump box cover (FIG. 42-1).

2. Remove the filler cap (FIGS. 42-1 and 42-1A). Add 7 quarts of Exxon Univis HVI-13 hydraulic fluid to pump reservoir until fluid level reaches the full line.



PUMP BOX SHOWN WITH SINGLE PUMP  
FIG. 42-1

3. Reinstall the filler cap (FIG. 42-1).

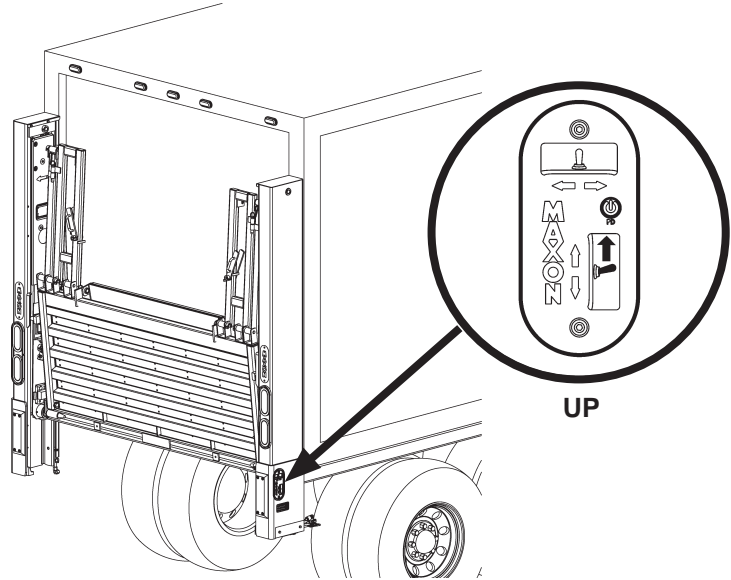
# STEP 11 - PRESSURIZE HYDRAULIC SYSTEM

## ⚠ WARNING

To prevent injury and equipment damage, pressurize hydraulic system before removing lower support fixtures and operating Liftgate.

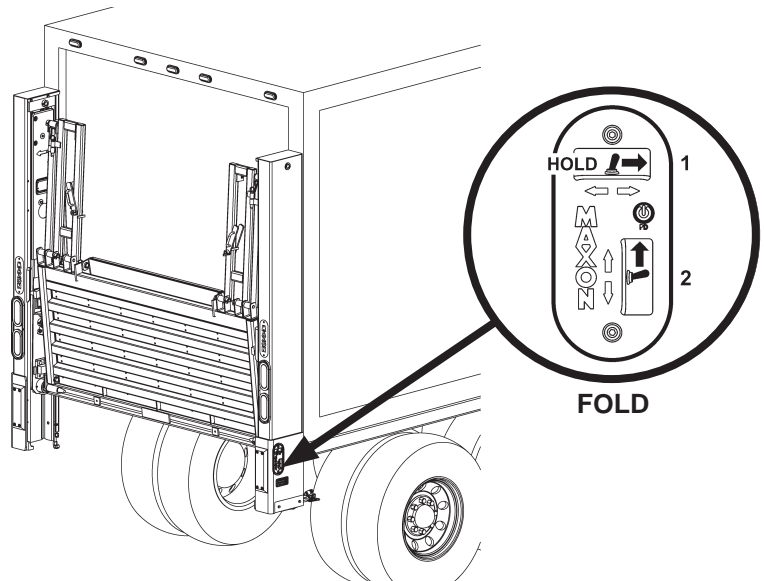
**NOTE:** Before operating liftgate, read and understand the operating instructions in the **Operation Manual**.

1. To pressurize lifting cylinders, set control box toggle switch to **UP** for 10-15 seconds as shown in **FIG. 43-1**.



**PRESSURIZING LIFTING CYLINDERS**  
**FIG. 43-1**

2. To pressurize closing cylinder, set control box toggle switches to **FOLD** for 10-15 seconds as shown in **FIG. 43-2**.



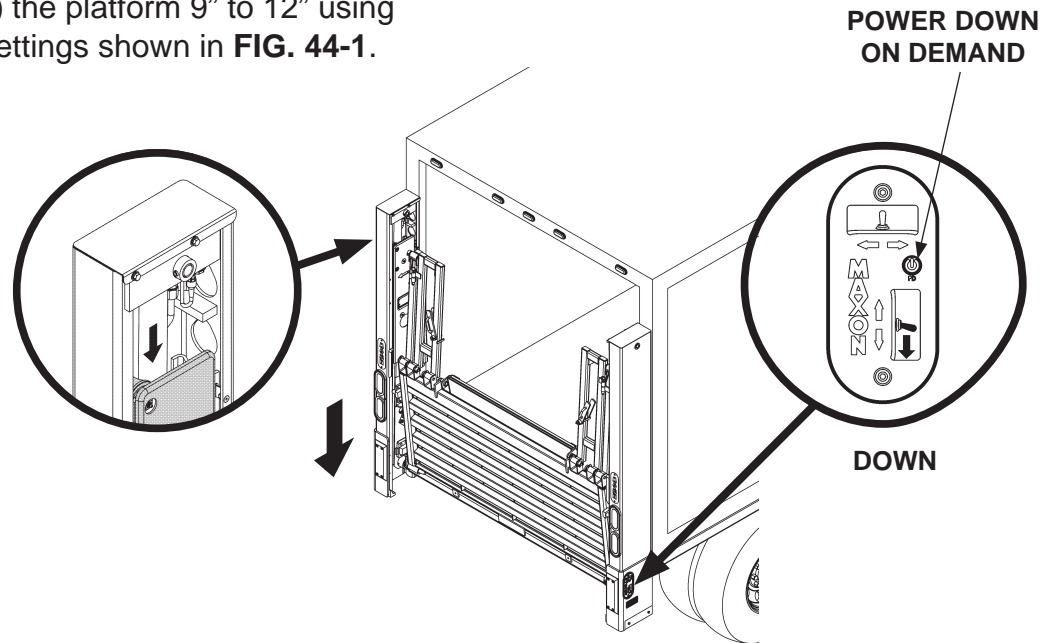
**PRESSURIZING CLOSING CYLINDER**  
**FIG. 43-2**

**NOTE:** Liftgate is shipped with **Exxon Unavis HVI-13** hydraulic fluid in the hydraulic cylinders. This fluid is suitable for operation in temperature range of **-40° F to +120° F**. If necessary, a different brand or higher viscosity hydraulic fluid may be used. Refer to the **CHANGING HYDRAULIC FLUID** procedure in the **BMR-CS Maintenance Manual**.

## STEP 12 - OPTIMIZE HYDRAULIC FLUID LEVEL

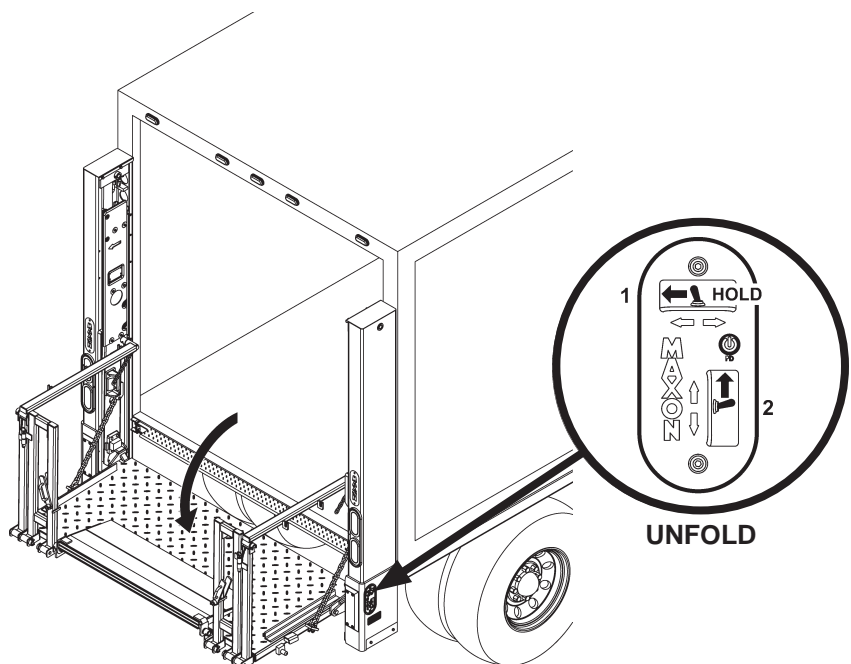
**NOTE:** If equipped, select **power down on demand** for optimizing hydraulic fluid level (FIG. 44-1).

1. Lower (**DOWN**) the platform 9" to 12" using toggle switch settings shown in FIG. 44-1.



**LOWERING PLATFORM**  
FIG. 44-1

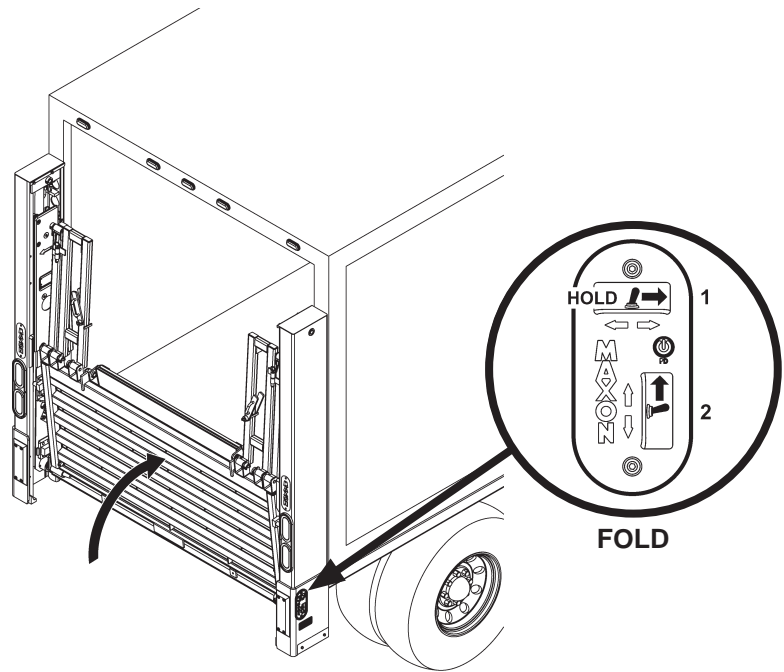
2. Open (**UNFOLD**) the platform by setting toggle switches as shown in FIG. 44-2.



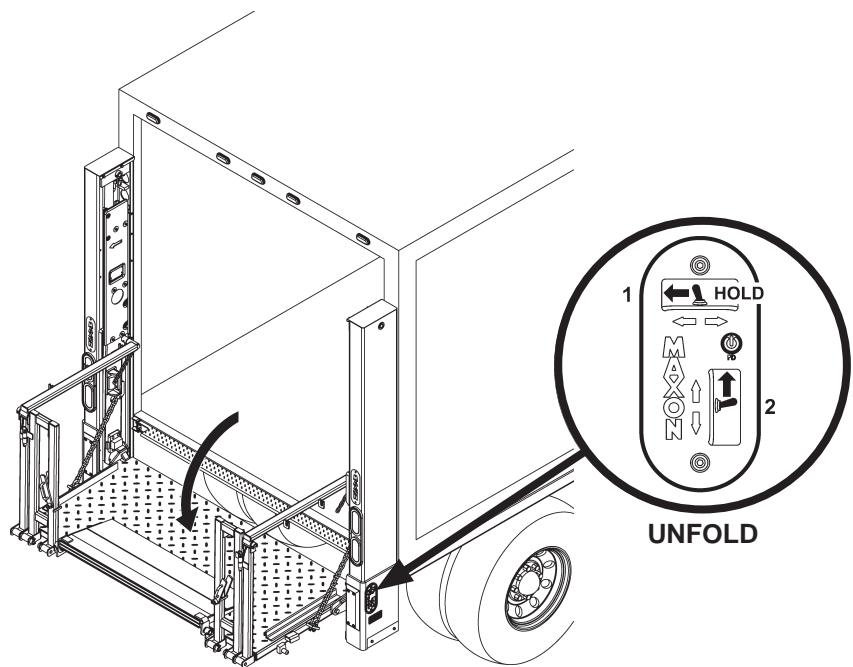
**UNFOLDING PLATFORM**  
FIG. 44-2

## STEP 12 - OPTIMIZE HYDRAULIC FLUID LEVEL - Continued

3. Close (**FOLD**) the platform by setting toggle switches as shown in **FIG. 45-1**. Then, open (**UNFOLD**) the platform by setting toggle switches as shown in **FIG. 45-2**.



