

# V2 Series Mounting Instructions

Flatbed or Cube Van Body  
on a Cutaway Van or Chassis Cab

Note: Mounting kits for V2 liftgates are intended for specific vehicle applications. Use of a mounting kit in a vehicle or manner other than intended is **NOT** recommended by Tommy Gate. Using an incorrect mounting kit will likely result in damage to the vehicle's bumper, door and floor area, as well as to the lifting and folding mechanism of the liftgate.

Note: This kit is intended for a cutaway van or chassis cab, with a flatbed or cube van body. It is **NOT** intended for cargo vans.

## Preparing the Liftgate

1. **Remove** the bracket kit and pallet sides from the liftgate pallet.
2. **Verify** mounting kit, liftgate, and other components (Figure 1 and Table 1).

Table 1: Parts list.

QTY.	PART NO.	DESCRIPTION
1	CVT56	Liftgate
1	015241	Drill Template
1	017548	Bracket Kit

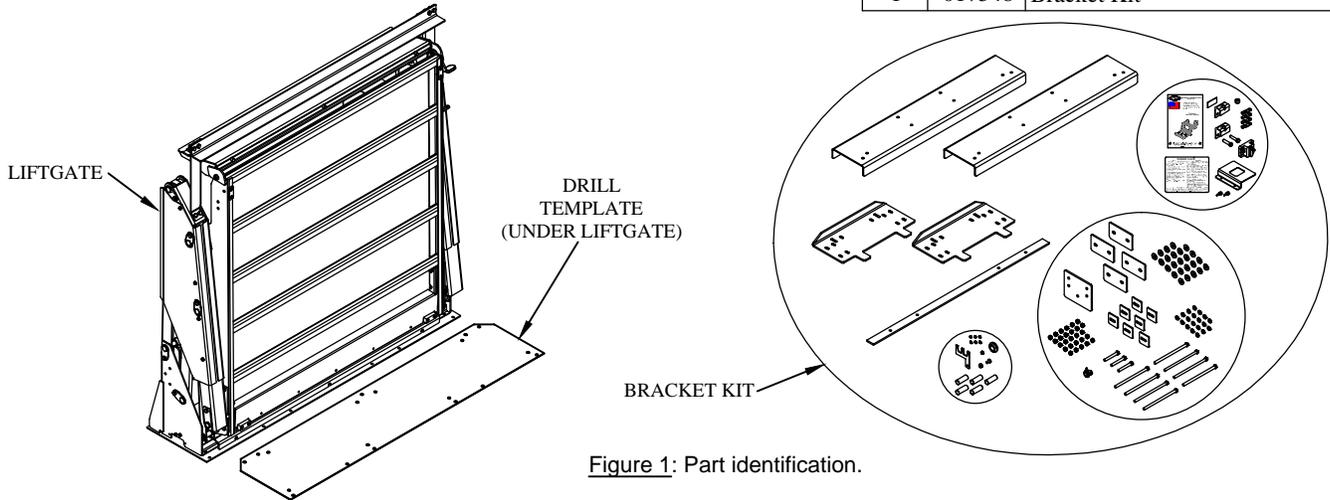


Figure 1: Part identification.

3. **Remove** the pump box cover by removing five (5) screws (Figure 3).
4. **Unscrew** the solid plastic plug from the pump reservoir and **install** the vent plug provided, if not already installed (Figure 2).
5. **Replace** the pump box cover and screws (Figure 3).
6. **Remove** and **Save** the six (6) screws fastening the base plate cover to the base plate (Figure 3).
7. **Remove** and **Save** base plate cover (Figure 3).  
With the screws removed, it can slide out from under the platform.
8. **Remove** and **Save** the floor transition that is under the base plate cover (Figure 3).

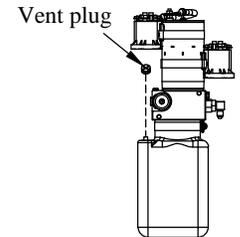


Figure 2: Vent plug.

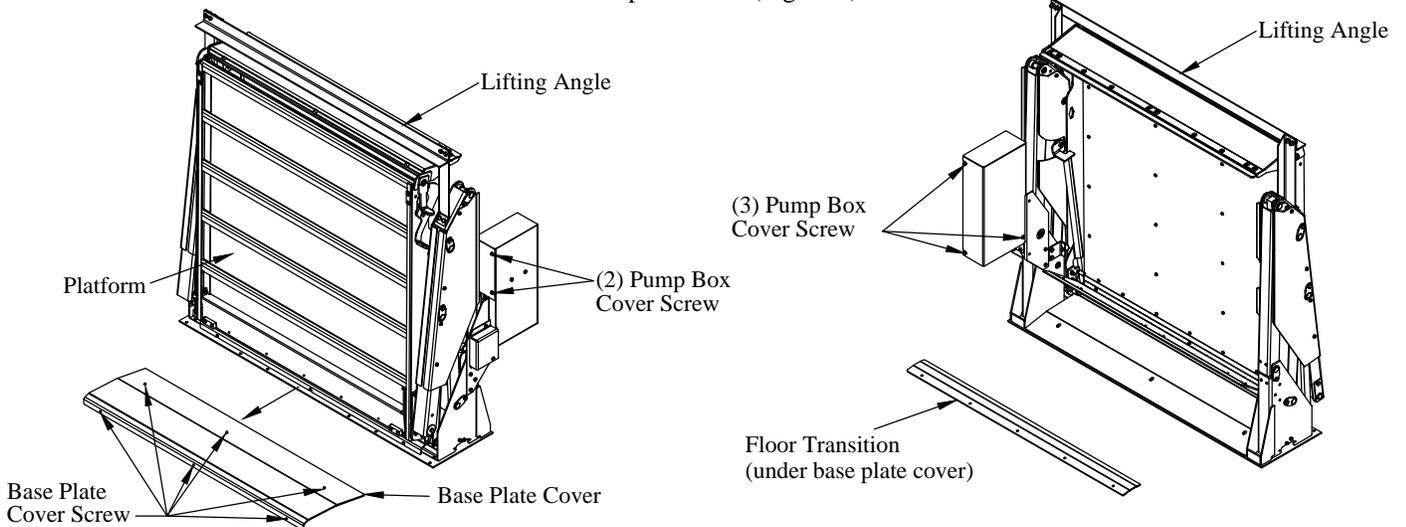


Figure 3: Base plate cover and pump box.

## V2 Series Mounting Instructions

### Preparing the Liftgate (continued)

**Caution:** Be careful not to tip the liftgate over during the next steps. The liftgate will stand upright, but could be knocked over with a moderate force.

9. Remove the screws and bolts fastening the liftgate to the pallet.
10. Lift the liftgate by the lifting angle with a fork truck or hoist (Figure 3).
11. Lower the liftgate onto the ground.
12. Remove the drill template from the pallet (Figure 1).

### Determining a Location for the Liftgate

1. Verify that the liftgate fits the height and width of the opening.
2. Determine a location for the liftgate that will allow the following.
  - Liftgate base plate is at least 3" from inside of door(s) or rear edge of flatbed to allow space for the floor supports (Figure 4) and (Figure 8).
  - Roll up door will clear the top of the stored liftgate (Figure 6).
  - Liftgate will clear the rear edge of the floor (DPN 095279).
  - Liftgate will clear the rear bumper (DPN 095279).
  - Liftgate will reach the ground (DPN 095279).
  - Bolt locations are free of obstructions (Figure 4).
3. Verify that the selected location provides the following structure (Figure 4) and (Figure 6).
  - Vertical-Down force at rear of liftgate will be sufficiently supported by the floor near "D" locations.
  - Vertical-Up force from mounting channel will be sufficiently supported by cross member(s) between "B" and "Q" locations.

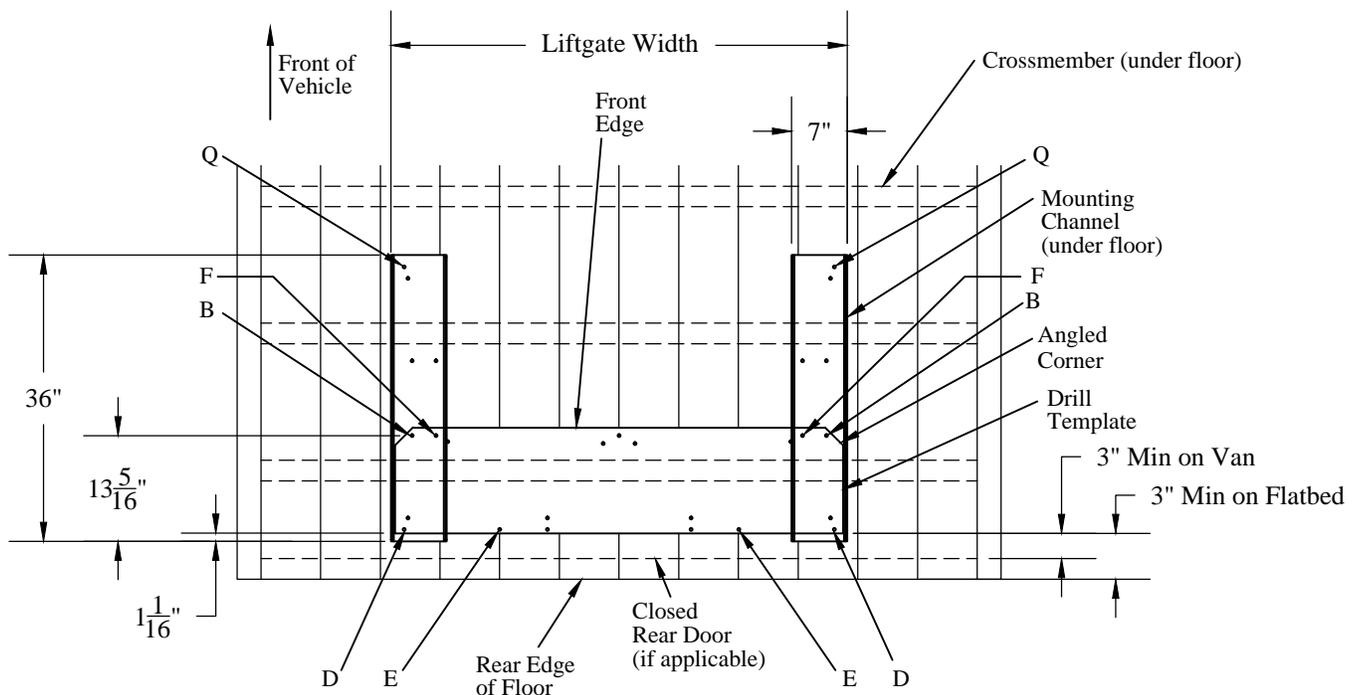


Figure 4: Liftgate location (top view).

