

Preparing the Gate

1. **Remove** the mounting hardware which is banded to the liftgate.
2. **Verify** mounting bracket kit (Figure 1 and Table 1).

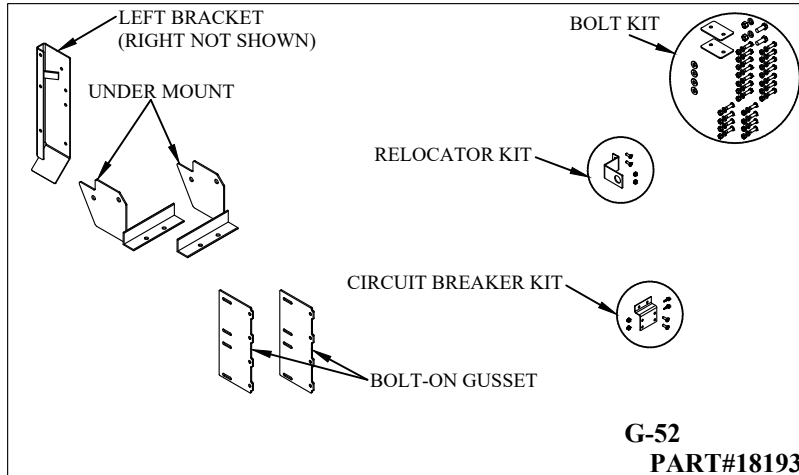


Figure 1: Part Identification.

Table 1: Parts List.

QTY.	PART NO.	DESCRIPTION
1	9064	T-51/T-52 Bolt Bag Kit
1	14066	T-52 Upper Bracket (Left)
1	14065	T-52 Upper Bracket (Right)
2	14063	T-52 Bolt-on Gusset
1	14064	T-52 Tire Tube Relocator Kit
1	14196	T-52 Circuit Breaker Mounting Kit
1	14213	Colorado Under Mount Passengers Side
1	14214	Colorado Under Mount Drivers Side

3. **Support** the liftgate; it will not stand upright without the angle irons.
4. **Unbolt** the two (2) angle irons attached to the liftgate uprights (Figure 2).
5. **Remove** the two (2) bracket plates attached to the liftgate (Figure 2).

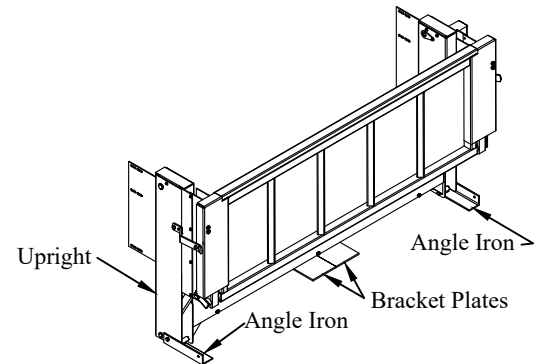


Figure 2: Complete liftgate.

Installing the Bolt-on Gussets

1. **Install** the bolt-on gussets with eight (8) 3/8" x 1" button head bolts, lock washers, and nuts (Figures 3 & 4).
 - The bolt-on gussets, and button head bolts go to the outside of the 1/4" x 1" strip for this application.

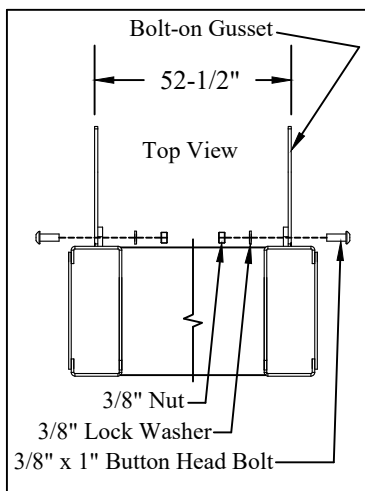


Figure 3: Top view of liftgate bolt-on gussets.

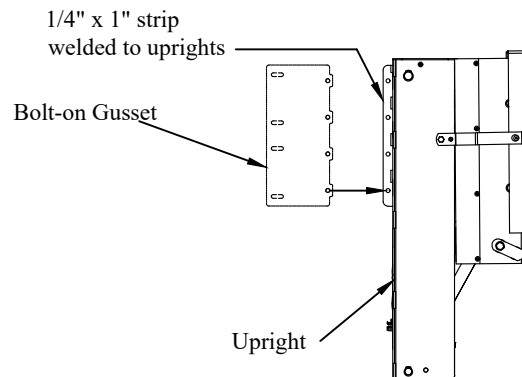


Figure 4 Liftgate requiring bolt-on gussets.

