V2 Series Mounting Instructions

Ford Transit and E-Transit, Low Roof Only
2015-present

Note: Mounting kits for V2 liftgates are intended for the specified vehicle model only. 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 van's bumper, door and floor area, as well as to the lifting and folding mechanism of the liftgate.

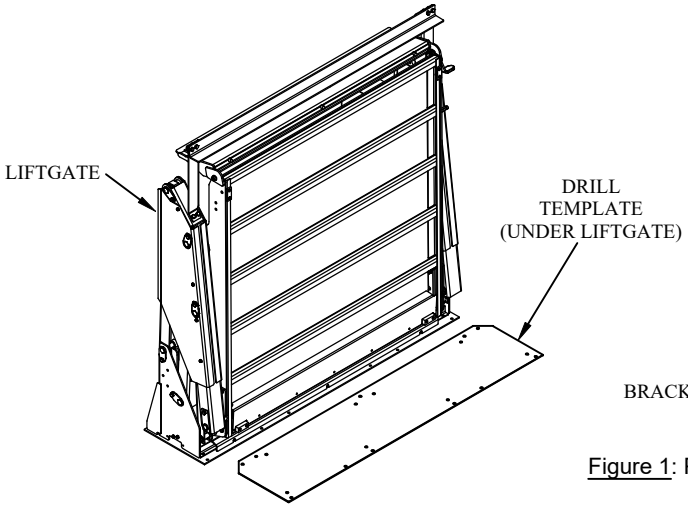
Note: V2 Series liftgates are not compatible with floor mounted rear heat or air conditioning.

Preparing the Gate

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	015794	Bracket Kit



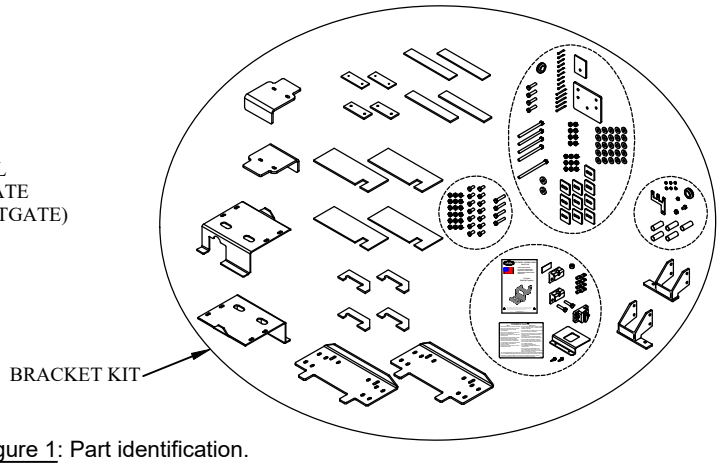


Figure 1: Part identification.

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).

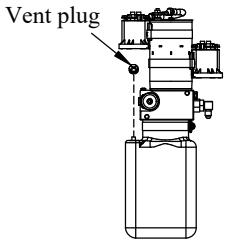
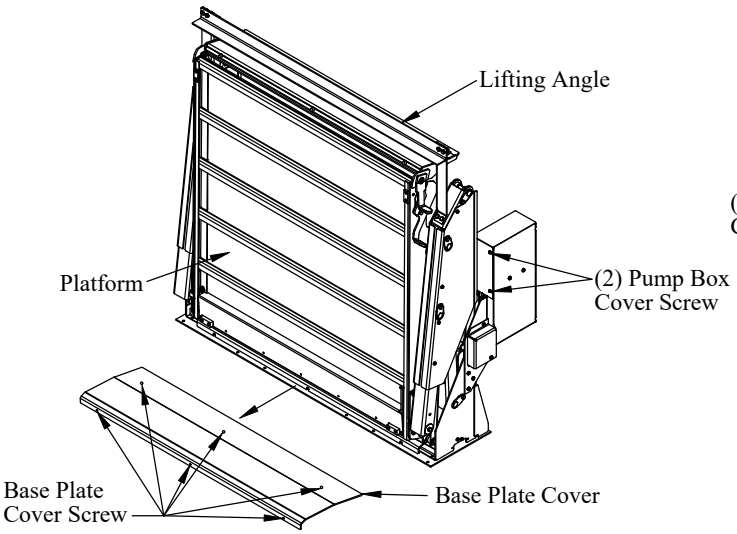


Figure 2: Vent plug.



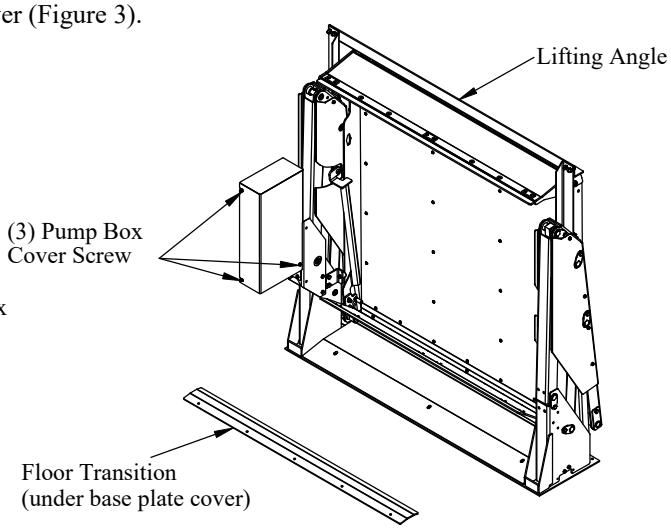


Figure 3: Base plate cover and pump box.

Preparing the Gate (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.

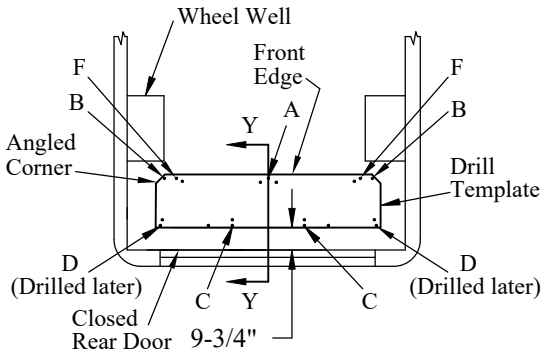
12. **Remove** the drill template from the pallet (Figure 1).

Preparing the Van

1. **Remove** the spare tire, if present at rear of van.

2. **Remove** and **Save** the plastic threshold at the rear door.

3. **Place** the drill template in the rear of the van:
   - Centered side to side.
   - 9-3/4" from the metal part of the closed rear doors at the center (Figure 4). (this is not the final location of the liftgate)
   - Angled corners toward the front of the van.
   - Holes "A" and "B" toward the front of the van.
   - Holes "C" and "D" toward the rear of the van.



Note: This is not the final location of the liftgate.
Figure 4: Drill template location (top view).

4. **Verify** that the drill template is located within 1/16" of dimensions above.
   The drill template needs to be located accurately for the brackets to fit properly.

5. **Skip** steps 6-13 if the van has a bare metal floor**.**

6. **Mark** the floor covering around the template, leaving clearance as shown (Figure 6).

7. **Remove** the drill template.

8 **Remove** the screws that hold down the rear-most portion of the floor covering, if needed.

9. **Insert** a piece of thin plywood or metal sheet between the flooring and metal van floor.
   This will protect the metal van floor from drilling and cutting in the next steps.

10. **Cut** the flooring where previously marked.
    Do not cut through the metal van floor for this step.

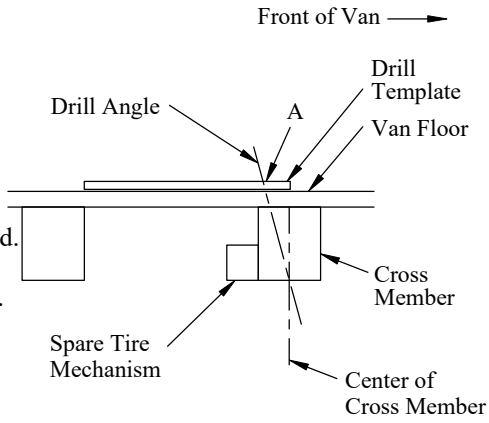


Figure 5: Section Y-Y, side view of "A" drilling location (side view).

