

**8436, 8437, 8438, 8439, 8442,  
27480, 27780, 28028, & 28400**

# **ISOLATION MODULE ELECTRICAL SYSTEM**

## **Installation Instructions**

**⚠ CAUTION**

Read this document before installing the snowplow.

**⚠ CAUTION**

See your sales outlet for application recommendations. The Kit Selection Guide/ Selection List has specific vehicle and snowplow requirements.

**SAFETY DEFINITIONS**

**⚠ WARNING**

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious personal injury.

**⚠ CAUTION**

Indicates a situation that, if not avoided, could result in damage to product or property.

**NOTE:** Identifies tips, helpful hints, and maintenance information the owner/operator should know.

**BATTERY SAFETY**

**⚠ CAUTION**

Batteries normally produce explosive gases which can cause personal injury. Therefore, do not allow flames, sparks or lit tobacco to come near the battery. When charging or working near a battery, always cover your face and protect your eyes, and also provide ventilation.




Batteries contain sulfuric acid which burns skin, eyes and clothing.

Disconnect the battery before removing or replacing any electrical components.

**TORQUE CHART**

**⚠ CAUTION**

Read instructions before assembling. Fasteners should be finger tight until instructed to tighten according to the torque chart. Use standard methods and practices when attaching snowplow, including wearing proper personal protective safety equipment.

Recommended Fastener Torque Chart (Ft.-Lb.)			
Size	 SAE Grade 2	 SAE Grade 5	 SAE Grade 8
1/4-20	6	9	13
5/16-18	11	18	28
3/8-16	19	31	46
3/8-24	24	46	68
7/16-14	30	50	75
1/2-13	45	75	115
9/16-12	66	110	165
5/8-11	93	150	225
3/4-10	150	250	370
7/8-9	150	378	591
1-8	220	583	893
Metric Grade 8.8 (Ft.-Lb.)			
Size	Torque	Size	Torque
M 6	7	M 12	60
M 8	17	M 14	95
M 10	35	M 16	155
These torque values apply to fasteners except those noted in the instruction.			

**FUSES**

The vehicle control harness contains two automotive-style fuses. One fuse is for the snowplow park/turn lamp power and the other is for the snowplow control power. If a problem should occur and fuse replacement is necessary, the replacement fuse should be of the same value as the original. Installing a fuse of a larger value could damage the system.

## MOTOR RELAY AND VEHICLE CABLE ASSEMBLY INSTALLATION

### ⚠ CAUTION

Batteries normally produce explosive gases which can cause personal injury. Therefore, do not allow flames, sparks or lit tobacco to come near the battery. When charging or working near a battery, always cover your face and protect your eyes, and also provide ventilation.

Batteries contain sulfuric acid which burns skin, eyes and clothing.

Disconnect the battery before removing or replacing any electrical components.

1. Turn off the vehicle ignition.
2. Disconnect both the NEGATIVE (–) and the POSITIVE (+) battery cables.
3. Find a location under the hood for the motor relay where it will be protected from road splash and will be within 18" of the vehicle battery.

**NOTE: Motor relay terminals must be up or horizontal.**

### ⚠ CAUTION

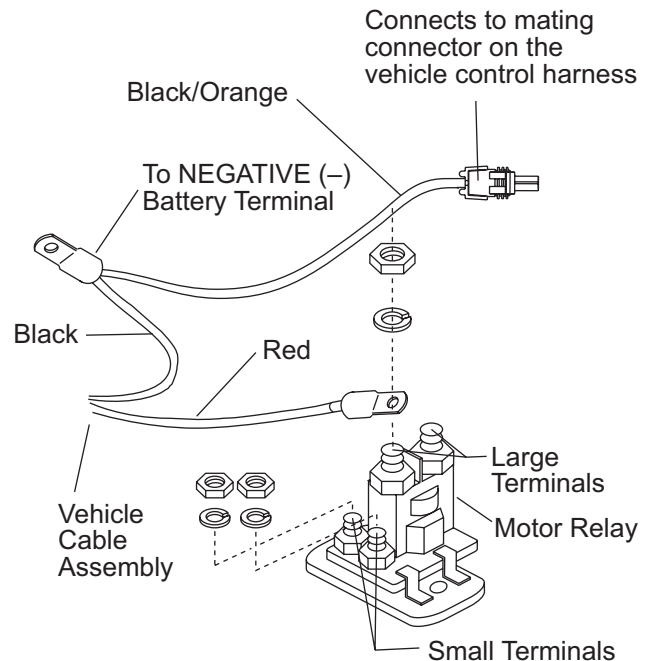
Before installing self-drilling screws or drilling mounting holes, check the selected mounting area for any wires, hoses, or other obstructions.

4. Drill two 9/32" mounting holes using the motor relay mounting plate as a template. Mount the motor relay to the holes using 1/4" x 3/4" cap screws, washers, and locknuts.
5. Route the vehicle cable assembly from the bumper or grille through or around the radiator bulkhead to the motor relay. Be sure to avoid sharp edges and hot or moving parts.

6. Attach the red wire from the vehicle cable assembly to one of the large terminals on the motor relay. Secure with a lock washer and 5/16" nut.

