

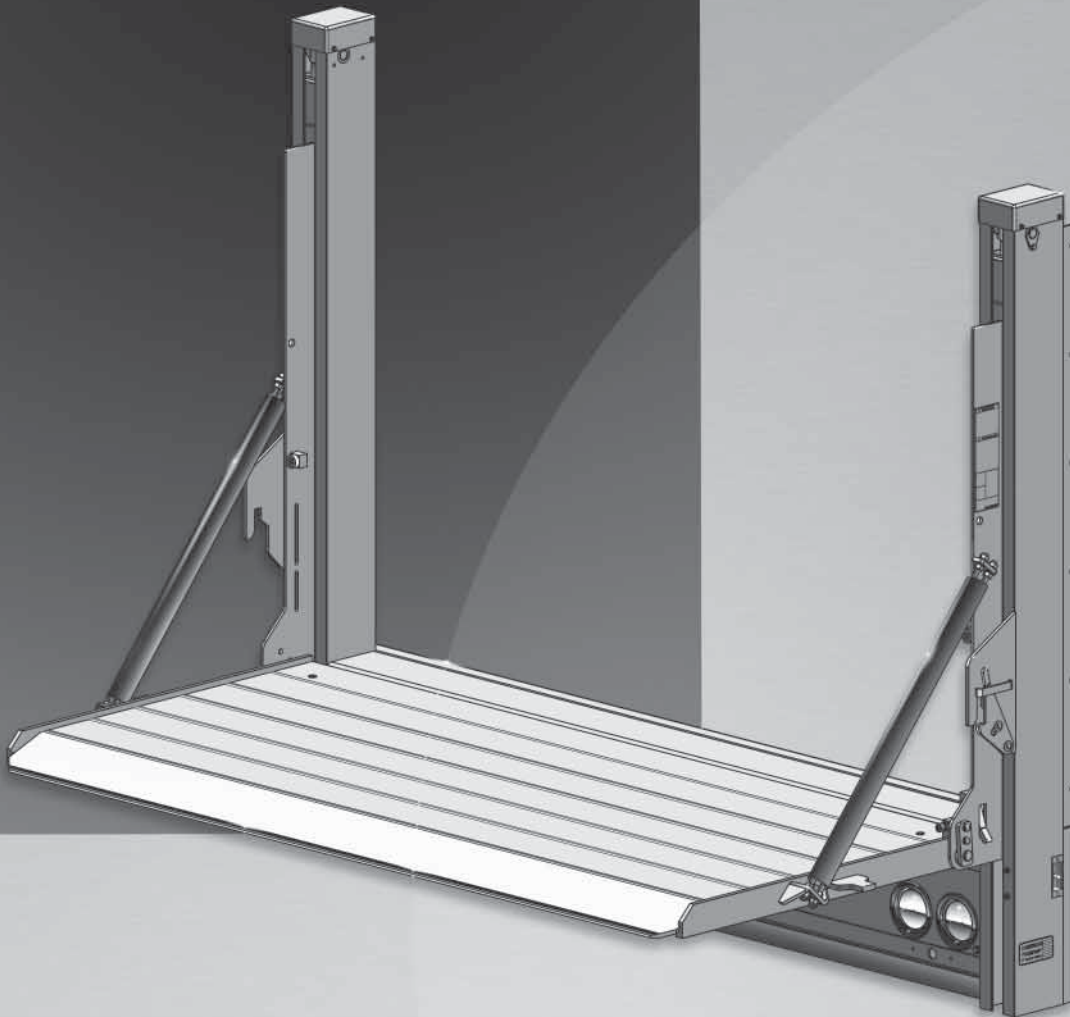
M-16-38
REV. A
FEBRUARY 2019



MAXON[®]

DMD Series

INSTALLATION MANUAL DMD-22 & DMD-33



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

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SUMMARY OF CHANGES: M-16-38 REVISION A

PAGE	DESCRIPTION OF CHANGE
COVER	Updated REV. and date of release.
18	Installation angle kit is provided with liftgate.
32	Added instruction to check for 1/4" gap between main frame housing and rear sill on the vehicle body.
35	Updated to show Operation decal with QR code.
36	Added decals and plates images with part numbers. Added Parts QR Code decal and Maxon 24/7 Support decal.
39, 40	Added illustrations for 12V and 24V power connections.
42	Updated pump motor and valve operation (w/hydraulic closer) FIG. 42-1, to show 5-pin relay.
43, 44	Hydraulic schematics revised to show master cylinder on curb side and slave cylinder on street side. Master cylinder flow control valve rate changed to 2 GPM.
45, 46	Electrical schematics updated to show 12V or 24V truck battery.
52	Updated options table includes hand-held and street side controllers for hydraulic closer, and back-up sensor kits.
53	Added DMD Pre-Delivery Inspection Form.

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.
- Recommended practices for welding galvanized steel are contained in the current **AWS (American Welding Society) D19.0 Welding Zinc-Coated Steel**. Damage to Liftgate and/or vehicle, and personal injury can result from welds that are done incorrectly.

SAFETY INSTRUCTIONS

- Read and understand the instructions in this **Installation Manual** before installing Liftgate.
- Before operating the Liftgate, read and understand the operating instructions in **Operation Manual**.
- Comply with all **WARNING** and instruction decals attached to the Liftgate.
- Keep decals clean and legible. If decals are illegible or missing, replace them. Free replacement decals are available from **Maxon Customer Service**.
- Consider the safety and location of bystanders and location of nearby objects when operating the Liftgate. Stand to one side of the platform while operating the Liftgate.
- Do not allow untrained persons to operate the Liftgate.
- Wear appropriate safety equipment such as protective eyeglasses, faceshield and clothing while performing maintenance on the Liftgate and handling the battery. Debris from drilling and contact with battery acid may injure unprotected eyes and skin.
- Be careful working by an automotive type battery. Make sure the work area is well ventilated and there are no flames or sparks near the battery. Never lay objects on the battery that can short the terminals together. If battery acid gets in your eyes, immediately seek first aid. If acid gets on your skin, immediately wash it off with soap and water.
- If an emergency situation arises (vehicle or Liftgate) while operating the Liftgate, release the control switch to stop the Liftgate.
- A correctly installed Liftgate operates smoothly and reasonably quiet. The only noticeable noise during operation comes from the power unit while the platform is raised and lowered. Listen for scraping, grating and binding noises and correct the problem before continuing to operate Liftgate.

NOTICE

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

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 **54" (Unloaded)**. Minimum is **30" (Loaded)**. Do not install this Liftgate on vehicle bodies equipped with swing open doors.

The DMD is a body-mounted Liftgate that puts forces on the side walls of truck bodies (**FIG. 7-1**). For correct installation, truck 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

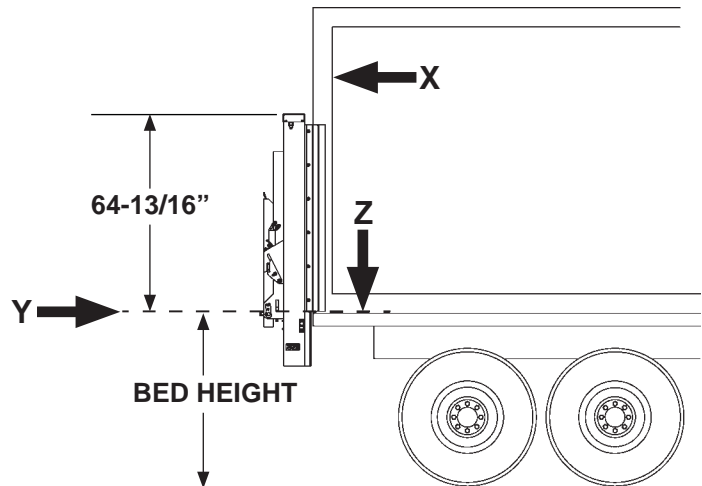


FIG. 7-1

VEHICLE REQUIREMENTS - Continued BODY STRENGTH - Continued

DMD-22 FORCES

		96" WIDE		102" WIDE	
MODEL CAPACITY	P/F SIZE	(X) (Y) LB	(Z) LB	(X) (Y) LB	(Z) LB
2200 LB	36	606	2958	610	2982
	42	685	2980	692	3009
	48	767	3005	774	3032
	54	848	3026	857	3056
	60	932	3051	942	3083
	72	1103	3098	1117	3136

TABLE 8-1

DMD-33 FORCES

		96" WIDE		102" WIDE	
MODEL CAPACITY	P/F SIZE	(X) (Y) LB	(Z) LB	(X) (Y) LB	(Z) LB
3300 LB	36	831	4058	831	4037
	42	938	4080	938	4058
	48	1047	4105	1047	4081
	54	1157	4126	1157	4096
	60	1269	4151	1269	4121
	72	1495	4198	1495	4168

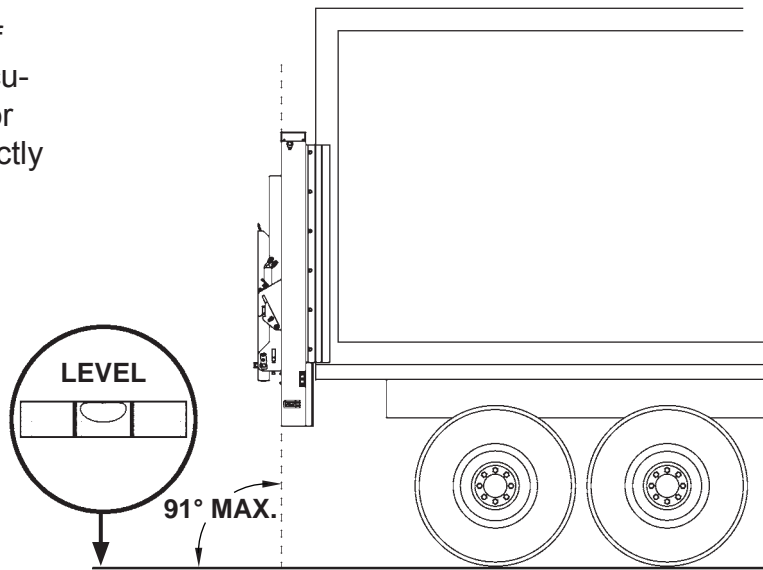
TABLE 8-2

VEHICLE REQUIREMENTS - Continued

INSTALLED LIFTGATE

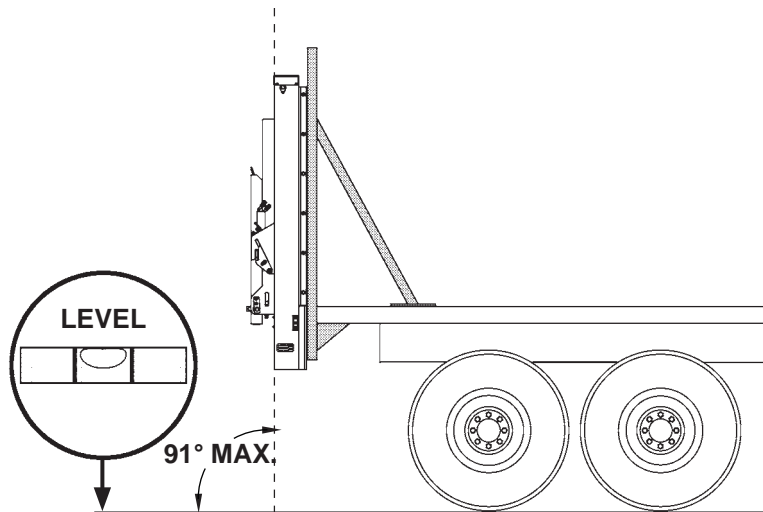
NOTE: If Liftgate columns exceed a 91 degree angle from level ground when installed on body, or if columns cannot be mounted flush against rear of vehicle, a steel filler may be used to bridge gap between vehicle body and Liftgate columns. Make sure the added materials and welds meet the **BODY STRENGTH**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

1. With the vehicle parked on level ground, the columns of the DMD 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

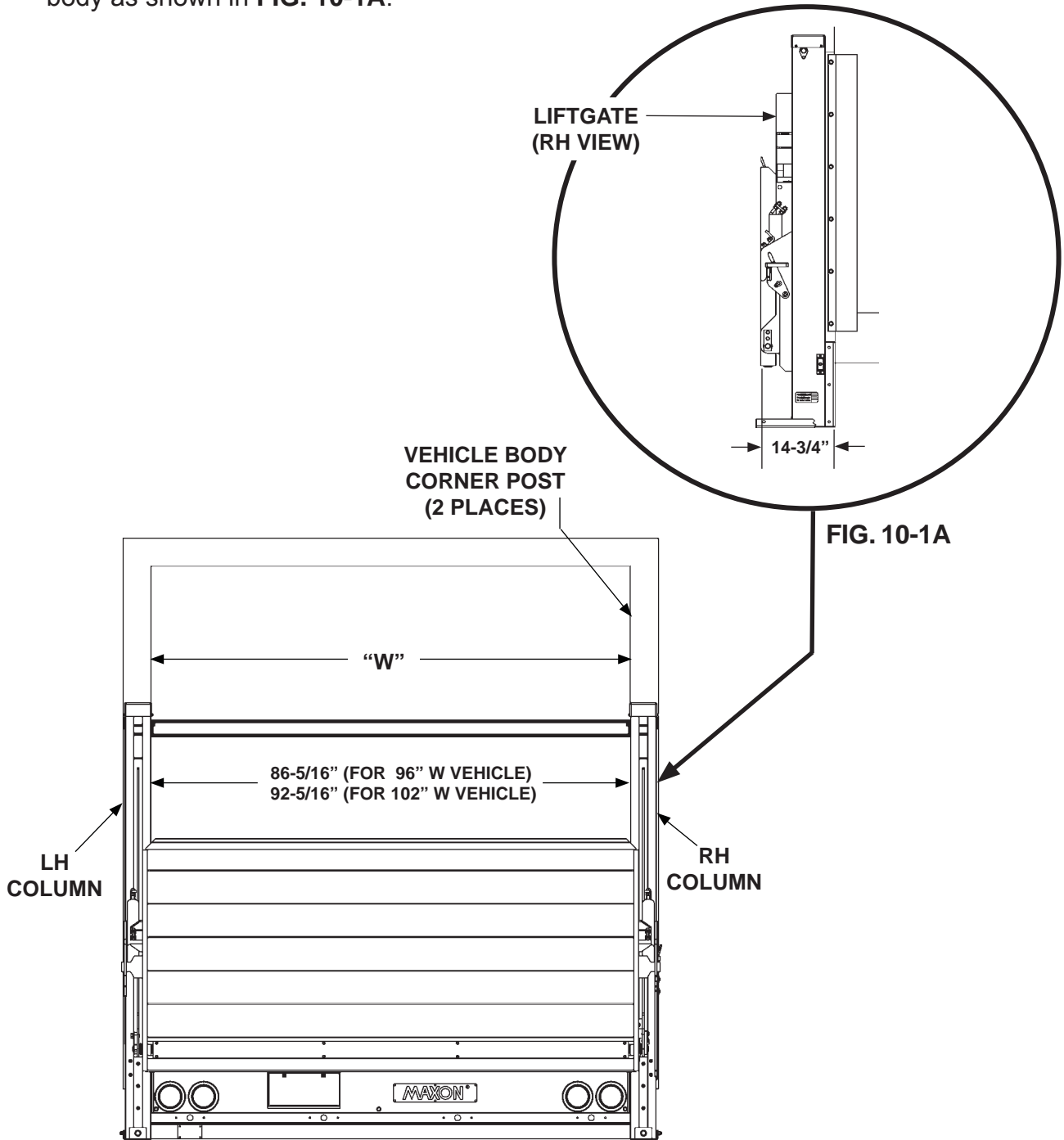


LIFTGATE INSTALLED ON FLAT BED (COLUMNS & SUPPORTS SHOWN PERPENDICULAR TO LEVEL GROUND)

FIG. 9-2

VEHICLE REQUIREMENTS - Continued

2. With Liftgate centered on vehicle body, each column should fit on the corner posts of vehicle body with little or no offset (**FIG. 10-1**). Some offset from corner posts is allowed on the inboard side of the columns. Liftgate in stow position extends behind vehicle body as shown in **FIG. 10-1A**.



**LIFTGATE COLUMNS FITTED TO BODY CORNER POSTS WITH LITTLE OR NO OFFSET
FIG. 10-1**

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LIFTGATE INSTALLATION COMPONENTS

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

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

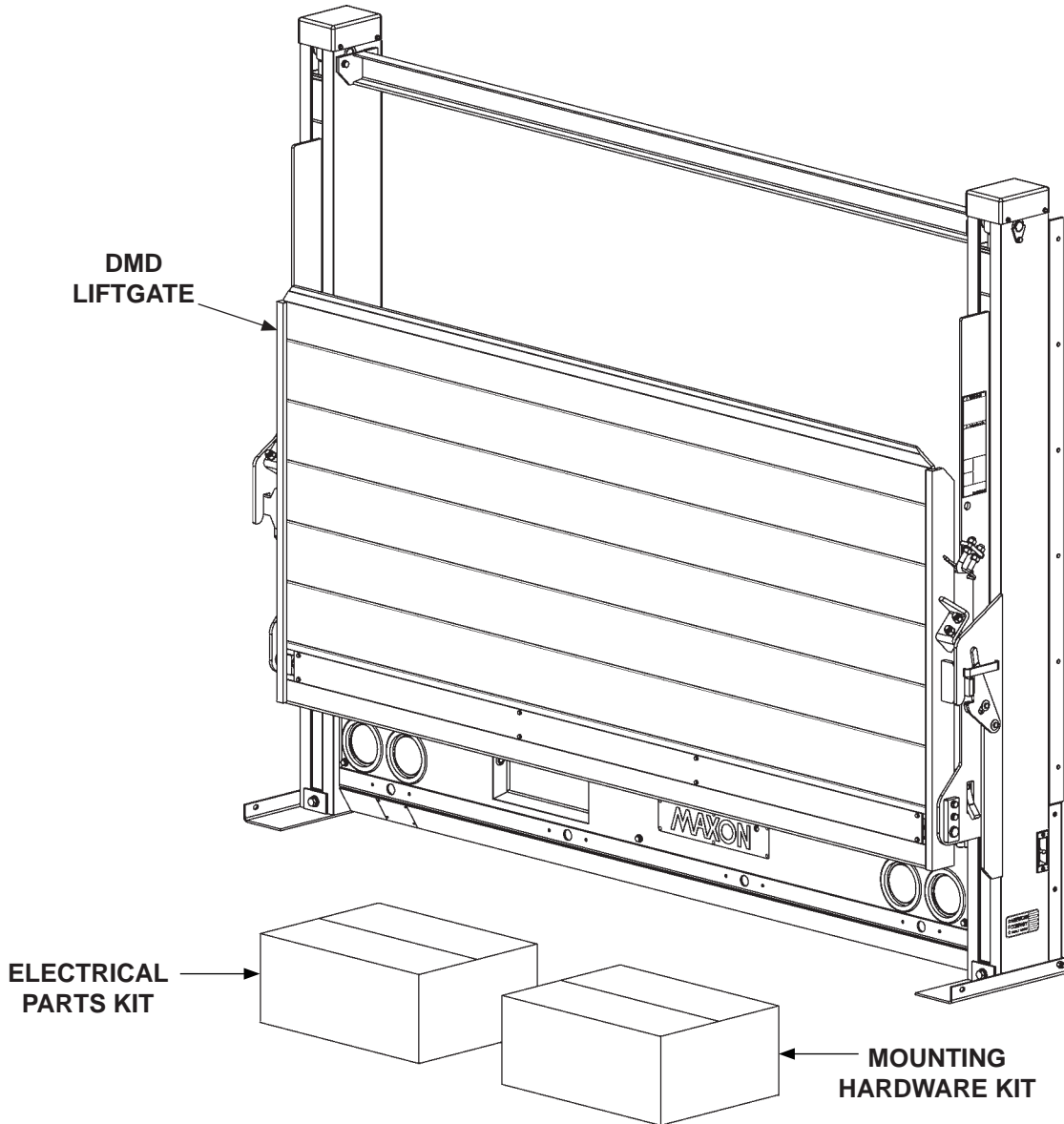


FIG. 11-1

INSTALLATION & MANUALS KITS

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

ITEM	NOMENCLATURE OR DESCRIPTION	QTY	PART NUMBER
REF	DMD MOUNTING HARDWARE KIT	1	298881-01
1	FLANGE LOCK NUT, 3/8"-16	12	901023-03
2	HEX CAP SCREW, 3/8"-16 X 4" LG, GRADE 8	12	900014-14
3	THIN HEAD, LOCKING HEX NUT, 3/8"-16	12	901016-4
4	FLAT WASHER, 3/8", GRADE 8	12	903442-03

