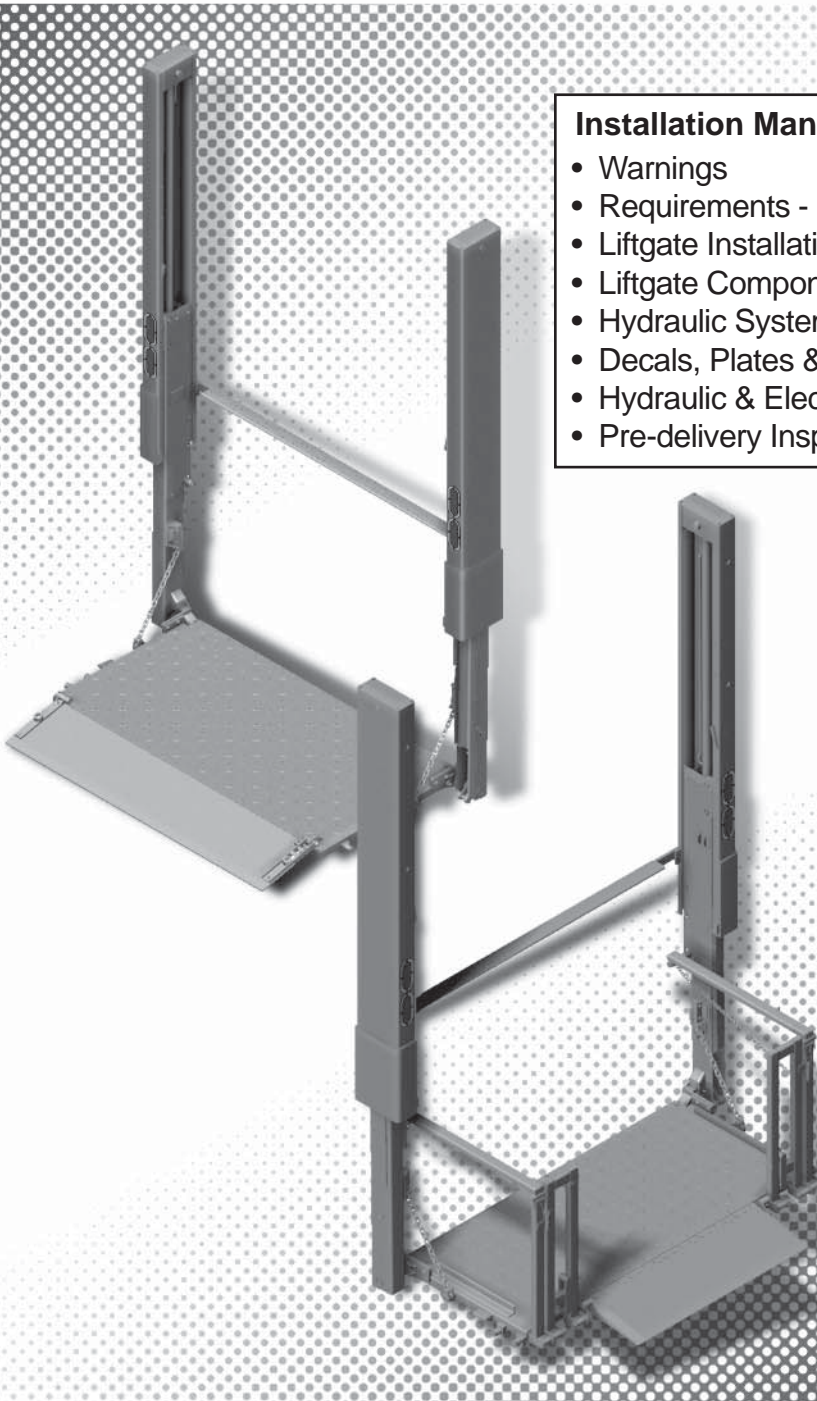


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**Installation Manual Contains:**

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



**MAXON**<sup>®</sup>  
**LIFT CORP.**

# BMR-A-ONE PIECE BMR-A-CS INSTALLATION MANUAL

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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.
- 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.

## **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.

# VEHICLE REQUIREMENTS

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

## BODY STRENGTH

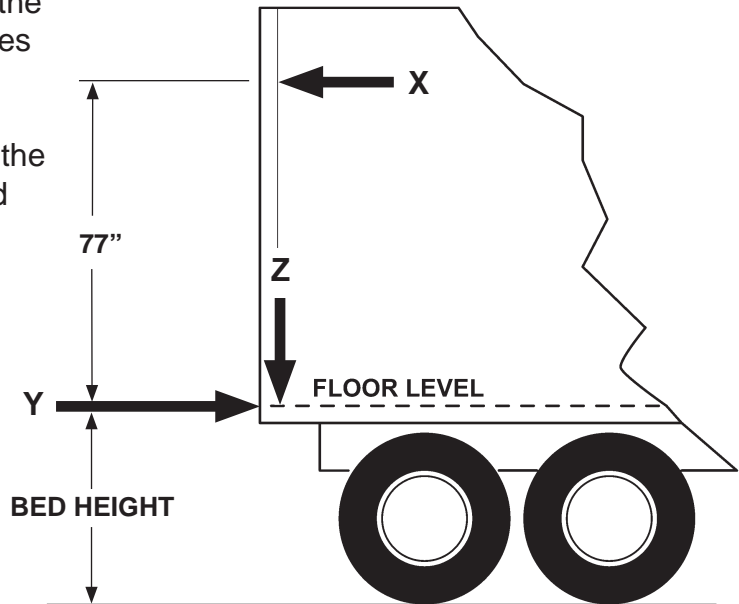
### **⚠ WARNING**

**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 for Body is **56" (Unloaded)**. Minimum is **32" (Loaded)**. Do not install this Liftgate on vehicle bodies equipped with swing open doors.

The BMR-A is a body-mounted Liftgate that puts forces on the side walls of truck and trailer bodies (**FIG. 5-1**). For correct installation, truck and trailer bodies must be strong enough to withstand the tension, compression and shear forces shown in **FIG. 5-1**. Use **TABLES 5-1 and 5-2** 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. 5-1**

MODEL CAPACITY	P/F SIZE	(X)(Y) LBS.	(Z) LBS.
BMRA35-CS 3500 LBS. (STEEL PLATFORM)	48	1180	3840
	42	1043	3786
BMRA44-CS 4400 LBS. (STEEL PLATFORM)	48	1426	4515
	42	1262	4461

**TABLE 5-1**

MODEL CAPACITY	P/F SIZE	(X)(Y) LBS.	(Z) LBS.
BMRA35-CS 3500 LBS. (ALUM. PLATFORM)	48	1081	3533
	42	964	3510
BMRA44-CS 4400 LBS. (ALUM. PLATFORM)	48	1326	4208
	42	1183	4185

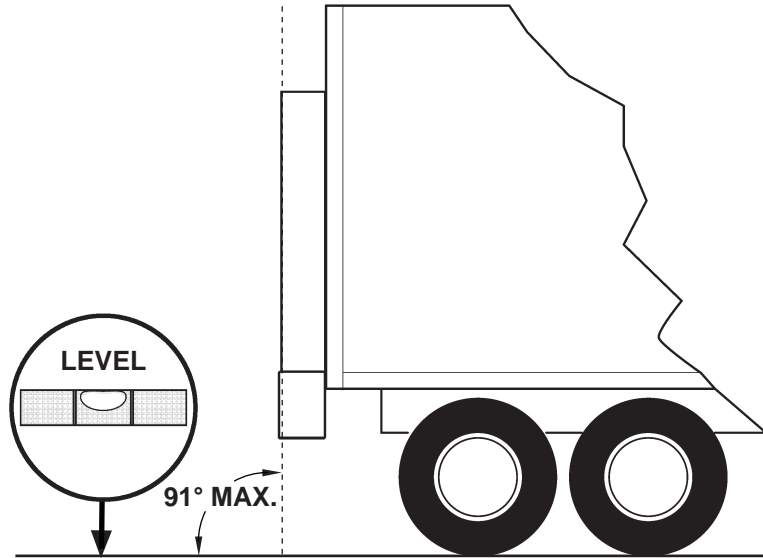
**TABLE 5-2**

# VEHICLE REQUIREMENTS - Continued

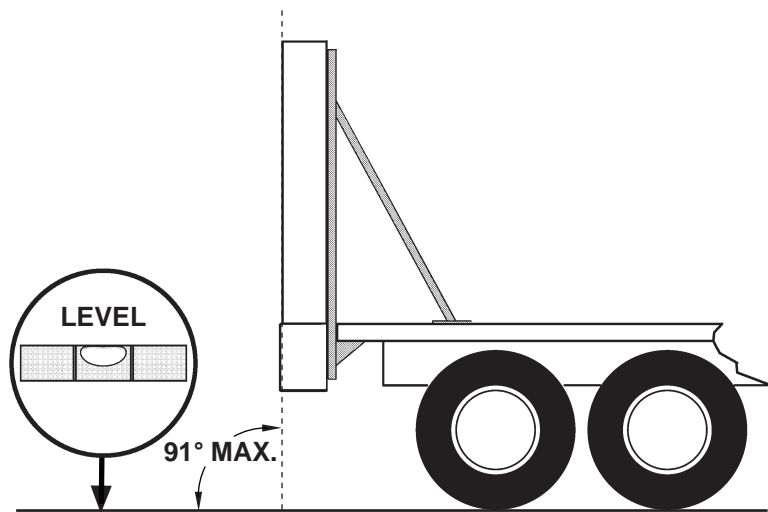
## INSTALLED LIFTGATE

**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-A must be perpendicular to the ground (vertical) for the Liftgate to operate correctly (FIGS. 6-1 and 6-2).



**LIFTGATE INSTALLED ON VAN BODY (COLUMNS SHOWN PERPENDICULAR TO LEVEL GROUND)**  
FIG. 6-1

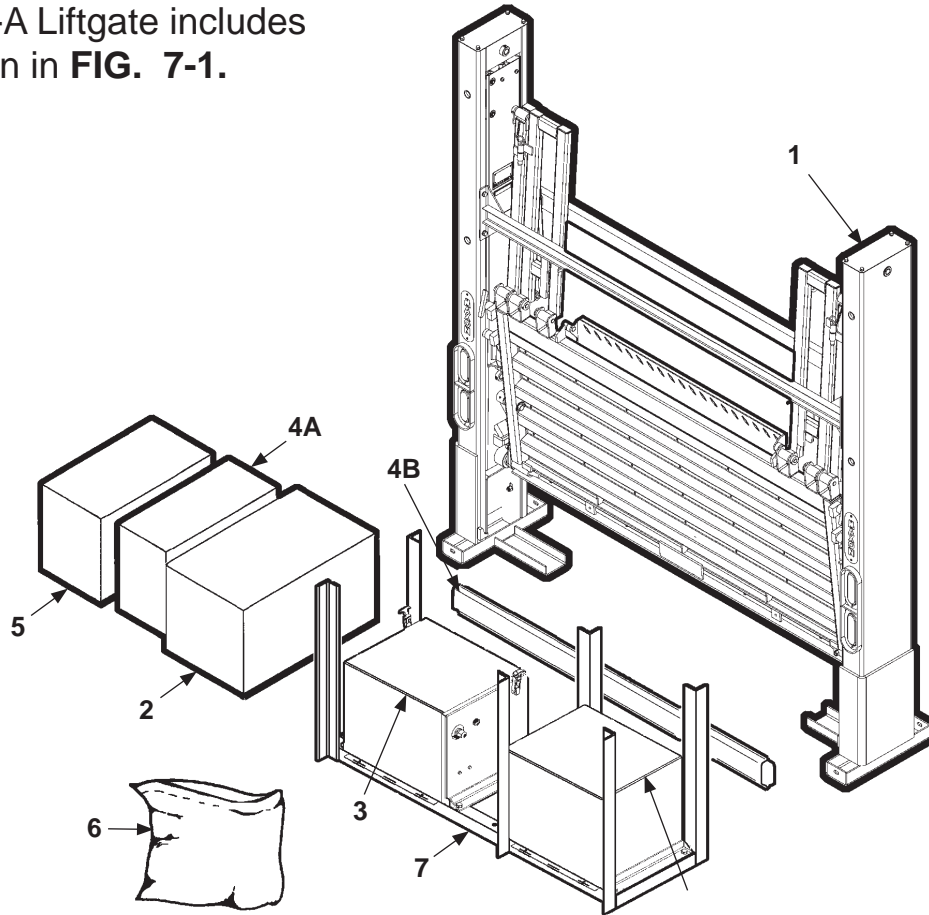


**LIFTGATE INSTALLED ON FLAT BED (COLUMNS & SUPPORTS SHOWN PERPENDICULAR TO LEVEL GROUND)**  
FIG. 6-2



# LIFTGATE INSTALLATION COMPONENTS

Each BMR-A Liftgate includes items shown in **FIG. 7-1**.



**FIG. 7-1**

DESCRIPTION	
1	BMR-A-CS Liftgate
2	Hardware parts bag, flat stock & bracket parts bag, hydraulic lines & fittings, wiring harness, power cable, molded switch control box
3	Pump box assembly
4A	Installation kit (3', 10', or 20')
4B	Channel guards (for 10' & 20' installation kits, only)
5	Optional equipment: tractor charge lines & hand held control
6	Instruction manuals and decals
7	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.
8	Battery box (optional)

**TABLE 7-1**

# 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-A MODEL GRAVITY DN-GD POWER DN-PD)	MANUAL & DE- CAL KIT	PART BOX	3 FT PUMP BOX INSTALL KIT	10 FT PUMP BOX INSTALL KIT	20 FT PUMP BOX INSTALL KIT	SINGLE PUMP ASSY	DUAL PUMP ASSY
BMR-A 35 GD	280715-01	280249	280248-01	280248-02	280248-03	280230	280220
BMRA35-CS GD	280715-05						
BMR-A 44 GD	280715-02						
BMRA44-CS GD	280715-06						
BMR-A 35 PD	280715-01	280250	280248-11	280248-12	280248-13	280240	264200
BMRA35-CS PD	280715-05						
BMR-A 44 PD	280715-02						
BMRA44-CS PD	280715-06						

BMR-A MODEL GRAVITY DN-GD POWER DN-PD)	FRAME SINGLE PUMP ASSY OR BATTERY BOX	FRAME PUMP ASSY & BATTERY BOX	TRUCK CHARGE LINE	SINGLE POLE TRAILER CHARGE LINE	DUAL POLE TRAILER CHARGE LINE
BMR-A 35 GD	280279	280280	280290	280275-01	280275-02
BMRA35-CS GD					
BMR-A 44 GD					
BMRA44-CS GD					
BMR-A 35 PD					
BMRA35-CS PD					
BMR-A 44 PD					
BMRA44-CS PD					

**TABLE 8-1**



# COMPONENTS - Continued

BMR-A MODEL GRAVITY DN-GD POWER DN-PD)	OPTIONS						
	SINGLE POLE TRACTOR CHARGE LINE	DUAL POLE TRACTOR CHARGE LINE	TRACTOR CHARGE LINE WITH ADAPTER	ABOVE BED KIT	LOW VOLTAGE SWITCH (1 KIT FOR SINGLE PUMP, 2 KITS FOR DUAL PUMP)	CYCLE COUNTER	HEADER KIT
BMR-A 35 GD	280275-03	280275-04	280275-05	280550-01	280546-01	280590-01	263490
BMRA35-CS GD							
BMR-A 44 GD							
BMRA44-CS GD							
BMR-A 35 PD							
BMRA35-CS PD							
BMR-A 44 PD							
BMRA44-CS PD							

BMR-A MODEL GRAVITY DN-GD POWER DN-PD)	OPTIONS												
	HAND HELD CONTROL	STREETSIDE CONTROL	AUXILIARY CONTROL	KIT, TRAIL CHARGER	KIT, HIGH PERFORMANCE CHARGE	BATTERY BOX (WITHOUT BATTERY)	BATTERY	KIT, TOUCHUP PAINT WITH ALUMINUM PRIMER					
BMR-A 35 GD	263260-07	280555-01	266070-01	267370-01	267580-01	280260-02	267318-01	908119-01					
BMRA35-CS GD													
BMR-A 44 GD													
BMRA44-CS GD													
BMR-A 35 PD	263260-08	280555-02	266070-02						267370-01	267580-01	280260-02	267318-01	908119-01
BMRA35-CS PD													
BMR-A 44 PD													
BMRA44-CS PD													

**TABLE 9-1**

**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.

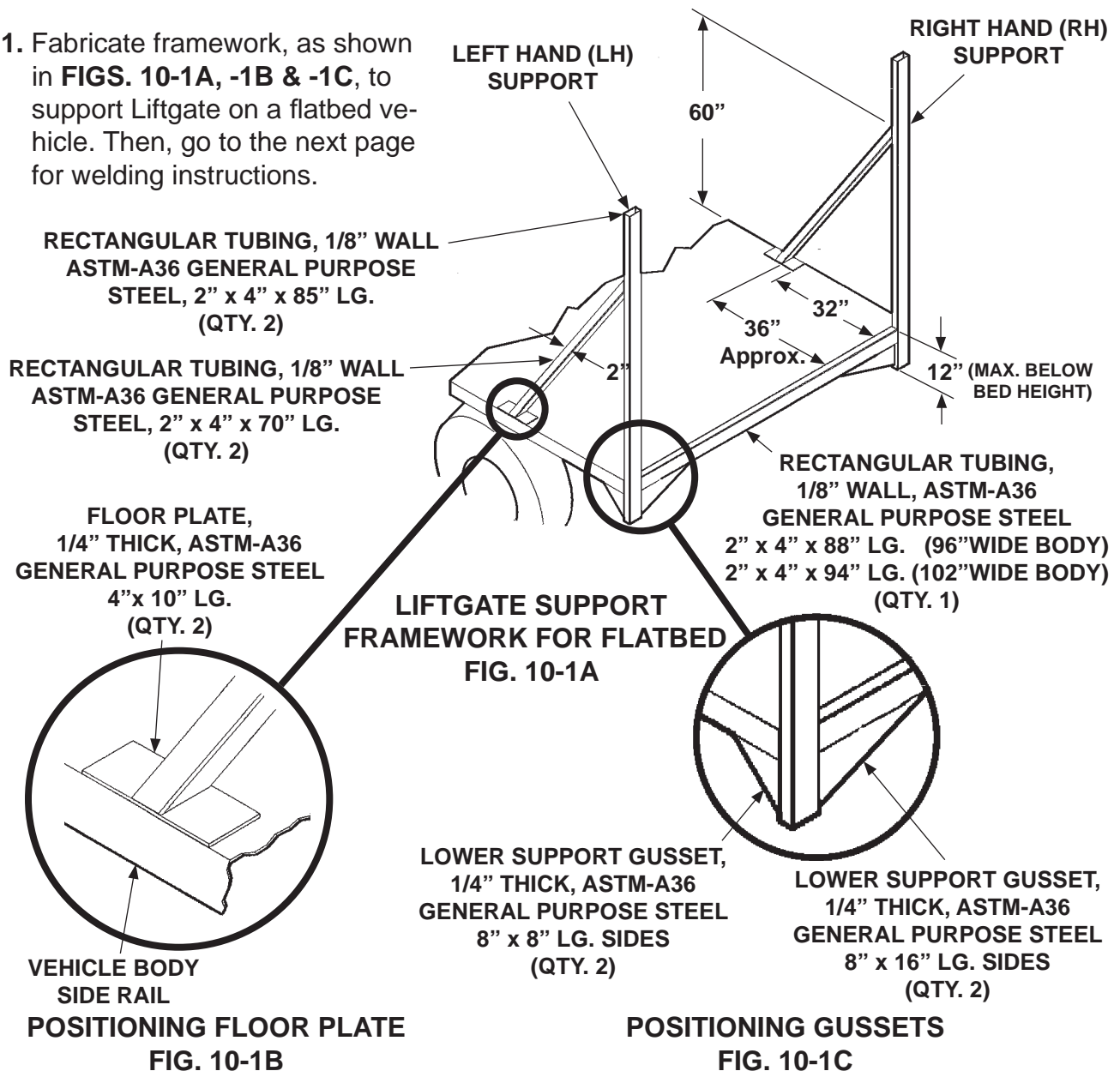
**NOTE:** LH and RH supports must be perpendicular to level ground. See **VEHICLE REQUIREMENTS, INSTALLED LIFTGATE.**

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

## ⚠ WARNING

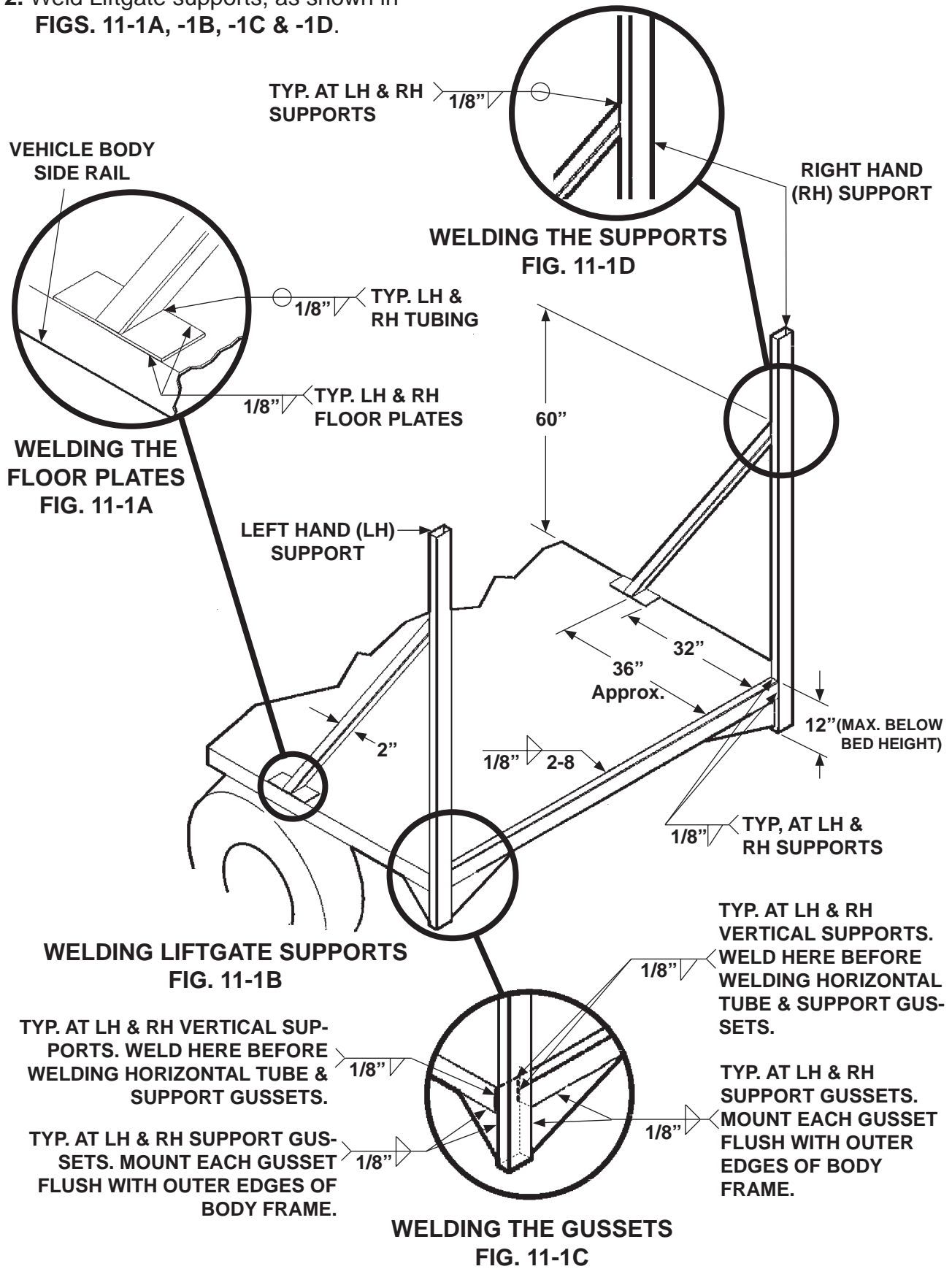
Recommended practices for welding on steel parts are contained in the current AWS (American Welding Society) D1.1 Structural Welding Code - Steel. Damage to Liftgate and/or vehicle, and personal injury can result from welds that are done incorrectly.

1. Fabricate framework, as shown in **FIGS. 10-1A, -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. 11-1A, -1B, -1C & -1D.



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## STEP 2 - POSITION LIFTGATE WELDING 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 !

When performing any electrical welding operations to the structure of this lift, be careful to connect the ground lead to the Liftgate component being welded (e.g. runner assembly, column assembly, platform assembly), and as close to the area being welded as possible. Because the separate assemblies on the BMR series lifts are insulated by self-lubricated bearings, failure to do so will cause severe damage to electrical components and metal parts.

### CAUTION

To protect the original paint system, a 3" wide area of paint must be removed from all sides of the weld area before welding.

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. 12-1A and 12-1B. Repeat for RH column. The angle stock helps keep extension plate flush with top of vehicle bed while installing Liftgate.

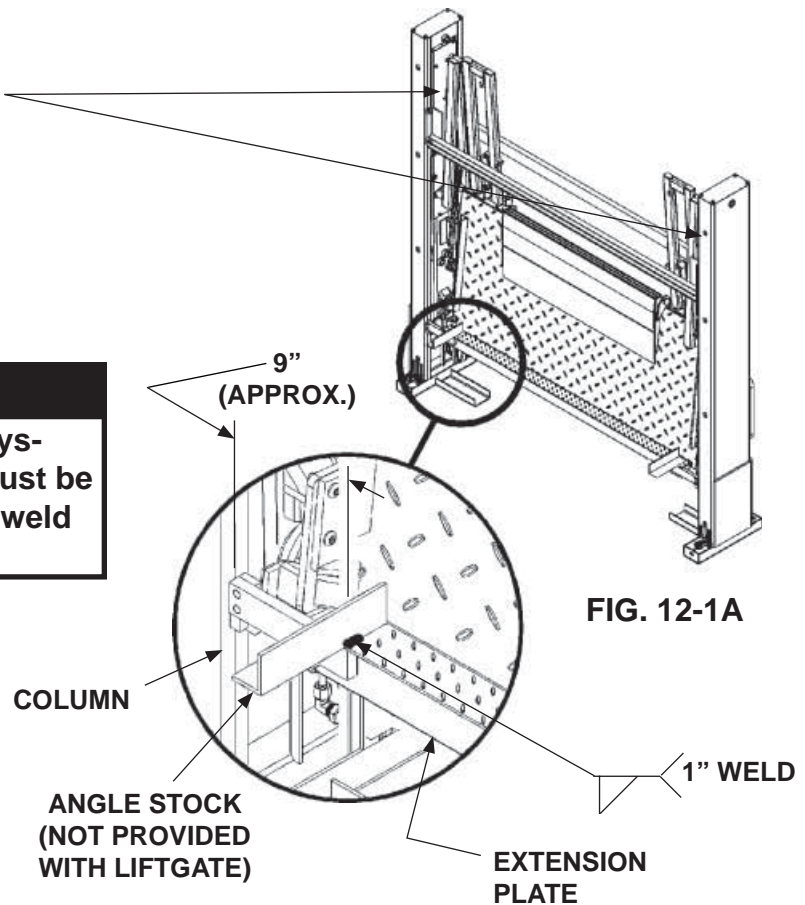
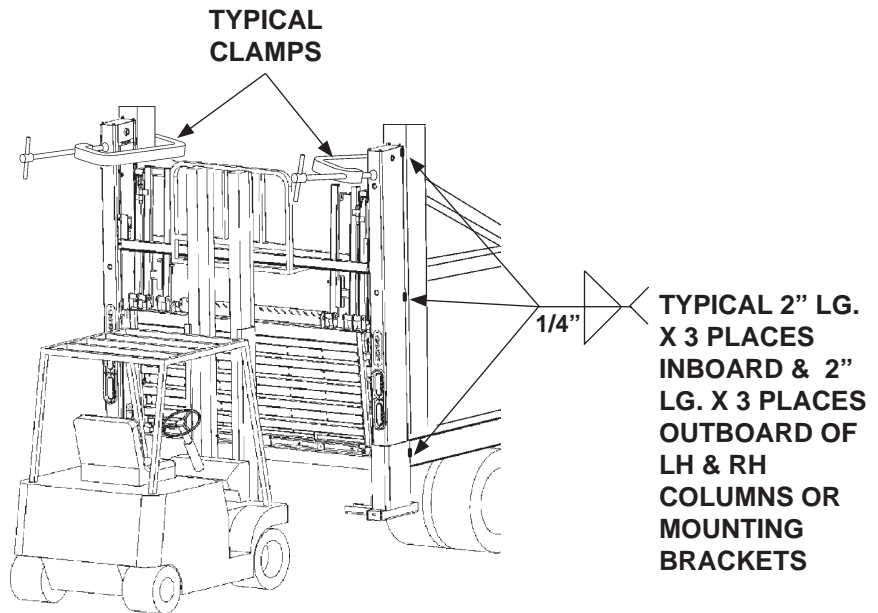


FIG. 12-1A

FIG. 12-1B

## WELDING LIFTGATE TO BODY - Continued

2. Use overhead hoist or forklift to center Lift-gate against the vehicle (**FIG. 13-1**). 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. 13-1**).



**WELDING COLUMNS TO VEHICLE**  
**FIG. 13-1**

### CAUTION

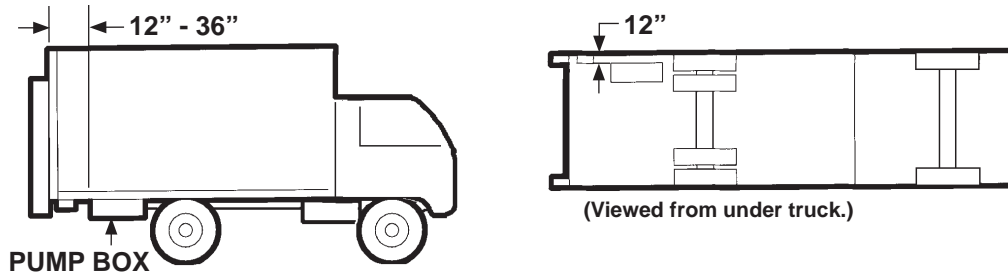
To protect the original paint system, a 3" wide area of paint must be removed from all sides of the weld area before welding.

4. Weld the RH and LH columns to vehicle body as shown in **FIG. 13-1**

## STEP 3 - POSITION PUMP BOX FRAME

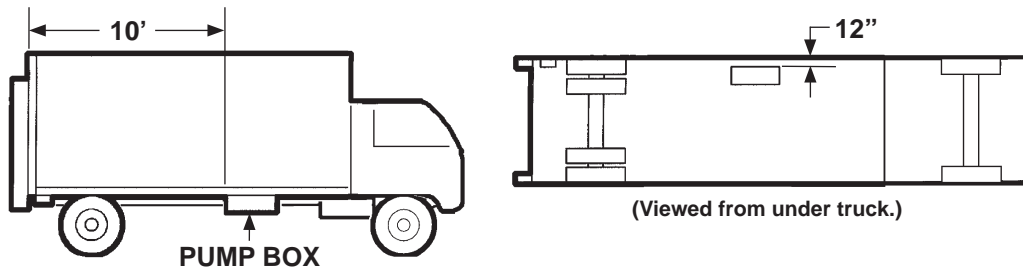
**NOTE:** Make sure pump box is closer to Liftgate than battery box (if installed) and pump box cover opens toward curb-side of vehicle. Also, make sure hydraulic hoses are installed without straining hoses. Distance from pump box to Liftgate is limited by lengths of hydraulic hoses and wiring harness 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. 14-1, 14-2, 14-3, and 16-4.**



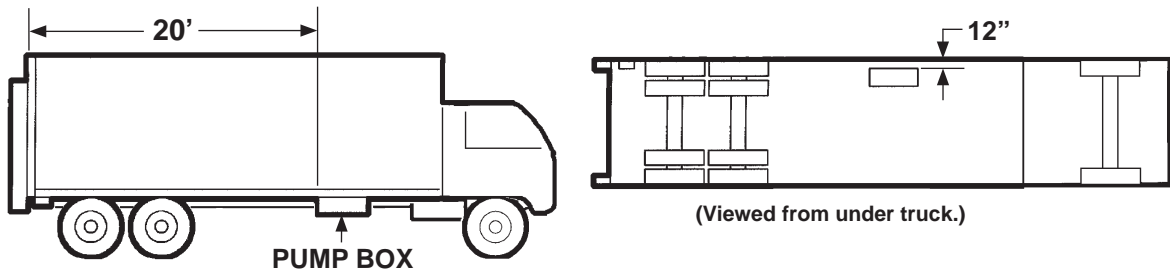
TYPICAL 3' FT. INSTALLATION

FIG. 14-1



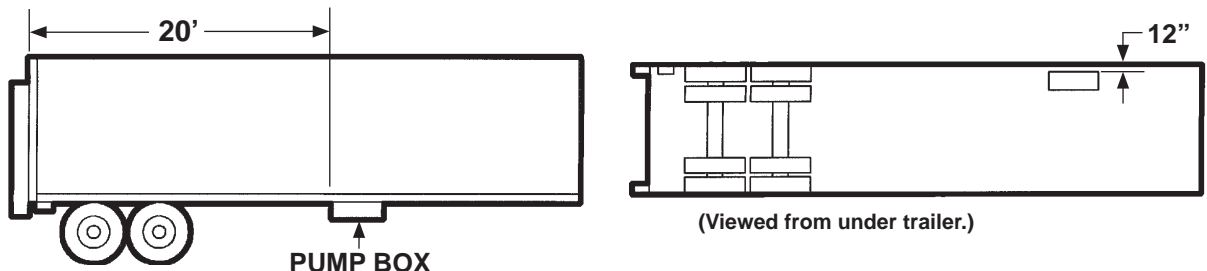
TYPICAL 10' FT. INSTALLATION

FIG. 14-2



TYPICAL 20' FT. INSTALLATION

FIG. 14-3



TYPICAL 20' FT. INSTALLATION

FIG. 14-4



## STEP 4 - WELD PUMP BOX FRAME TO VEHICLE

### ⚠ 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.

**NOTE:** If possible, position 2 of the angle supports pointing in opposite direction from the other angle supports (**FIG. 15-1B**).

1. Use floorjack or equivalent lifting device to place pump box frame in position on vehicle body cross members as shown in **FIGS. 15-1A and 15-1B**.

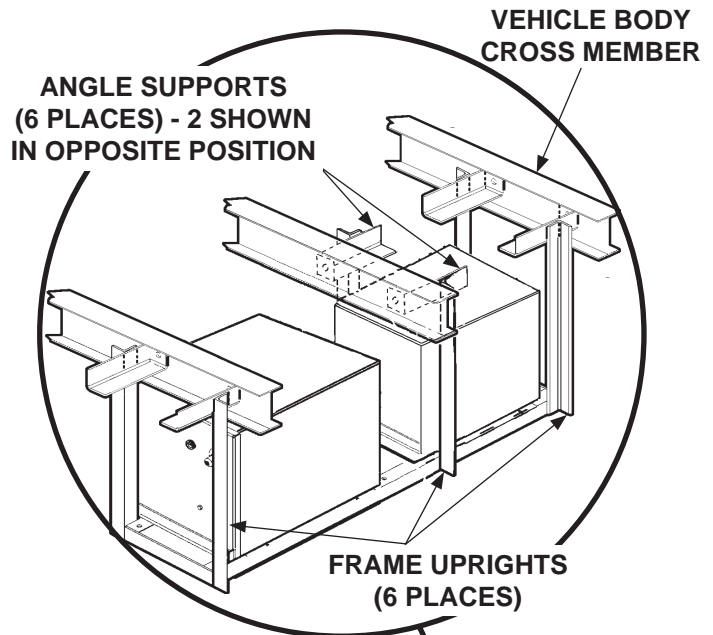
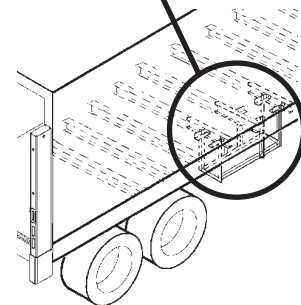


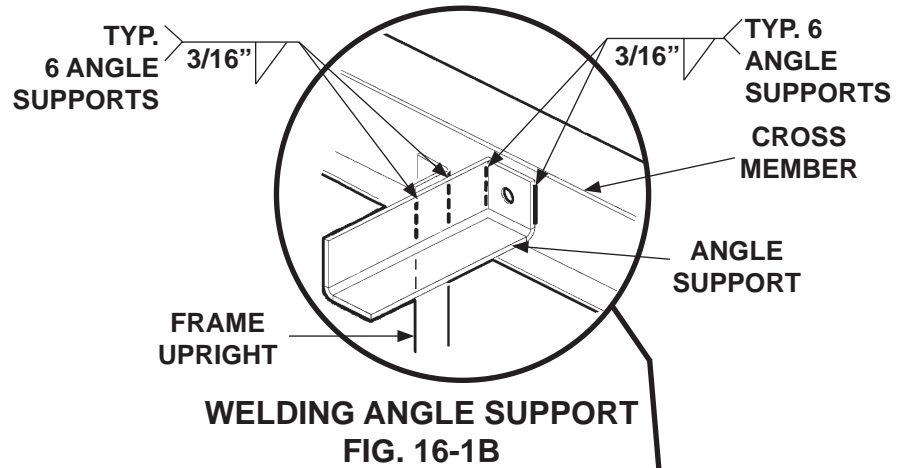
FIG. 15-1B



TRAILER WITH PUMP & BATTERY BOX FRAME  
FIG. 15-1A

## STEP 4 - WELD PUMP BOX FRAME TO VEHICLE - Continued

2. Make sure angle supports are centered between top and bottom of cross member. Position each of the frame uprights by the nearest cross member (**FIG. 16-1A**).

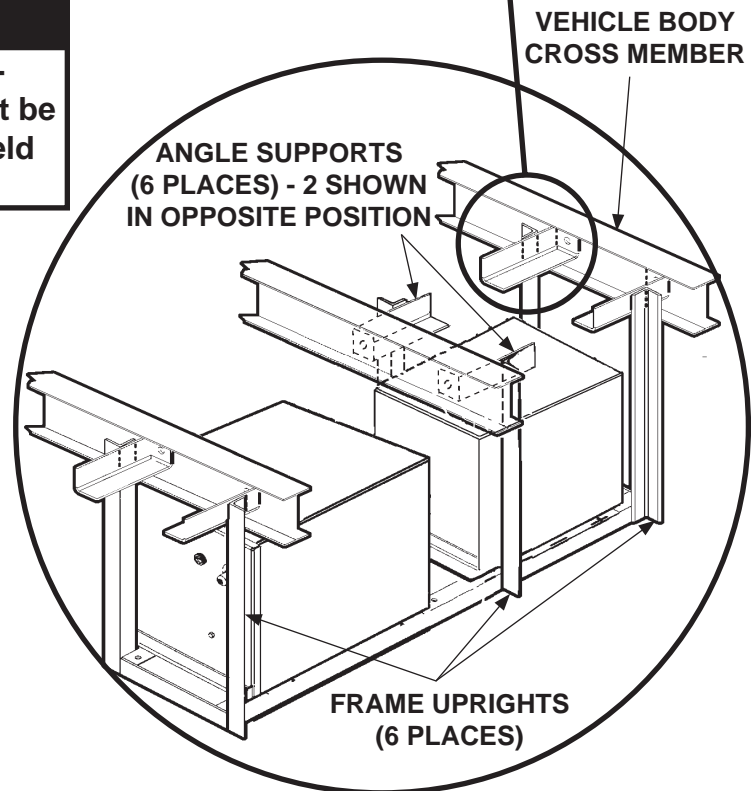


**WELDING ANGLE SUPPORT  
FIG. 16-1B**

**CAUTION**  
To protect the original paint system, a 3" wide area of paint must be removed from all sides of the weld area before welding.

