

G² dual drive® Series Pickup Lift Mounting Instructions

Fullsize Chevy & GMC Trucks-
1500: 2019-Present (Excludes 2019 "LD" and "Limited")
2500 & 3500: 2020-Present
(Excludes Trucks with Carbon Fiber Bed)

T-181

Preparing the Gate

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

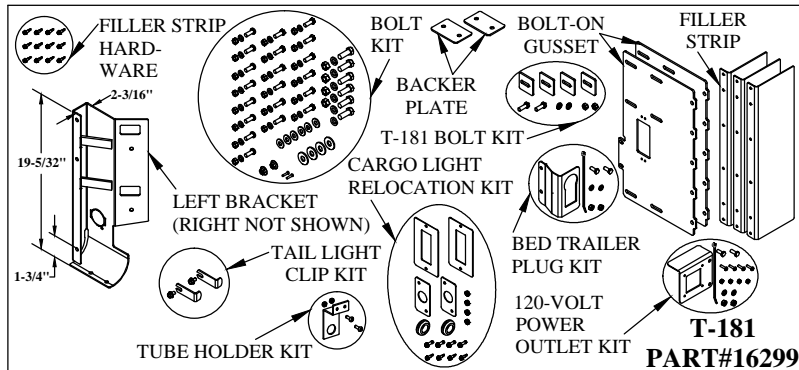


Figure 1: Part Identification.

Table 1: Parts List.

| QTY. | PART NO. | DESCRIPTION |
|------|----------|--------------------------------------|
| 1 | 9094 | Standard Pickup Bracket Bolt Bag Kit |
| 1 | 16262 | T-181 Left Corner Bracket |
| 1 | 16263 | T-181 Right Corner Bracket |
| 1 | 16290 | T-181 Tail Light Lens Clip Kit |
| 1 | 5207 | Spare Tire Tube Holder Kit |
| 3 | 17987 | Filler Strip |
| 2 | 2943 | Backer Plate |
| 2 | 15856 | T-181 Bolt-on Gusset |
| 1 | 15908 | Cargo Light Relocation Kit |
| 1 | 15909 | T-181 Bolt Bag Kit |
| 1 | 16296 | Filler Strip Hardware Kit |
| 1 | 16159 | 120-Volt Power Outlet Kit |
| 1 | 16291 | T-181 Bed Trailer Plug Kit |

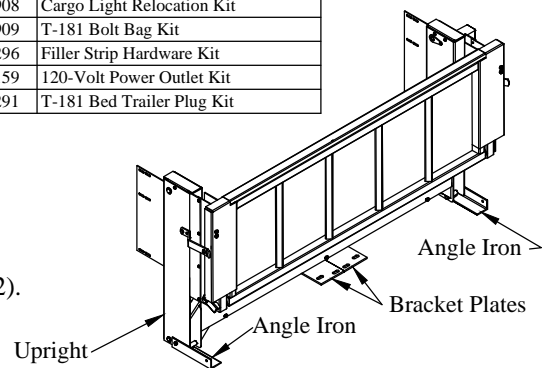


Figure 2: Complete liftgate.

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

Installing the Bolt-on Gussets

1. **Install** the eight (8) 3/8" x 1" button head bolts, lock washers, and nuts in the position shown for your configuration (Figure 3).
 - G² dual drive® bolt-on gussets and button head bolts go to the outside of the 1/4" x 1" strip.

Note: The extra hole in the bolt-on gusset is always below the 1/4" x 1" strip; and the middle slot should be closer to the top (Figure 4).

Note: If gussets are already welded to the uprights, you will need a weld-on gusset strip kit (part number 2317). Contact Tommy Gate for instructions (712-847-8000).

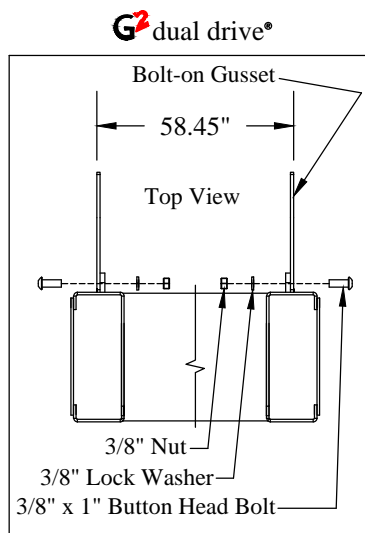


Figure 3: Top view of liftgate bolt-on gussets.

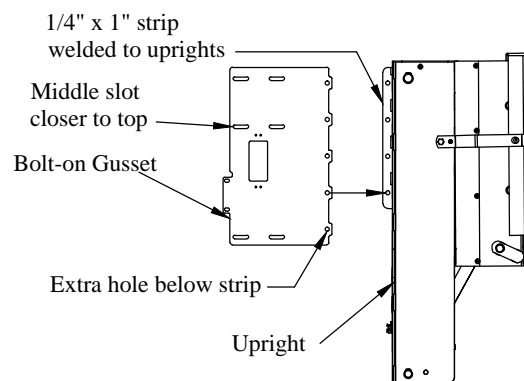


Figure 4: Liftgate requiring bolt-on gussets.