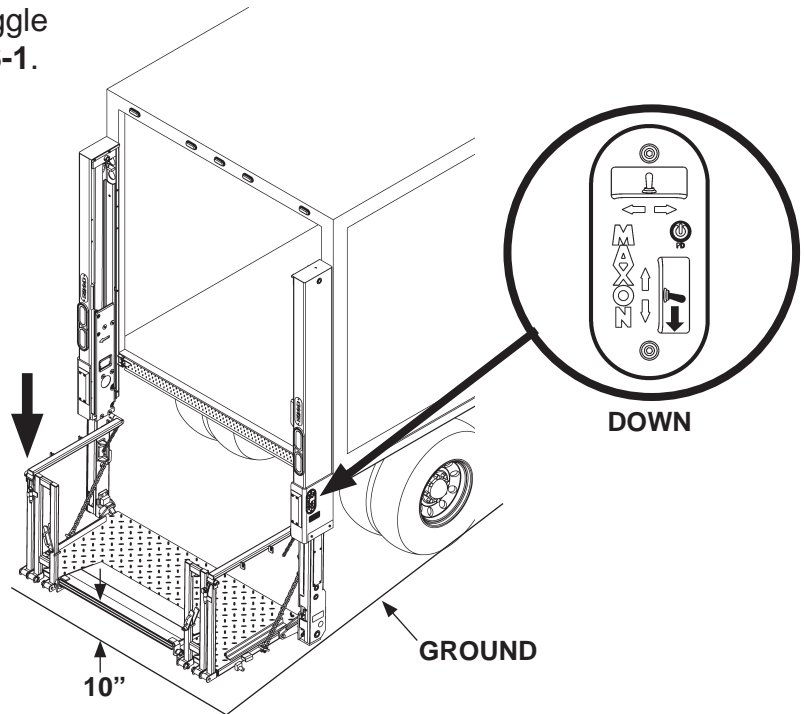
**FOLDING PLATFORM**  
**FIG. 45-1**



**UNFOLDING PLATFORM**  
**FIG. 45-2**

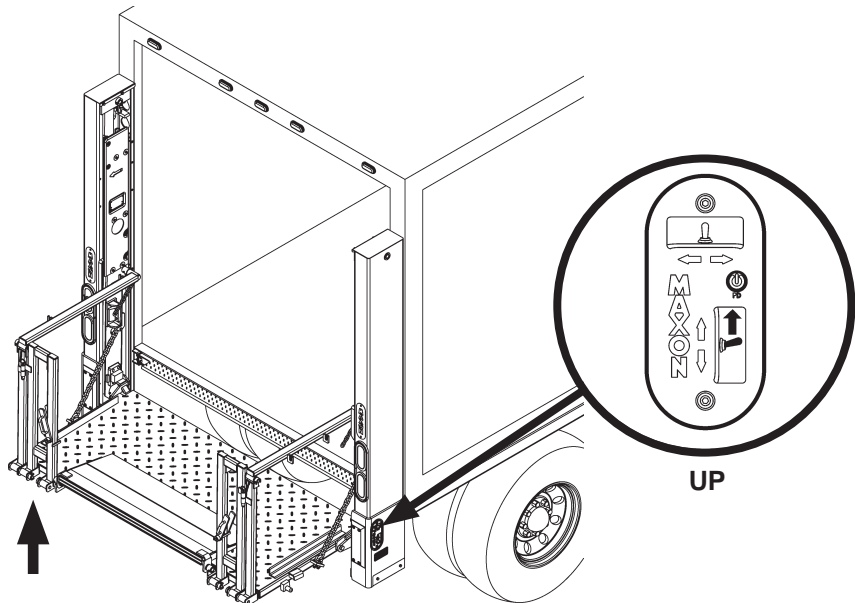
## STEP 12 - OPTIMIZE HYDRAULIC FLUID LEVEL - Continued

4. Lower (**DOWN**) the platform to 10" above ground level using the toggle switch settings shown in **FIG. 46-1**.



**LOWERING PLATFORM  
FIG. 46-1**

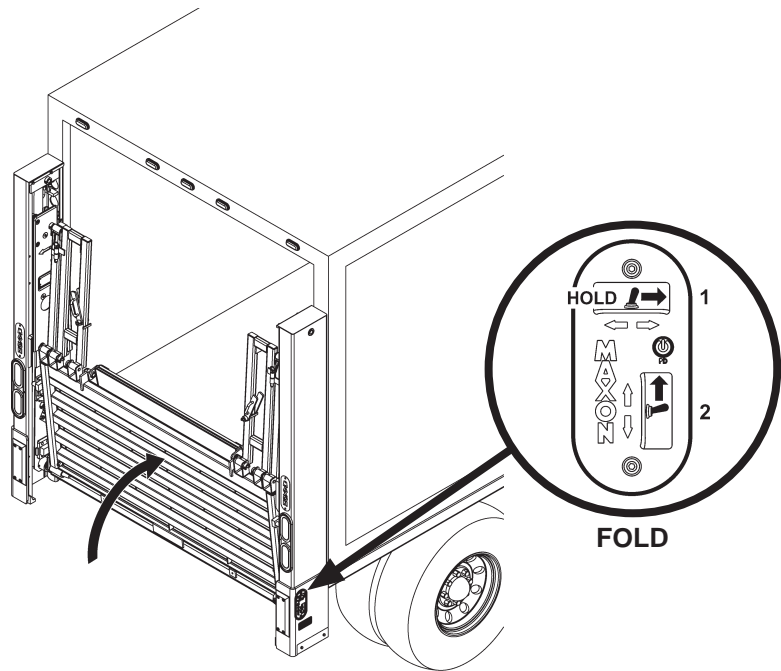
5. Raise (**UP**) the platform to about 6" below bed height using toggle switch setting shown in **FIG. 46-2**.



**RAISING PLATFORM  
FIG. 46-2**

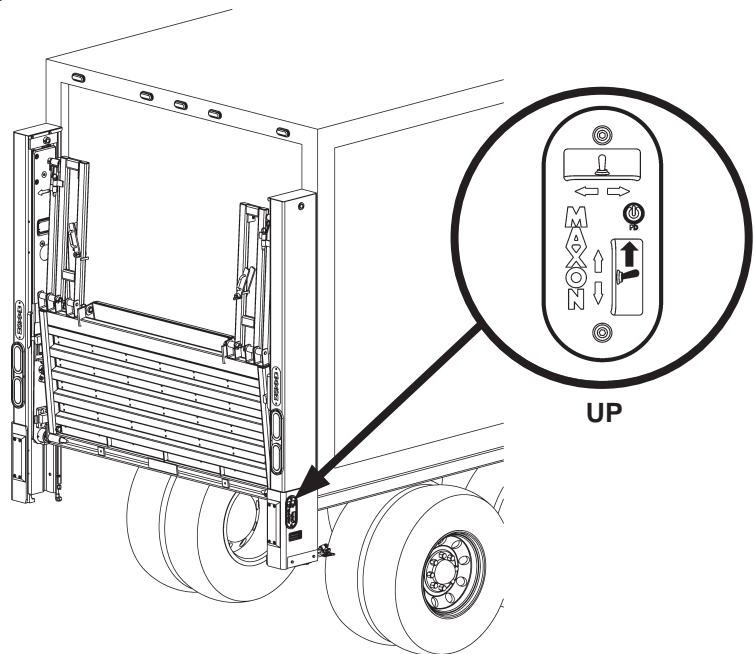
## STEP 12 - OPTIMIZE HYDRAULIC FLUID LEVEL - Continued

6. Close (**FOLD**) the platform by setting toggle switches as shown in **FIG. 47-1**.



**FOLDING PLATFORM**  
**FIG. 47-1**

7. Raise (**UP**) the runners to stow platform by setting toggle switches as shown in **FIG. 47-2**.

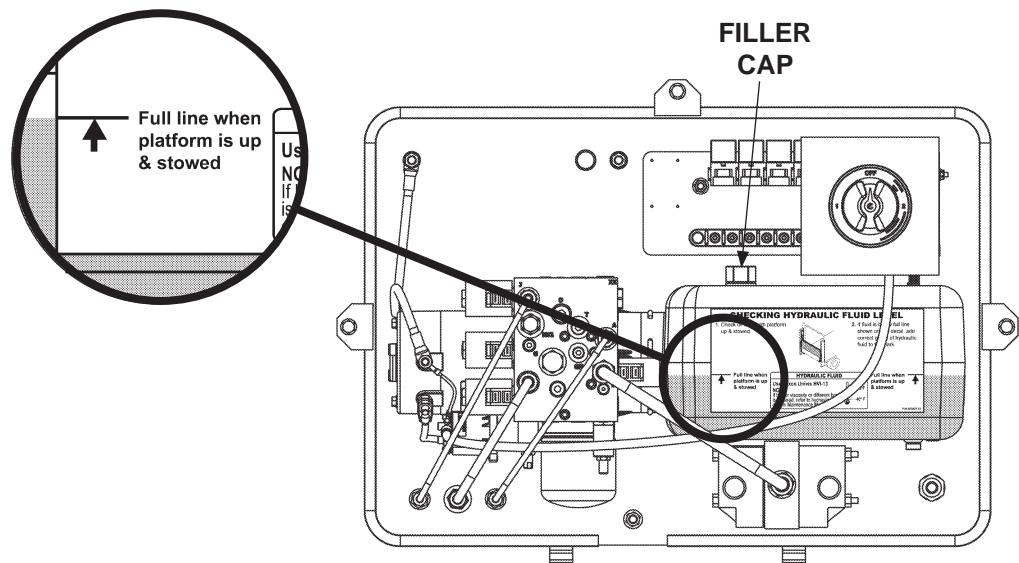


**RAISING PLATFORM**  
**FIG. 47-2**

## STEP 12 - OPTIMIZE HYDRAULIC FLUID LEVEL - Continued

**NOTE:** Information for checking hydraulic fluid level is shown on a decal on the pump reservoir.

8. Check if hydraulic fluid level is at the full line (**FIG. 48-1**). If necessary, remove filler cap (**FIG. 48-1**) and add hydraulic fluid until level rises to the full line (**FIG. 48-1**). Then, reinstall filler cap (**FIG. 48-1**).



**CHECKING HYDRAULIC FLUID LEVEL  
FIG. 48-1**



## STEP 13 - CHECK MOUNTING BRACKET FIT

1. To check for interference between mounting bracket and stop block (**FIG. 49-1A**), lower columns to approximately 10" above the ground, then begin to unfold platform (**FIG. 49-1**).
2. As platform is unfolding, check for interference from the mounting bracket as it slides into the stop block (**FIG. 49-1A**).