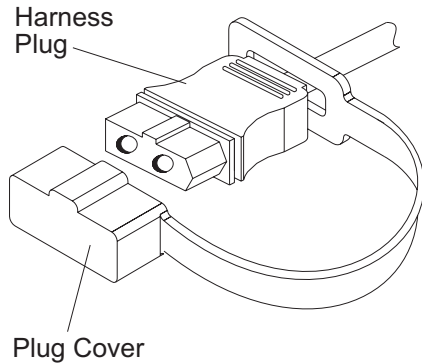
**NOTE: Use dielectric grease on all electrical connections to prevent corrosion. Fill receptacles and lightly coat ring terminals and blades before assembly.**

7. Route the black wire from the vehicle cable assembly to the NEGATIVE (–) battery terminal. Do not connect at this time. The black/orange wire from the vehicle cable assembly will connect to the mating connector on the vehicle control harness.



## PLUG COVER INSTALLATION

1. Stretch the rectangular opening of the plug cover strap over the harness plug of the vehicle cable assembly. Place the plug cover over the molded harness plug when snowplow is not in use.



2. If grille plates are used, choose the one most suitable for your installation. Slide the harness plug into the plate.

**NOTE: When choosing a location for the grille plate, keep in mind the connection between the vehicle and the snowplow. Mounting the grille plate too close to the center of the vehicle may make it difficult to make your electrical connections to the snowplow.**

3. Mount grille plate to the vehicle grille using the supplied cable ties.
4. For applications that supply bumper mounting brackets, follow the instructions supplied with the kit.
5. If you choose not to install a grille plate, secure the cable assembly so it is protected when not in use and is easily retrieved for connection to the snowplow.

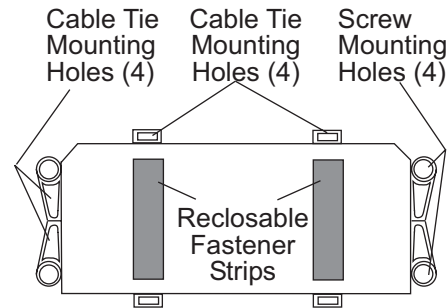
## ISOLATION MODULE MOUNTING

The design of the Isolation Module allows it to be mounted to a variety of surfaces **within** the engine compartment. The function of the Isolation Module will not be affected by its mounting orientation.

**⚠ CAUTION**

**Before installing self-drilling screws or drilling mounting holes, check the selected mounting area for any wires, hoses, or other obstructions.**

Locate a flat surface within the engine compartment of the vehicle for mounting the Isolation Module. For example, the fire wall, side of washer reservoir, fender well or radiator shroud are possible mounting locations. If a flat surface cannot be located, cable tie the Isolation Module to existing brackets or harnessing. Reclosable fastener strips, cable ties, and self-drilling screws are supplied for mounting the Isolation Module. When using the reclosable fastener strips, the mounting surface must be free of dirt and grease. If using self-drilling screws, install the screws in opposite corners if possible.



Isolation Module  
Bottom View

### Suggested Mounting Options:

- Flat, non-metallic, non-drillable surfaces – use reclosable fasteners
- Flat, non-metallic, drillable surfaces – use self-drilling screws (supplied), nuts, and cap screws (not supplied)
- Flat metallic surfaces – use reclosable fasteners, self-drilling screws (supplied), nuts, and cap screws (not supplied)
- No flat surface found – use cable ties and tie to existing brackets or harness

## VEHICLE LIGHTING AND VEHICLE CONTROL HARNESS INSTALLATION

Vehicle lighting and vehicle control harnesses are designed to plug into one another when the snowplow is not attached. The control harness exits the grille or bumper on the passenger side and the lighting harness exits on the driver side. Plug the harnesses together before cable tying them to ensure adequate length.

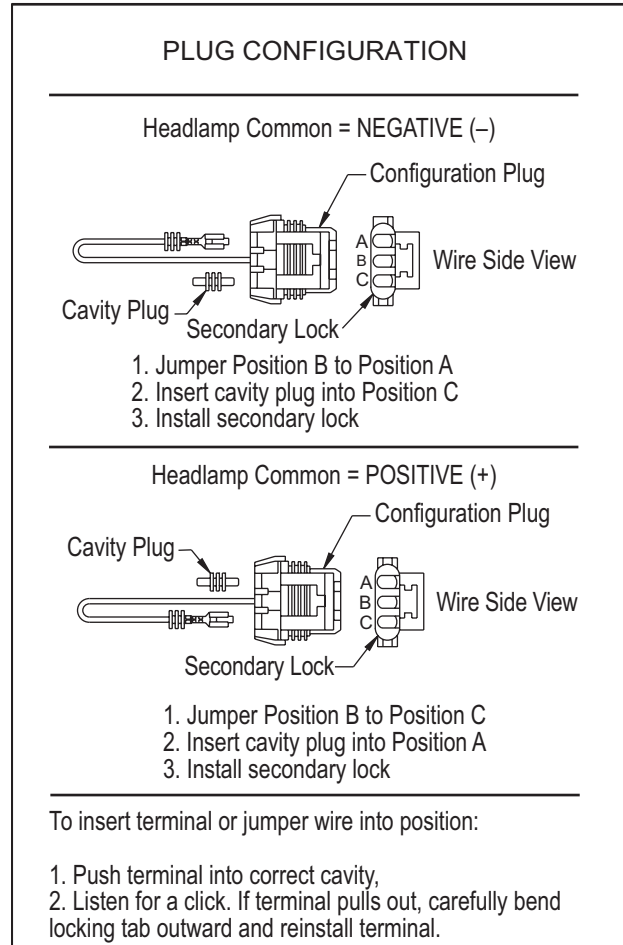
- Find a location in the grille or bumper on the driver side for routing the vehicle lighting harness. Then find a location in the grille or bumper on the passenger side for the vehicle control harness.
- Route both harnesses around or through the radiator bulkhead to the Isolation Module.
- Make the following connections:
  - Vehicle control harness to Position 1 on Isolation Module
  - Vehicle lighting harness to Position 2 on Isolation Module.
  - Single-wire connector (black/orange wire) from vehicle control harness to single-wire connector (black/orange wire) on vehicle lighting harness.
  - For the 8437 or 27780 Harness Kit:** Supplied dust cover onto vehicle control harness 3-position plug near Isolation Module.
  - For all other harness kits:** Configuration plug onto vehicle control harness 3-position plug near Isolation Module. (Refer to plug configuration drawing for instructions.)