11. **Remove** the protective plywood or metal sheet that was inserted in a previous step.

12. **Place** the drill template in the rear of the van :
    - Centered side to side.
    - 9-3/4" from the metal part of the closed rear doors at the center (Figure 4). (this is not the final location of the liftgate)
    - Holes "A" and "B" toward the front of the van.
    - Holes "C" and "D" toward the rear of the van.

13. **Verify** that the drill template is located within 1/16" of dimensions above.
    The drill template needs to be located accurately for the brackets to fit properly.

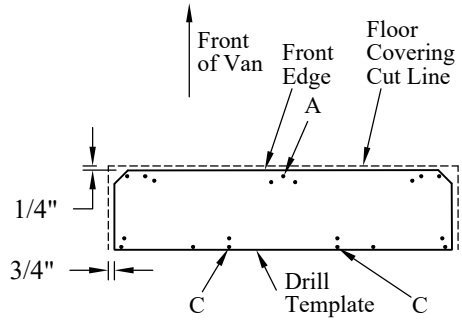


Figure 6: Floor covering cut location (top view).

Preparing the Van (continued)

14. 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.

15. Drill 3/8" holes in six (6) locations in the template. Drill "B", "C", and "F" locations only, skip all others (Figure 7). Insert a 3/8" bolt into each hole as it is drilled to maintain hole alignment and template position.

16. Drill a 3/8" hole in the center "A" location only: angle the drill toward the front of the vehicle, and only drill through the floor, not through the cross member below (Figure 5). This is done to avoid the spare tire mechanism below the floor.

17. Drill a 3/8" hole, in the bottom of the cross member below the center "A" location. Drill up from the bottom side, in the center-middle of the cross member (Figure 5). Do not drill through the floor, drill only through the bottom of the cross member.

18. Remove the drill template.

19. Replace the floor covering screws, if previously removed.

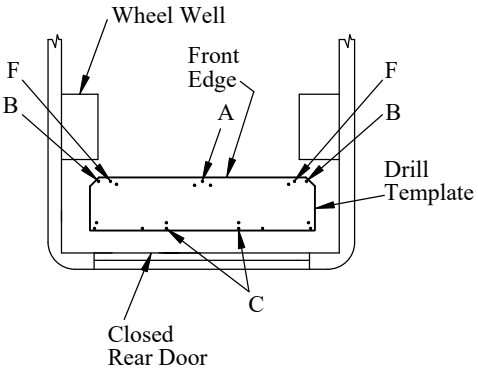


Figure 7: Drill location (top view).

Installing the Rib Shims

Note: The rib shims are used to fill the space between the top and bottom of the ribs.

Important: Do not omit this section. Without the support of the rib shims, the van floor will be damaged when the liftgate is loaded.

1. Position three (3) square shims at each "C" location (Figure 8).

Note: No shim is needed at "A" location.

2. Position the supplied rib shims next to the ribs of the metal van floor (Figure 8). Be sure to match one (1) 1/4" and one (1) 3/16" shim at each location.

3. Trim the height of the bead of caulk at the rear threshold, if the plates do not lay flat. Do not remove all of the caulk.

4. Trim or **Grind** the plastic structure on the under side of the plastic rear threshold to fit over the rib shims at the "D" locations.

5. Attach the rear rib shims to the floor using the supplied #8 self-drilling screws. Be sure that the counter sunk plate is positioned on top to accept the self-drilling screws.

6. Verify that the tops of the shims are even with, or slightly above, the tops of the floor ribs.

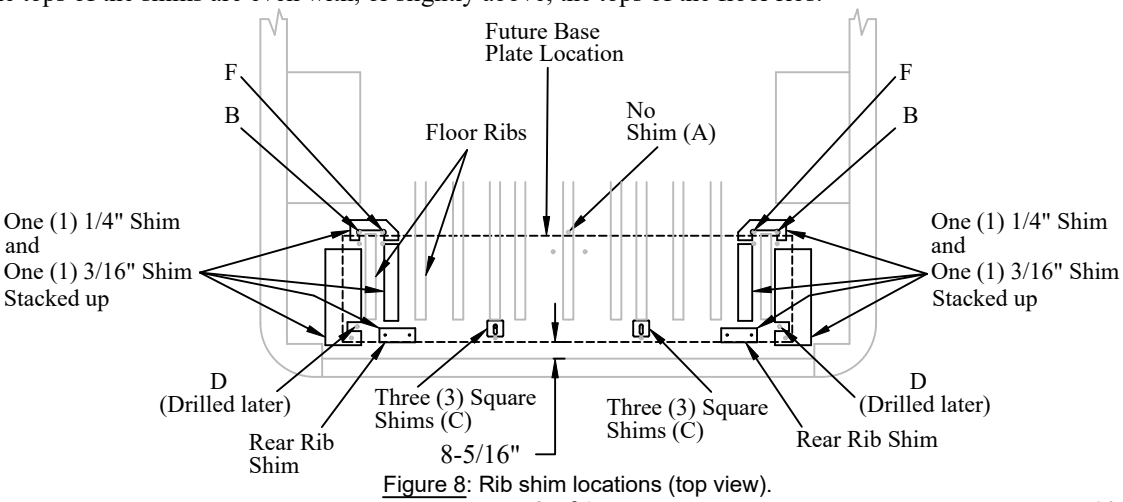


Figure 8: Rib shim locations (top view).

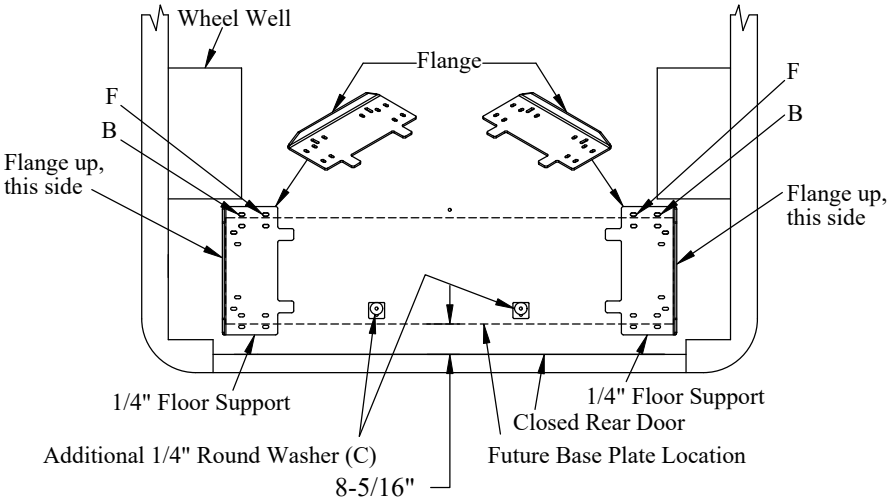
Installing the Floor Supports

1. **Position** the 1/4" floor supports in the van. Use the "F" and "B" holes as shown to align the supports (Figure 9).

2. **Trim** or **Notch** the rear threshold to fit around the floor supports.

3. **Reinstall** the rear threshold.

4. **Position** an additional round 1/4" washer at each "C" location (Figure 9).



Note: Not all shims from previous section are shown for clarity.

Figure 9: Floor support locations (top view).

5. **Fasten** the 1/4" plate to the base plate at the "I" locations using 3/8" x 3/4" bolts and lock nuts (Figure 10). The bolt heads must be on the bottom-side.

6. **Remove** the 1/4" floor supports from the van for the next step.

7. **Fasten** the 1/4" floor supports to the base plate at locations "P" and "Q" using 3/8" x 3/4" bolts and lock nuts (Figure 10). The bolt heads must be on the bottom-side.

8. **Position** the base plate extensions on the 1/4" floor supports (Figures 11).

9. **Fasten** the base plate extensions to the liftgate using the 3/8" x 3/4" bolts and lock nuts (Figure 11). Reuse existing 3/8" x 1-1/4" bolts on passenger side. These bolts also secure the flow divider bracket.