Preparing the Truck

1. **Remove** the locking spare tire access plug using the truck's ignition key (Figure 5).
2. **Remove** the spare tire using the proper tools that come with the truck.
3. **Remove** the tailgate and tailgate hardware (Figure 5).
The strikers and hinges can be removed after the tail lights have been removed.
4. **Remove** the square hole plug or 120-volt power outlet from the passenger side bed side.
The 120-volt power outlet can be reinstalled later.
5. **Skip** the next step if the truck does not have a 120-volt power outlet in the bed side.
6. **Remove** the knock-out from the right (passenger) side mounting bracket (Figure 6).
7. **Remove** the hole plug or bed trailer plug from the driver side bed side.
The trailer plug can be reinstalled later.
8. **Skip** the next step if the truck does not have a bed trailer plug in the bed side.
9. **Remove** the knock-out from the left (driver) side mounting bracket (Figure 6).
10. **Save** modules mounted on the bumper, near the license plate (such as tire pressure and key fob receivers). They will need re-installed later.
11. **Support** the rear bumper to keep it from falling while removing the mounting bolts.
12. **Remove** the rear bumper. Re-wire side marker lights on dual rear wheel trucks, if they are disconnected in this step.

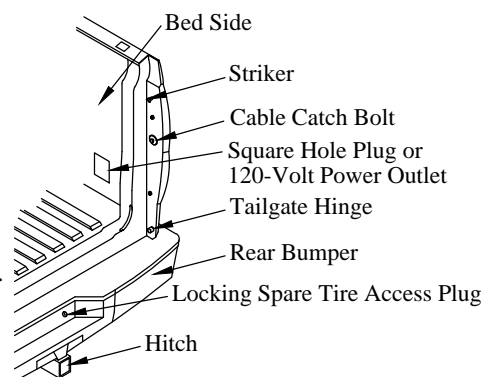


Figure 5: Remove hardware.

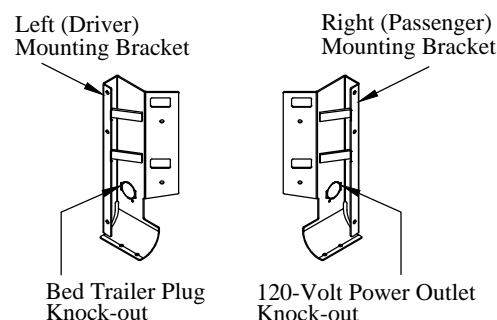


Figure 6: Bracket knock-outs.

Note: The tailgate, tailgate hardware, 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 7).
2. **Remove** tail light lenses (Figure 7).
3. **Verify** that all tailgate hardware has been removed.
4. **Install** the tail light lenses leaving out factory screws.
5. **Install** M8 x 1.25 x 12 bolts and tail light clips (supplied) in the tailgate cable catch bolt locations (Figure 7).

Note: The tail lights will need to be out to install the mounting brackets. The following step can be completed later.

6. **Apply** pressure to the tail light and clip from the rear while tightening the bolt (Figure 7).

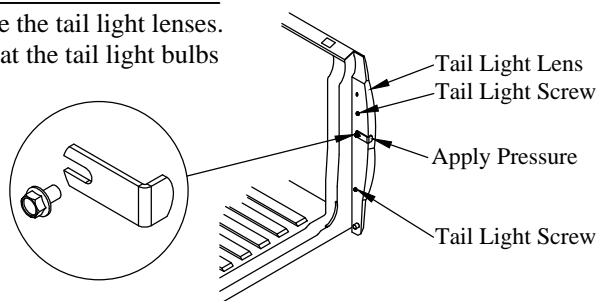


Figure 7: Tail light modification detail.

Installing the Spare Tire Tube Holder

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

1. **Position** the supplied spare tire tube holder on the rear of the bed (Figure 8).
This is a temporary location for marking the holes only.
2. **Mark** two (2) 1/4" hole locations on the truck body.
3. **Check** for obstructions and **Drill** two (2) 1/4" holes in the positions marked in previous step.
4. **Position** the supplied spare tire tube holder on the rear inside lip of the bed (Figure 9).
The spare tire tube should extend through the 1" hole of the tube holder.
5. **Fasten** the tube holder with the supplied two (2) 1/4"x3/4" bolts and locking nuts.
6. **Verify** that the spare tire crank tube is positioned to the dimensions in (Figure 9).
The holes in the tube holder can be slightly oversized to achieve the correct position.
7. **Remove** and **Discard** the black plastic plug in the rear of the liftgate for spare tire tube access (Figure 20).

Note: This position is for dilling only.

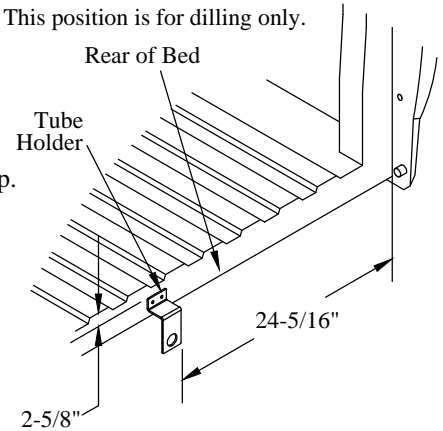


Figure 8: Tube holder drilling location.