**NOTE: If unsure of headlamp common, configure plug for a NEGATIVE (–) common. Complete the installation and check headlamp functions. Turn on the vehicle lights in the low beam mode. Both low beams should be on. If the left low beam does not illuminate, change plug configuration to POSITIVE (+) common and test headlamp functions.**

- Route the end of the vehicle control harness with the white, 6-pin connector or the 10 loose terminals to the fire wall. Route the vehicle control harness breakout with four wires to the motor relay.

### Motor relay small terminal connections:

Straight blades: brown/red and black/orange  
V-plows: brown/red and brown/green



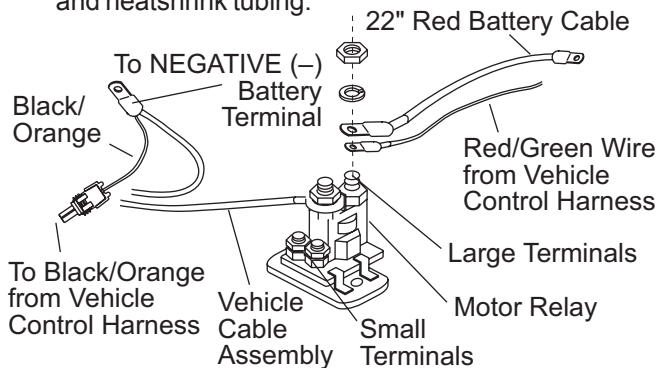
Secure wires to small terminals of motor relay with #10 lock washers and 10-32 nuts.

- Connect the single-wire connector (black/orange wire) from the vehicle control harness breakout to the single-wire connector (black/orange wire) from the vehicle cable assembly. Do not cable tie the harness at this time.
- Attach the 22" red battery cable and the red/green wire from the vehicle control harness to a large terminal on the motor relay with a lock washer and 5/16" nut. Route the 22" red battery cable between motor relay terminal and POSITIVE (+) battery terminal, avoiding sharp edges and hot or moving parts. Do not make battery connection at this time.

**⚠ CAUTION**

Before installing self-drilling screws or drilling mounting holes, check the selected mounting area for any wires, hoses, or other obstructions.

7. On the driver side, drill a 5/8" hole through the fire wall of the vehicle in a convenient location away from sharp edges, and hot or moving parts. If access through the fire wall already exists, use proper chafing material or existing plug cover.
8. **Straight blade controls only:** Push the braided harness breakout with the cab control connector through the fire wall hole into the cab. Use a grommet to protect the harness where it passes through the fire wall. Route the harness to the selected control mounting location. To mount the control, follow the instructions supplied with the control.
9. **V-plow control only:** Remove the packing material from the end of the vehicle control harness. This exposes 10 socket-type terminals. Carefully push these terminals through fire wall hole into the cab. Use a grommet to protect the harness where it passes through the fire wall. Route the harness to the selected control mounting location. Follow the instructions in the next section to attach the terminals to the connector. To mount the control, follow the instructions supplied with the control.
10. Locate an accessory wire controlled by the ignition switch. Acceptable accessory wires show +12V when the ignition switch is on, and 0V when it is off.
11. Route the red wire from the vehicle control harness to this location and trim away excess length.
12. Following the recommended splicing procedure (see page 8), splice the red wire into the switched accessory wire using the supplied parallel splices and heatshrink tubing.



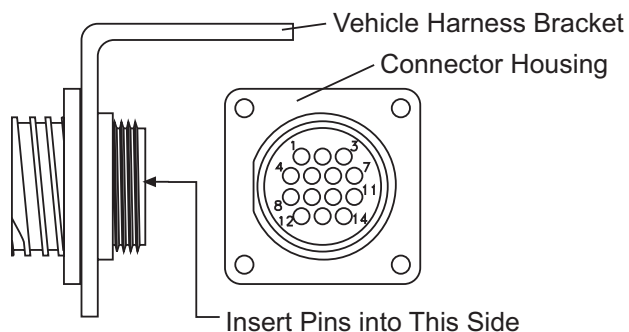
**UNDER-DASH VEHICLE CONTROL HARNESS CONNECTOR PIN ASSIGNMENTS**

**V-Plow Control Only**

1. In the cab, pass the 10 socket-type terminals through the vehicle harness bracket.
2. Insert each of the 10 socket-type terminals into the connector housing. Refer to chart below.