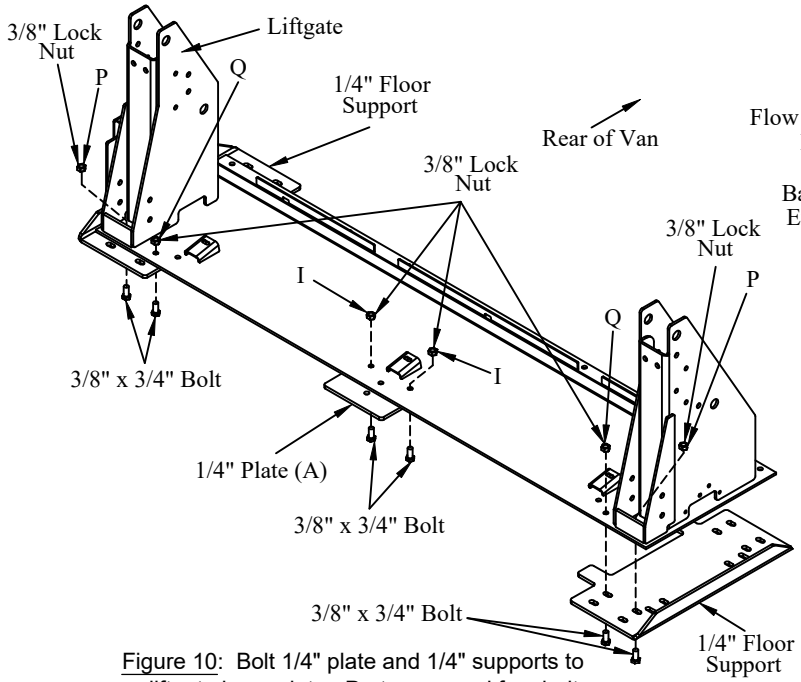


Figure 10: Bolt 1/4" plate and 1/4" supports to liftgate base plate. Parts removed for clarity.

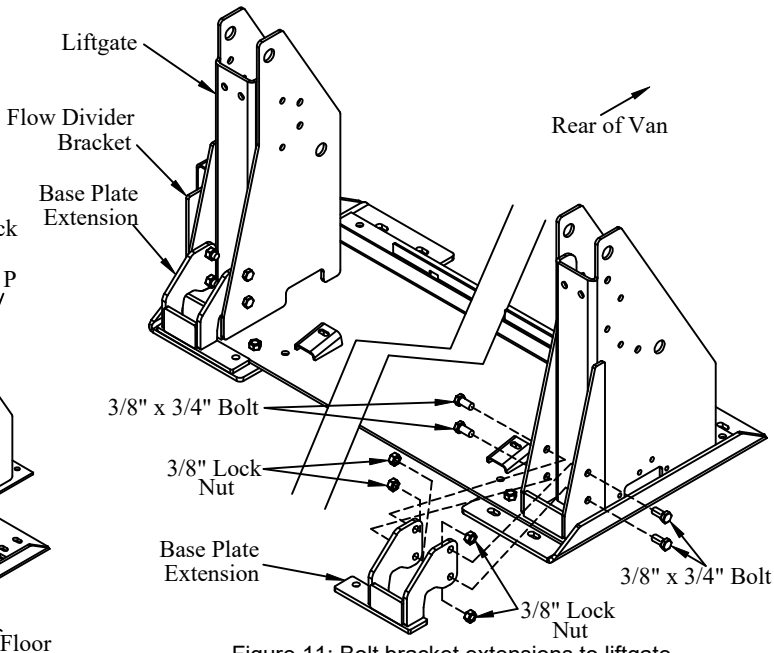


Figure 11: Bolt bracket extensions to liftgate. Parts removed for clarity.

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. **Clamp** 24" long supports to the fork truck forks to keep the liftgate from sliding (Figure 12).
2. **Lift** the liftgate by the lifting angle with a fork truck (Figure 12).
3. **Attach** adjustable strap to the base of the liftgate and the mast on the fork truck (Figure 12).
4. **Apply** tension to the adjustable strap to tilt the liftgate (Figure 12).

Caution: Be careful not to contact the van with the liftgate, fork lift, clamps, etc in the next steps.

5. **Drive** into the back of the van until the bottom of the liftgate almost contacts the van floor (Figure 13).
6. **Raise** the liftgate until the base of the liftgate will clear the floor and shims (Figure 14).
7. Carefully **Release** tension on the adjustable strap until the liftgate hangs freely (Figure 15).

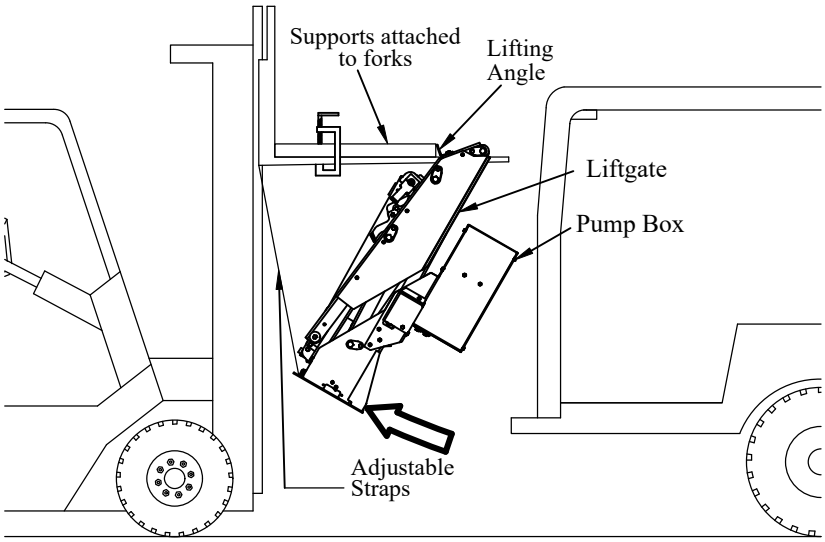


Figure 12: Clamp 24" long supports to the forks. Apply tension to strap to tilt the liftgate.

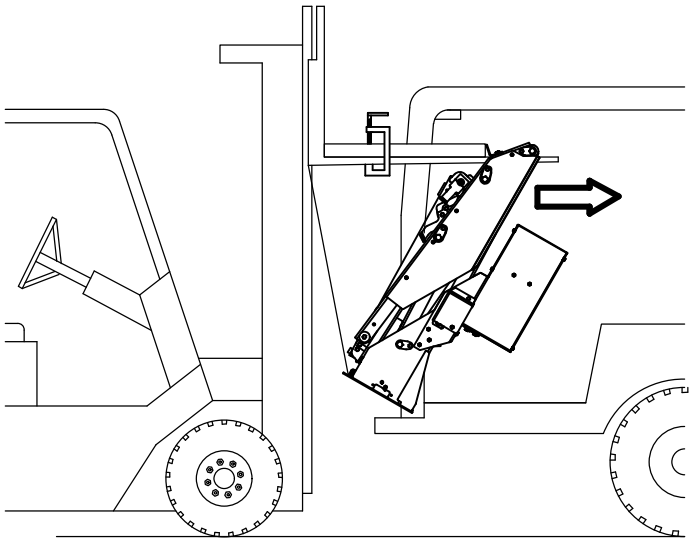


Figure 13: Drive into the back of the van until the bottom almost contacts the van floor.

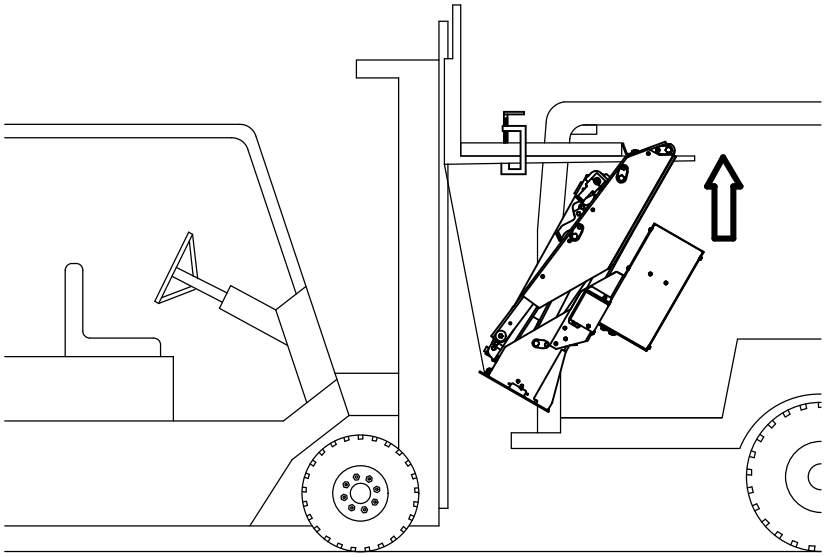


Figure 14: Raise the liftgate until the base of the liftgate will clear the shims on the van floor.