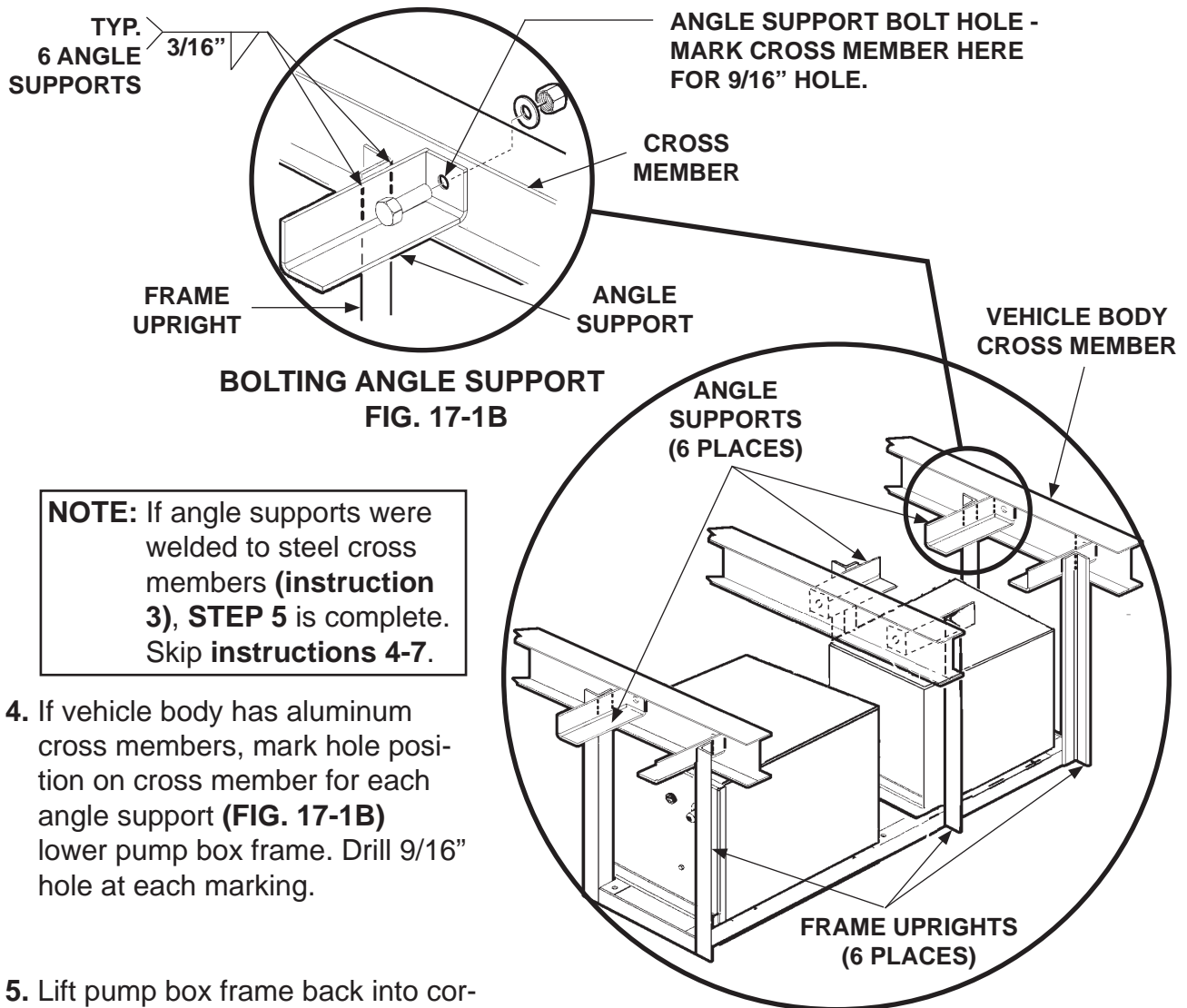
**NOTE:** If vehicle body has aluminum cross members, skip instruction 3.

3. If vehicle body has steel cross members, clamp and weld each angle support to cross member (**FIG. 16-1B**). Then, clamp and weld each frame upright to angle support (**FIG. 16-1B**).



**FIG. 16-1A**

## STEP 4 - WELD PUMP BOX FRAME TO VEHICLE - Continued



4. If vehicle body has aluminum cross members, mark hole position on cross member for each angle support (**FIG. 17-1B**) lower pump box frame. Drill 9/16" hole at each marking.
5. Lift pump box frame back into correct position (**FIG. 17-1A**).
6. Bolt each angle support to aluminum cross member as shown in **FIG. 17-1B**.
7. Weld each frame upright to angle support as shown in **FIG. 17-1B**.

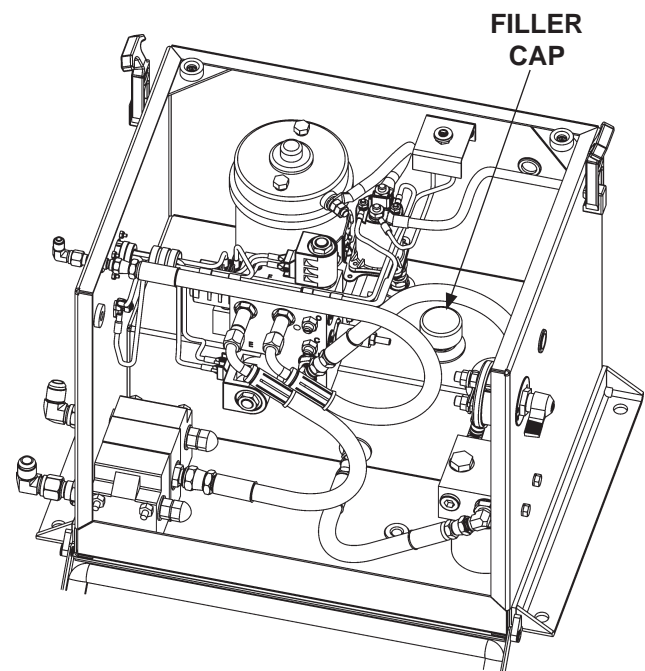
## STEP 5 - ADD HYDRAULIC FLUID TO RESERVOIR

### 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.

**NOTE:** Liftgate is shipped with **ISO 32** hydraulic fluid in the hydraulic cylinders. For operation in **severe cold weather**, refer to the **CHANGING HYDRAULIC FLUID** procedure in the **BMR-A-CS Maintenance Manual**. If necessary, change to the recommended grade of hydraulic fluid.

1. Open pump box cover (**FIG. 18-1**).
2. Remove the filler cap (**FIG. 18-1**).  
Add **3 quarts** (single pump) or **5 quarts** (dual pump) of hydraulic fluid to pump reservoir.



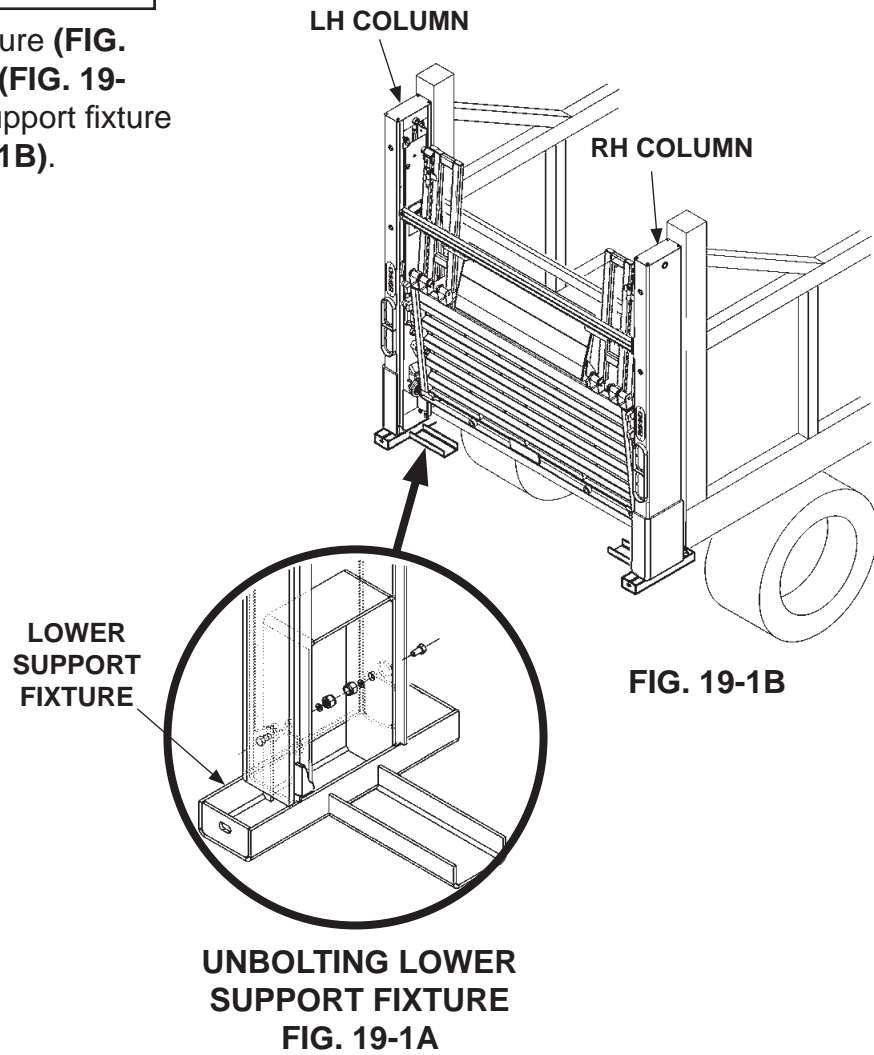
**PUMP BOX SHOWN WITH SINGLE PUMP  
FIG. 18-1**

3. Reinstall the filler cap (**FIG. 18-1**).

## STEP 6 - REMOVE LOWER SUPPORT FIXTURES

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

Unbolt lower support fixture (**FIG. 19-1A**) from LH column (**FIG. 19-1B**). Repeat for lower support fixture on RH column (**FIG. 19-1B**).



## STEP 7 - 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.

1. Get hydraulic hoses, hydraulic tee, channel guard (if required) and plastic ties from part box and pump box installation kit. Run hydraulic hoses from LH and RH columns to pump box. Connect hydraulic hoses as shown in **FIG. 22-1** and **TABLE 22-1** for Gravity Down Liftgate or **FIG. 23-1** and **TABLE 23-1** for Power Down Liftgate.
2. Get interconnecting wiring harness and molded extension cable from pump box installation kit. Run the wiring harness and extension cable from LH and RH columns to pump box as shown in **FIG. 24-1**.
3. If channel guard is required, bolt up one side of the channel (**FIGS. 21-1, 22-1, and 23-1**) to vehicle body. Leave bolts loose until all hydraulic hoses (**FIGS. 21-1 and 22-1**) and wiring harness (**FIG. 23-1**) 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 7 - RUN HYDRAULIC LINES & ELECTRIC CABLES - Continued

## RUN GRAVITY DOWN HYDRAULIC LINES

**NOTE:** See TABLE 21-1 for information on the numbered hoses in this illustration.

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

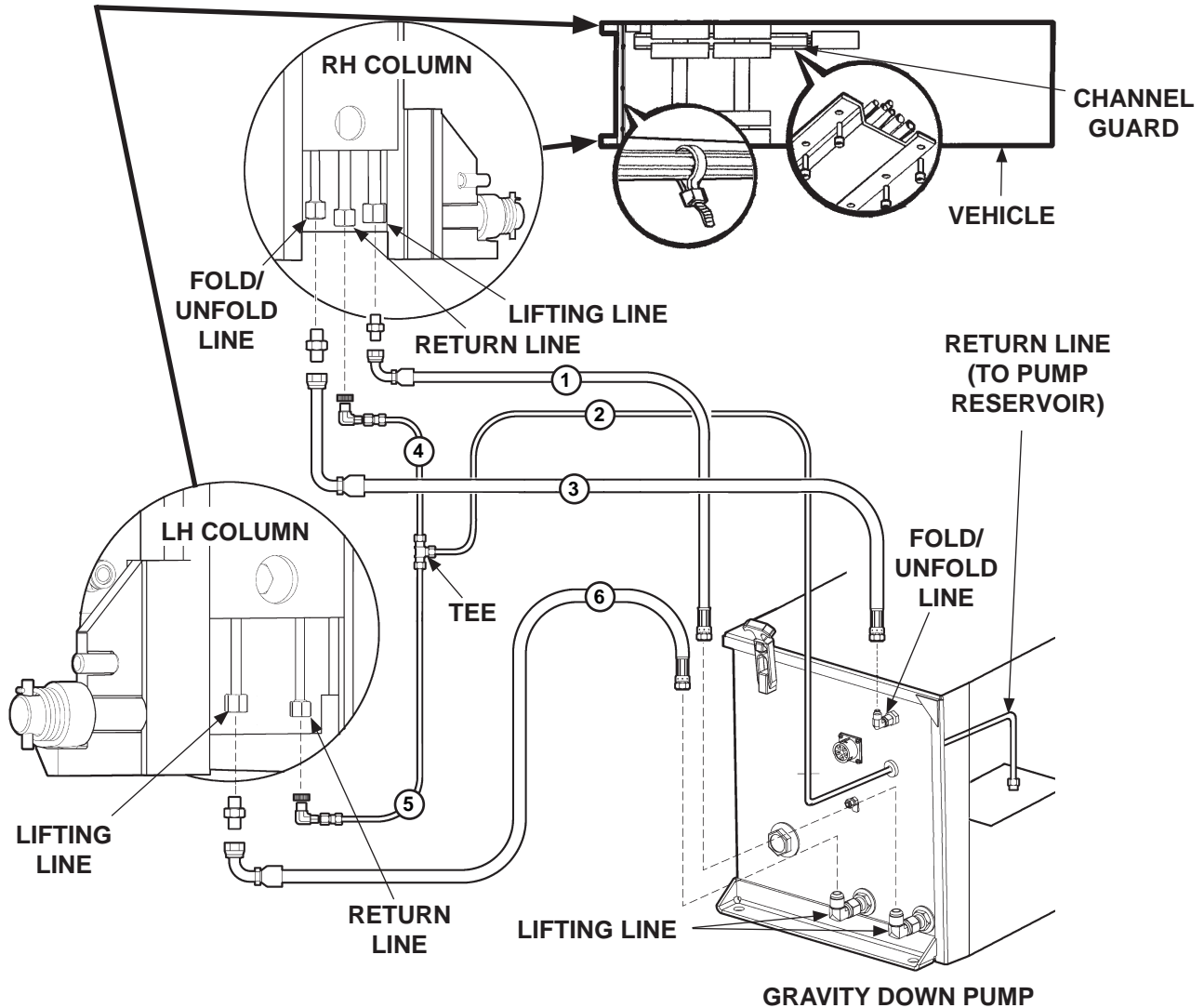


FIG. 21-1

GRAVITY DOWN PUMP BOX INSTALLATION: REQUIRED HOSES & PLASTIC TUBING			
	3 FT.	10 FT.	20 FT.
1	HP 3/8" X 64" LG.	HP 3/8" X 196" LG.	HP 3/8" X 316" LG.
2	PLASTIC 3/8" OD X 84" LG.	PLASTIC 3/8" OD X 192" LG.	PLASTIC 3/8" OD X 324" LG.
3	HP 1/4" X 56" LG.	HP 1/4" X 188" LG.	HP 1/4" X 308" 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 394" LG.

TABLE 21-1

# STEP 7 - RUN HYDRAULIC LINES & ELECTRIC CABLES - Continued

## RUN POWER DOWN HYDRAULIC LINES

**NOTE:** See TABLE 22-1 for information on the numbered hoses in this illustration.

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

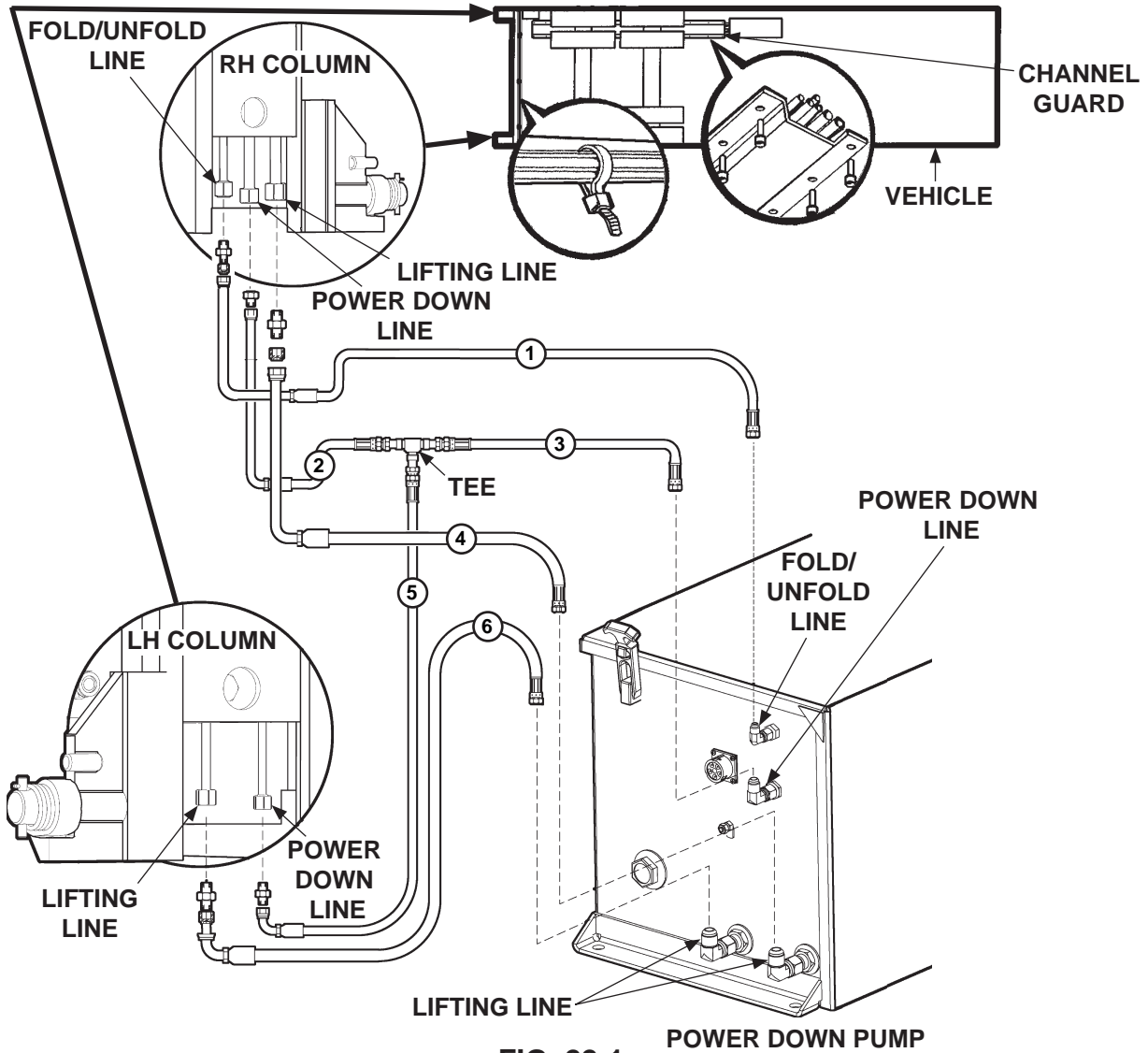


FIG. 22-1

POWER DOWN PUMP BOX INSTALLATION: REQUIRED HOSES			
	3 FT.	10 FT.	20 FT.
1	HP 1/4" X 56" LG.	HP 1/4" X 188" LG.	HP 1/4" X 308" LG.
2		HP 1/4" X 22" LG.	
3	HP 1/4" X 34" LG.	HP 1/4" X 166" LG.	HP 1/4" X 286" LG.
4	HP 3/8" X 64" LG.	HP 3/8" X 196" LG.	HP 3/8" X 316" LG.
5		HP 1/4" X 98" LG.	
6	HP 3/8" X 142" LG.	HP 3/8" X 274" LG.	HP 3/8" X 394" LG.