## V2 Series Mounting Instructions

### Preparing the Vehicle

1. **Remove** the spare tire, if present at rear of vehicle.
2. **Remove** or **Modify** any rear step that will conflict with the liftgate.
3. **Remove** or **Modify** any threshold at the rear door that will conflict with the liftgate.
4. **Place** the drill template in the rear of the vehicle (Figure 5):
  - Distance from rear previously determined.
  - Centered side to side.
  - Angled corners toward the front of the vehicle.
  - Holes "A" and "B" toward the front of the vehicle.
  - Holes "D" and "E" toward the rear of the vehicle.
5. **Check** for obstructions before drilling in the next steps.

Note: Do not drill all holes in the template, they are not all used for this application. Only drill holes when indicated. Any time a hole is drilled in the vehicle, apply rust preventative to the bare metal.

6. **Drill** 3/8" holes in nine (9) locations in the template. Drill "A", "B", "D", "E", and "F" locations only, skip all others (Figure 5). Insert a 3/8" bolt into each hole as it is drilled to maintain hole alignment and template position.

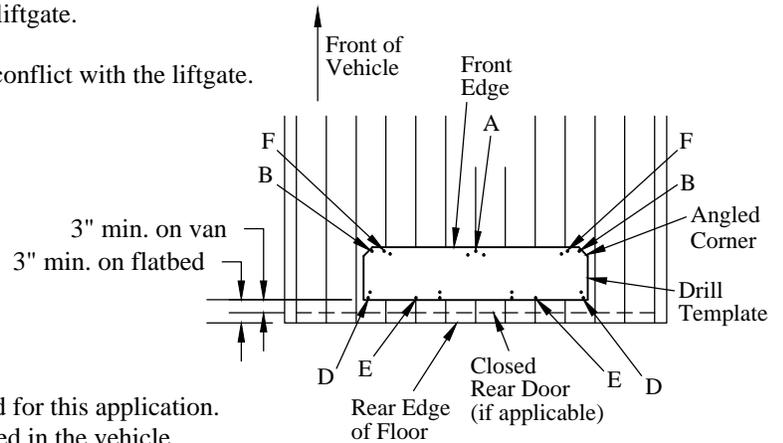


Figure 5: Drill template location (top view).

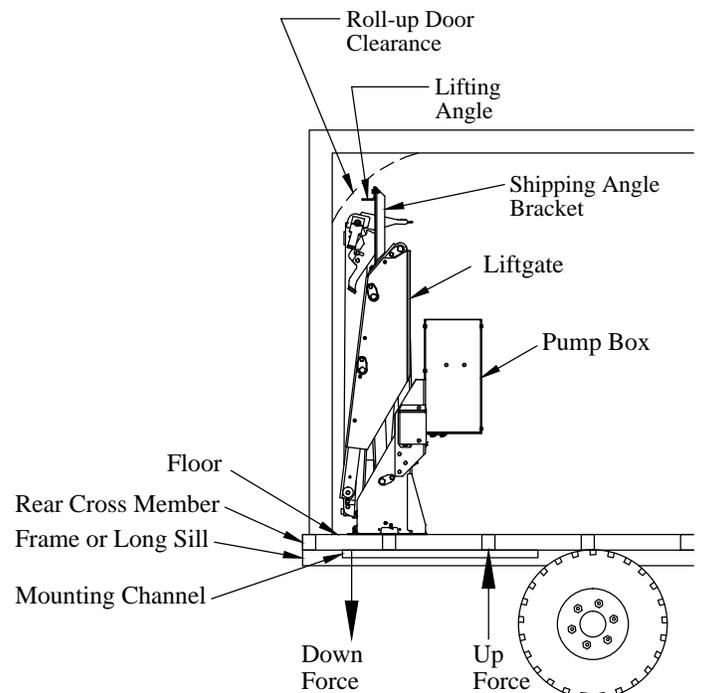


Figure 6: Liftgate positioning.

## V2 Series Mounting Instructions

### Preparing the Vehicle (continued)

7. **Position** the mounting channels to be used as a drill template (Figure 7):

- "B", "D", and "F" locations aligned with previously drilled holes.
- "Q" locations are toward the outside.
- Both mounting channels are positioned straight front-to-back.

8. **Drill** a 3/8" hole at each "Q" location.

9. **Remove** the drill template and mounting channels.

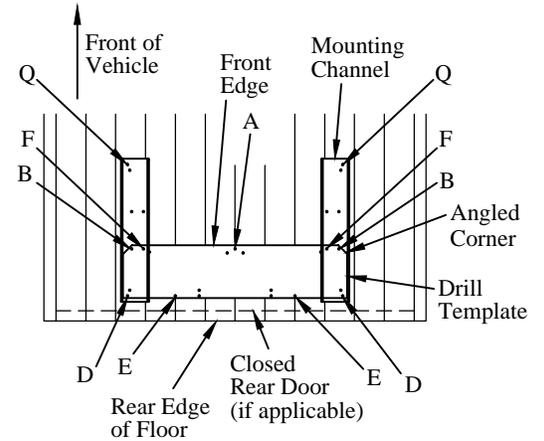


Figure 7: Drilling location (top view).

### Installing the Floor Supports

1. **Position** the 1/4" floor supports on the vehicle floor (Figure 8).

2. **Position** the 1/4" strip between the floor supports along the "E" locations (Figure 8).

3. **Position** the 1/4" plate at the "A" location (Figure 8).

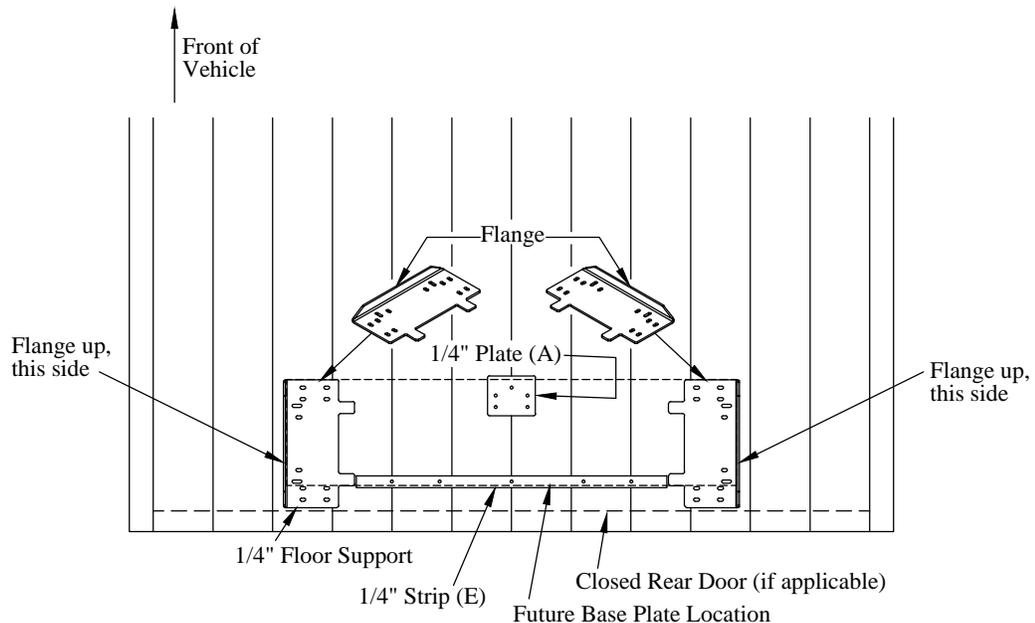


Figure 8: Floor support locations (top view).

## V2 Series Mounting Instructions

### Installing the Liftgate

**Caution:** Be careful not to tip the liftgate over during the next steps. The liftgate will stand upright, but could be knocked over with a moderate force.

1. **Lift** the liftgate by the lifting angle with a fork truck (Figure 9).
2. **Place** the liftgate in the rear of the vehicle:
  - On top of the 1/4" floor supports
  - Centered side to side
  - Location previously determined in these instructions (Figure 5).
3. **Place** a 3/8" flat washer on each base plate bolt.
4. **Insert** base plate bolts into holes in base plate, down through vehicle floor (Figure 7).
  - (3) 3/8 x 2-3/4" bolt at "A" and "E" locations.
  - (8) 3/8 x 7" fully threaded bolts at "B", "D", "F", and "Q" locations.