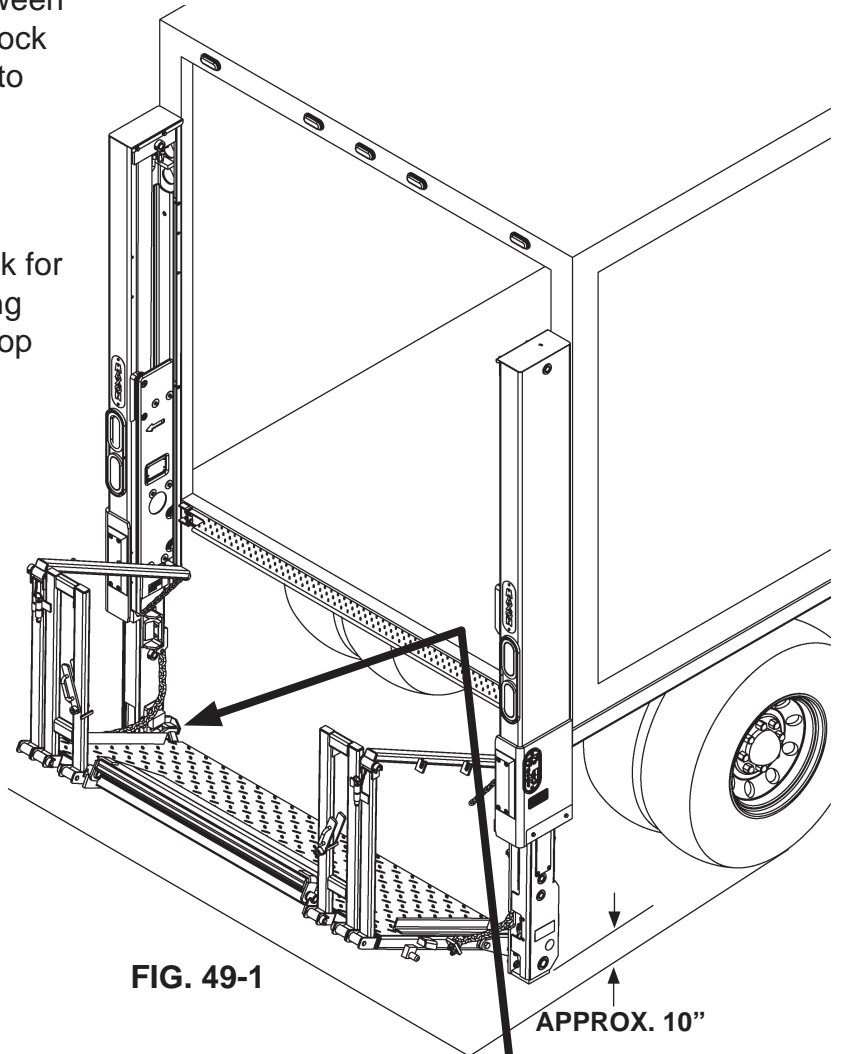
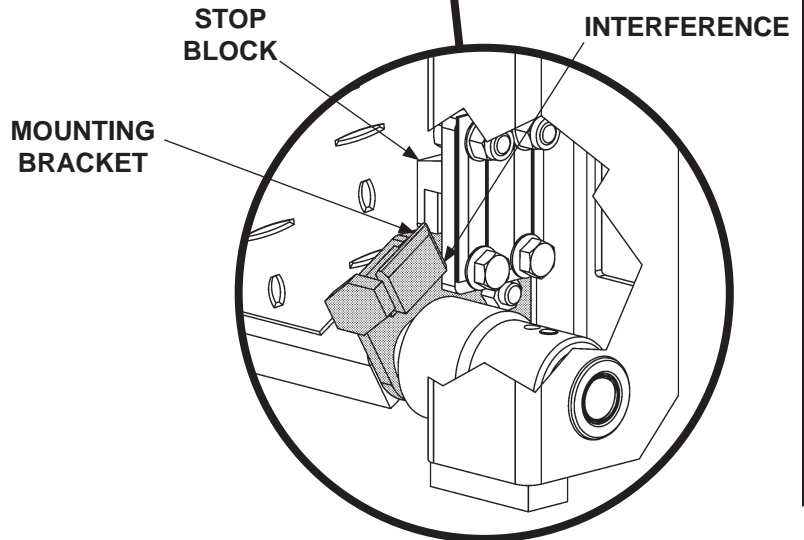


FIG. 49-1

APPROX. 10"



STOP  
BLOCK

INTERFERENCE

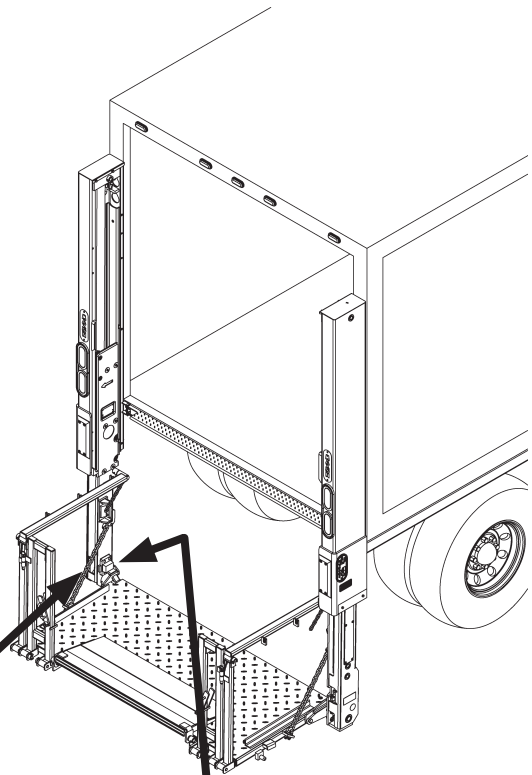
MOUNTING  
BRACKET

REAR VIEW OF LH RUNNER  
FIG. 49-1A

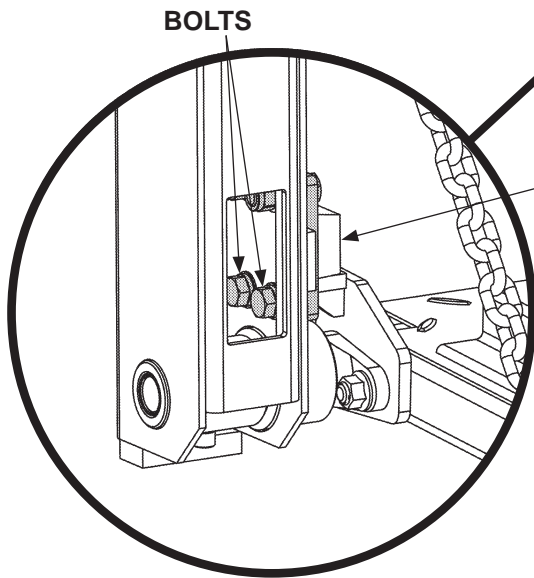
# STEP 13 - CHECK MOUNTING BRACKET FIT - Continued

**NOTE:** Perform this step only if folding operation is not smooth or there is interference (**FIG. 50-1B**).

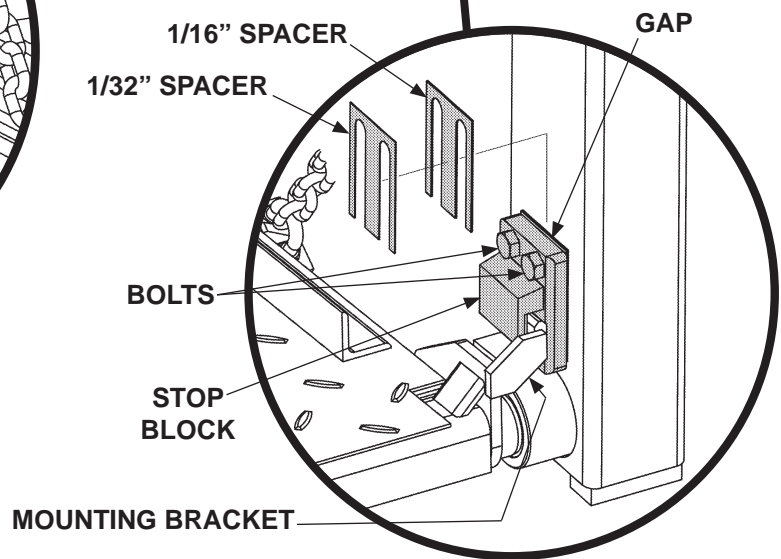
3. If LH mounting bracket fits too tight against either side of stop block, operation is not smooth, or if there is interference (**FIG. 50-1A**) adjust with spacers as shown in **FIG. 50-1A**.
4. To adjust stop block, make sure platform is lowered to the ground (**FIG. 50-1**). Then, loosen (4) bolts (**FIGS. 50-1A and 50-1B**) and check gap (**FIG. 50-1A**). Add or remove shims (parts box) to fill or lessen the gap, then retighten bolts (**FIGS. 50-1A and 50-1B**).



**FIG. 50-1**



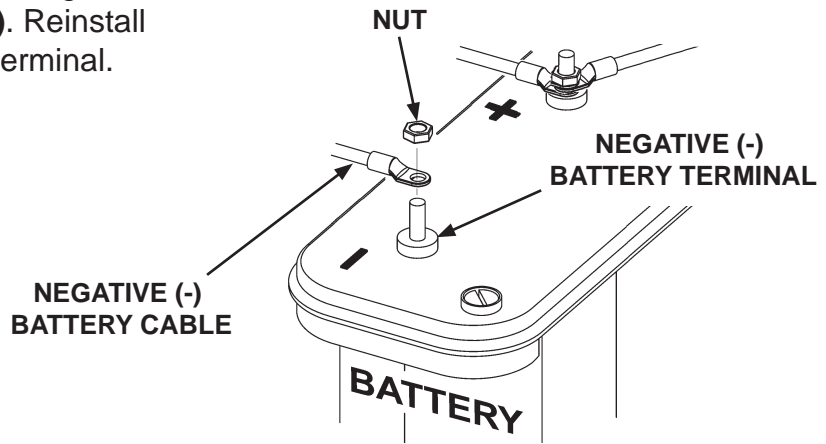
**FRONT VIEW OF LH RUNNER  
FIG. 50-1B**



**REAR VIEW OF LH RUNNER  
FIG. 50-1A**

## STEP 14 - FINISH WELDING LIFTGATE TO VEHICLE WELD LIFTGATE TO BODY

1. Disconnect power from pump by removing nut from negative (-) battery terminal and disconnect negative (-) battery cable (**FIG. 51-1**). Reinstall nut on negative (-) battery terminal.



**DISCONNECTING POWER**  
**FIG. 51-1**

## STEP 14 - FINISH WELDING LIFTGATE TO VEHICLE WELD LIFTGATE TO BODY - Continued

### ⚠ 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.

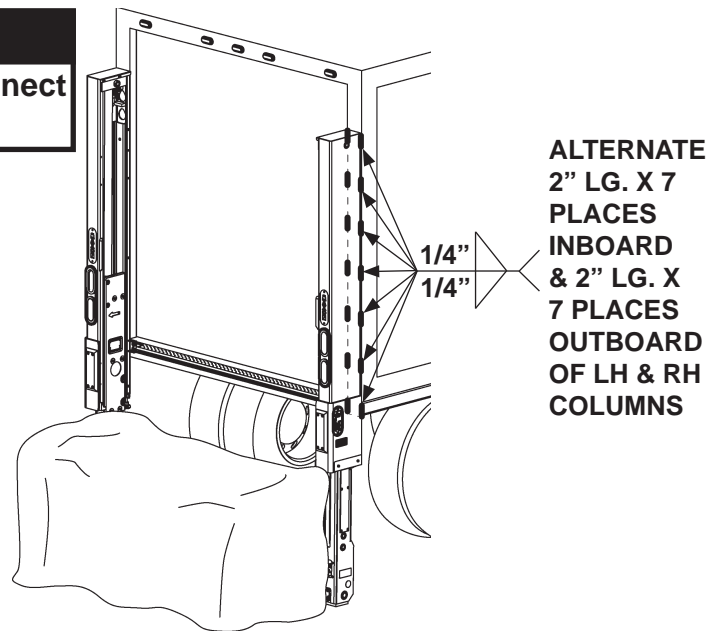
**NOTE:** Refer to **INSTALLED LIFTGATE** in the **VEHICLE REQUIREMENTS** section of this manual.

**NOTE:** If Liftgate columns 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.

### CAUTION

To prevent damage to Liftgate, connect welder ground to vehicle body.

2. Cover platform as shown in **FIG. 52-1**.
3. Weld the Liftgate RH and LH columns to vehicle body as shown in **FIG. 52-1**.



