

**Preparing the Gate**

1. **Measure** the body opening, the overall width, and the maximum bed height of the truck (Figure 1).  
 Make sure you have the correct model of liftgate for your application.
2. **Remove** the mounting hardware which is banded to the liftgate.
3. **Verify** mounting bracket kit (Figures 2 and 3 and Tables 1 and 2).

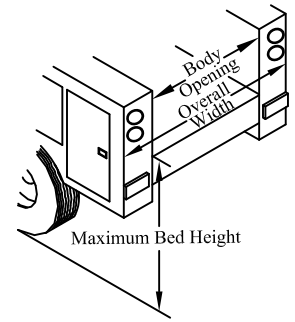


Figure 1: Body opening measurements.

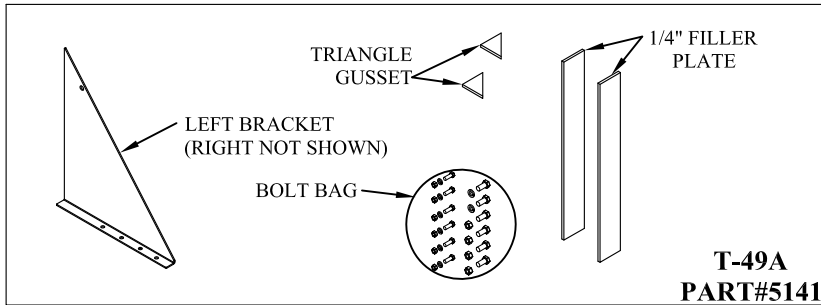


Figure 2: T-49A Part Identification.

Table 1: T-49A Parts List.

QTY.	PART NO.	DESCRIPTION
1	5012	T-49A Right Bracket
1	5011	T-49A Left Bracket
2	9744	1/4" Filler Plate
2	6948	1/4" Triangle Gusset
1	1096	T-49A Bolt Bag Kit

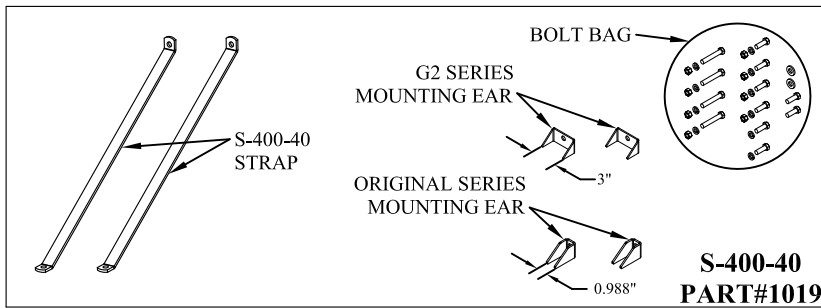


Figure 3: S-400-40 Part Identification.

Table 2: S-400-40 Parts List.

QTY.	PART NO.	DESCRIPTION
2	1020	G2 Series Mounting Ear
2	9438	S-400-40 Strap
1	9096	S-400 Bolt Bag Kit
2	1028	Original Series Mounting Ear

4. **Support** the liftgate; it will not stand upright without the angle irons- **G<sup>2</sup> only**.
5. **Unbolt** and **Save** the two (2) angle irons attached to the liftgate uprights- **G<sup>2</sup> only** (Figure 4).
6. **Remove** and **Save** the two (2) bracket plates attached to the liftgate- **G<sup>2</sup> only** (Figure 4).

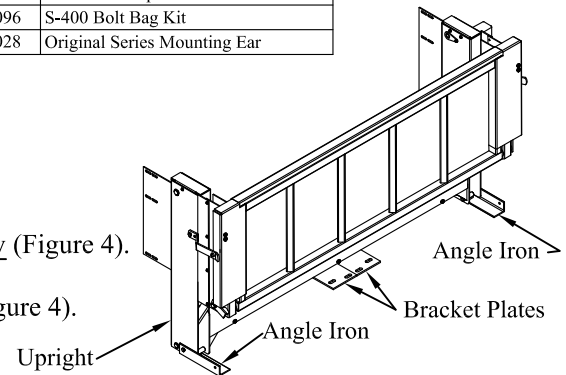


Figure 4: Complete liftgate (**G<sup>2</sup>** shown).

**Preparing the Truck**

1. **Verify** that there are no obstructions on the rear end rails or the end of the body.

Note: If factory light packages will be obstructed by the liftgate, optional liftgate light kits are available for installation (Figure 5).