TABLE 22-1

# STEP 7 - RUN HYDRAULIC LINES & ELECTRIC CABLES

## - Continued

### RUN ELECTRIC CABLES

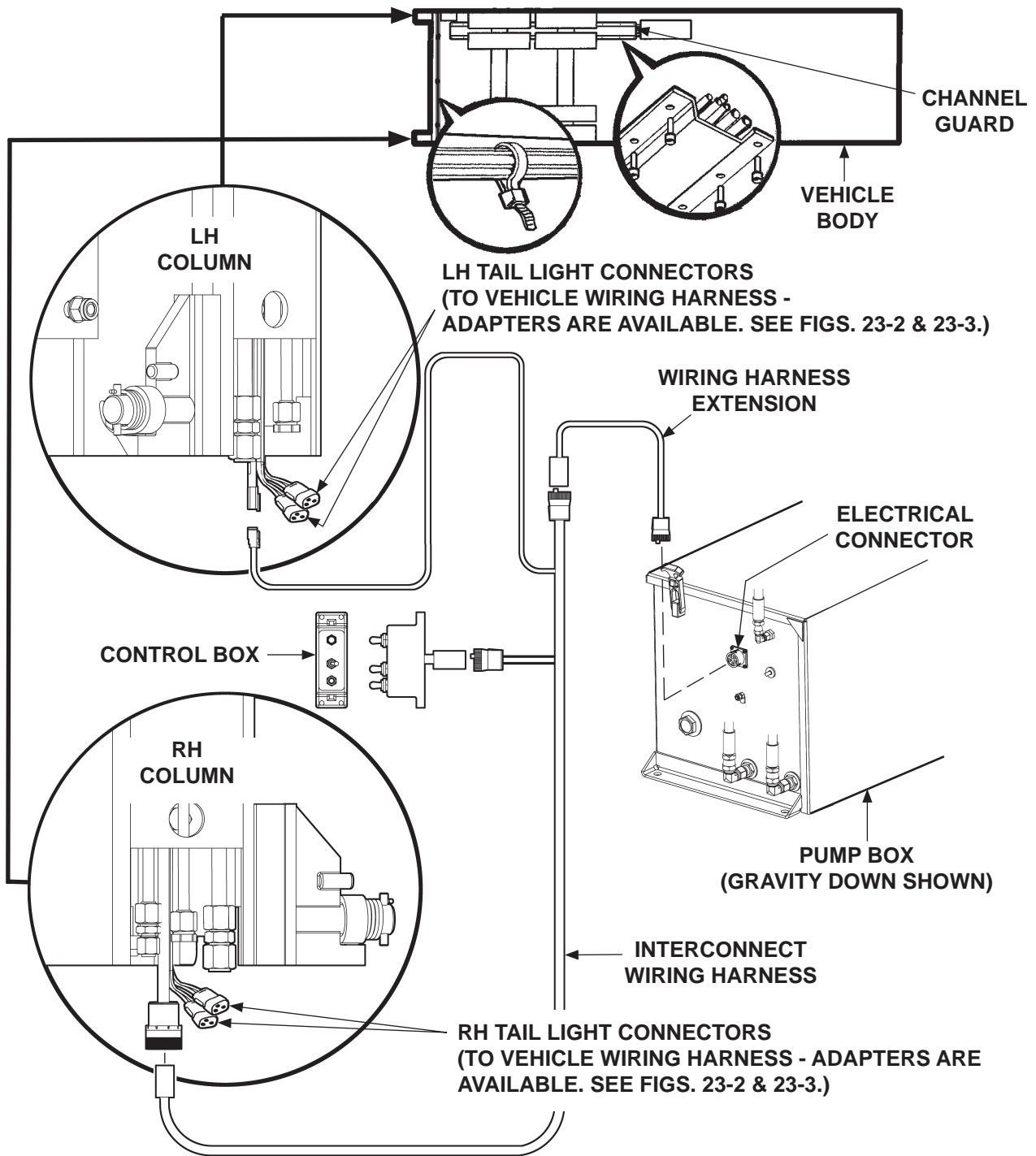


FIG. 23-1



PIGTAIL HARNESS (ADAPTER)  
P/N 280626  
FIG. 23-2



JUMPER HARNESS (ADAPTER)  
P/N 280627  
FIG. 23-3

## STEP 8 - CONNECT GROUND CABLE GROUNDING TO TRUCK FRAME

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

1. Bolt ground cable to the ground stud on pump box (**FIG. 24-1A**).

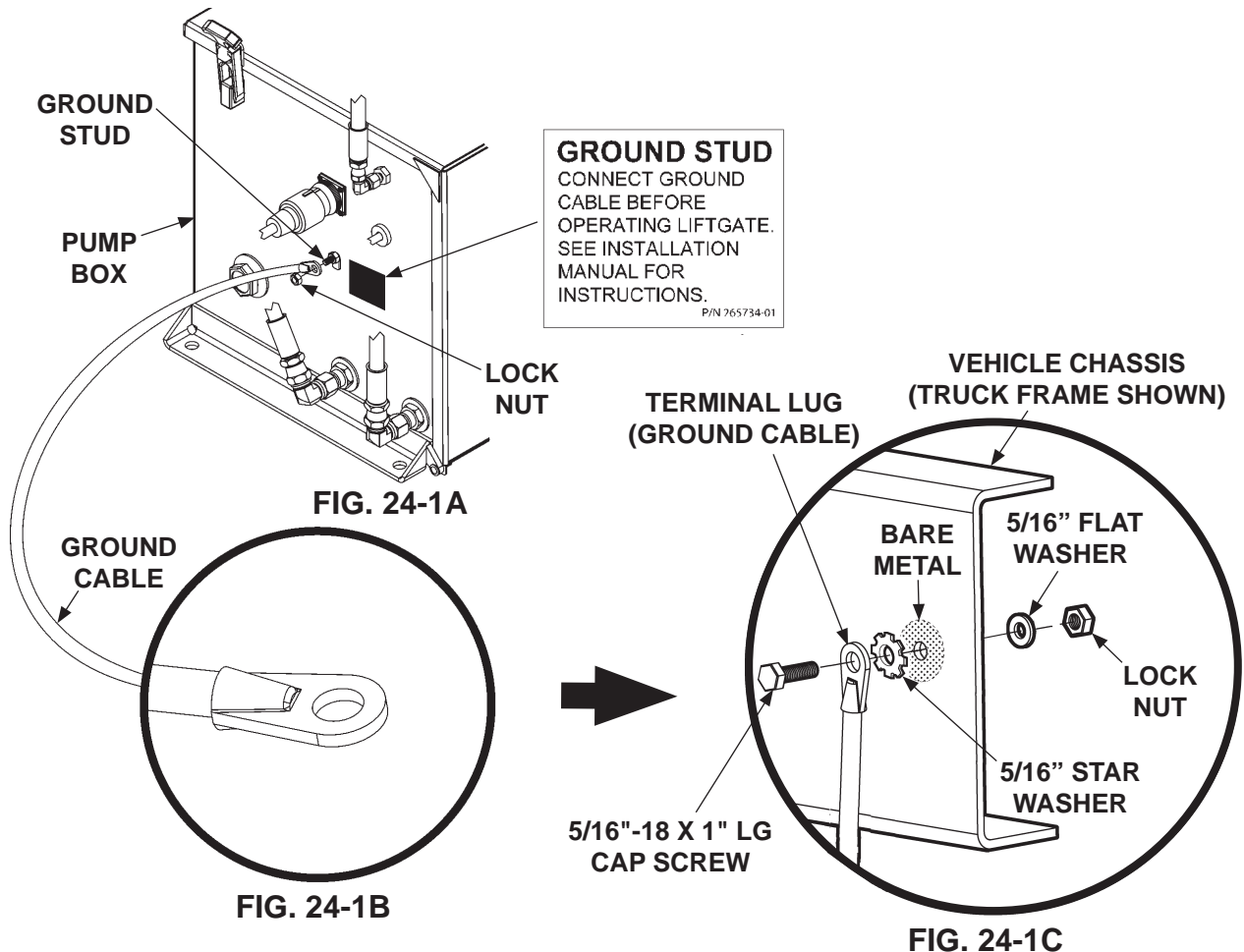
**NOTE:** If there is an existing grounding point on truck frame, use it to connect ground cable and skip the step for drilling a hole.

2. Extend the ground cable to reach vehicle frame (**FIG. 24-1C**) 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. 24-1C**).

**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. 24-1C**).

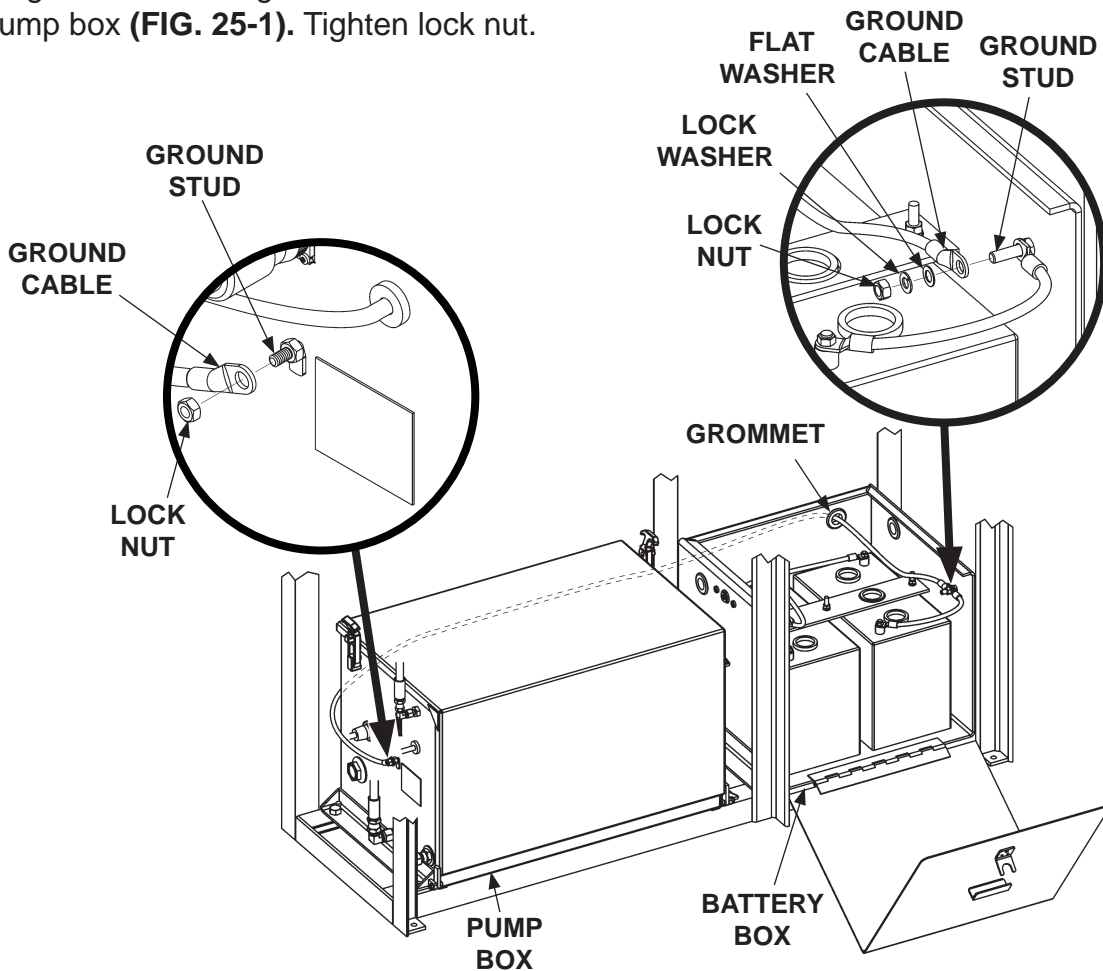


## STEP 8 - CONNECT GROUND CABLE - Continued

### GROUNDING TO BATTERY BOX (IF EQUIPPED)

**NOTE:** Make sure the Liftgate power unit, battery box and batteries, tail lights 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. 25-1**). Tighten lock nut.



**FIG. 25-1**

2. Route ground cable behind pump box and battery box to the grommet on the back wall of battery box (**FIG. 25-1**). Then, pull ground cable through grommet to the ground stud (**FIG. 25-1**).

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

3. Attach ground cable to battery box ground stud (**FIG. 25-1**). Tighten lock nut.

## STEP 9 - INSTALL CONTROL BOX & BRACKET

### ⚠ 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.

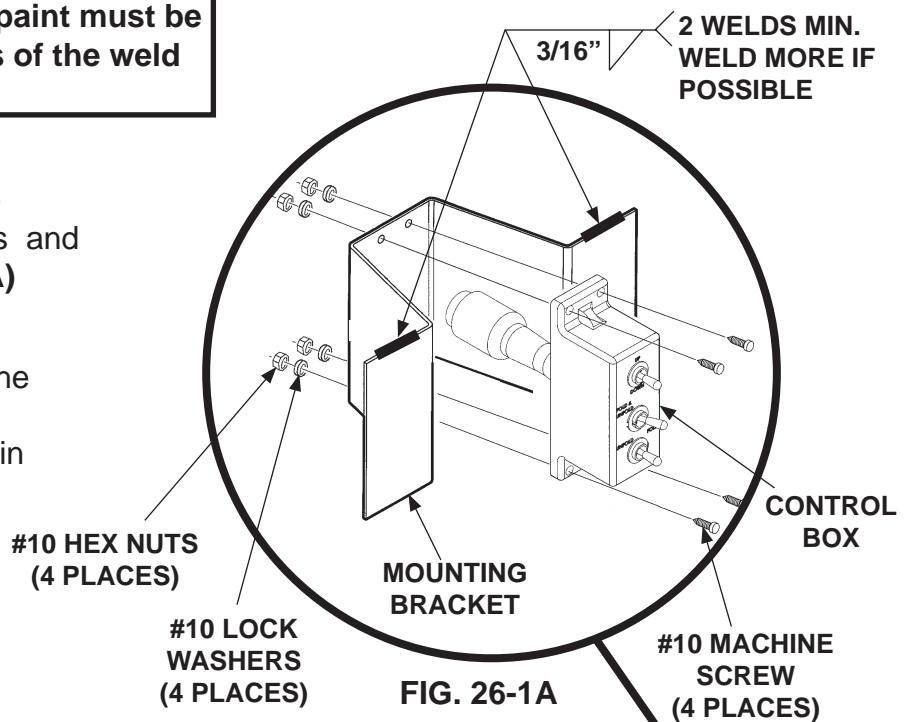
### CAUTION

Prevent damage to control box. Make sure installed control box does not protrude out from the side of vehicle body.

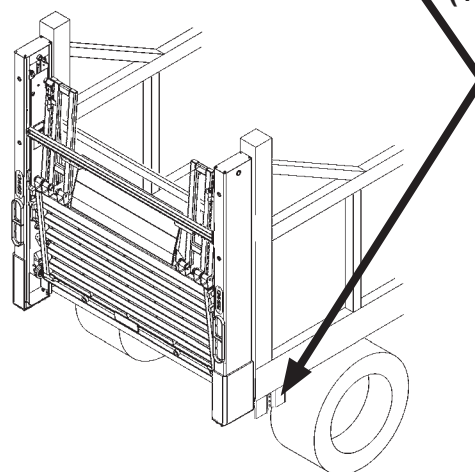
### CAUTION

To protect the original paint system, a 3" wide area of paint must be removed from all sides of the weld area before welding.

1. Get Switch Control Box, Bracket, (4) #10 machine screws, #10 lock washers and #10 hex nuts (**FIG. 26-1A**) from Part Box.
2. Weld the Bracket under the vehicle body on the curb-side of vehicle as shown in **FIG. 26-1A & 26-1B**.



3. Bolt Switch Control Box to Bracket with (4) #10 machine screws, (4) #10 lock washers and (4) #10 hex nuts (**FIG. 26-1A**).
4. If Liftgate comes with Hand-Held Control Kit, install Hand-Held Control according to **Instruction Sheet M-00-23** contained in each Kit.



**FIG. 26-1B**



## STEP 10 - 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.

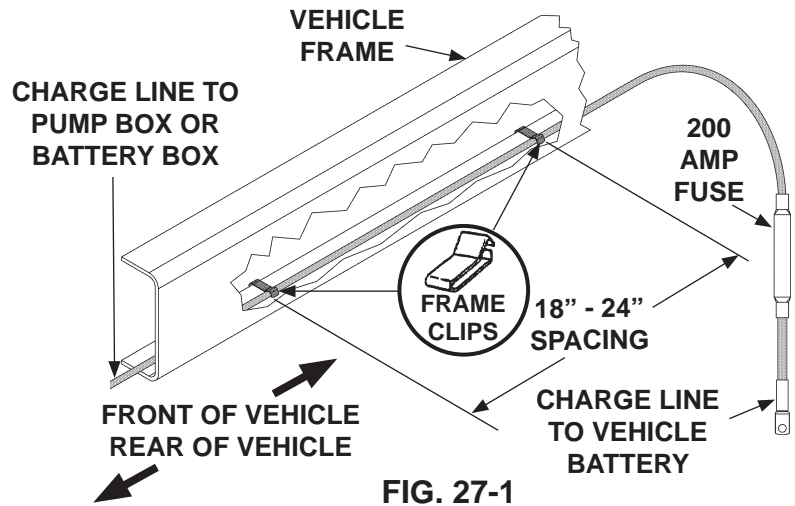


FIG. 27-1

1. Install vehicle charge line by running the line along the inside of vehicle frame (FIG. 27-1). Make sure 200 amp fuse (FIG. 27-1) end of cable is by the battery. Run the charge line from vehicle battery to Liftgate pump box master disconnect switch (FIG. 27-2) or circuit breaker in an optional battery box (FIG. 27-3), if installed. Use frame clips (parts box item) and plastic ties (as required) from charge line kit to secure cable.

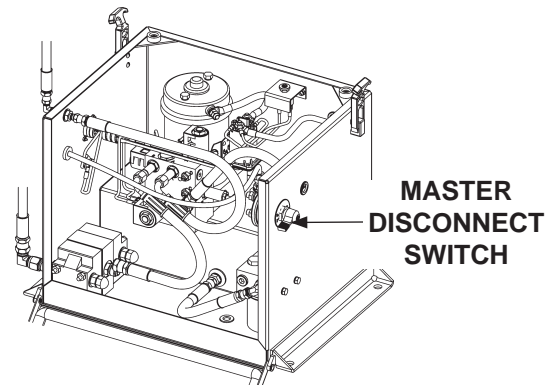


FIG. 27-2

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.

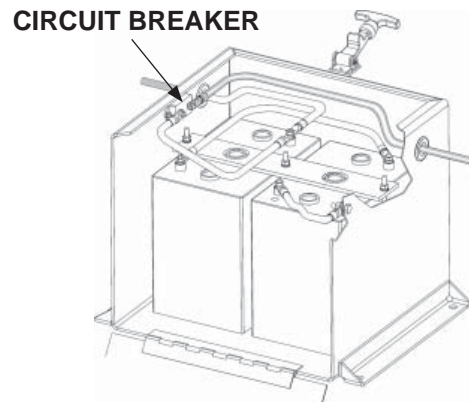


FIG. 27-3

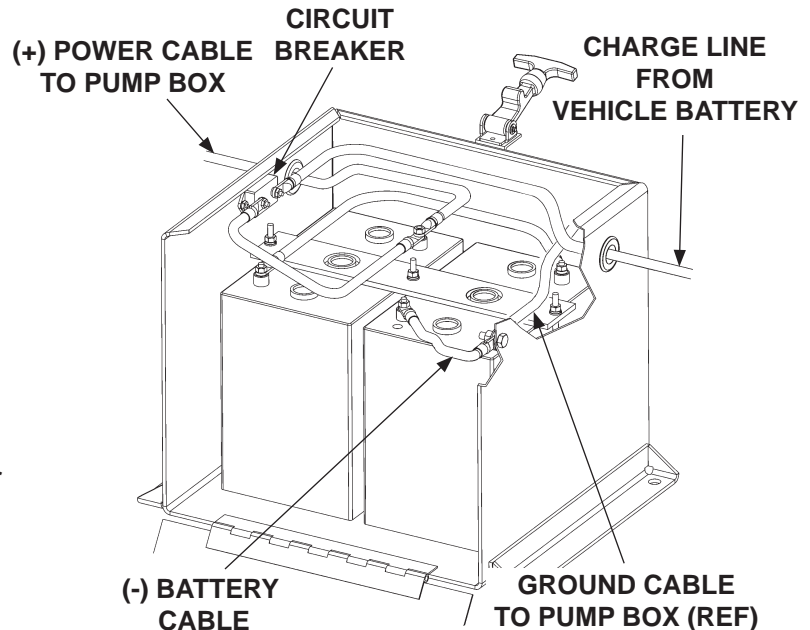
# STEP 11 - CONNECT BATTERIES TO LIFTGATE

## ⚠ 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 6 volt and 12 volt battery connections, refer to the **RECOMMENDED LIFTGATE POWER CONFIGURATION** section in this manual.

