

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 S-400 boxed mounting hardware if it is banded to the liftgate (Figure 2).
- 3. Verify** mounting bracket kit (Figure 2 and Table 1).

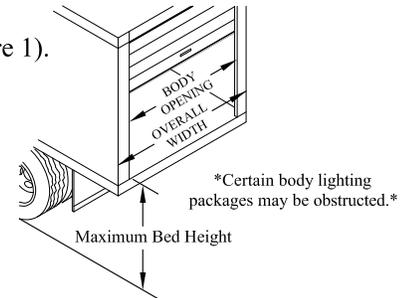


Figure 1: Body opening measurements.

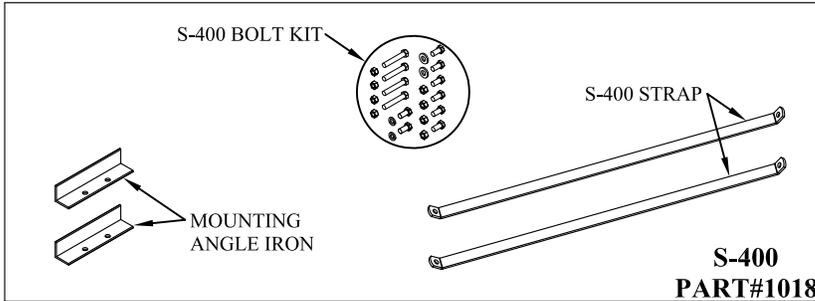


Figure 2: Part Identification

Table 1: Parts List

QTY.	PART NO.	DESCRIPTION
2	6509	Mounting Angle Iron
2	9436	S-400 Strap
1	9096	S-400 Bolt Bag Kit

- 4. Install** the (2) mounting angle irons to the bottom of the liftgate (Figure 3).
 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 mounting angle irons.

- 5. Support** the liftgate; it will not stand upright without the angle irons - **G²** only.
- 6. Unbolt** and **Save** the two (2) angle irons attached to the liftgate uprights - **G²** only (Figure 3).

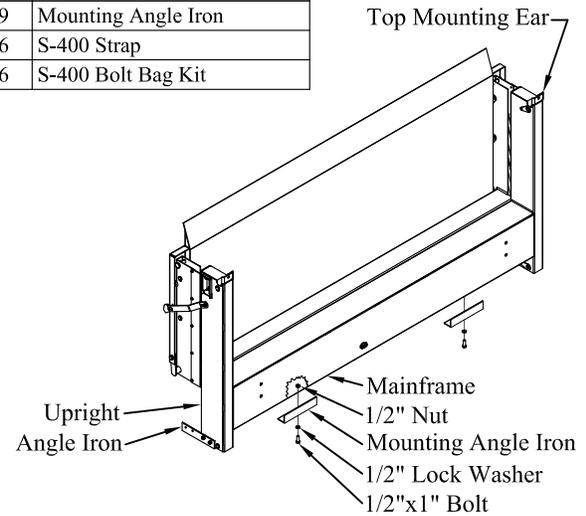


Figure 3: Complete Liftgate.

Preparing the Truck

- 1. Verify** that there are no obstructions on the rear end rails or the end of the body.
 - Remove corner lights that are not flush with the body.
 - Cut off longitudinal sills that extend beyond the rear rail.

Note: If body light packages will be obstructed by the liftgate, optional liftgate light kits are available for installation.
 Note: Vehicles with wrap around hinges for swing doors generally cannot be fitted.
 Note: Quick hold down clamps are required on single acting hoist dump bodies to avoid unintended dump body movement when using the liftgate (Figure 4).

- 2. Remove** the original tailgate, where appropriate.

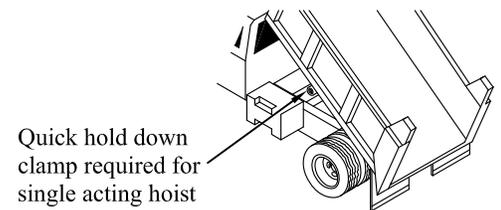


Figure 4: Dump body with single acting hoist.