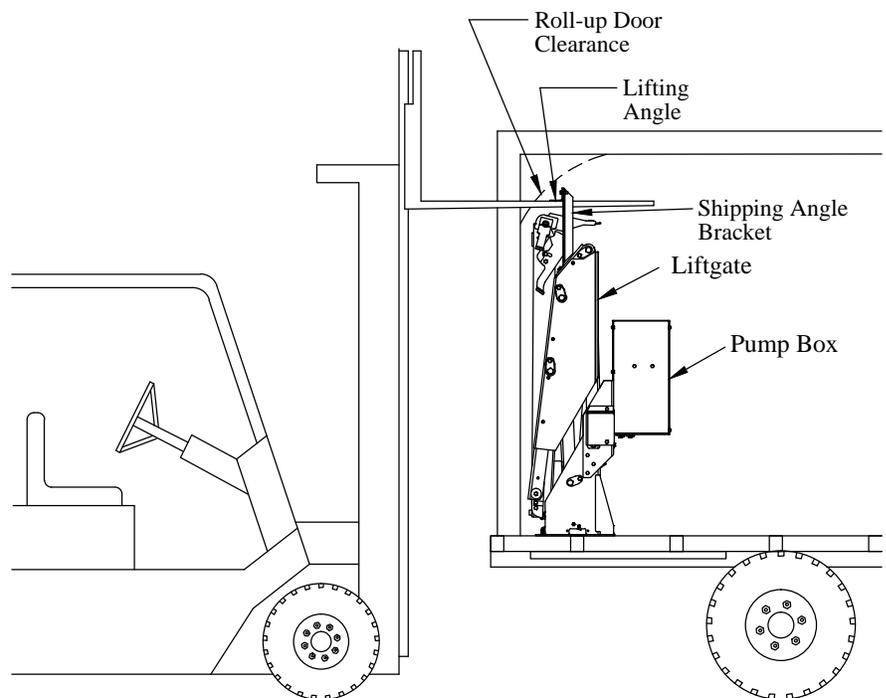


Figure 9: Lifting angle.

## V2 Series Mounting Instructions

### Installing the Liftgate (continued)

- 5. Install** a square washer, 3/8" flat washer, lock washer, and hex nut on each of the "A" and "E" location bolts (Figure 10).  
Do not tighten at this time.
- 6. Install** a square washer, 3/8" flat washer, lock washer, and hex nut on each of the "D" and "Q" location bolts (Figure 10).  
Do not tighten at this time.
- 7. Install** a backer plate, 3/8" flat washers, lock washers, and hex nuts on each pair of "B" and "F" location bolts (Figure 10).  
Do not tighten at this time.

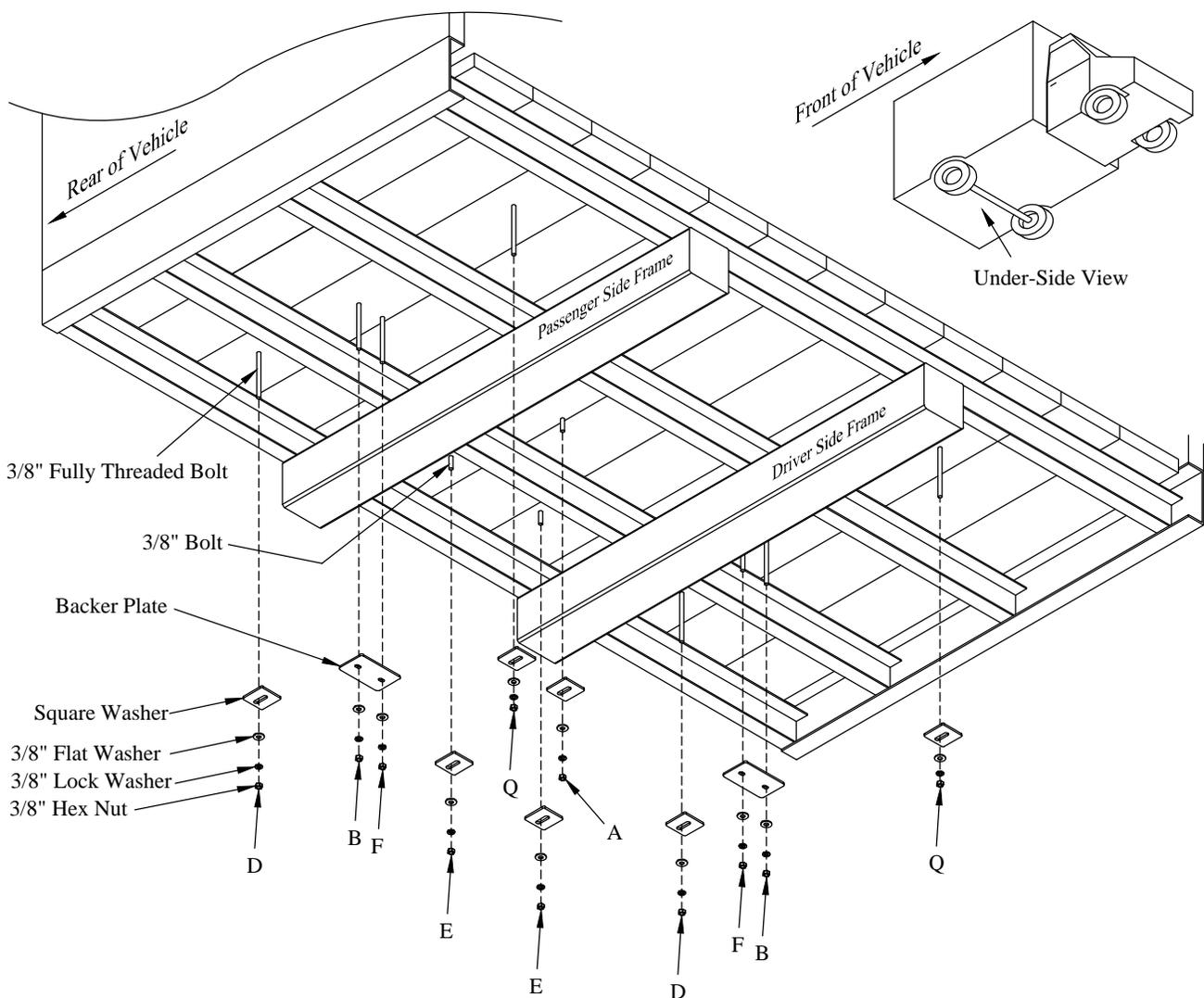
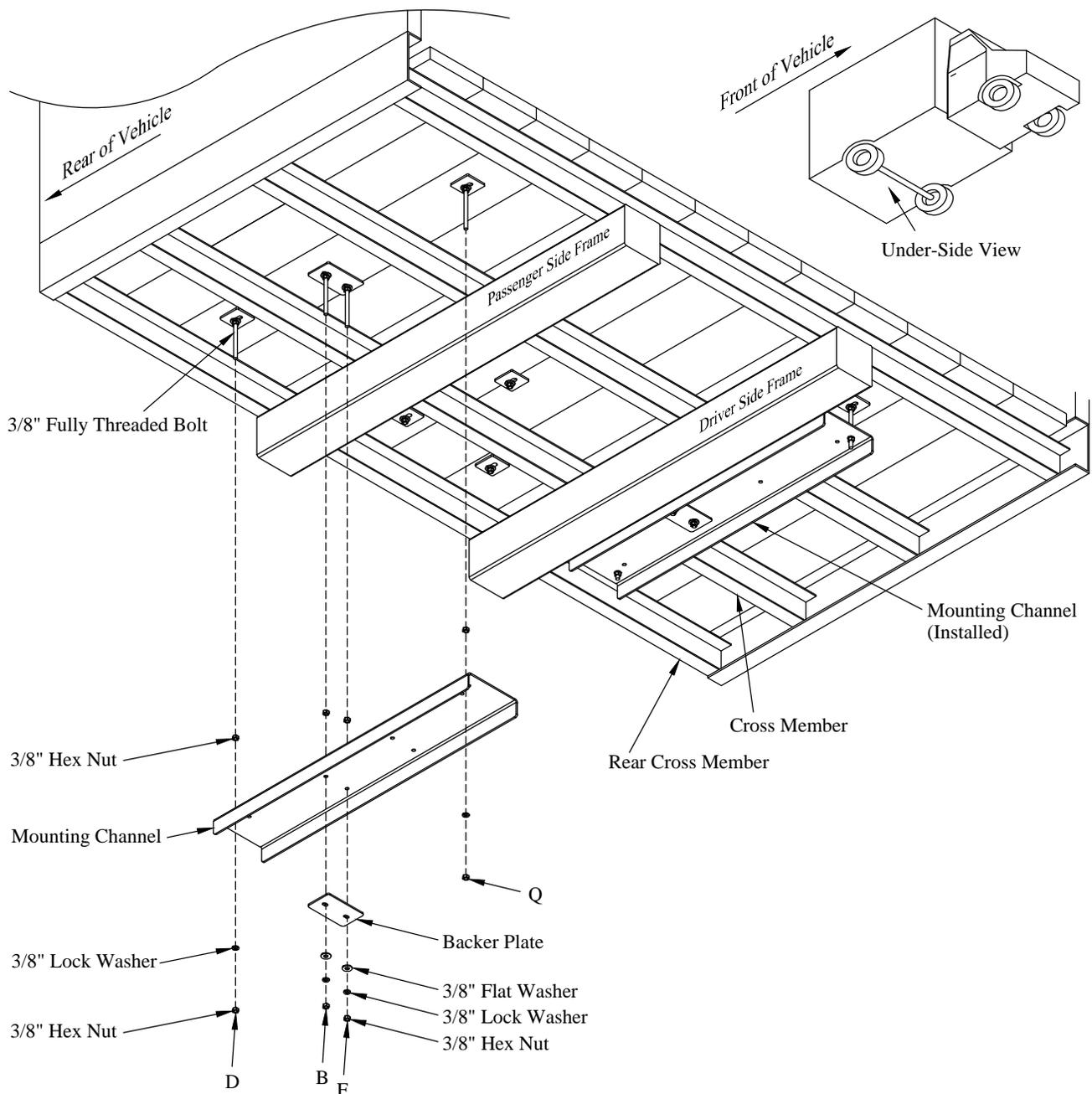


Figure 10: Under-side view of vehicle.

