

31115

HARNESS KIT

3-PORT ISOLATION MODULE LIGHTING SYSTEM

Parts List and Installation Instructions

▲ CAUTION

Read this document before installing the harness kit.

▲ CAUTION

See your sales outlet/website for specific vehicle application recommendations before installation. The online selection system has specific vehicle and snowplow requirements.

PARTS LIST

Lighting System Plug-In Harness			
Part	Description	Qty	
		31115	90730
31114	Plug-In Harness, 3-Pin	1	
29861-4	Vehicle Lighting Harness – 11-Pin	1	
20681	50" Power Cable	1	
29071	8" Cable Assembly		1*
95837	Fuse Holder		1
90729	200A Fuse		1
–	Reclosable Fasteners	4	

* The 8" cable from Fuse Kit (PN 90730) will not be used in this application.

SAFETY DEFINITIONS

WARNING

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

CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTE: Indicates a situation or action that can lead to damage to your snowplow and vehicle or other property. Other useful information can also be described.

FUSES

The snowplow electrical and hydraulic systems contain several automotive-style fuses. If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire. Fuse Replacement, including fuse ratings and locations, is located in the Maintenance section of the Owner's Manual.

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

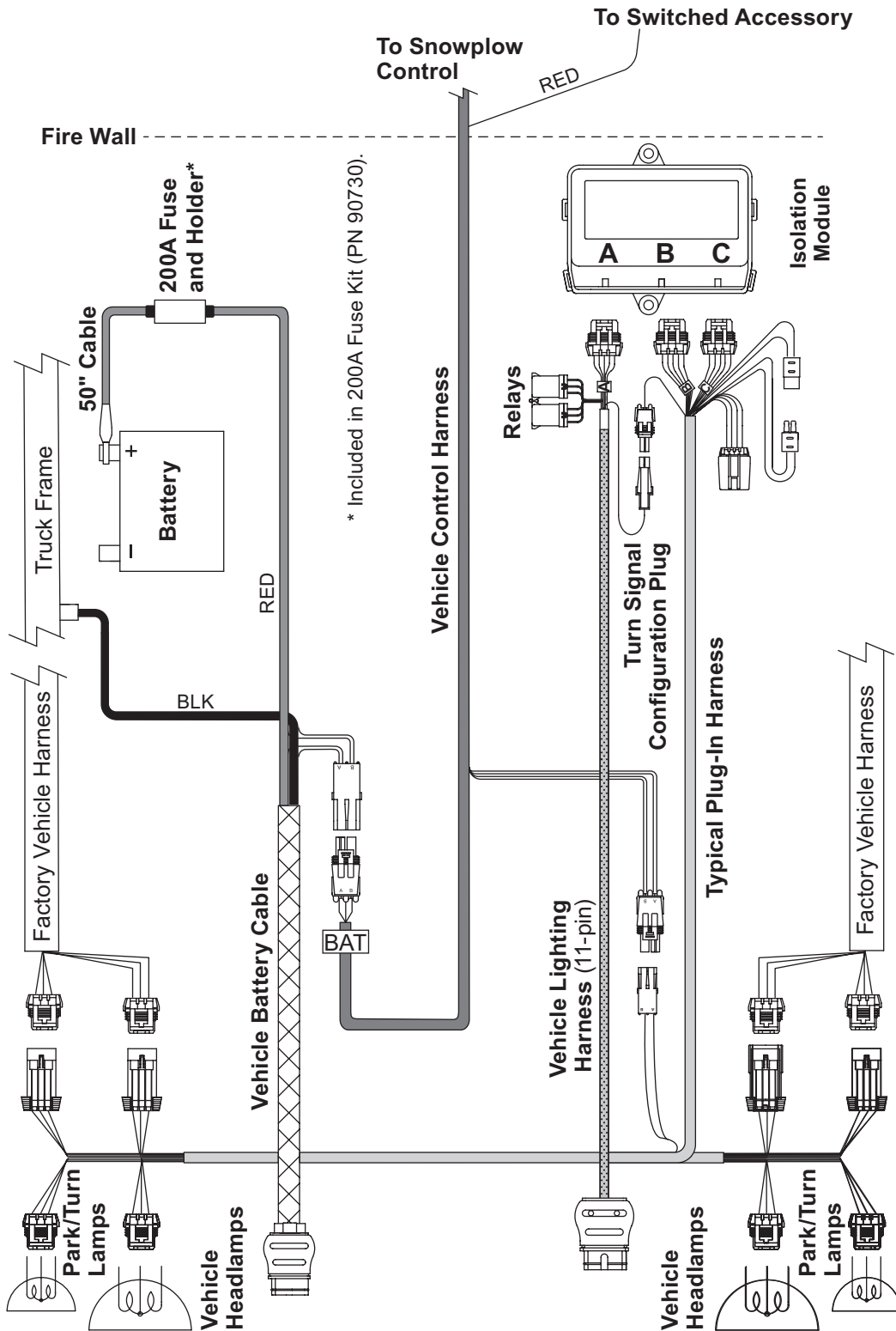
CAUTION

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 proper personal protective safety equipment.

Recommended Fastener Torque Chart					
Inch Fasteners Grade 5 and Grade 8					
Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	 Grade 5	 Grade 8		 Grade 5	 Grade 8
1/4-20	8.4	11.9	9/16-12	109	154