Fabricating the Lower Mount

- 1. Position** the Tommy Lift into the opening (Figure 5). It should be:
 - Centered in the opening.
 - Flush with the truck bed floor.
 - In a vertical position (level to the world).

Note: Be sure that the mounting angle irons are against the truck's rear rail.

- 2. Clamp** the (2) angle irons to the bottom or side of the longitudinal sills so they support the underside of the mounting angle irons (Figure 6).

- 3. Bolt or Weld** the angle irons to the longitudinal sills (Figure 6).

- 4. Weld** the angle irons to the mounting angle irons that are bolted to the liftgate.

- 5. Level** the liftgate to the world, not to the truck (Figure 5).

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.

- 6. Verify** that there are no obstructions to the two-screw strain relief on the back of the liftgate.

This is where the electrical cable will be pulled through. If an obstruction occurs, you may need to drill or cut a hole in the truck bed to allow clearance for the cable.

- 7. Complete** the top mount for your application.

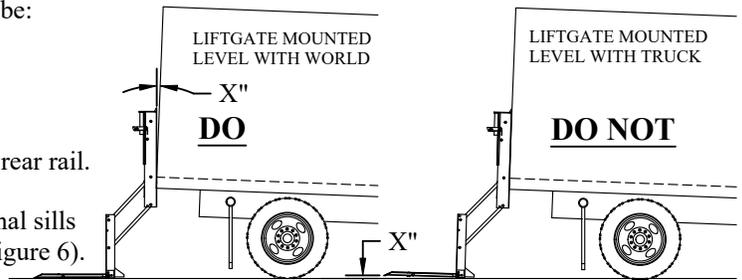


Figure 5: Liftgate level to the world.

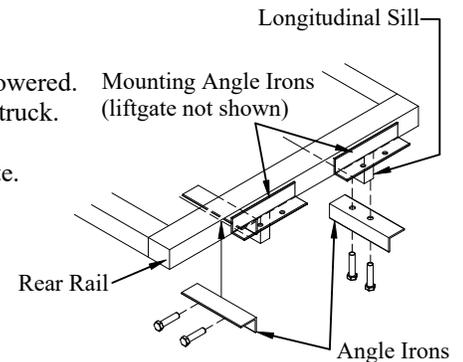


Figure 6: Possible angle iron positions.

Van Body: Bolting the Top Mounting Ear to the Truck

- 1. Position** the liftgate level with the world (Figure 5).

- 2. Drill** 1/2" holes through the van body using the liftgate mounting ears as a guide (Figure 8).

- 3. Insert** 1/2" bolts with flat washers through the mounting ears and through the truck (Figure 8). Original Series with gussets on the top mounting ears do not need the flat washers (Figure 7).

- 4. Attach** the 1/4" x 1-1/4" x 39" straps on the back side of the bolts with 1/2" lock nuts. Position the straps inside the body so they go down to the floor (Figure 8).

- 5. Verify** that the gate is level with the world. Add a spacer or washers between the mounting ear and truck if needed.

- 6. Drill** 1/2" holes through truck floor, using the strap holes as a guide.

- 7. Bolt** the straps to the truck floor using the supplied 1/2" bolts and lock nuts (Figure 8).

Note: If there is not enough room for the straps, reinforce the body around the bolt holes and bolt the ears to the van body.

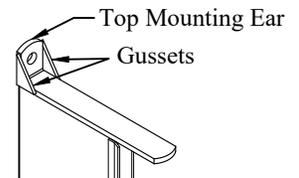


Figure 7: Top mounting ear with gussts.

