

## Preparing the Gate

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

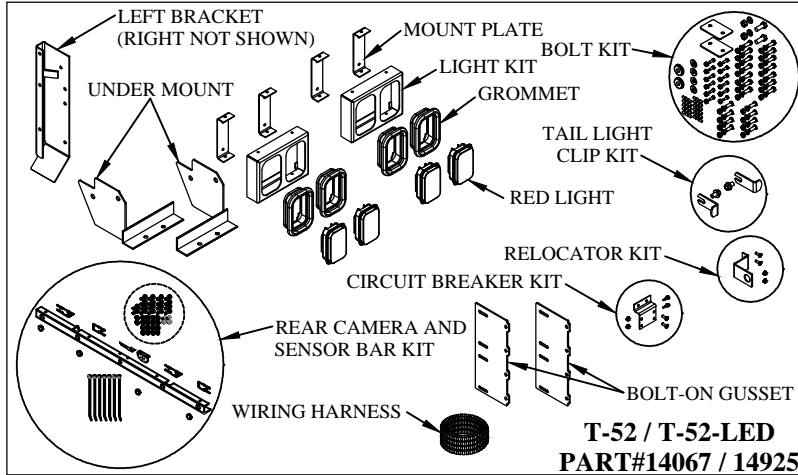


Figure 1: Part Identification.

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	5727	T-170/Tundra Tail Light Lens Clip Kit
2	14191	Light Kit
4	10736	Mount Plate
4	4062	Rubber Grommet
4	4064	Red Light
	15533	Red LED Light
1	9143	Light Wiring Harness
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
1	15370	Rear Camera and Sensor Bar Kit

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).

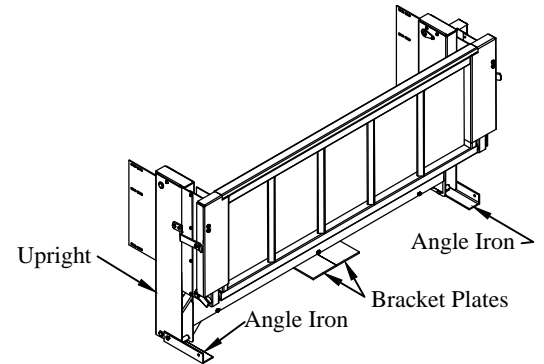


Figure 2: Complete liftgate (G<sup>2</sup> shown).

## 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.

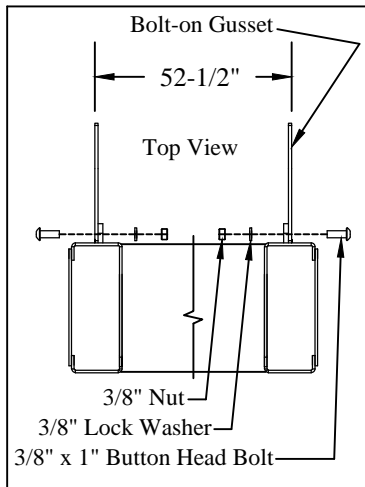


Figure 3: Top view of liftgate bolt-on gussets.

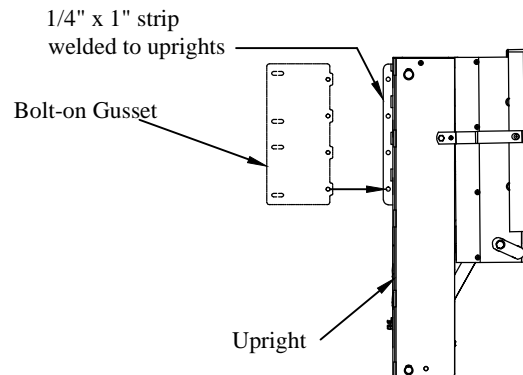


Figure 4 Liftgate requiring bolt-on gussets.

**Preparing the Truck**

1. **Remove** the tailgate and tailgate hardware (Figure 5).
2. **Remove** the spare tire to provide better access in later steps.
3. **Support** the hitch and rear bumper to keep them from falling while removing the mounting bolts.
4. **Remove** the rear bumper and bumper mounting brackets.  
This includes the bracket that attaches to the center of the rear crossmember. Save the bolts, they will be reused for installing the under mount brackets.
5. **Remove** the hitch.

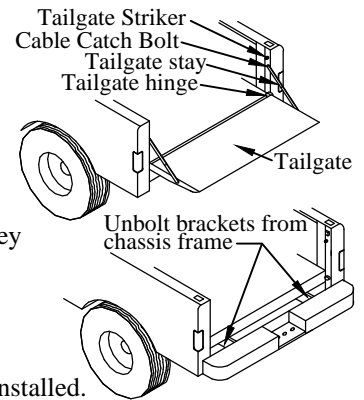


Figure 5: Remove Hardware.

Note: The tailgate, tailgate hardware, hitch, and rear bumper cannot be remounted after the liftgate is installed.