TABLE 12-1

ITEM	NOMENCLATURE OR DESCRIPTION	QTY	PART NUMBER
REF	DMD ELECTRICAL PARTS KIT	1	298882-01
1	CABLE ASSEMBLY, 2 GA, 5/16", 3/8" RING, 74" LG.	1	268226-06
2	COPPER LUG, 2 GA, 5/16"	2	906497-02
3	CABLE ASSEMBLY, 2 GA, RED, 5/16", 1/4" RING, 35' LG.	1	295968-04
4	CAP SCREW, 5/16"-18 X 1" LG., GRADE 8	1	900009-2
5	HEX HEAD NUT, 5/16"-18	1	901011-3
6	FLAT WASHER, 5/16", 1/16" THICK	1	902000-8
7	EXT. TOOTH WASHER, 5/16" I.D.	1	903429-01
8	SPRING CLIP	8	050079
9	CIRCUIT BREAKER, 150 AMP	1	907207-01
10	JUMPER, BATTERY CIRCUIT BREAKER	1	295967-01

TABLE 12-2

ITEM	NOMENCLATURE OR DESCRIPTION	QTY	PART NUMBER
REF	DMD MANUALS KIT	1	298884-01
1	INSTALLATION MANUAL	1	M-16-38
2	OPERATION MANUAL	1	M-16-39
3	DECAL, MAXON 24/7 SPRT, OPER	1	298634-01

TABLE 12-3

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.

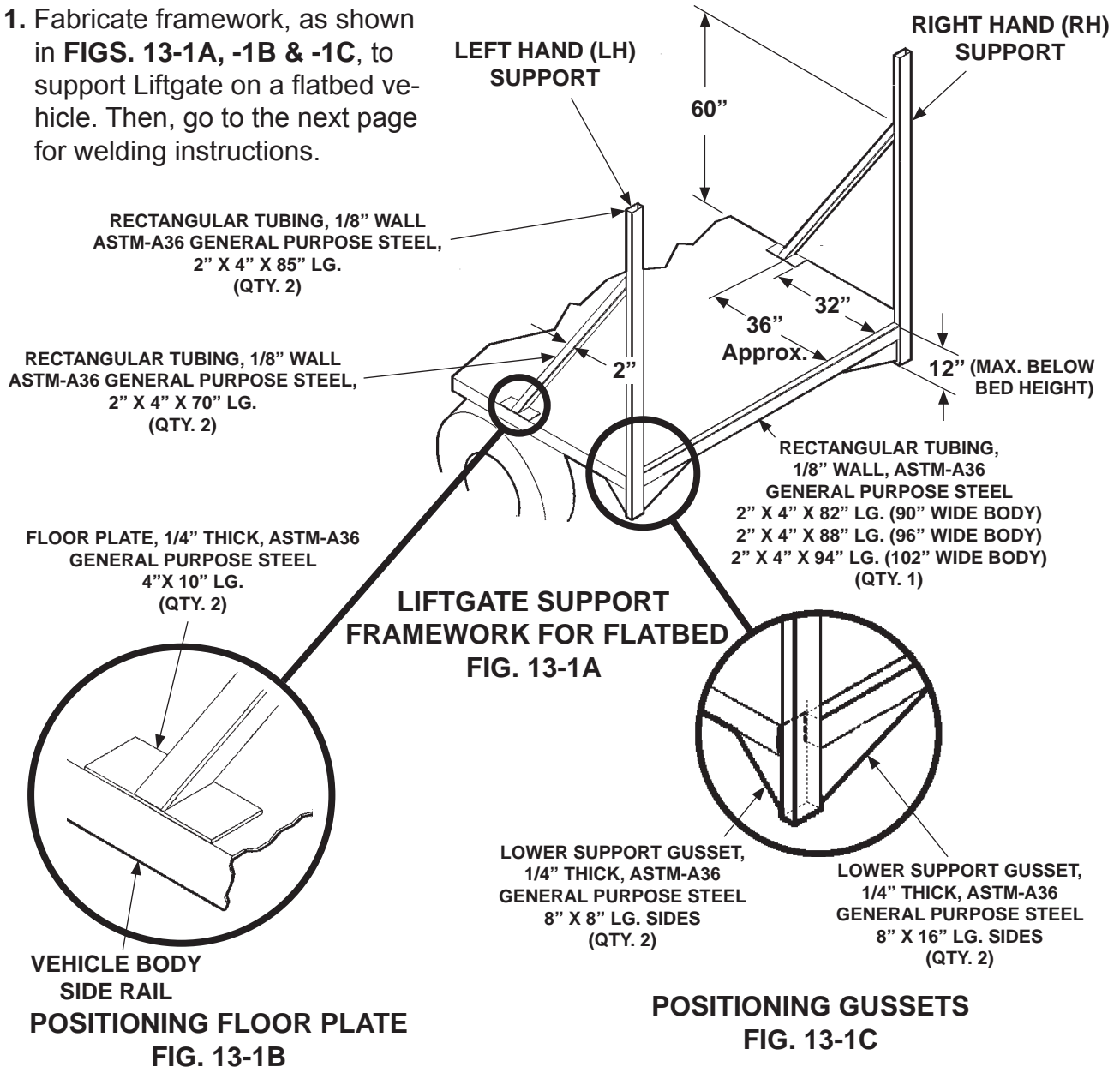
NOTE: LH and RH supports must be perpendicular to level ground. See **VEHICLE REQUIREMENTS, INSTALLED LIFTGATE.**

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

⚠ WARNING

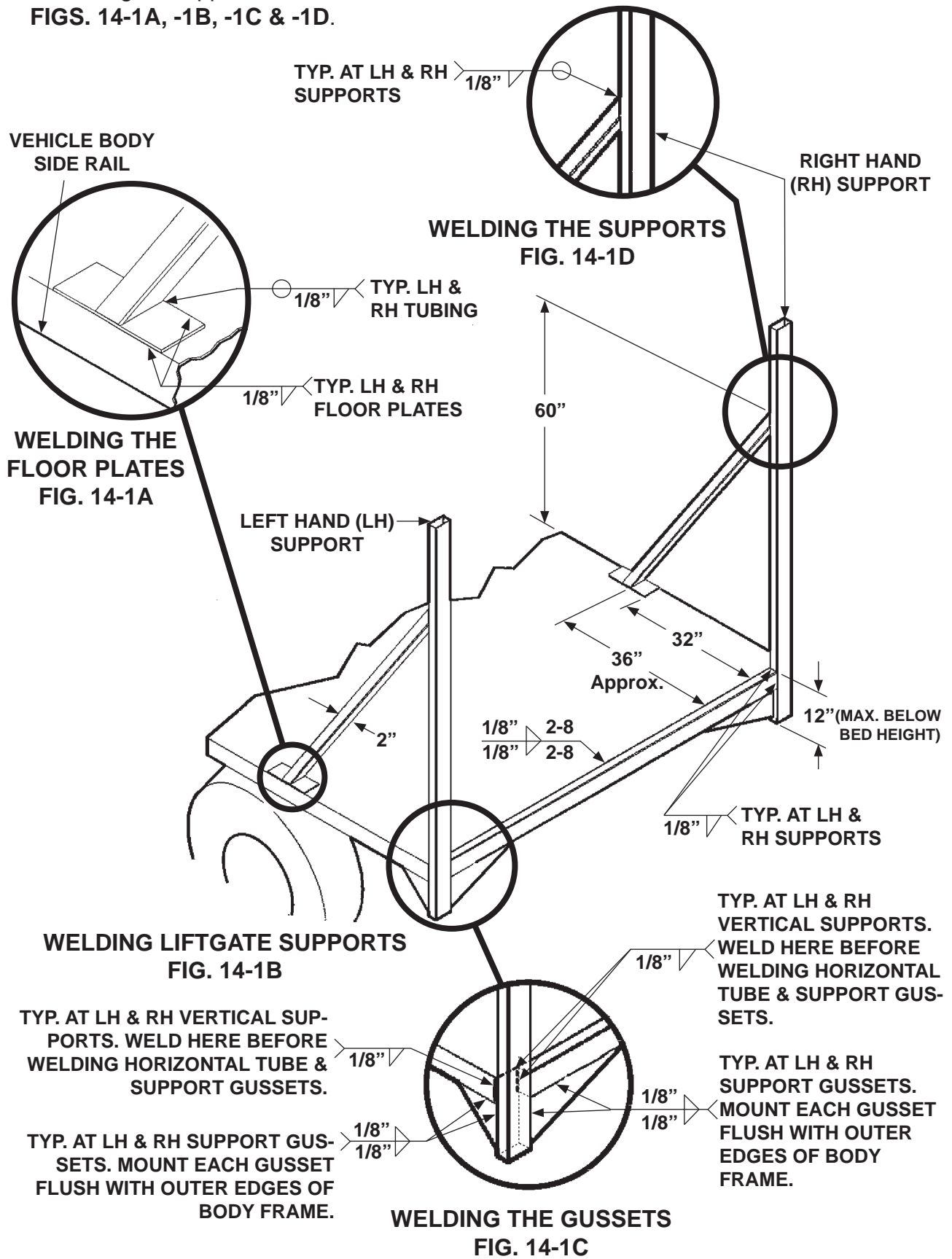
Recommended practices for welding on steel parts are contained in the current AWS (American Welding Society) D1.1 Structural Welding Code - Steel. Damage to Liftgate and/or vehicle, and personal injury can result from welds that are done incorrectly.

1. Fabricate framework, as shown in **FIGS. 13-1A, -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. 14-1A, -1B, -1C & -1D.



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STEP 2 - CHOOSE METHOD OF INSTALLATION

Two methods for mounting a DMD Liftgate on a vehicle body are covered in this manual.

METHOD 1 - If vehicle body is equipped with mounting channels installed (**FIG. 15-1**), refer to **BOLTING LIFTGATE TO BODY** instructions in **STEP 3**.

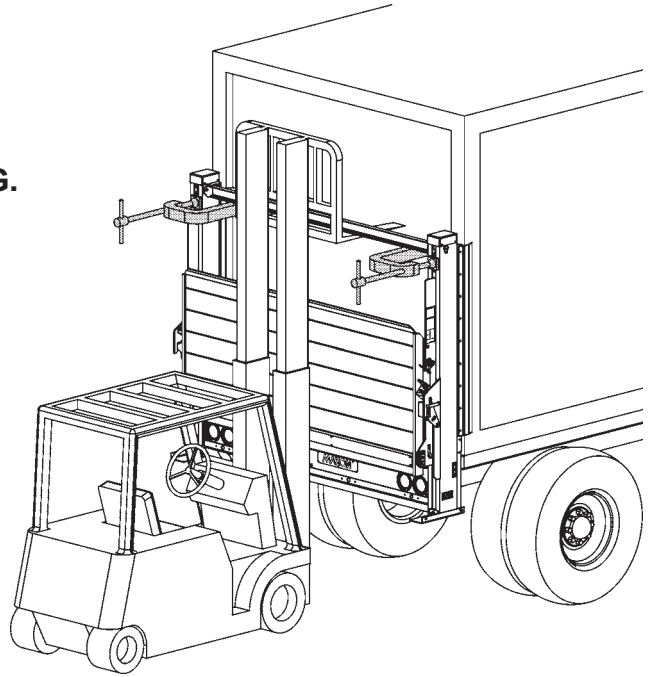


FIG. 15-1

METHOD 2 - If vehicle body is not equipped with mounting channels installed (**FIG. 15-2**), refer to **WELDING LIFTGATE TO BODY** instructions in **STEP 3**.

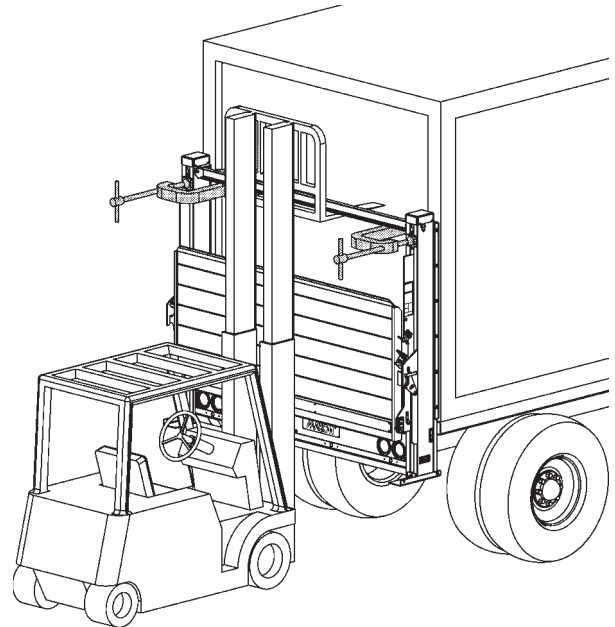
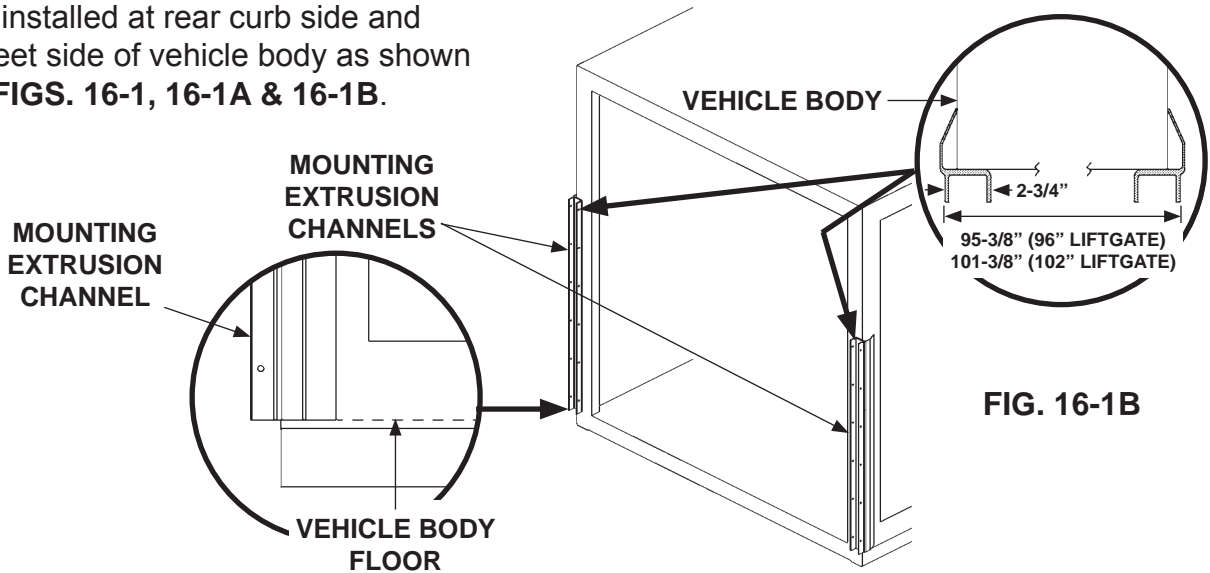


FIG. 15-2

STEP 3 - POSITION LIFTGATE METHOD 1 - BOLTING LIFTGATE TO BODY

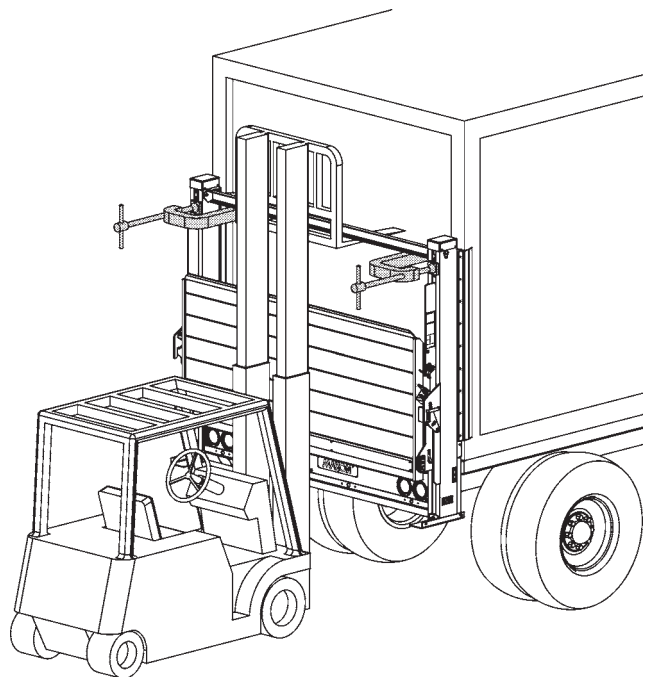
NOTE: Method 1 instructions are intended for Liftgate installation on a vehicle with mounting extrusion channels pre-mounted on the vehicle body. Extrusion channels are NOT provided with Liftgate.

1. Mounting extrusion channels must be installed at rear curb side and street side of vehicle body as shown in **FIGS. 16-1, 16-1A & 16-1B**.



**INSTALLING MOUNTING EXTRUSION
CHANNELS ON VEHICLE BODY
FIG. 16-1**

2. Use overhead hoist or fork lift to center Liftgate against the vehicle (**FIG. 16-2**). Raise the Liftgate until the top of the housing is against the mounting channels and flush with the body floor (**FIG. 16-2**).



**POSITIONING LIFTGATE ON
VEHICLE BODY
FIG. 16-2**

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STEP 3 - POSITION LIFTGATE - Continued

METHOD 1 - BOLTING LIFTGATE TO BODY - Continued

NOTE: If needed, use a clamp to secure Liftgate column channel to truck mounting channel before drilling holes on vehicle body channel.