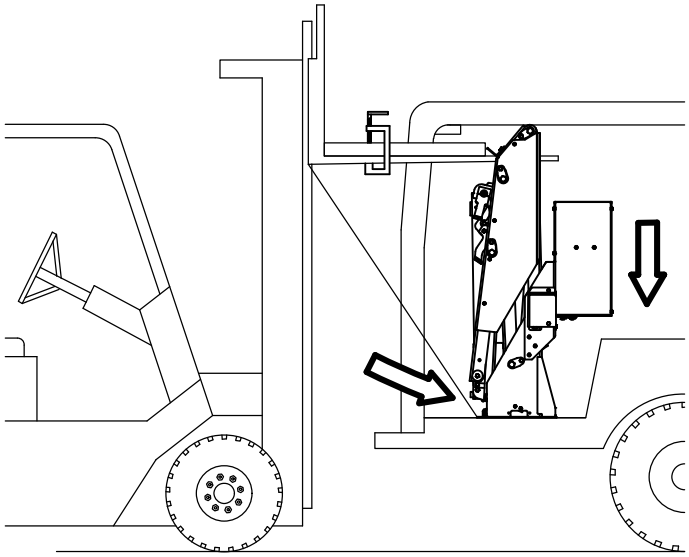


Figure 15: Carefully release tension on the adjustable strap until the liftgate hangs freely. Lower liftgate onto shims.

Installing the Liftgate (continued)

8. **Lower** the liftgate onto the floor shims (Figures 8 and 15).
   - Centered side to side.
   - 8-5/16" from the metal part of the closed rear doors at the center (Figure 8).

9. **Place** a 3/8" flat washer on each "A", "B", and "F" base plate bolt (Figure 16).

10. **Insert** base plate bolts into holes in base plate extension, down through the floor support and van floor (Figure 16).
    (4) 3/8" x 5" fully threaded bolts at "F" and "B" locations.

11. **Insert** base plate bolts into holes in base plate, down through the floor support and van floor (Figure 16).
    (2) 3/8" x 2" bolts at "C" locations.
    (1) 3/8" x 6" bolt at "A" location. This bolt will be angled to avoid spare tire mechanism.

12. **Install** square washer, 3/8" flat washers, and 3/8" lock nuts on each of the "C" location bolts (Figure 16).
    Do not tighten at this time.

13. **Install** the backer plate brackets onto the "B" and "F" location bolts (Figure 16).
    For E-Transit these brackets will be swapped left to right from what is shown.

14. **Secure** backer plate brackets with 3/8" flat washers and hex nuts (Figure 16). Do not tighten at this time.

15. **Thread** a second 3/8" hex nut onto each of the "B" and "F" location bolts (Figure 16). Do not tighten at this time.

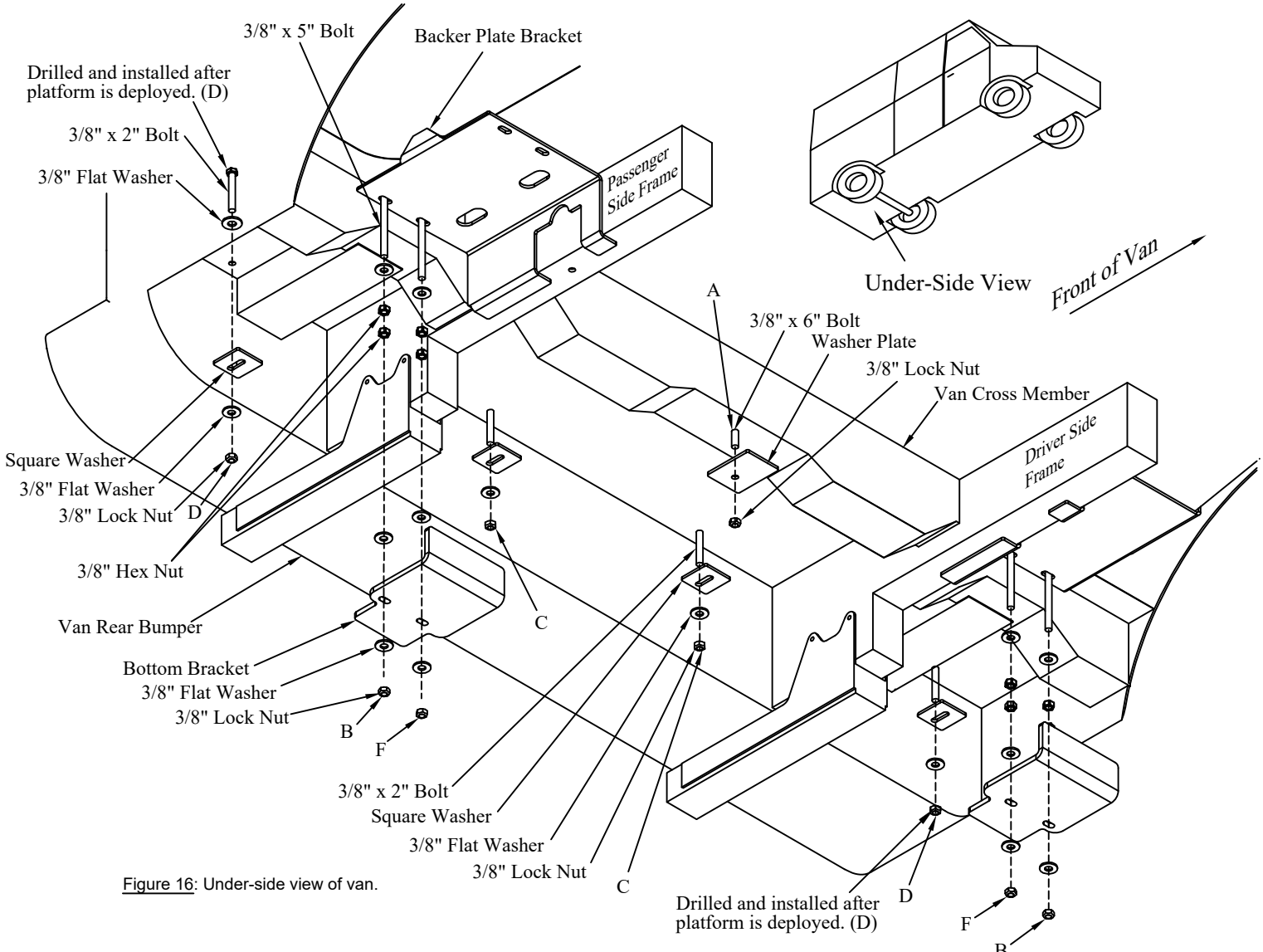


Figure 16: Under-side view of van.

Installing the Liftgate (continued)

16. **Insert** a 3/8" flat washer and then the bottom bracket onto the "B" and "F" location bolts (Figure 16).

17. **Secure** bottom brackets with flat washers and lock nuts (Figure 16).
    Do not tighten at this time.

18. **Install** washer plate on "A" location bolt (Figure 16).

19. **Secure** the "A" location washer plate with 3/8" lock nut.

20. **Tighten** all seven (7) bolts in an alternating pattern. "D" mounting holes will be drilled after platform is deployed.
    Do not over tighten and warp the base plate or bend the bottom brackets.

21. **Hold** the bolt/nut from turning and **Tighten** the 3/8" hex nuts on the fully threaded bolts at the "B" and "F" locations.
    Be sure bottom brackets are tight against van frame and backer plate brackets.