## V2 Series Mounting Instructions

### Installing the Liftgate (continued)

8. **Thread** an additional 3/8" hex nut onto each "B", "D", "F", and "Q" location bolts (Figure 11). Do not tighten at this time.
9. **Install** a mounting channel on each side using a backer plate, 3/8" flat washers, lock washers, and hex nuts on the "B" and "F" location bolts (Figure 11). Do not tighten at this time.
10. **Install** a 3/8" lock washer and hex nut on "D" and "Q" location bolts (Figure 11). Do not tighten at this time.
11. **Tighten** the bottom nuts at positions "A", "B", "D", "E", "F", and "Q" in an alternating pattern (Figure 10) and (Figure 11). Be sure not to over-tighten the nuts and warp the base plate.
12. **Hold** the bolt/nut from turning and **Tighten** the 3/8" hex nuts on the fully threaded bolts at the "B", "D", "F", and "Q" locations.



## V2 Series Mounting Instructions

### Routing the Power Cables: Ford Transit

1. **Skip** to Routing the Power Cable: Except Ford Transit if the vehicle is NOT a Ford Transit.

#### Note: 2020+ Ford Transit and E-Transit

Connect the liftgate positive cable directly to the battery, not the Customer Connection Points (CCP) for these model years of Transit. Electrical loads controlled by the van's load-shed signal, such as the CCP, may temporarily be turned off by the load-shed switch while the liftgate is operated.

#### Note: 2015-2019 Ford Transit

Ford recommends using the vehicle Customer Connection Points (CCP) to power the liftgate. Vehicle option 67C-User Defined Upfitter Switches, provides three (3) 60 amp CCP, which can be combined into one 180 amp connection. If three (3) CCP are not available, Ford part number BK2Z-14S411-A adds the additional CCP. If neither of these options are available, large loads can be connected to an empty M6 stud on the positive battery terminal using the supplied M6 lock nut (Ford Bulletin Q-226R2).

2. **Install** the circuit breaker on the floor behind the driver seat, near the battery, leaving enough room for the power cables to be installed and so that the circuit breaker can easily be reset.
3. **Check** for obstructions before drilling.

Note: Any time a hole is drilled in the vehicle, apply rust preventative to the bare metal.

4. **Drill** and **Deburr** a 1-1/4" hole in the vehicle floor, near the power unit, to run the power cables through.  
Use the supplied rubber grommet to protect the power cables from the sharp sheet metal edge of the drilled hole.
5. **Drill** and **Deburr** a 1-1/4" hole in the floor next to the driver seat in the location shown (Figure 12).  
An alternate location will be needed if there is a trailer brake controller in the way.

Note: Follow the *Tommy Gate Recommended Electrical Wiring Guidelines* and wiring diagram (Figure 19) in the following steps.

6. **Route** the power cables under the vehicle from the liftgate, along the frame, to a location under the driver door (Figure 14).
7. **Pull** the power cables through the drilled 1-1/4" hole in the floor, using the supplied grommet.
8. **Separate** the positive(+) and negative(-) leads.
9. **Cut** the positive(+) lead to the length required to reach the auxiliary (AUX) terminal of the circuit breaker.
10. **Cut** the remaining positive(+) lead long enough to reach from the circuit breaker battery (BAT) terminal to the positive 12 volt connection point for your application (see notes at beginning of this section).
11. **Cut** the negative(-) lead to the length required to reach a vehicle ground point on the floor between the front seats (Figure 12).

**IMPORTANT:** The pump and motor unit for this lift can require significant electrical power at 12 volts D.C.  
Be sure that the negative (-) ground lead is securely connected to a sufficient vehicle ground point.

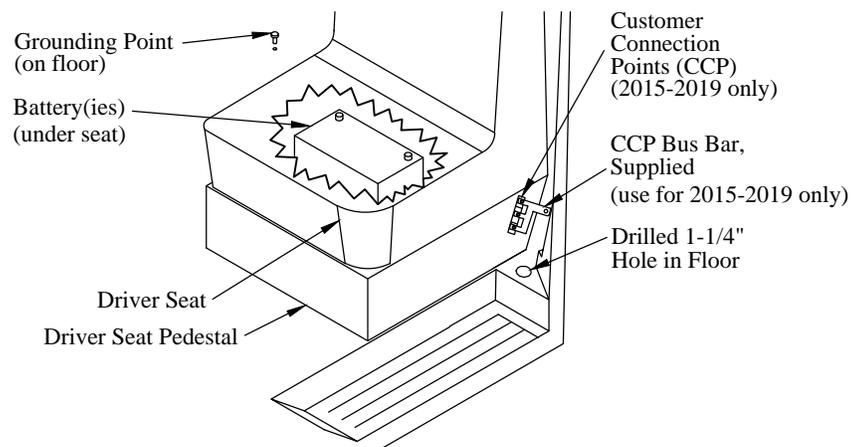


Figure 12: Power connection locations.

## V2 Series Mounting Instructions

### Routing the Power Cables: Ford Transit (continued)

12. **Install** the copper lugs on all required ends. Make sure the copper lugs will fit flush with the connection surfaces.
13. **Connect** the circuit breaker (Figure 19). Use the supplied heat shrink tubing.
14. **Check** for obstructions before drilling.
15. **Attach** the circuit breaker cover using the supplied self-drilling screws (Figure 16).
16. **Connect** the positive(+) lead to the M6 stud on the positive battery clamp. Reuse the M6 lock nut, when possible (Figure 15).  
For 2015-2019, see Ford Bulletin Q-226R2 and do not connect to the stud occupied by the alternator sensing circuit.
17. **Apply** sealant to holes drilled for power cables.
18. **Skip** Steps 19-22 for 2020+ Transit.  
**Complete** Steps 19-22 only if using the CCP bus bar for 2015-2019.
19. **Remove** the plastic cover from the CCP on the driver seat pedestal (Figure 14).
20. **Install** the supplied bus bar on the CCP studs using three (3) supplied M5 nuts and star washers.  
The bus bar combines three (3) 60 amp connections into one 180 amp connection point.
21. **Connect** the positive(+) lead to the CCP bus bar. Use the supplied 5/16" bolt, lock nut, and two (2) pieces of heat shrink tubing to cover the cable connection to the bus bar.
22. **Install** the plastic CCP cover on the bus bar cable connection. The cover will need to be trimmed for bus bar clearance.
23. **Skip** to Installing the Floor Transition.

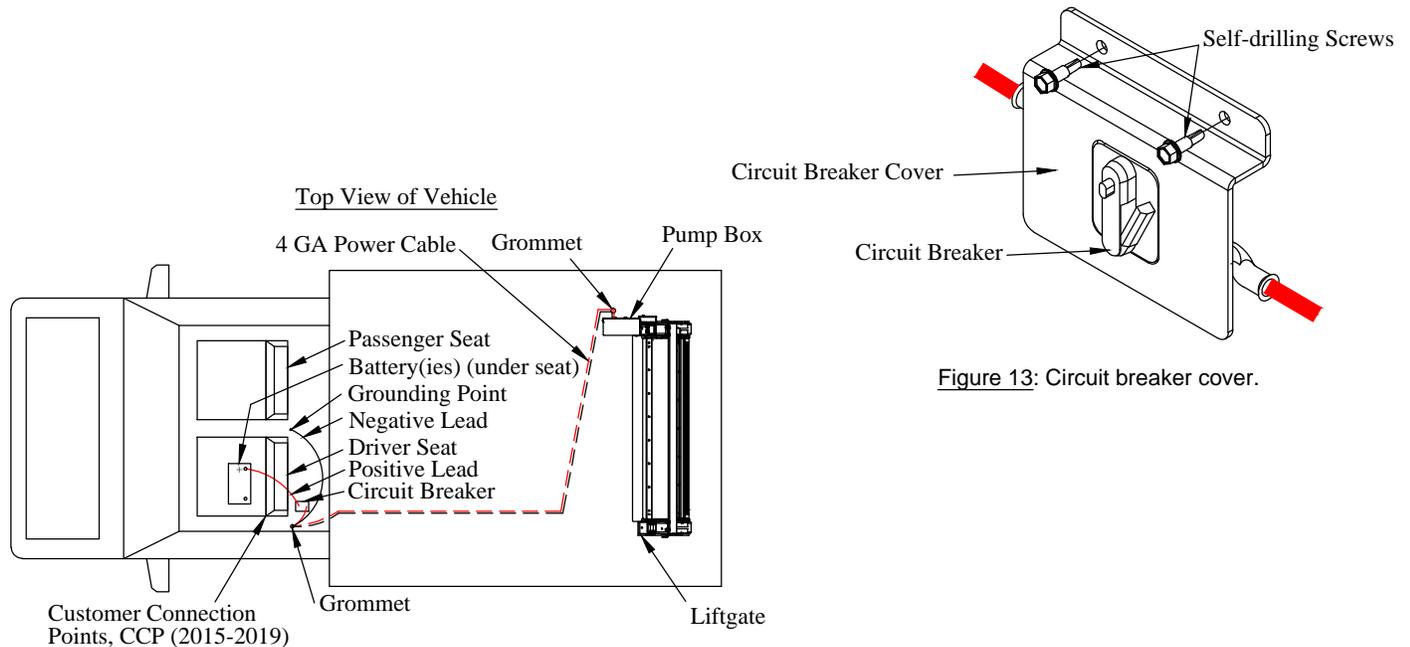


Figure 14: Electrical routing (Ford Transit).