2. **Remove** the original tailgate, where appropriate.
3. **Check** for spare tire access before installing the liftgate.  
 If necessary, remove the spare tire, modify the spare tire crank and/or the liftgate for tire access.

4. **Verify** the vehicle's structure.  
 The vehicle's body or frame must support the liftgate's loads as indicated in (Figure 6).

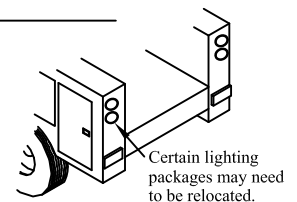


Figure 5: Factory lighting systems.

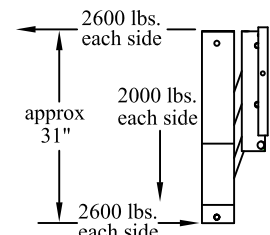


Figure 6: Liftgate loads that the vehicle must support.

## Mounting the Liftgate to the Truck

- Level** the liftgate to the world, not to the truck (Figure 7).  
 If not done correctly, the platform taper may not touch the ground when the liftgate is lowered.  
 When done correctly, there could be a small gap between the top of the liftgate and the truck.

- Position** the liftgate for service body and special applications:
  - Centered in the opening.
  - Flush with the truck bed floor.
  - In a vertical position (level with the world).

- Select** one of the following options for the upper mount.  
 An under mount is also required.

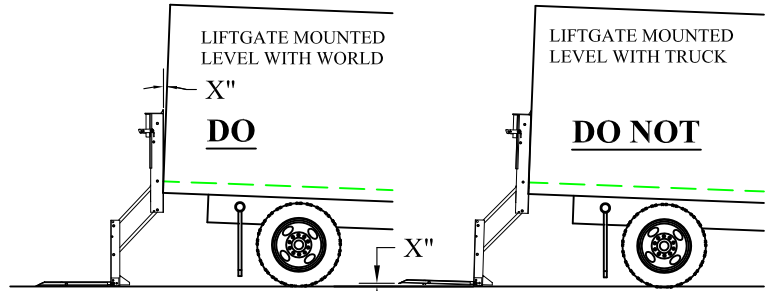


Figure 7: Liftgate level to the world.

### Option #1: Welding the Brackets Directly to the Liftgate

- Position** the mounting brackets on the gate uprights (Figure 8):
  - The distance between them is slightly less than the tailgate opening.
  - The bracket flanges that bolt to the truck floor are toward the opening.
  - The bottom of the brackets are flush with the top of the liftgate mainframe.
- Check** for lift cables and/or wiring inside the uprights or mainframe that may be damaged by welding heat and sparks.
- Protect** lift cables and wiring from welding heat and sparks before welding.
- Stitch weld** the brackets to the uprights.
- Bolt** the liftgate to the floor of the service body with at least (2) 3/8-16 bolts per side.  
 Use washers or a backer plate if necessary under the truck floor and on top to prevent the bolts from pulling through.

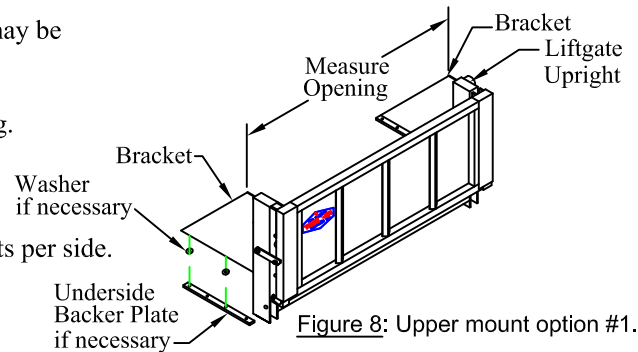


Figure 8: Upper mount option #1.

### Option #2: Bolting the Liftgate Directly to the Truck Body

- Check** for lift cables and/or wiring inside the uprights or mainframe that may be damaged by welding heat and sparks.
- Protect** lift cables and wiring from welding heat and sparks before welding.
- Weld** the mounting ears to the liftgate in the position shown (Figure 9).
- Bolt** the liftgate directly to the service body using a top mounting ear on the liftgate (Figure 9).  
 Use large O.D. washers or backer plates if necessary to prevent the bolts from pulling through.

Note: A larger bolt may be required if the mounting ears are moved closer together than in the figure.

Note: Only use option #2 if options #1, #3, or #4 are not possible.