3. Once the Liftgate is positioned on the body as in **FIG. 16-2**, use the holes of the Liftgate mounting bracket as a template to drill mating holes on the mounting channel on the vehicle body. Drill $13/32$ " holes, using 5" LG. drill bit, through the vehicle mounting channel as shown in **FIG. 17-1**.
4. Bolt Liftgate to mounting channels on vehicle body using hex cap screws, flat washers, hex nuts and lock nuts (Kit items) as shown in **FIG. 17-1**. Torque nuts to **18 +/- 4 lb-ft.**

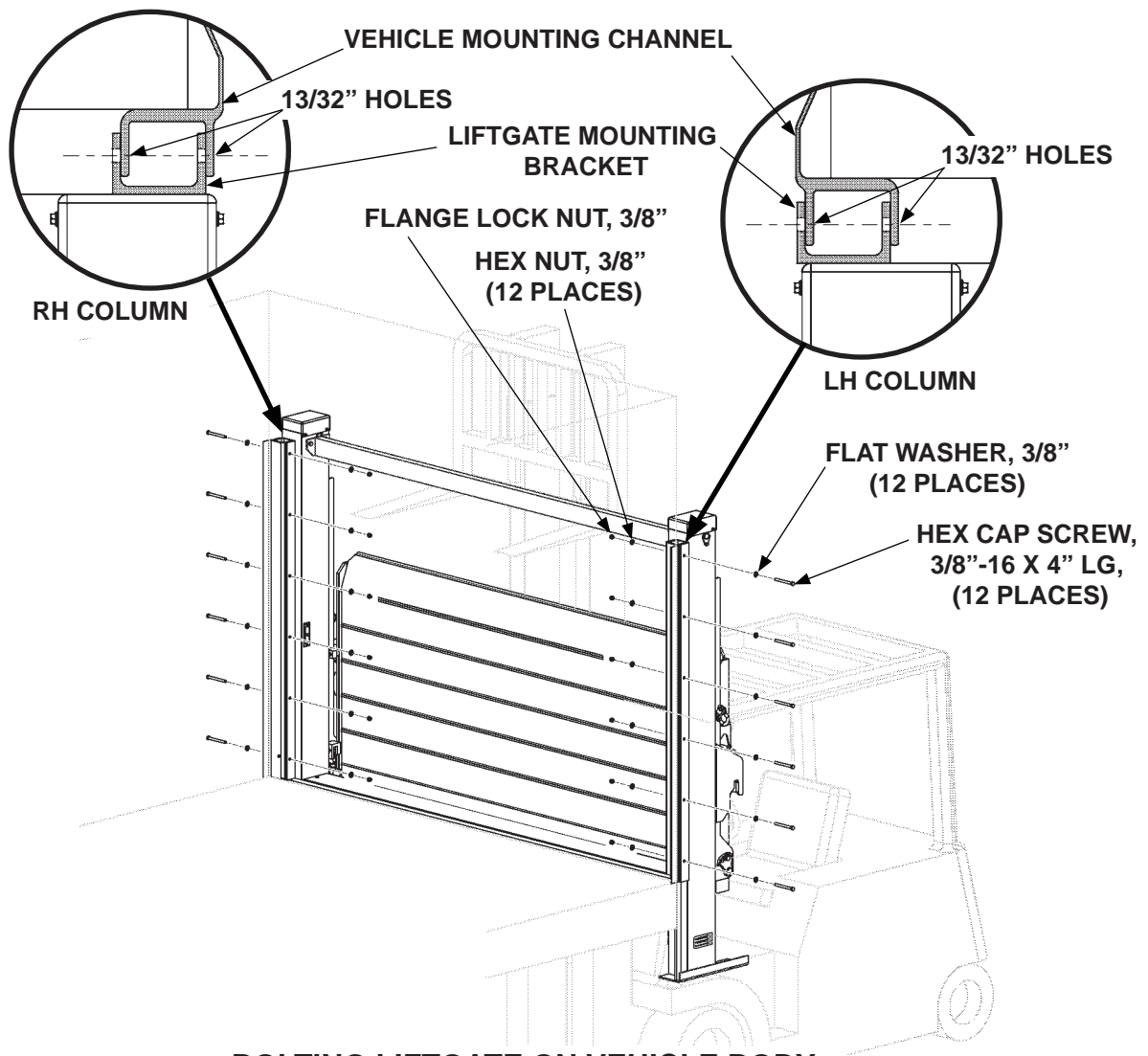


FIG. 17-1

GO TO STEP 4: CONNECT GROUND CABLE

STEP 3 - POSITION LIFTGATE - Continued

METHOD 2 - WELDING LIFTGATE TO BODY

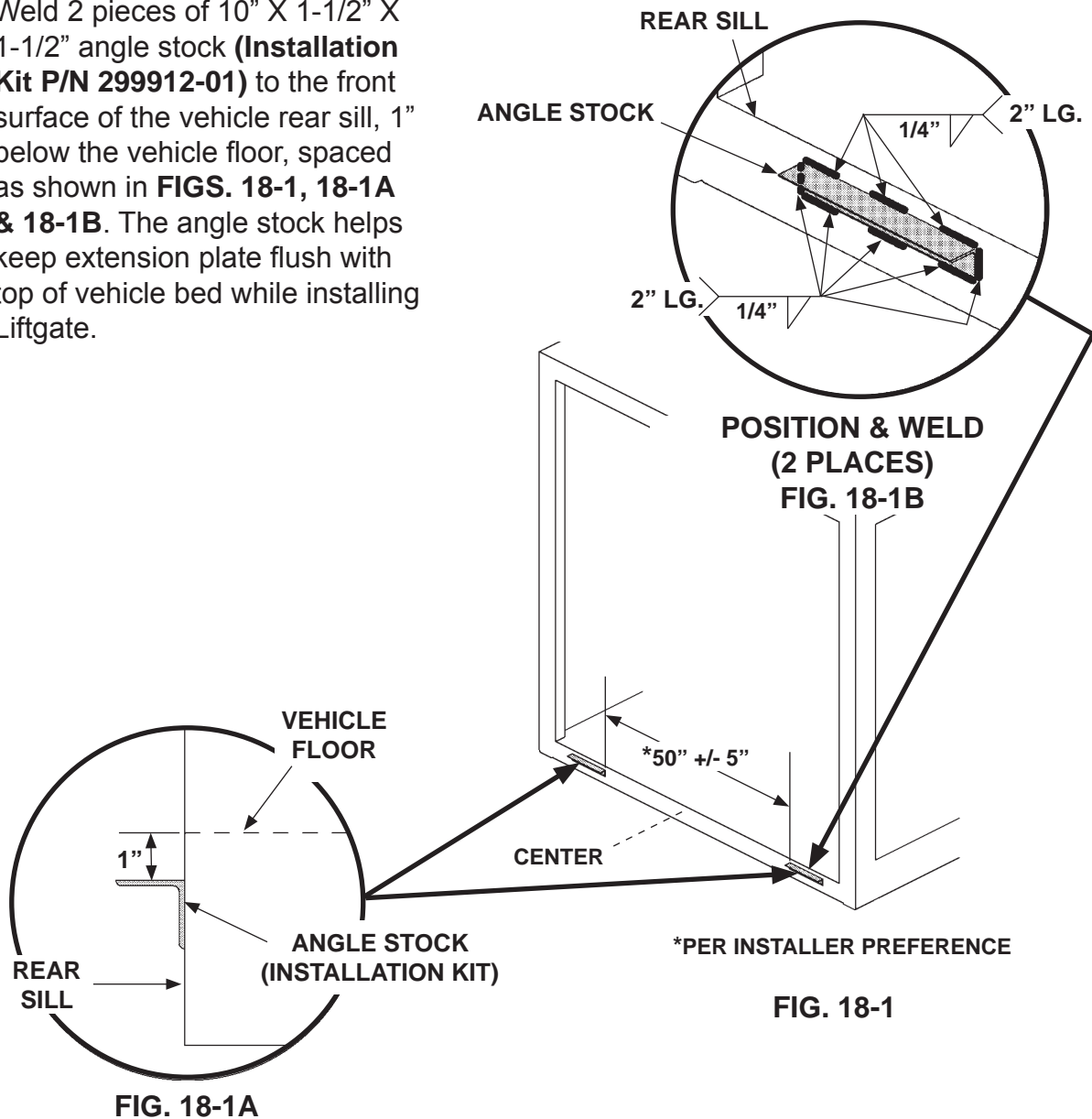
⚠ WARNING

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 Liftgate mounting channels to vehicle body, make sure:

- Inboard edge at top of main housing is flush with the top of the rear sill on vehicle body.
- Top surface of main housing is level with the ground.

1. Weld 2 pieces of 10" X 1-1/2" X 1-1/2" angle stock (**Installation Kit P/N 299912-01**) to the front surface of the vehicle rear sill, 1" below the vehicle floor, spaced as shown in **FIGS. 18-1, 18-1A & 18-1B**. The angle stock helps keep extension plate flush with top of vehicle bed while installing Liftgate.



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STEP 3 - POSITION LIFTGATE - Continued

METHOD 2 - WELDING LIFTGATE TO BODY - Continued

- Use overhead hoist or forklift to center Lift-gate against the vehicle (FIG. 19-1). Position Lift-gate until the mounting tube on the housing sits flush against the angle stock as shown in FIG. 19-1A.

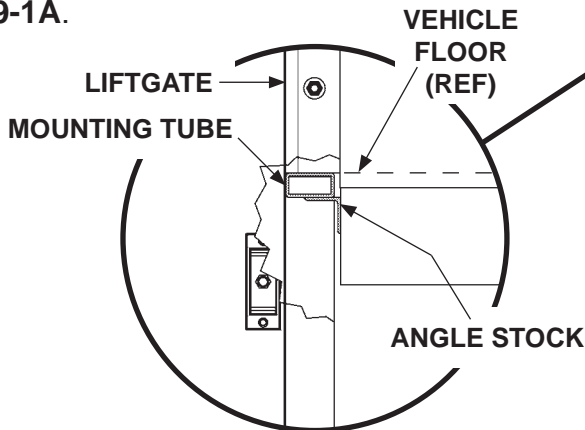
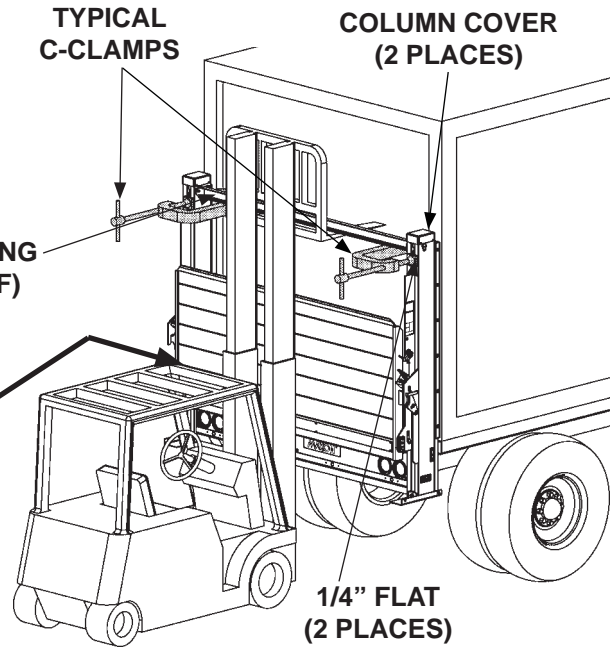


FIG. 19-1A



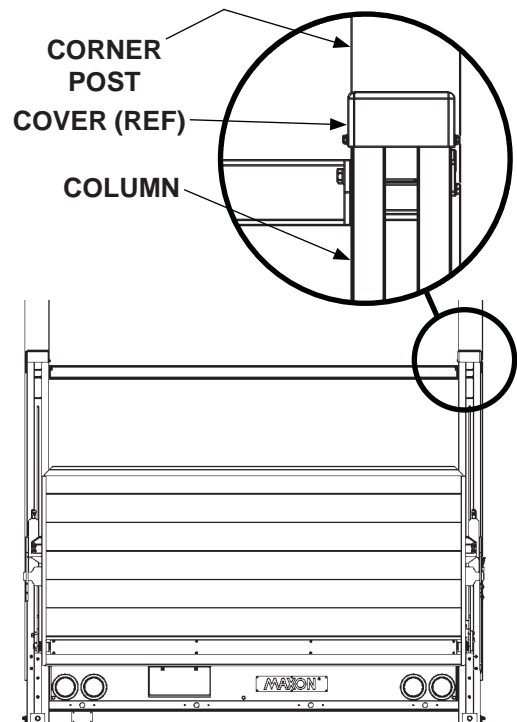
**POSITIONING LIFTGATE ON
VEHICLE BODY**
FIG. 19-1

- Ensure outside of liftgate columns are centered on vehicle body (FIG. 19-2).

CAUTION

Clamping columns to vehicle at top covers can damage the covers and will not securely clamp the columns. Clamp each column to body corner post below top covers and below upper shipping fixture. Place 1/4" steel flat (not provided by MAXON) between clamp and clamping surface.

- Clamp top of each column to vehicle body to prevent gap (FIG. 19-1).

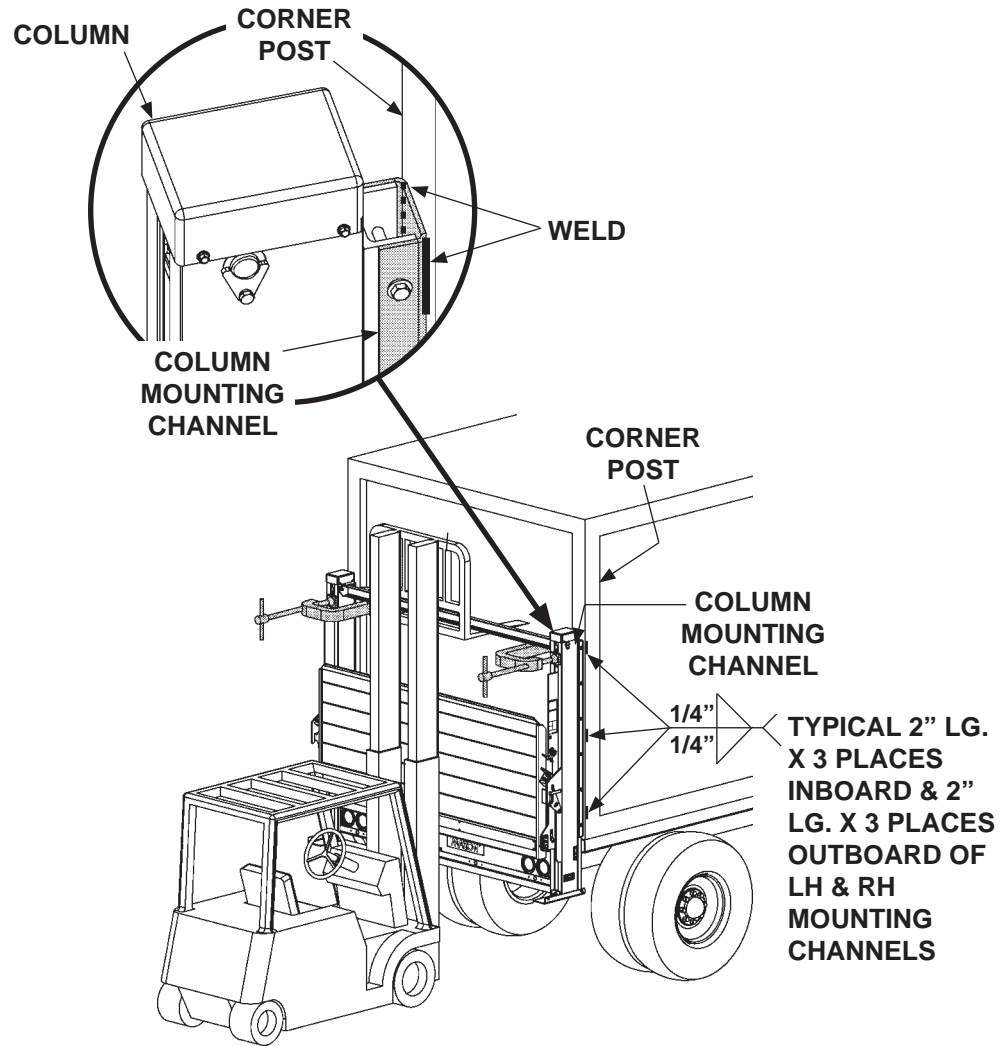


**CENTERING LIFTGATE ON
VEHICLE BODY**
FIG. 19-2

STEP 3 - POSITION LIFTGATE - Continued

METHOD 2 - WELDING LIFTGATE TO BODY - Continued

5. Weld the RH and LH column mounting channels to vehicle body as shown in **FIG. 20-1**.

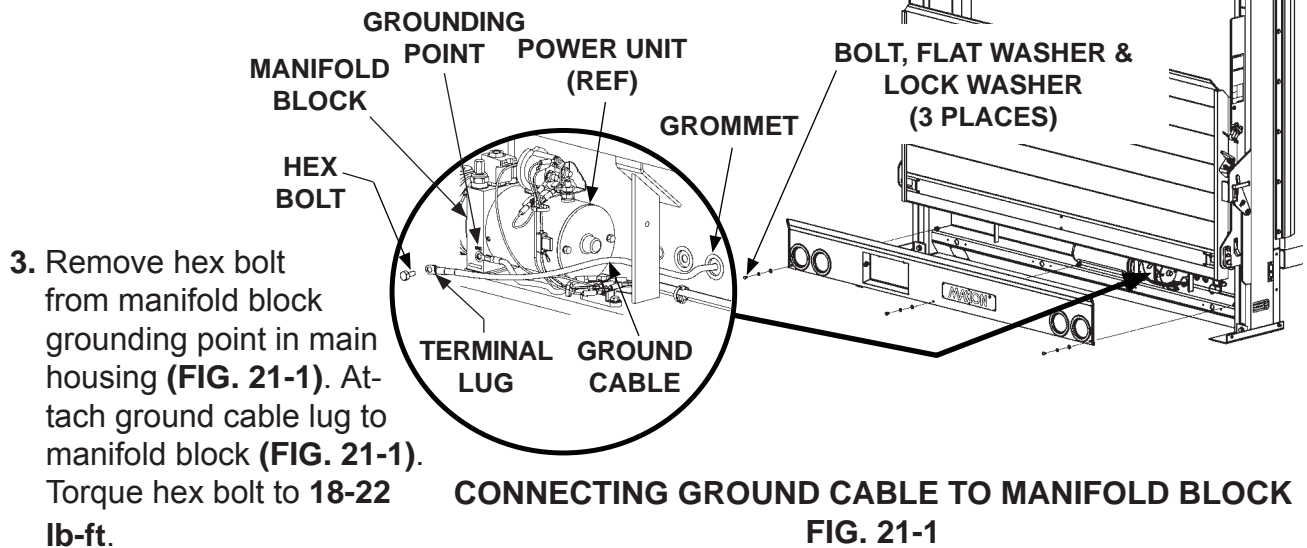


WELDING LIFTGATE TO VEHICLE BODY
FIG. 20-1

STEP 4 - CONNECT GROUND CABLE

NOTE: To ensure power unit is correctly grounded, connect 2 gauge ground cable (Parts Box item) from grounding point on manifold block to a grounding point on the vehicle frame.