## V2 Series Mounting Instructions

### Routing the Power Cables: Ford Transit (continued)

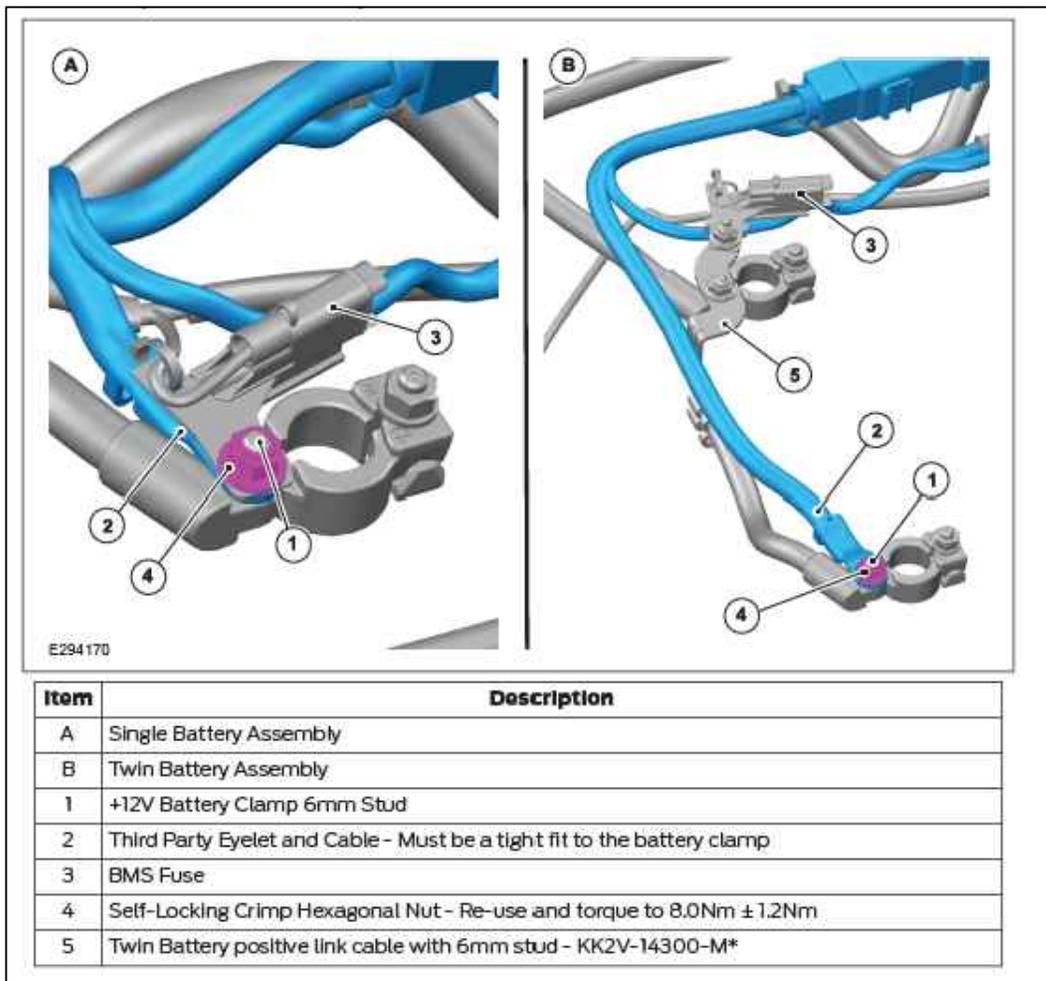


Figure 15: Battery diagram from 2020 Ford Transit Body and Equipment Mounting Manual (BEMM).

## V2 Series Mounting Instructions

### Routing the Power Cables: Except Ford Transit

1. **Install** the circuit breaker near the battery or on the side of the seat pedestal, leaving enough room for the power cables to be installed and so that the circuit breaker can easily be reset (Figure 16).

Note: Any time a hole is drilled in the vehicle, apply rust preventative to the bare metal.

2. **Check** for obstructions before drilling in the next steps.
3. **Drill** and **Deburr** a 1-1/4" hole in the van floor, near the power unit, to run the power cables through.  
Use the supplied rubber grommet to protect the power cables from the sharp sheet metal edge of the drilled hole.
4. **Drill** a 7/8" hole in the rear of the battery box, if the vehicle has one. Avoid drilling into the battery.

Note: Follow the *Tommy Gate Recommended Electrical Wiring Guidelines* and wiring diagram (Figure 19) in the following steps.

5. **Route** the power cables under the vehicle from the liftgate, along the frame, to a location near the battery (Figure 16).
6. **Separate** the positive(+) and negative(-) leads.
7. **Install** the supplied two-screw strain relief in the drilled 7/8" hole, if vehicle has a battery box.
8. **Pull** the cable through newly installed strain relief, if vehicle has a battery box.
9. **Cut** the positive(+) lead to the length required to reach the auxiliary (AUX) terminal of the circuit breaker.
10. **Cut** the remaining positive(+) lead long enough to reach from the circuit breaker battery (BAT) terminal to the positive(+) battery terminal.
11. **Cut** the negative(-) lead to the length required to reach the negative battery terminal, or body grounding point if recommended by vehicle manufacturer.

**Important:** The pump and motor unit for this lift can require significant electrical power at 12 volts D.C.  
Be sure that the negative(-) ground lead is securely connected to a sufficient vehicle ground point.

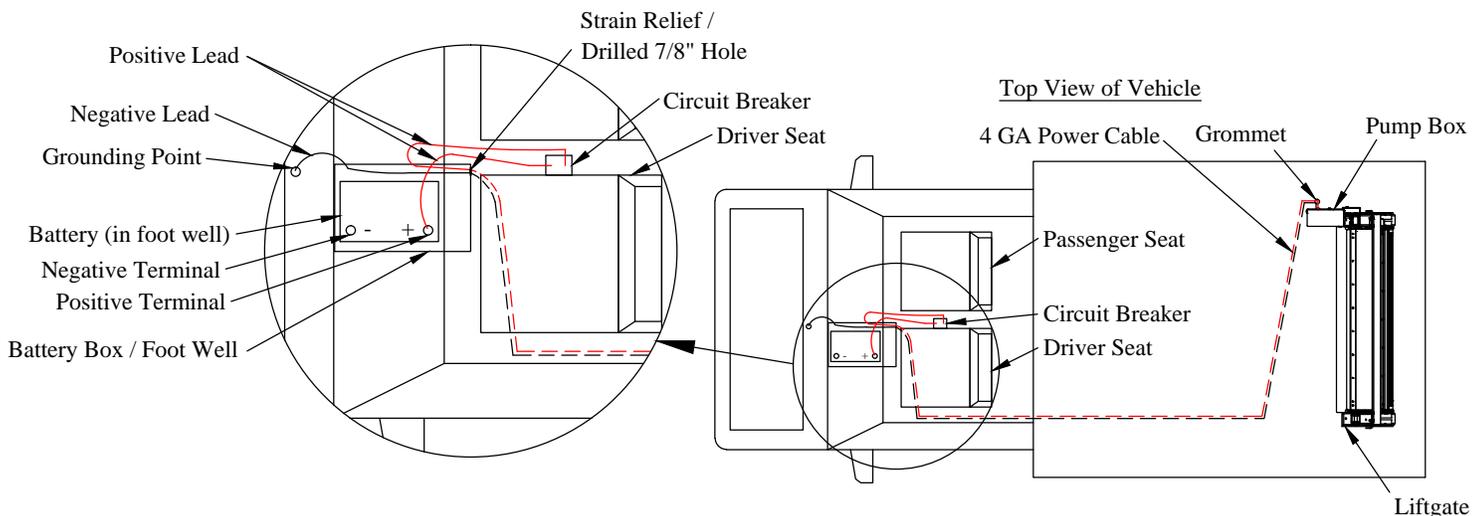


Figure 16: Electrical routing (Sprinter Shown).

## V2 Series Mounting Instructions

### Routing the Power Cables: Except Ford Transit (continued)

- 12. Install** the copper lugs and heat shrink tubing on all required ends.
- 13. Connect** the circuit breaker and battery as outlined in the *Tommy Gate Recommended Electrical Wiring Guidelines* and wiring diagram (Figure 19).
- 14. Tighten** screws on the power cable strain relief on the battery box, if the vehicle has one.
- 15. Check** for obstructions before using the self-drilling screws in the next step.
- 16. Install** the plastic circuit breaker cover over the circuit breaker using the supplied #12 self-drilling screws (Figure 17).

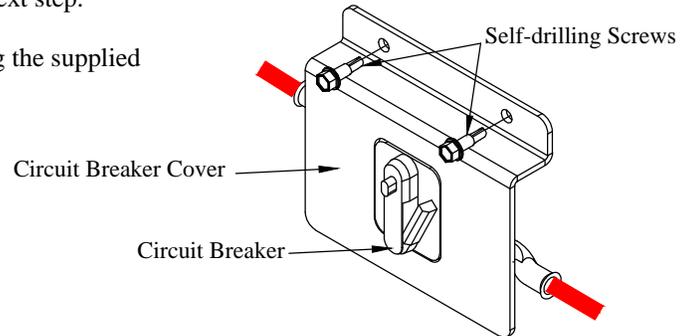


Figure 17: Circuit breaker cover.

### Installing the Floor Transition

- 1. Position** the floor transition with one side on the liftgate and the other side on the vehicle floor (Figure 18).
- 2. Center** the transition side-to-side. **Trim** the transition if needed to fit between mounting bolts.
- 3. Check** for obstructions before using the self-drilling screws in the next step.
- 4. Secure** the floor transition to the vehicle floor with the provided #8 self-drilling screws (1-1/4" or 2" long screws).

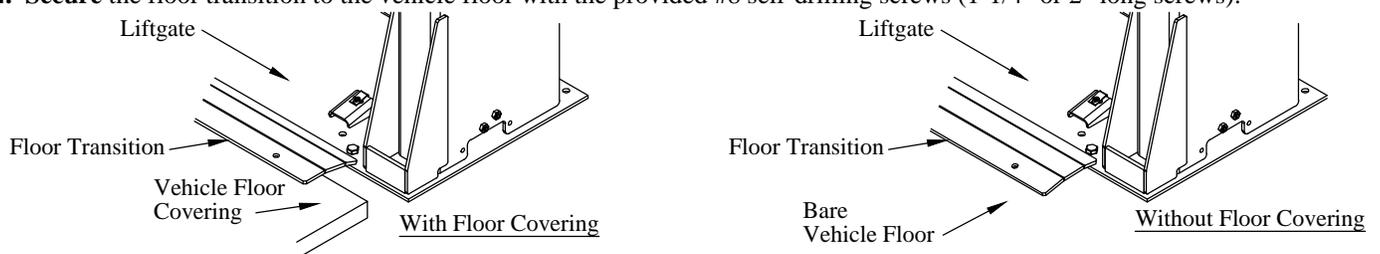


Figure 18: Floor transition.