1. Disconnect (-) battery cable (FIG. 28-1) from battery.

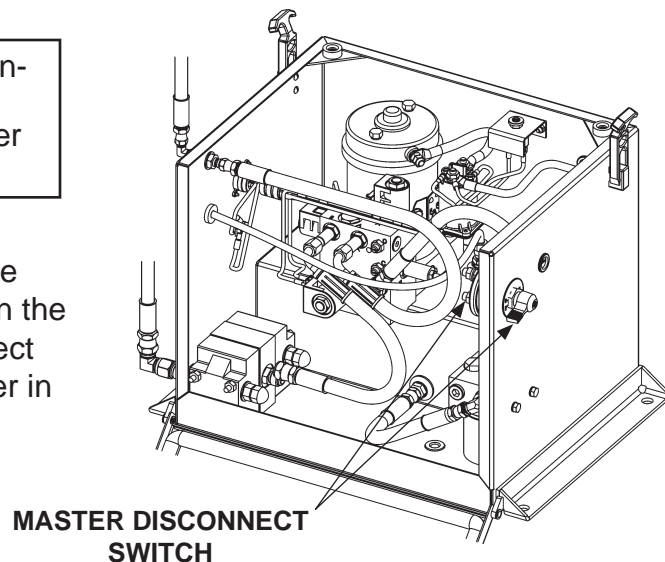


**BATTERY BOX  
(6 VOLT BATTERIES SHOWN)  
FIG. 28-1**

2. Connect vehicle charge line to unconnected terminal on master disconnect switch (FIG. 28-2).

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

3. If optional battery box (FIG. 28-1) is installed, connect (+) power cable from battery box to master switch in the pump box (FIG. 28-2). Then, connect vehicle charge line to circuit breaker in optional battery box (FIG. 28-1).



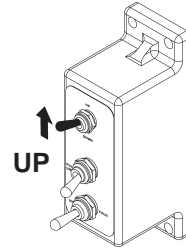
**PUMP BOX  
FIG. 28-2**

## STEP 12 - PRESSURIZE HYDRAULIC SYSTEM

### **⚠ WARNING**

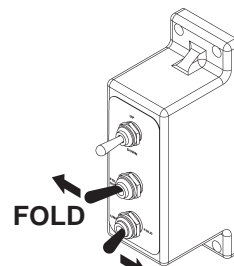
To prevent injury and equipment damage, pressurize Hydraulic System before removing Lower Support Fixtures and operating Liftgate.

1. To pressurize lifting cylinders, set control box toggle switches to **UP** for 10-15 seconds as shown in **FIG. 29-1**.



**CONTROL BOX**  
**FIG. 29-1**

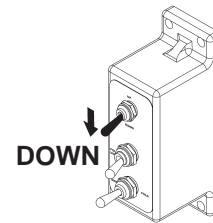
2. To pressurize closing cylinder, set control box toggle switches to **FOLD** for 10-15 seconds as shown in **FIG. 29-2**.



**CONTROL BOX**  
**FIG. 29-2**

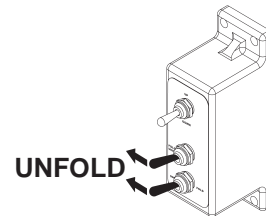
## STEP 12 - PRESSURIZE HYDRAULIC SYSTEM - Continued

3. Next, lower (**DOWN**) the platform (**FIG. 30-1**) about 6" using toggle switch settings shown in **FIG. 30-1**.



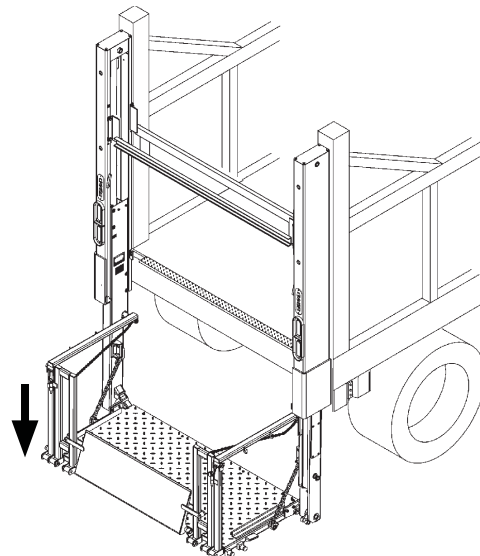
**CONTROL BOX  
FIG. 30-1**

4. Open (**UNFOLD**) the Platform by setting toggle switches as shown in **FIG. 30-2**.



**CONTROL BOX  
FIG. 30-2**

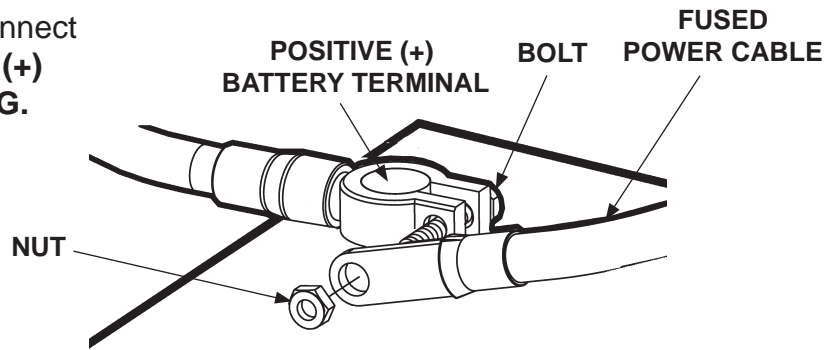
5. Lower (**DOWN**) the Platform (**FIG. 30-3**) to ground level using the toggle switch settings shown in **FIG. 30-1**. Continue to hold switches in position (**FIG. 30-2**) for 10-15 seconds after Platform reaches ground level. Make sure Hydraulic Fluid is at the correct level by doing the procedure on the next page.



**LOWERING PLATFORM  
FIG. 30-3**

## STEP 13 - FINISH WELDING LIFTGATE TO VEHICLE

1. Remove nut from positive (+) battery terminal connector. Disconnect power cable from the positive (+) battery terminal connector (**FIG. 31-1**).



**DISCONNECTING FUSED POWER CABLE  
FIG. 31-1**

# STEP 13 - FINISH WELDING LIFTGATE 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.

**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.

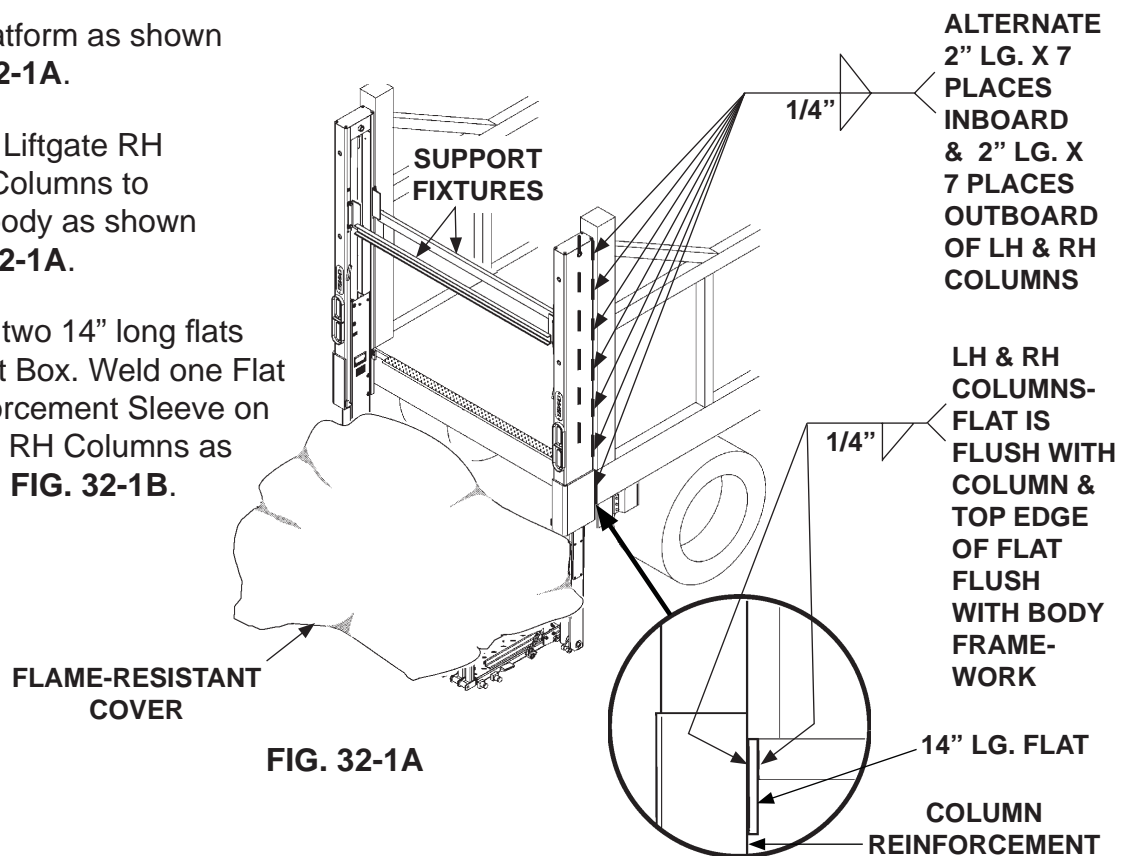
## ⚠ WARNING

Do not remove support fixtures before welding.

2. Cover platform as shown in **FIG. 32-1A**.

3. Weld the Liftgate RH and LH Columns to vehicle body as shown in **FIG. 32-1A**.

4. Also, get two 14" long flats from Part Box. Weld one Flat to Reinforcement Sleeve on the LH & RH Columns as shown in **FIG. 32-1B**.



WELDING FLAT ON COLUMN & VEHICLE  
FIG. 32-1B

# STEP 13 - FINISH WELDING LIFTGATE TO VEHICLE - Continued

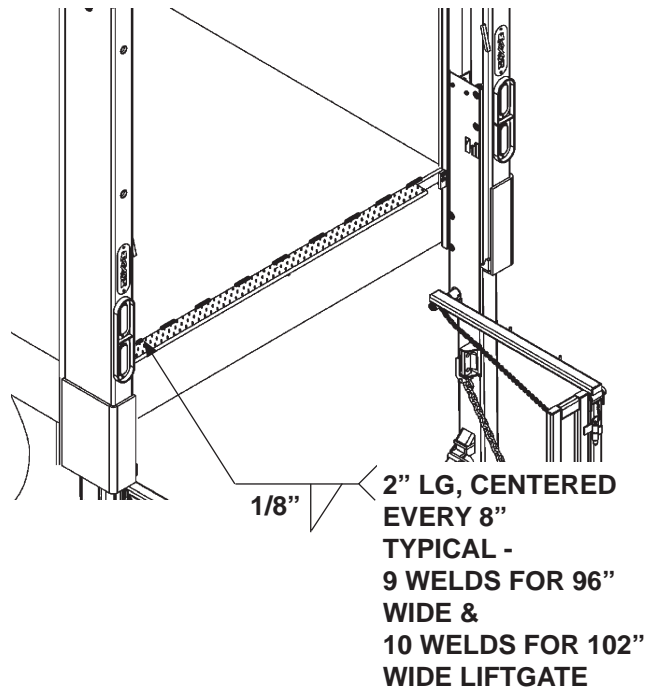
## CAUTION

To prevent damage to Liftgate components, welder ground must be connected to Liftgate Extension Plate.

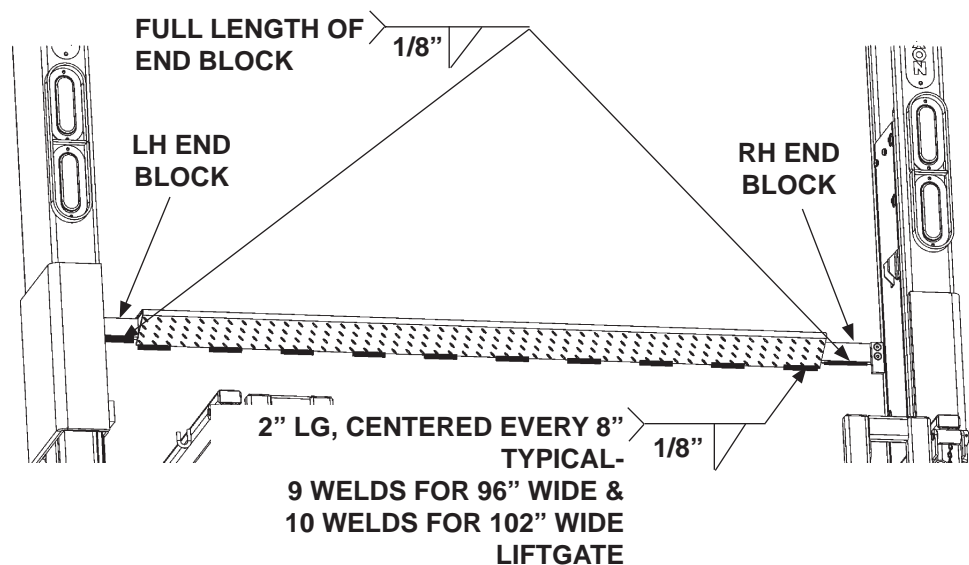
5. Make sure Platform is at ground level to provide access to the Extension Plate.

**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. 33-2**.

6. Weld the top and bottom surfaces of Extension Plate (**FIG. 33-1 & 33-2**) to Vehicle Body Sill with 2" long welds centered every 8".
7. Weld entire length (**FIG. 33-2**) on the bottom of LH and RH End Blocks.



**WELDING TOP OF EXTENSION PLATE  
FIG. 33-1**

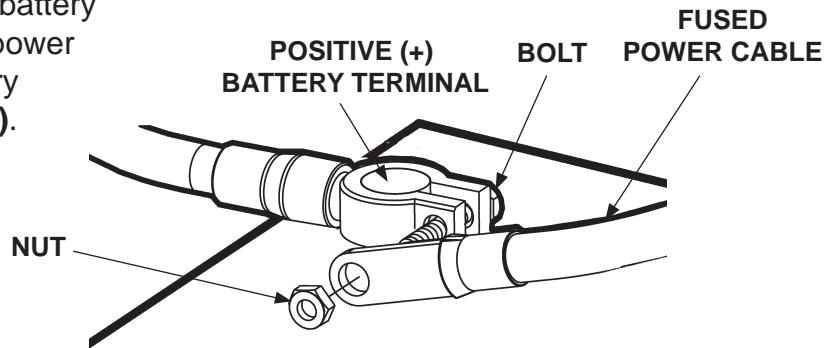


**WELDING BOTTOM OF EXTENSION PLATE  
FIG. 33-2**



## STEP 13 - FINISH WELDING LIFTGATE TO VEHICLE - Continued

8. Remove nut from positive (+) battery terminal connector. Connect power cable to the positive (+) battery terminal connector (**FIG. 34-1**). Reinstall and tighten nut.



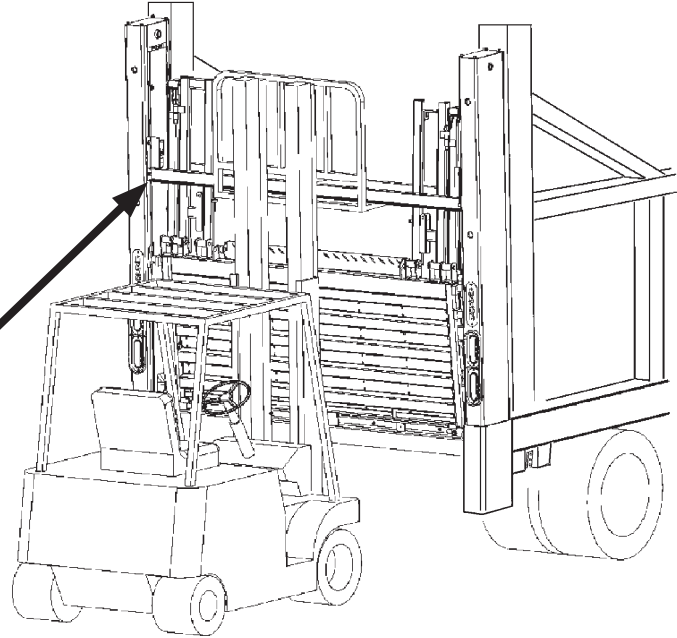
**CONNECTING FUSED POWER CABLE  
FIG. 34-1**

## STEP 14 - REMOVE UPPER SUPPORT FIXTURES

### ⚠ CAUTION

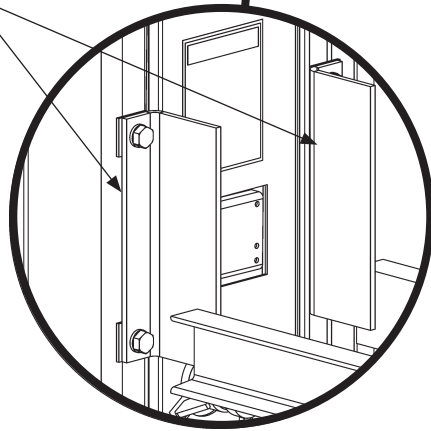
Upper support fixtures are heavy. To prevent injury to installer and damage to Liftgate, use forklift or hoist to hold support fixtures during removal.

1. Stow the platform as shown in **FIG. 35-1A**.
2. Position forklift or hoist to hold upper support fixtures as shown in **FIG. 35-1A**.
3. Unbolt the 2 upper support fixtures from the LH column (**FIGS. 35-1A and 35-1B**). Repeat for RH column. Remove upper support fixtures from work area.



**FIG. 35-1A**

UPPER SUPPORT  
FIXTURES



**FIG. 35-1B**

## 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.

1. Cut Decal "H" (FIG. 36-1) on dashed lines to make 2 pieces as shown in (FIG. 36-2). Peel backing from largest piece of decal and place it on **RUNNER** as shown in FIG. 36-3.
2. Peel backing from smallest piece of decal and place it on **COLUMN** as shown in FIG. 36-3.