**NOTE: You will feel a snap as the terminals are successfully inserted. An extraction tool is provided for removing pin terminals if necessary. Keep this tool for future use.**

Wire Color	Pin No.
Light Blue w/ Orange Stripe	1
Blue w/ Orange Stripe	2
Black w/ White Stripe	3
Light Green	4
Light Blue	5
White w/ Yellow Stripe	6
Brown w/ Red Stripe	7
Red	8
Black w/ Orange Stripe	9
Brown w/ Green Stripe	10



3. Attach the vehicle harness bracket to the vehicle with the supplied #8-18 x 5/8" tapping screws. Secure the connector housing to the vehicle harness bracket with the #6 x 1/4" tapping screws and lock washers.

**NOTE: Cable tie control harness and accessory tap away from any moving parts, brake, clutch, gas or parking brake pedals.**

## PLUG-IN HARNESS INSTALLATION

This procedure assumes the Isolation Module is mounted on the driver side of the vehicle. If the selected mounting location is on the passenger side, then use the short plug-in harness on the passenger side and use the long plug-in harness on the driver side.

**For vehicles using the 28028 Harness Kit:** The plug-in harnesses connect to the headlamp housings, not the headlamp bulbs.

**For vehicles using the 8436 Harness Kit:** The plug-in harnesses must be configured before installation. Before proceeding, refer to page 11 to determine the plug configuration for your style of headlights.

1. Remove the headlamp or headlamp housing connector(s) on the **driver side**. Connect the short plug-in harness male connector(s) to the female connector(s) removed from the headlamp(s) or headlamp housing. Connect the plug-in harness female connector(s) to the headlamp(s) or headlamp housing. Route to the Isolation Module. Connect **driver-side** plug-in harness to Position 3 on the Isolation Module.

**NOTE: Only the short plug-in harness connects to the vehicle parking light circuit.**

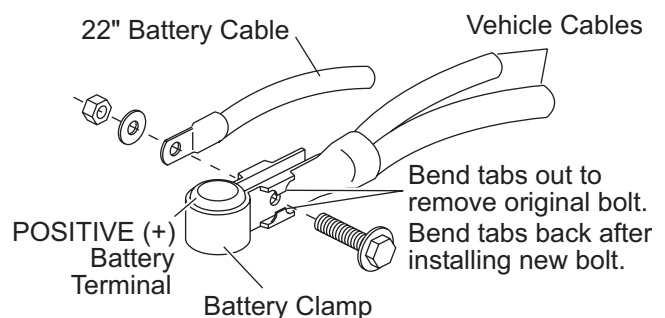
**For vehicles using either the 8437 or the 27780 Harness Kit:** On the driver side, locate the DRL light POSITIVE (+) wire. Splice the pink wire from the plug-in harness into the DRL POSITIVE (+) wire following the splicing procedure. The short plug-in harness contains the pink DRL wire. If the Isolation Module is mounted on the passenger side of the vehicle, splice into the passenger-side DRL POSITIVE (+) wire.

**For vehicles using the 8438 or the 27480 Harness Kit:** The pink wire from the plug-in harness is not needed. Cut and discard the pink wire.

2. On the **driver side**, locate the turn signal wire. Splice the purple wire from the plug-in harness into this wire following the recommended splicing procedure. Locate the parking light wire. Splice the brown wire from the plug-in harness into this wire following the splicing procedure.
3. Remove the headlamp or headlamp housing connector(s) on the **passenger side**. Connect the long plug-in harness female connector(s) to the

headlamp(s) or headlamp housing. Connect the plug-in harness male connector(s), to the female connector(s) removed from the headlamp(s) or headlamp housing. Route across radiator bulkhead to Isolation Module. Connect **passenger-side** plug-in harness to Position 4 on the Isolation Module.

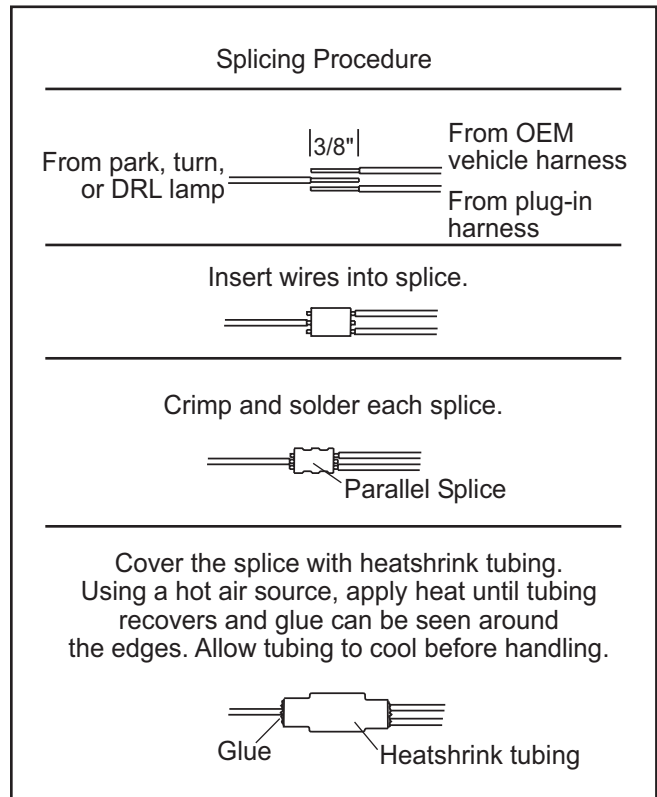
4. On the **passenger side**, locate the turn signal wire. Splice the purple wire from the plug-in harness into this wire following the recommended splicing procedure.
5. Cable tie the vehicle control harness, vehicle lighting harness, and both plug-in harnesses away from any sharp, hot or moving parts. The vehicle control harness and vehicle lighting harness are designed to plug into one another for storage.
6. Reconnect the vehicle POSITIVE (+) battery cables and the 22" battery cable to the POSITIVE (+) battery terminal with the existing terminal fastener. However, if you have a formed sheet metal battery terminal clamp, follow the steps below.
  - a. To fasten the 22" battery cable to the formed sheet metal battery terminal clamp, carefully lift retainer tabs and remove the 6mm terminal clamp cap screw.
  - b. Replace the clamp cap screw with 6mm x 25mm (1") cap screw. Reposition the retainer tabs.
  - c. Tighten terminal normally.