22. **Attach** the liftgate power cables to a jumper pack or battery to power the liftgate.

23. **Deploy** the platform to allow access to drill holes in the "D" locations (Figures 17-18).

24. **Disconnect** the power cables.

25. **Check** for obstructions before drilling in the next steps.

26. **Drill** holes, at the "D" locations, through the van floor using the base plate as a template.
    The holes must angle slightly outward to avoid the van frame below (Figures 17-18).

27. **Insert** the 3/8" x 2" bolts into holes in base plate, at the "D" locations, down through van floor (Figures 16-18).

28. **Install** square washer, 3/8" flat washers, and 3/8" lock nuts on each of the "D" location bolts (Figures 17-18).
    These parts are on the bottom side of the van.

29. **Tighten** the "D" location bolts.

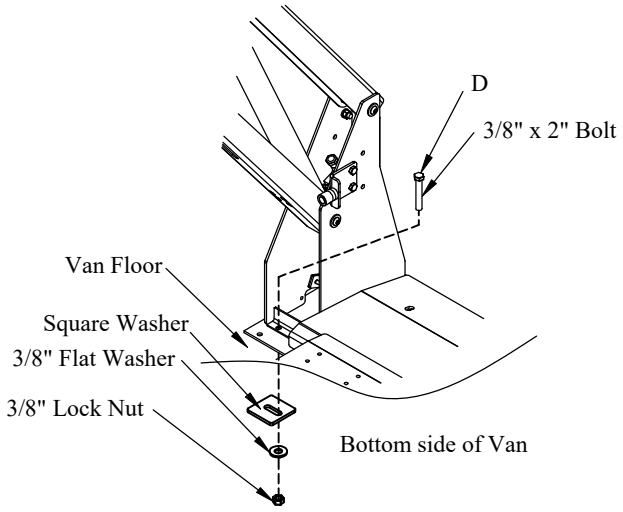


Figure 17: Driver side "D" location hole and fastener.

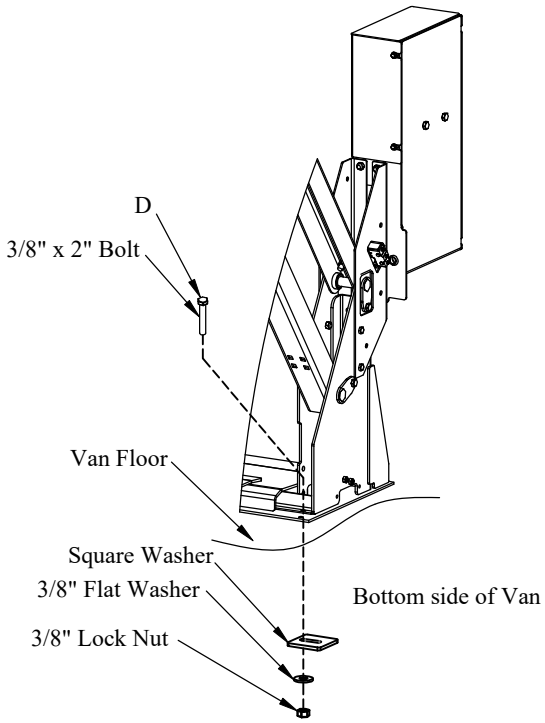


Figure 18: Passenger side "D" location hole and fastener.

Routing the Power Cables

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).

1. **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.

2. **Check** for obstructions before drilling.

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

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** and **Deburr** a 1-1/4" hole in the floor next to the driver seat in the location shown (Figure 19). 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 24) in the following steps.

5. **Route** the power cables under the vehicle from the liftgate, along the frame, to a location under the driver door (Figure 21).

6. **Pull** the power cables through the drilled 1-1/4" hole in the floor, using the supplied grommet.

7. **Separate** the positive(+) and negative(-) leads.

8. **Cut** the positive(+) lead to the length required to reach the auxiliary (AUX) terminal of the circuit breaker.

9. **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).

10. **Cut** the negative(-) lead to the length required to reach a vehicle ground point on the floor between the front seats (Figure 19).

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.

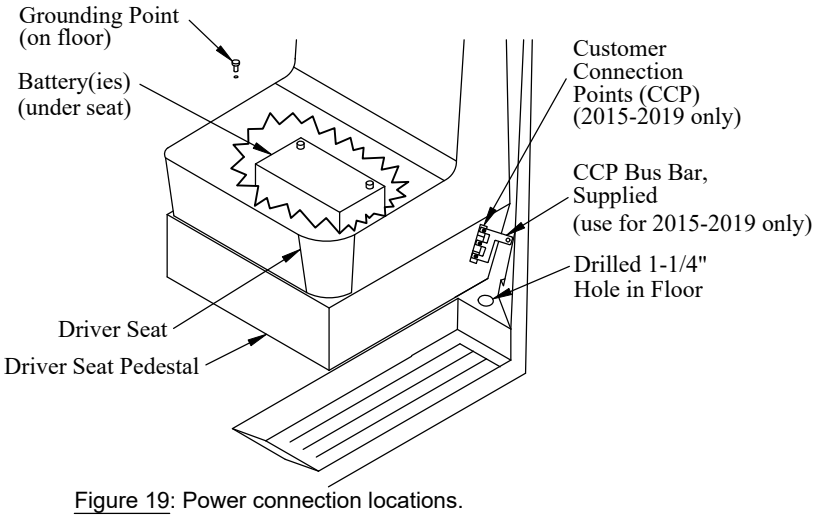


Figure 19: Power connection locations.

Routing the Power Cables (continued)

11. **Install** the copper lugs on all required ends. Make sure the copper lugs will fit flush with the connection surfaces.

10. **Cut** the negative(-) lead to the length required to reach a vehicle ground point on the floor between the front seats (Figure 19).

13. **Connect** the circuit breaker (Figure 24). 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 20).

16. **Connect** the positive(+) lead to the M6 stud on the positive battery clamp. Reuse the M6 lock nut, when possible (Figure 22).
    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 19).

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.

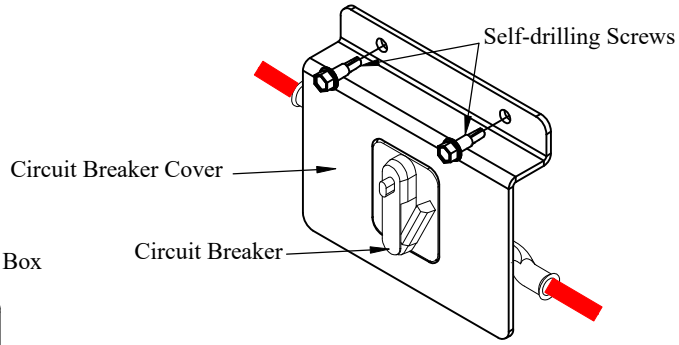


Figure 20: Circuit breaker cover.