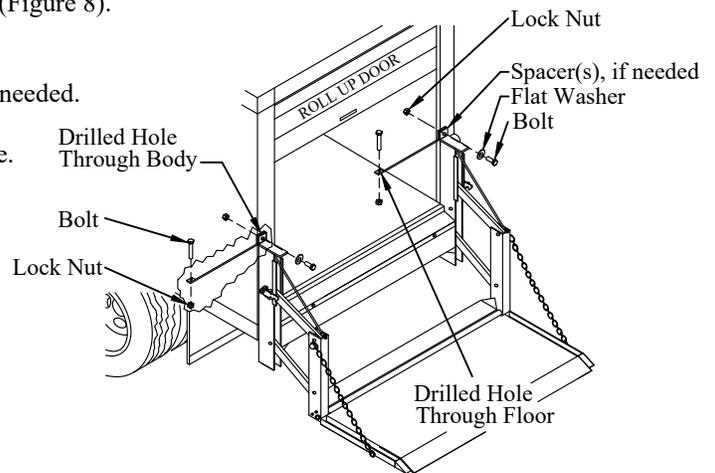


Figure 8: Van body top mounting ear.

Dump Body: Bolting the Top Mounting Ear to the Truck

1. **Position** the liftgate level with the world (Figure 5).
2. **Drill** 1/2" holes through the truck body using the liftgate mounting ears as a guide (Figure 9).
3. **Insert** 1/2" bolts with flat washers through the mounting ears and through the truck (Figure 9).
Original Series with gussets on the top mounting ears do not need the flat washers (Figure 7).
4. **Attach** a 1/2" lock nut to each bolt.
5. **Verify** that the gate is level with the world.
Add a spacer or washers between the mounting ear and truck if needed.

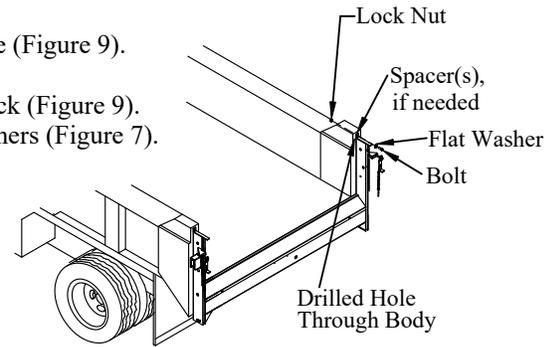


Figure 9: Dump body top mounting ear.

Flatbed and Stake Body: Bolting the Top Mounting Ear to the Truck

1. **Position** the liftgate level with the world (Figure 5).
2. **Insert** 1/2" bolts with flat washers through the mounting ears (Figure 10).
Original Series with gussets on the top mounting ears do not need the flat washers (Figure 7).
3. **Attach** the 1/4" x 1-1/4" x 39" straps on the back side of the bolts with 1/2" lock nuts.
Position the straps so they go down to the floor (Figure 10).
4. **Verify** that the gate is level with the world.
5. **Drill** 1/2" holes through truck floor, using the strap holes as a guide (Figure 10).
6. **Bolt** the straps to the truck floor using the supplied 1/2" bolts and lock nuts (Figure 10).

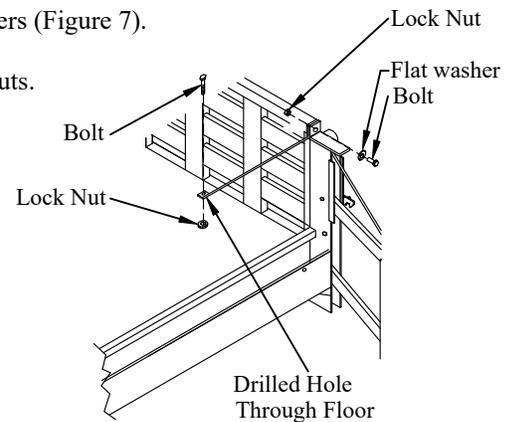


Figure 10: Flatbed and stake body top mounting ear.

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 13). 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 11).