1. Unbolt and remove main frame cover for access to power unit (**FIG. 21-1**).
2. Run ground cable (**FIG. 21-1**) through grommet on back wall of main housing.



3. Remove hex bolt from manifold block grounding point in main housing (**FIG. 21-1**). Attach ground cable lug to manifold block (**FIG. 21-1**). Torque hex bolt to **18-22 lb-ft**.

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

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

4. Extend the ground cable to reach vehicle frame (**FIG. 21-2**) without putting tension on cable (after connection). Connect to existing grounding point if available.
5. If necessary, drill a $11/32$ " (0.343 ") hole in vehicle frame for bolting the ground cable terminal lug (**FIG. 21-2**).
6. Bolt the ground cable terminal lug to vehicle frame as shown in **FIG. 21-2**. Torque cap screw to **24 lb-ft**.

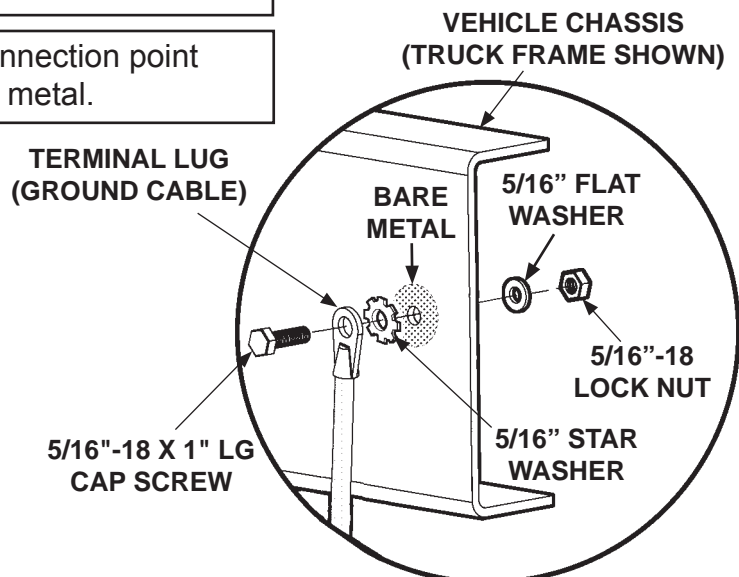


FIG. 21-2

STEP 5 - RUN POWER CABLE

⚠ CAUTION

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

NOTE: Make sure cable is long enough to reach positive terminal on Liftgate pump box without putting tension on the cable.

Install vehicle power cable by running the cable along the inside of vehicle frame (**FIG. 22-1**). Run the power cable from vehicle battery to Liftgate pump box positive terminal. Use frame clips (Parts Box item) and plastic ties (as required) to secure cable.

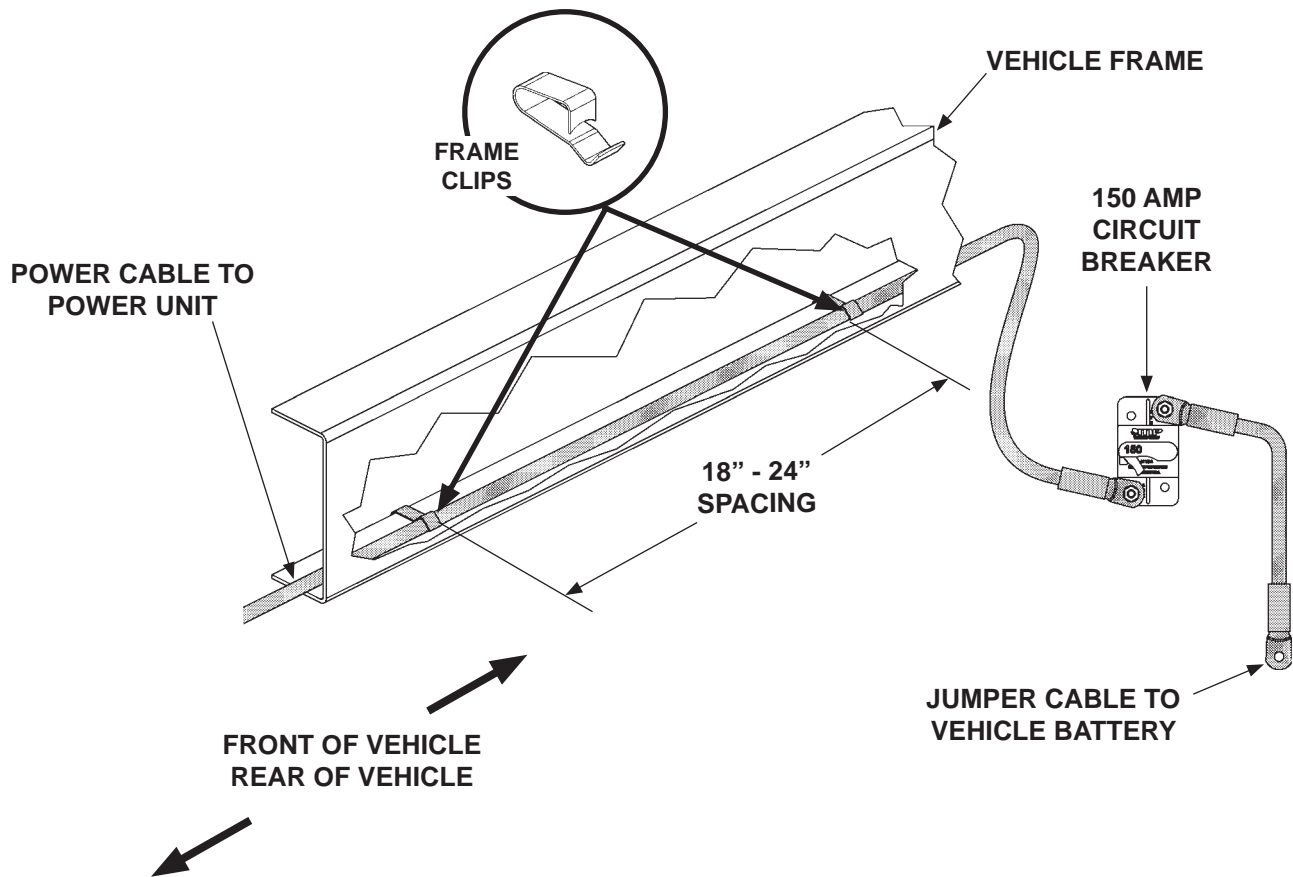


FIG. 22-1

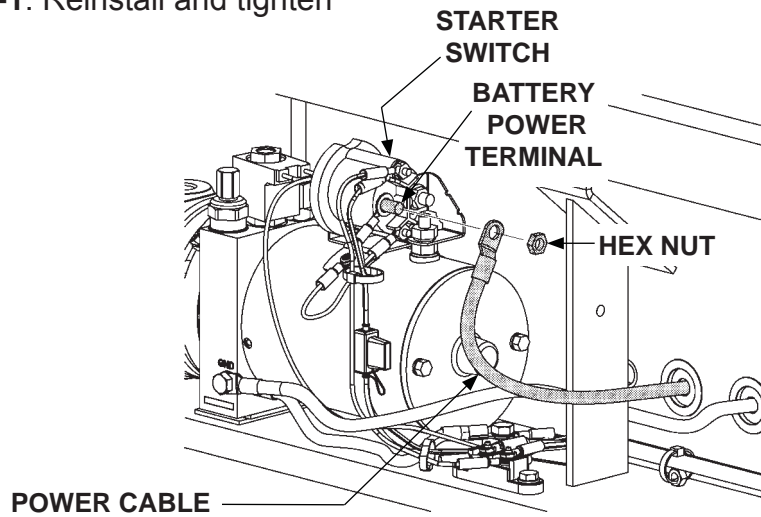
STEP 6 - CONNECT POWER CABLE

CAUTION

Do not over-tighten the terminal nuts on starter solenoid. For the load terminals, torque nuts to 30-35 lb-in max. Torque the nuts on #10-32 control terminals 10-15 lb-in.

NOTE: Do not remove flat washer from the battery power terminal.

Remove hex nut from battery power terminal on the starter switch. Connect the power cable to the starter switch as shown in **FIG. 23-1**. Reinstall and tighten hex nut.

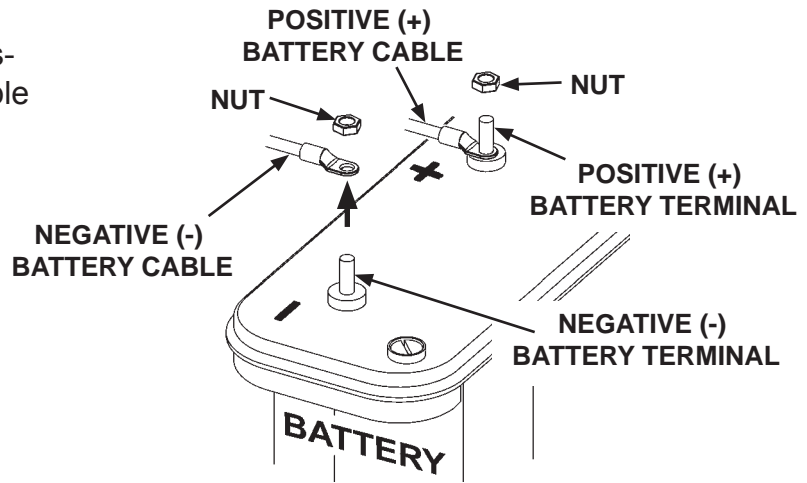


CONNECTING POWER CABLE TO POWER UNIT
(MANUAL CLOSE POWER UNIT SHOWN)

FIG. 23-1

STEP 7 - CONNECT POWER CABLE TO BATTERY

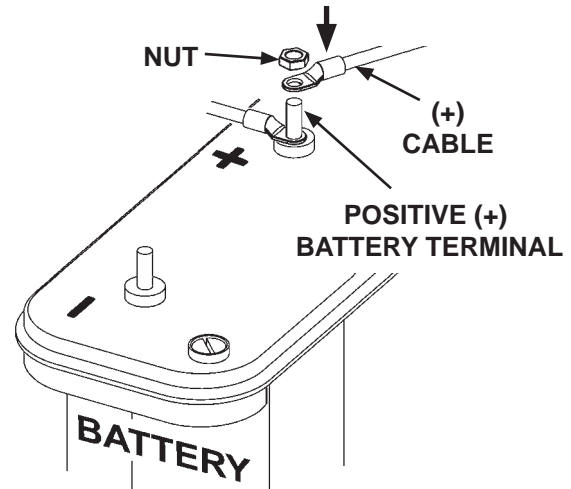
1. Remove nut from negative (-) battery terminal (**FIG. 24-1**). Disconnect negative (-) battery cable (**FIG. 24-1**).



DISCONNECTING (-) BATTERY CABLE
FIG. 24-1

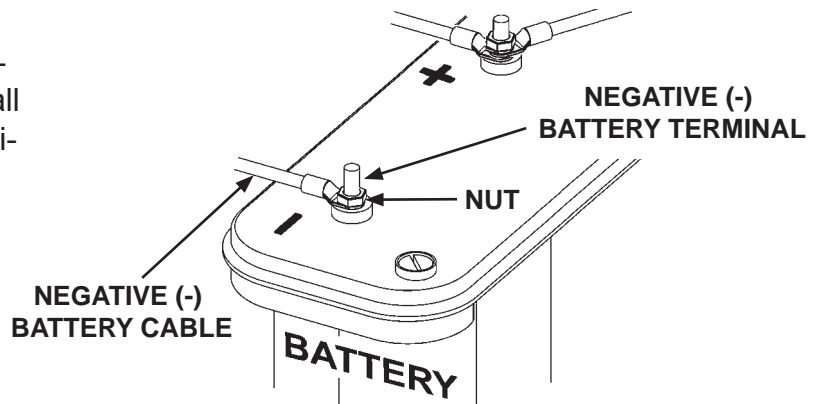
2. Remove nut from positive (+) battery terminal (**FIG. 24-1**).

3. Connect circuit breaker jumper (+) cable to positive (+) battery terminal (**FIG. 24-2**). Then, reinstall nut on positive (+) battery terminal (**FIG. 24-2**).



CONNECTING (+) CABLE
FIG. 24-2

4. Reconnect negative (-) battery cable to negative (-) battery terminal (**FIG. 24-3**). Then, reinstall nut on negative (-) battery terminal (**FIG. 24-3**).



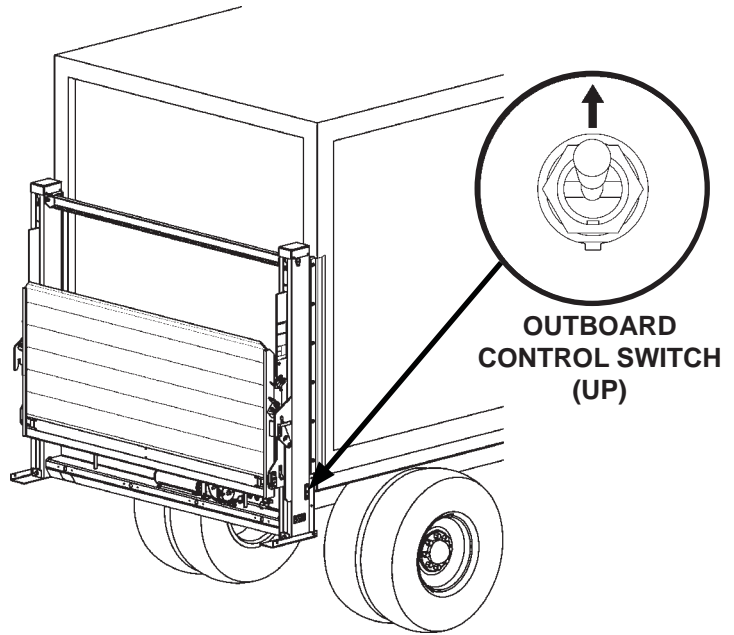
RECONNECTED BATTERY CABLES
FIG. 24-3

STEP 8 - PRESSURIZE HYDRAULIC SYSTEM

WARNING

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

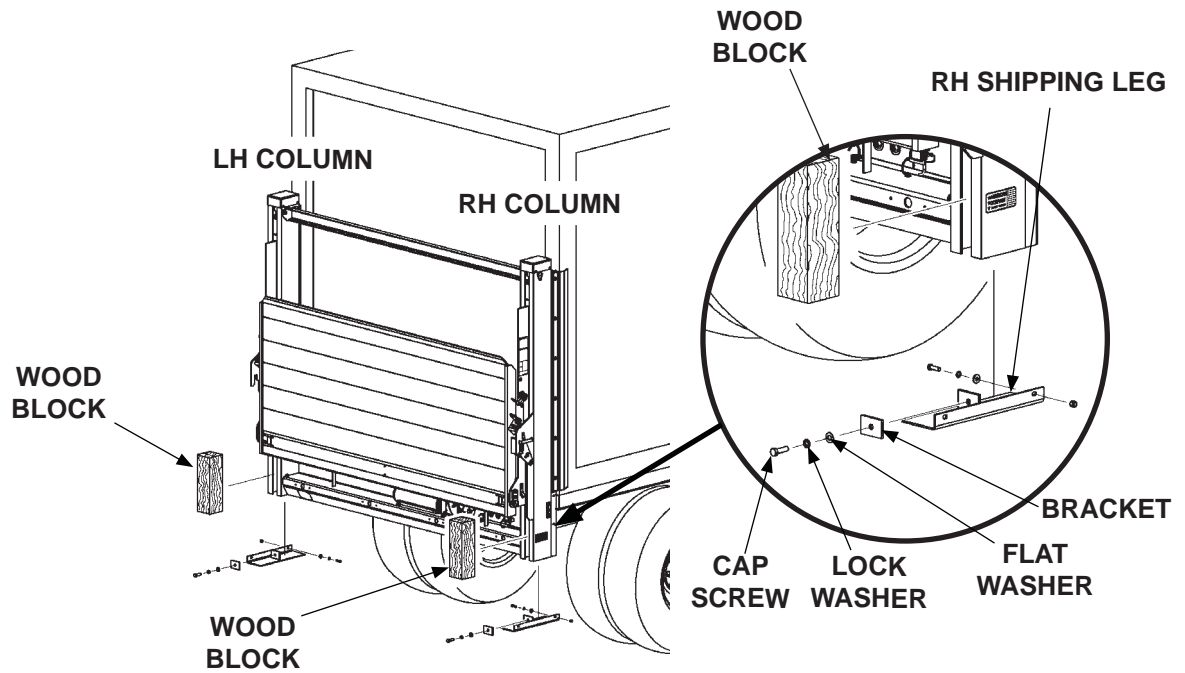
To pressurize lifting cylinders, hold outboard control switch in **UP** position for 30 - 60 seconds (**FIG. 25-1**). Then, release toggle switch.



PRESSURIZING LIFTING CYLINDERS
FIG. 25-1

STEP 9 - REMOVING LOWER SUPPORTS

1. Unbolt shipping leg from bottom of RH column (FIG. 26-1). Repeat for LH column.



2. Remove and discard wood shipping blocks (FIG. 26-1).

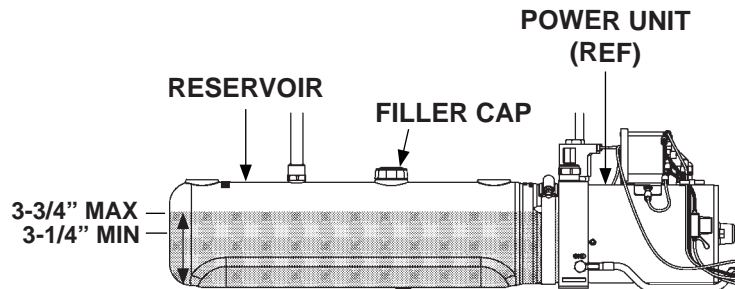
STEP 10 - CHECKING HYDRAULIC FLUID

CAUTION

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

NOTE: Liftgate is shipped with **Exxon Univis HVI-13** hydraulic fluid in the hydraulic cylinders. **Exxon Univis HVI-13** hydraulic fluid is recommended for operating temperatures of **-40 to +120° F**. Refer to decal in pump box. Under certain conditions, other brands and grades of oil may be used as substitutes for the recommended oil. See **TABLE 28-1** for recommended brands of **ISO 15** oils.

1. Open and lower platform to the ground. Refer to **Operation Manual** for detailed operating instructions.
2. Check the hydraulic fluid level in reservoir as follows. With platform on the ground, level should be as shown in **FIG. 27-1**.
3. If needed, add fluid to the reservoir as follows. Remove filler cap (**FIG. 27-1**). Fill the reservoir with hydraulic fluid to level shown in **FIG. 27-1**. Reinstall filler cap.