- d. Secure battery cable on end of clamp cap screw with nut and washer. Hold cap screw head while tightening to avoid disturbing battery clamp.
7. Reconnect the vehicle battery NEGATIVE (-) cable and the black wire from the vehicle cable assembly to the NEGATIVE (-) battery terminal.

## RECOMMENDED SPLICING PROCEDURE

1. Locate wire to be spliced into.
  2. Cut wire at least 1-1/2" from any other splice, connector, or terminal. If wires are covered by tubing or braid, remove enough of it to achieve the minimum clearance required.
  3. Strip away 3/8" of the insulation from the ends of the wires to be spliced.
  4. Slide two wires into one end of the supplied parallel splice.
  5. Place a piece of heatshrink tubing (3/16" x 1-1/4" long) over the remaining wire to be spliced.
  6. Insert wire into the open end of the splice and crimp using an appropriate crimp tool. One or two crimps may be necessary to ensure a good connection. No wire strands should be visible outside of the splice.
  7. Preheat a soldering tool for at least one minute to help promote even solder flow.
  8. Apply heat to the splice. Avoid heating too close to the insulation. Apply solder to the wires. Use just enough solder to produce an even flow through the splice. **Use rosin core solder ONLY. Do not use acid core solder.**
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- NOTE: Avoid using an excessive amount of solder as it can result in wicking. Wicking occurs when solder travels up the wire core. This may cause the wire to become stiff or brittle which could lead to a broken or open circuit.**
- 
9. Check circuits for continuity.
  10. Cover the splice with heatshrink tubing. The tubing should extend beyond the splice on both sides.
  11. Using a hot air source, starting in the center and working to either side, apply heat until the tubing recovers and glue can be seen around the edges. Allow the tubing to cool before handling.



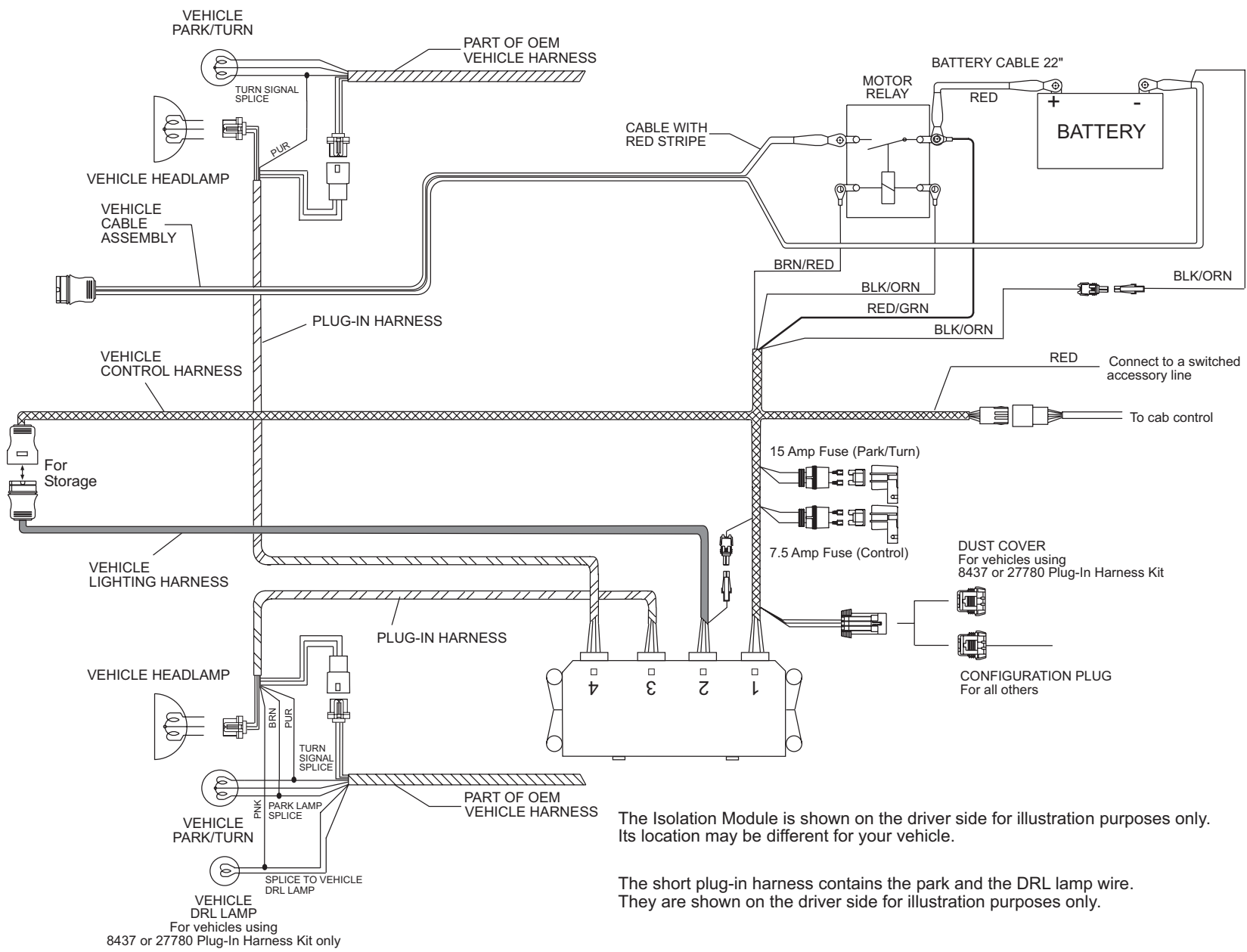
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**NOTE: The splices supplied will accommodate 18-gauge wires as shown. For larger gauge wires, cut the wire, strip the ends 3/8" to 1/2", and twist together. Apply solder to the splice and cover with heatshrink tubing.**

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SYSTEM DIAGRAM - STRAIGHT BLADES

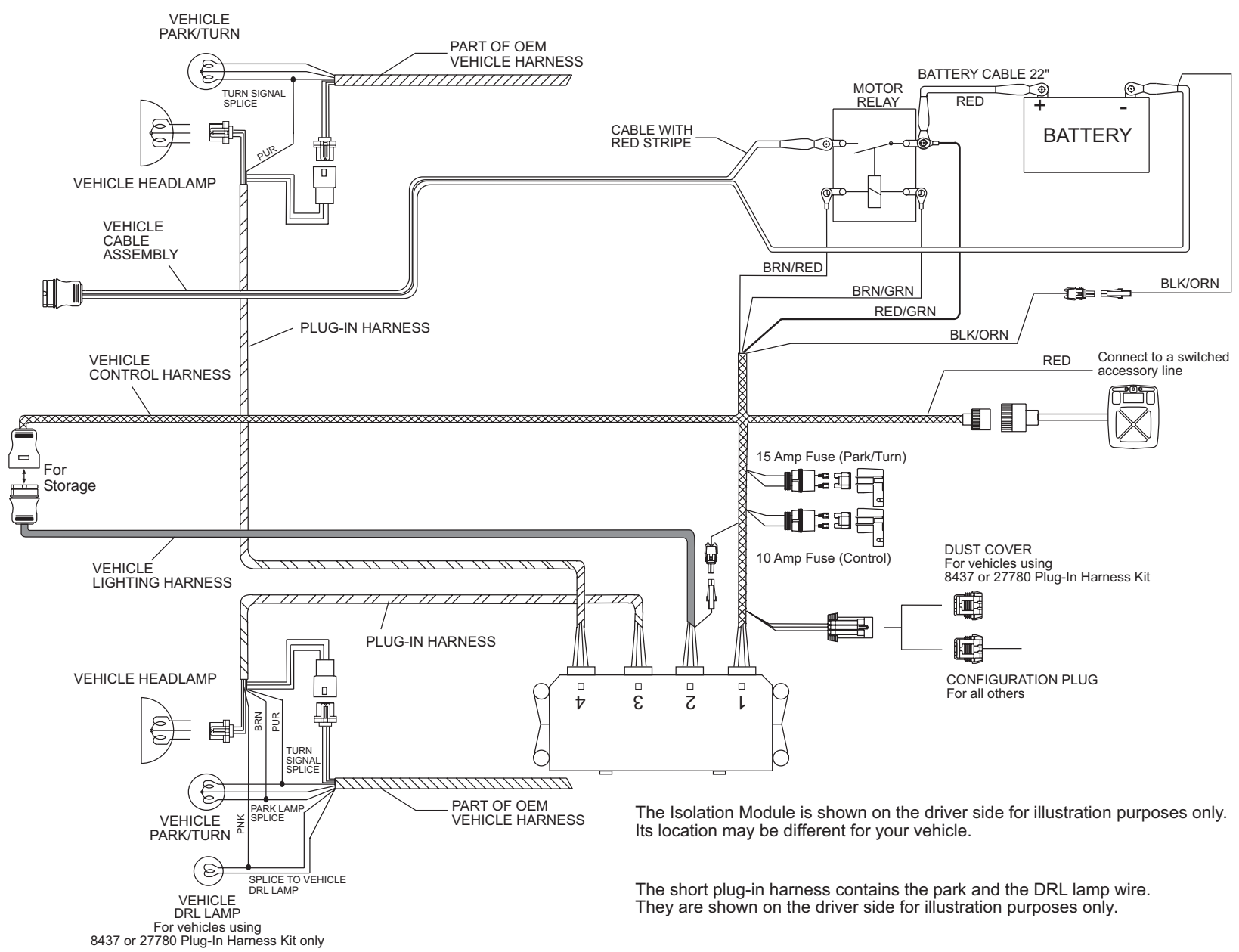


The Isolation Module is shown on the driver side for illustration purposes only. Its location may be different for your vehicle.