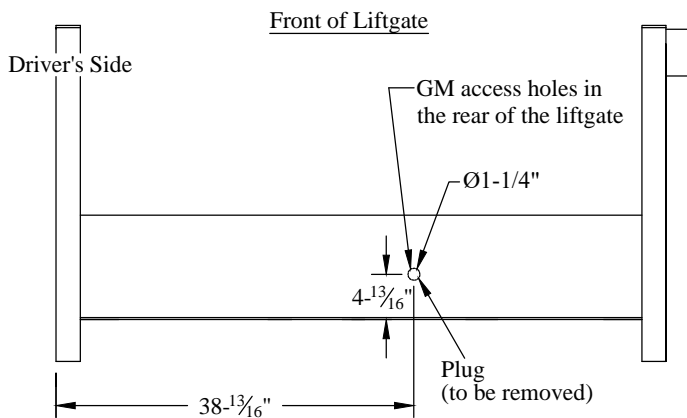


Figure 20: Spare tire access hole.

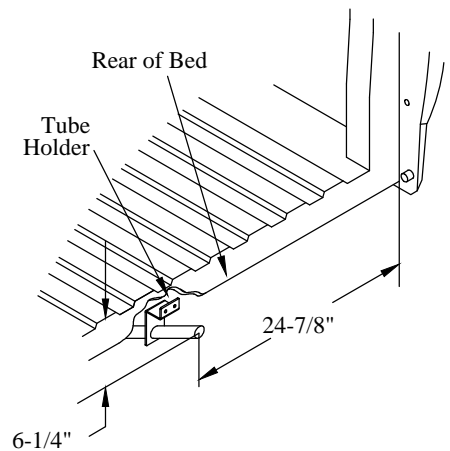


Figure 9: Tube holder finished location.

Installing the Filler Strip

Note: A filler strip is needed to fill the 4" to 5" gap between the liftgate and the truck bed.

A three-piece 12ga x19-1/2" formed filler strip is included for this purpose.

Note: The filler strip must be mounted on the liftgate before the liftgate is mounted on the truck.

1. **Arrange** the three (3) filler strips along the top corner of the liftgate mainframe (Figure 10).
Position the long flange horizontal.
2. **Attach** the filler strips to the mainframe with the provided twelve (12) self drilling screws.
Avoid obstructions (hoses, wires, decals, etc) inside the mainframe while attaching filler strips.

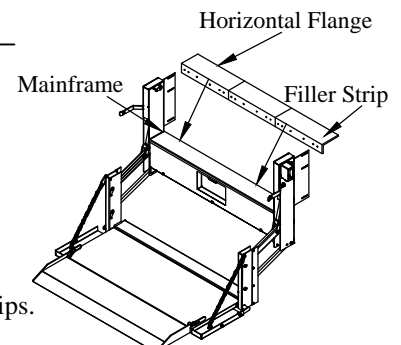


Figure 10: Filler strip location.

Relocating the Cargo Light

Note: Skip this section if the vehicle does not have the optional cargo lights on the corner posts.

1. **Remove** the tail light lenses (Figure 11).
2. **Remove** the cargo light from the corner post (Figure 11).
3. **Disconnect** the wiring connector from the cargo light.
4. **Install** a grommet holder in each opening in the corner post where the cargo lights were removed (Figure 11).
5. **Install** a grommet into each grommet holder (Figure 11).

Note: The cargo light and holder will be installed after the liftgate is installed on the truck.

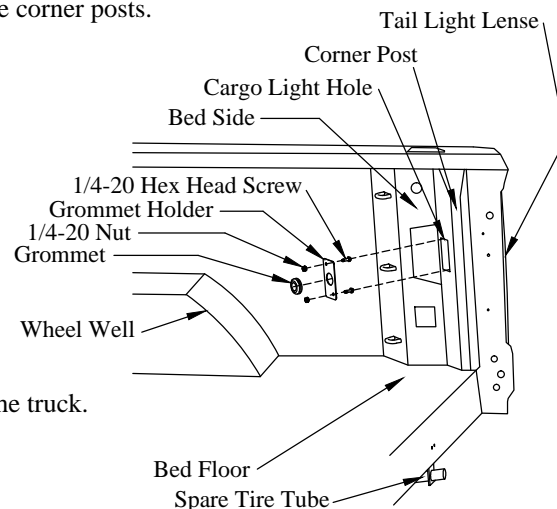


Figure 11: Factory cargo light location.

Installing the Liftgate

Note: The bed trailer plug connector, if available, must be routed through the knock-out hole while positioning the driver side bracket. It cannot be done after the bracket is bolted down.

