

## Preparing to Install the License Plate Kit

### 1. Verify License Plate Kit (Figure 1 and Table 1).

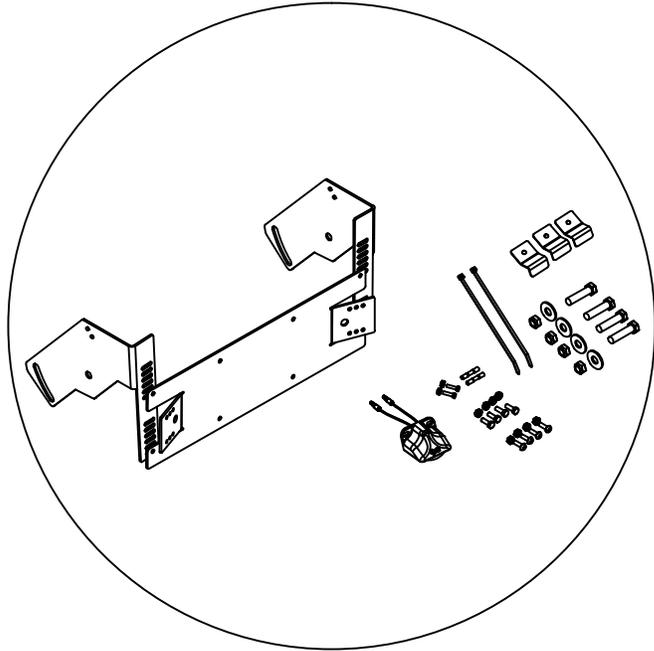


Figure 1: License plate kit.

Table 1: Parts list for kit PN015918

QTY.	PART NO.	DESCRIPTION
1	015923	TKL License Plate
1	015924	TKL License Plate Left Bracket
1	015936	TKL License Plate Right Bracket
1	013715	License Plate Light
2	009077	3/16"x7-1/2" Cable Tie
2	009089	16-14 Heat Shrink Butt Connector
4	000747	1/4-20x3/4 Bolt
8	011081	1/4-20 Keps Nut ZP
2	001485	10-32x3/4 HEX Head Bolt
2	000556	10-32 Keps Nut
4	000630	1/4-20x3/4" HHCS GR5
4	000522	1/2-13x2" HHCS GR5
4	000576	1/2"USS Flat Washer
4	000588	1/2-13 Crown Lock Nut
3	015980	14GAx2-3/4x1-1/2" - Harness Clamp
1	015597	48" Long 1/4 " Corrugated Loom
3	015604	2"x1.5" Double Sided VHB Tape

Note: If your gate has a bumper bar installed, lower the liftgate to the ground and then replace the four (4) 1/2-13" x 1-1/2" bolts with provided 1/2-13x2" bolts (Figure 2).