1/4-28	9.7	13.7	9/16-18	121	171
5/16-18	17.4	24.6	5/8-11	150	212
5/16-24	19.2	27.3	5/8-18	170	240
3/8-16	30.8	43.6	3/4-10	269	376
3/8-24	35.0	49.4	3/4-16	297	420
7/16-14	49.4	69.8	7/8-9	429	606
7/16-20	55.2	77.9	7/8-14	474	669
1/2-13	75.3	106.4	1-8	644	909
1/2-20	85.0	120.0	1-12	704	995
Metric Fasteners Class 8.8 and 10.9					
Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	 Class 8.8	 Class 10.9		 Class 8.8	 Class 10.9
M6 x 1.00	7.7	11.1	M20 x 2.50	325	450
M8 x 1.25	19.5	26.9	M22 x 2.50	428	613
M10 x 1.50	38.5	53.3	M24 x 3.00	562	778
M12 x 1.75	67	93	M27 x 3.00	796	1139
M14 x 2.00	107	148	M30 x 3.50	1117	1545
M16 x 2.00	167	231	M33 x 3.50	1468	2101
M18 x 2.50	222	318	M36 x 4.00	1952	2701
These torque values apply to fasteners except those noted in the instructions.					

TYPICAL 2-PLUG, 3-PORT MODULE SYSTEM DIAGRAM

NOTE: On 2-plug electrical systems, plug covers shall be used whenever snowplow is disconnected.



INSTALLATION INSTRUCTIONS

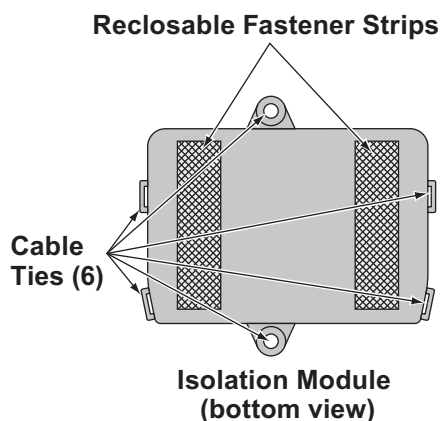
Isolation Module Mounting

⚠ CAUTION

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

NOTE: Isolation modules are sold separately. Check the online selection system for the correct module for your vehicle.

Reclosable fastener strips and/or cable ties are supplied for mounting the isolation module. When using reclosable fastener strips, the mounting surface must be free of dirt and grease.



Mount the module on the upper side of the hood support bracket on the passenger's side, as shown below.



Vehicle Battery Cable 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.

NOTE: Follow OEM battery cable connection recommendations when attaching to the battery.