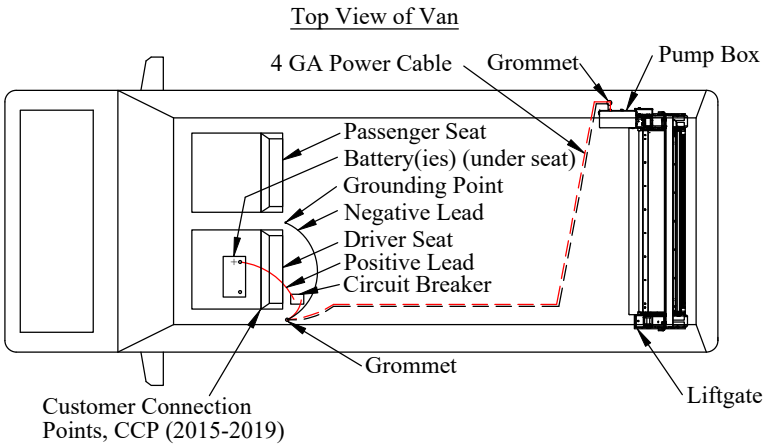
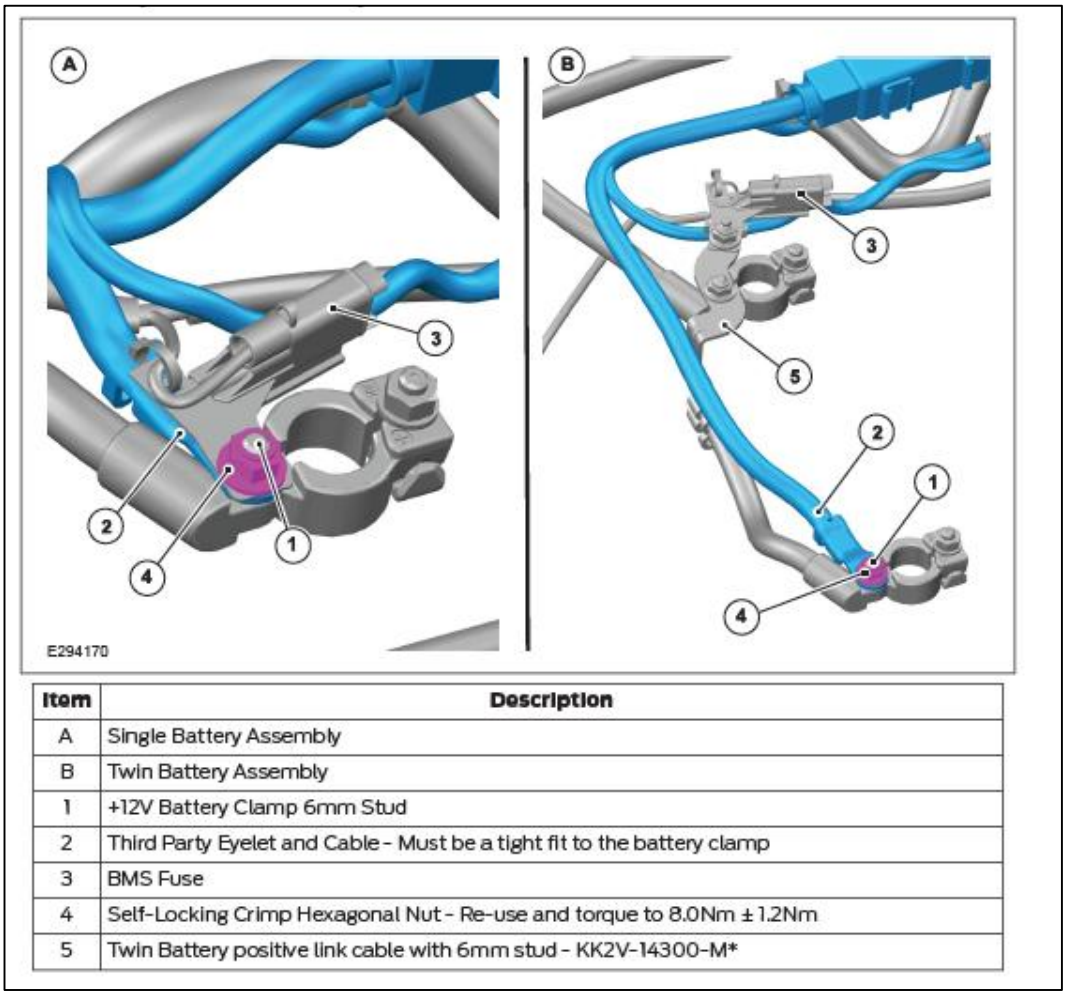


Figure 21: Electrical routing.

Routing the Power Cables (continued)



Item	Description
A	Single Battery Assembly
B	Twin Battery Assembly
1	+12V Battery Clamp 6mm Stud
2	Third Party Eyelet and Cable - Must be a tight fit to the battery clamp
3	BMS Fuse
4	Self-Locking Crimp Hexagonal Nut - Re-use and torque to 8.0Nm ± 1.2Nm
5	Twin Battery positive link cable with 6mm stud - KK2V-14300-M*

Figure 22: Battery diagram from 2020 Ford Transit Body and Equipment Mounting Manual (BEMM).

Installing the Floor Transition

1. **Position** the floor transition with one side on the liftgate and the other side on the van floor (Figure 23).
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 van floor with the provided #8 self-drilling screws (1-1/4" or 2" long screws).

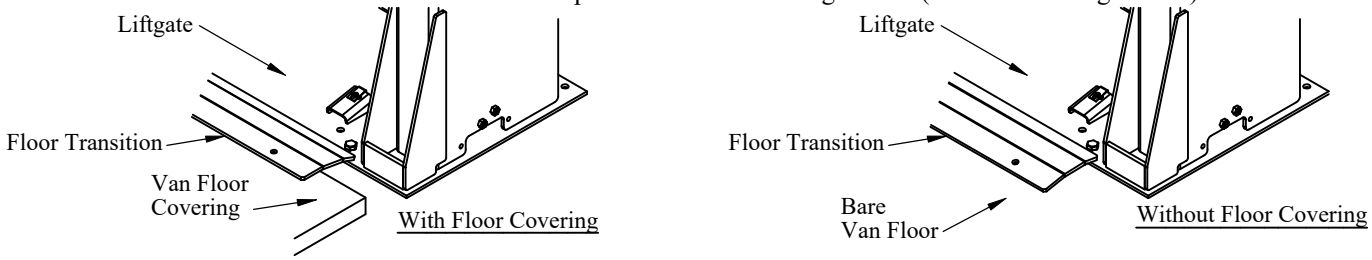


Figure 23: Floor transition.

