



FORD EXCURSION AND SUPER DUTY F-SERIES 250/350/450/550 4x2 and 4x4 1999 & LATER VEHICLE SPECIFIC ELECTRICAL INSTALLATION INSTRUCTIONS

Model No. 3219

Straight Blade

Hydraulics Box No. 56588

Harness Kit No. 63420 (HB-5) or 63422 (2B)

Used with Headlamp Kit 9-Pin No. 61540-1

MVP® Blade

Hydraulics Box No. 56777

Harness Kit No. 63421(HB-5) or 63423 (2B)

Used with Headlamp Kit 12-Pin No. 66640-1

⚠ CAUTION

Read this document before installing the snowplow.

⚠ CAUTION

See your WESTERN® outlet for application recommendations. The Selection List has specific vehicle and snowplow requirements.

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SAFETY

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.




CAUTION

Always disconnect the battery before removing or replacing electrical components such as a motor relay or battery cable.

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 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 | 202 | 378 | 591 |
| 1-8 | 300 | 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. | | | |

UNDER HOOD INSTALLATION

HARNESS KIT SELECTION

Straight Blade

- For DUAL replaceable bulb type HB-5 headlamps use Box No. 61540-1 Headlamp Kit 9-Pin and 63420 Harness Kit HB-5 9-Pin -A with Park or Turn Harness Kit.
- For 2B Sealed Beam headlamps use Box No. 61540-1 Headlamp Kit 9-Pin and 63422 Harness Kit 2B/2D 9-Pin -A with Park or Turn Harness Kit.

MVP® Blade

- For DUAL replaceable bulb type HB-5 headlamps use Box No. 66640-1 Headlamp Kit 12-Pin MVP and 63421 Plug-in Harness HB-5 -A with Park or Turn Harness Kit.
- For 2B Sealed Beam headlamps use Box No. 66640-1 Headlamp Kit 12-Pin and 63423 Plug-in Harness 2B/2D -A with Park or Turn Harness Kit.

Any of Above Vehicles With:

- **Cab marker lights** require the use of a second 61185 Park or Turn Harness Kit installed in the cab marker/park light circuit. (Second 61185 sold separately.)
- **DRL's** require use of 61584 DRL Kit on headlamp relays. (61584 sold separately.)
- Park or turn harness to be installed in plow left and right turn signal circuits.

UNDER HOOD INSTALLATION

VEHICLE HARNESS AND MOTOR RELAY

Except as noted, parts to be installed are found in hydraulics box.