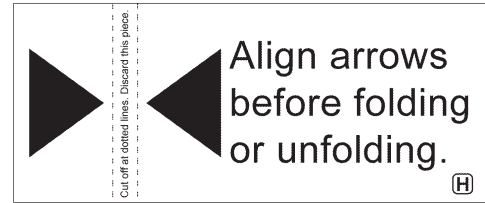


FIG. 36-1

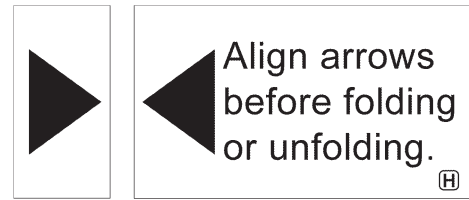


FIG. 36-2

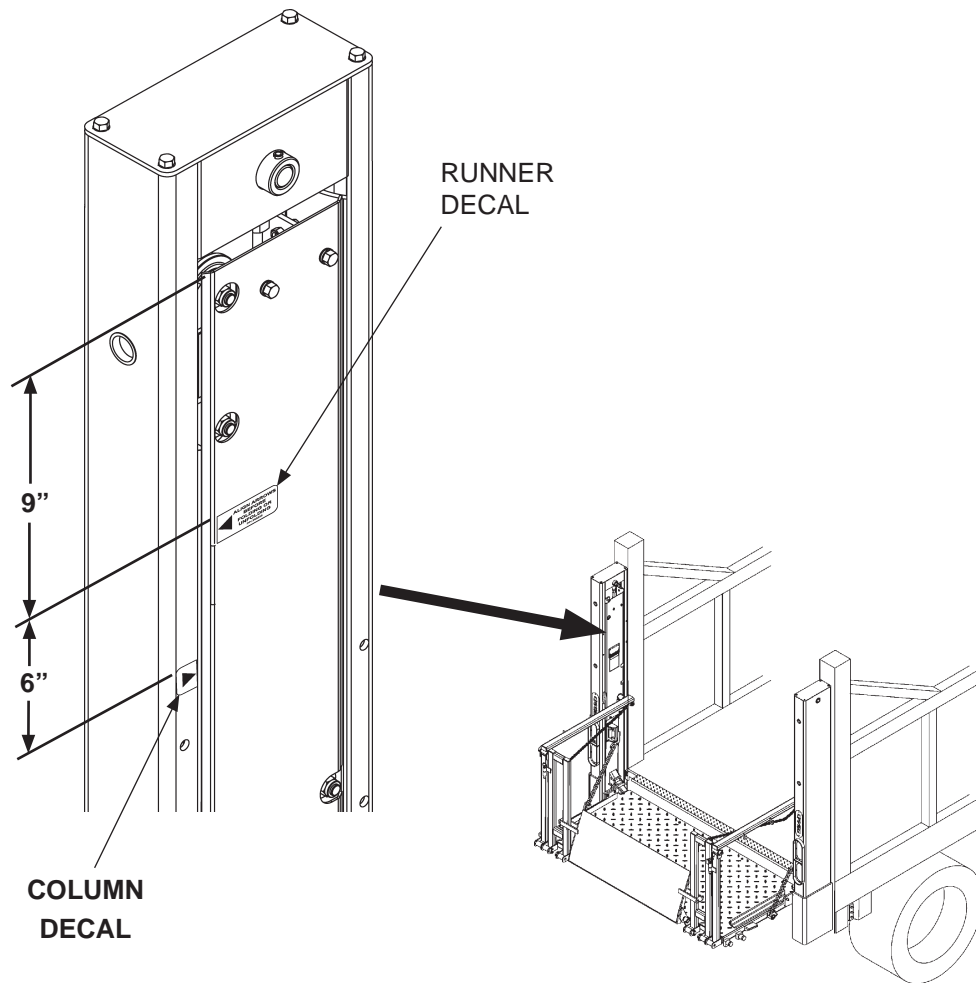


FIG. 36-3

# ATTACH DECALS



CAUTION DECAL (2 PLACES)  
P/N 266508-01

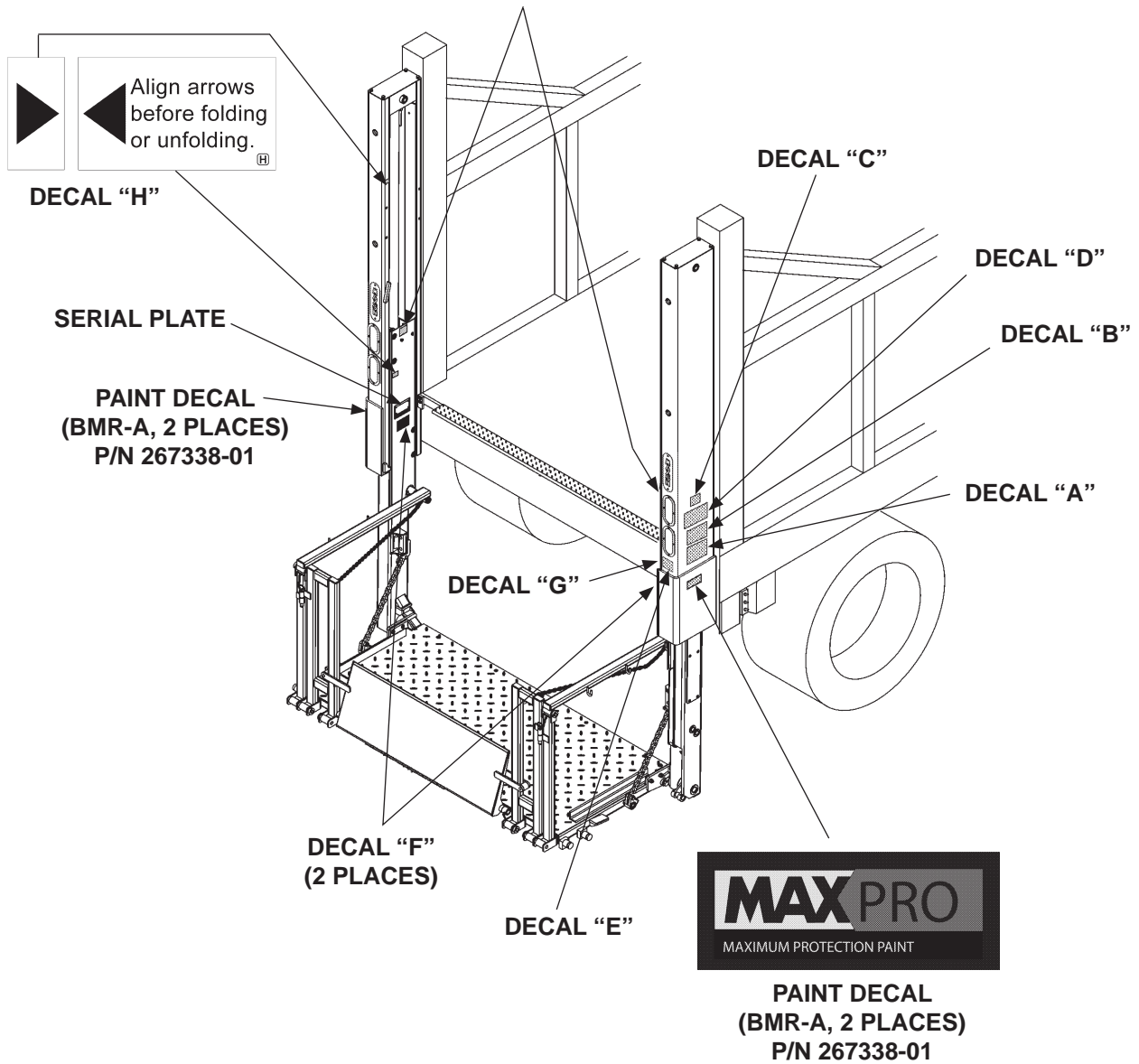


FIG. 37-1

# ATTACH DECALS - Continued

**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**

**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**

THE MAXIMUM CAPACITY  
OF THIS LIFT IS

\_\_\_\_\_ POUNDS

WHEN THE LOAD IS  
CENTERED ON THE LOAD  
CARRYING PLATFORM

**C**

(REFER TO TABLE 38-1)

**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.

**D**

Read and understand all instructions and WARNINGS before use.

**CAUTION**

Always stand clear of platform area.

**E**

**CAUTION**

Do not grease columns.

**F**

UP ↑

DOWN ↓

**G**

▶ ◀

Align arrows before folding or unfolding.

Cut off at dotted lines. Discard this piece.

**H**

**DECAL SHEET  
FIG. 38-1**

Model	DECAL SHEET P/N	DECAL "C"
BMRA-35 & BMRA35-CS	268309-01	3500 POUNDS
BMRA-44 & BMRA44-CS	268309-02	4400 POUNDS

**DECAL SHEET PART NUMBERS  
TABLE 38-1**

**FIG. 38-1**

38

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

# TOUCHUP PAINT

## CAUTION

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

If bare metal or primer is exposed on the painted portions of the Liftgate, touch up the paint. To maintain the protection provided by the original paint system, **MAXON** recommends aluminum primer touchup paint kit, P/N 908119-01.

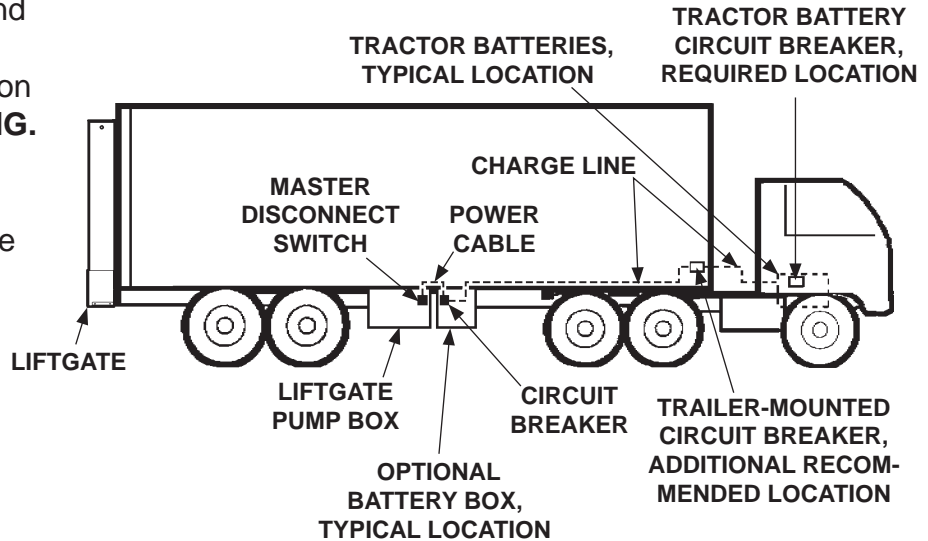
**MAXON**<sup>®</sup> 11921 Slauson Ave. Santa Fe Springs, CA. 90670 (800) 227-4116 FAX (888) 771-7713

# OPTIONS

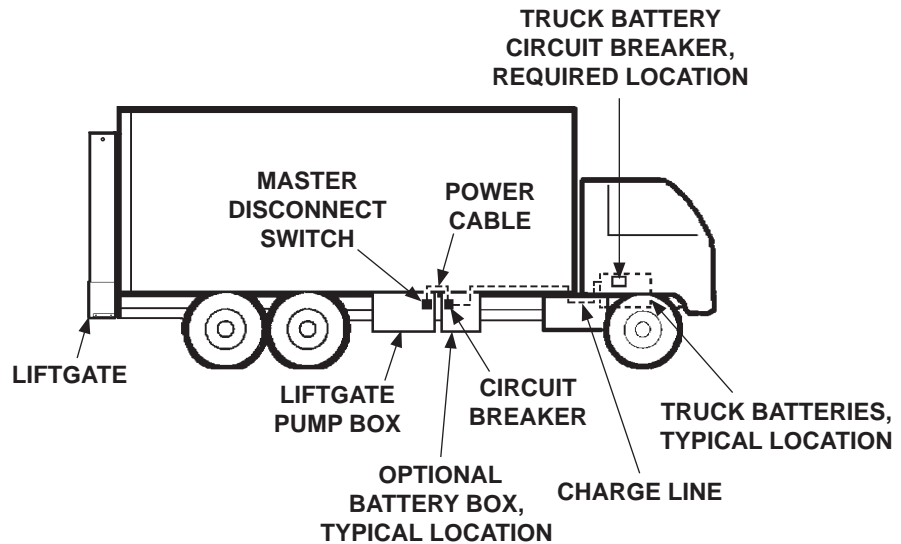
## RECOMMENDED LIFTGATE POWER CONFIGURATION

**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 additional battery box are typically installed on trailers as shown in **FIG. 40-1** and on trucks as shown in **FIG. 40-2**. See the following page for battery and cable connections.



**RECOMMENDED LIFTGATE & BATTERY BOX  
INSTALLATION ON TRAILER  
FIG. 40-1**



**RECOMMENDED LIFTGATE & BATTERY BOX  
INSTALLATION ON TRUCK  
FIG. 40-2**

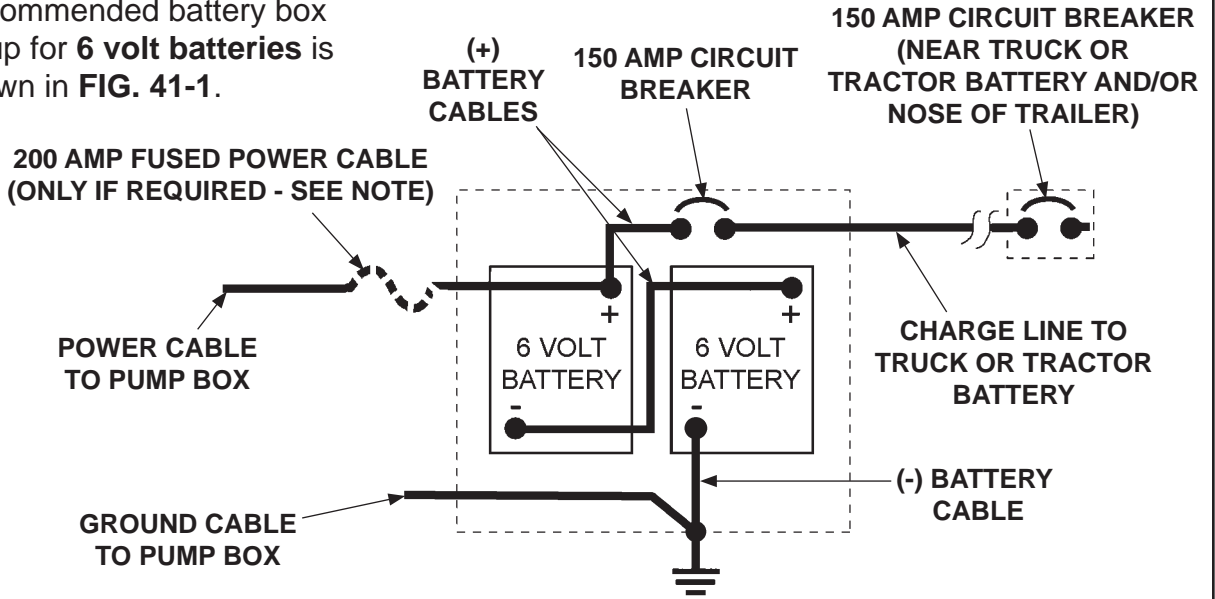


# OPTIONS

## RECOMMENDED LIFTGATE POWER CONFIGURATION - Continued

**NOTE:** Always connect fused end of power cable to battery positive (+) terminal.

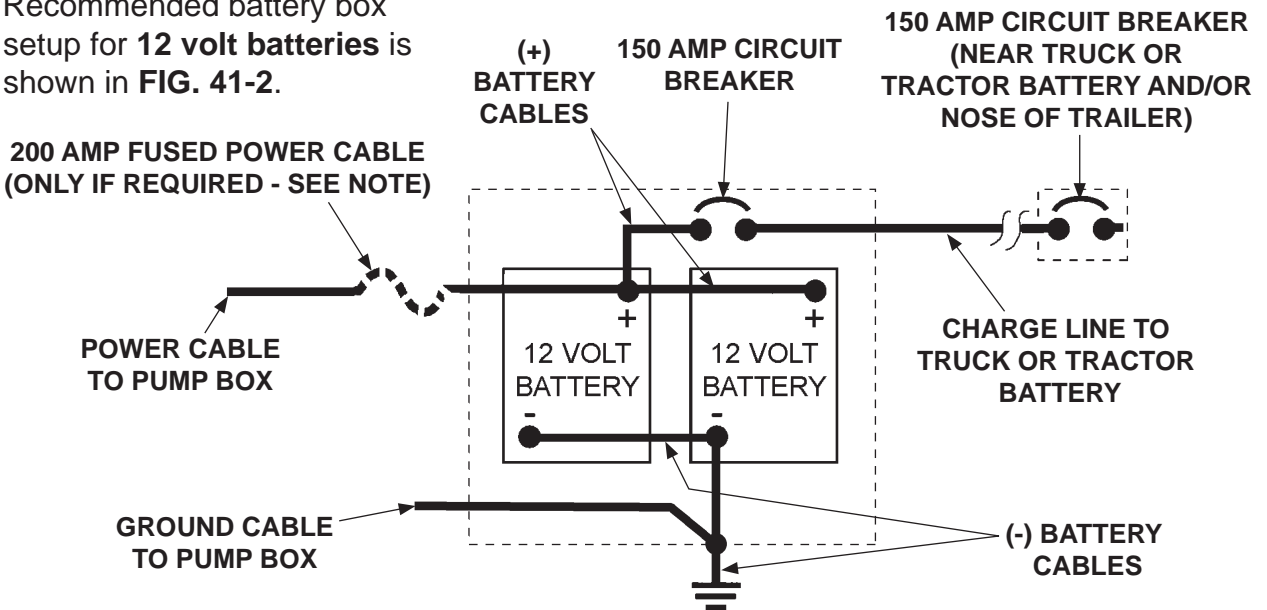
2. Recommended battery box setup for **6 volt batteries** is shown in **FIG. 41-1**.



**6 VOLT BATTERY CONNECTIONS**  
**FIG. 41-1**

**NOTE:** Always connect fused end of power cable to battery positive (+) terminal.

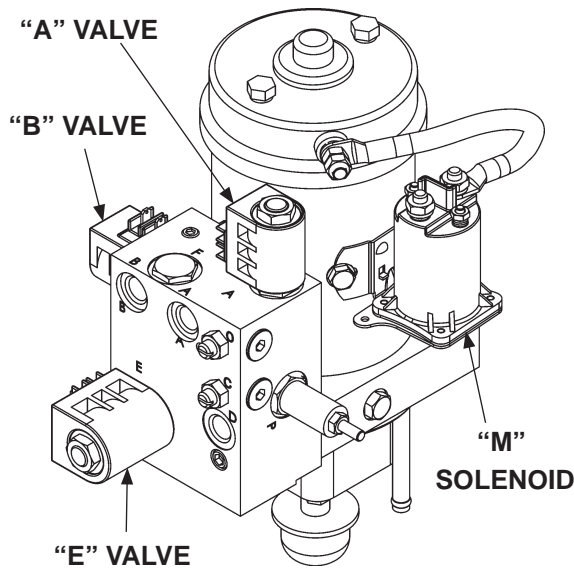
3. Recommended battery box setup for **12 volt batteries** is shown in **FIG. 41-2**.



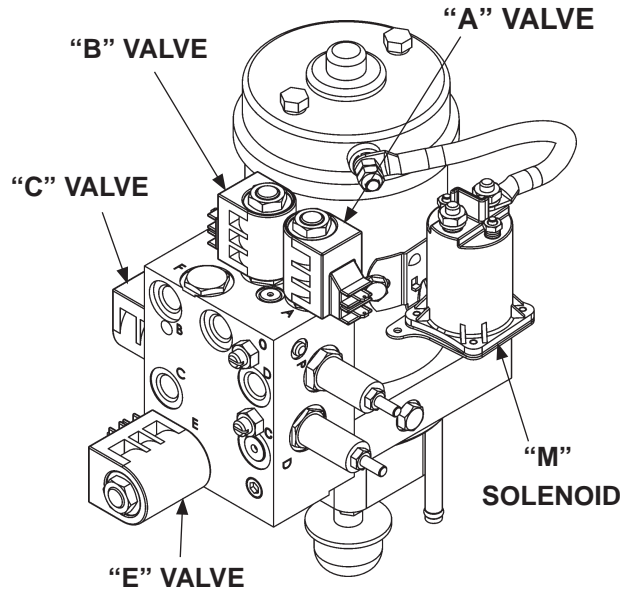
**12 VOLT BATTERY CONNECTIONS**  
**FIG. 41-2**

# HYDRAULIC SYSTEM DIAGRAMS

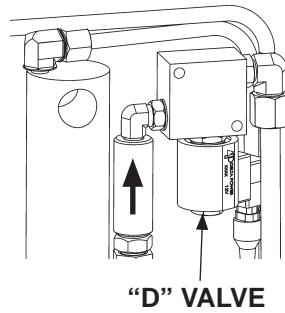
## PUMP & MOTOR SOLENOID OPERATION



**GRAVITY DOWN PUMP/MOTOR**  
**FIG. 42-1**



**POWER DOWN PUMP/MOTOR**  
**FIG. 42-2**



**"D" VALVES (TOP OF EACH COLUMN)**  
**FIG. 42-3**

SOLENOID OPERATION		
FUNCTION	SOLENOID ENERGIZED	ACTION
UP	M	Motor runs; Oil flows from "B" Port, thru Flow Divider, thru "D" Valves to Lift Cylinders.
DOWN	GRAVITY - B & D (FIG. 1 & 3)	"B & D" Valves open, allowing oil to return from Lift Cylinders to the Reservoir
	POWER - M,B,C,& D (FIG. 2 & 3)	Motor runs; "B,C,& D" Valves open, allowing oil to return from Lift Cylinders to Reservoir.
FOLD PLATFORM	M & E	Motor runs; "E" Valve shifts, Oil flows from Port "A" to the Folding Cylinder.
UNFOLD PLATFORM	A	"A" Valve opens, allowing oil to return from the Folding Cylinder to Reservoir.