1. **Complete** the drilling portion of the side sensor kit, if a side sensor kit is being installed.
2. **Position** the mounting brackets into the truck bed over the cargo hooks (Figure 12).
Do not drill holes for mounting brackets at this time.
3. **Position** the Tommy Gate into the bed opening. The liftgate should be:
 - Centered in the opening.
 - Flush with the top of the truck bed floor (top of ribs).
 - Top of upright is level with the ground.
4. **Install Loosely** each mounting bracket to the liftgate gussets using the supplied:
 - (3) 3/8"x1" hex head bolts on the bracket-side (Figure 13).
 - (3) 3/8" lock washers, and (3) 3/8" nuts on the gusset-side (Figure 13).

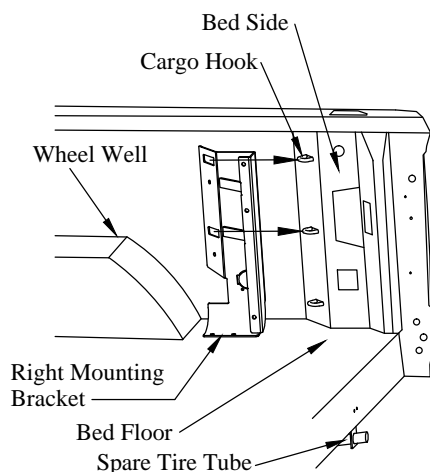


Figure 12: Mounting bracket location.

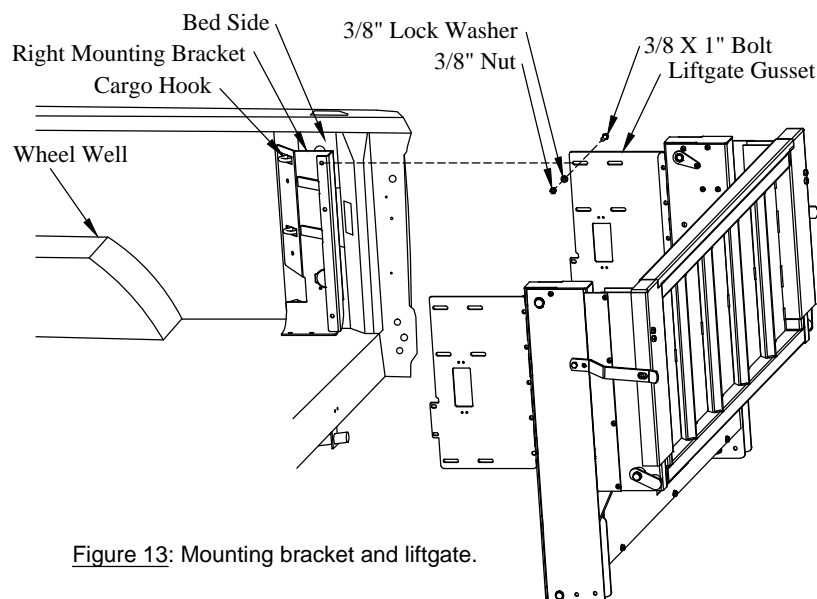


Figure 13: Mounting bracket and liftgate.

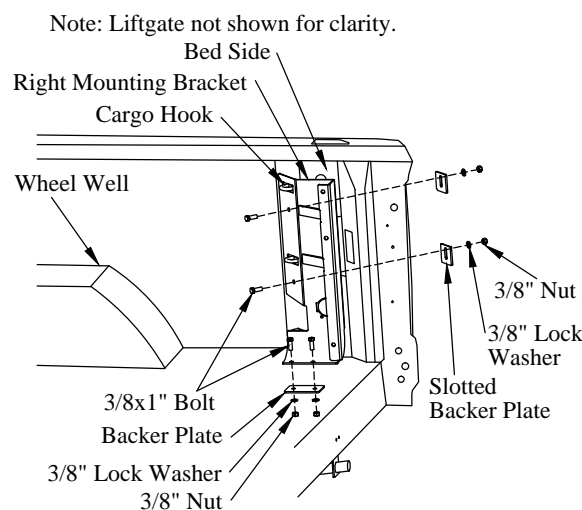


Figure 14: Mounting bracket hardware.

Installing the Liftgate (continued)

Note: The liftgate will not hang properly during the drilling process if supported by the corner posts only. For that reason, on this liftgate application, the following procedure is used.

5. **Allow** some of the liftgate weight to rest on the truck.
The bracket must contact the bed side and the truck bed floor.
6. With most of the liftgate weight still supported by the fork truck or hoist,
Hold the bracket against the bed side near the cargo hooks, and against the truck bed floor.
7. **Check** for obstructions before drilling in the next steps.
8. **Insert** 3/8" bolts into the holes after they are drilled in the next steps, to maintain hole alignment.
9. **Drill** two (2) 3/8" holes into the truck bed floor using the holes in the bracket as a guide (Figure 14).
10. **Fasten** each bracket to the truck bed floor using the supplied (Figure 14):
 - (2) 3/8"x1" hex head bolts on the top-side.
 - (1) backer plate, (2) lock washers, and (2) hex nuts on the under-side.
11. **Drill** two (2) 3/8" holes into the truck bed side near the cargo hooks, using the holes in the bracket as a guide (Figure 14).
12. **Fasten** each bracket to the truck bed side using the supplied (Figure 14):
 - (2) 3/8"x1" hex head bolt on the bracket-side.
 - (2) slotted backer plates, (2) flat washers, (2) lock washers, and (2) hex nuts on the truck-side.
13. **Adjust** the liftgate so that it is:
 - Top of upright is level with the ground.
 - The back of the liftgate is as close as possible to the truck bed.
14. **Tighten** the bolts securing the liftgate gusset to the mounting brackets.
The lock washer split must not be in the gusset slot when tightening bolts.
15. **Install** a cargo light holder onto each gusset using the self-drilling screws (Figure 15).
Use the holes that allow clearance for the back-side of the light.
16. **Connect** each cargo light to the wiring connector through the liftgate gusset.
17. **Clip** each cargo light into the hole provided for in the cargo light holder.
To remove the cargo light, remove the screws in the cargo light holder.

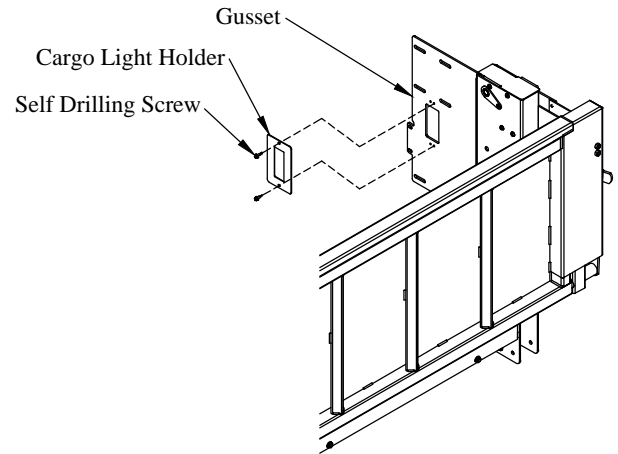


Figure 15: Cargo light new location.

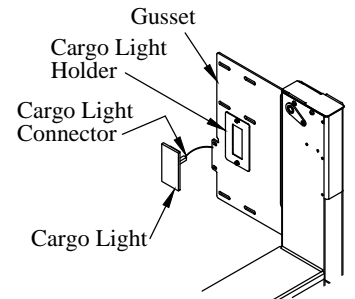


Figure 16: Cargo light.

Installing the Liftgate (continued)

18. **Skip** to step 23 if the truck does not have the 120-volt power outlet.
19. **Install** the 120-volt power outlet bracket on the passenger side gusset (Figure 17).
Use the provided two (2) 5/16 bolts, lock washers and nuts.
20. **Re-connect** the connector to the back of the 120-volt power outlet.
The wire holders will need to be adjusted to provide enough slack in the wire.
21. **Install** the 120-volt power outlet into the bracket with provided four (4) #10 screws and lock nuts (Figure 17).
22. **Secure** 120-volt power outlet wire with provided cable tie.
23. **Skip** to step 28 if the truck does not have the bed trailer plug.
24. **Install** the bed trailer plug into the bracket (Figure 18).
25. **Re-connect** the connector to the back of the bed trailer plug.
The wire holders will need to be adjusted to provide enough slack in the wire.
26. **Install** the bed trailer plug bracket on the driver side gusset (Figure 18). Use the provided two (2) 5/16 bolts, lock washers and nuts.
27. **Secure** wire with provided cable tie.
28. **Install** the tail lights. This is covered in a previous section, "Modifying the Tail Light Mount" (Figure 7).

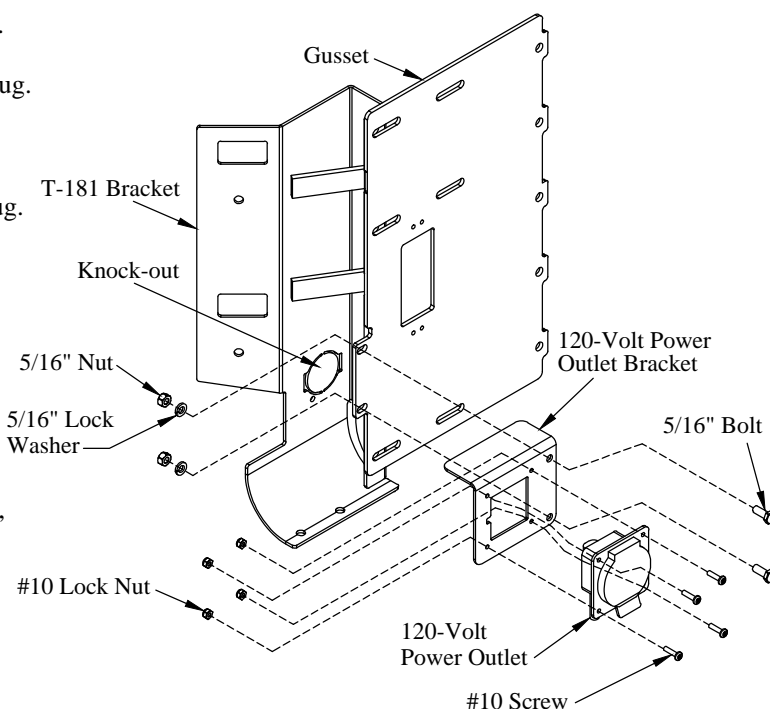


Figure 17: 120-volt power outlet bracket.