Installing the Liftgate (Continued)

8. **Hold** the bracket flat against the box side and tight against the corner post.
9. **Check** for obstructions before drilling in the next step.
10. **Drill** four (4) 3/8" holes into each side of the truck using the holes in the bracket as a guide.
11. **Fasten** each bracket to the truck box using the supplied:
 - (4) 3/8"x1" hex head bolts on the bracket-side.
 - (1) backer plate inside the corner post on middle two bolts.
 - (2) flat washers inside the corner post on top and bottom bolts.
 - (4) lock washers and (4) hex nuts inside the corner post.
12. **Adjust** the liftgate so the platform is level from front to back. Check the clearance between the truck tail light lenses and the liftgate.
13. **Tighten** the bolts securing the liftgate gussets to the mounting brackets and the under mount bolts.
14. **Install** the tail lights.

Installing the Spare Tire Tube Holder

Note: This modification allows access to the spare tire crank mechanism after the liftgate is installed.

1. **Remove** the box cover by removing the 5/16" nuts (Figure 8).
2. **Remove** the black plastic plugs for your application (Figure 9).
3. **Position** the spare tire tube holder on the spare tire tube (Figure 10).
4. **Insert** the spare tire crank through the access holes in the liftgate and into the spare tire tube.
5. **Position** the spare tire tube holder against the liftgate (Figure 10).
The spare tire tube should extend through the 1" hole of the tube holder.
6. **Mark** two (2) 1/4" hole locations on the liftgate using the tube holder as a guide.
7. **Check** for obstructions before drilling in the next step.
8. **Drill** two (2) 1/4" holes in the positions previously marked.
9. **Fasten** the tube holder with the supplied two (2) 1/4" hex bolts and nuts.
10. **Verify** spare tire access operation.

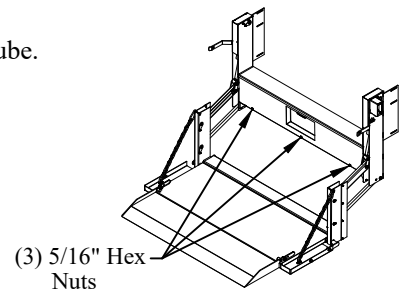


Figure 8: Box cover location.

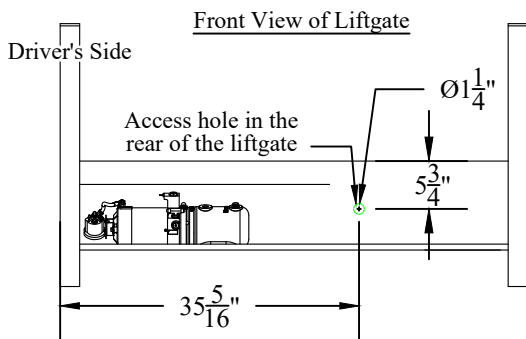


Figure 9: Spare tire access.

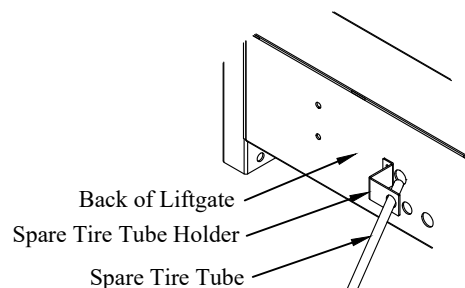


Figure 10: Spare tire tube holder.

Preparing the Gate for Wiring

1. **Unscrew** the solid plastic plug from the pump reservoir. The box cover should already be off.

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

2. **Attach** 12 volts from a battery to the liftgate power cables (no battery chargers).

3. **Push** the hidden "Power On" switch (Figure 14). The amber "Power On" LED will illuminate.

4. **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.

5. **Push** the toggle switch down to lower the liftgate to the ground.