The short plug-in harness contains the park and the DRL lamp wire. They are shown on the driver side for illustration purposes only.

For vehicles using 8437 or 27780 Plug-In Harness Kit only

SYSTEM DIAGRAM - V-PLOWS



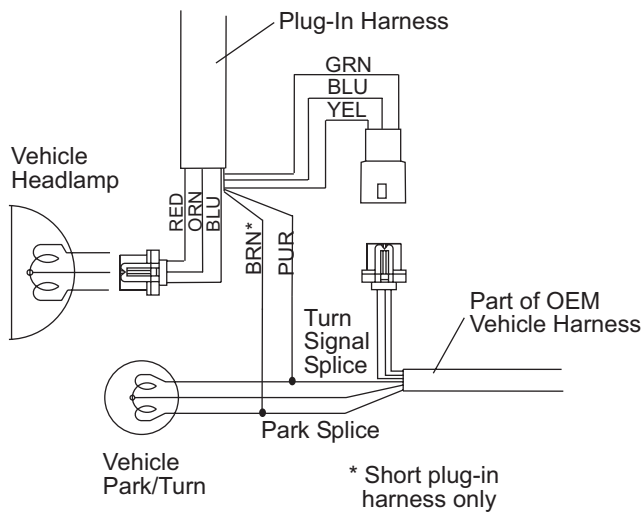
The Isolation Module is shown on the driver side for illustration purposes only. Its location may be different for your vehicle.

The short plug-in harness contains the park and the DRL lamp wire. They are shown on the driver side for illustration purposes only.

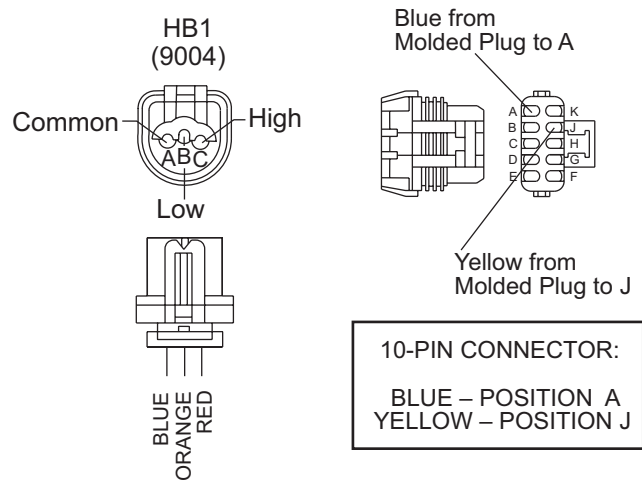
VEHICLE DRL LAMP  
For vehicles using 8437 or 27780 Plug-In Harness Kit only

**HEADLAMP WIRING FOR VEHICLES USING  
8436 HARNESS KIT**

**HB-1 Headlamps  
(9004)**

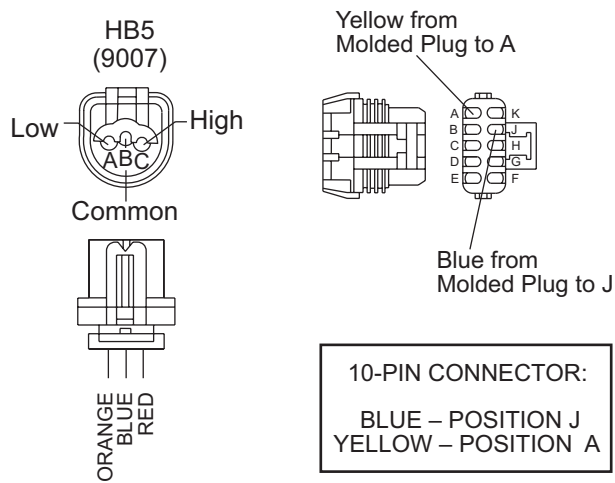


**Plug Configuration for HB-1 Headlamps**



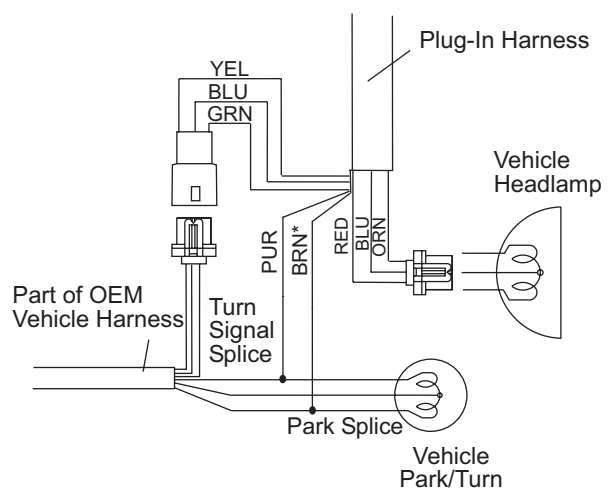
Install wires in both connectors as shown.  
Install supplied secondary connector locks.