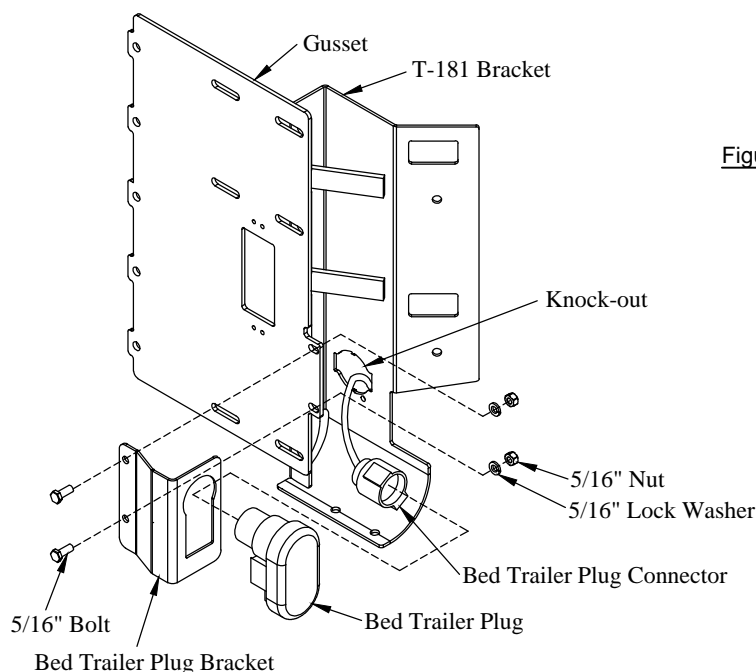


Figure 18: Bed trailer plug bracket.

Checking the Spare Tire Access

Note: There is a hole in the mainframe that provides access to the spare tire crank mechanism.

1. **Remove** the box cover by removing the 5/16" hex head nuts (Figure 19).
2. **Remove and Discard** the black plastic plug(s) from the mainframe in the location shown (Figure 20).
3. **Verify** spare tire access operation by inserting the spare tire crank rod through the access hole.

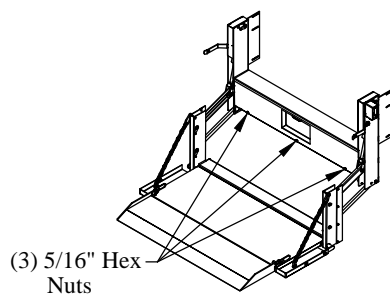


Figure 19: Box cover locations.

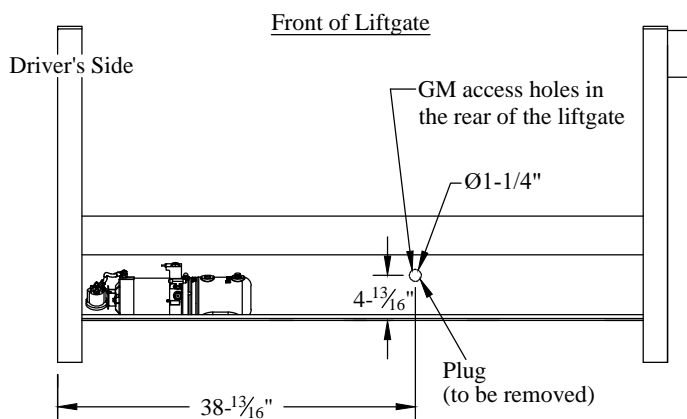


Figure 20: Spare tire access holes.

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 23). 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
- License plate light
- 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

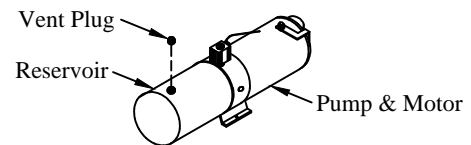


Figure 21: Vent plug.

7. **Install** the vent plug provided into the pump reservoir (Figure 21).

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 (Figure 22).
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 (Figure 22).
4. **Tighten** the strain relief.
5. **Route** the power cables along the frame (Figure 22) to the battery following the *Tommy Gate Recommended Electrical Wiring Guidelines*.

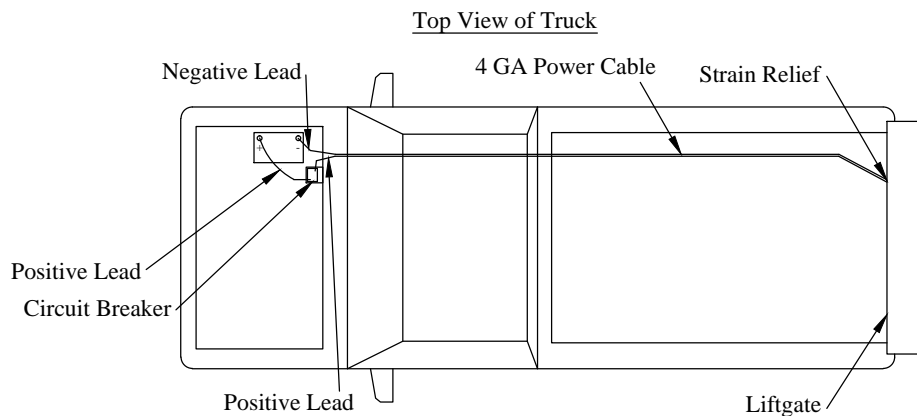


Figure 22: Electrical routing.