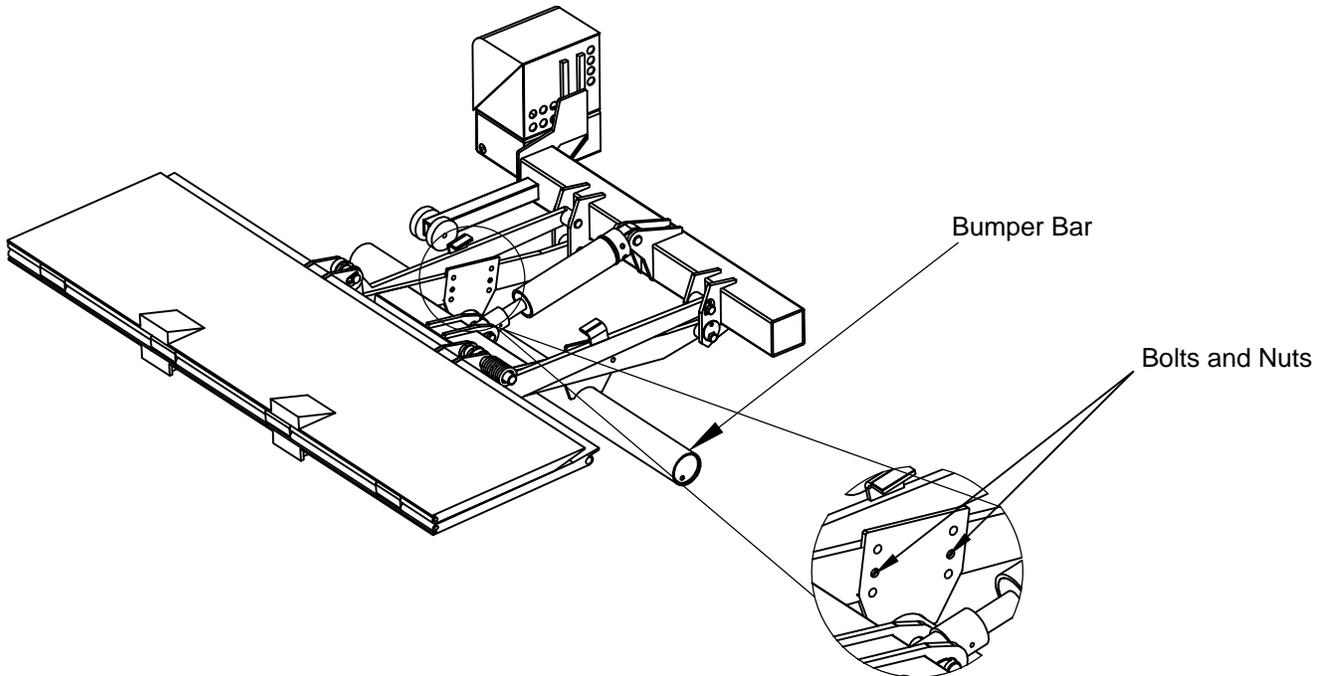


Figure 2: Bumper bar hardware removal.

## Preparing to Install the License Plate Kit (continued)

2. **Raise** the liftgate to the stowed position to grant access to the four 1/2" holes on both arms as shown (Figure 3).

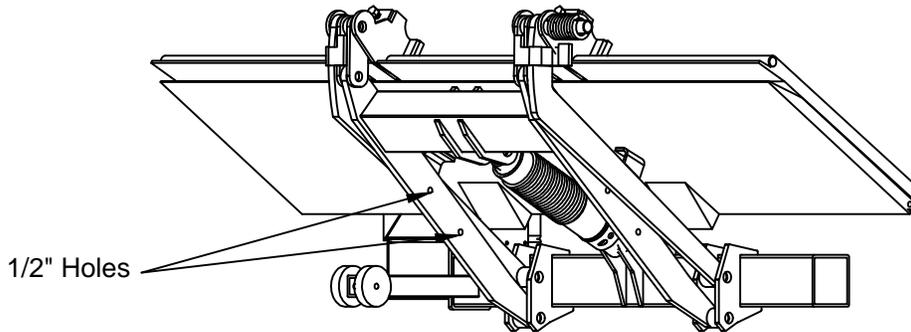


Figure 3: Liftgate at stowed position.

3. **Disconnect** the #4 power cable from the positive side of the battery or manually trip the circuit breaker (Figure 4).

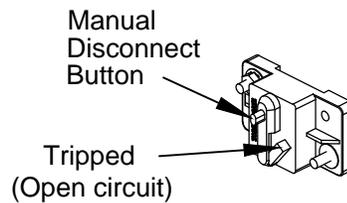


Figure 4: Circuit breaker.

## Installing the License Plate Kit

1. **Install** the brackets, with the provided 1/2-13x2" bolt, 1/2" flat washer and 1/2-13 locking nut, on the liftgate arms. If your gate has a bumper bar installed, bolt to the hole in the bumper bar bracket that attaches to the liftgate arm. Do not tighten at this time (Figure 5)

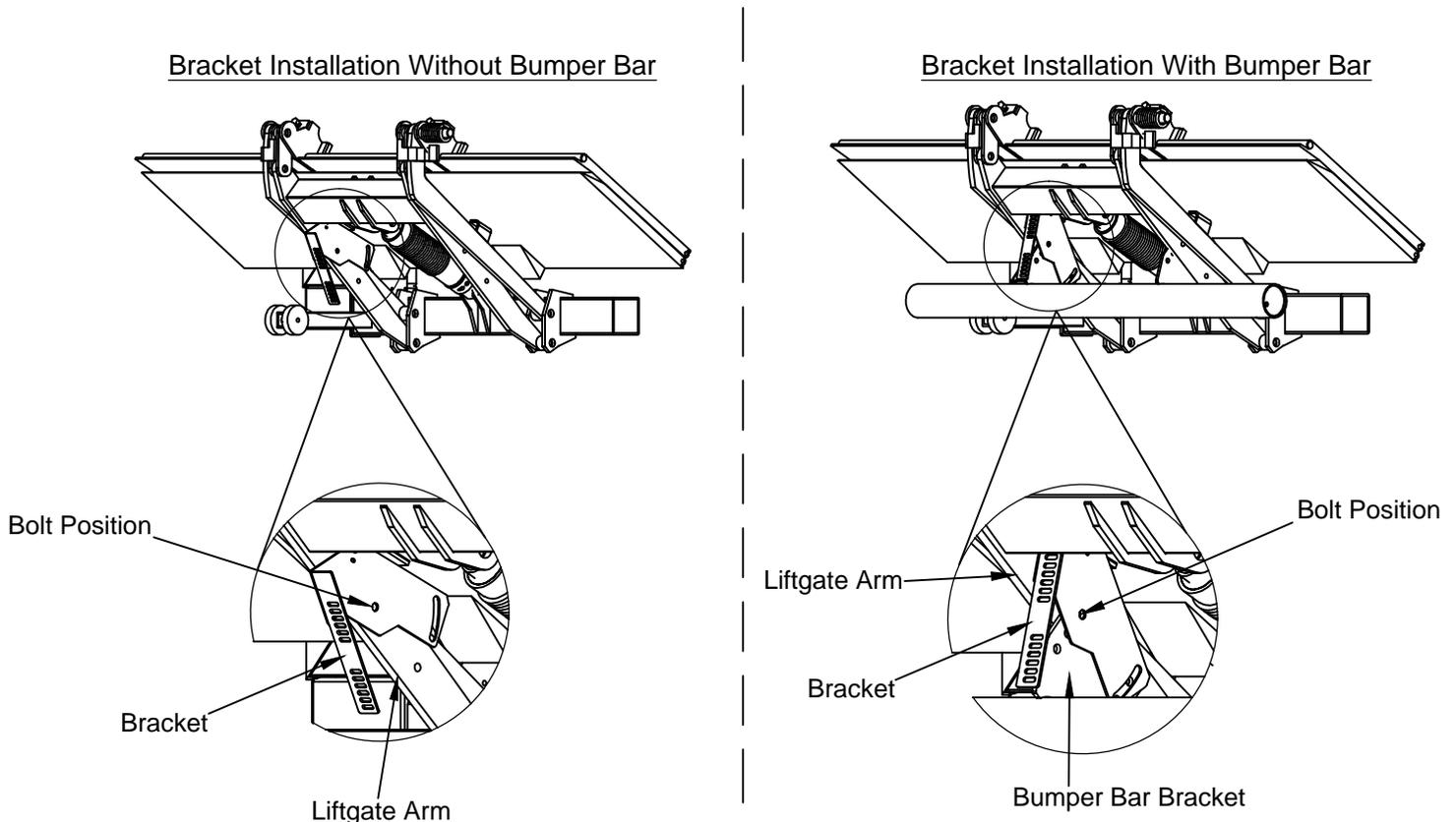


Figure 5: Bracket installation.

## Installing the License Plate Kit (continued)

- 2. Adjust** the angle adjusting slot in order to have a 90° angle between the license plate and the ground. Do not tighten completely at this time (Figure 6).

Note: On liftgates with bumper bar installed, in order to avoid interference between the bracket and the bumper bar, it might be needed to change the bumper bar height by changing the hole where the bracket is bolted on.

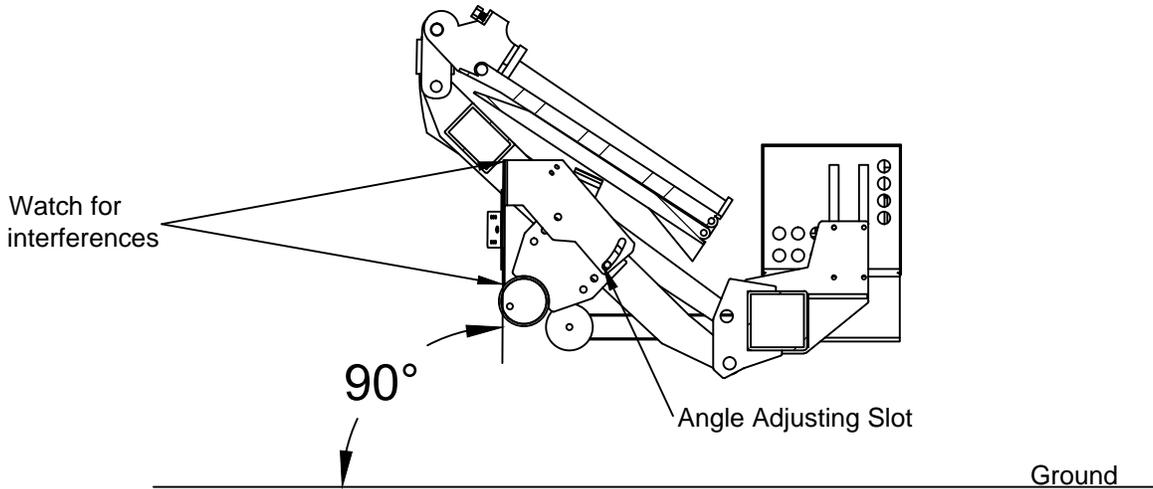


Figure 6: Bracket angle adjustment.

- 3. Bolt** the license plate holder, with the provided four (4) 1/4"x3/4" bolts and 1/4" keps nuts, on the brackets. Use one of the multiple slots to attach the license plate holder in order to get clearance from the liftgate structure. Do not tighten at this time (Figure 7).