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

1. Turn OFF the vehicle ignition.
2. Disconnect both the NEGATIVE (-) and the POSITIVE (+) battery cables from the vehicle battery.
3. Route the supplied vehicle battery cable from the grille or bumper to the OEM vehicle frame bolt, avoiding any sharp edges and hot or moving parts. Cable tie only the end section closest to the grille.

Fuse Holder and 200A Fuse Installation

1. Install fuse holder kit (PN 90730) and 200A fuse according to the Installation Instructions (Lit. No. 90728).
2. Use 50" cable (PN 20681) instead of supplied 8" cable (PN 29071).

Vehicle Lighting and Vehicle Control Harness Installation

For Halogen snowplow light installation, proceed with the following instructions.

1. Route the vehicle harness inside the frame of the OEM front bumper.
2. Connect the vehicle lighting harness to position "A" on the isolation module.
3. Route the end of the vehicle control harness with the white 4-pin connector to the fire wall. Connect the black 4-position connector (labeled "BAT") from the end of the vehicle control harness to the 4-position connector from the vehicle battery cable. Do not cable tie the harness at this time.



4. On the driver's side, locate the OEM grommet for the vehicle control harness shown below.
5. Push the braided harness breakout with the cab control connector through the fire wall hole and into the cab. Use a grommet, existing plug cover, or proper anti-chafing material to protect the harness where it passes through the fire wall. Route the harness to the selected control mounting location.

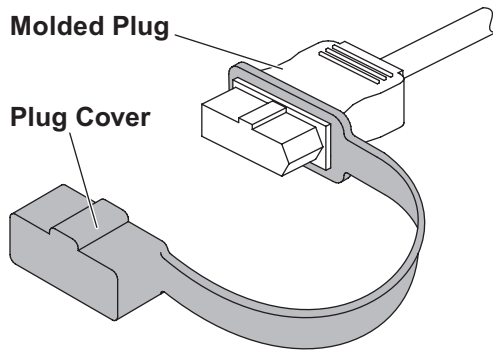
To mount the control, follow the instructions supplied with the control.

6. Locate an accessory wire controlled by the ignition switch. Acceptable accessory wires show 12V when the ignition switch is turned ON, and 0V when it is OFF.
7. Route the red "ACC" wire from the vehicle control harness to this location and trim away excess length.
8. Following the recommended splicing procedure given at the end of this document, splice the red "ACC" wire into the switched accessory wire using the supplied parallel splices and heatshrink tubing.

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

PLUG COVER INSTALLATION

Stretch the rectangular opening of the plug cover strap over the end of the vehicle battery cable. Place the plug cover over the molded plug whenever the snowplow is not in use.



PLUG-IN HARNESS INSTALLATION

1. Remove the headlamp or headlamp housing connectors. Connect the plug-in harness to the mating connectors removed from the headlamps or headlamp housings. Connect the plug-in harness to the mating connections at the headlamps or headlamp housings.
2. Route the plug-in harness to the isolation module. Connect the plug-in harness to the module by matching harness connector B with module port B and harness connector C with module port C.
3. Connect the 4-position connector on the vehicle control harness to the matching 4-position connector on the plug-in harness.
4. Connect the single-wire connector from the vehicle lighting harness to the single-wire connector from the plug-in harness.
5. Cable tie the vehicle control harness, vehicle lighting harness, and plug-in harness away from any sharp, hot, or moving parts.