**Modifying the Tail Light Mounting**

Note: After this modification, the M8x1.25x12 bolts can be loosened to remove the tail light lenses.  
Note: This modification must be completed before the liftgate is installed so that the tail light bulbs can be replaced without removing the liftgate.

1. **Remove** four (4) factory tail light screws, two (2) per side (Figure 6).
2. **Install** M8 x 1.25 x 12 bolts and tail light clips (supplied) in the tailgate cable catch bolt locations (Figure 6).
3. **Apply** pressure to the tail light from the rear while tightening the bolt (Figure 6).

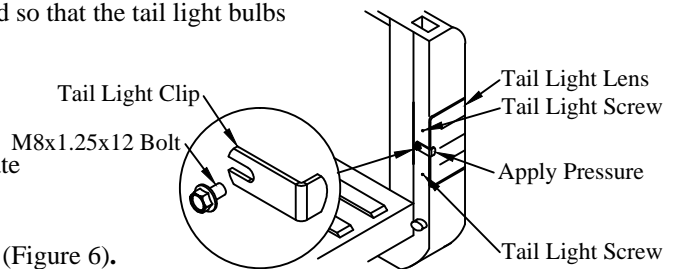


Figure 6: Tail light modification detail.

**Installing the Liftgate**

1. **Bolt** the supplied under mount brackets to the outside of the truck frame using the bolts that held the bumper in place. Leave bolts slightly loose.
2. **Position** the mounting brackets into the truck bed in front of the corner posts (Figure 7).  
Do not drill holes for mounting brackets at this time.
3. **Position** the Tommy Lift into the bed opening. The liftgate should be:
  - Centered in the opening.
  - Flush with the truck bed floor.
  - In a vertical position (level with the ground).
4. **Bolt** the under mount bracket to the bottom of the liftgate through the angle iron pieces using two (2) 1/2" bolts and lock washers. Leave bolts slightly loose.
5. **Hand tighten** each mounting bracket to the liftgate gussets using the supplied:
  - (3) 3/8"x1" hex head bolts on the bracket-side (Figure 7).
  - (3) 3/8" lock washers, and (3) 3/8" nuts on the gusset-side (Figure 7).
6. **Allow** the liftgate to hang, supported by the under mount brackets and corner posts.
7. **Remove** the tail lights.

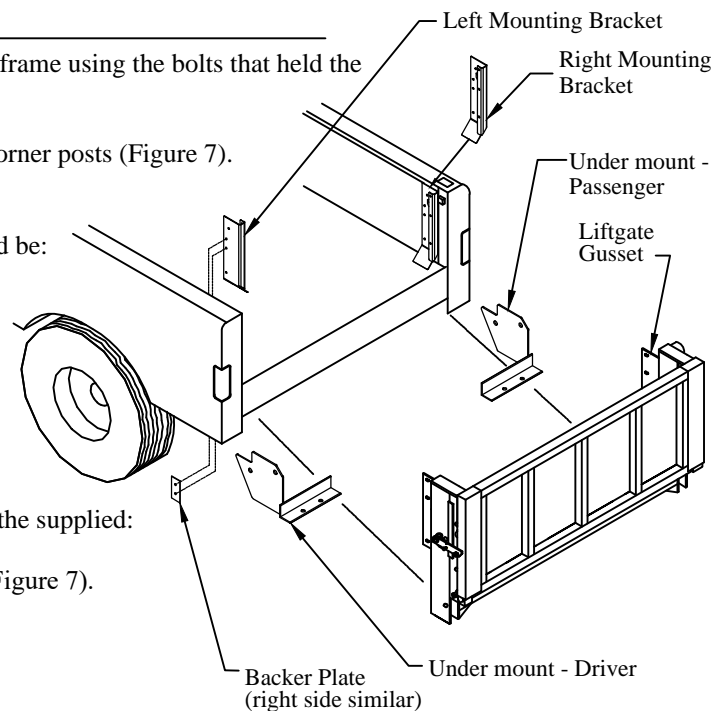


Figure 7: Mounting bracket and liftgate.

**Installing the Liftgate**

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 with 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. **Reinstall** the box cover on the mainframe.
4. **Position** the spare tire tube holder on the spare tire tube (Figure 10).
5. **Insert** the spare tire crank through the access holes in the liftgate and into the spare tire tube.
6. **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.
7. **Mark** two (2) 1/4" hole locations on the liftgate using the tube holder as a guide.
8. **Remove** the box cover and **Check** for obstructions before drilling in the next step.
9. **Drill** two (2) 1/4" holes in the positions previously marked.
10. **Fasten** the tube holder with the supplied two (2) 1/4" hex bolts and nuts.
11. **Verify** spare tire access operation.

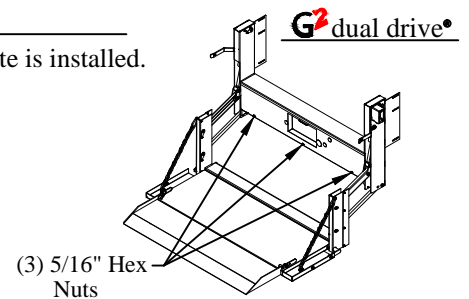


Figure 8: Box cover location.

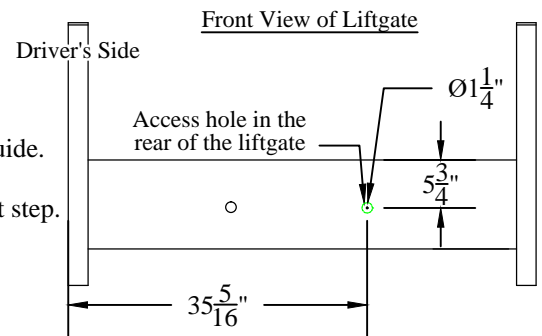


Figure 9: Spare tire access.

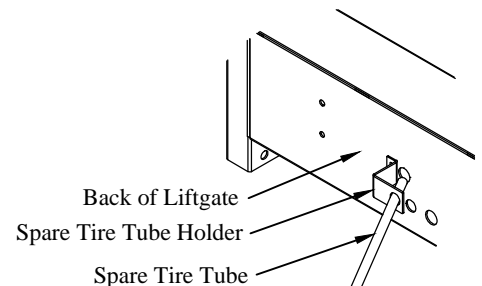


Figure 10: Spare tire tube holder.

**Preparing the Gate for Wiring**

1. **Attach** 12 volts from a battery to the liftgate power cables (no battery chargers).
2. **Push** the hidden "Power On" switch (Figure 17). 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 nuts (Figure 8).

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

- Owner/Operator Manual
- (1) License plate lights with bolts
- (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

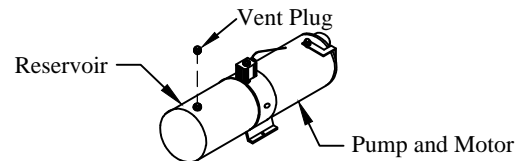


Figure 14: Vent plug.

**7. Install** the vent plug provided into the pump reservoir (Figure 14).

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

**Routing the Power Cables**

1. **Install** the circuit breaker on the circuit breaker bracket with 1/4" screws and nuts (Figure 15).
2. **Install** the circuit breaker bracket on the driver side fender, inside the engine compartment away from moving parts (Figure 8). 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 16).
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 16) to the battery following the *Tommy Gate Recommended Electrical Wiring Guidelines*.

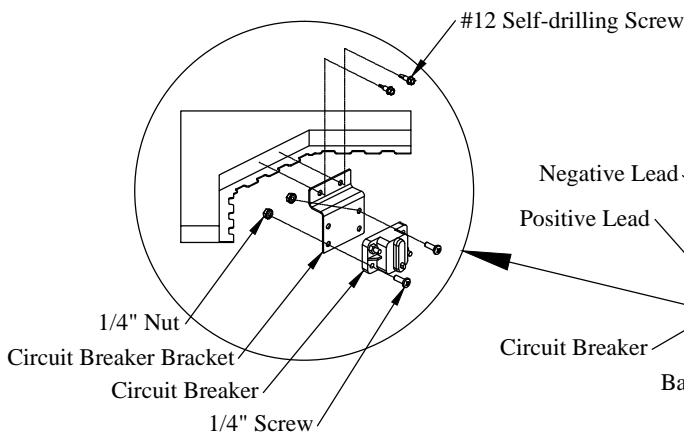


Figure 15: Circuit breaker bracket.

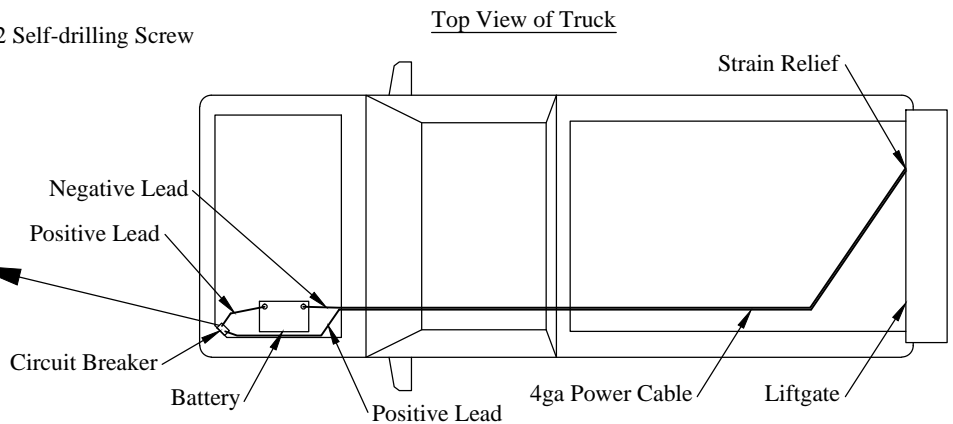


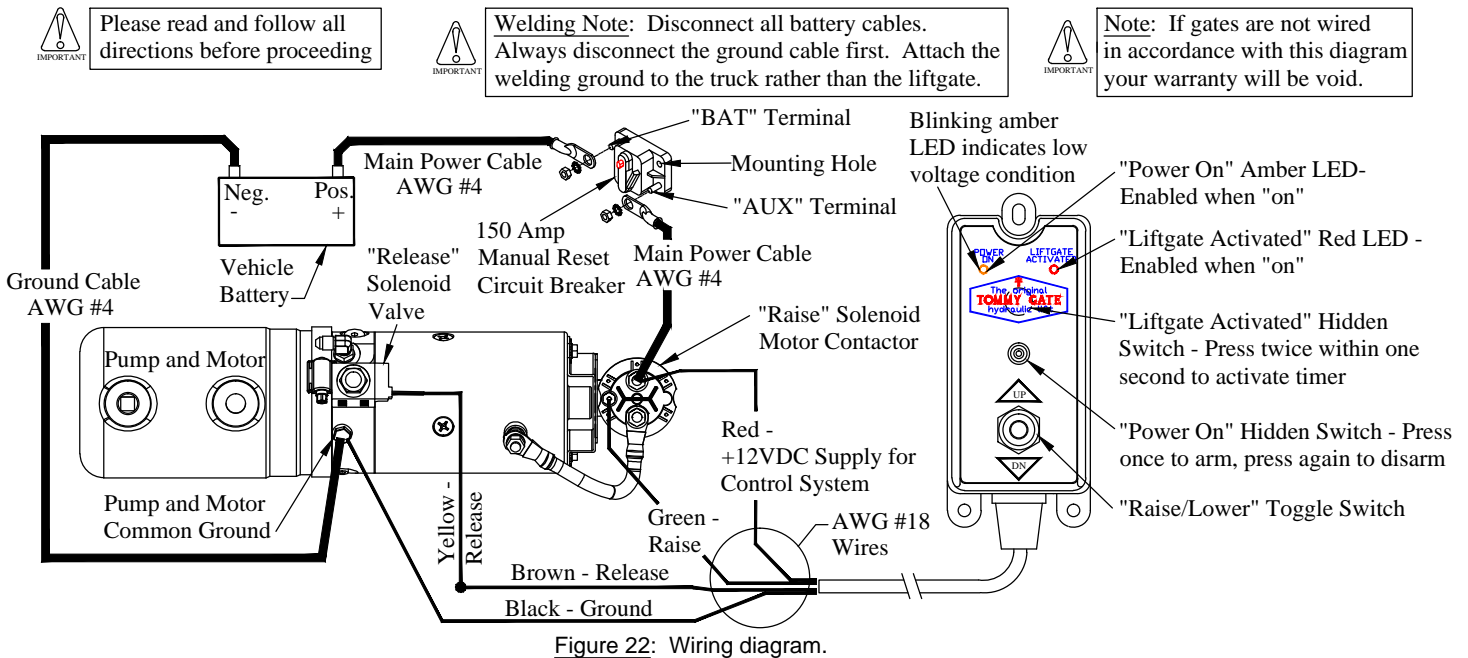
Figure 16: Electrical routing.