# ELECTRICAL WIRING DIAGRAM

## Pendant Control

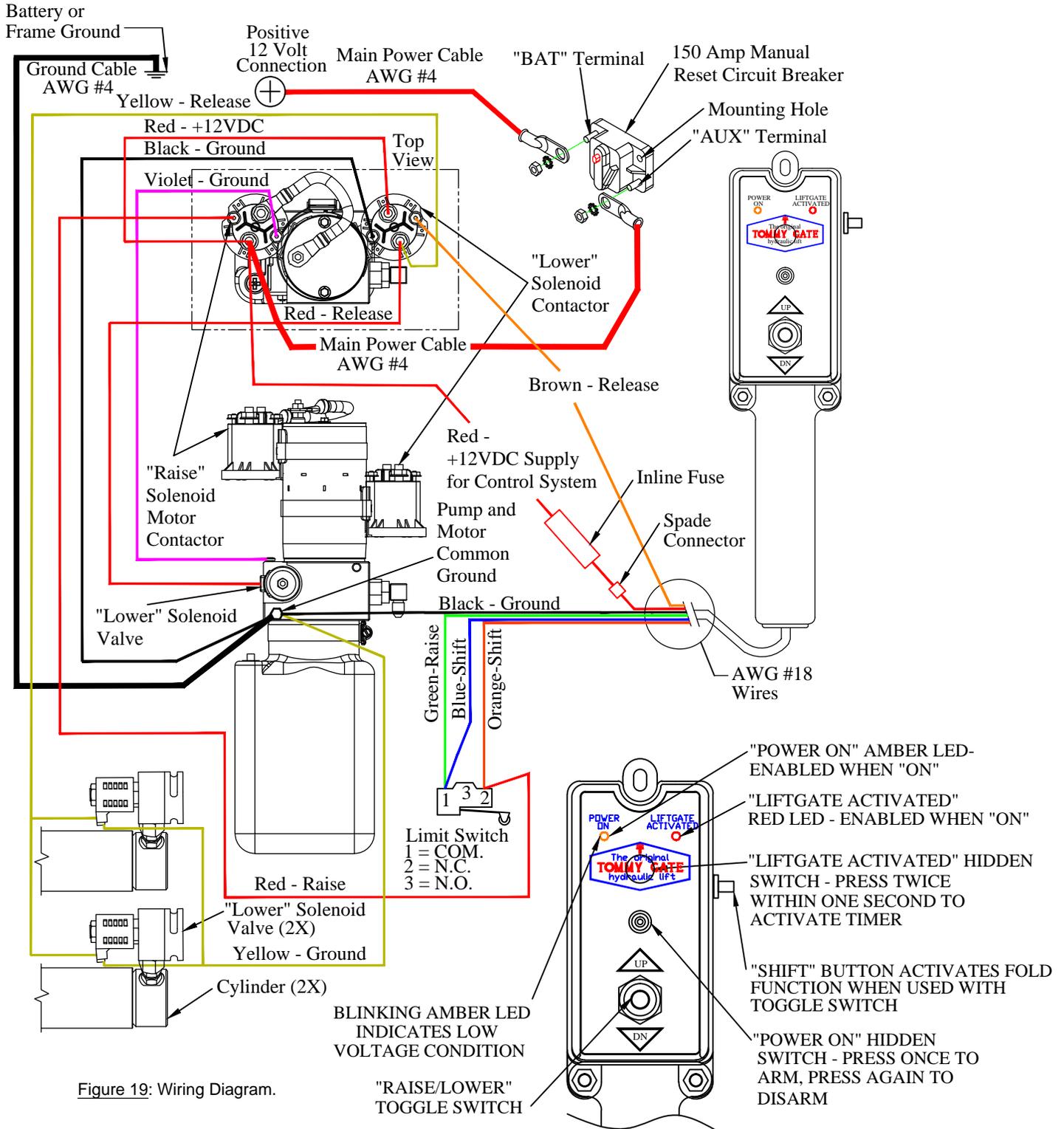
**!!! PLEASE READ AND FOLLOW ALL DIRECTIONS BEFORE PROCEEDING !!!**



**NOTE !!! IF GATES ARE NOT WIRED IN ACCORDANCE WITH THIS DIAGRAM YOUR WARRANTY WILL BE VOID.**



**WELDING NOTE !!! DISCONNECT ALL BATTERY CABLES. ALWAYS DISCONNECT THE GROUND CABLE FIRST. ATTACH THE WELDING GROUND TO THE TRUCK RATHER THAN THE LIFTGATE.**





Ladder Logic/Wiring Diagram

Legend	
	Circuit Breaker
	Push Button
	Toggle Switch
	Limit Switch
	Contactor - Normally Open Contacts
	Motor
	Solenoid/Contactor - Coil
	Battery Cable
	Wire
	Grounded through motor chassis.
	Quick Disconnect
	Eyelet Terminal
	Splice
	Fuse

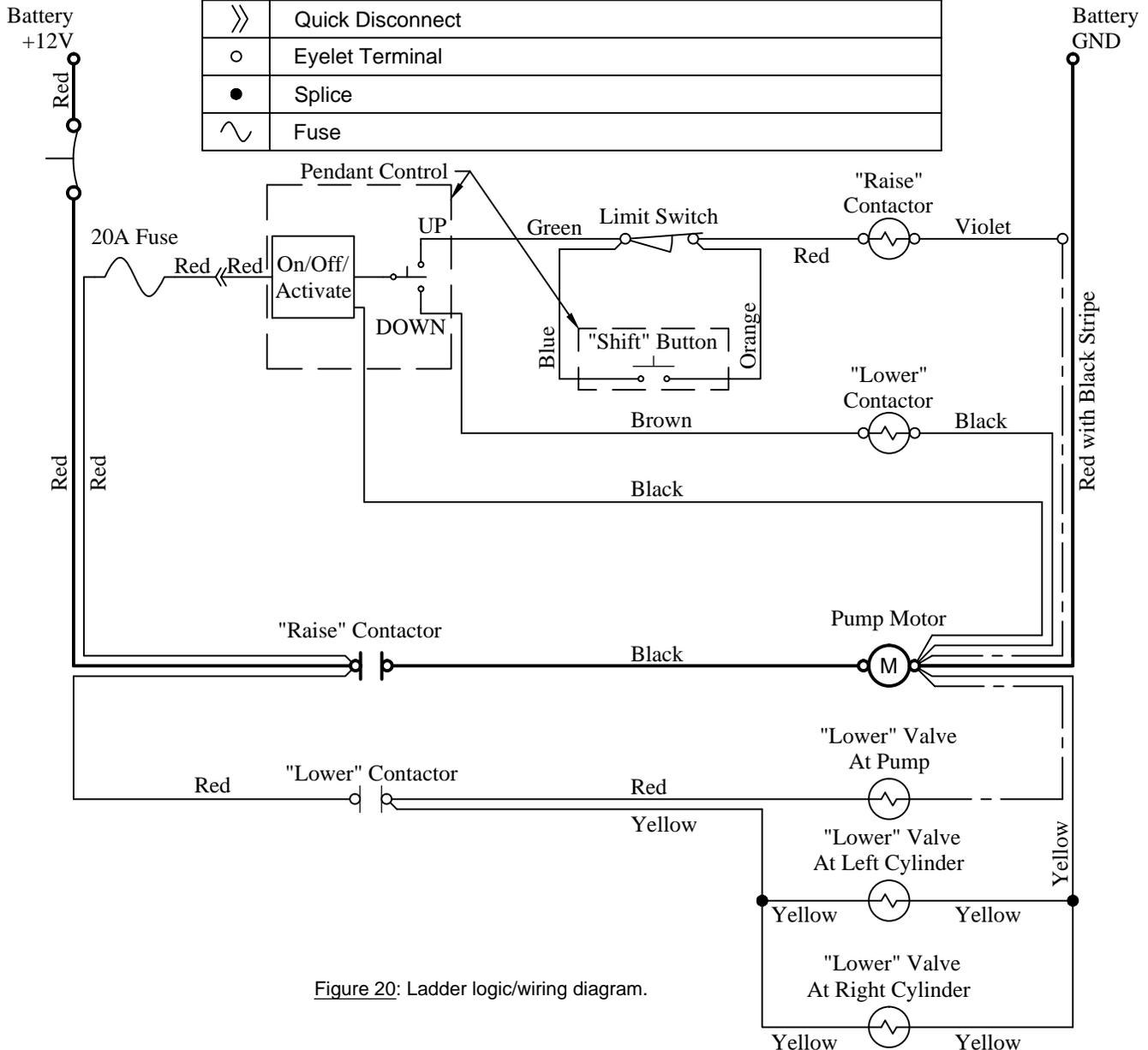


Figure 20: Ladder logic/wiring diagram.

## V2 Series Mounting Instructions

### Finishing the Liftgate Installation

1. **Install** the "Do's and Do Not's" decal in a highly visible area in the vehicle cab. This decal is with the Owner's / Operator's Manual.
2. **Verify** that all mounting bolts and nuts have been installed and tightened.
3. **Reinstall** base plate cover on base plate with the screws previously removed (Figure 3).
4. **Apply** sealant to holes drilled in the floor for electrical cable routing.

**Caution:** Keep all foreign objects (body parts, tools, load weights, etc) away from the liftgate assembly and away from pinch points at all times when operating the liftgate.