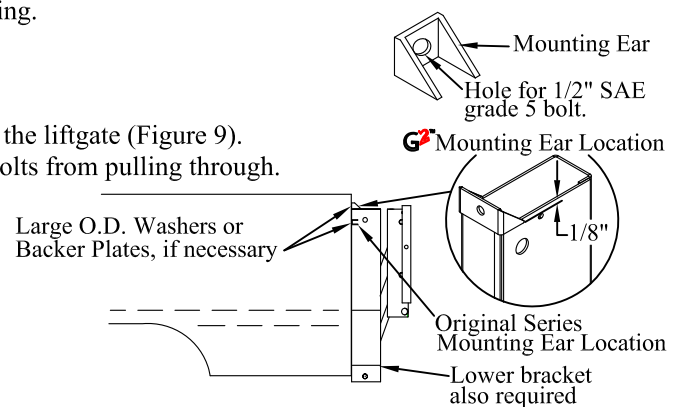


Figure 9: Upper mount option #2.

### Option #3: Fabricating an Upper Bracket

1. **Center** the liftgate in the body opening.
2. **Position** the mounting brackets in the truck bed (Figure 10):
  - The distance between them is slightly less than the tailgate opening.
  - The bracket flanges that bolt to the truck floor are toward the opening.
  - The bottom of the brackets are flush with the top of the liftgate mainframe.
3. **Verify** that the service body is square.
4. **Use** a 1/4" filler to span the gap between the bracket and the liftgate as shown (Figure 10).
5. **Check** for lift cables and/or wiring inside the uprights or mainframe that may be damaged by welding heat and sparks.
6. **Protect** lift cables and wiring from welding heat and sparks before welding.
7. **Stitch weld** the brackets and filler plates to the uprights of the liftgate.
8. **Weld** 1/4" triangle gussets to the top of each upright as shown (Figure 10).
9. **Bolt** the liftgate to the floor of the service body with at least (2) 3/8-16 bolts per side.  
 Use washers or a backer plate if necessary under the truck floor and on top to prevent the bolts from pulling through.

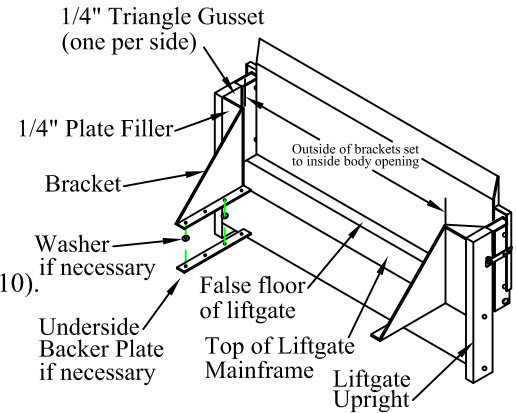


Figure 10: Upper mount option #3.

### Option #4: Bolting the Liftgate to the Truck with Straps

Note: Use this arrangement when the truck body is not strong enough to support the loads shown previously.

1. **Attach** the liftgate to the frame using a lower mount, instructions to follow (Figure 16).
2. **Attach** the uprights to the truck using the mounting ears and straps (Figure 11).

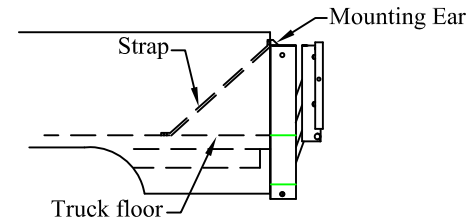


Figure 11: Upper mount option #4.

### Correcting an Incorrectly Mounted Liftgate

Note: If the liftgate has a steel platform and is inadvertently mounted level with the truck, the following may be used to correct the problem.

1. **Replace** the standard U-bolt, which connects the chain to the platform, with a longer U-bolt (Figure 12). The replacement U-bolt kit (PART#4534) must be purchased from Tommy Gate Company.

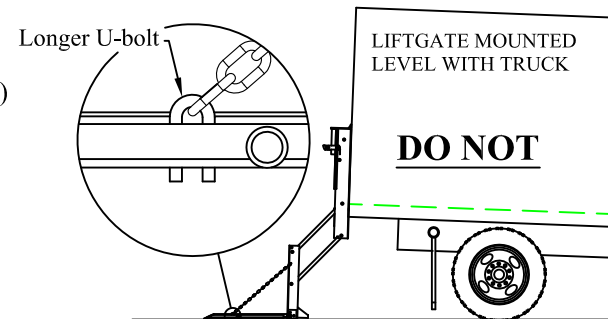


Figure 12: Incorrect liftgate mounting.

**Preparing the Gate for Wiring**

1. **Attach** 12 volts from a battery to the liftgate power cables (no battery chargers).
  2. **Push** the hidden "Power On" switch (Figure 14). The amber "Power On" LED will illuminate.
  3. **Push** the hidden "Liftgate Activated" switch twice within one second. The red "Liftgate Activated" LED will illuminate.
- Note: With both lights on, the liftgate can be raised or lowered. If not used for 90 seconds, the control will automatically shut off.
4. **Push** the toggle switch down to lower the liftgate to the ground.
  5. **Remove** the box cover by removing the 5/16" hex head bolts or nuts (Figure 13).
  6. **Remove** the following from inside the liftgate mainframe:
    - Owner/Operator Manual
    - License plate light(s)
    - License plate light hardware (G<sup>2</sup> only)
    - (1) Vent plug
    - (2) Latch balls with studs (Original Series only)
    - (1) 150 Amp manual reset circuit breaker
    - (4) Copper lugs
    - (2) License plate nuts and screws
    - (1) Padlock with keys
    - (3) 3/8" plastic plugs (G<sup>2</sup> only)
    - (1) Drop away pin (G<sup>2</sup> only)
    - (1) Lower mounting kit

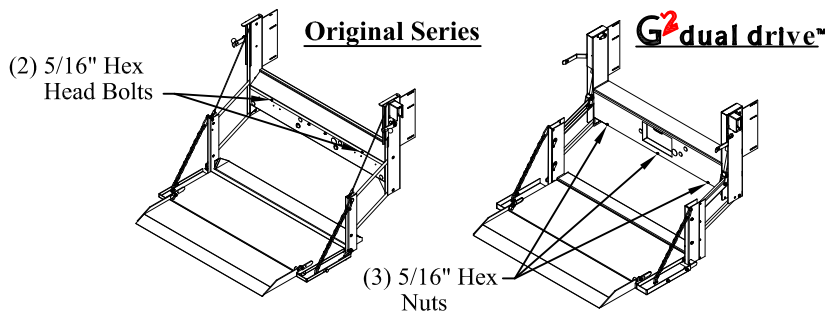


Figure 13: Box cover locations.

**Routing the Power Cables**

1. **Install** the circuit breaker on the vehicle fender, firewall, or other location inside the engine compartment away from moving parts. Leave enough room for the power cables to be installed and so that the circuit breaker can easily be reset.
2. **Loosen** the strain relief on the back of the liftgate mainframe.
3. **Pull** the power cable (coiled up in the liftgate mainframe) carefully through the strain relief. Leave approximately two (2) inches of slack inside the liftgate mainframe.
4. **Tighten** the strain relief.
5. **Route** the power cables along the frame to the battery following the *Tommy Gate Recommended Electrical Wiring Guidelines*.
6. **Pull** the excess cable beyond the battery.
7. **Separate** the positive(+) and negative(-) leads.
8. **Cut** the positive(+) lead to the length required to reach the auxilliary (AUX) terminal of the circuit breaker.
9. **Cut** the remaining pos.(+) lead long enough to reach from the circuit breaker battery (BAT) terminal to the pos.(+) battery terminal.
10. **Cut** the negative(-) lead to the length required to reach the negative battery terminal.

**IMPORTANT:** The pump and motor unit for this lift can require up to 205 amps of electrical power at 12 volts D.C. Be sure that the negative(-) ground lead is connected to the negative(-) terminal of the vehicle battery.

11. **Install** the copper lugs on all required ends.
12. **Connect** the circuit breaker and battery as outlined in the *Tommy Gate Recommended Electrical Wiring Guidelines* and wiring diagram (Figure 14).