**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.

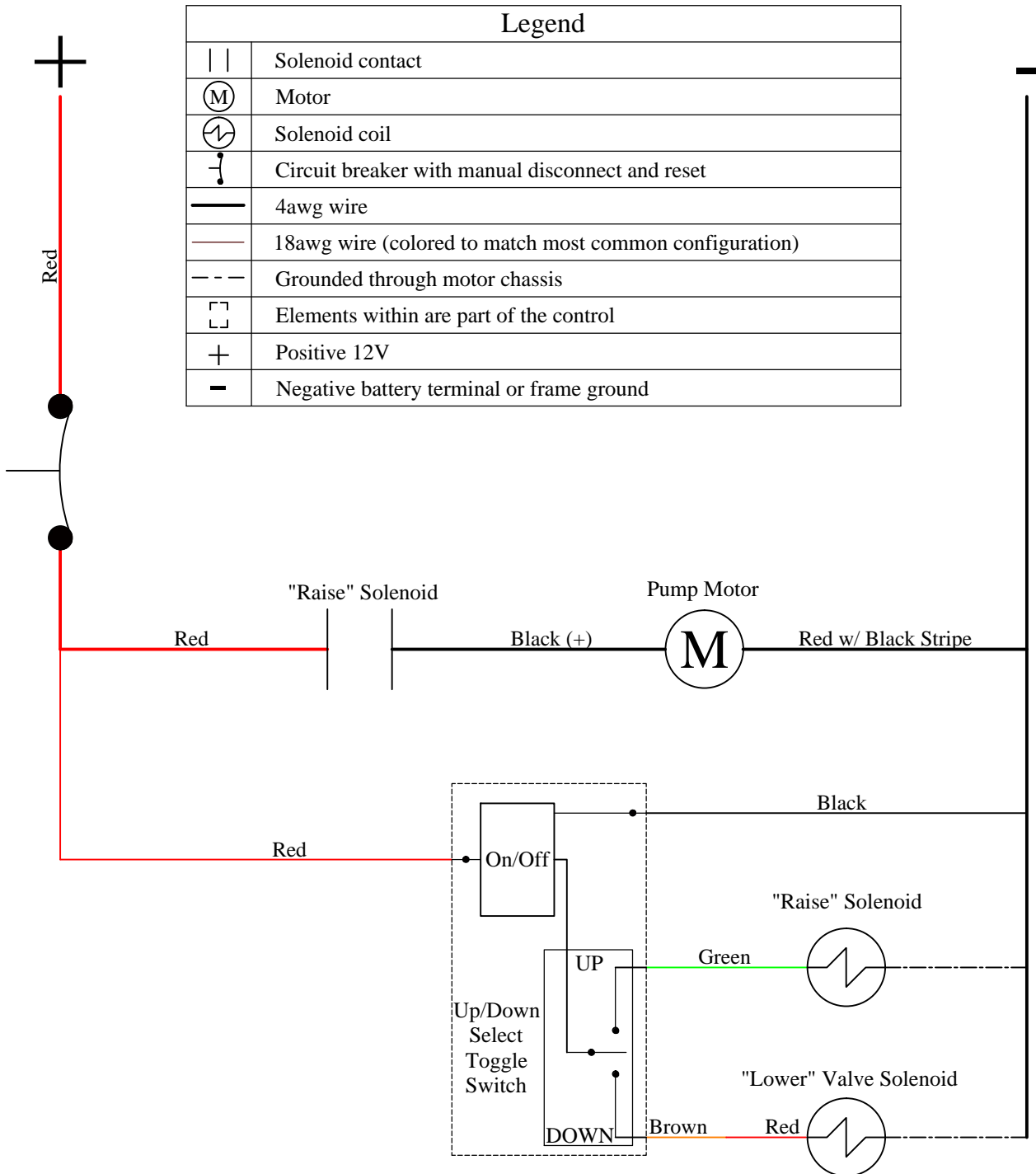
12. **Install** the copper lugs and heat shrink tubing on all required ends.
13. **Connect** the circuit breaker and battery as outlined in the *Tommy Gate Recommended Electrical Wiring Guidelines* and wiring diagram (Figure 17).



**Relocating the Rear Camera**

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

# G<sup>2</sup> dual drive<sup>®</sup> Power Unit Ladder Logic



**Mounting the Light Kit**

Note: When cutting or drilling, apply corrosion prevention to exposed metal.

1. Lower the liftgate to the ground.
2. Disconnect the #4 power cable from the positive side of the battery or manually trip the circuit breaker.
3. Prepare the harness provided according to the wiring diagram (Figure 18).  
Liftgate wiring harnesses with solid over-molding do not need to be modified. Cover the clips that have blue wires.

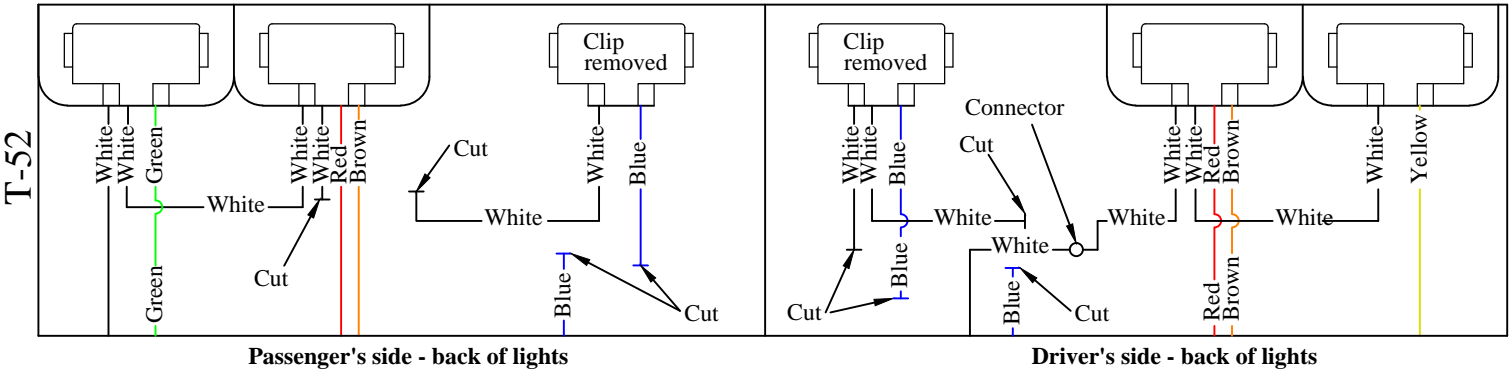


Figure 18: Light kit wiring diagram.

4. Install the license plate light in the box cover using the supplied bolts and nuts.
5. Remove the plastic plugs from the box cover at locations shown (Figure 19).
6. Pull a 2-prong light clip and a 3-prong light clip through each 1-1/4" access hole.  
Make sure that the yellow wire is on the driver's side and the green wire is on the passenger's side.

7. Cut each 1-1/4" grommet from the inner hole outward (Figure 20).

8. Place each 1-1/4" grommet around wires (Figure 20)

9. Push the 1-1/4" grommets into the access holes.

10. Connect the license plate light to the wiring harness using heat shrink butt connectors (Figure 21).

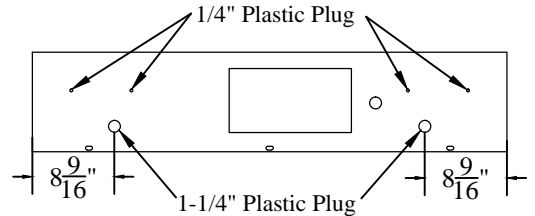


Figure 19: Box cover access holes.

11. Cover the unused white and brown wires with heat shrink tubing as shown (Figure 21).

12. Locate a 7/8" or larger unused hole for the light harness in the back of the liftgate.  
Be sure not to use the spare tire access hole.

13. Pull the end of the harness without connectors through the hole previously located.  
Leave harness draped loosely in mainframe until all components are installed.

14. Assemble each light kit as shown using the supplied 1/4" bolts and nuts.  
Do not tighten at this time (Figure 22).

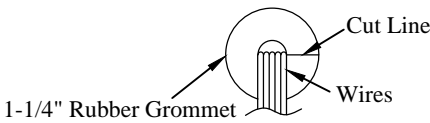


Figure 20: Assembled grommet.

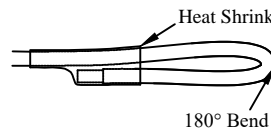


Figure 21: Unused wire covering.

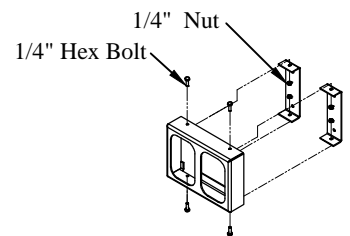


Figure 22: Light kit.