**POWER UNIT FLUID LEVEL
(STANDARD POWER UNIT SHOWN)**

FIG. 27-1

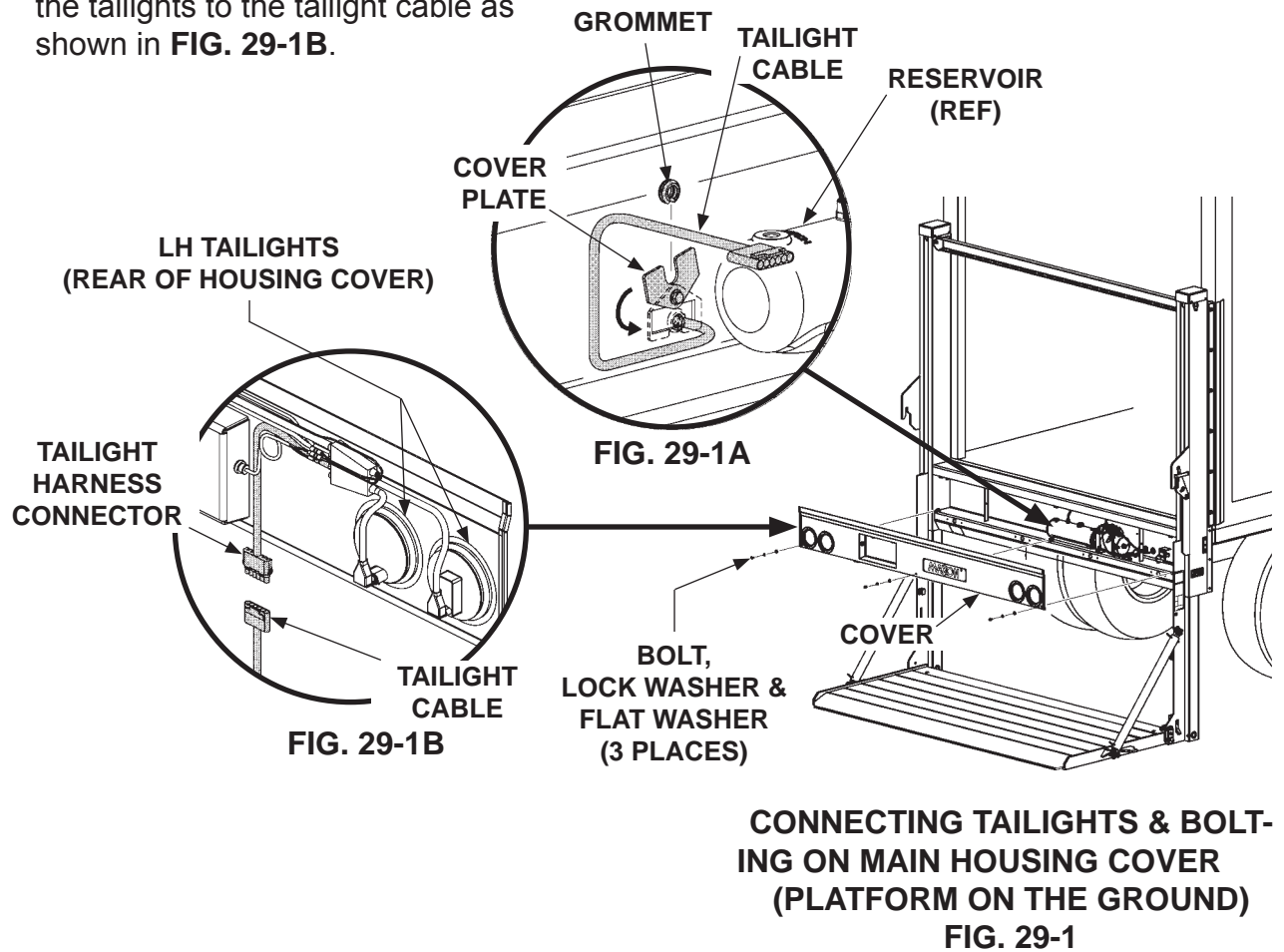
STEP 10 - CHECKING HYDRAULIC FLUID - Continued

ISO 15 OR MIL-H-5606 HYDRAULIC OIL	
RECOMMENDED BRANDS	PART NUMBER
CHEVRON	FLUID A, AW-MV-15
KENDALL	GLACIAL BLU
SHELL	TELLUS S2 VX 15
EXXONMOBIL	UNIVIS HVI-13
ROSEMEAD	THS FLUID 17111

TABLE 28-1

STEP 11 - CONNECTING TAILLIGHTS

1. Run tailight cable through rear of main housing as shown in **FIG. 29-1A**. Secure the tailight cable through split grommet, flip down the cover plate and tighten the bolt (**FIG. 29-1A**). Next, connect the tailights to the tailight cable as shown in **FIG. 29-1B**.



CAUTION

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

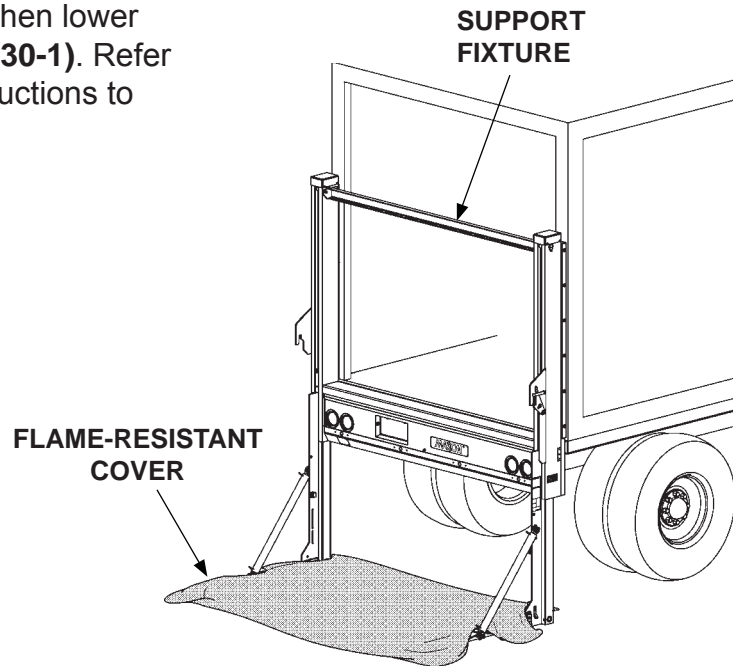
2. Bolt on the main housing cover as shown in **FIG. 29-1**. Torque the 5/16"-18 cover bolts from **10 to 14 lb-ft.**

STEP 12 - FINISH WELDING LIFTGATE TO VEHICLE

⚠ WARNING

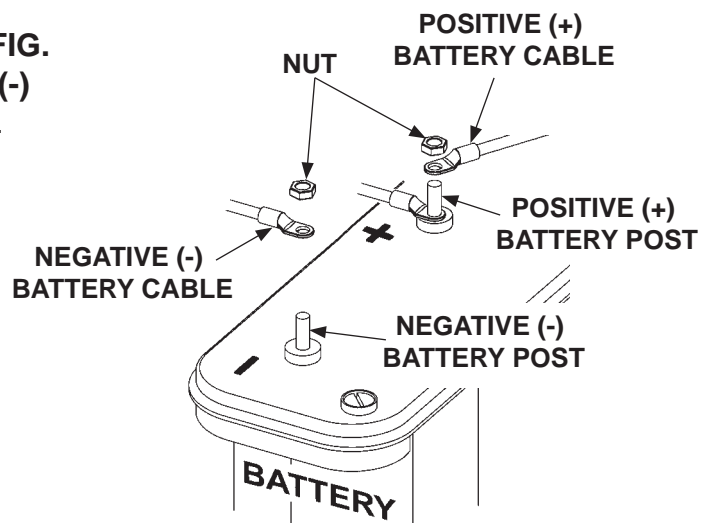
Remove support fixture from Liftgate only after the columns and housing are welded to vehicle body according to this procedure.

1. Unfold platform and flipover. Then lower platform to ground level (**FIG. 30-1**). Refer to **Operation Manual** for instructions to operate Liftgate.
2. Cover platform as shown in **FIG. 30-1**.



PLATFORM COVERED BEFORE WELDING
FIG. 30-1

3. Disconnect power to the pump by disconnecting negative (-) and positive (+) cables from battery (**FIG. 30-2**). Reinstall nuts on negative (-) and positive (+) battery terminals.



DISCONNECTING BATTERY POWER
FIG. 30-2

STEP 12 - 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.

CAUTION

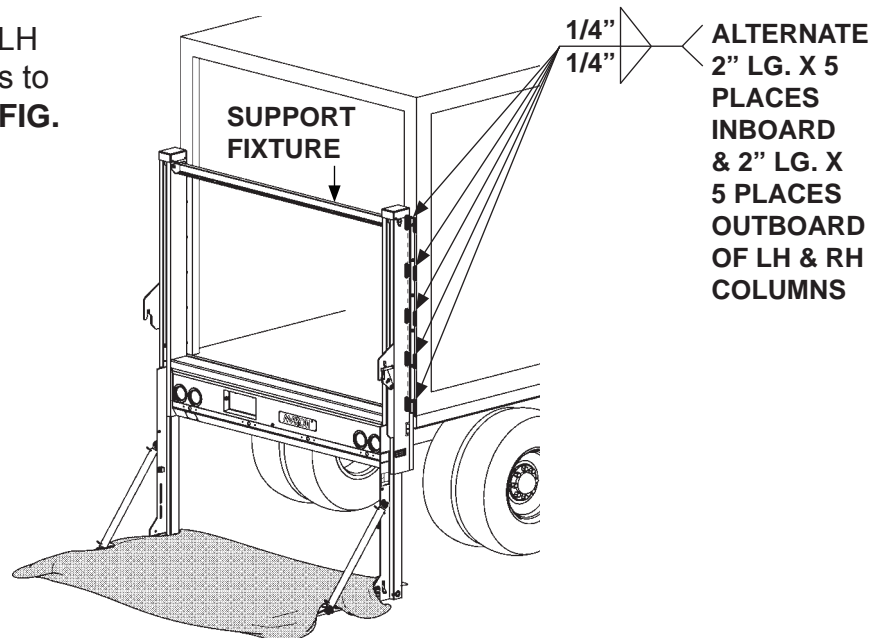
When using an electric welder, connect the welder ground to one of the parts being welded, as close to the weld as possible. Failure to comply could result in damage to cylinders and electrical parts.

CAUTION

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

NOTE: If Liftgate mounting channels cannot be mounted flush against rear of vehicle, a filler such as tubing, channel, or plate stock may be used to bridge gap between vehicle body and Liftgate columns. Make sure the added materials and welds meet the **BODY STRENGTH REQUIREMENTS** indicated in this manual.

4. Weld the Liftgate RH and LH column mounting channels to vehicle body as shown in **FIG. 31-1**.

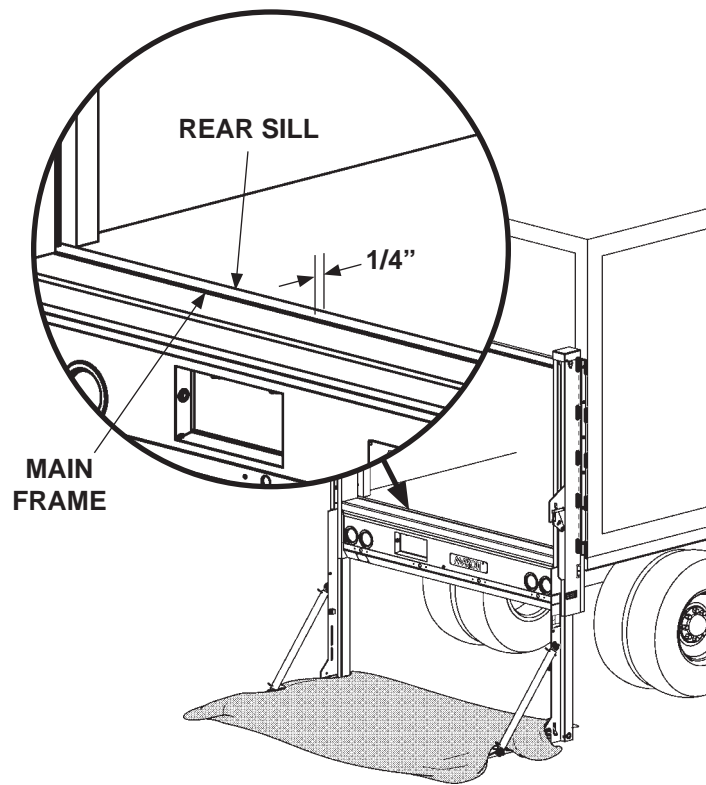


**WELDING COLUMN MOUNTING BRACKETS TO VEHICLE BODY
(NO OFFSET INBOARD SIDE OF COLUMNS)**

FIG. 31-1

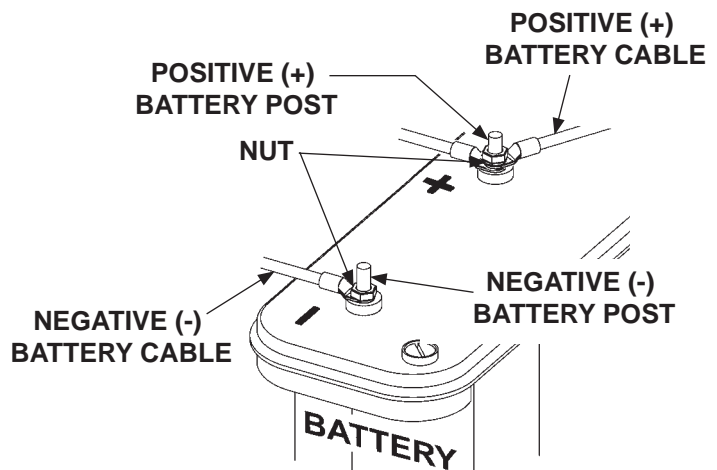
STEP 12 - FINISH WELDING LIFTGATE TO VEHICLE - Continued

5. Verify there is a 1/4" +/- 1/8" gap between main frame housing and rear sill on the vehicle body (**FIG. 32-1**).



**CHECKING FOR 1/4" GAP BETWEEN
MAIN FRAME HOUSING & REAR SILL
FIG. 32-1**

6. Reconnect power to the pump by reconnecting positive (+) and negative (-) cables to battery (**FIG. 32-2**). Reinstall and tighten nut when each battery cable is reconnected.



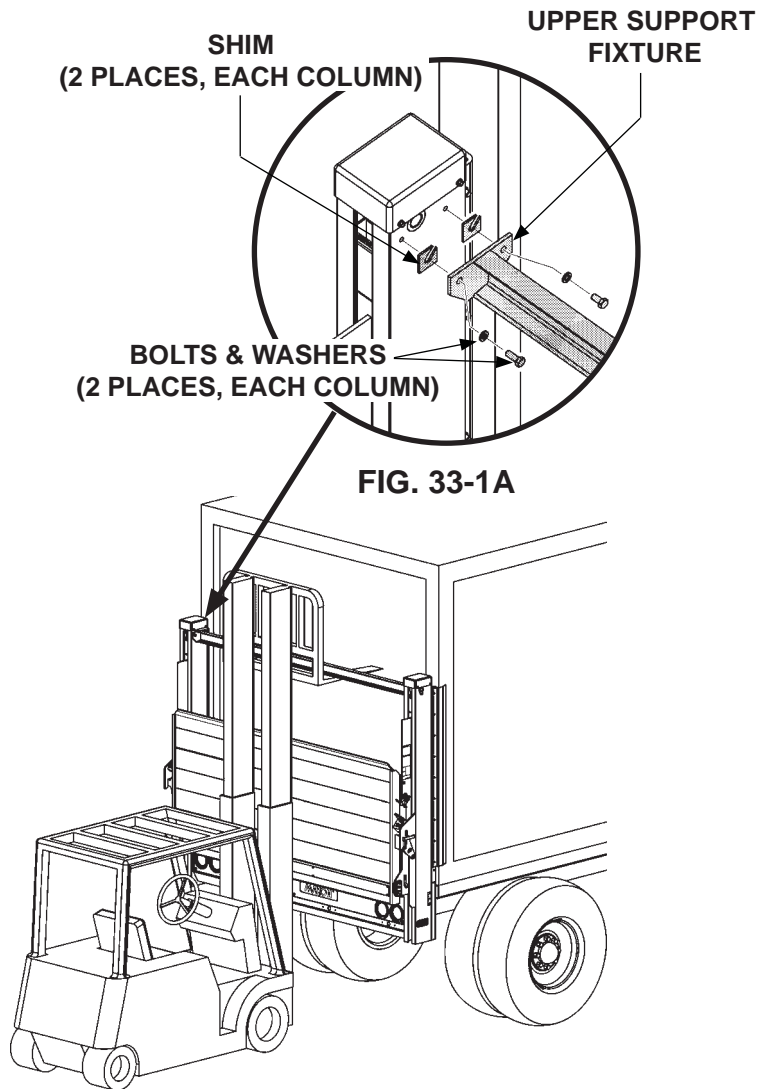
**RECONNECTED BATTERY CABLES
FIG. 32-2**

STEP 13 - REMOVE UPPER SUPPORT FIXTURE

⚠ CAUTION

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

1. Stow the platform as shown in **FIG. 33-1**.
2. Position forklift or hoist to hold upper support fixture as shown in **FIG. 33-1**.
3. Unbolt the upper support fixture from the LH column (**FIG. 33-1A**). Repeat for RH column. Remove upper support fixture from work area.