**FIG. 52-1**

# STEP 14 - FINISH WELDING LIFTGATE TO VEHICLE

## WELD LIFTGATE TO BODY - Continued

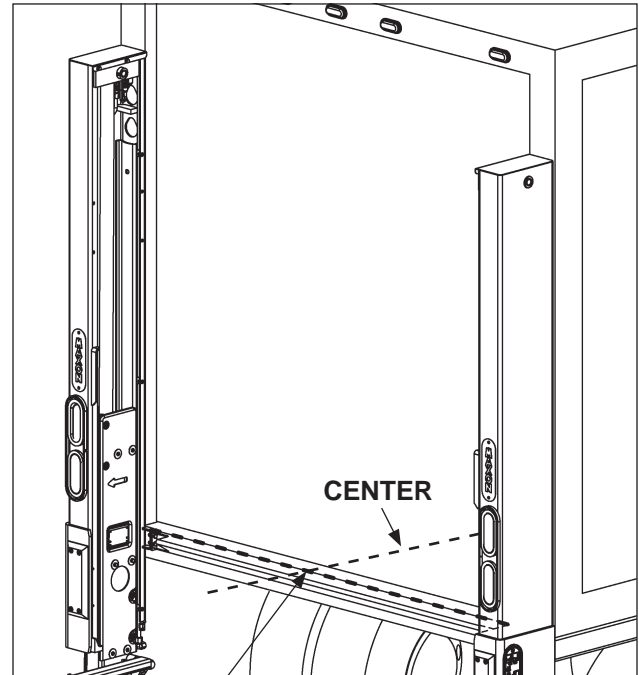
### CAUTION

To prevent damage to Liftgate components, welder ground must be connected to Liftgate extension plate.

4. Make sure platform is at ground level to provide access to the extension plate.

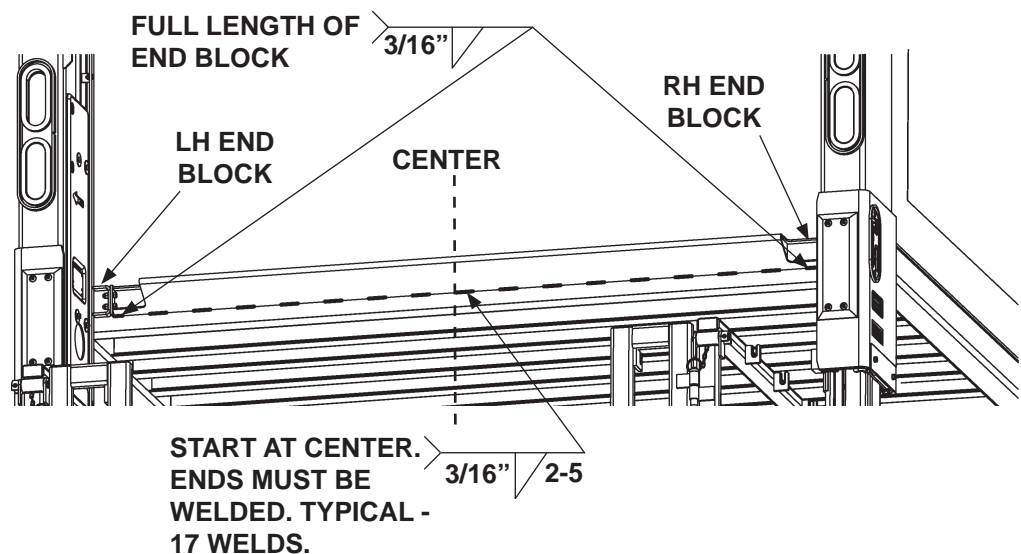
**NOTE:** After welding top of extension plate, if you see a gap between bottom of extension plate & vehicle body sill, fill the gap. To fill the gap, use A-36 General Purpose steel and the same welds shown in **FIG. 53-2**.

5. Weld the top and bottom surfaces of extension plate (**FIGS. 53-1 & 53-2**) to vehicle body sill.
6. Weld entire length (**FIG. 53-2**) on the bottom of LH and RH end blocks.



3/16" 2-5 START AT CENTER. ENDS MUST BE WELDED. TYPICAL - 17 WELDS.

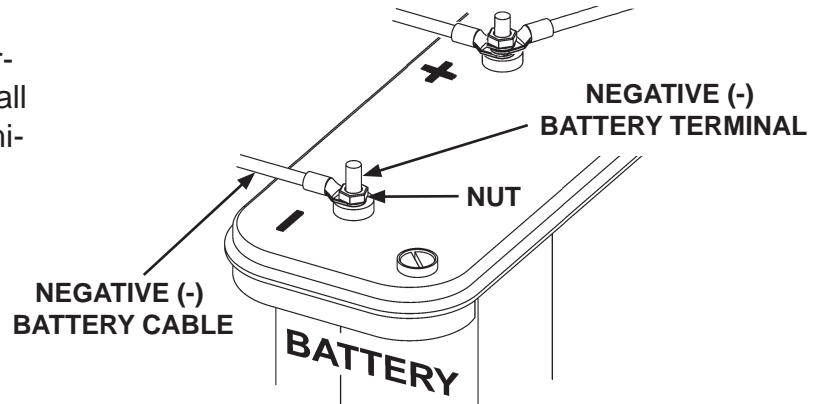
**WELDING TOP OF EXTENSION PLATE**  
**FIG. 53-1**



**WELDING BOTTOM OF EXTENSION PLATE**  
**FIG. 53-2**

## STEP 14 - FINISH WELDING LIFTGATE TO VEHICLE WELD LIFTGATE TO BODY - Continued

7. Reconnect negative (-) battery cable to negative (-) battery terminal (**FIG. 54-1**). Then, reinstall nut on negative (-) battery terminal (**FIG. 54-1**).

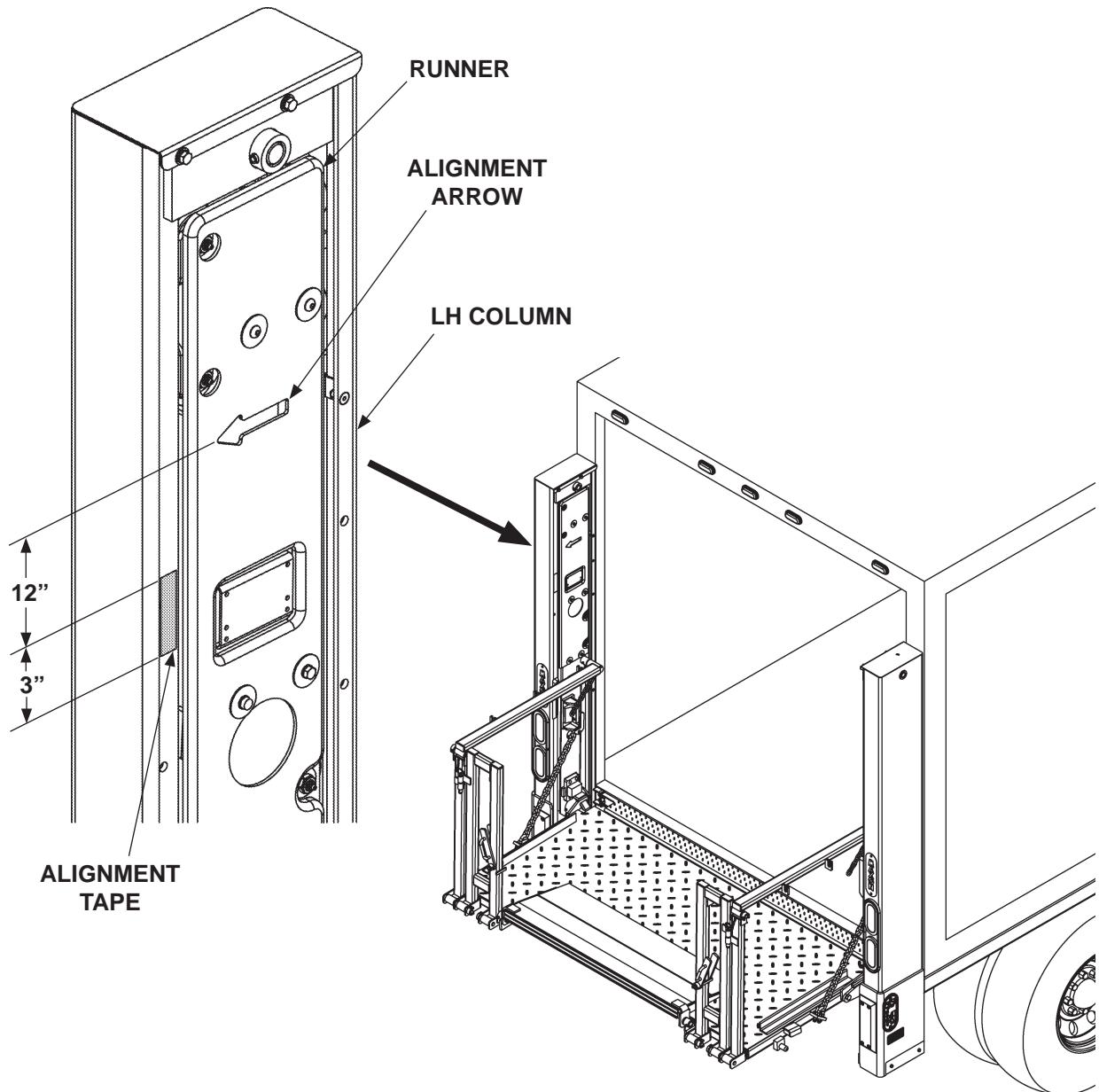


RECONNECTED BATTERY CABLES  
FIG. 54-1

## STEP 15 - PLACE "ALIGN ARROWS" DECAL

**NOTE:** Make sure **RUNNERS** are raised all the way up (closest to top of **COLUMN**) before doing the following steps.

Peel backing from alignment tape and place it on LH column as shown in **FIG. 55-1**. Repeat for RH column.



**FIG. 55-1**

# ATTACH DECALS

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

**NOTE:** Preferred decal layout is shown. Decals on the Liftgate are attached at the factory. If vehicle does not permit this layout, decals in the manual and decal kit must be applied so that they are easily visible when approaching vehicle to operate Liftgate. Use good common sense when locating these decals on vehicle.