ELECTRICAL WIRING DIAGRAM
Pendant Control

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

IMPORTANT

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

IMPORTANT

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

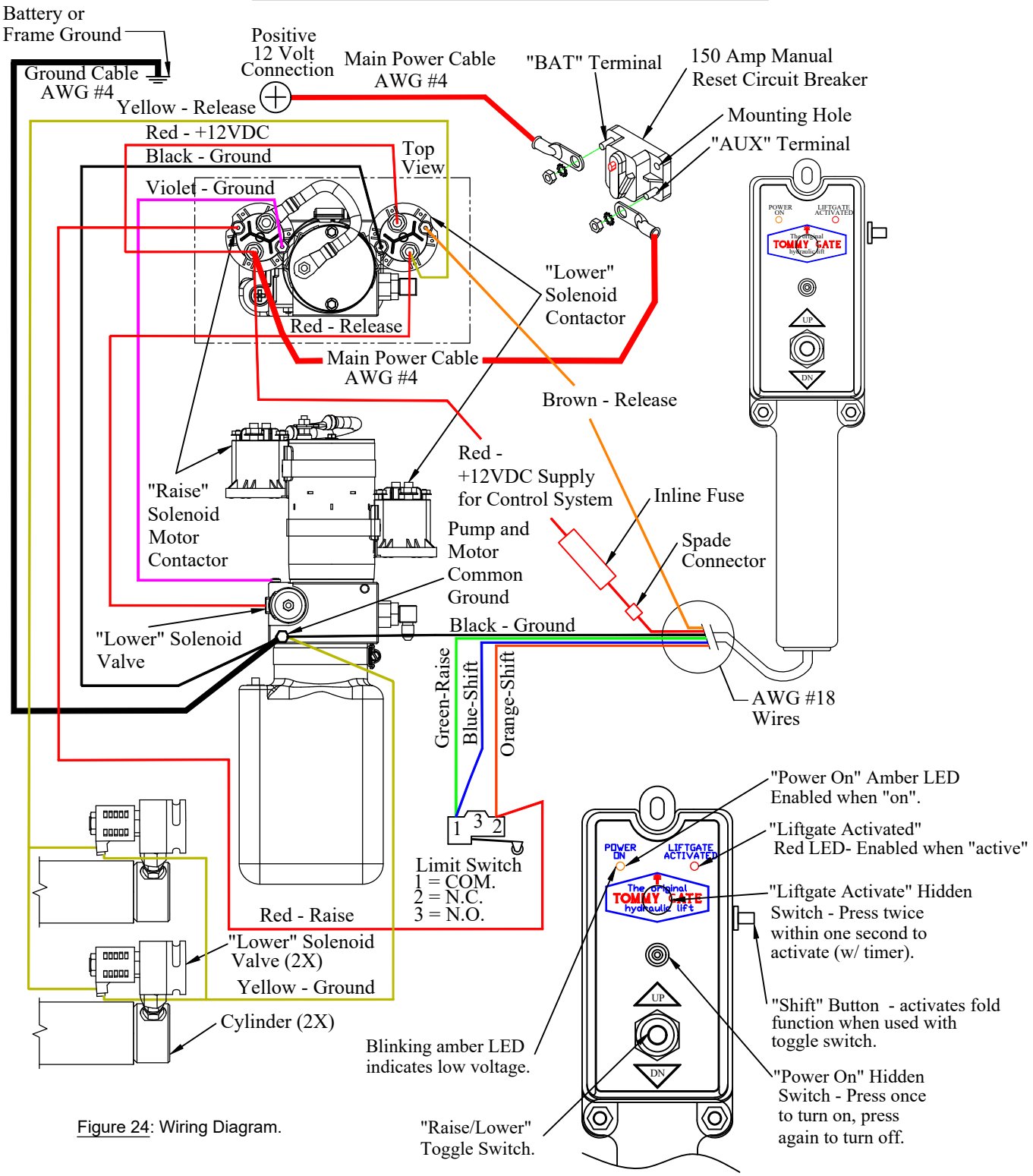


Figure 24: Wiring Diagram.

Ladder Logic/Wiring Diagram

Legend	
	Circuit Breaker
	Push Button
	Toggle Switch
	Limit Switch
	Contactor - Normally Open Contacts
M	Motor
	Solenoid/Contactor - Coil
	Battery Cable
	Wire
	Grounded through pump body.
	Quick Disconnect Connector (Mated Pair)
	Eyelet Terminal
	Splice
	Fuse

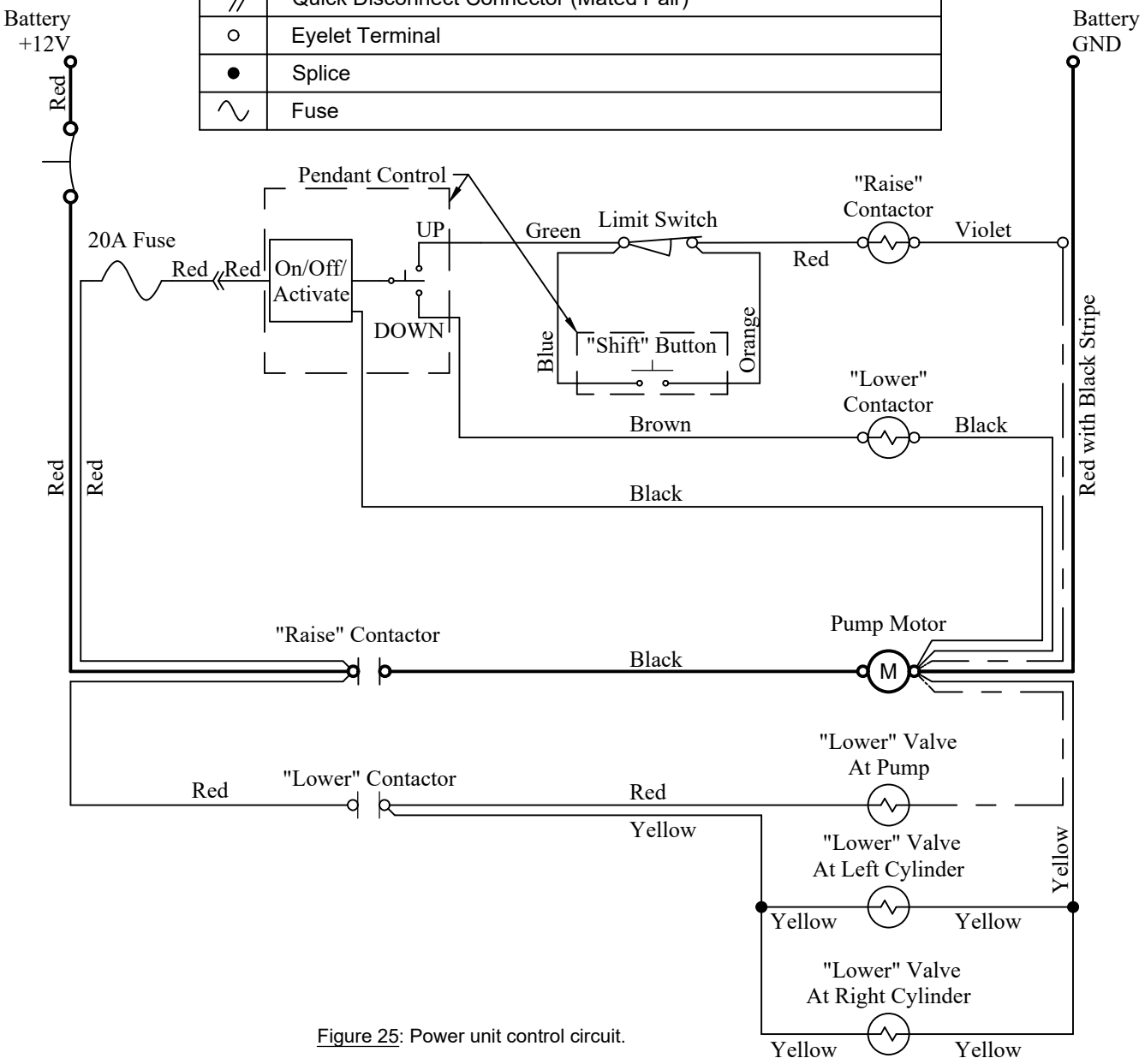


Figure 25: Power unit control circuit.

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 26). There are weld nuts inside the vertical arm.

6. **Reinstall** two 3/8" bolts removed in previous step in driver side vertical arm.

7. **Select** a location to install the control hanging bracket. Use a location on the passenger side rear corner post of the van at a height that allows the entire pendant cord to be completely inside the van when stored (Figure 27).

8. **Lower** the liftgate to the ground.

9. **Clean** the location selected to ensure that it is free from dirt, oil, and grease.

10. **Remove** adhesive backing from control hanging bracket.

11. **Hold** the control hanging bracket with adhesive against the door pillar with firm pressure for one minute.

12. **Install** second control hanging bracket with supplied 3/8" bolts on the passenger side vertical arm where the lifting angle was removed (Figure 27).

13. **Reinstall** the spare tire, if previously removed.
Make sure there are not any sharp screws or bolts that will puncture the tire when it is installed.

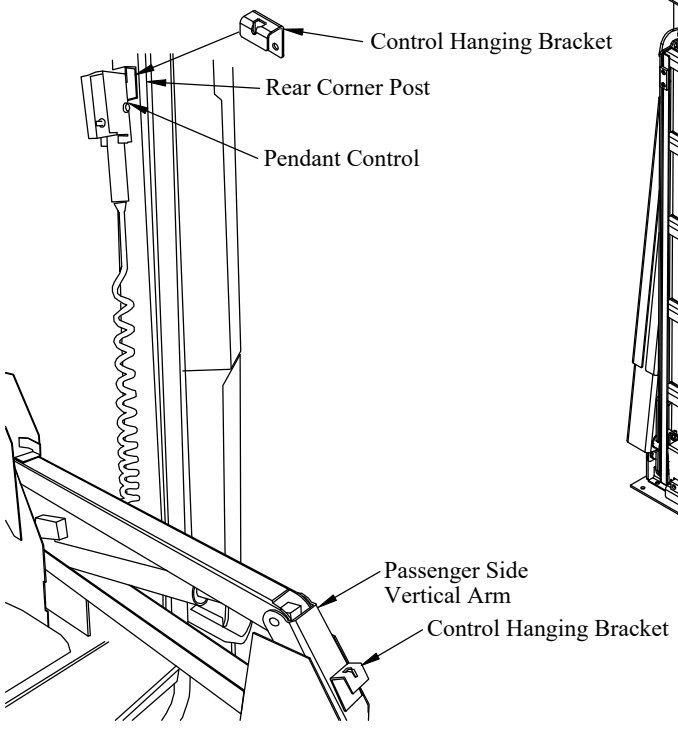


Figure 27: Control Hanging Brackets.