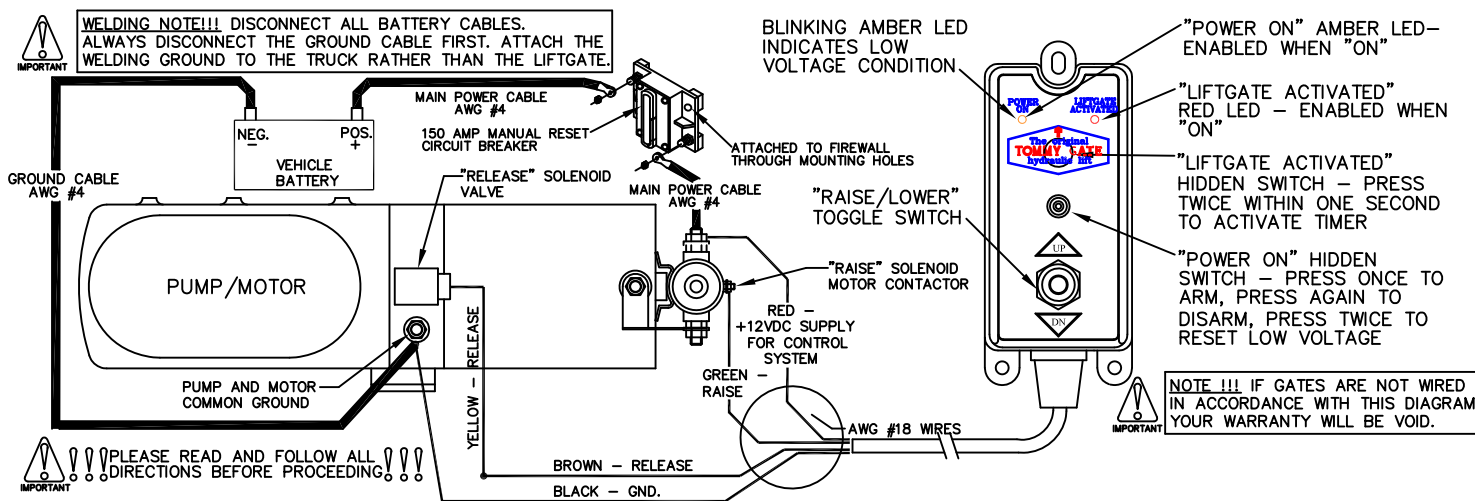


Figure 14: Wiring diagram.

## Installing the Lower Mount

**IMPORTANT:** Do not install a liftgate without installing the lower mount.

- 1. Install** the two (2) mounting angle irons to the bottom of the liftgate (Figure 15).  
Select the holes in the liftgate that position the angle irons adjacent to the truck frame rails.

Note: Nuts have been welded to the inside of the liftgate to accept the bolts.

Note: If the liftgate already has a long angle iron, use it in place of the two mounting angle irons.

- 2. Bolt** the bracket plates to the truck frame (Figure 16).  
Modification to the bracket plates may be required.
- 3. Clamp** the short angle irons to the bracket plates.  
The short angle irons should extend out to the mounting angle irons on the liftgate.
- 4. Tack** weld the bracket plates (see welding note at right), the short angle irons, and the mounting angle irons together.
- 5. Remove** the tacked lower brackets from the truck.
- 6. Weld** all seams with a heavy weld:
  - Where the bracket plates meet the short angle irons.
  - Where the short angle irons meet the mounting angle irons.
- 7. Bolt** the completed brackets back to the truck frame and bottom of the liftgate.

Note: The lower mount is of great importance because it adds additional support to the liftgate.

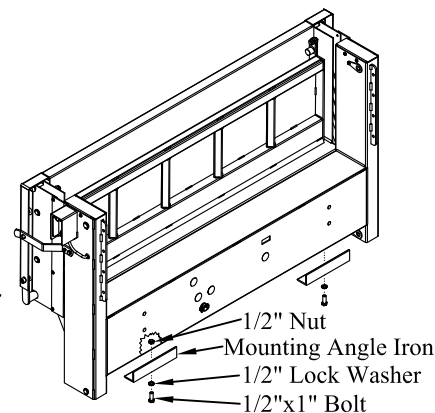


Figure 15: Mounting angle iron location.

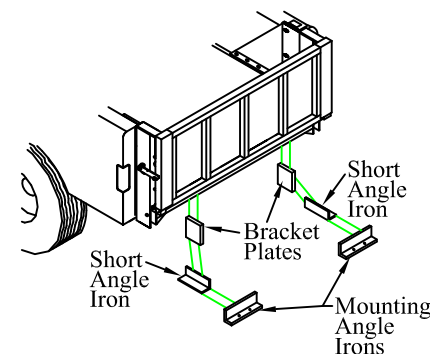
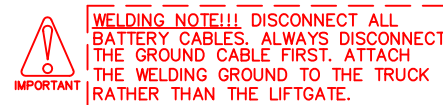


Figure 16: Lower bracket support.

## Finishing the Liftgate Installation

- 1. Install** the two (2) knobs on the platform latches (Original Series only) see (Figure 17).
  - 2. Unscrew** the solid plastic plug from the pump reservoir and **Install** the vent plug provided (Figure 18).
- Note: The hydraulic system has already been filled with the proper amount of hydraulic oil so **do not** add any oil at this time.