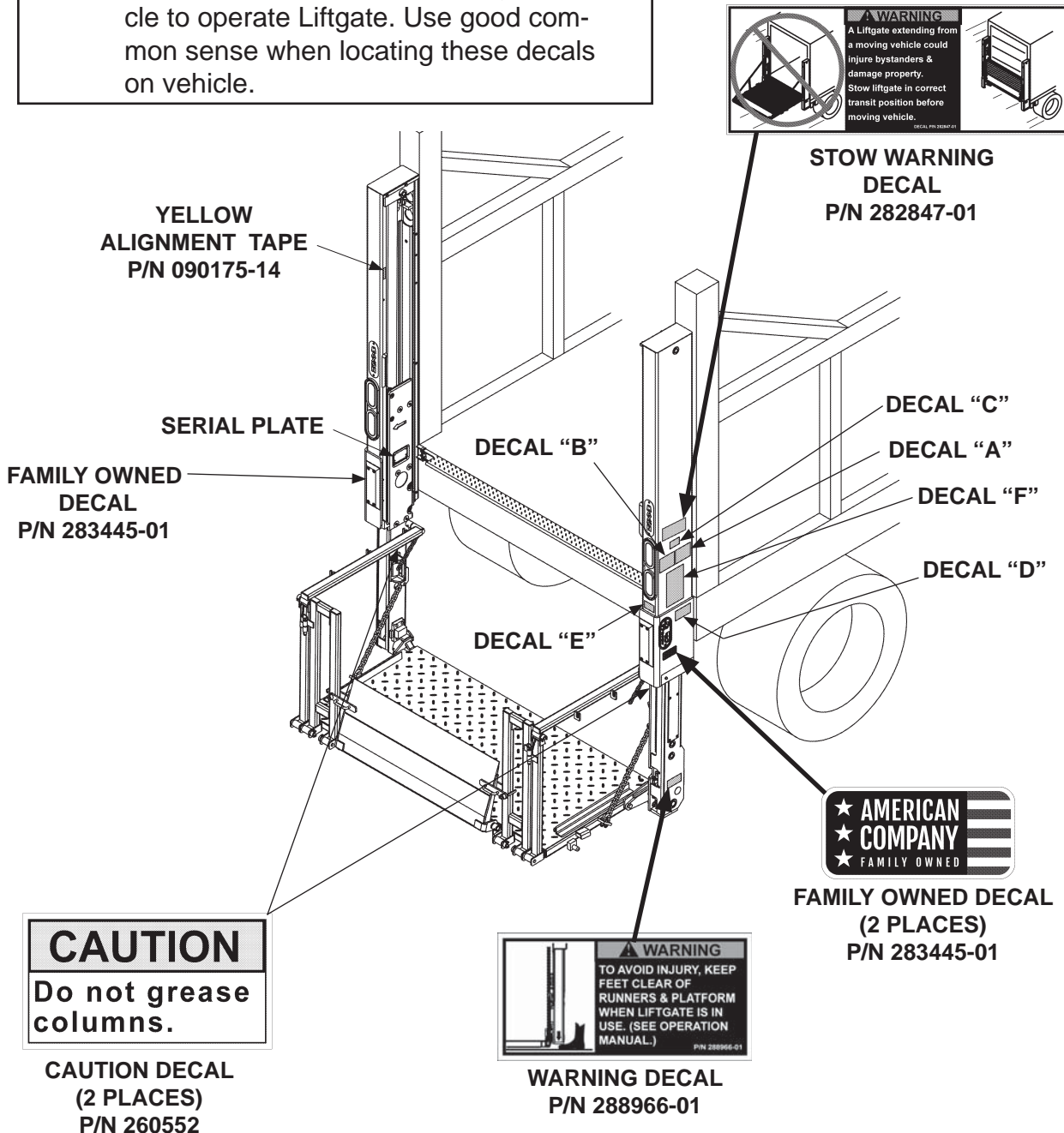


FIG. 56-1



# DECALS - Continued

**⚠ WARNING**  
**Read this information carefully.**

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

For a free copy of other manuals that pertain to this model Liftgate, please visit our website at [www.maxonlift.com](http://www.maxonlift.com) or call Customer Service at (800) 227-4116. **B**

**⚠ 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.**

**Read and understand all instructions and WARNINGS before use.** **D**

**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.

**A**

**THE MAXIMUM CAPACITY OF THIS LIFT IS**

**\_\_\_ LB [ \_\_\_ KG]**

**WHEN THE LOAD IS CENTERED ON THE LOAD CARRYING PLATFORM**

**C**

(REFER TO TABLE 57-1)

**⚠ CAUTION**

**Always stand clear of platform area.**

**E**

**OPERATING INSTRUCTIONS**

OPERATE	STOW
<p><b>1 LOWER RUNNERS TO LINE UP YELLOW ARROW WITH YELLOW STRIPE. THIS SHOWS PLATFORM IS CLEAR TO UNFOLD.</b></p>	<p><b>1 RAISE PLATFORM TO LINE UP YELLOW ARROW WITH YELLOW STRIPE. THIS SHOWS PLATFORM IS CLEAR TO FOLD.</b></p>
<p><b>2 UNFOLD PLATFORM.</b></p>	<p><b>2 FOLD PLATFORM.</b></p>
<p><b>3 1 - LOWER PLATFORM. IF IT IS SLOW TO LOWER &amp; LIFTGATE IS POWER DOWN EQUIPPED, PUSH POWER DOWN BUTTON. 2 - RAISE PLATFORM. POWER DOWN BUTTON (IF EQUIPPED)</b></p>	<p><b>3 RAISE RUNNERS TO STOW PLATFORM.</b></p>

P/N 289163-01 **F**

DECAL SHEET  
 FIG. 57-1

MODEL	ORDER P/N	DECAL "C"
BMR-CS35	289163-01	3500 LBS. [1600 KG]
BMR-CS44	289163-02	4400 LBS. [2000 KG]

DECAL SHEET PART NUMBERS  
 TABLE 57-1

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## TOUCH UP GALVANIZED FINISH

### CAUTION

Damaged cylinder seals and contaminated hydraulic fluid can result from applying cold galvanized spray to the polished portion of the cylinder rod. To prevent damage, protect the exposed polished portion of the cylinder rod while spraying.

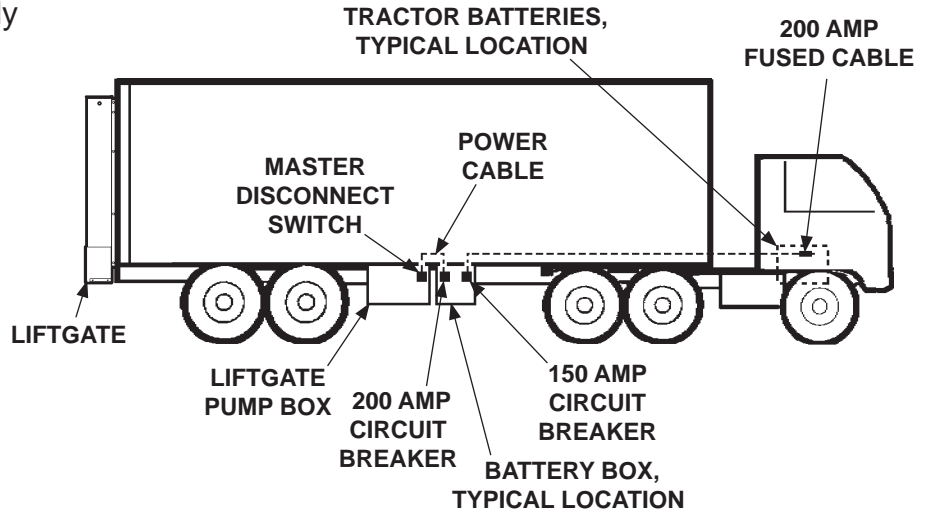
- If bare metal is exposed on galvanized portions of the Liftgate, touch up the galvanized finish. To maintain the protection provided by the original galvanized finish, **MAXON** recommends cold galvanize spray, **P/N 908000-01**.

# OPTIONS

## RECOMMENDED LIFTGATE POWER CONFIGURATION

**NOTE:** Make sure the Liftgate power unit, and all batteries on the vehicle for the power unit, are connected correctly to a common chassis ground.

1. Liftgate, pump box, and battery box are typically installed on trailers as shown in **FIG. 59-1**.



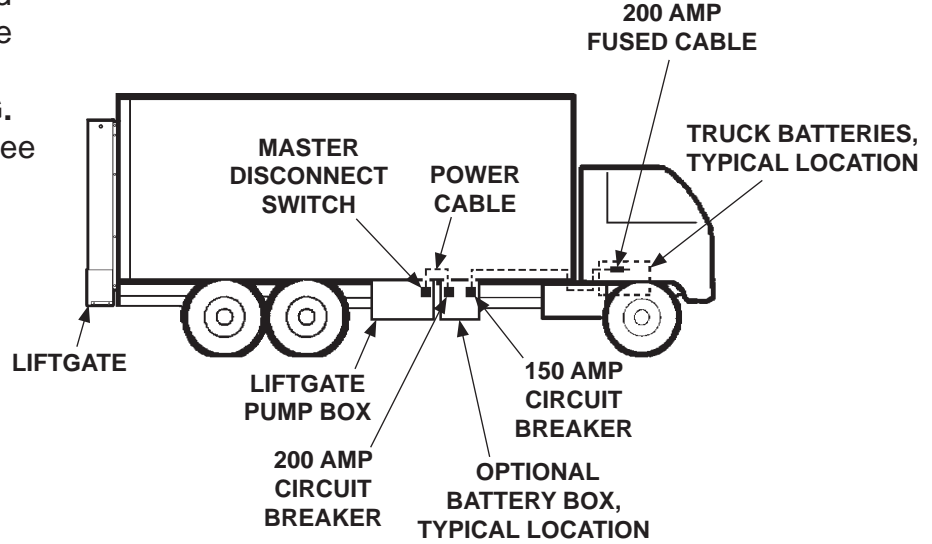
**RECOMMENDED LIFTGATE & BATTERY BOX  
INSTALLATION ON TRAILER  
FIG. 59-1**

# OPTIONS

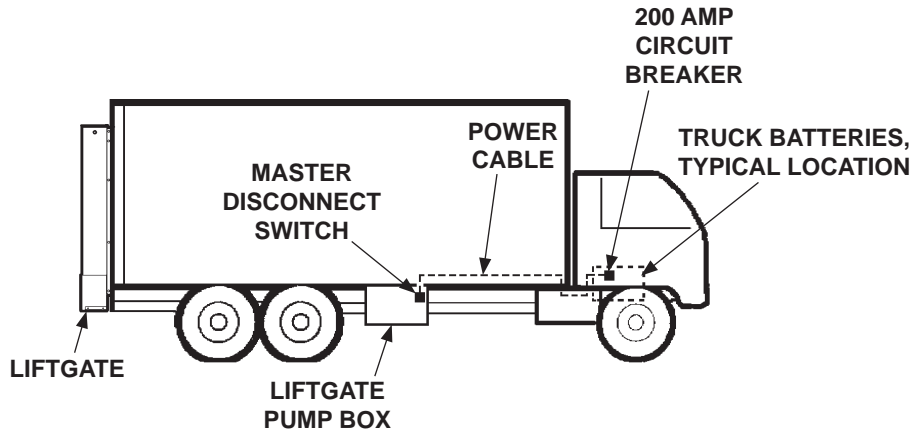
## RECOMMENDED LIFTGATE POWER CONFIGURATION - Continued

**NOTE:** Make sure the Liftgate power unit, and all batteries on the vehicle for the power unit, are connected correctly to a common chassis ground.

2. Liftgate, pump box, and optional battery box are typically installed on trucks as shown in **FIG. 60-1** and **FIG. 60-2**. See the following page for battery and cable connections.



**RECOMMENDED LIFTGATE & BATTERY BOX  
INSTALLATION ON TRUCK  
FIG. 60-1**



**RECOMMENDED LIFTGATE  
INSTALLATION ON TRUCK  
FIG. 60-2**

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# HYDRAULIC SYSTEM DIAGRAMS

## PUMP & MOTOR SOLENOID OPERATION - POWER DOWN

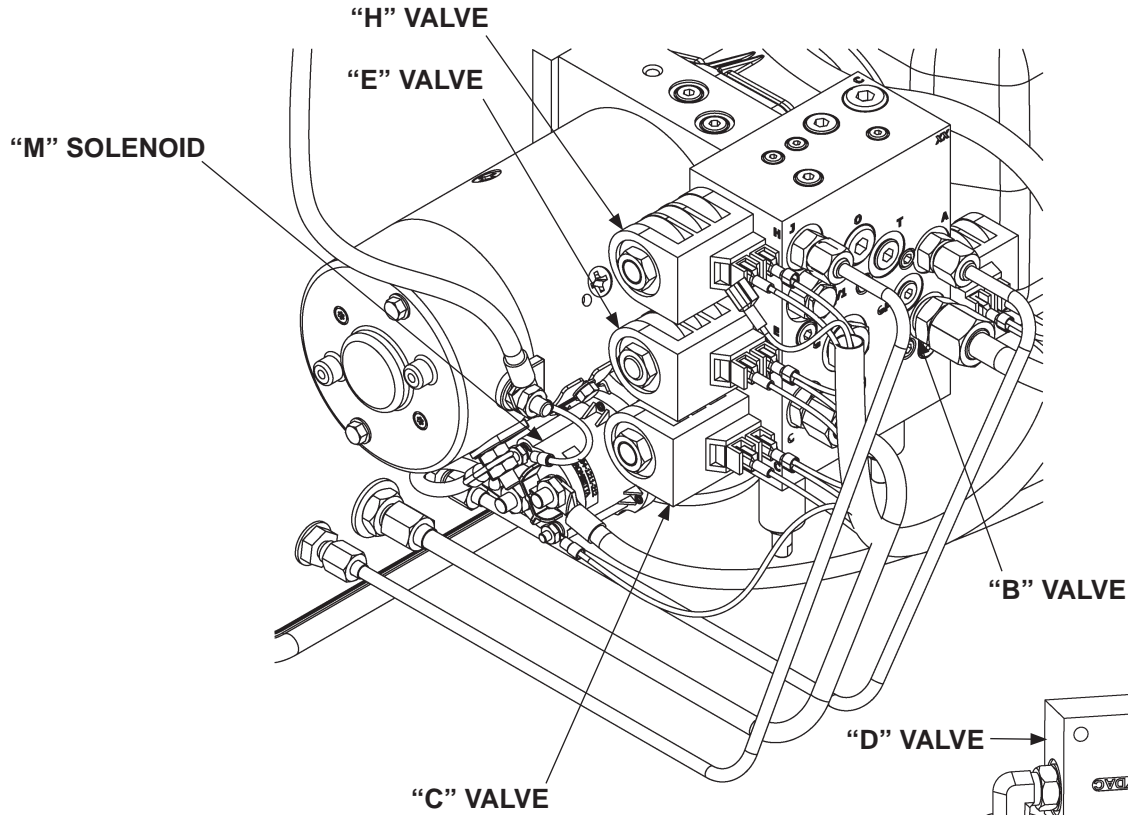
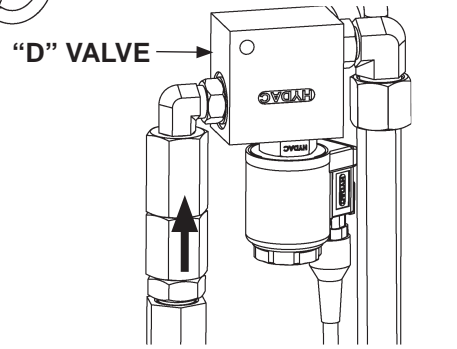