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

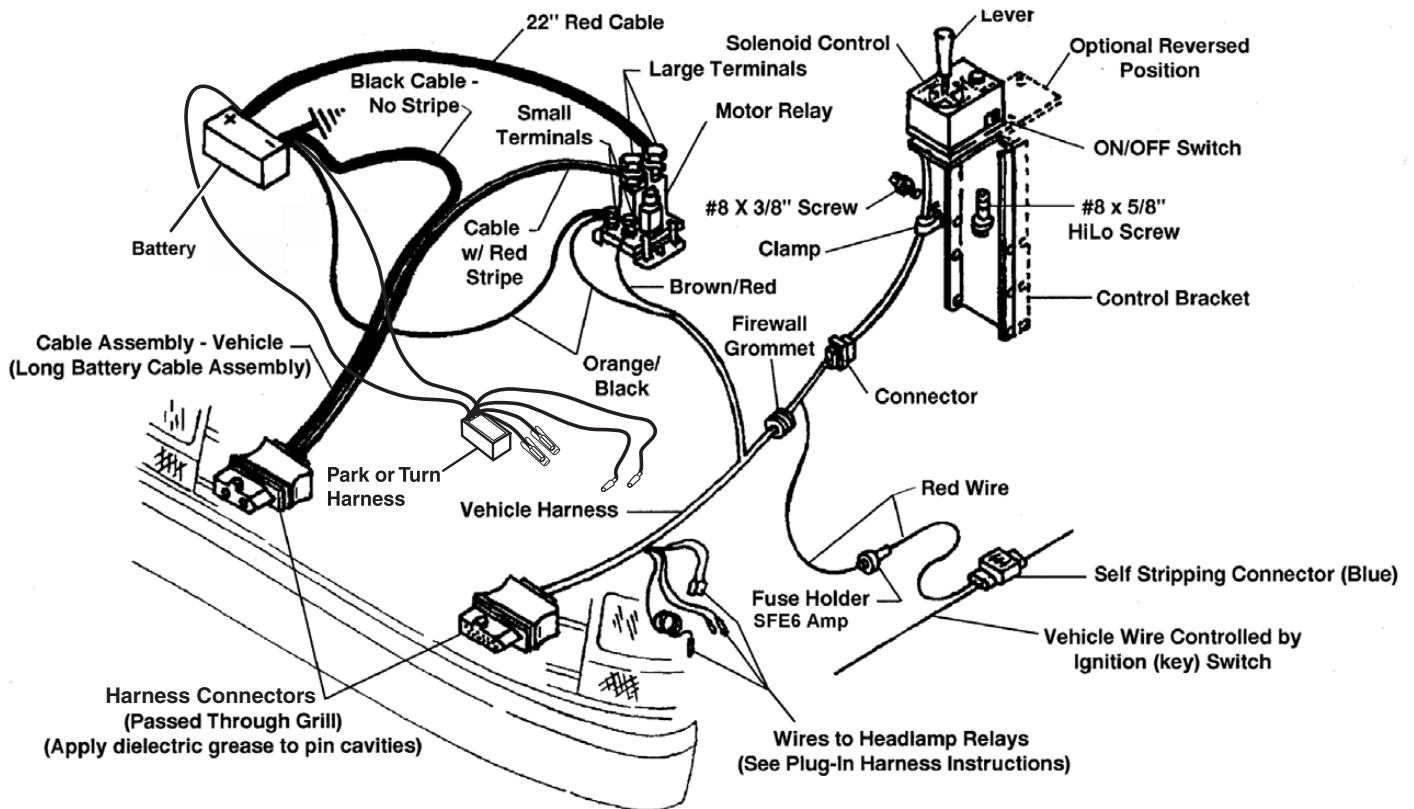
NOTE: During electrical installation, the LONG BATTERY GROUND CABLE (no stripe) MUST BE GROUNDED TO THE NEGATIVE BATTERY TERMINAL.

Plow may be removed from vehicle for installation of electrical components.

1. Identify wires for the parking lamp on the driver-side and the turn signals on both sides of the vehicle. Attach a black self-stripping bullet receptacle connector (found in harness kit) to each of these three wires.
2. Remove NEGATIVE battery cable from battery.

(Continued on next page)

HARNESS, SOLENOID CONTROL & MOTOR RELAY INSTALLATION DIAGRAM



UNDER HOOD INSTALLATION

VEHICLE HARNESS AND MOTOR RELAY

- Find a location for the motor relay where it will be protected from road splash and within 18" of the vehicle primary battery. (See **Photo 1**.)

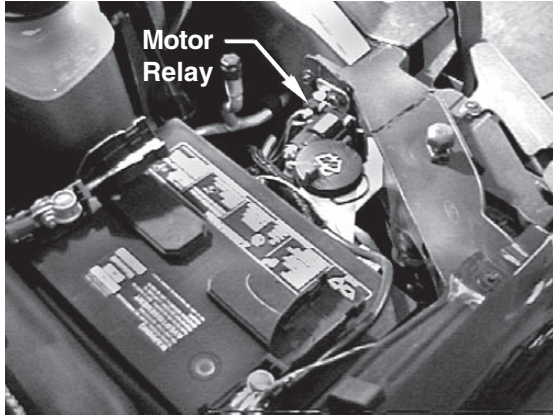


Photo 1

NOTE: Motor relay terminals must be up or horizontal.

- Using the motor relay base as a template, drill two 9/32" holes, and mount motor relay to holes using 1/4" x 3/4" bolts, flat washers and lock nuts.

Optional Method: Use a 3/8" drill bit to enlarge slots in relay and use existing 3/8" body bolt to attach as shown in **Photo 1**.

- Route 22" battery cable between a large motor relay terminal and the POSITIVE battery terminal taking care to avoid sharp edges and hot or moving parts.

- