Pickup Lift Mounting Instructions

Ford Ranger: 1983-2011
Mazda B-series: 1983-2011

TG-25

Preparing the Gate

1. **Remove** the mounting hardware which is banded to the liftgate.

2. **Verify** mounting bracket kit (Figure 1 and Table 1).

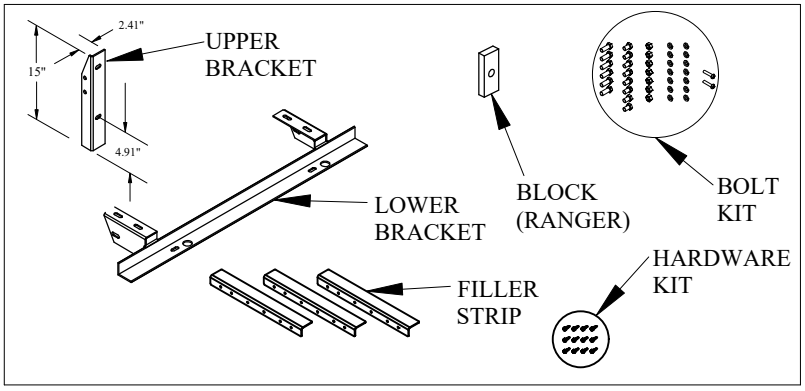


Figure 1: Part Identification.

Table 1: Parts List.

QTY.	PART NO.	DESCRIPTION
1	5111	TG-25 Lower Bracket
1	9409	TG-25 Upper Left Bracket
1	9408	TG-25 Upper Left Bracket
4	6942	0.50"x1.25"x3" Block(Ranger)
3	18800	48-G2 Filler Strip (Formed)
1	16296	Filler Strip Hardware 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).

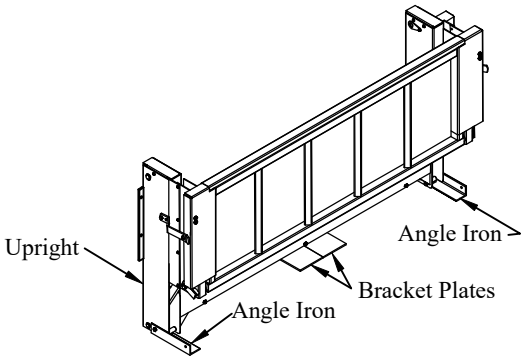


Figure 2: Complete liftgate.

Preparing the Truck

1. Remove the tailgate. The tailgate hardware does not need to be removed (Figure 3).

2. Remove the spare tire to provide better access in later steps.

3. Unplug the wiring clips that are connected to the rear bumper.

4. Support the rear bumper to keep it from falling while removing the mounting bolts.

5. Remove the rear bumper.

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

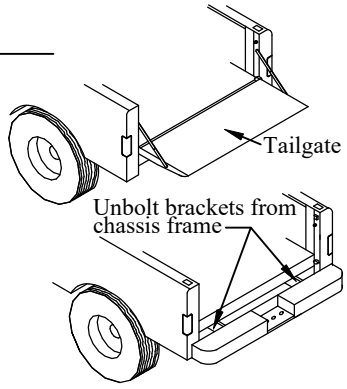


Figure 3: Tailgate and bumper removal.

6. Trim 1.25" from the pickup's rear cross member (Figure 4).
This must be done to allow the liftgate to set flush with the upper brackets (installed later).

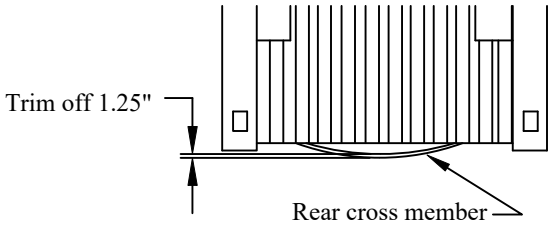


Figure 4: Rear cross member.

Modifying the Tail Light Mounting

Note: This modification must be completed before the liftgate is installed.
Note: This modification allows removal of the taillight lense without removing the liftgate.

1. Remove the two (2) factory tail light screws from each tail light lens (Figure 4). The screws will not be reused after the modification.

2. **Carefully** Drill a 9/64" hole through each tail light lens and internal sheet metal (Figure 4).

3. **Carefully** Drill a 3/16" hole through each tail light lens only, for screw clearance (Figure 4).

4. **Apply** clear silicone sealant to the 3/16" holes in the tail light lenses and stainless self-tapping screws.

5. **Install** a stainless self-tapping screw, supplied, into each 9/64" hole to hold the tail light lenses in place (Do not over-tighten).
Do not apply clear silicone sealant at this time, it will be applied in a later step.

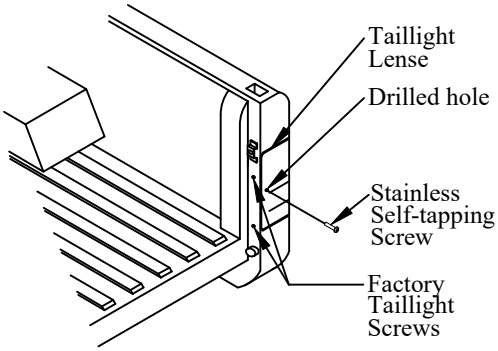


Figure 4: Taillight modification detail.

Modifying the Spare Tire Access

Note: This modification must be completed before the liftgate is installed.

1. Remove the box cover by removing the 5/16" hex head nuts (Figure 5).

2. Check for obstructions inside the mainframe before drilling in the next step.

3. Drill a 1" hole in the back of the mainframe (Figure 6).

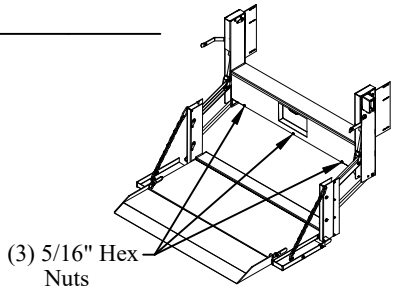


Figure 5: Box cover locations.

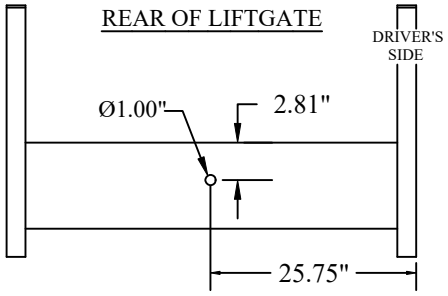


Figure 6: Spare tire access hole location.

Installing the Filler Strip

Note: The filler strip must be mounted on the liftgate before the liftgate is installed.
Note: The filler strip will fill the gap between the liftgate and the truck bed.

1. **Arrange** the three (3) 15-1/2" filler strips end to end with the short flange flat against the back of the liftgate mainframe and the top even with the top of the mainframe (Figure 7).

2. **Avoid** obstructions inside the mainframe box while attaching filler strips.

3. **Attach** the three (3) filler strips to the mainframe with the provided self drilling screws.

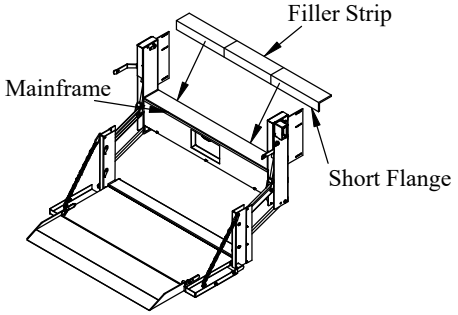


Figure 7: Filler strip placement.

Installing the Liftgate

1. **Bolt** the supplied lower bracket in place of the bumper using four (4) 1/2" x 1-1/4" bolts, four (4) lock washers, and four (4) nuts, supplied. Leave the bolts slightly loose.

2. **Slide** the lower bracket rearward.