FIG. 61-1



**"D" VALVES**  
(TOP OF EACH COLUMN)  
FIG. 61-2

POWER UNIT MOTOR & SOLENOID OPERATION - POWER DOWN									
LIFTGATE FUNCTION	PORT	SOLENOID OPERATION ( ✓ MEANS ENERGIZED)							
		SWITCH	RELAY	MOTOR	VALVE "B"	VALVE "C"	VALVE "D"	VALVE "E"	VALVE "H"
LIFT	B	"PD"	-	✓	-	-	-	-	-
LOWER	C		-	✓	✓	✓	✓	-	-
OPEN	J		-	✓	-	-	-	✓	✓
CLOSE	A		-	✓	-	-	-	✓	-

REFER TO VALVES SHOWN ON HYDRAULIC SCHEMATIC

TABLE 61-1

# HYDRAULIC SYSTEM DIAGRAMS

## PUMP & MOTOR SOLENOID OPERATION - GRAVITY DOWN

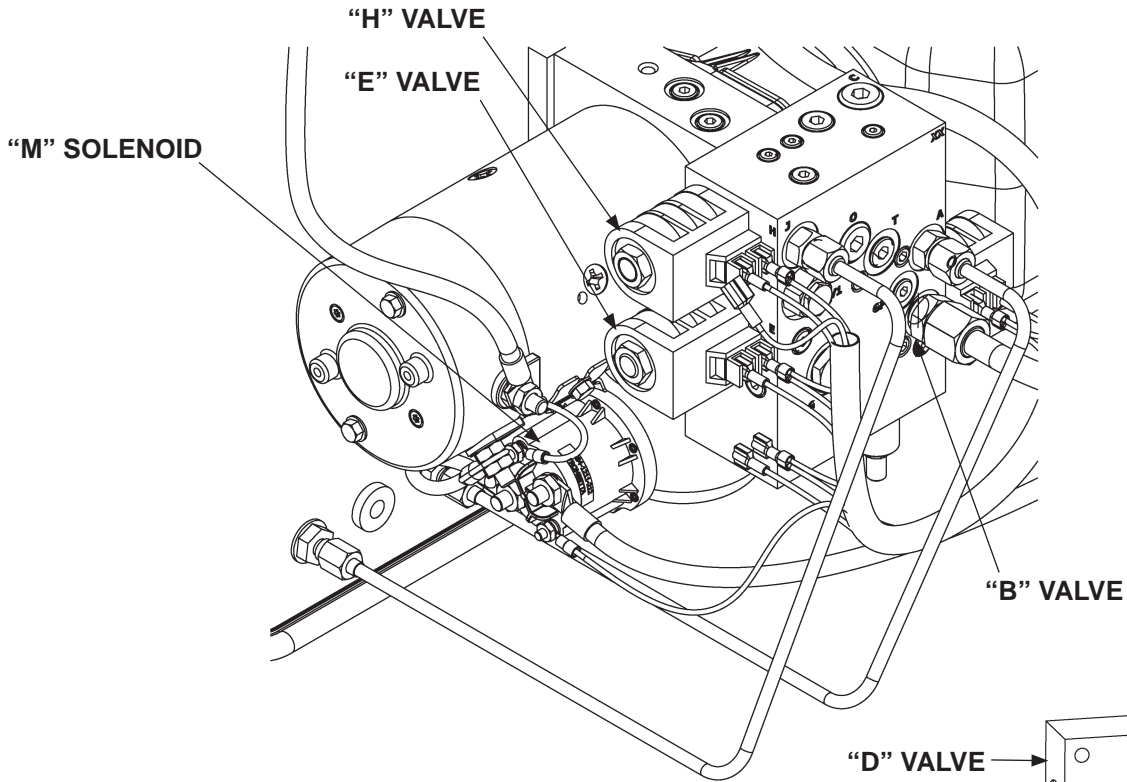
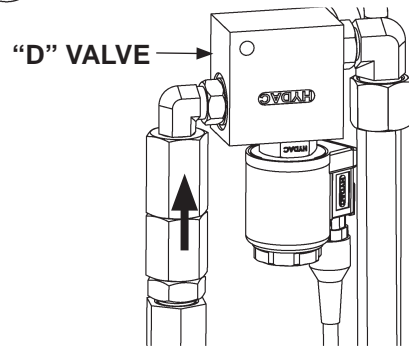


FIG. 62-1



**"D" VALVES**  
(TOP OF EACH COLUMN)  
FIG. 62-2

POWER UNIT MOTOR & SOLENOID OPERATION - GRAVITY DOWN									
LIFTGATE FUNCTION	PORT	SOLENOID OPERATION ( ✓ MEANS ENERGIZED)							
		SWITCH	RELAY	MOTOR	VALVE "B"	VALVE "C"	VALVE "D"	VALVE "E"	VALVE "H"
LIFT	B	"GD"	-	✓	-	-	-	-	-
LOWER	C		✓	-	✓	-	✓	-	-
OPEN	J		-	✓	-	-	-	✓	✓
CLOSE	A		-	✓	-	-	-	✓	-
REFER TO VALVES SHOWN ON HYDRAULIC SCHEMATIC									