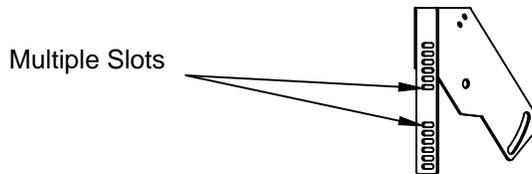


Figure 7: Bracket.

- 4. Bolt** the License plate light, with the provided two (2) 10-32 bolts and 10-32 keps nuts, on the left side (recommended) of the license plate holder (Figure 8).

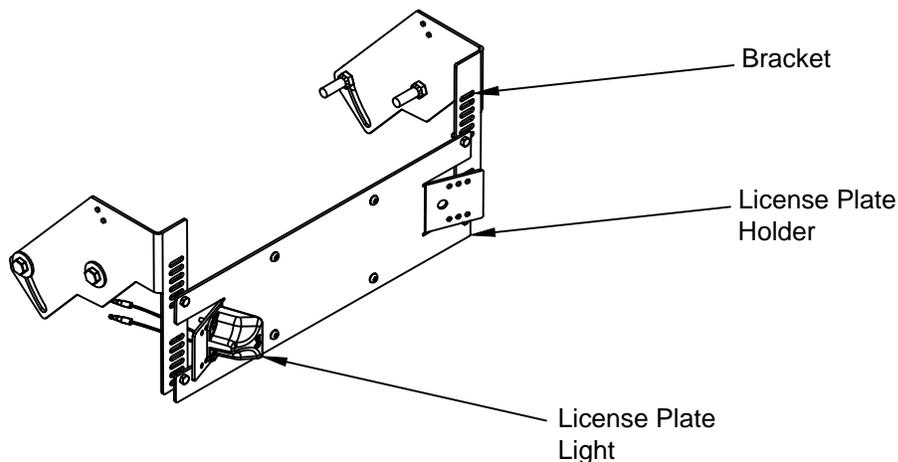


Figure 8: License plate light.

## Installing the License Plate Kit (continued)

5. **Verify** that the license plate is in upright position and free of interferences.
6. **Tighten** completely the bolts from steps 1, 2 and 3 of Installing the License Plate Kit.
7. **Bolt** the license plate, with the provided four (4) 1/4"x3/4" bolts and 1/4" keps nuts, on the license plate holder.
8. **Strip** the ends of the license plate light wires and connect to the vehicle wiring with the provided two (2) heat shrink butt connectors. Follow Tommy Gate Recommended Electrical Wiring Guidelines on page 5 when connecting to vehicle wiring.
9. **Protect** the license plate light wires with the provided corrugated loom.
10. **Secure** the license plate light wires through the arms and brackets using the provided zip ties and/or the double sided tape with harness clamps (Figure 9).

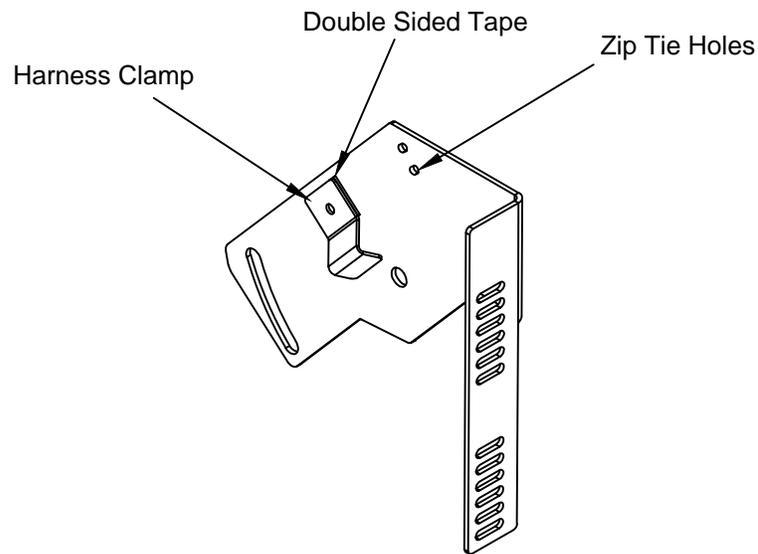


Figure 9: Secure cable.

11. **Verify** proper operation of license plate light.
12. **Connect** the #4 power cable to the positive side of the battery or manually **Engage** the circuit breaker (Figure 10.)

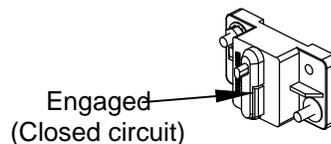


Figure 10: Engage circuit breaker.

## **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 or approved connection point through the supplied circuit breaker or fuse. The circuit breaker or fuse should be installed as close to the battery as possible.
- (3) Avoid splicing power 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. If possible, avoid putting 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 may 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.