**TABLE 42-1**

# HYDRAULIC SCHEMATIC, SINGLE PUMP GRAVITY DOWN

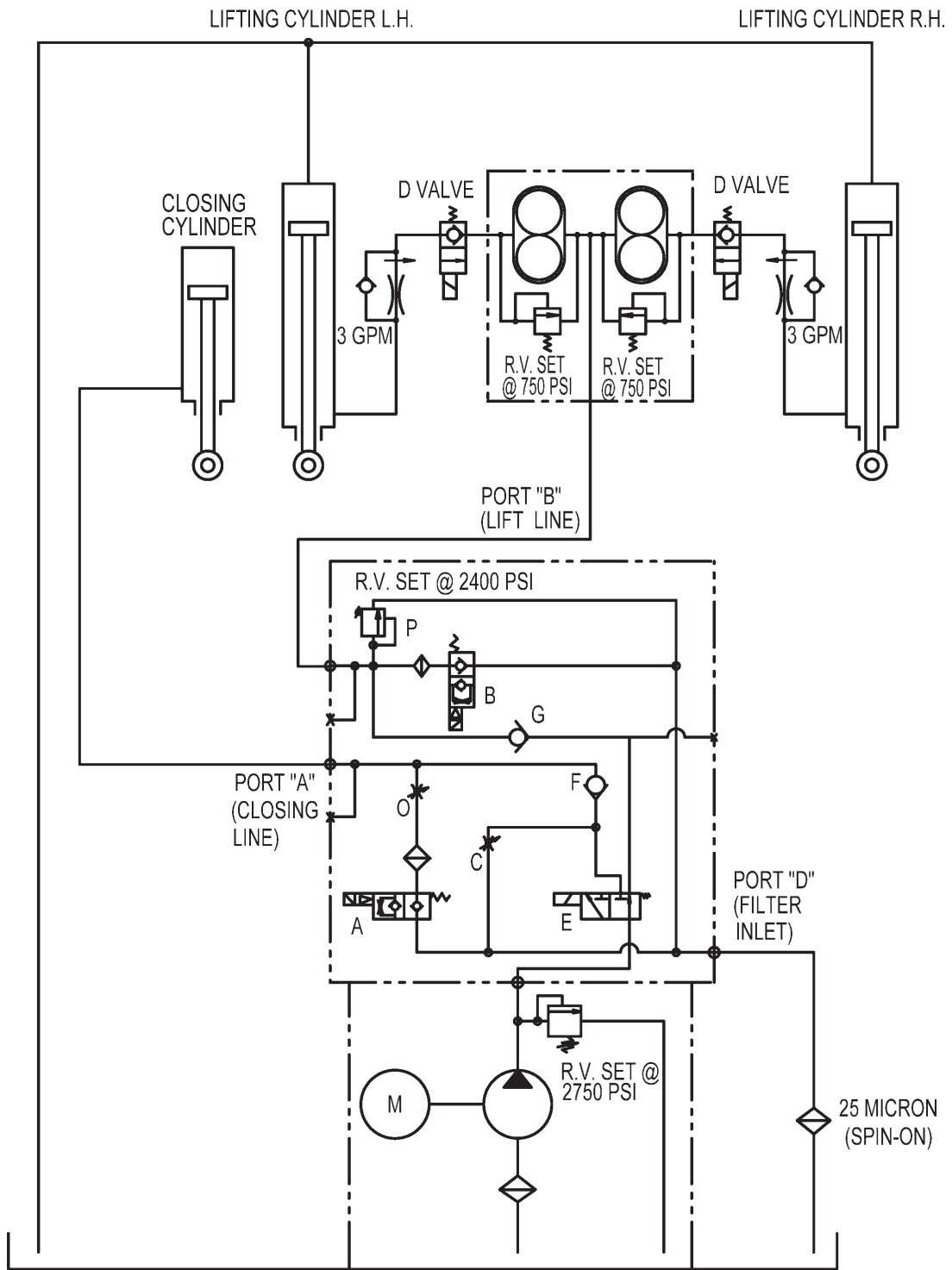


FIG. 43-1

# HYDRAULIC SCHEMATIC, DUAL PUMP GRAVITY DOWN

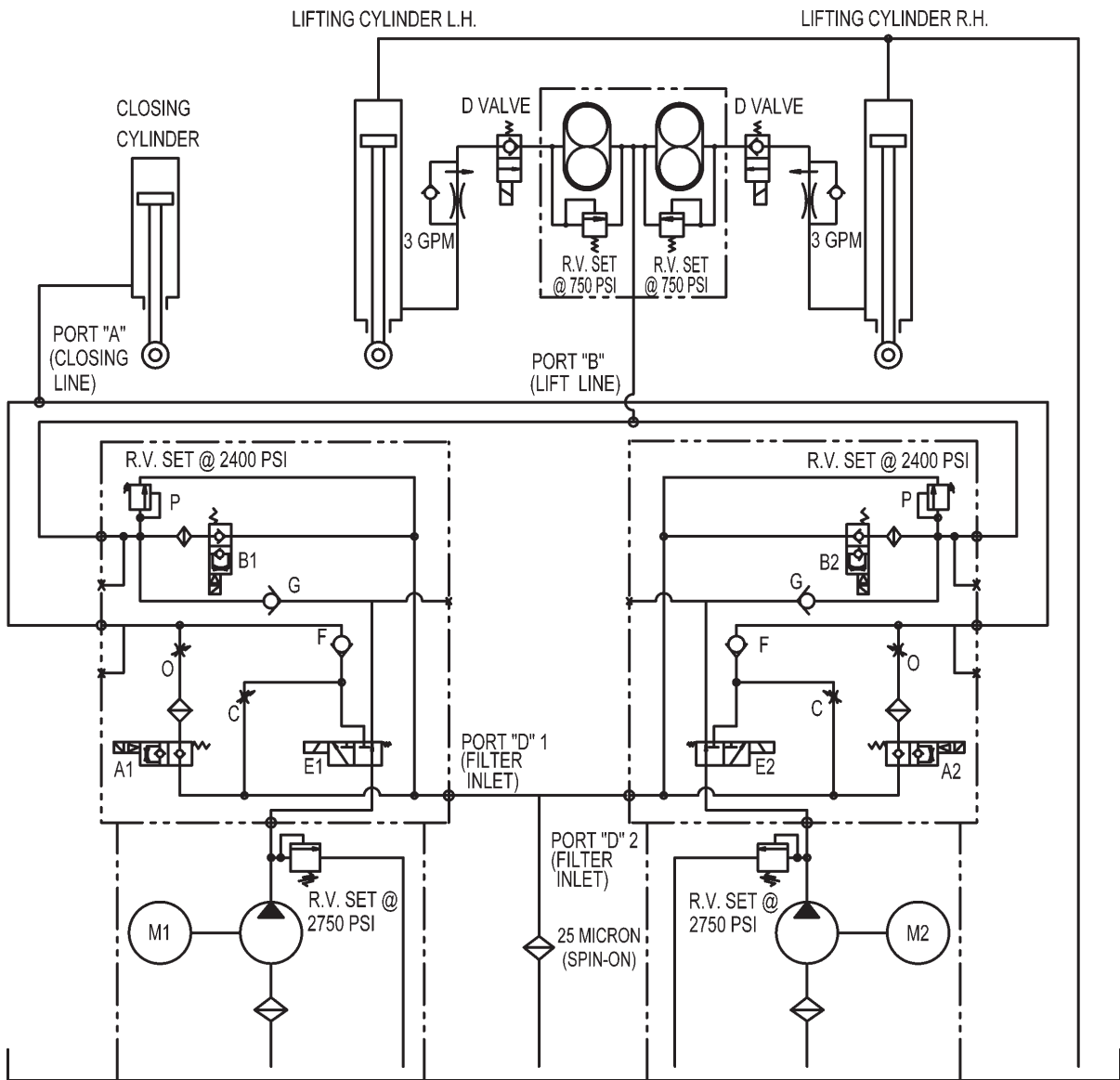


FIG. 44-1

# HYDRAULIC SCHEMATIC, SINGLE PUMP POWER DOWN

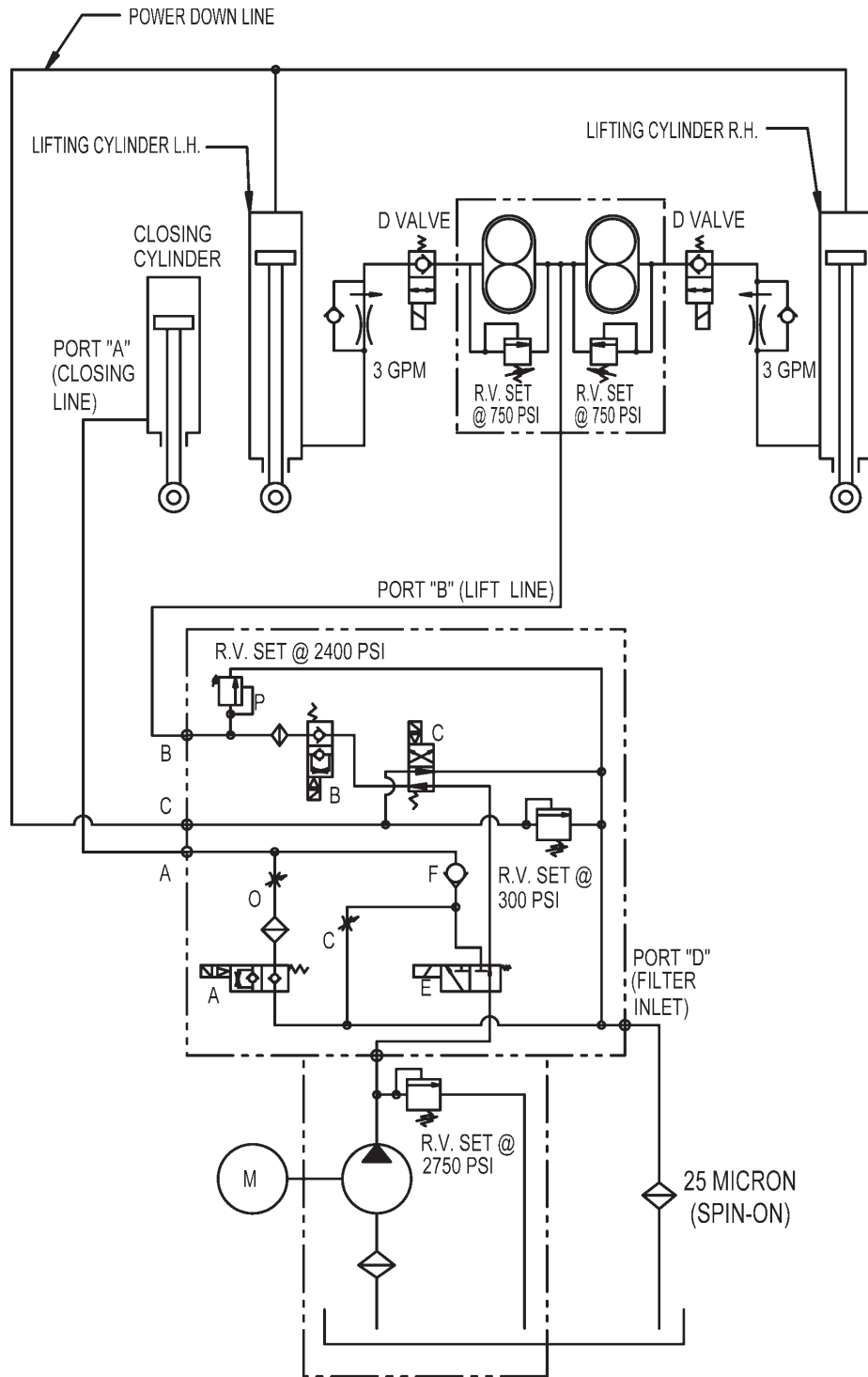


FIG. 45-1

# HYDRAULIC SCHEMATIC, DUAL PUMP POWER DOWN

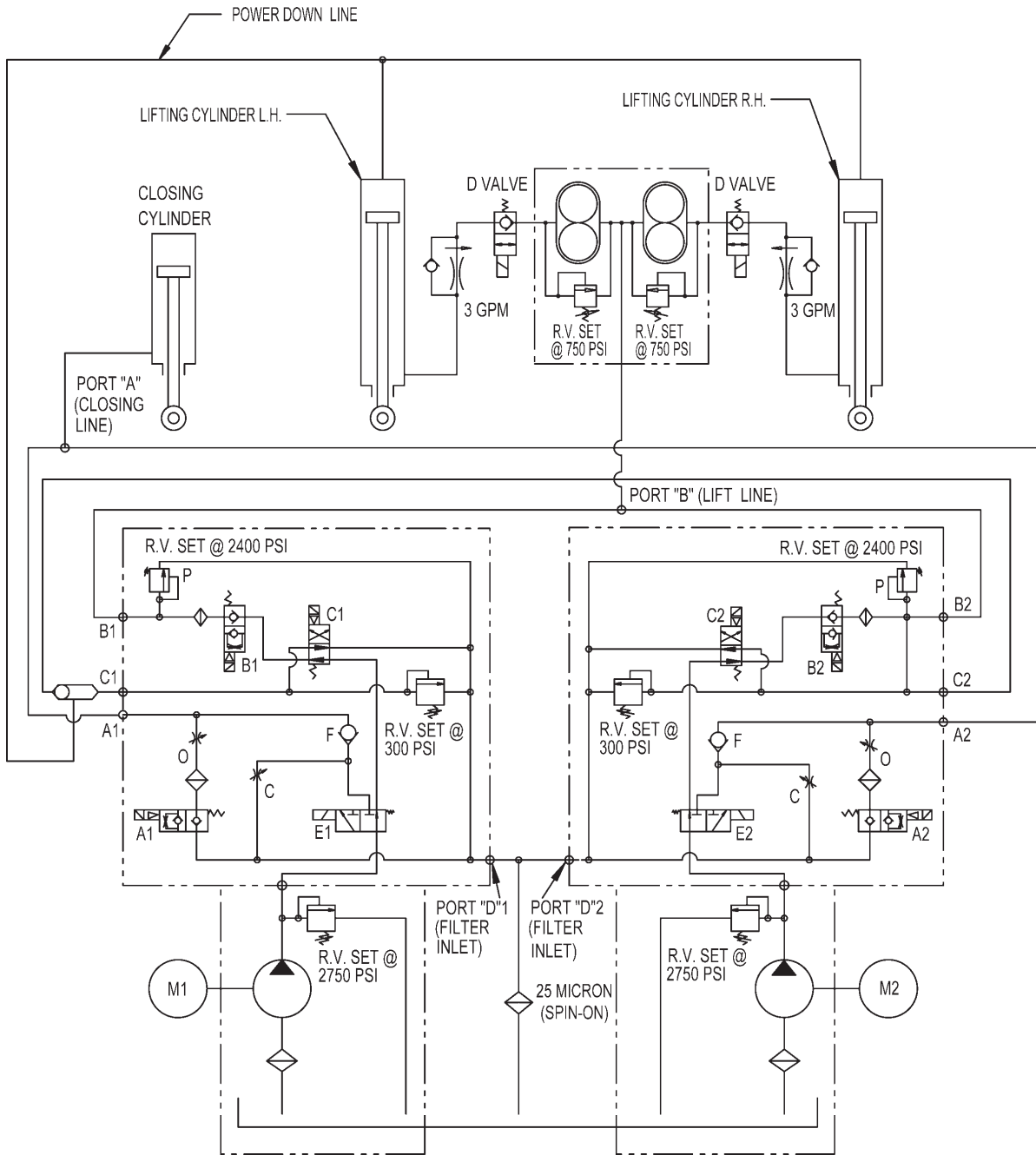
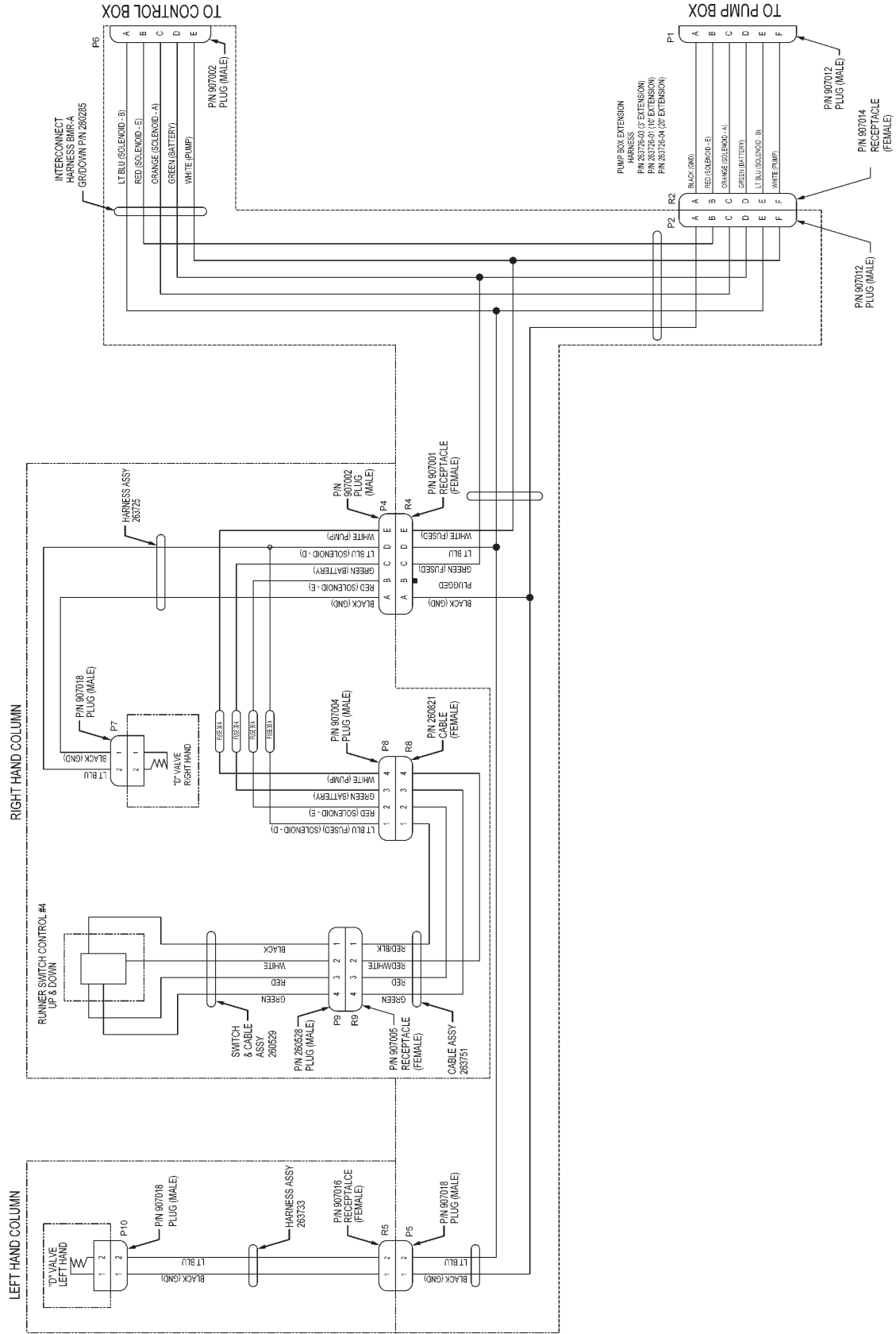