TABLE 62-1

# HYDRAULIC SYSTEM DIAGRAMS

## GRAVITY DOWN HYDRAULIC SCHEMATIC

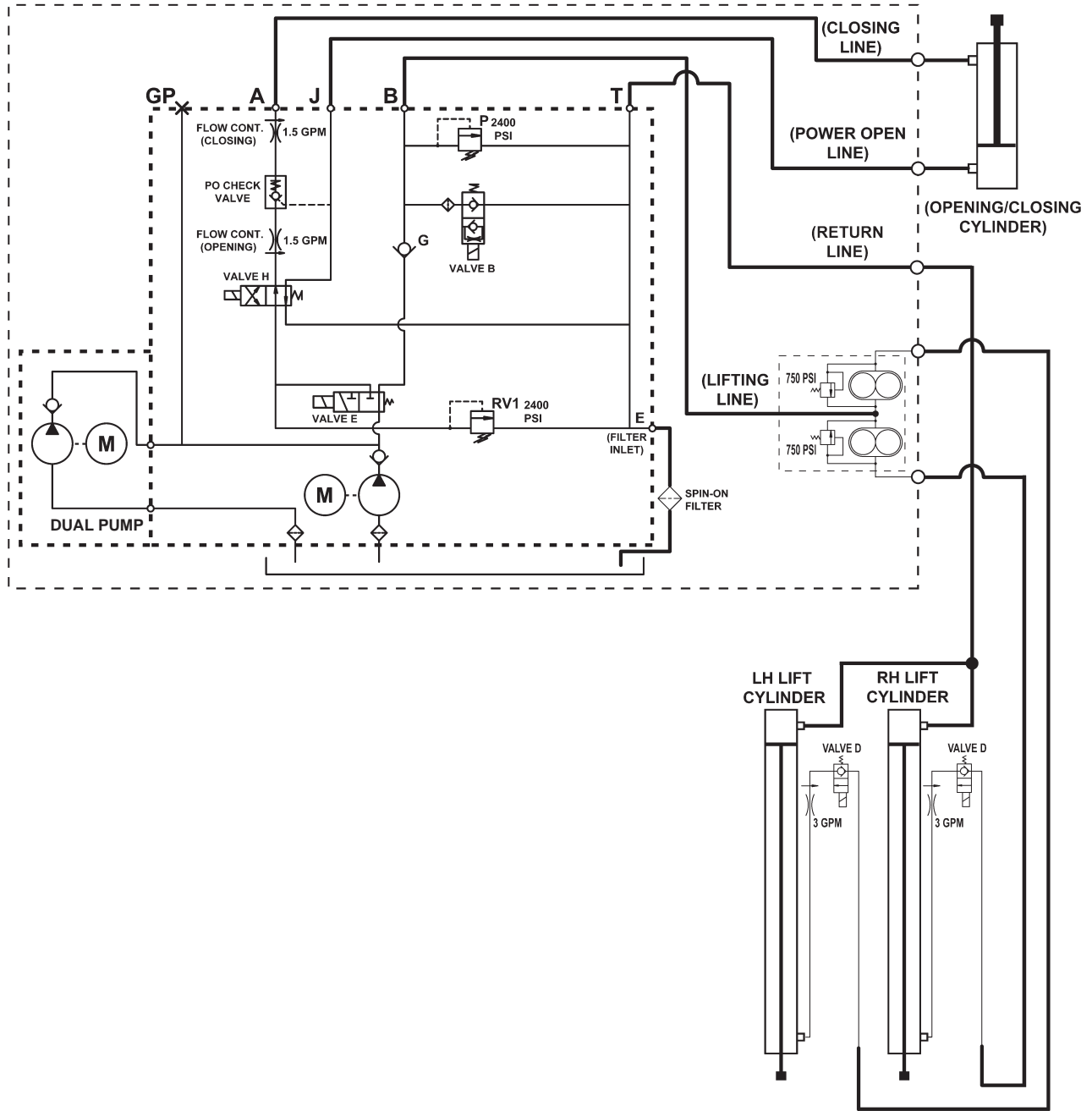


FIG. 63-1

# HYDRAULIC SYSTEM DIAGRAMS

## POWER DOWN HYDRAULIC SCHEMATIC

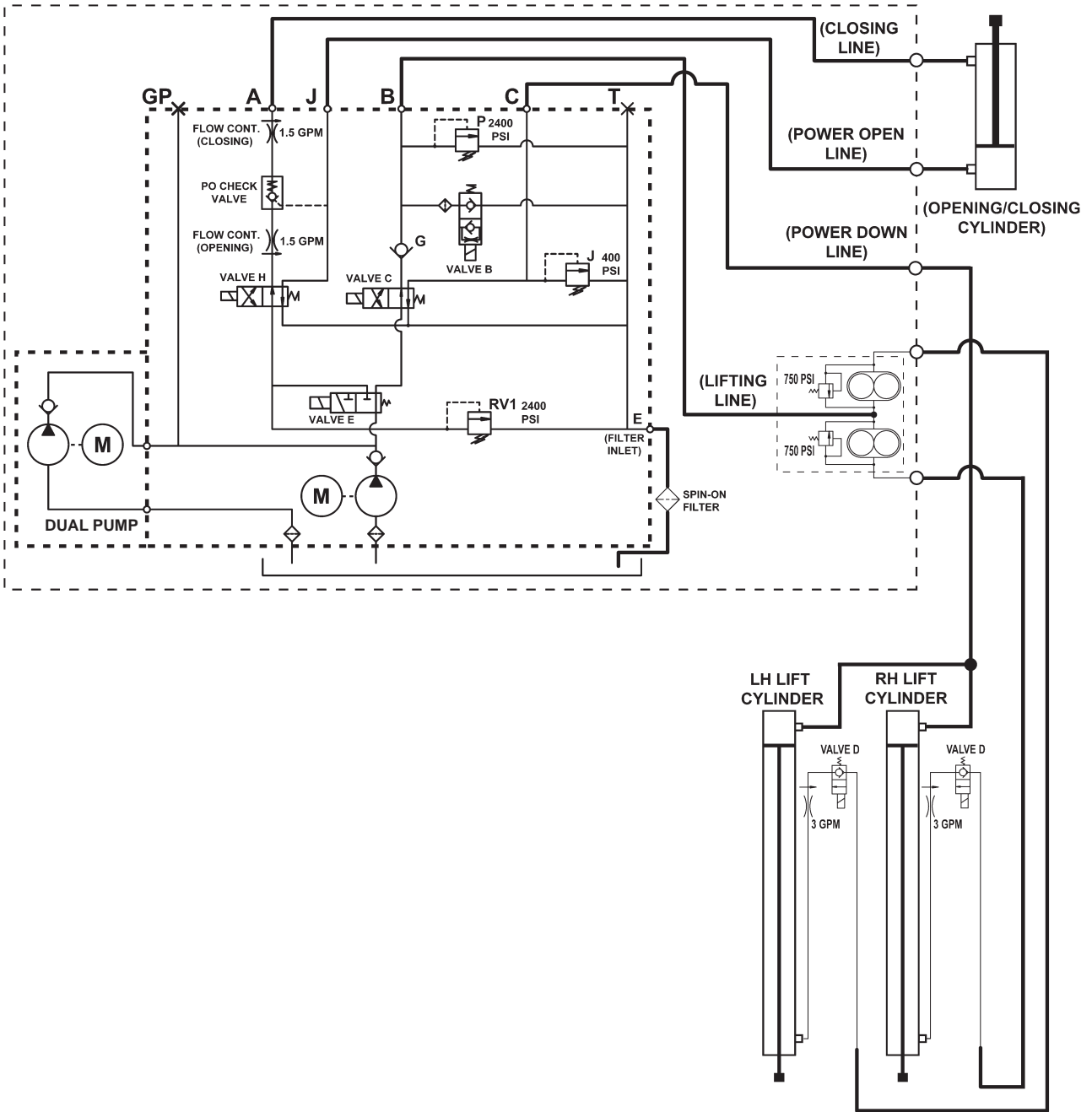


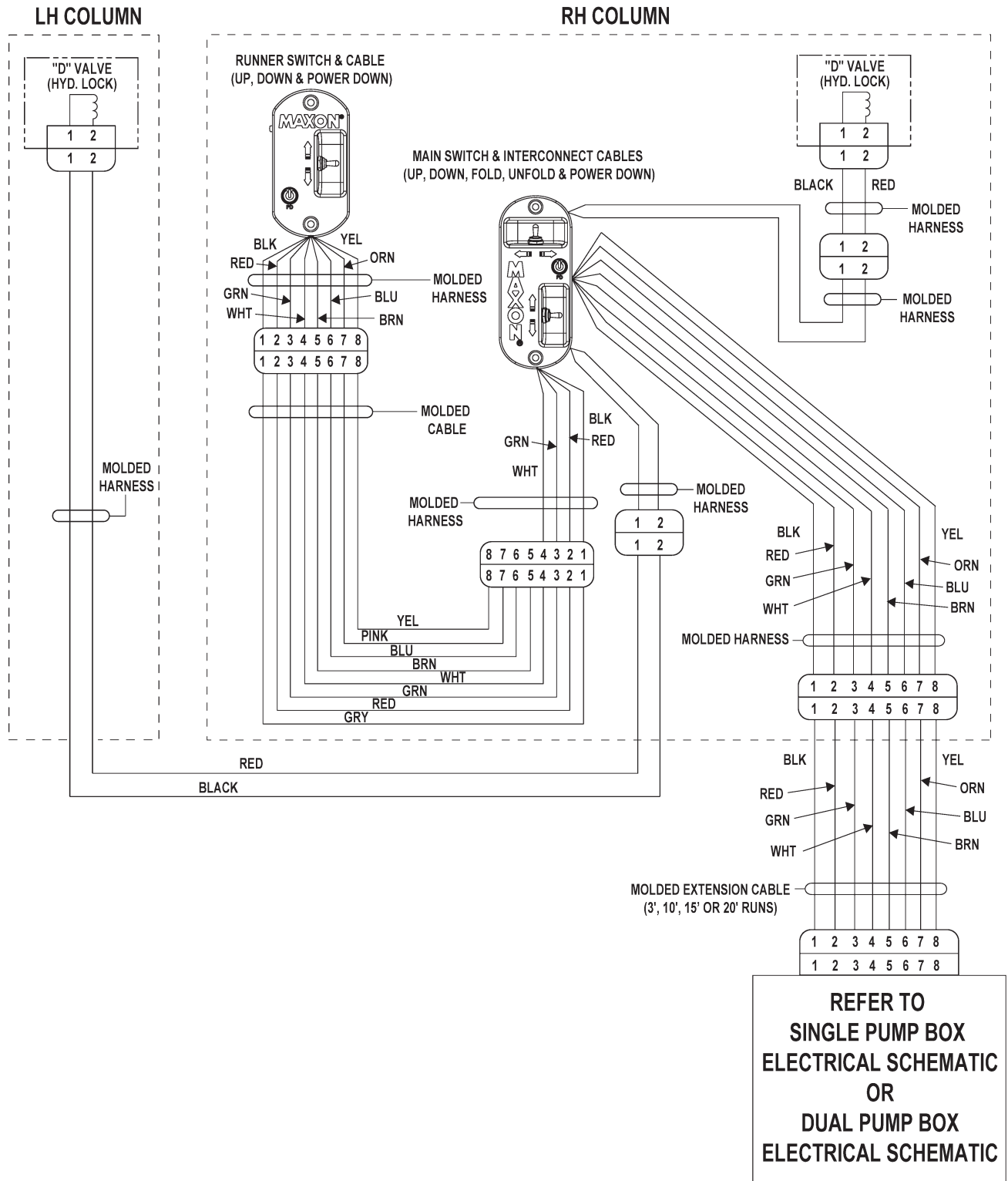
FIG. 64-1

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**MAXON**



# ELECTRICAL SYSTEM DIAGRAMS

## INTERCONNECTING ELECTRICAL SCHEMATIC



**FIG. 65-1**

# ELECTRICAL SYSTEM DIAGRAMS

## SINGLE PUMP BOX ELECTRICAL SCHEMATIC GRAVITY DOWN

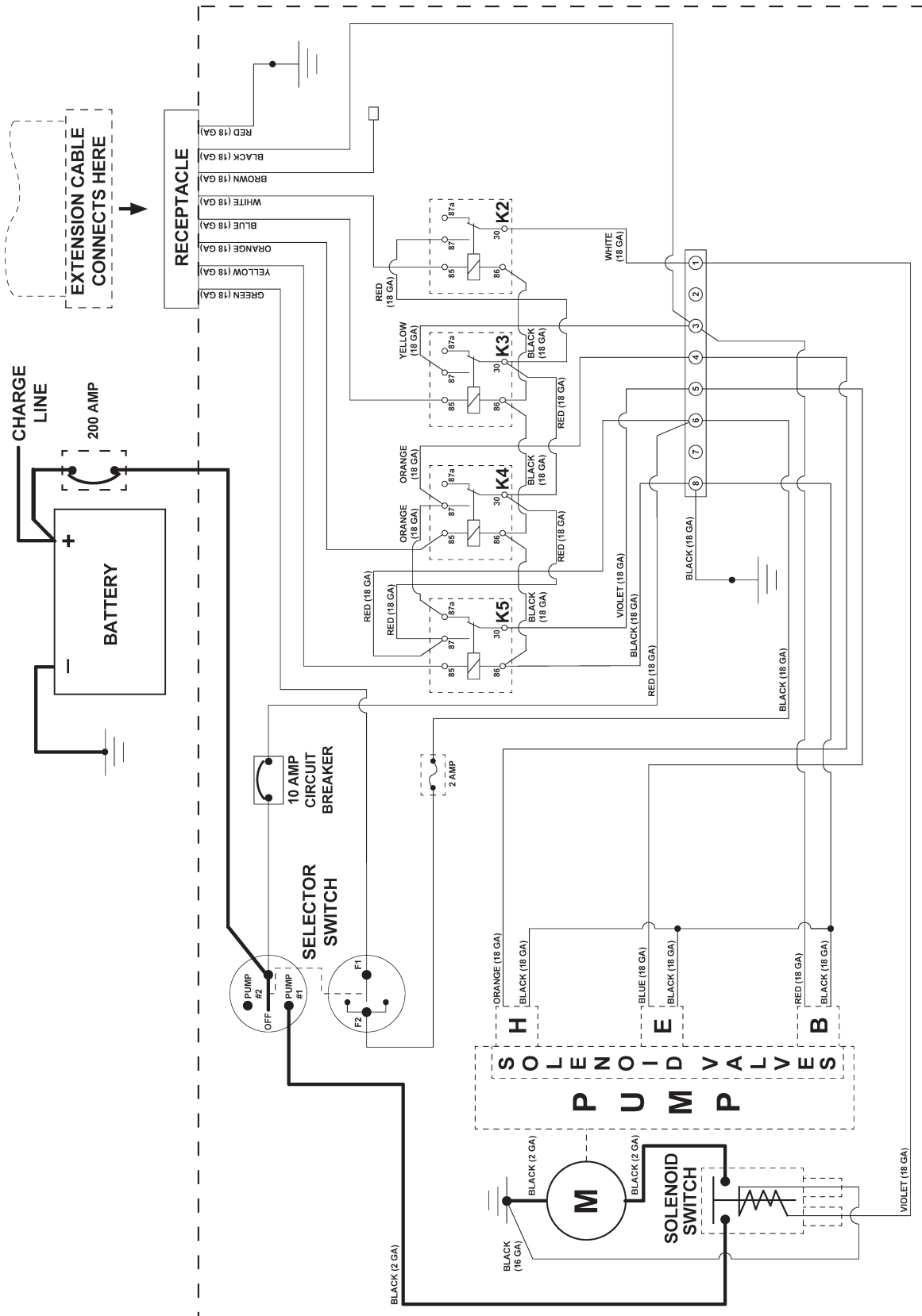


FIG. 66-1

# ELECTRICAL SYSTEM DIAGRAMS

## DUAL PUMP BOX ELECTRICAL SCHEMATIC GRAVITY DOWN

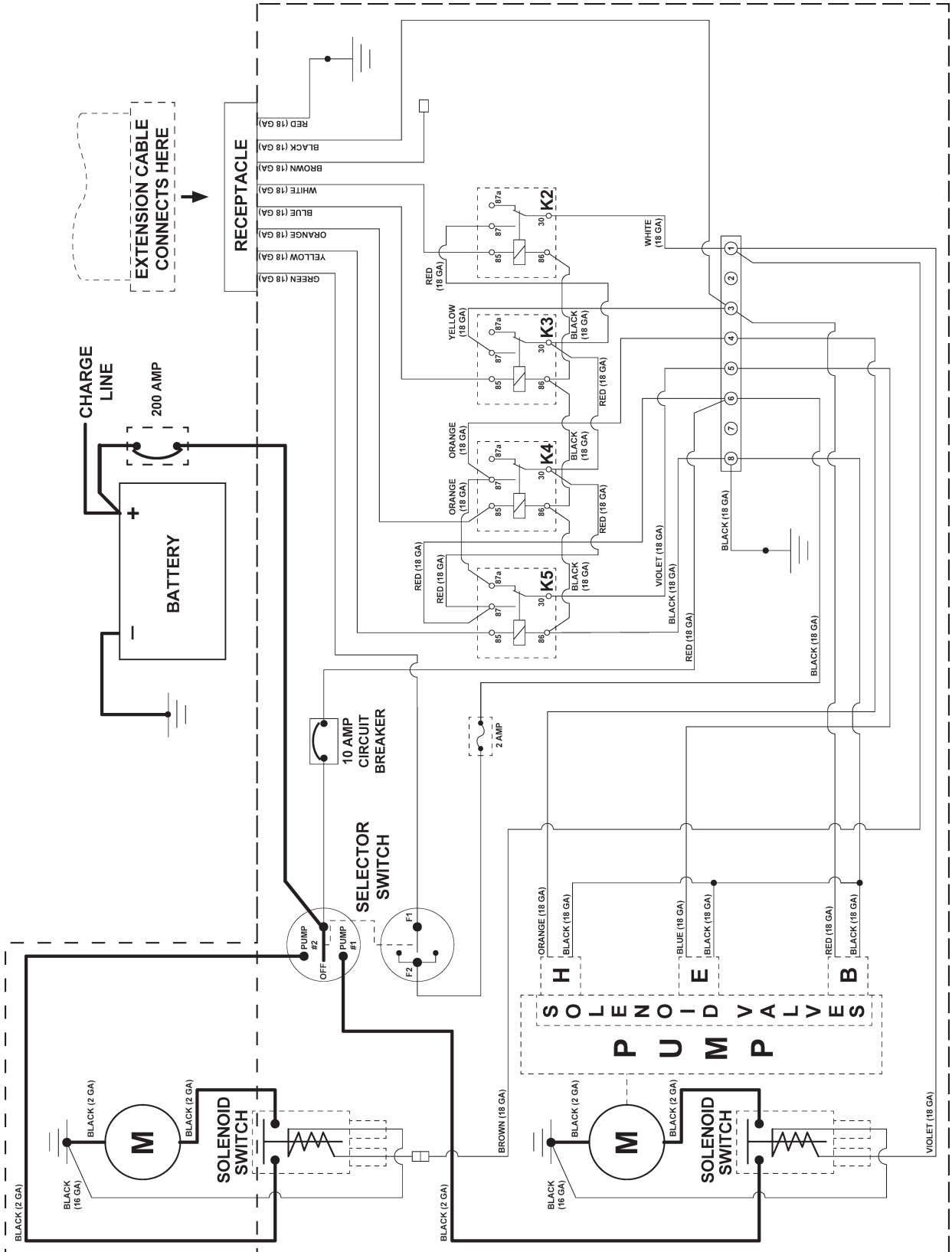


FIG. 67-1

# ELECTRICAL SYSTEM DIAGRAMS

## SINGLE PUMP BOX ELECTRICAL SCHEMATIC POWER DOWN

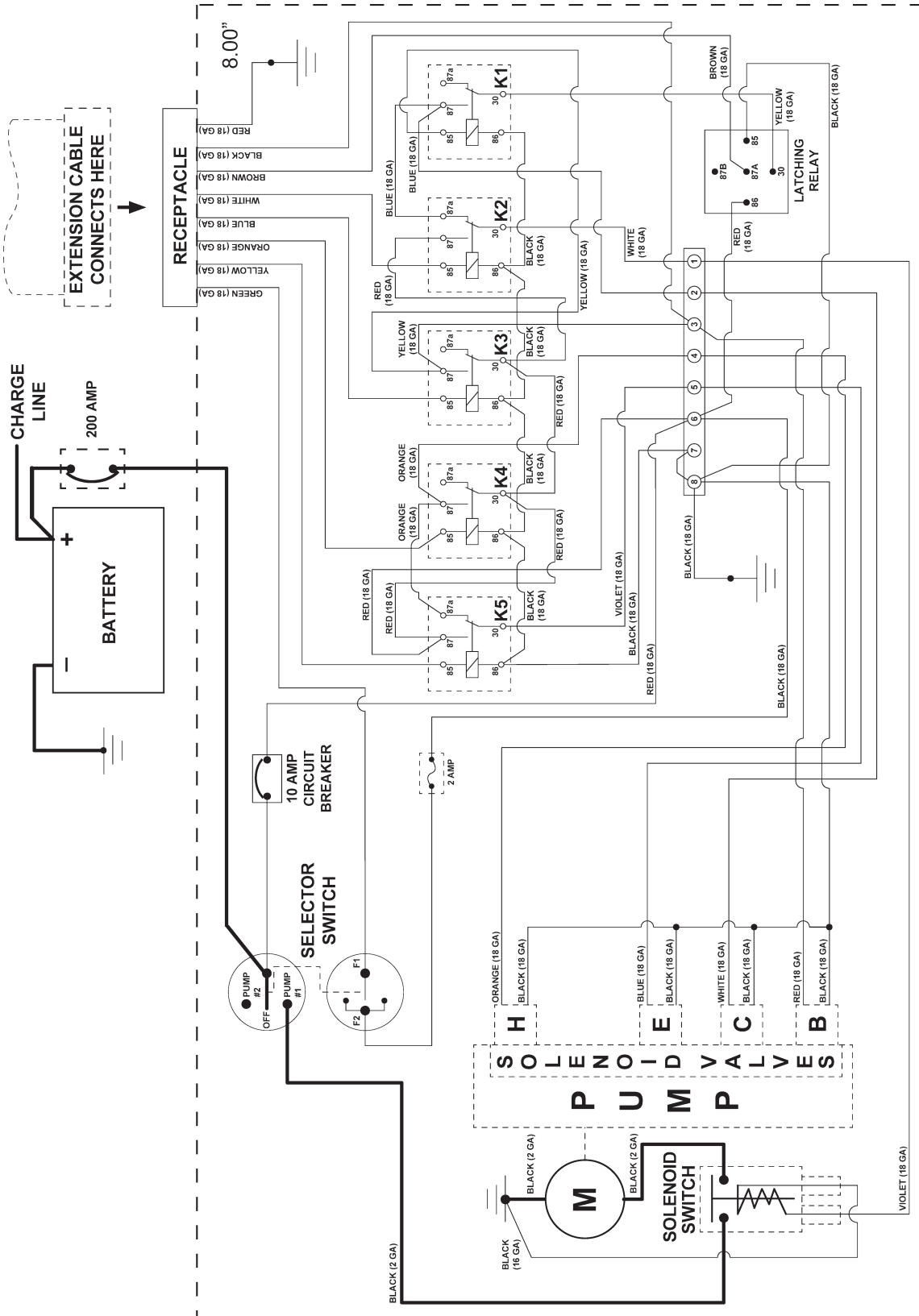


FIG. 68-1

# ELECTRICAL SYSTEM DIAGRAMS

## DUAL PUMP BOX ELECTRICAL SCHEMATIC POWER DOWN

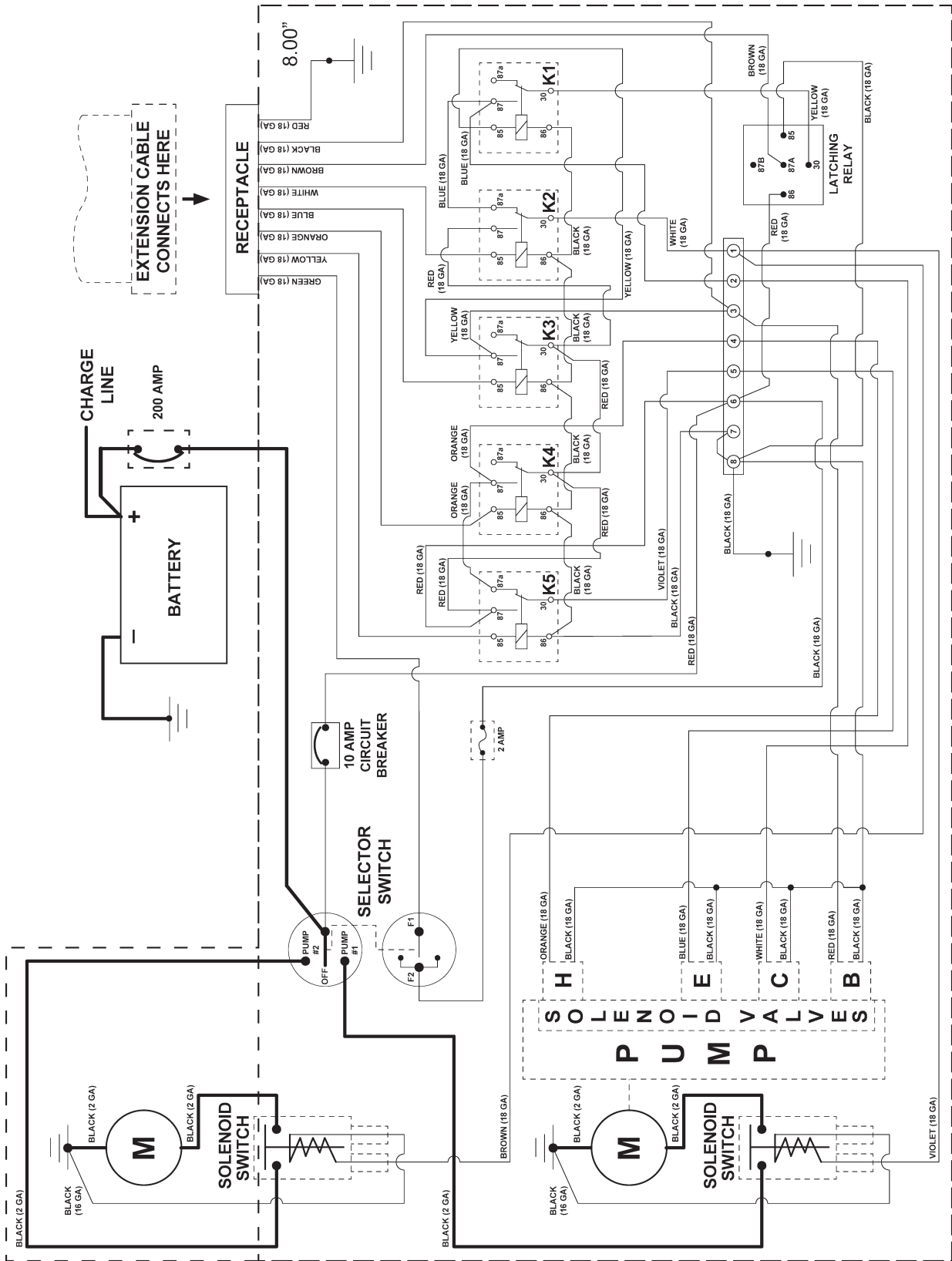


FIG. 69-1

# MAXON®

## PRE-DELIVERY INSPECTION FORM

Model: \_\_\_\_\_

Date: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Technician: \_\_\_\_\_

### Pre-Installation Inspection:

- Correct model
- Correct capacity
- Correct platform size
- Correct options
- Manuals & decals

### Structural Inspection:

- Inspect alignment of final assembly
- Inspect pump box secure mounting
- Inspect all installation welds
- Check roll pins, bolts and fasteners
- Check for no twists in chain