UNBOLTING UPPER SUPPORT FIXTURE
(VIEW OF LH COLUMN AND SUPPORT FIXTURE)

FIG. 33-1

DECALS

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

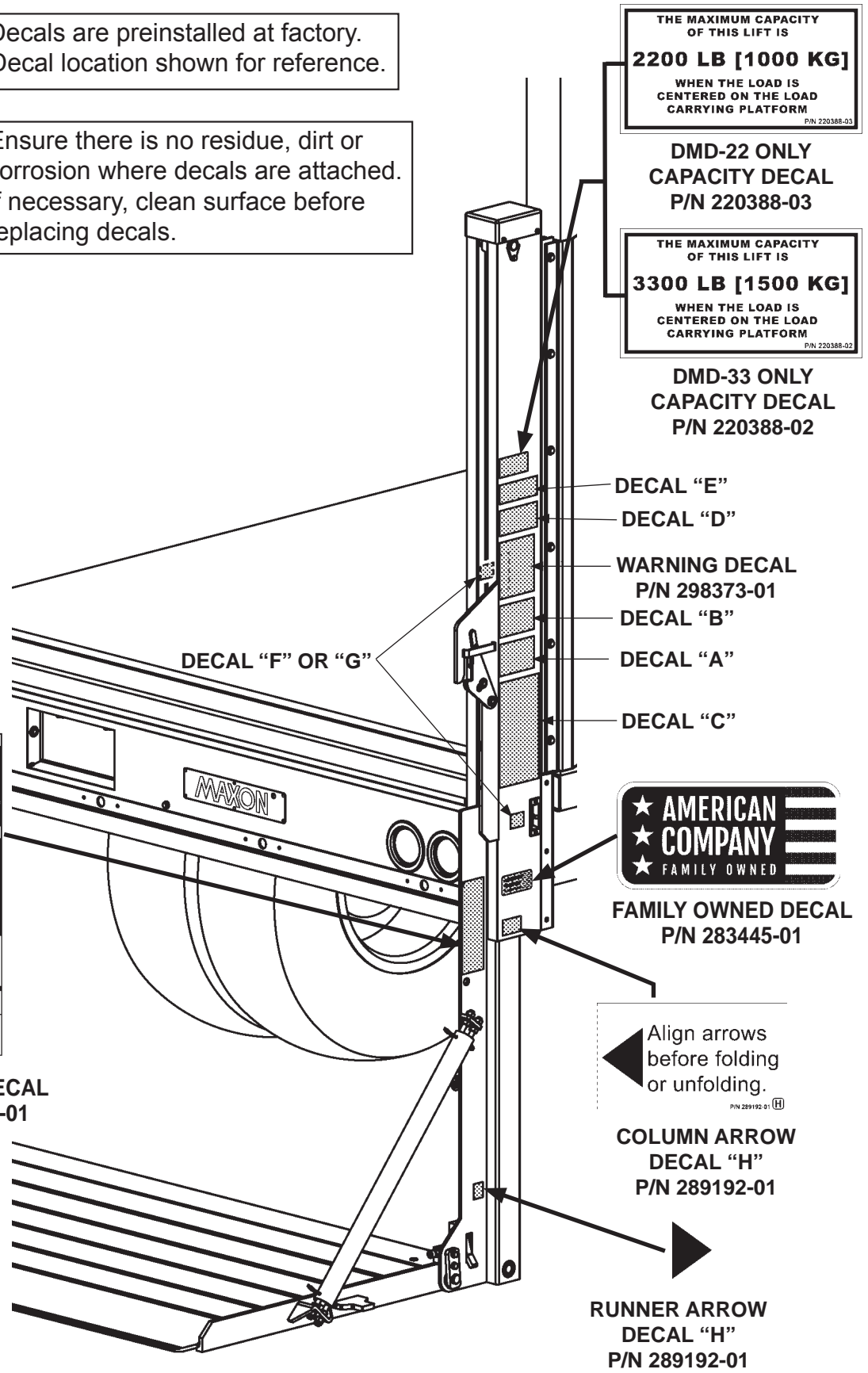
NOTE: Ensure there is no residue, dirt or corrosion where decals are attached.
If necessary, clean surface before replacing decals.

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.

Advertencia
Existe riesgo de caer desde o ser prensado por el elevador.
Mantenga manos y pies fuera de las zonas de pliegue.
Asegúrese de tener la carga estable y usted parado firmemente sobre el elevador.

Read and understand all instructions and warnings before use.
Lea y comprenda todas las instrucciones y advertencias antes de operar.

WARNING DECAL
P/N 299274-01



THE MAXIMUM CAPACITY OF THIS LIFT IS
2200 LB [1000 KG]
WHEN THE LOAD IS CENTERED ON THE LOAD CARRYING PLATFORM
P/N 220388-03

DMD-22 ONLY
CAPACITY DECAL
P/N 220388-03

THE MAXIMUM CAPACITY OF THIS LIFT IS
3300 LB [1500 KG]
WHEN THE LOAD IS CENTERED ON THE LOAD CARRYING PLATFORM
P/N 220388-02

DMD-33 ONLY
CAPACITY DECAL
P/N 220388-02

- DECAL "E"
- DECAL "D"
- WARNING DECAL P/N 298373-01
- DECAL "B"
- DECAL "A"
- DECAL "C"

AMERICAN COMPANY
FAMILY OWNED
FAMILY OWNED DECAL
P/N 283445-01

Align arrows before folding or unfolding.
P/N 289192-01 (H)

COLUMN ARROW DECAL "H"
P/N 289192-01

RUNNER ARROW DECAL "H"
P/N 289192-01

FIG. 34-1

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

DECALS - Continued

SAFETY INSTRUCTIONS

Read all decals and operation manual before operating liftgate.

- Do not use liftgate unless you have been properly instructed and have read, and are familiar with, the operating instructions.
- Be certain vehicle is properly and securely braked before using the liftgate.
- 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.
- Do not overload.
- Make certain the area in which the platform will open and close is clear before opening or closing the platform.
- 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.
- This liftgate is intended for loading and unloading of cargo only. Do not use this liftgate for anything but its intended use.

P/N 289192-01 **A**

CAUTION

Always stand clear of platform area.

P/N 289192-01 **E**

P/N 289192-01 **F**

P/N 289192-01 **G**

WARNING

Liftgate hazards can result in crushing or falling.

Keep hands and feet clear of pinch points.

If riding liftgate, make sure load is stable and footing is solid.

P/N 289192-01 **D**

Align arrows before folding or unfolding.

P/N 289192-01 **H**

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 or call Customer Service at (800) 227-4116. P/N 289192-01 **B**

OPERATING INSTRUCTIONS

Scan this QR code to see operation manual or video.

OPERATE	STOW
<p>RAISE PLATFORM OFF TRANSIT HOOK & LOWER TO UNLOCK.</p> <p style="text-align: center;">1</p>	<p>FOLD & LOCK FLIPOVER IF EQUIPPED.</p> <p style="text-align: center;">1</p>
<p>LOWER PLATFORM AT OR BELOW ARROW ALIGNMENT.</p> <p style="text-align: center;">2</p>	<p>RAISE PLATFORM AT OR BELOW ARROW ALIGNMENT.</p> <p style="text-align: center;">2</p>
<p>RELEASE PLATFORM LOCK & UNFOLD.</p> <p>IF EQUIPPED WITH MANUAL CLOSER (THEN)</p> <p>IF EQUIPPED WITH HYDRAULIC CLOSER (THEN)</p> <p style="text-align: center;">3</p>	<p>RELEASE PLATFORM LOCK & FOLD.</p> <p>IF EQUIPPED WITH MANUAL CLOSER (THEN)</p> <p>IF EQUIPPED WITH HYDRAULIC CLOSER (THEN)</p> <p style="text-align: center;">3</p>
<p>UNLOCK & UNFOLD FLIPOVER IF EQUIPPED.</p> <p style="text-align: center;">4</p>	<p>RAISE PLATFORM ABOVE TRANSIT HOOK.</p> <p style="text-align: center;">4</p>
<p>RAISE / LOWER PLATFORM.</p> <p style="text-align: center;">5</p>	<p>MAKE SURE TRANSIT HOOK RETURNS TO POSITION.</p> <p style="text-align: center;">5</p>

P/N 289192-01 **C**

DECAL SHEET

P/N 289192-01

WARNING

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

Advertencia

Un elevador hidráulico abierto en vehículo en movimiento puede ocasionar daños y lesiones a objetos y personas circundantes. Cierre apropiadamente antes de poner el vehículo en movimiento.

P/N 298373-01

WARNING DECAL
P/N 298373-01

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.

Advertencia

Este equipo de construcción debe ser operado por el operador.

Mantenga manos y pies fuera de las zonas de peligro.

Accesoria de tener la carga estable y usted cargado firmemente sobre el elevador.

P/N 299274-01

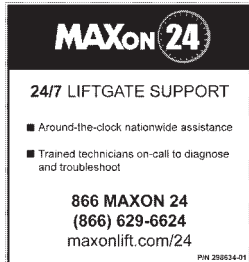
WARNING DECAL
P/N 299274-01

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DECALS & PLATES

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



**MAXON 24/7
SUPPORT DECAL
P/N 298634-01**



**MAXON NAME PLATE
P/N 050175**



**SERIAL PLATE
(REF)**



**PARTS QR CODE
DECAL
P/N 299143-01**

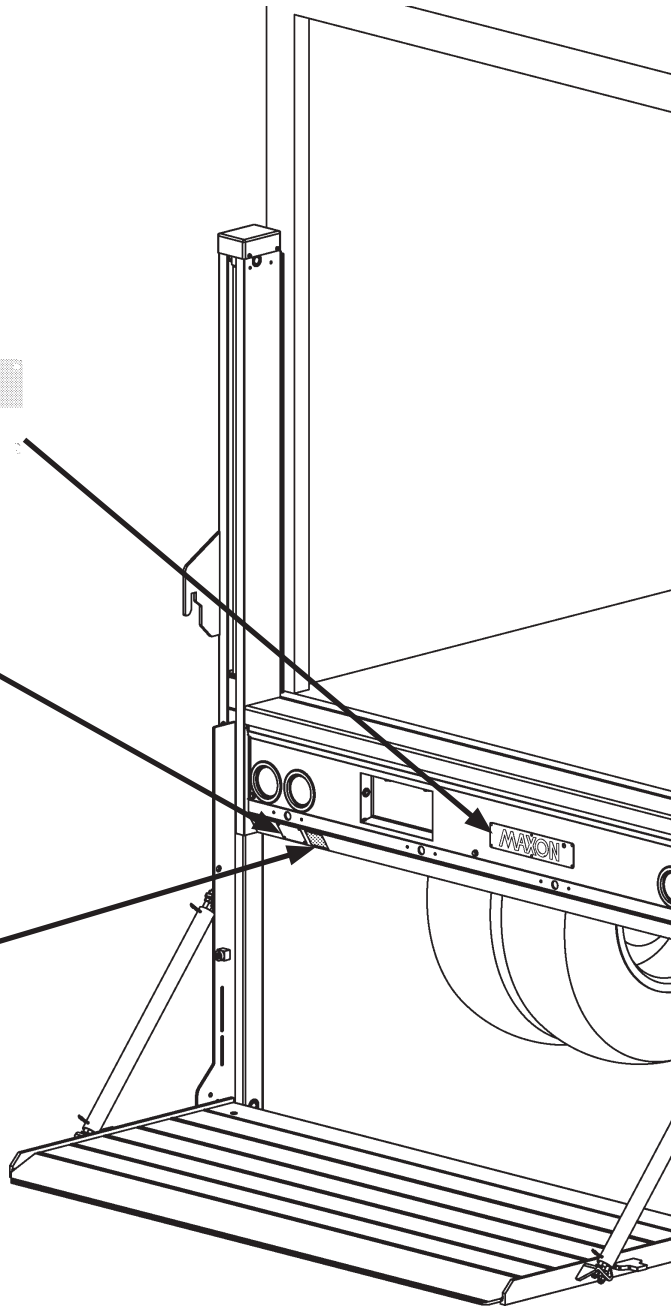


FIG. 36-1

TOUCHUP PAINT

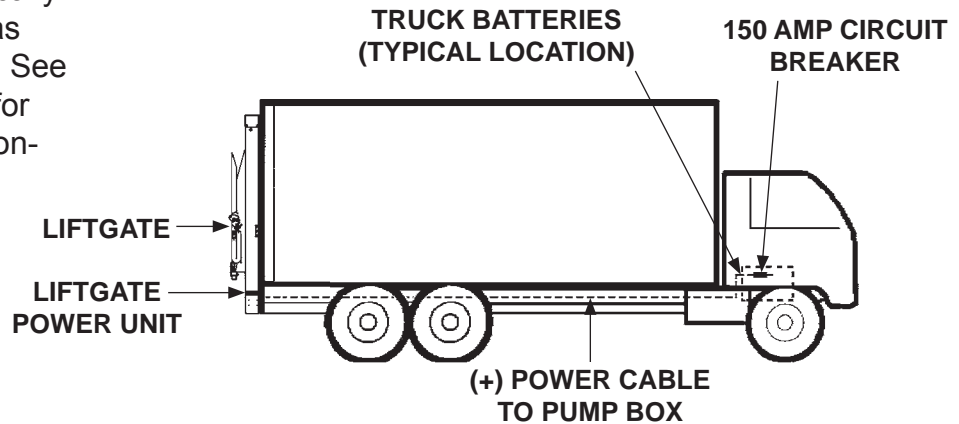
- If bare metal or primer is exposed on the painted portions of the Liftgate, touch up the paint. To maintain the protection provided by the original paint system, **MAXON** recommends aluminum primer touchup paint.
- If bare metal is exposed on galvanized portions of the Liftgate, touch up the galvanized finish. To maintain the protection provided by the original galvanized finish, **MAXON** recommends cold galvanize spray.

POWER 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 and additional battery box are typically installed on trucks as shown in **FIG. 38-1**. See **FIGS. 39-1 & 40-1** for battery and cable connections.



**RECOMMENDED BATTERY BOX
INSTALLATION ON TRUCK
FIG. 38-1**

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

RECOMMENDED LIFTGATE POWER CONFIGURATION - Continued

⚠ WARNING

Remove all rings, watches and jewelry before doing any electrical work.

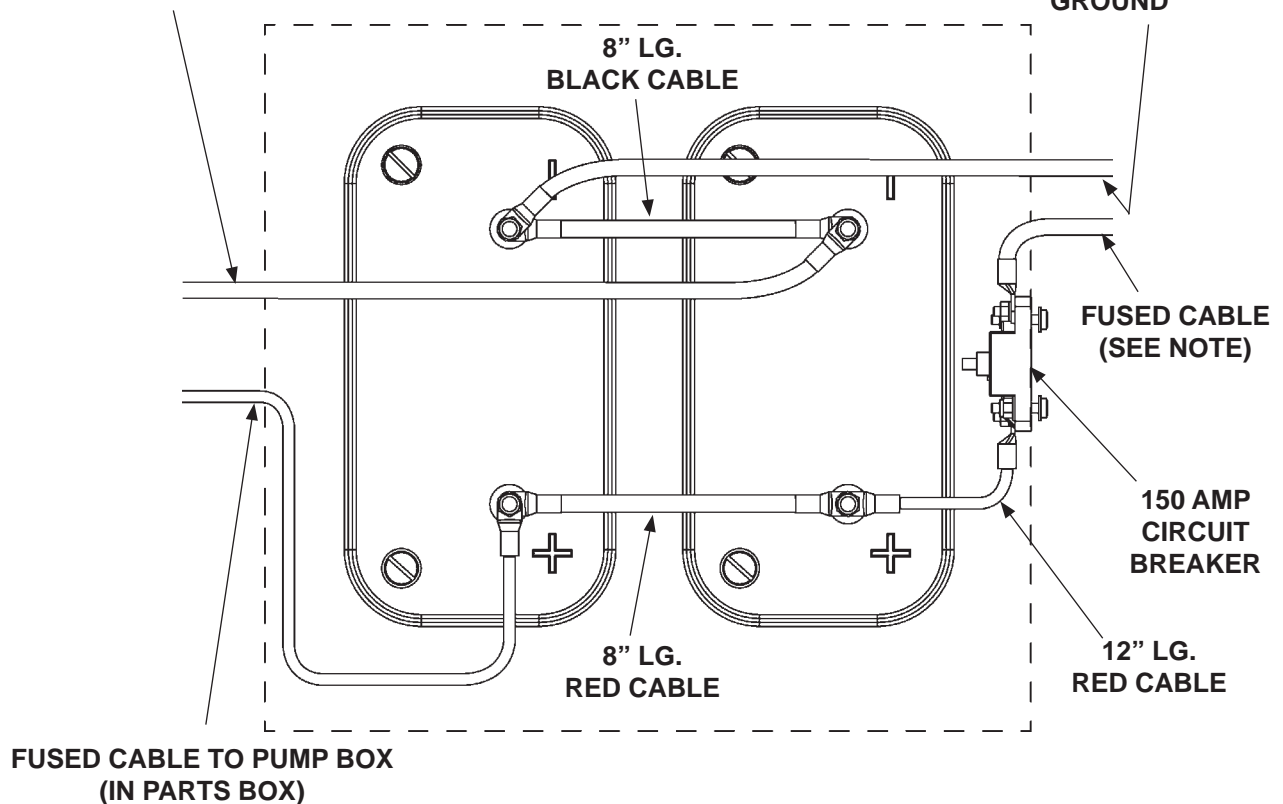
NOTE: Always connect fused end of power cable to battery positive (+) terminal.

NOTE: To connect charge lines, refer to instructions provided with each charge line kit.

2. Connect battery cables, fused cables, and ground cables for 12 volt power as shown in **FIG. 39-1** or 24 volt power as shown in **FIG. 40-1**.