5. **Unbolt** and **Remove** the lifting angle and brackets (Figure 21). There are weld nuts inside the vertical arm.
6. **Reinstall** two 3/8" bolts removed in previous step in driver side vertical arm.
7. **Install** a control hanging bracket with supplied 3/8" bolts on the passenger side vertical arm where the lifting angle was removed (Figure 22).
8. **Skip** steps 9-13 for flatbeds without a corner post.
9. **Select** a location to install a second control hanging bracket. Use a location on the passenger side rear corner post of the vehicle at a height that allows the entire pendant cord to be completely inside the vehicle when stored (Figure 22).
10. **Lower** the liftgate to the ground.
11. **Clean** the location selected to ensure that it is free from dirt, oil, and grease.
12. **Remove** adhesive backing from control hanging bracket.
13. **Hold** the control hanging bracket with adhesive against the door pillar with firm pressure for one minute.
14. **Reinstall** spare tire, if previously removed. Make sure there are no sharp screws or bolts that will puncture the tire when installed.

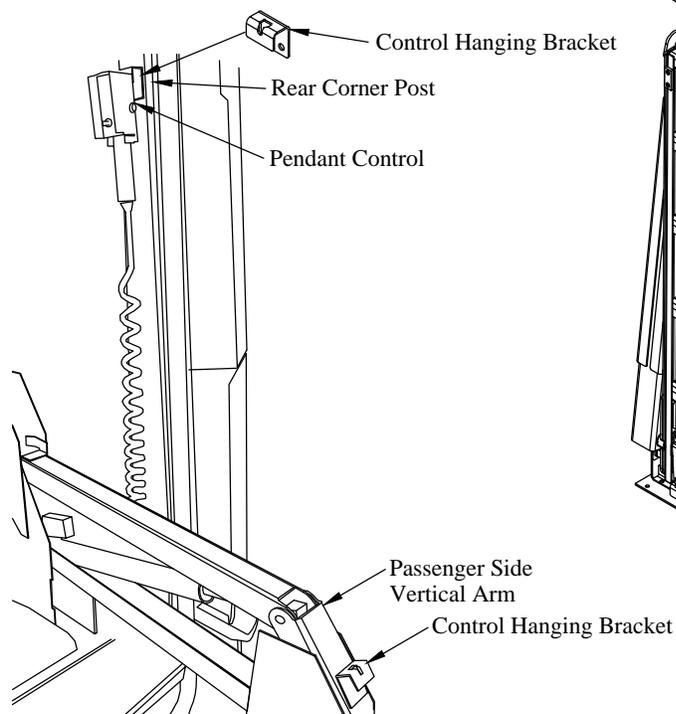


Figure 22: Control Hanging Brackets.

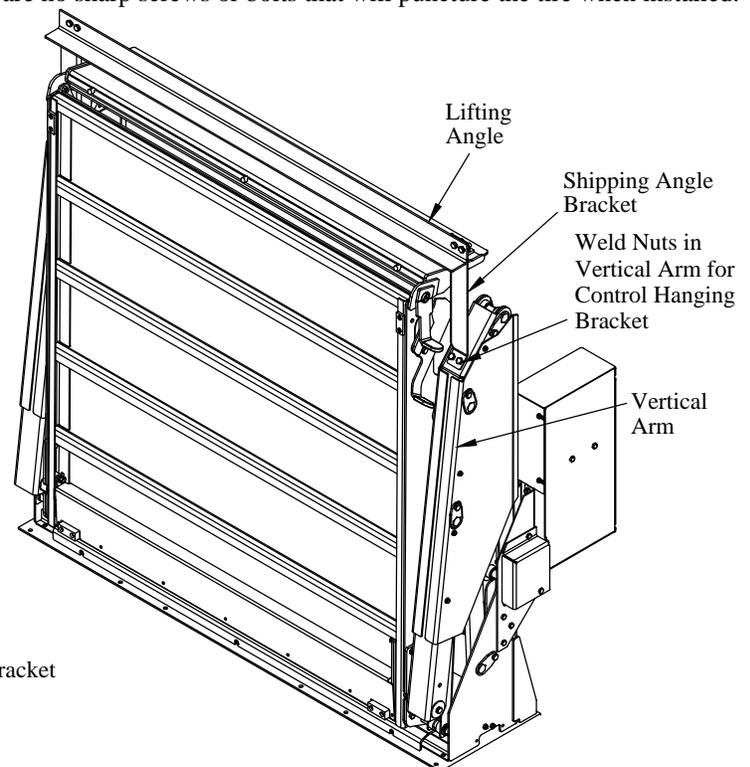


Figure 21: Lifting angle and vertical arm.

## V2 Series Mounting Instructions

### Adjusting the Platform to Stop at Bed Height

1. **Lower** the platform below bed height.
2. **Raise** the platform as high as it will go with just the pendant toggle.
3. **Check** if the platform loading surface is even with base plate cover (Figure 25).  
If it is even, skip to the next section.  
If it is not even, proceed to the next step.
4. **Position** the platform so that it is even with the top of the base plate cover (Figure 25).
5. **Remove** the limit switch cover by removing two (2) 5/16" bolts and nuts (Figure 23).
6. **Loosen** the bolts holding the limit switch (Figure 23).
7. **Move** the limit switch out and then back in until it just clicks.
8. **Tighten** the limit switch bolts with the limit switch in the position described in the previous step.
9. **Install** the limit switch cover with 5/16" bolts and nuts. Be careful not to over tighten the 5/16" bolts (Figure 23).

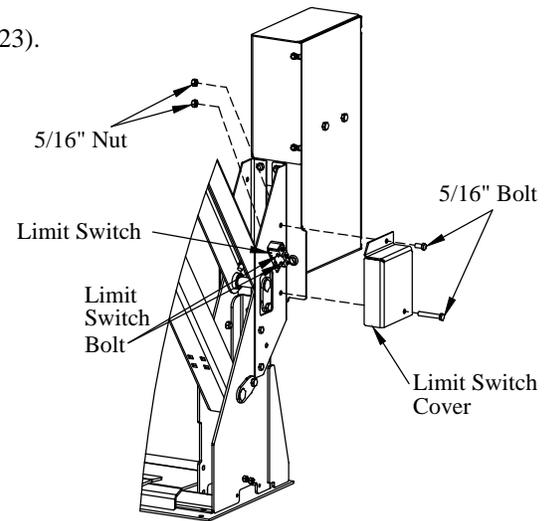


Figure 23: Limit Switch.

### Adjusting the Platform Tilt

1. **Park** the vehicle on level ground.
2. **Lower** the liftgate to the ground. Make sure the liftgate clears the bumper.  
The platform taper end should touch the ground.  
The platform taper end and the hinge end should touch the ground at about the same time.

Note: If the platform tilt is properly adjusted, skip to the next section. Otherwise proceed to the next step.

3. **Adjust** the platform set screws until the platform taper end just rests on the ground (Figure 24).  
Turn the set screws in to raise the taper end, and out to lower the taper end.

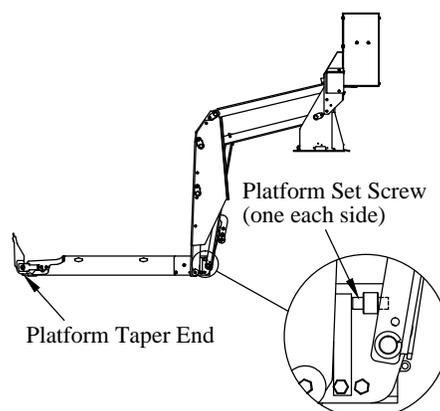


Figure 24: Platform.

## V2 Series Mounting Instructions

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### Adjusting the Threshold Bridge

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1. **Raise** the platform as high as it will go with just the pendant toggle (Figure 25).
2. **Lower** the platform 1".
3. **Adjust** each bridge close wheel so that it is tight against the bottom of the threshold bridge (Figure 25).
4. **Verify** that:
  - The bridge and bridge close wheels do not hit the bumper, as the lift is lowered.
  - The bridge comes to rest on the base plate cover, without jamming into the base plate cover, when raised to bed height.
5. **Raise** and **Close** the platform.
6. **Verify** that the rear doors will close without hitting the platform.
7. **Remove** platform stop shims, if needed on FA34 platform, for more door clearance.  
Make sure to use the same number of shims in each side (Figure 26).

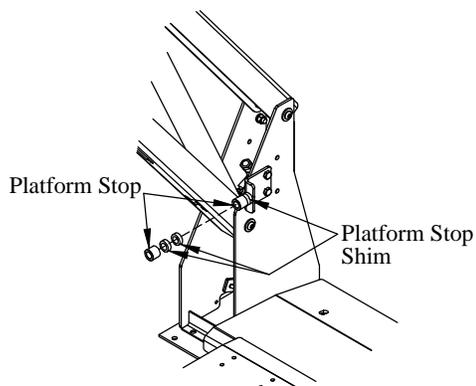


Figure 26: Platform stops.

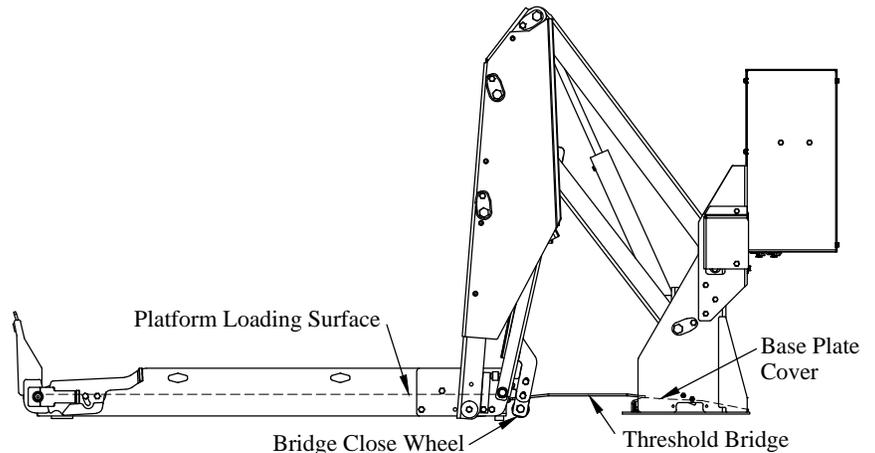


Figure 25: Platform and threshold bridge.