6. **Remove** the following from inside the liftgate mainframe:

- Owner/Operator Manual
- License plate light(s)
- License plate light hardware (G² 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 (G² only)
- (1) Drop away pin
- (1) Lower mounting kit

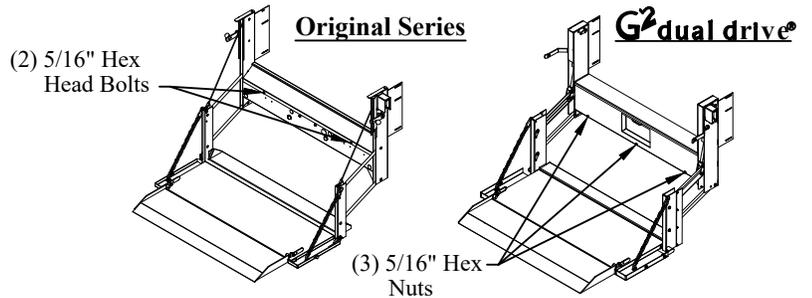


Figure 11: Box cover locations.

7. **Unscrew** the solid plastic plug from the pump reservoir and **Install** the vent plug provided (Figure 12).

Note: The hydraulic system has already been filled with the proper amount of hydraulic oil so **do not** add any oil at this time.

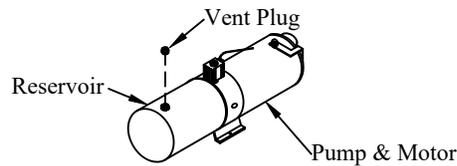


Figure 12: Vent plug.

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 significant 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 and heat shrink tubing 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 13).