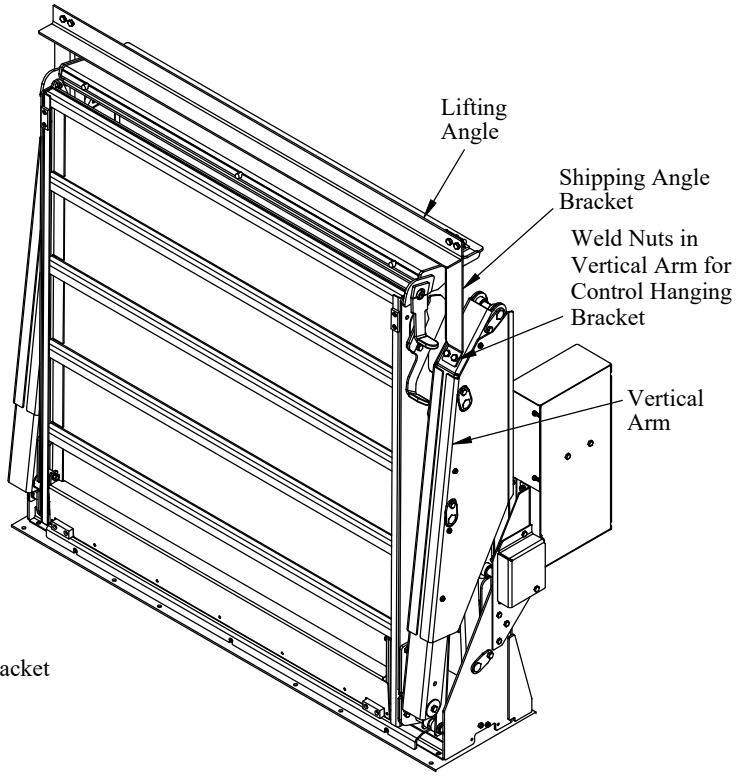


Figure 26: Lifting angle and vertical arm.

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 30).
   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 30).
5. **Remove** the limit switch cover by removing two (2) 5/16" bolts and nuts (Figure 28).
6. **Loosen** the bolts holding the limit switch (Figure 28).
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 28).

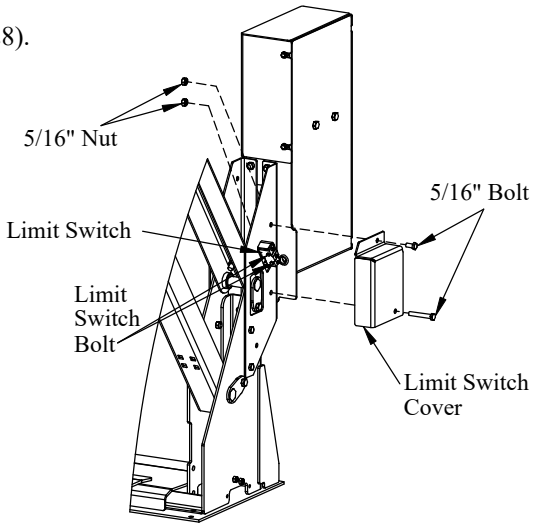


Figure 28: Limit Switch.

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 29).
   Turn the set screws in to raise the taper end, and out to lower the taper end.

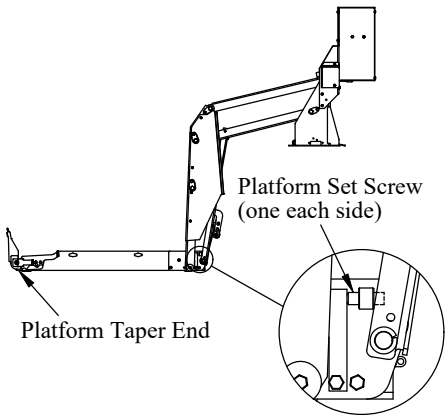


Figure 29: Platform.

Adjusting the Threshold Bridge

1. **Raise** the platform as high as it will go with just the pendant toggle (Figure 30).

2. **Lower** the platform 1".

3. **Adjust** each bridge close wheel so that it is tight against the bottom of the threshold bridge (Figure 30).

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 31).

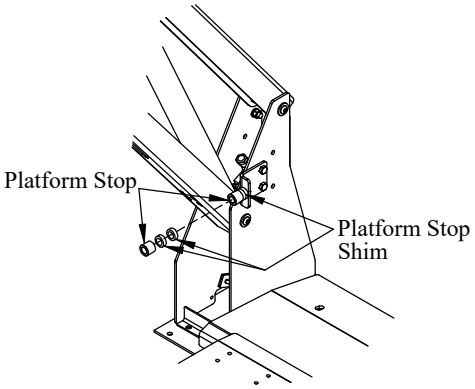


Figure 31: Platform stops.

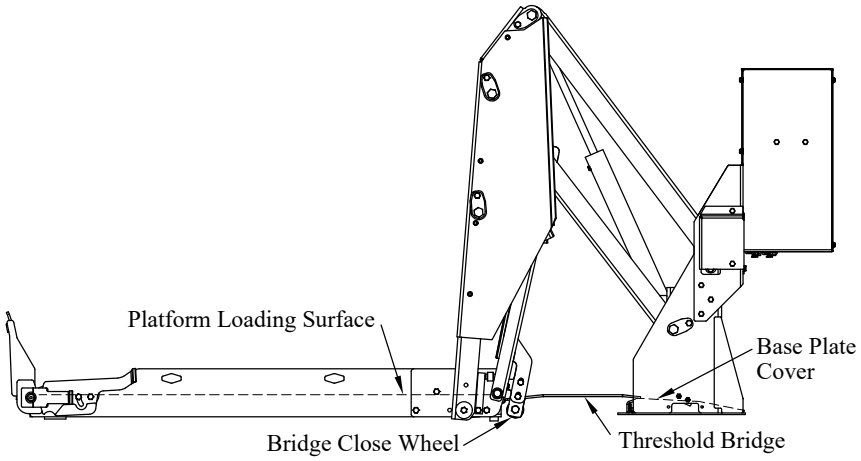


Figure 30: Platform and threshold bridge.

Testing the Operation of the Liftgate

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 on the door pillar.

9. **Place** Owner's / Operator's Manual in the vehicle.

Painting the Liftgate (if needed)

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 180ºF), 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 (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.

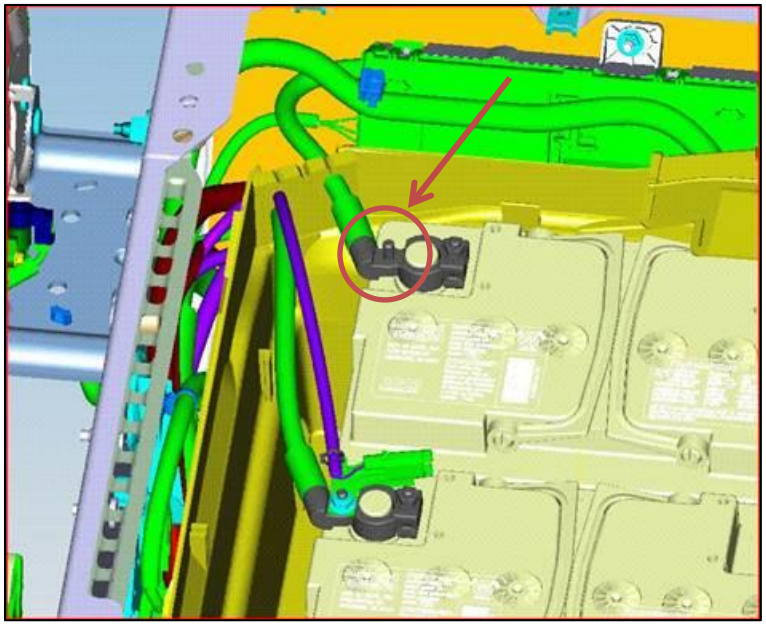


Fig. 1: Location of empty B+ battery post

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.