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

- Owner/Operator Manual
- (1) License plate light with bolts
- License plate light hardware
- (1) Vent plug
- (1) 150 Amp manual reset circuit breaker
- (4) Copper lugs
- (2) License plate nuts and screws
- (1) Padlock with keys
- (5) 3/8" plastic plugs
- (1) Drop away pin
- (1) Lower mounting kit

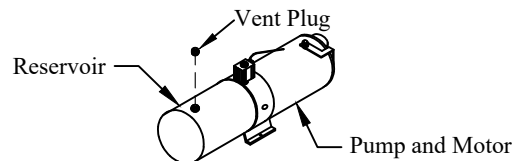


Figure 11: Vent plug.

7. **Install** the vent plug provided into the pump reservoir (Figure 11).

Routing the Power Cables

1. **Install** the circuit breaker on the circuit breaker bracket with 1/4" screws and nuts (Figure 12).

2. **Install** the circuit breaker bracket on the driver side fender, inside the engine compartment away from moving parts (Figure 12).
Use two (2) supplied #12 self-drilling screws. Leave room for the power cables to be installed and the circuit breaker to be reset.

3. **Loosen** the strain relief on the back of the liftgate mainframe (Figure 13).

4. **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.

5. **Tighten** the strain relief.

6. **Route** the power cables along the driver side frame (Figure 13) to the battery following the *Tommy Gate Recommended Electrical Wiring Guidelines*.

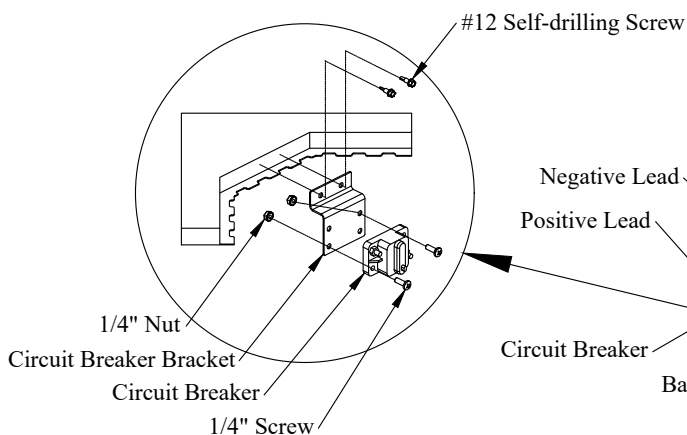


Figure 12: Circuit breaker bracket.