## V2 Series Mounting Instructions

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### Testing the Operation of the Liftgate

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**Caution:** Keep all foreign objects (body parts, tools, load weights, etc) away from the liftgate assembly and away from pinch points at all times when operating the liftgate.

1. **Check** operation of the safety control for proper lift operation.  
Be sure the "liftgate activated" light shuts off automatically after 90 seconds of not being used.
2. **Raise** and **Lower** the unloaded platform on a flat surface. The platform should stay even from side to side.  
The liftgate power unit should raise and lower the unloaded platform smoothly and easily.
3. **Load** the platform with the rated capacity as described in the Owner's / Operator's Manual and **Measure** the time necessary to raise the platform. The platform should be fully raised in about 18 seconds.
4. **Examine** the platform for any downward creep.  
With the platform raised and loaded, you should not be able to see the platform creeping down.
5. **Time** the lowering operation with the platform still loaded.  
The platform should reach the ground in about 6 seconds (time may be longer in cold weather).
6. **Remove** the load from the platform and **Examine** the liftgate and vehicle for any problems such as hydraulic oil leaks, loose wiring, etc.
7. **Raise** and **Fold** the platform using the "shift" button on the control.  
Be sure the folding function requires the use of the "shift" button.
8. **Hang** the control on the control hanger.
9. **Place** Owner's / Operator's Manual in the vehicle.

### Painting the Liftgate (if needed)

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Your Tommy Gate has been primed with a gray polyurethane and painted with a black semi-gloss polyurethane topcoat to protect it from the environment. No additional paint is required unless shipping or installation damage or outdoor storage exposure has deteriorated the Tommy Gate paint. **Tommy Gate will not be responsible for shipping or installation damage or outdoor storage exposure that has marred or otherwise deteriorated the Tommy Gate paint.**

If you need to refinish the liftgate you should do the following:

1. **Remove** any dirt, oil, grease, salt, or other contamination by washing with a mild detergent solution.
2. **Rinse** thoroughly with fresh water and allow to dry.
3. Lightly **Scuff Sand** the Tommy Gate topcoat.
4. **Sand** and **Spot Prime** any area of the Tommy Gate paint that shows signs of damage or deterioration.
5. **Mask** off all safety decals, cylinder shafts and vents before painting.

**Warning:** Paint over spray on the cylinder shaft(s) or vent(s) will damage the cylinder seals and void warranty.

6. After proper cleaning and surface preparation, **Apply** desired finish coat per paint manufacturer's recommendations.
7. **Remove** the masking from the safety decals and cylinders.
8. **Check** to ensure that all decals are clean and legible. Additional decals are available from the factory, if needed.

## WIRE ROUTING

- (1) When routing wires, avoid heat (above 180°F), abrasion, vibration, metal edges, screws, and trim fasteners. If such routings are not possible, protective devices must be used. If wires must cross a metal edge, the edge should be covered with a protective shield and the wiring fastened within 3 inches on each side of the edge.
- (2) Grommets must be used where wires pass through holes in sheet metal, castings, and / or frame rails. Do not bend wires in a radius smaller than 10 times the wire diameter.
- (3) Routing wires into areas exposed to wheel wash should be avoided. If this cannot be avoided protective shields are required to protect the wires from stones, ice, salt and water damage. Provide a drip loop to prevent moisture from being conducted into switches, relays, circuit breakers, and fuses.
- (4) Wires should be supported every 18 inches with plastic zip ties or rubber-lined clips.
- (5) Wires must be routed to clear moving parts by at least 3 inches unless positively fastened or protected by a conduit. If wiring must be routed between two members where relative motion can occur, the wiring should be secured to each member, with enough wire slack to allow flexing without damage to the wire.
- (6) Maintain at least a 6 inch clearance from exhaust system components. If this is not possible, high temperature insulation and heat shields are required. Existing OEM heat shields, insulation, and wire shielding must be maintained.
- (7) Do not route or attach electrical wires to fuel lines. Route electrical wires at least 1-1/2 inches away from the engine.

## BATTERY, WIRE, TERMINALS, AND CONNECTORS

- (1) Wire attachments at the battery must be protected from tension loads so there is no undue strain on the battery terminals. Wires should be routed down rather than horizontally from the terminals with no sharp bends adjacent to the connections.
- (2) Battery power for your Tommy Gate should come directly from the battery or approved connection point through the supplied circuit breaker or fuse. The circuit breaker or fuse should be installed as close to the battery as possible.
- (3) Avoid splicing power cables. If splicing is necessary, the most durable splice joint will be bare metal barrel crimped, flow-soldered and covered with adhesive lined heat shrink tubing. Strip the wire ends making sure that individual conductor strands are not damaged. Use only rosin core solder, proper crimping tools, and wire with a gauge at least equivalent to the circuit being lengthened. Do not use electrical tape.
- (4) Battery cable terminals will be bare metal barrel crimped or flow-soldered and covered with adhesive lined heat shrink tubing.
- (5) Use wire connectors with locking features such as positive locking, inertia locking, bolt together, and soft mold-over with locking external retainers.

## GENERAL

- (1) All frame contact areas must be wire brushed to bare metal, free of paint, dirt, and grease. Frame connections must be made using hardened flat washers under the bolt head and lock nuts. Corrosion preventive grease or compound is to be applied to the terminal area of the frame connection.
- (2) Frame cross members are not recommended as part of the ground return.
- (3) All circuit breakers and fuses should be located in one easily serviceable location with a means provided for identification of circuit function and current rating. If possible, avoid putting circuit breakers or fuses in the vehicle cab.
- (4) Before welding to the chassis disconnect the battery. Also disconnect the power train, engine, valve, and transmission control modules.
- (5) Do not alter vehicle ignition, starting, and / or charging systems. Do not reroute engine compartment wiring.
- (6) Full copper circuitry and standardized polarity grounds are recommended.
- (7) Never increase the rating of a factory installed fuse or circuit breaker.
- (8) Disconnect the battery negative (ground) wire prior to any vehicle modification.

Following the above guidelines will provide you with years of trouble free service. Failing to incorporate the above guidelines may result in a voided warranty. Non-compliance with the guidelines above may result in a failure of electrical components, shutdown of engines, loss of backup brake systems, and the possibility of fire.

**Q-226R2**



## **SVE BULLETIN**

**SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE**

E-Mail via Website: [www.fleet.ford.com/truckbbas](http://www.fleet.ford.com/truckbbas) (click "Contact Us")

Toll-free: (877) 840-4338

QVM Bulletin: Q-226R2

Date: 20 October, 2014

Revised: 13 March, 2017

Revision	Update	Revision Date
Q-226R2	Added recommendation for vehicles requiring greater than 30 Amps	13 March, 2017

### **Accessing Battery Power on Transit**

**Models Affected:** 2015 Transit – All models

**Description:** For modifications and equipment installations requiring B+ current loads greater than 30 Amps, the guidelines provided below should be followed.

**NOTE:** If a converter intends to add systems or accessories that will add significant electrical load (particularly at key off), then vehicles with twin High Performance Deep Cycle AGM batteries should be specified. The twin option is the standard heavy duty system for loads greater than 5mA continuous at key off or 30A at engine run. It is also recommended to upgrade to the heavy duty alternator option if the extra loads are continuously active at engine run and exceed 30A above standard Ford systems.

#### **For Battery Power Less than 60 Amps**

- Connect to the 1 x 60A Customer Connection Point (CCP) in the Pre Fuse Box (PFB)
- 1 x 60A MIDI fuse is present on all Transit vehicles (within the PFB in the driver seat pedestal).
- See the Transit Body and Equipment Mounting Manual (BEMM) for information regarding the use of the CCP's.

#### **For B+ Battery Power Greater than 60 Amps**

Vehicles with factory installed 3 X 60A Customer Connection Points (available with option 67C-Upfitter switches)

- Connect to the 3 x 60A Customer Connection Points on the driver seat pedestal.
- The CCP's are capable of providing up to a total of 180A.
- Refer to the BEMM for information regarding the use of CCP's

Vehicles without factory installed 3 X 60A Customer Connection Points.

Upfitters may order a Customer Connection Point kit through Ford dealers. The kit part number is:  
**BK2Z-14S411-A**

This kit provides hardware for two additional 60 Amp CCP terminals, allowing the modifier to upgrade from the standard single 60 Amp CCP to three 60 Amp CCP's, for a total of 180 Amps.

## **For Battery Power Greater than 180A**

Vehicles equipped with dual AGM batteries will have a single empty B+ battery post on the rear or second AGM battery (see figure 1). Upfitters wishing to connect to this terminal must adhere to the following guidelines:

- Use only a W520101-S437 nut to secure the aftermarket eyelet (M6 - Electrolytic zinc plate, trivalent chromate, and clear sealer, with integral torque control lubricant). **No other nut or finish may be used.**
- The additional cable eyelet must have a complete flush contact to the terminal and be fully secured.
- The nut must be torqued to **8Nm [+/- 1.2Nm]**.
- The additional battery connection must be protected with an appropriately sized fuse.



**Fig. 1: Location of empty B+ battery post**

### **Note: Single Battery variants**

The B+ post on the single battery terminal can only accommodate a single terminal connection. The post is fully occupied by the alternator sense circuit, and cannot support an additional aftermarket terminal connection. **Any additional terminal connection to the single post may cause the charging system to malfunction or fail.** Upfitters connecting to the single battery post must provide an additional stud for their connection. All connection recommendations for the dual battery configuration shown above must be followed, and the additional connection and battery terminal must be protected with an appropriate battery terminal cover.

If you have any questions, please contact the Ford Truck Body Builders Advisory Service as shown in the header of this bulletin.