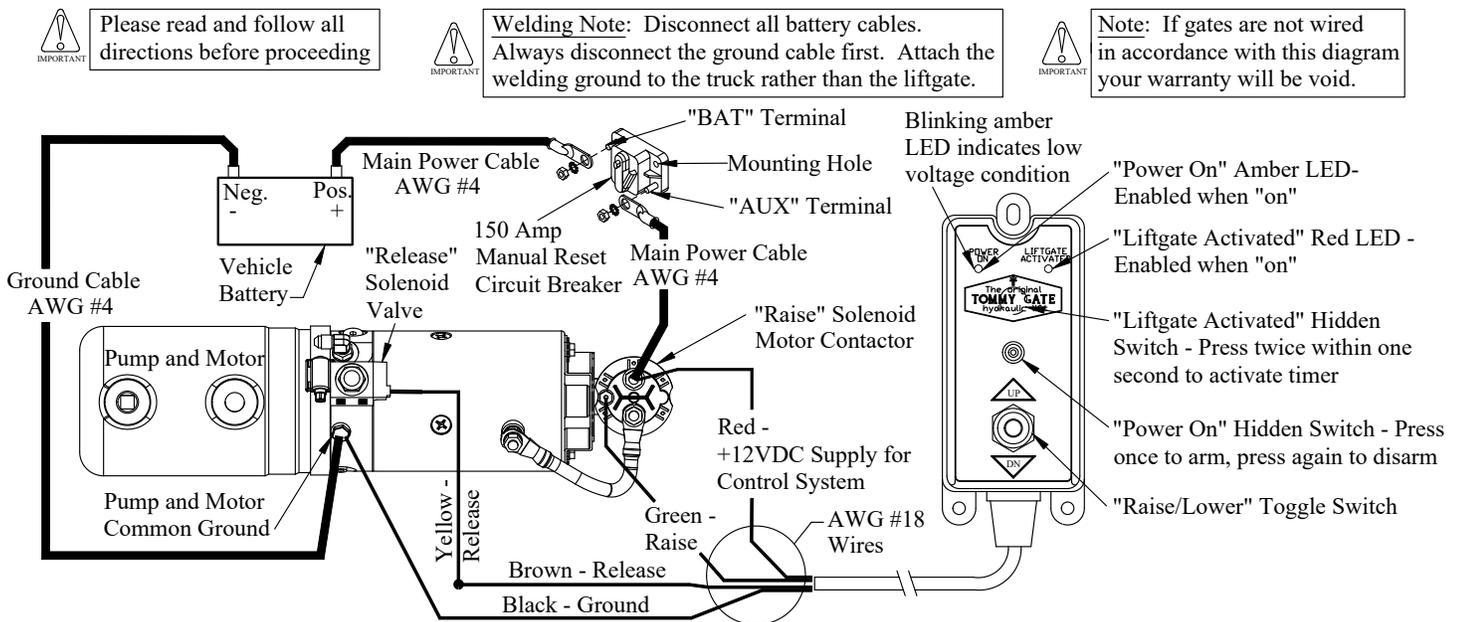
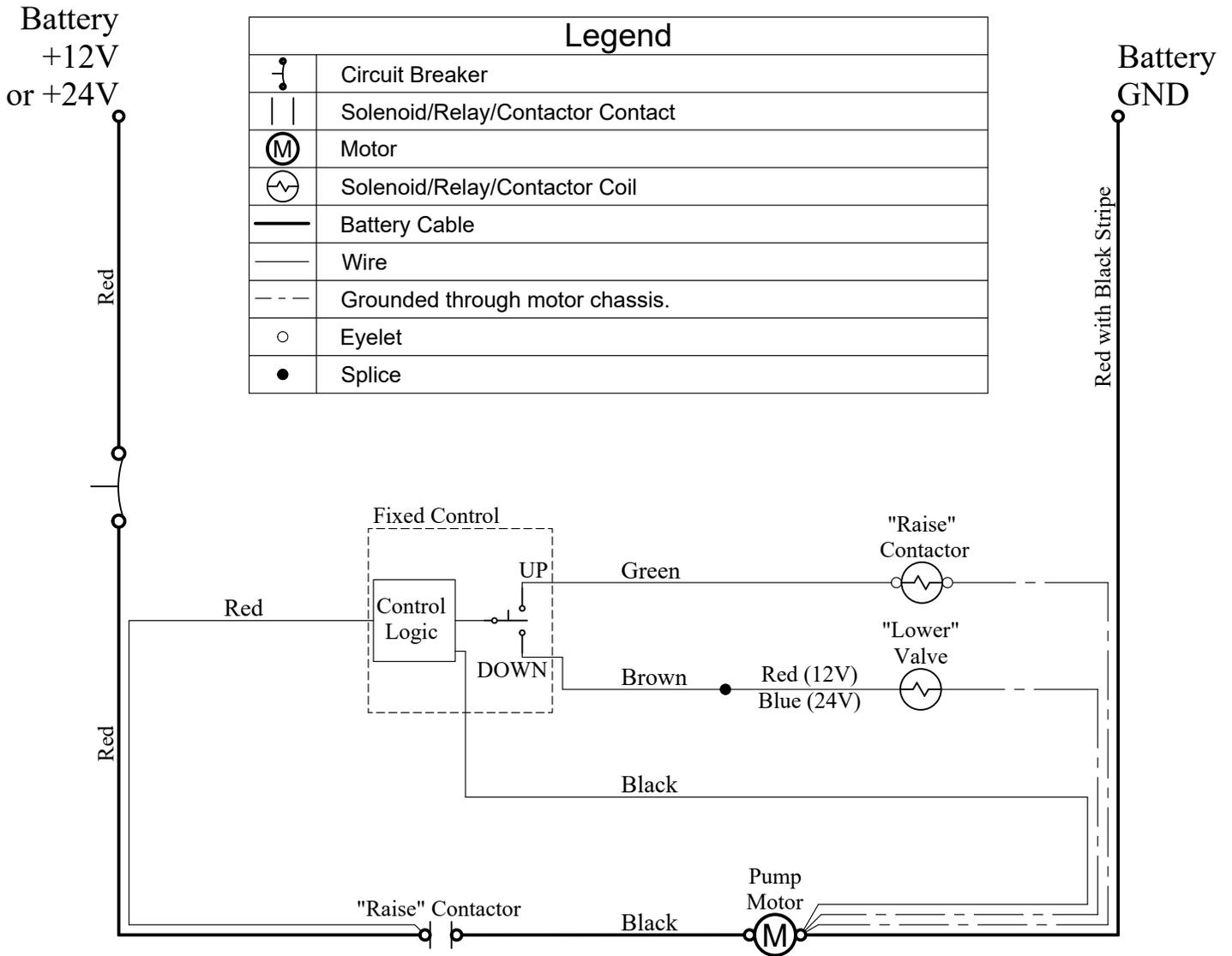