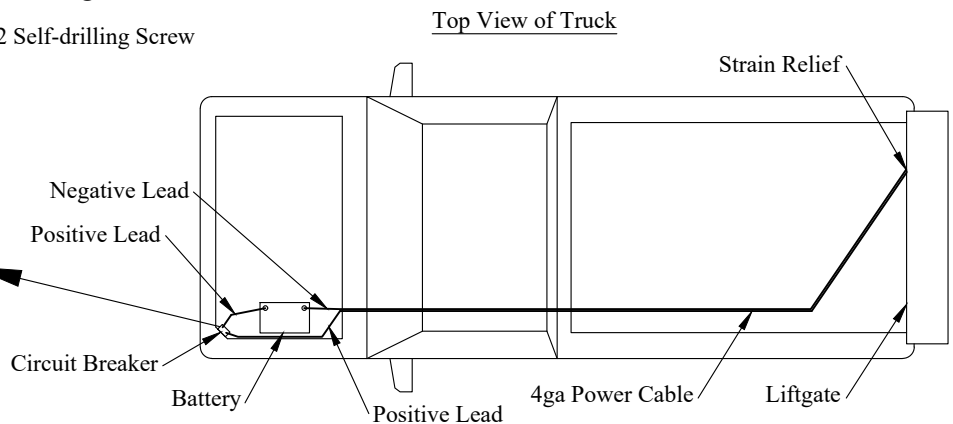


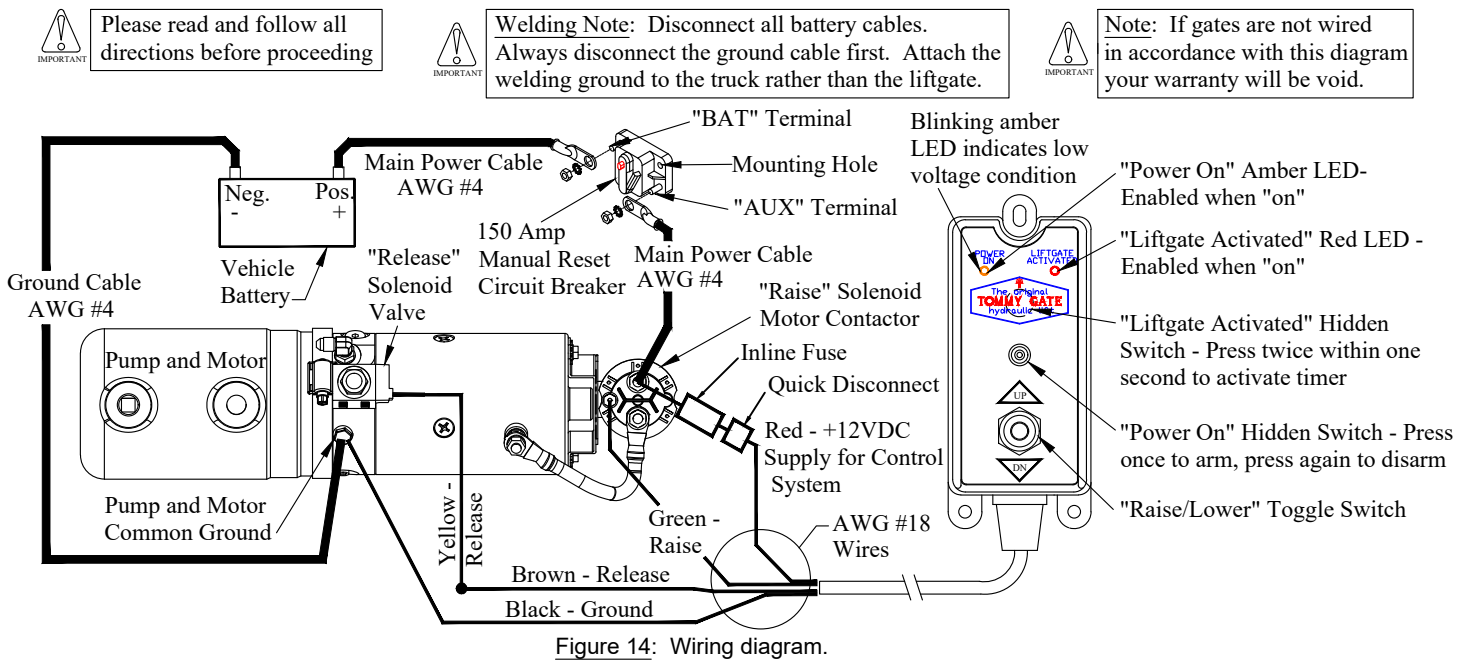
Figure 13: Electrical routing.

Routing the Power Cables (continued)

7. Pull the excess cable beyond the battery.
8. Separate the positive(+) and negative(-) leads.
9. Cut the positive(+) lead to the length required to reach the auxilliary (AUX) terminal of the circuit breaker.
10. Cut the remaining pos.(+) lead long enough to reach from the circuit breaker battery (BAT) terminal to the pos.(+) battery terminal.
11. 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.

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 14).