FIG. 46-1

# ELECTRICAL SYSTEM DIAGRAMS

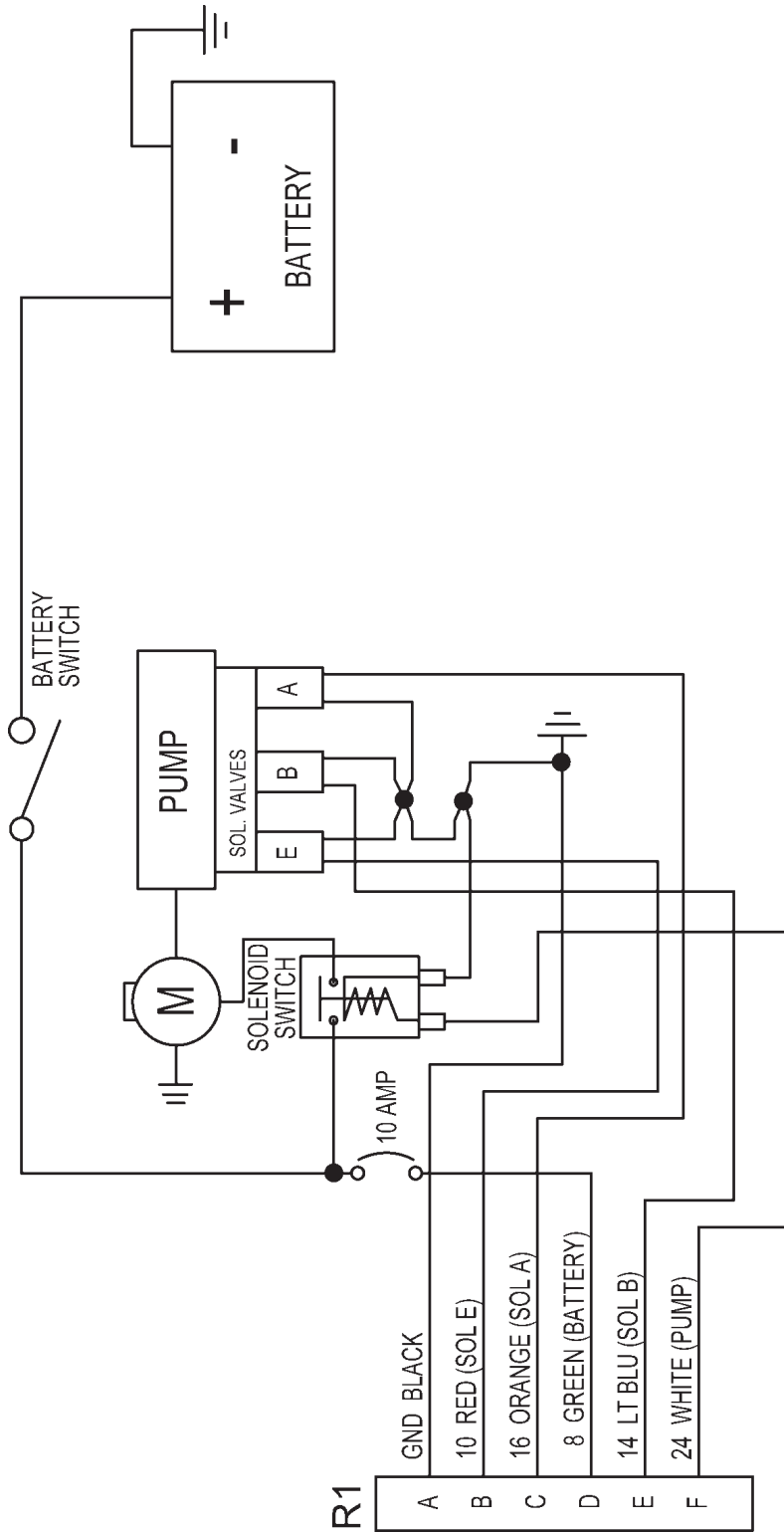
## WIRING SCHEMATIC, GRAVITY DOWN



**FIG. 47-1**



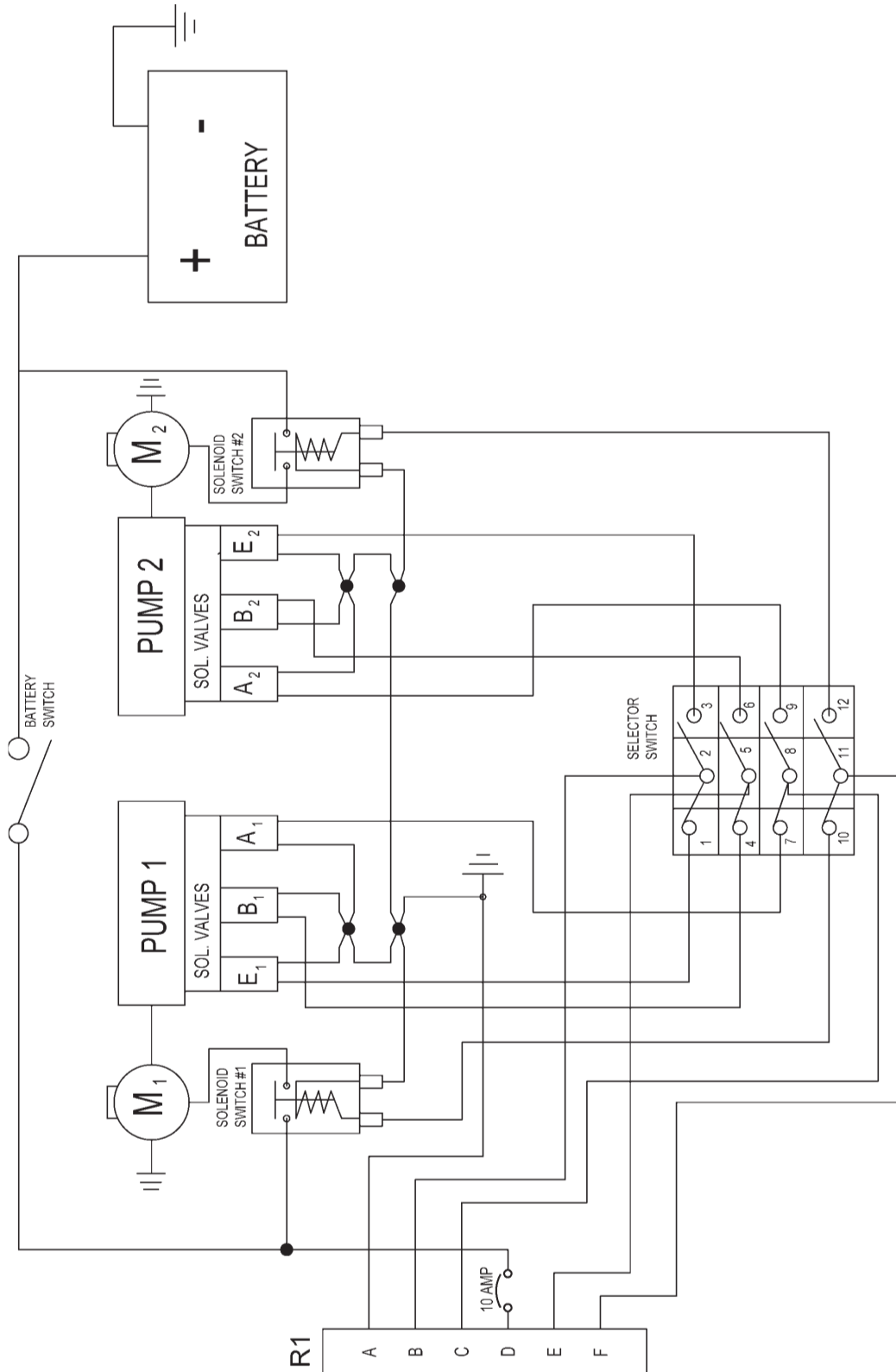
# SINGLE PUMP BOX, GRAVITY DOWN



(From Receptacle on pump box wall)

FIG. 48-1

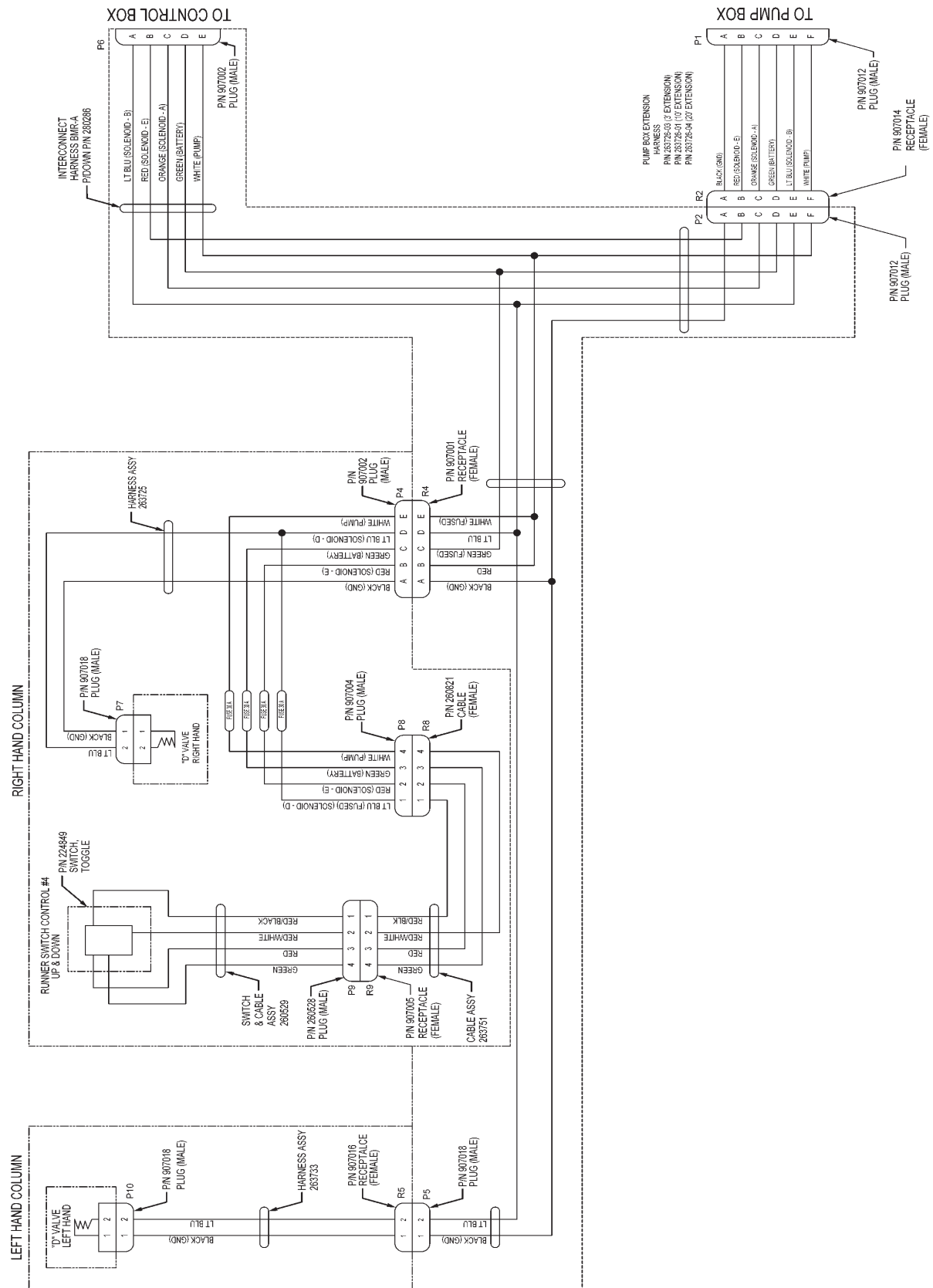
# DUAL PUMP BOX, GRAVITY DOWN



(From Receptacle on pump box wall)

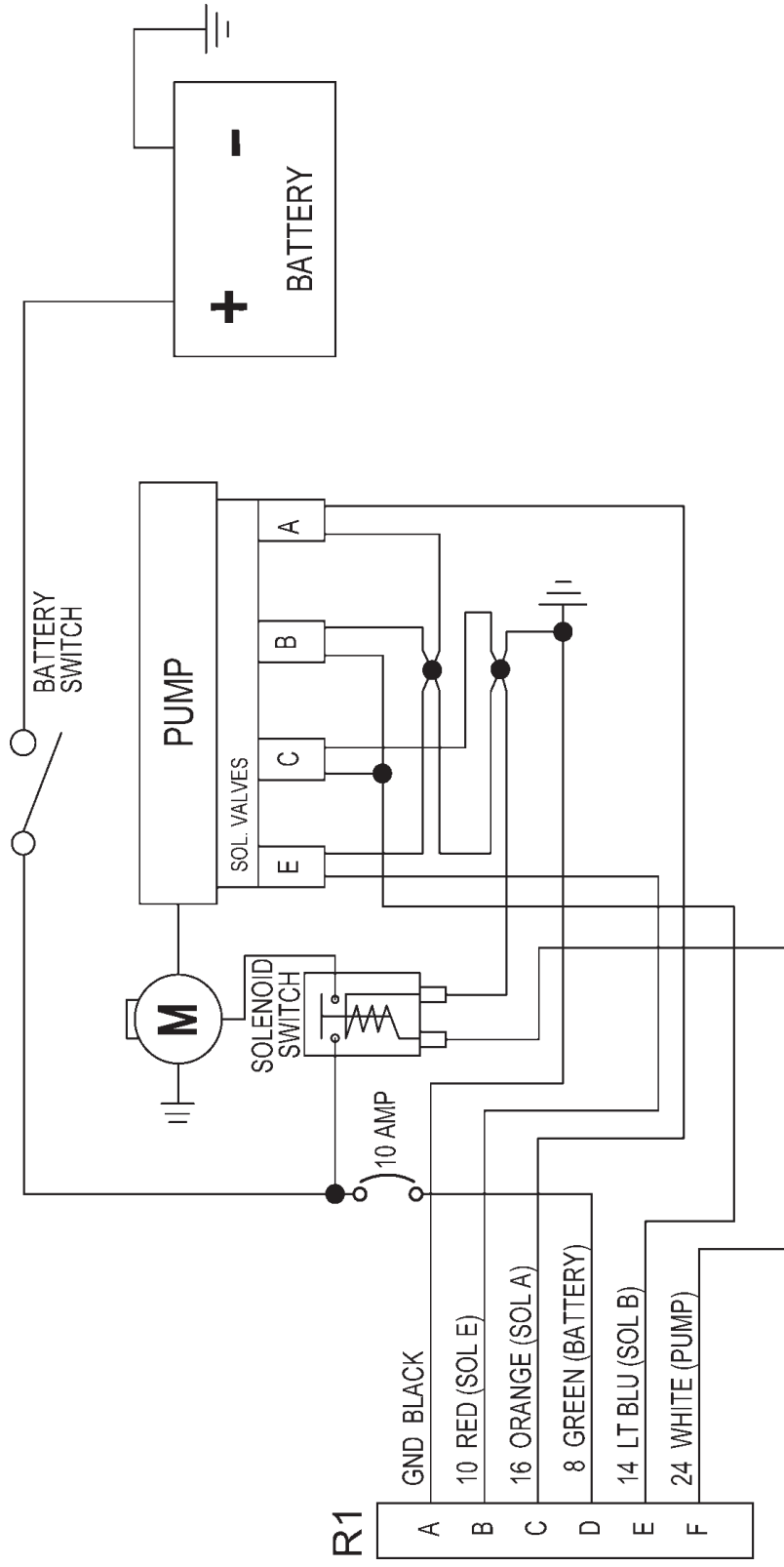
FIG. 49-1

# WIRING SCHEMATIC, POWER DOWN



**FIG. 50-1**

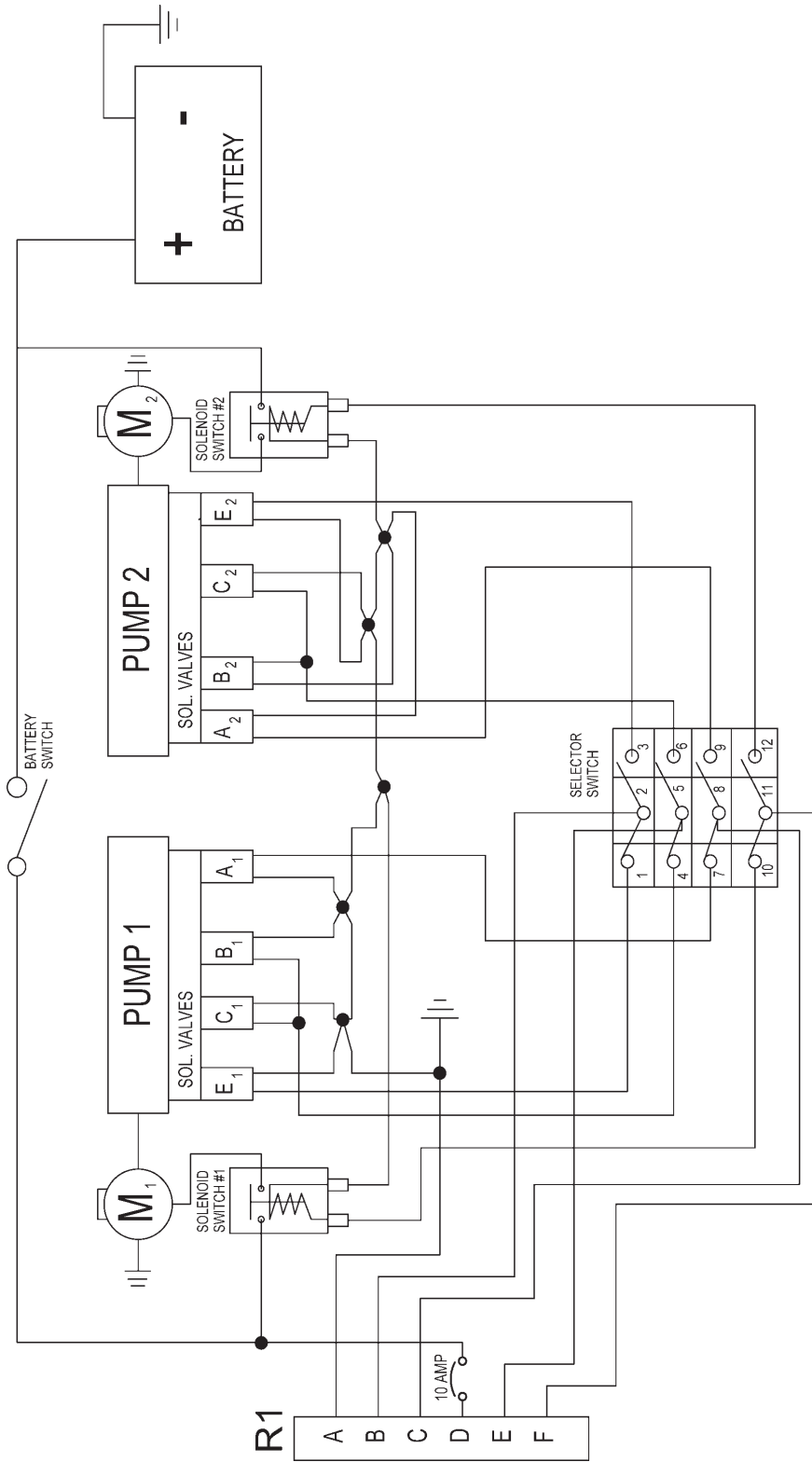
# SINGLE PUMP BOX, POWER DOWN



(From Receptacle on pump box wall)

FIG. 51-1

# DUAL PUMP BOX, POWER DOWN



(From Receptacle on pump box wall)  
**FIG. 52-1**

# MAXON<sup>®</sup>

## PRE-DELIVERY INSPECTION FORM BMR-A MODELS

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
- Check for Torsion Spring engagement
- Ensure Platform Ramp touches ground

### Hydraulic Inspection:

- Proper Fluid Level (See Manual)
- Check fittings for leaks in Pump Box
- Check fittings for leaks in Columns
- Check for chafing of Closing Cylinder Hose and Spring Guard

### Electrical Inspection:

- Check Power/Charge Plug and Terminal
- Check for loose wires and Terminals
- Circuit Breaker, Fittings
- Battery hookup, 6 Volt vs. 12 Volt
- Check for fully charged Batteries
- Inspect all Solenoid connections
- Check all wiring harness connections
- Outside Control Box location
- Wiring Harness connections (at the bottom of the curb-side Runner) tight and secure

### Operation Inspection:

**NOTE:** The following times are for 56" bed height, ISO 32 grade oil, & temperature at 70°F.

- Check operation of outside control
- Check operation of Runner control
- Platform unfolds in 4 to 7 seconds
- Platform folds in 4 to 7 seconds  
(See folding and unfolding speed adjustments in Maintenance Manual)
- Platform lowers in 20-40 seconds
- Platform raises in 15-26 seconds
- Platform raises and lowers evenly
- Platform stores and locks securely behind both Column Wedges
- Check lift operation under load
- Decals in correct location and legible

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