Note: The bed of the pickup should now be approximately 11" above the flat surface of the lower bracket (Figure 8). If it is not, the lower bracket can be spaced down with washers or spacers (not supplied).

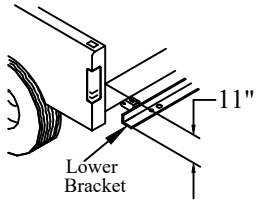


Figure 8: Lower bracket location.

3. **Support** the liftgate and place the Tommy Lift into the lower bracket.

4. **Align** the holes in the lower bracket with the holes in the bottom of the liftgate.

5. **Center** the liftgate in the opening.

6. **Bolt** the lower bracket tightly to the liftgate with two (2) 1/2 x 3/4" bolts and two (2) lock-washers (Figure 9). There are nuts welded to the inside of the mainframe to accept the bolts.

7. **Slide** the lower bracket and liftgate forward so that the gate is as close to the back of the pickup box as possible.

8. **Tighten** the bolts holding the lower bracket to the pickup frame.

Note: The bed of the pickup should now be approximately flush with the top of the liftgate mainframe.

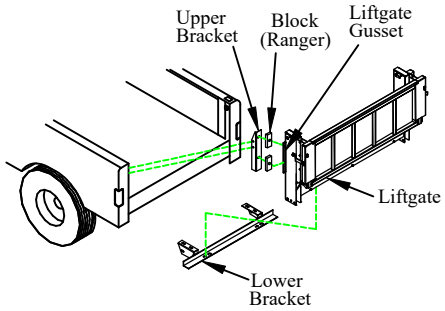


Figure 9: Liftgate mounting on pickup.

9. **Fasten** each upper bracket to the liftgate gussets using four (4) 1/2" x 1-1/4" bolts and four (4) lock washers, supplied (Figure 9). Leave the bolts slightly loose.

Note: 1998 and newer Rangers require four (4) blocks to be sandwiched between the liftgate gussets and upper brackets (Figure 9).

10. **Slide** the upper brackets outward and tight against the pickup's stake pockets.

11. **Verify** that the liftgate is in the vertical position and Tighten the bolts.

12. **Remove** the taillights.

13. **Check** for obstructions before drilling in the next step.

14. **Drill** two (2) 1/2" diameter holes in each of the pickup's stake pockets, using the holes in the upper bracket as a guide.

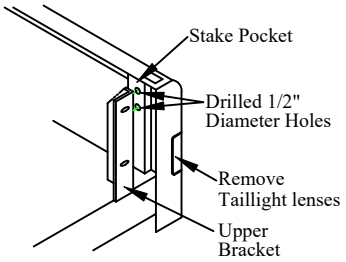


Figure 10: Upper bracket location.

15. **Bolt** the upper brackets to the stake pockets using one (1) 1/2" x 1-1/4" bolt, lock-washer, and nut in the upper hole, and one (1) 1/2" x 3/4" bolt, lock washer, and nut in the lower hole of each upper bracket.

16. **Check** and Tighten all of the mounting fasteners.

17. **Apply** clear silicone sealant to:
    * The 3/16" drilled hole in each taillight lense.
    * The supplied stainless self-tapping screws.

18. **Install** one (1) stainless self-tapping screw into each 9/64" hole to hold the taillight lenses in place. (Do not over-tighten.)

19. **Check** to make sure that the spare tire access hole in the liftgate lines up with the access hole in the pickup bed..

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 12). 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

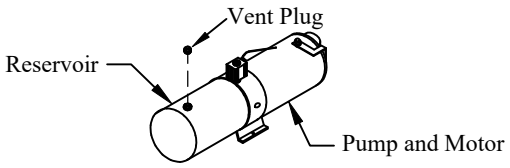


Figure 11: Vent plug.

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.

2. **Install** the circuit breaker bracket on the driver side fender, inside the engine compartment away from moving parts. 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.

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 to the battery following the *Tommy Gate Recommended Electrical Wiring Guidelines*.

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 auxiliary (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 12).