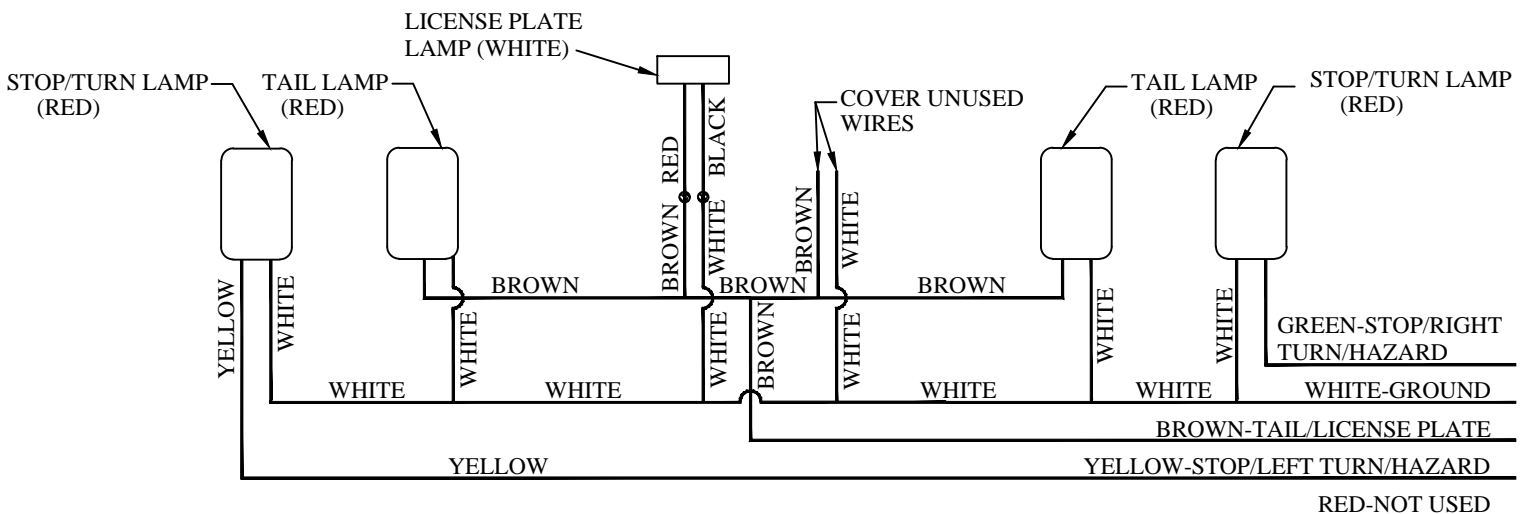
# T-52 Wiring Diagrams

## ELECTRICAL GUIDELINES:

- (1) THE INSTALLER IS RESPONSIBLE FOR USING PROPER TECHNIQUES WHEN INTERFACING WITH VEHICLE ELECTRICAL SYSTEMS.
- (2) FAILURE TO COMPLY WITH THE OEM GUIDELINES COULD RESULT IN UNSAFE VEHICLE OPERATION, FAILURE OF OEM WIRING, OR VEHICLE FIRE.
- (3) NEVER REPLACE OEM FUSES AND/OR CIRCUIT BREAKERS WITH FUSES OR CIRCUIT BREAKERS WITH A HIGHER RATING.
- (4) THE TOTAL CIRCUIT CURRENT DRAW SHOULD NOT EXCEED 80% OF THE OEM CIRCUIT FUSE OR CIRCUIT BREAKER.
- (5) USE BODY BUILDER JUNCTION BLOCKS, CUSTOMER ACCESS CIRCUITS & CONNECTORS RATHER THAN EXTENDING OEM CIRCUITS.
- (6) INCORPORATE RELAYS INSTEAD OF SPLICING INTO THE OEM ELECTRICAL SYSTEM.
- (7) USE APPROPRIATE GAUGE WIRE FOR EXTENDING CIRCUITS. THE WIRE GAUGE SHOULD BE CAPABLE OF SUPPORTING THE MAXIMUM LOAD TO WHICH THE ADDED CIRCUIT WILL BE EXPOSED.
- (8) OEM ELECTRICAL WIRE COLOR CODING SHOULD BE MAINTAINED WHEN EXTENDING CIRCUITS.
- (9) WHEN ADDING CIRCUITS, ALWAYS INCORPORATE FUSE OR CIRCUIT BREAKER PROTECTION.

• **NOTE:** SYMBOL INDICATED USAGE OF HEAT SHINK BUTT CONNECTOR

### COMBINED STOP/TURN FUNCTION



### SEPARATED STOP/TURN FUNCTION

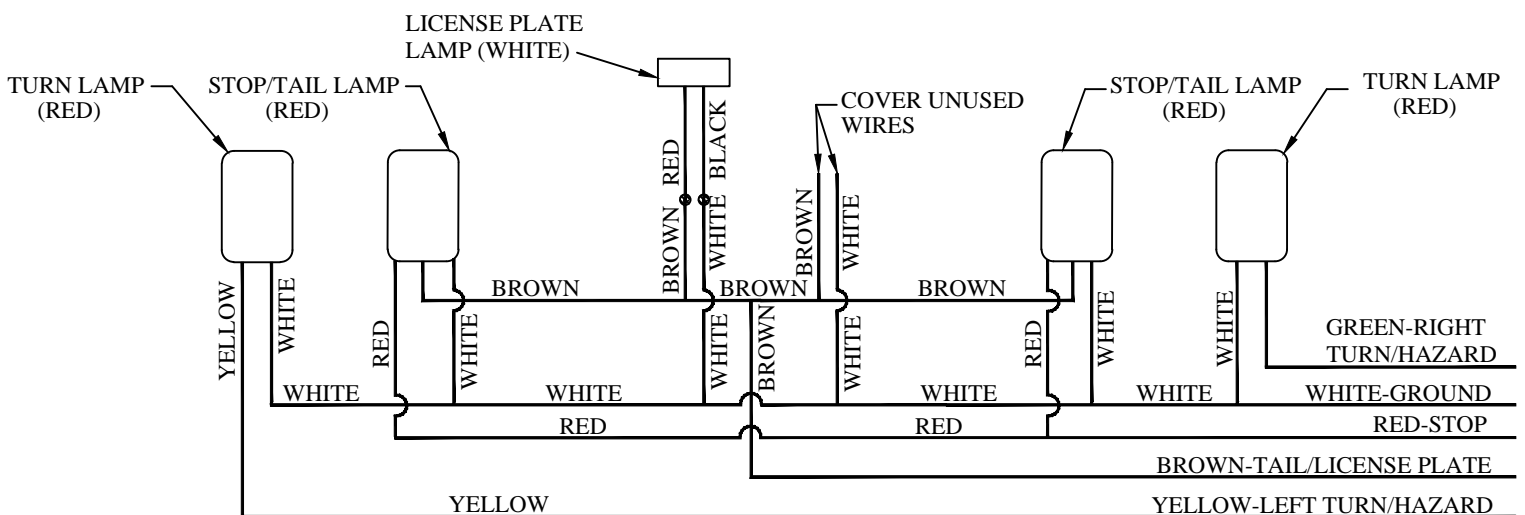


Figure 23: Light kit wiring diagrams.