Routing the Power Cables (continued)

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 23).

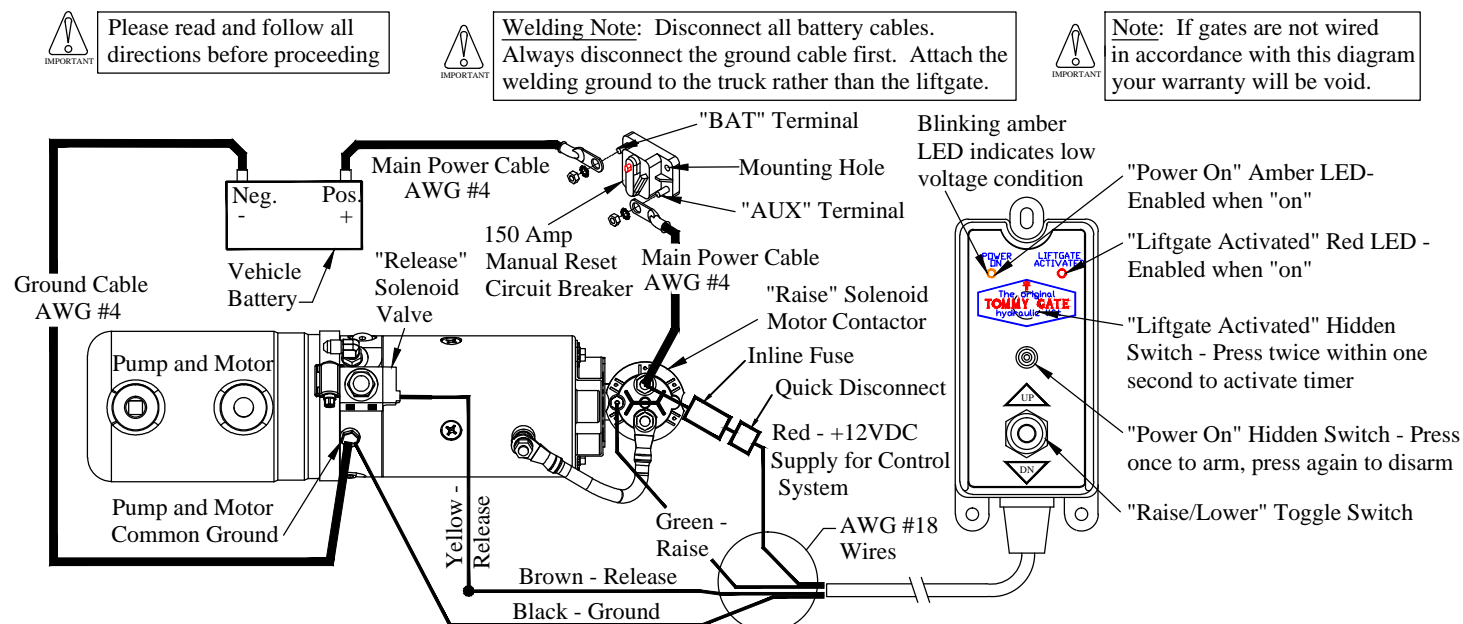
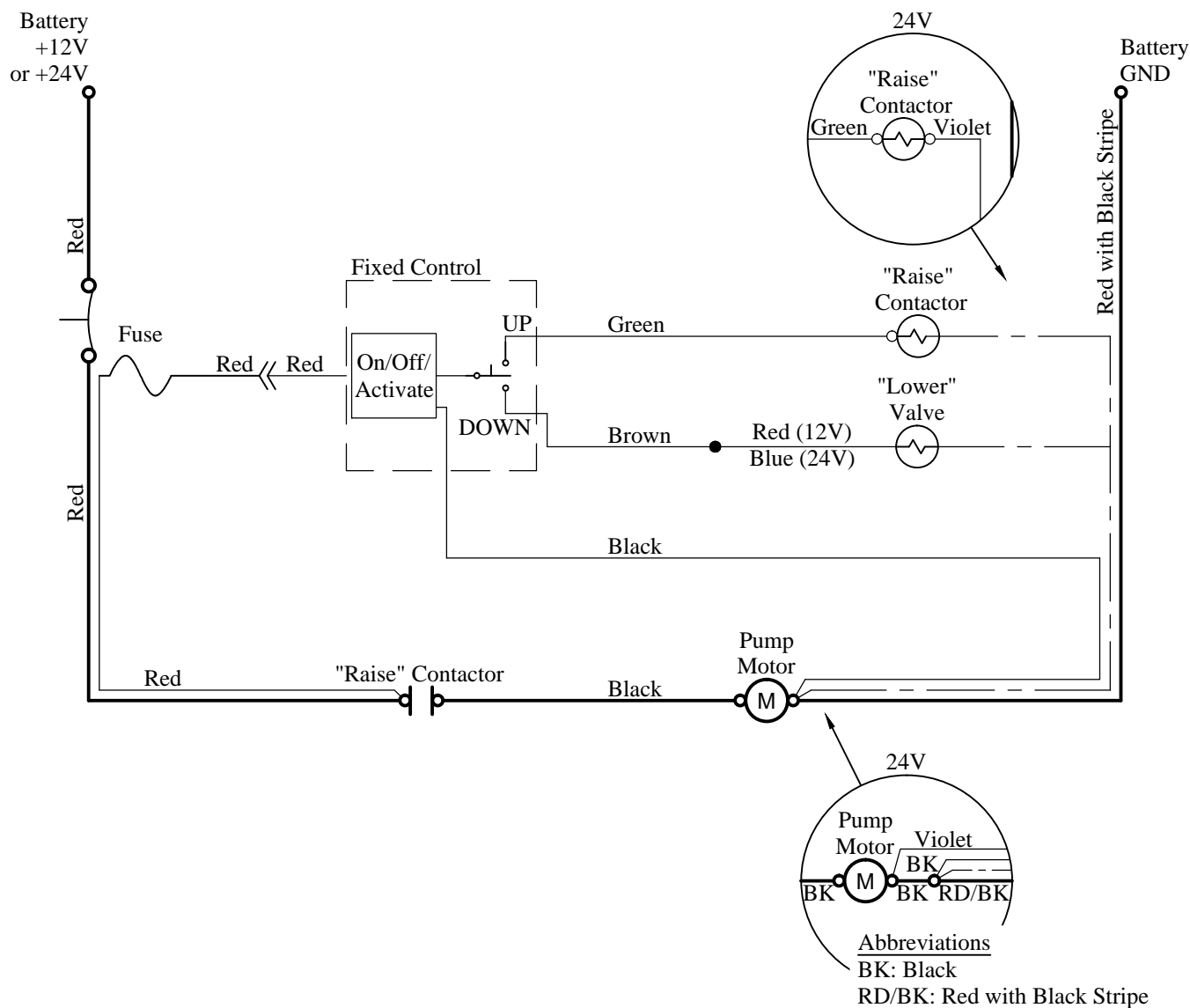