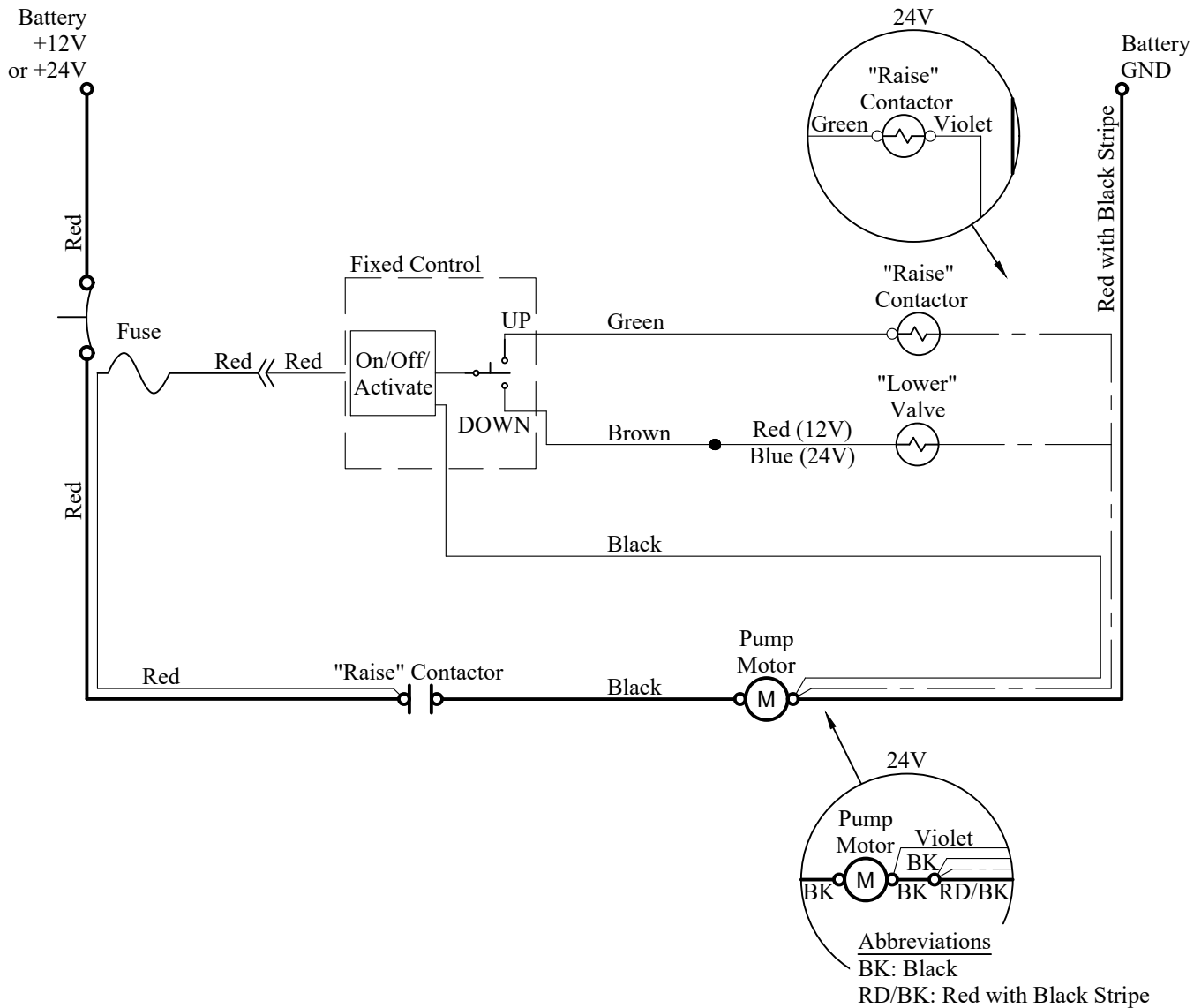


Relocating the Rear Camera

1. Refer to the Rear Camera and Sensor Bar Installation Instructions included with the Rear Camera and Sensor Bar Kit.

Ladder Logic/Wiring Diagram

Legend	
	Circuit Breaker
	Contactor - Normally Open Contacts
	Motor
	Solenoid/Contactor - Coil
	Battery Cable
	Wire
	Grounded through pump body.
	Eyelet Terminal
	Splice
	Quick Disconnect
	Fuse



Finishing the Liftgate Installation

1. **Install** the two (2) square plastic insert nuts for the license plate into the square holes on the liftgate.
2. **Install** the license plate using the two (2) stainless steel screws provided.
3. **Install** the license plate light into the holes provided.
4. **Connect** the license plate light 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.

5. **Install** the 3/8" round plastic plugs into the empty holes in the bottom of the uprights.
6. **See** the Owner's / Operator's Manual if drop away feature is desired.
7. **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.
8. **Reinstall** the spare tire, if previously removed.

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 latch pin (Figure 15).
10. **Place** Owner's / Operator's Manual and padlock keys in the vehicle.

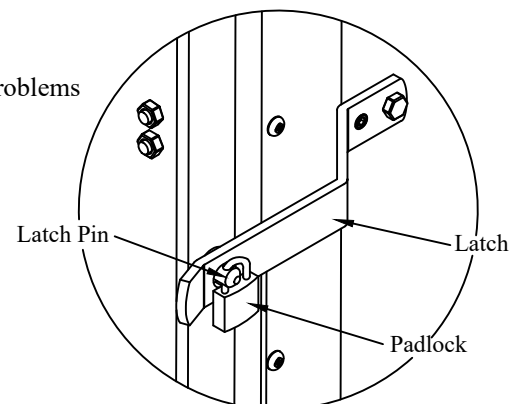


Figure 15: Padlock location.

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 back-up brake systems, and the possibility of fire.