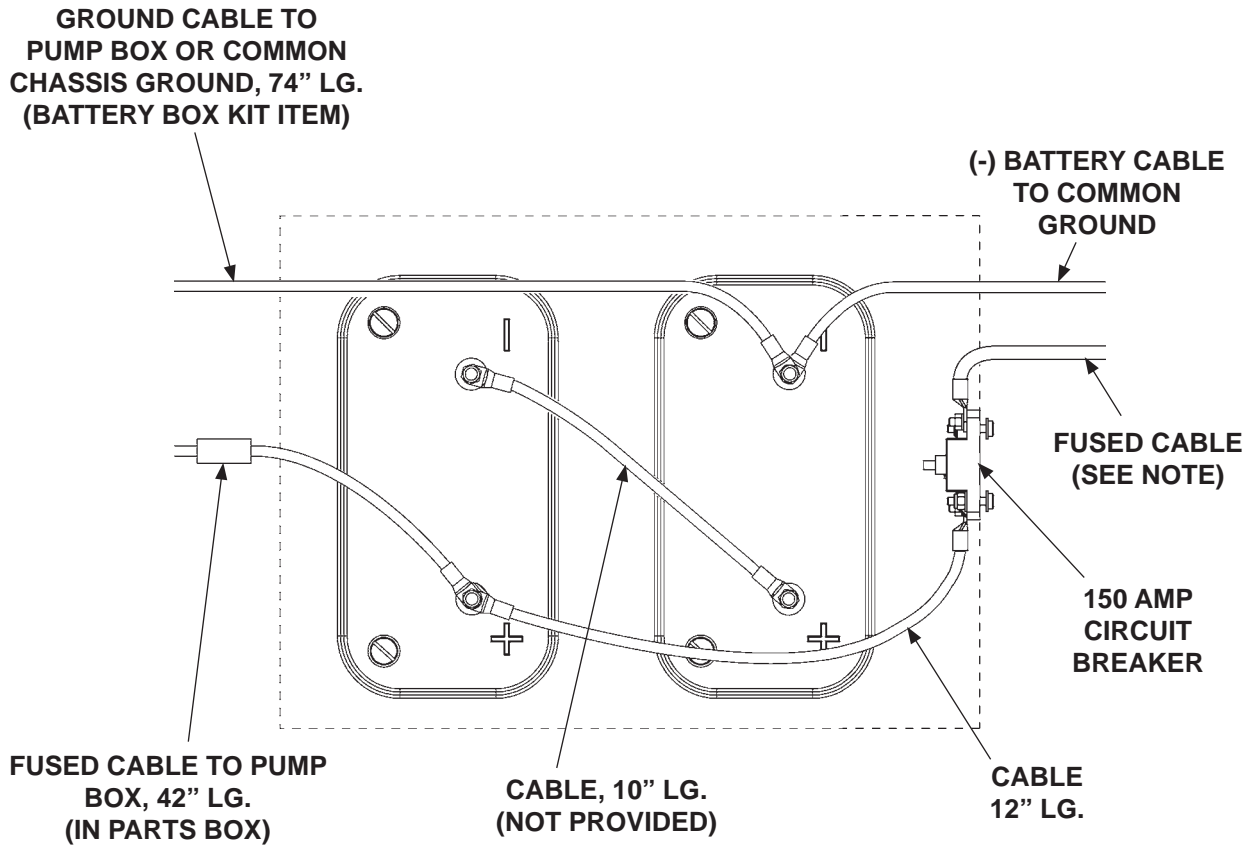
GROUND CABLE TO PUMP
BOX OR COMMON CHASSIS
GROUND, 74" LG.
(BATTERY BOX KIT ITEM)

(-) BATTERY CABLE
TO COMMON
GROUND



12 VOLT BATTERY CONNECTIONS
FOR 12 VOLT POWER
FIG. 39-1

RECOMMENDED LIFTGATE POWER CONFIGURATION - Continued

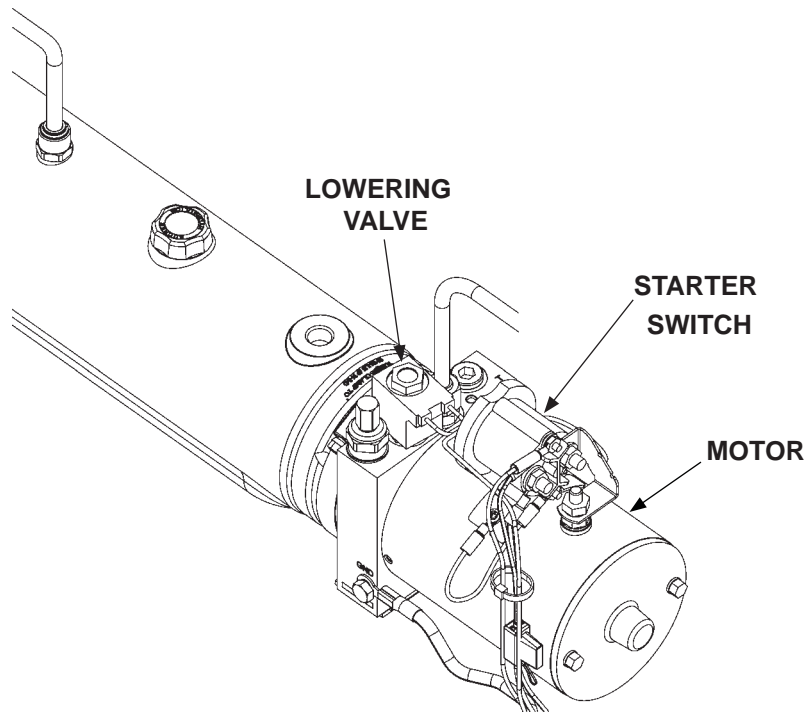


**12 VOLT BATTERY CONNECTIONS
FOR 24 VOLT POWER
FIG. 40-1**

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SYSTEM DIAGRAMS

PUMP MOTOR & VALVE OPERATION (MANUAL CLOSE)

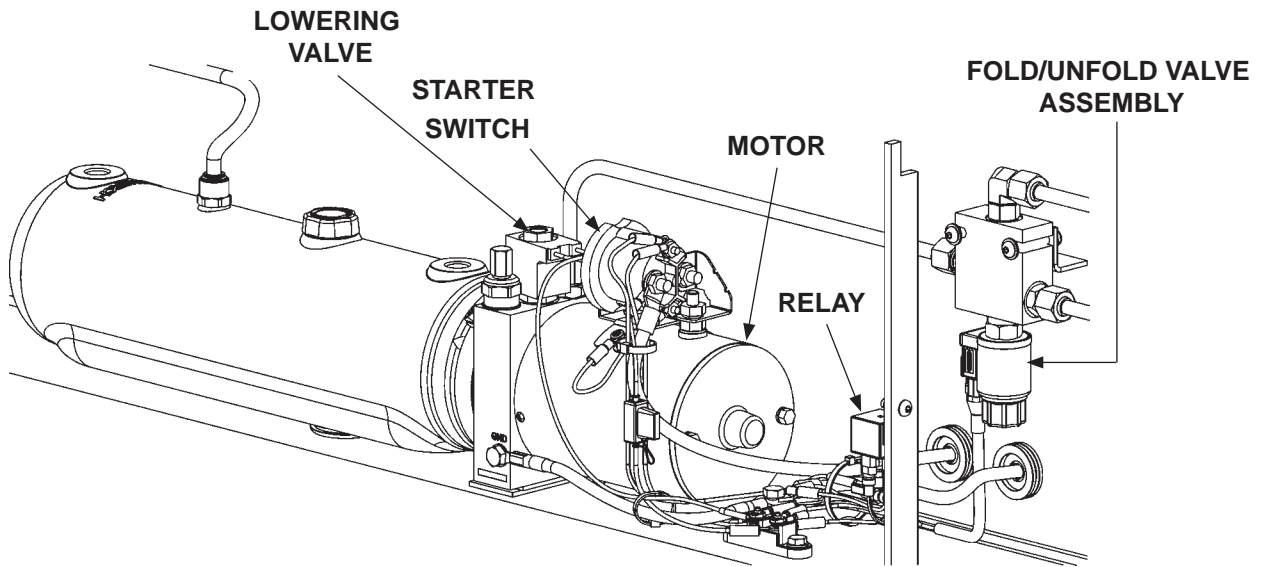


POWER UNIT
FIG. 41-1

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

TABLE 41-1

PUMP MOTOR & VALVE OPERATION (EQUIPPED WITH HYDRAULIC CLOSER)



**POWER UNIT
FIG. 42-1**

POWER UNIT MOTOR & VALVE OPERATION			
LIFTGATE FUNCTION	REMOTE VALVE OPERATION (✓ MEANS ENERGIZED)		
	MOTOR	LOWERING VALVE	FOLD/UNFOLD VALVE
RAISE	✓		
LOWER		✓	
UNFOLD		✓	✓
FOLD	✓		✓
REFER TO VALVES SHOWN ON HYDRAULIC SCHEMATIC			

TABLE 42-1

HYDRAULIC SCHEMATIC (MANUAL CLOSE)

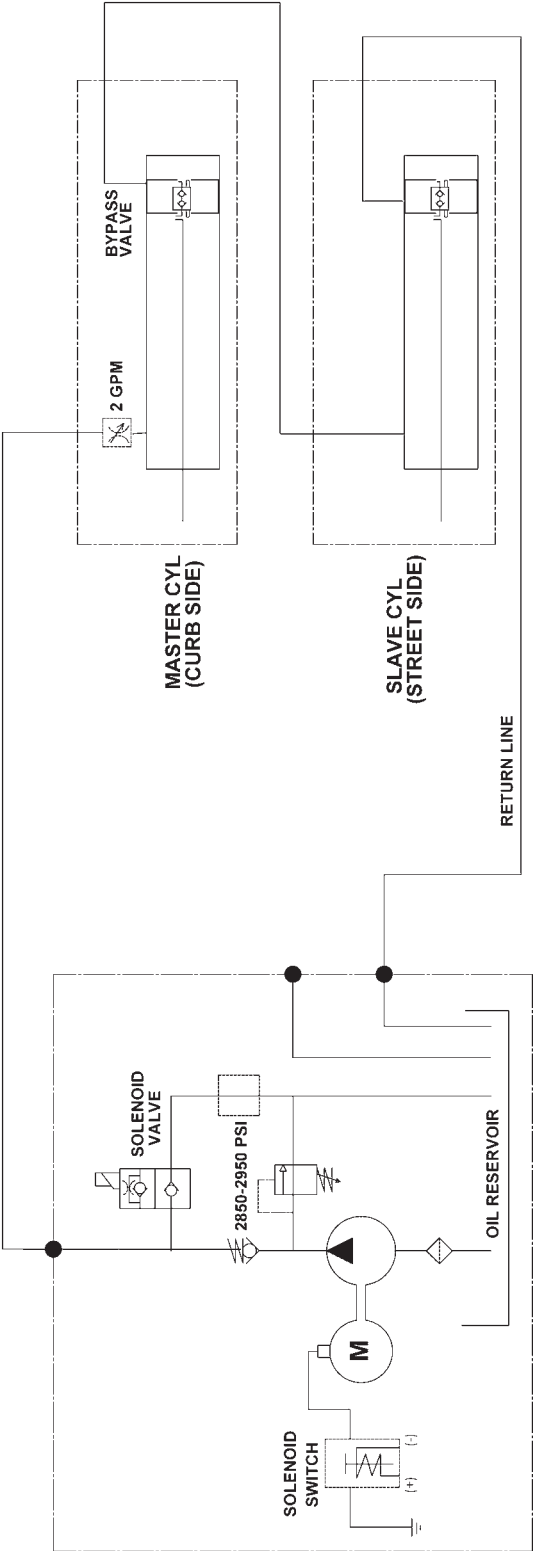


FIG. 43-1

HYDRAULIC SCHEMATIC (EQUIPPED WITH HYDRAULIC CLOSER)

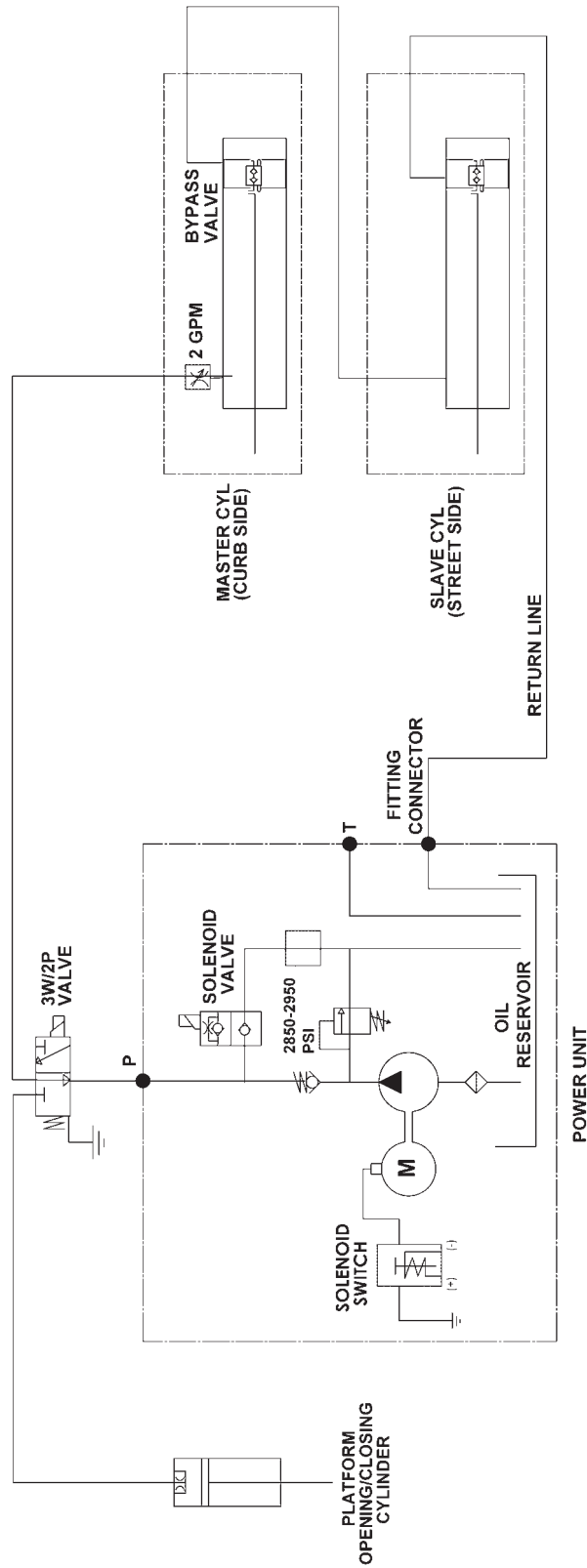


FIG. 44-1

ELECTRICAL SCHEMATIC (MANUAL CLOSE)

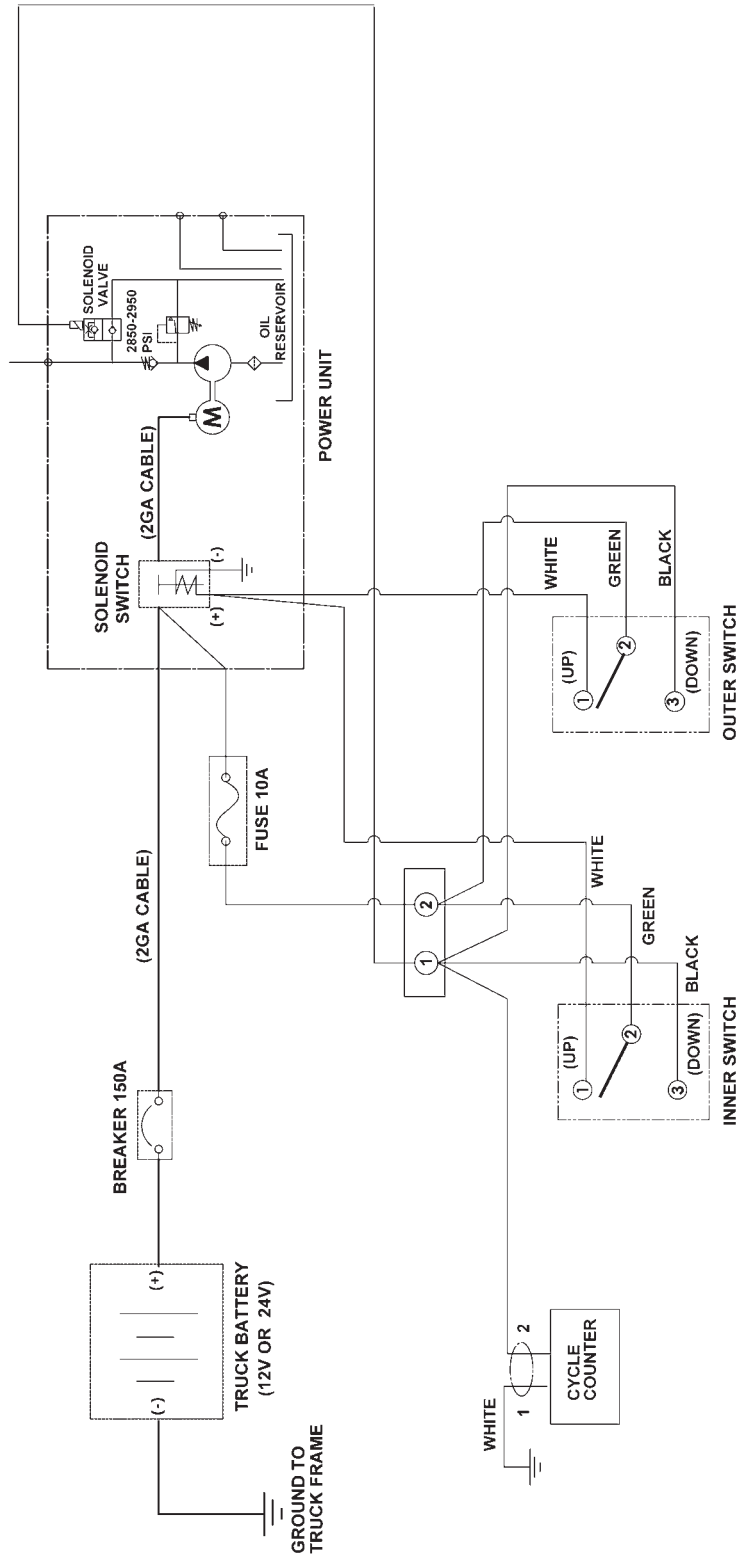


FIG. 45-1

ELECTRICAL SCHEMATIC (EQUIPPED WITH HYDRAULIC CLOSER)