Figure 23: Wiring diagram.

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 |



Installing the Lower Mount

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

1. **Install** the two (2) mounting angle irons to the bottom of the liftgate (Figure 24).
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.

Note: If an aftermarket hitch is to be used, it should already be installed.

2. **Bolt** the bracket plates to the truck frame (Figure 25). The bracket plates will need to be modified.

3. **Bolt** the short angle irons to the bottom of the truck frame.

The short angle irons should extend out to the mounting angle irons on the liftgate.

The short angle irons will need to be modified.

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.

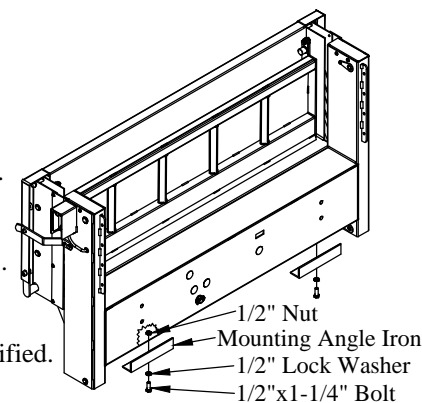


Figure 24: Mounting angle iron location.



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

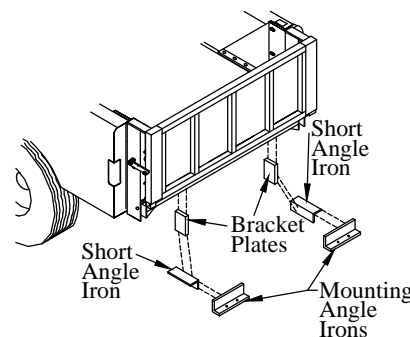


Figure 25: Lower bracket support.

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 hole provided.
4. **Connect** the license plate light to the vehicle's wiring following the *Tommy Gate Recommended Electrical Wiring Guidelines*. The license plate light wires 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 26).
10. **Place** Owner's / Operator's Manual and padlock keys in the vehicle.

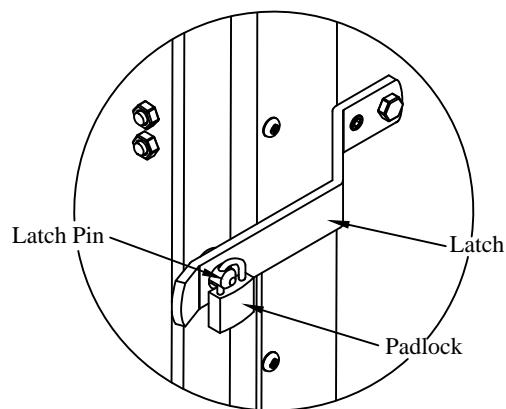


Figure 26: Padlock location.

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.