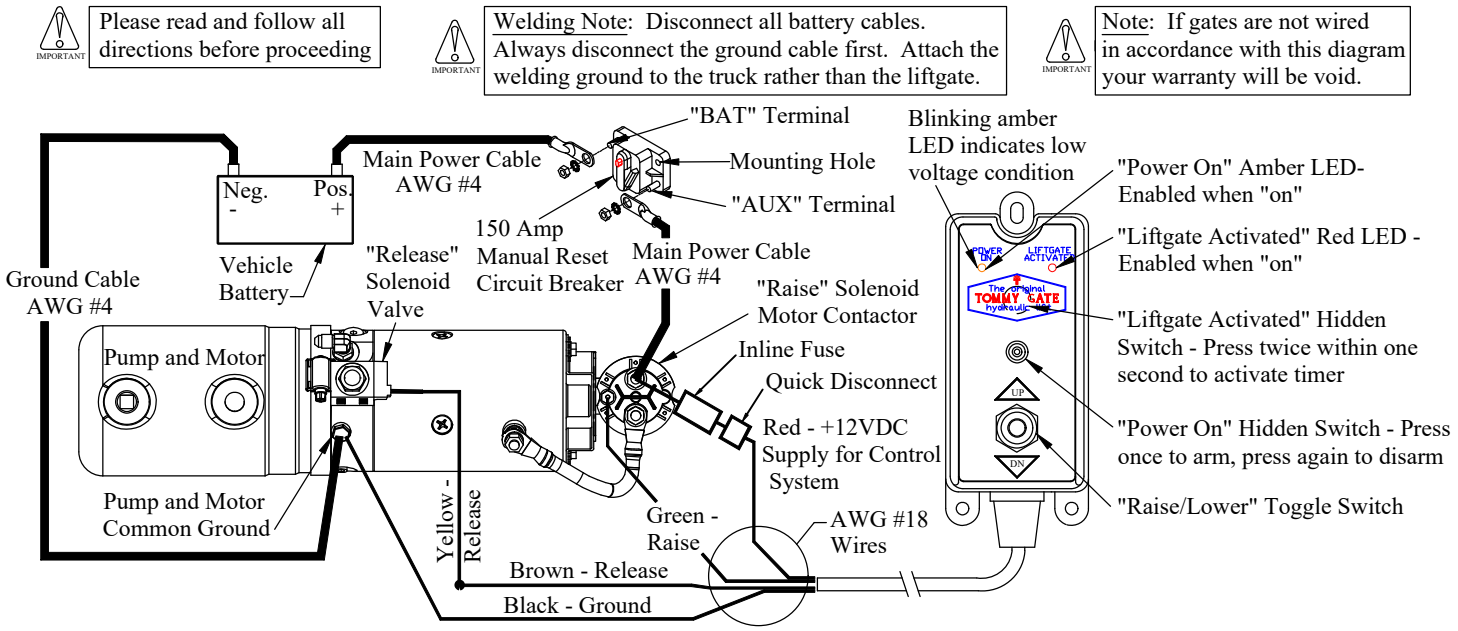
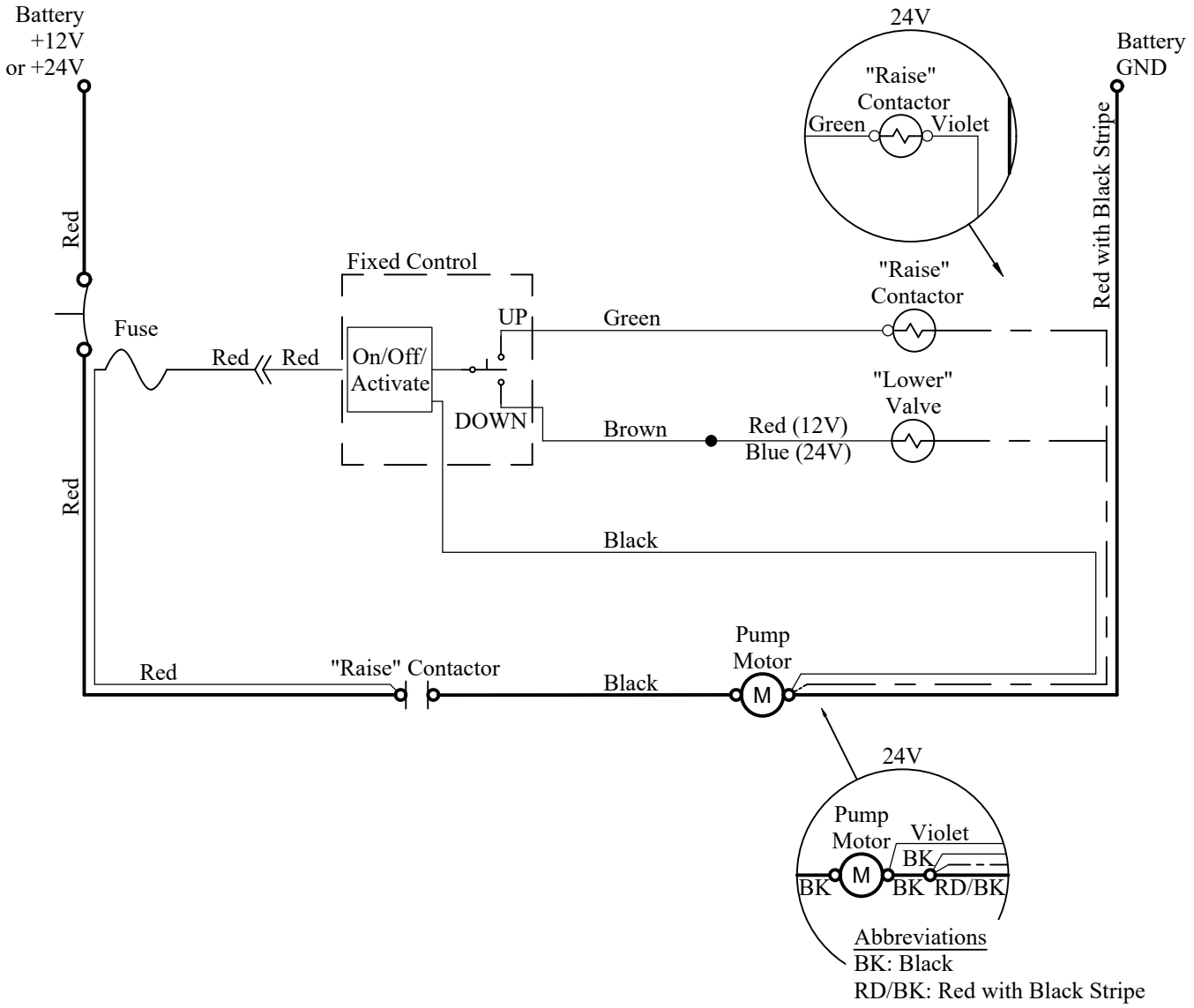


Figure 12: Wiring diagram.

Ladder Logic/Wiring Diagram

Legend	
	Circuit Breaker
	Contactor - Normally Open Contacts
M	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 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 13).
10. **Place** Owner's / Operator's Manual and padlock keys in the vehicle.

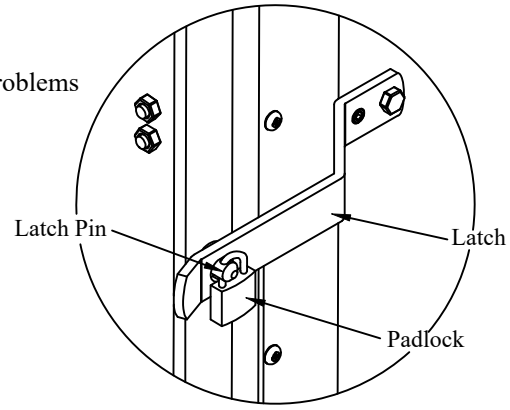


Figure 13: Padlock location.

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 180ºF), 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.