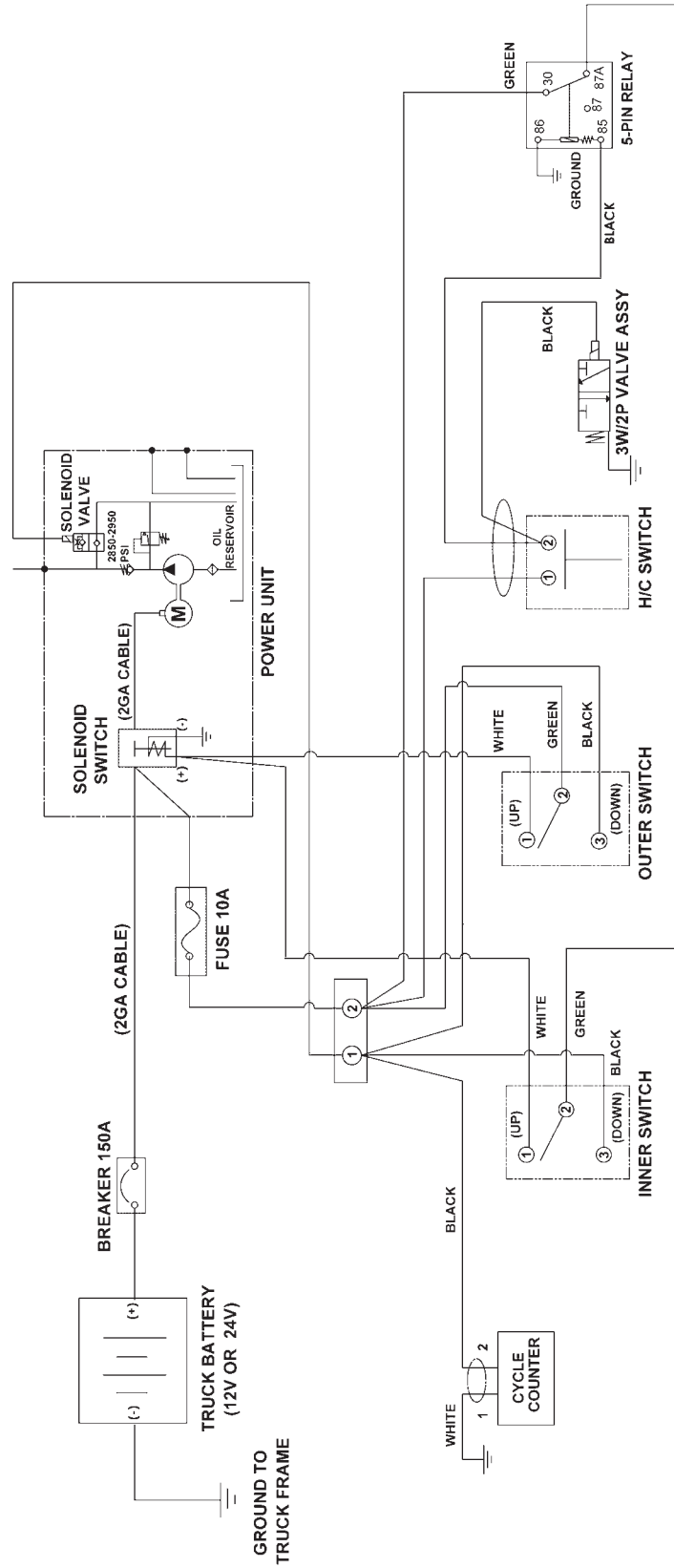


FIG. 46-1

ELECTRICAL SCHEMATIC - JUMPER HARNESS ASSEMBLY

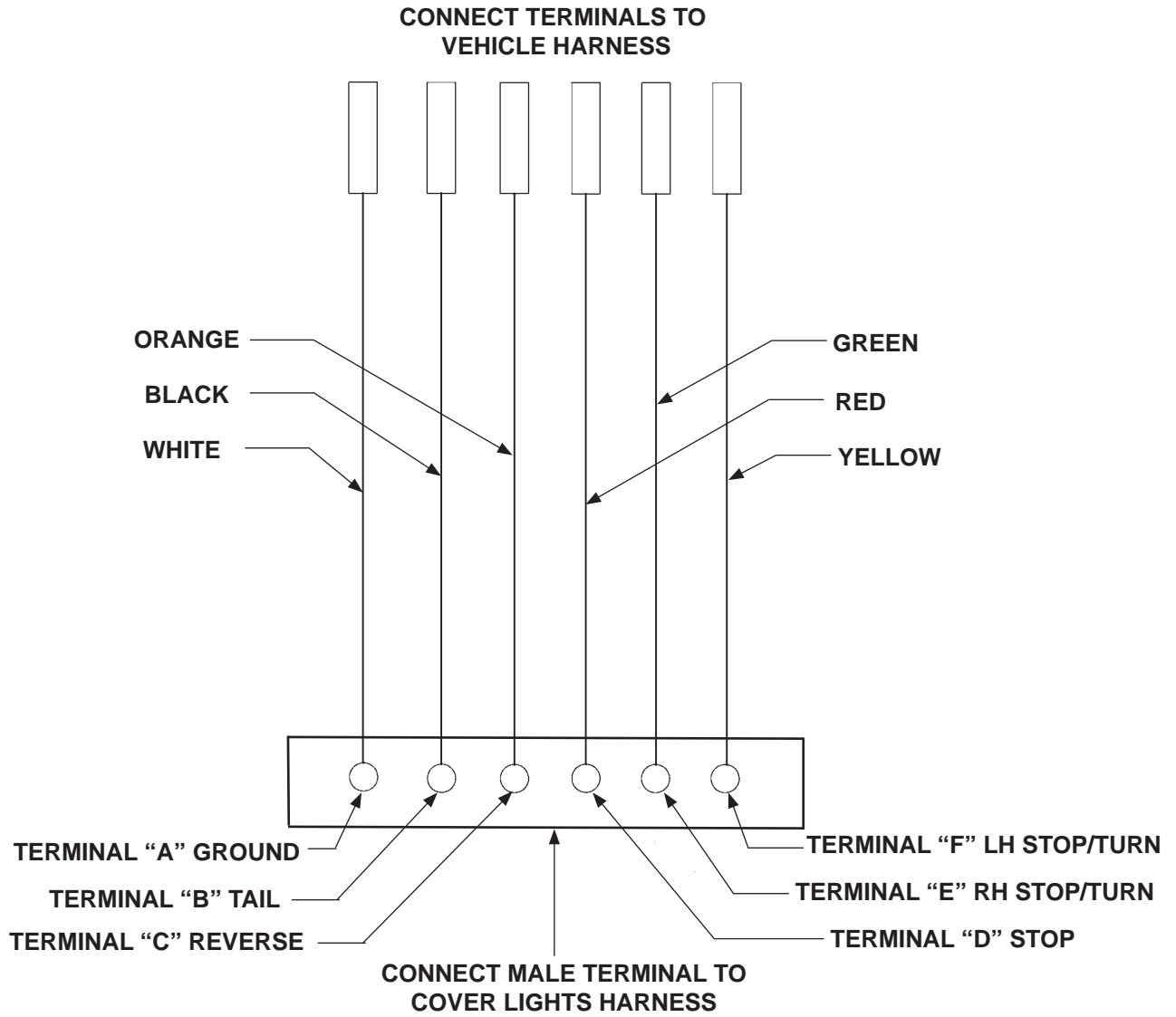


FIG. 47-1

SYSTEM DIAGRAMS

ELECTRICAL SCHEMATIC - HOUSING COVER ASSEMBLY (WITHOUT LIGHTS)

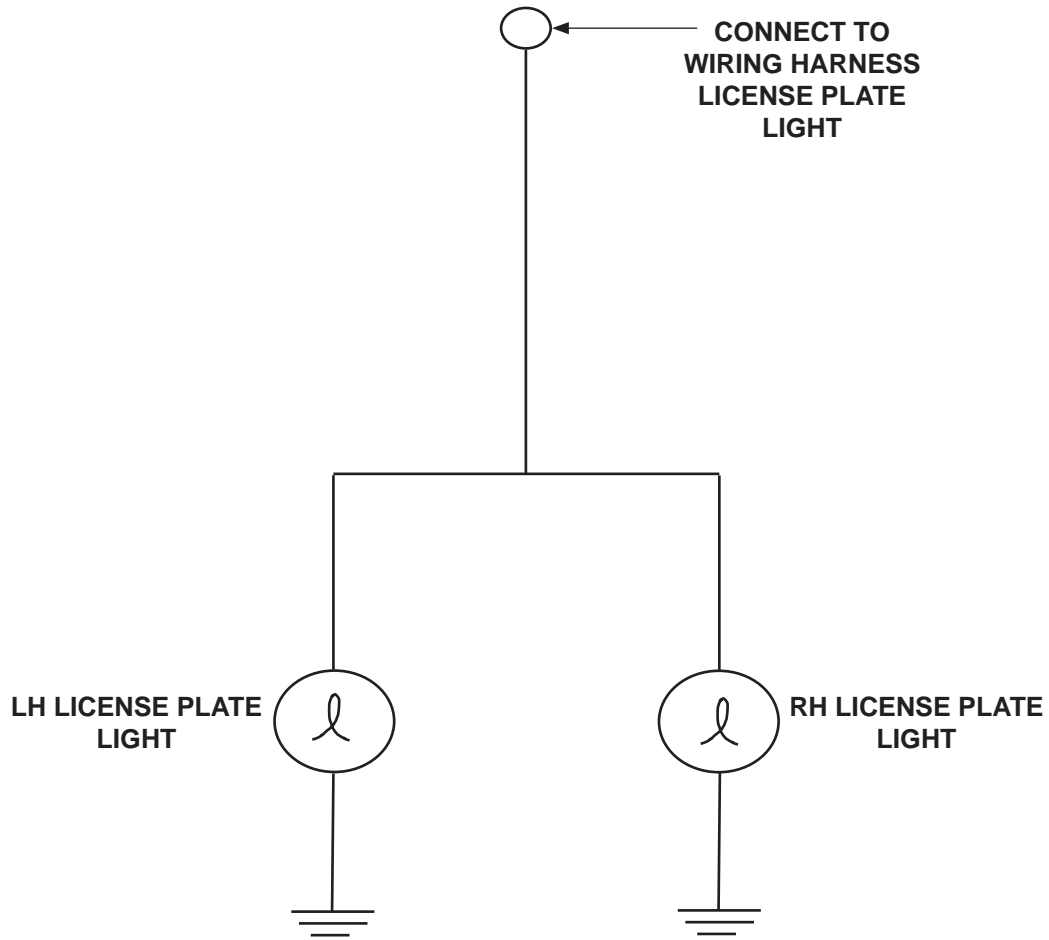


FIG. 48-1

ELECTRICAL SCHEMATIC - HOUSING COVER ASSEMBLY (WITH FOUR LIGHTS)

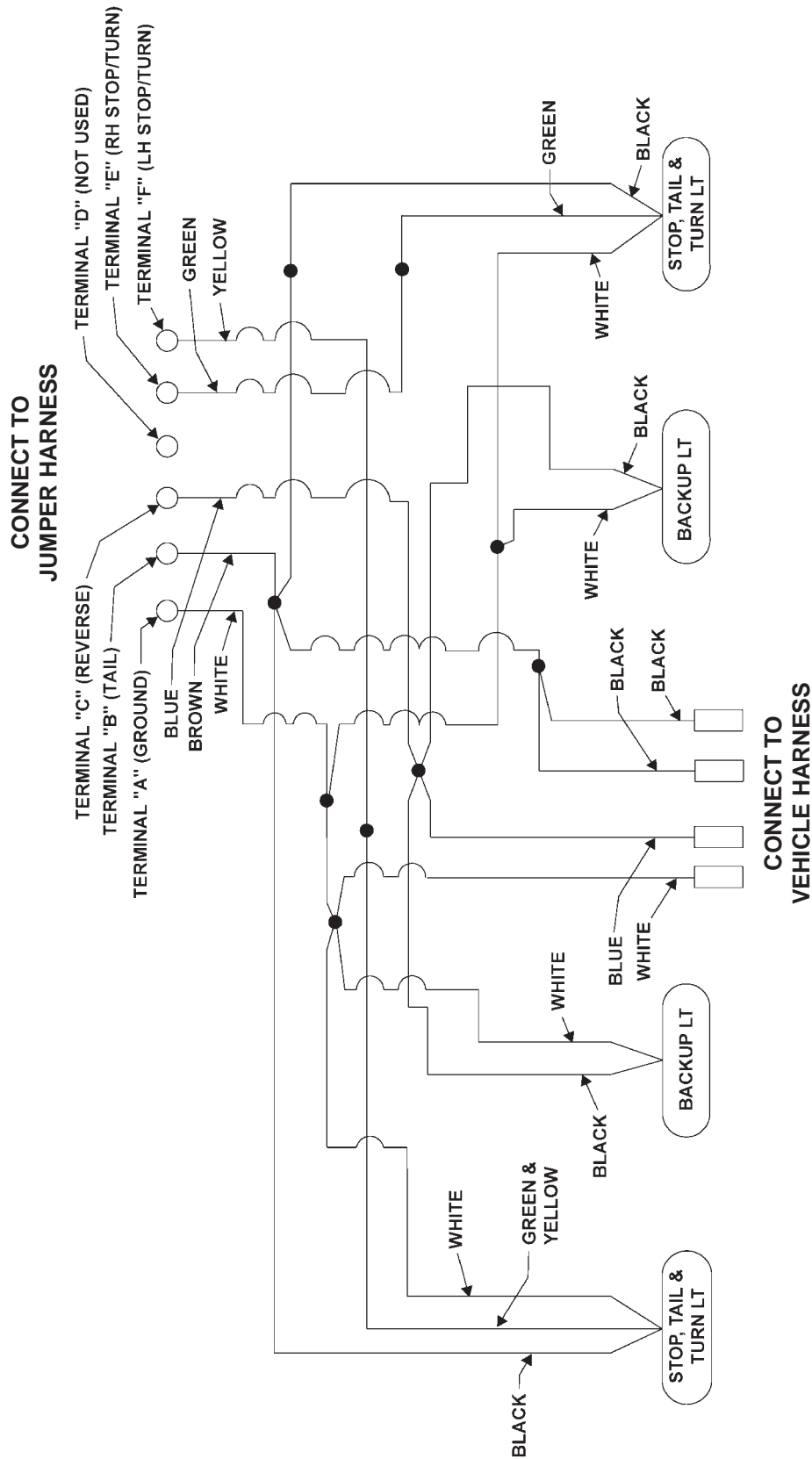


FIG. 49-1

SYSTEM DIAGRAMS

ELECTRICAL SCHEMATIC - HOUSING COVER ASSEMBLY, FOREIGN VEHICLE (WITH SIX LIGHTS)

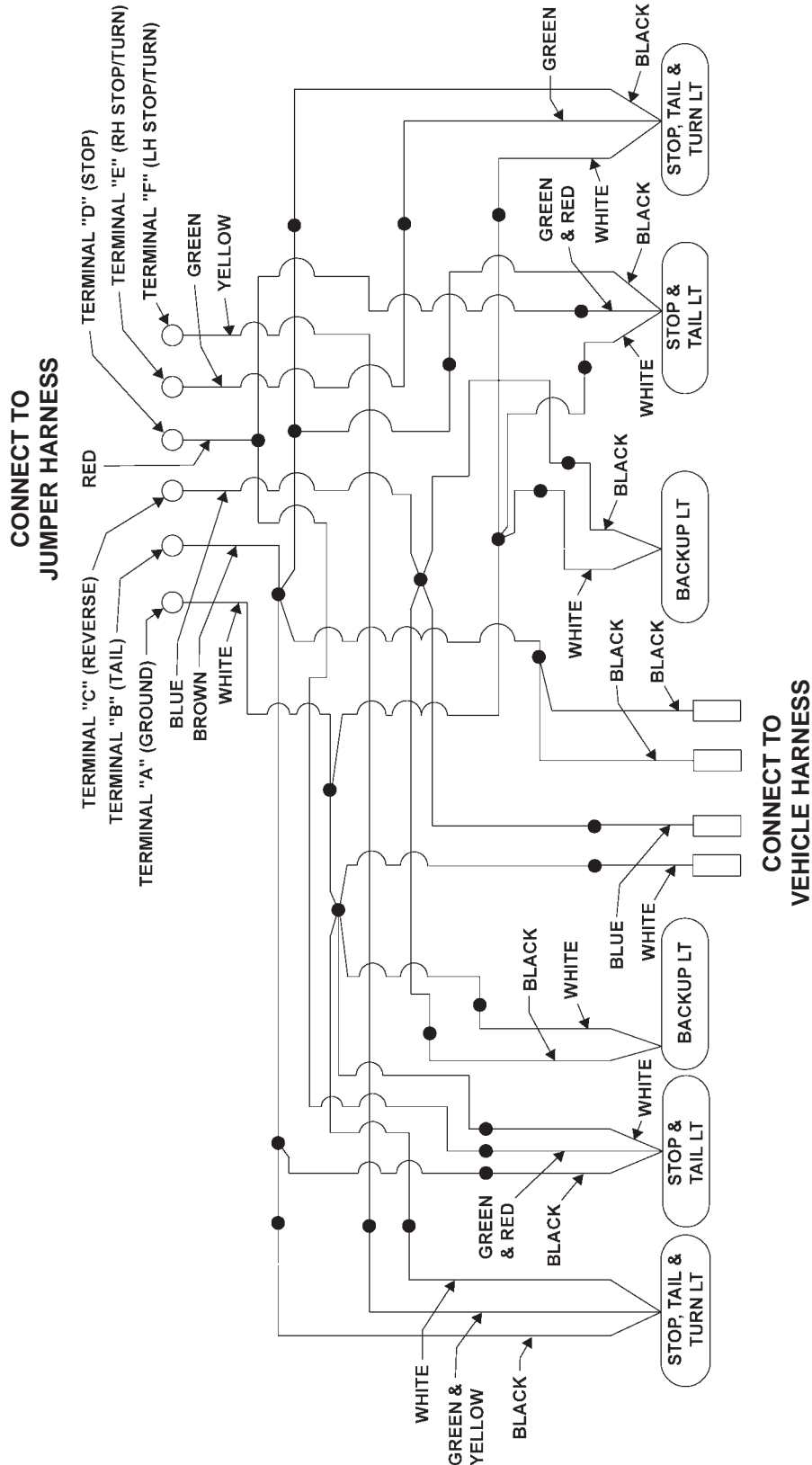


FIG. 50-1

SYSTEM DIAGRAMS DMD ELECTRICAL VALUES

SOLENOID SWITCH	12V	24V
Coil resistance:	5.4Ω @70°F. ±15%	20.1Ω @70°F. ±15%
Ampere:	2.2A	1.2A
Coil terminal torque: 10-15 lb-in max.		
Contact terminal torque: 30-35 lb-in max.		
LOWERING VALVE		
Coil resistance:	6.6Ω @ 70°F. ±15%	26.7Ω @ 70°F. ±15%
Ampere:	1.8A	0.9A
Coil terminal torque: 15-45 lb-in max.		
Valve cartridge torque: 25-30 lb-ft max.		
Coil nut torque: 15-45 lb-in		
FOLD/UNFOLD VALVE		
Coil resistance:	8.0Ω @ 70°F. ±15%	30Ω @ 70°F. ±15%
Ampere:	1.5A	0.8A
Coil terminal torque: 3-4.5 lb-ft max.		
Valve cartridge torque: 18.5-22 lb-ft max.		
GROUND CABLE		
Cap screw torque: 24 lb-ft max.		
CYCLE COUNTER		
Operation voltage	7V - 30V	7V - 30V
150 AMP CIRCUIT BREAKER		
1/4"-20 nut torque: 50 lb-in max.		

TABLE 51-1

OPTIONS

OPTIONAL LIFTGATE COMPONENTS

ELECTRICAL KITS	PART NO.	STD	HC
IN CAB ON-OFF SWITCH	286691-01	X	X
HAND HELD CONTROL ASSEMBLY, MANUAL CLOSER	298675-01	X	
HAND HELD CONTROL ASSEMBLY, HYDRAULIC CLOSER	298675-02		X
STREET SIDE CONTROL, MANUAL CLOSER	298674-01	X	
STREET SIDE CONTROL, HYDRAULIC CLOSER	298674-02		X
MISCELLANEOUS KITS	PART NO.	STD	HC
TRAFFIC CONE	268893-01	X	X
BACK-UP SENSOR ADAPTER, .75"	299392-01	X	X
BACK-UP SENSOR ADAPTER, .96"	299392-02	X	X
BACK-UP SENSOR ADAPTER, .87"	299392-03	X	X

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 (if applicable)
- Inspect tightness of hardware used to secure liftgate to vehicle.
- Ensure platform ramp touches ground when runner is 1" above ground, and platform & flipover are level & touching the ground.

Hydraulic Inspection:

- Proper fluid level (See **CHECKING HYDRAULIC FLUID** step in this manual.)
- Check hydraulic fittings in pump box for leaks
- Check hydraulic line connections for leaks

Electrical Inspection:

- Check power/charge plug and terminal
- Check for tight wire connections
- Circuit breaker (150A) installed in battery box (if equipped) or by truck/tractor battery.
- Ensure batteries are fully charged, all cable connections are tight & tiedowns are tight.
- 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) are tight & secure.

Operation Inspection:

NOTE: The following times are for 56" bed height, aluminum platform and flipover, Exxon Unavis HVI-13 oil, & temperature at 79°F. Times are for reference only and may vary for larger platforms, smaller platforms, or temperature changes.

- Check operation of all main and optional control switches.

All DMD

- Unloaded platform lowers in **21 to 25 sec.**
- Unloaded platform raises in **11 to 15 sec.**

DMD with hydraulic platform closer, only

- Platform unfolds in **6 to 8 sec.**
- Platform folds in **4 to 6 sec.**
- All DMD:** Unloaded platform raises and lowers evenly. Maximum 1" difference of runners from side to side.
- All DMD:** Platform stores securely on transit latches.
- Check if cycle counter works
- Decals in correct location and legible

Verify all lights are operational

- Taillights, stop lights, turn lights, and backup lights turn **ON** and **OFF** correctly.

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