- Inspect tightness of hardware used for securing columns to mounting plates
- Ensure platform ramp touches ground

### Hydraulic Inspection:

- Proper fluid level (See OPTIMIZE HYDRAULIC FLUID LEVEL step in this manual)
- Check fittings for leaks in pump box
- Check fittings for leaks in columns

### Electrical Inspection:

- Check power/charge plug and terminal
- Check for loose wires and terminals
- Circuit breaker
- Battery hookup, 12 volt
- Ensure batteries are fully charged.
- Inspect all solenoid connections
- Check all wiring harness connections
- Outside control box location
- Check electrical cable connections (at the bottom of the curb-side runner) tight and secure

### Operation Inspection:

**NOTE:** The following times are for 56" bed height, aluminum platform and flipover 85" W x 42" + 42" L, Exxon Univis HVI-13 oil, & temperature at 70°F. Times are for reference only and may vary for larger platforms, smaller platforms, steel platforms, or temperature changes.

#### All BMR-CS

- Check operation of main control
- Check operation of runner control
- Platform unfolds in 5 to 7 sec.
- Platform folds in 5 to 7 sec.
- Unloaded platform lowers in **8 to 20 sec.**
- Platform loaded with 1000 lb (plus) lowers in **8 to 12 sec.**
- Unloaded platform raises in **9 to 21 sec.**
- Platform raises and lowers evenly. Maximum 1" difference from side to side.
- Platform stores and locks securely behind both column wedges..
- Check lift operation under load
- Decals in correct location and legible