**Plug Configuration for HB-5 Headlamps**



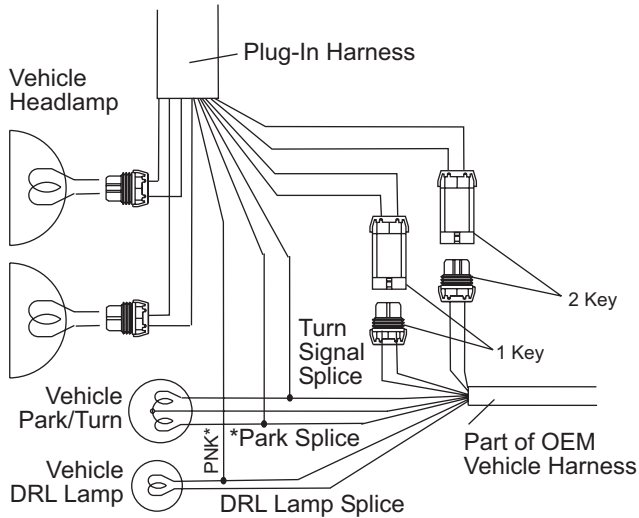
Install wires in both connectors as shown.  
Install supplied secondary connector locks.

**HB-5 Headlamps  
(9007)**



\* Short plug-in harness only

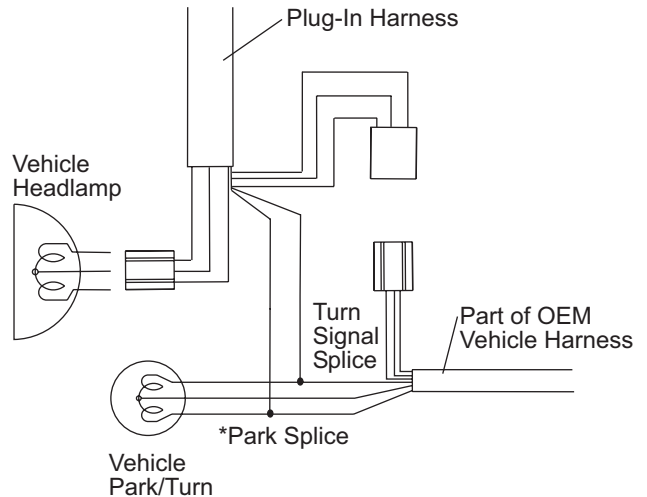
**8437, 8438, 27480, and 27780 Harness Kits**



\* Short plug-in harness only.

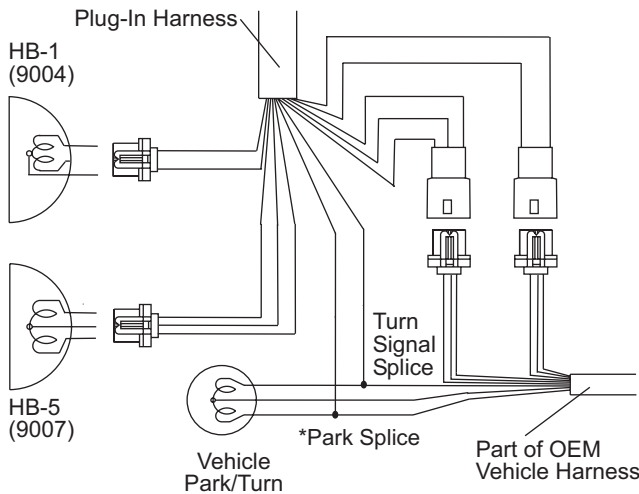
NOTE: Pink wire not used in 8438 or 27480 Harness Kits.

**8439 and 28400 Harness Kit**



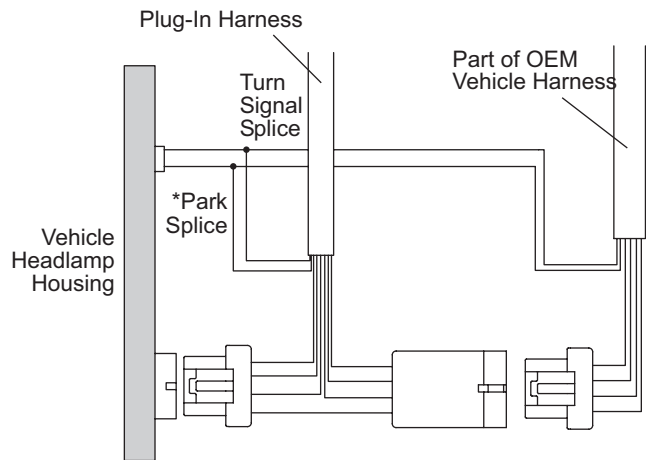
\* Short plug-in harness only

**8442 Harness Kit**



\* Short plug-in harness only.

**28028 Harness Kit**



\* Short plug-in harness only.

The company reserves the right under its product improvement policy to change construction or design details and furnish equipment when so altered without reference to illustrations or specifications used. Do not exceed vehicle ratings with a snowplow. The company offers a limited warranty for all snowplows. See separately printed page for this important information.