TURN SIGNAL CONFIGURATION PLUG

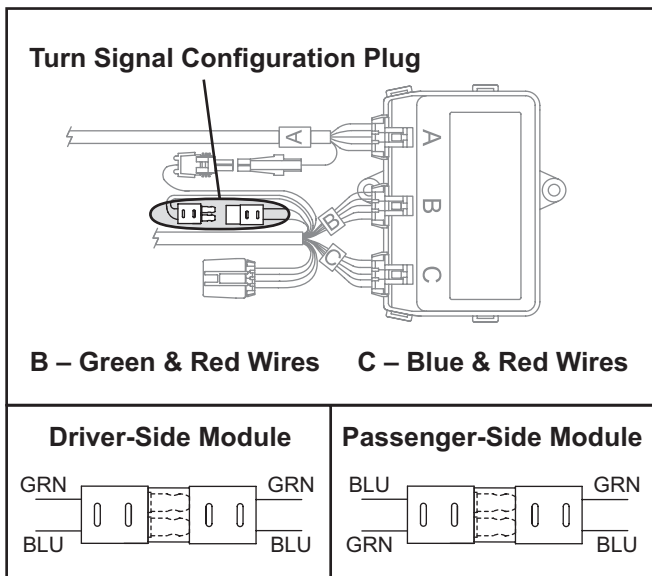
⚠ WARNING

If the turn signal configuration plug is mated incorrectly, the turn signals will be reversed between the vehicle and the snowplow.

1. Mate the turn signal configuration plug located on the plug-in harness.

If the isolation module is installed on the driver's side, mate the plug so that the wire colors match (green to green and blue to blue).

If the module is installed on the passenger's side, mate the plug so that the wire colors are opposite (green to blue).



2. Complete the installation by securing the relay assemblies to an existing assembly with cable ties. Mount the relay connectors wire side down.

BATTERY CONNECTIONS

NOTE: Cable tie cable assemblies and control and lighting harnesses away from any sharp edges and hot or moving parts.

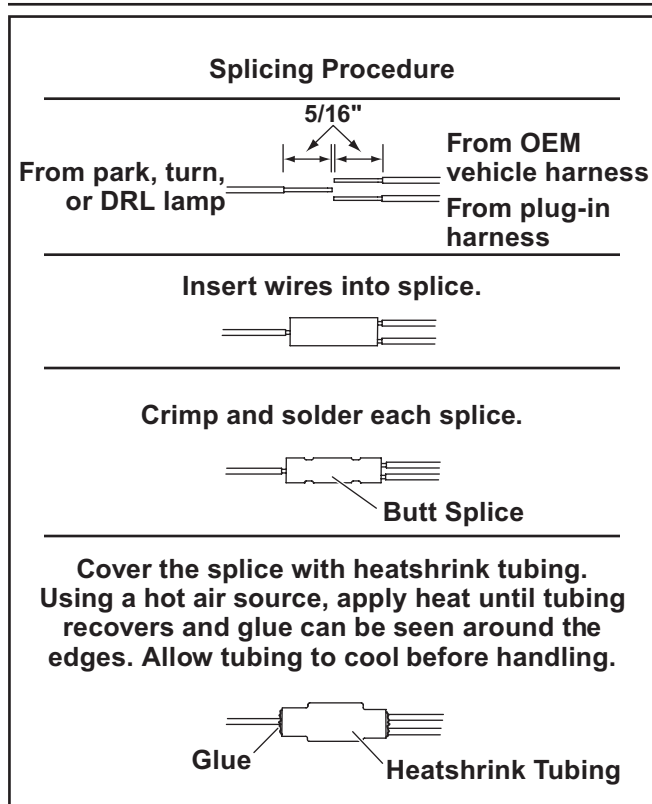
NOTE: Follow OEM battery cable connection recommendations when attaching to the battery.

1. Make the following attachments to the POSITIVE (+) battery terminal:
 - POSITIVE (+) OEM cable assembly
 - Red 50" cable from fuse holder to the POSITIVE (+) side of the battery.
2. Make the following attachment to the vehicle frame:
 - Black vehicle battery cable to frame using an existing hole or ground bolt. Prior to attaching, clean away any paint or dirt to ensure a good ground connection.
3. Make the following attachment to the NEGATIVE (-) battery terminal:
 - NEGATIVE (-) OEM cable assembly.

RECOMMENDED SPLICING PROCEDURE

1. Locate the wire to be spliced into.
2. Cut the 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 5/16" 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. Cut tubing into 1-1/4" lengths if required.
6. Insert the 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, using just enough solder to produce an even flow through the splice. **Use rosin core solder ONLY. Do not use acid core solder.**
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.

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.



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.

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