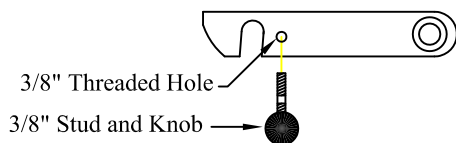


Figure 17: Original Series platform latch knob.

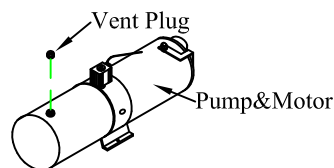


Figure 18: Vent plug.

- 3. Install** the two (2) square plastic insert nuts for the license plate into the square holes on the liftgate.
- 4. Install** the license plate using the two (2) stainless steel screws provided.
- 5. Install** the license plate light(s) into the holes provided.
- 6. Connect** the license plate light(s) to the vehicle's wiring following the *Tommy Gate Recommended Electrical Wiring Guidelines*.  
The license plate light wire(s) can be run through the strain relief in the back of the liftgate.

Note: Additional wire may need to be spliced into the license plate light circuit to reach the connection point.

Note: All electrical splices should be heat shrunk for corrosion protection.

- 7. Install** the 3/8 inch round plastic plugs into the empty holes in the bottom of the uprights (G<sup>2</sup> only).  
See the Owner's / Operator's Manual if drop away feature is desired.
- 8. 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.

## Testing the Operation of the Liftgate

**CAUTION:** Keep all foreign objects (body parts, tools, load weights, etc) out of the liftgate mainframe 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 control shuts off automatically after 90 seconds of not being used.
2. **Raise** and **Lower** the unloaded platform on a flat surface looking for proper operating speed and alignment with the ground.
3. **Load** the platform with the rated capacity and **Measure** the time necessary to raise the platform.  
The platform should raise at roughly 2-3 inches per second.
4. **Examine** the platform for any downward creep.
5. **Time** the lowering operation with the platform still loaded.  
The load should descend at roughly 7-9 inches per second.
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. **Reinstall** the box cover.
8. **Close** and **Latch** the platform.
9. **Lock** the padlock through the hole in the platform or latch pin (Figure 19).
10. **Place** Owner's / Operator's Manual and padlock keys in the vehicle.

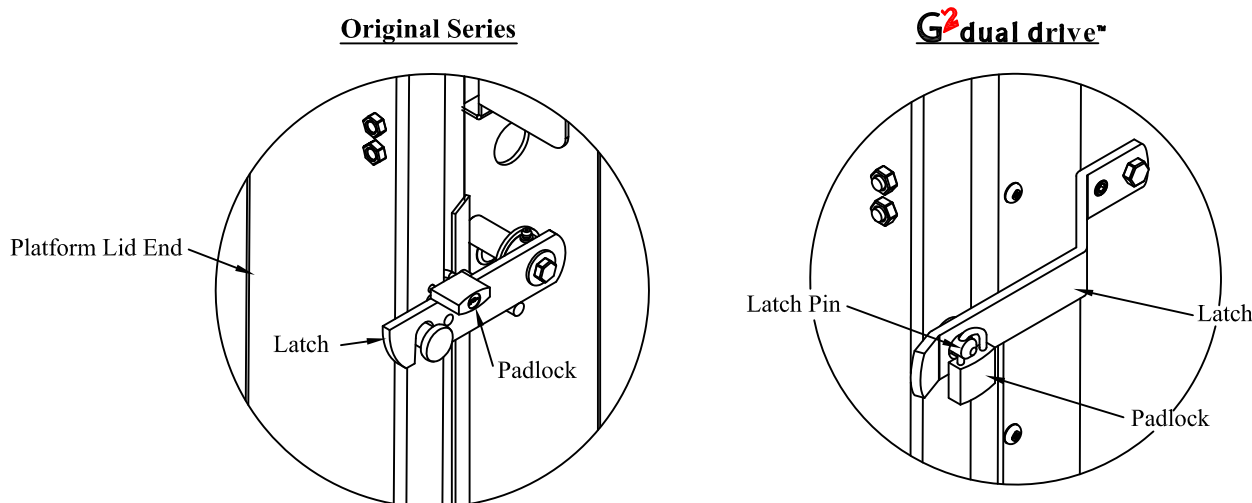


Figure 19: Padlock location.

## 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 overspray 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 through the supplied circuit breaker or fuse. The circuit breaker or fuse should be installed as close to the battery as possible.
- (3) Do not splice battery 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. Do not put 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 will 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.