**Mounting the Light Kit (continued)**

Note: If this light kit is being installed on an older liftgate with smaller access holes or no holes at all, two 1-1/4" diameter holes must be drilled in the locations shown (Figure 19).

\*Check for obstructions before drilling.\*

- 15. **Bolt** the light kit to the box cover using the supplied 1/4" bolts and nuts (Figure 24).  
Make sure that no wires are pinched between the kit and the liftgate and that the warning decal is facing up (Figure 26).

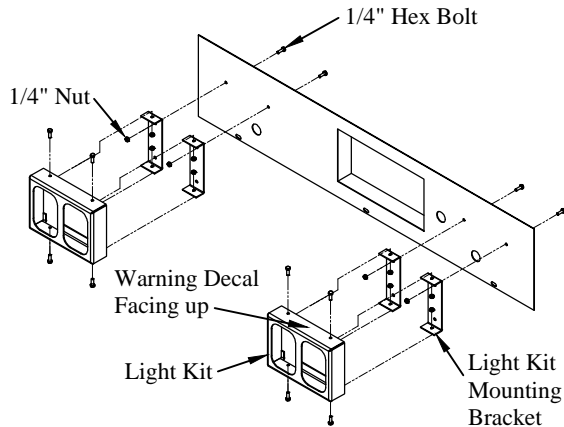


Figure 24: Light kit assembly location.

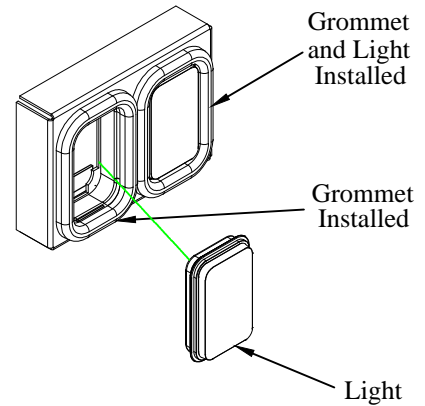


Figure 25: Light kit parts assembly.

- 16. **Tighten** all light kit bolts to 9ft-lb (Figure 24).
- 17. **Press** the rubber grommets into the light holes (Figure 25).
- 18. **Pull** harness clips through the inserted grommets.
- 19. **Connect** the clips to lights (Figure 27).
- 20. **Connect** the provided wiring harness to the vehicle's trailer hitch wiring.  
Follow the *Tommy Gate Recommended Electrical Wiring Guidelines* when connecting the wiring harness to the vehicle.
- 21. **Check** for proper operation of lights.
- 22. **Push** lights into installed rubber grommets (Figure 25).
- 23. **Fasten** the harness out of the way of moving components with wire ties.
- 24. **Verify** proper operation of lights.
- 25. **Reconnect** the liftgate's main power cable to the positive side of the battery or manually **Engage** the circuit breaker.



Figure 26: Warning decal.

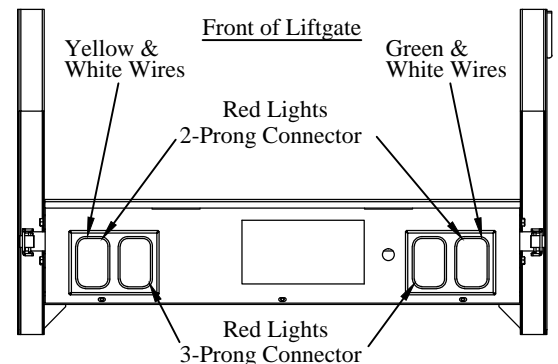


Figure 27: Installed light kit.

**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 3/8" round plastic plugs into the empty holes in the bottom of the uprights.  
See the Owner's / Operator's Manual if drop away feature is desired.
4. **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.
5. **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 28).
10. **Place** Owner's / Operator's Manual and padlock keys in the vehicle.
11. **Check** operation of the back-up camera.

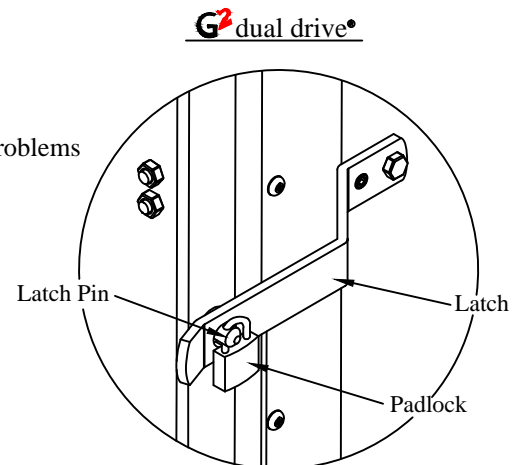


Figure 28: Padlock location.

### Painting the Liftgate (if needed)

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

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

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

**WARNING:** Paint 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 200°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.