Figure 13: Wiring diagram.

Ladder Logic/Wiring Diagram



Finishing the Liftgate Installation

1. **Install** the two (2) knobs on the platform latches (Original Series only) see (Figure 14).
2. **Install** the two (2) square plastic insert nuts for the license plate into the square holes on the liftgate.
3. **Install** the license plate using the two (2) stainless steel screws provided.
4. **Install** the license plate light(s) into the holes provided.
5. **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.

6. **Install** the 3/8" round plastic plugs into the empty holes in the bottom of the uprights (G² only).
7. **See** the Owner's / Operator's Manual if drop away feature is desired.
Drop away feature not available for 2000 lb capacity treadplate platform.
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.

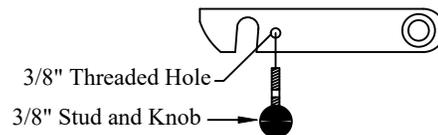


Figure 14: Original Series platform latch knob.

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 4-7 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 15).
10. **Place** Owner's / Operator's Manual and padlock keys in the vehicle.

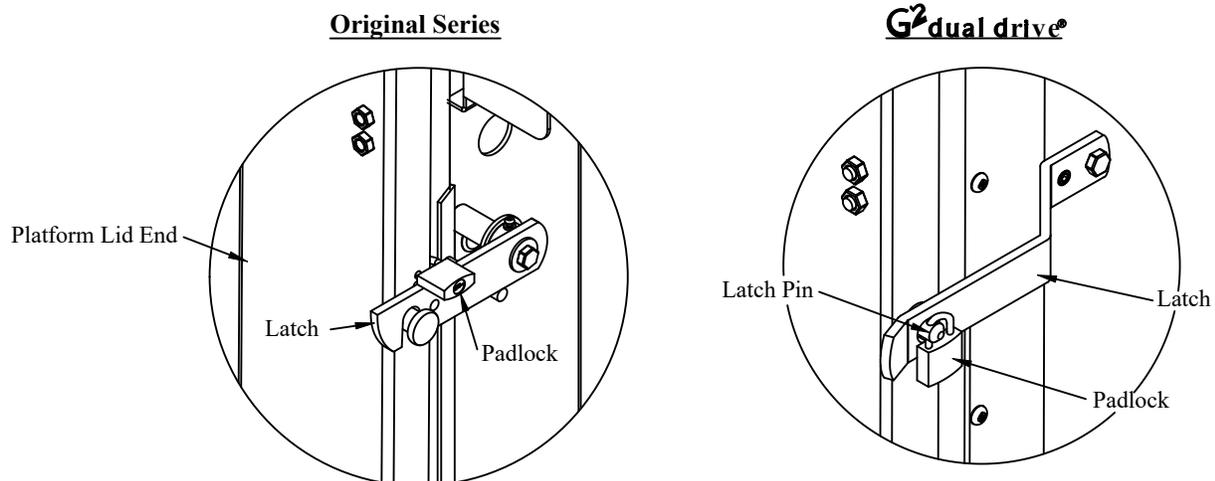


Figure 15: Padlock location.

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.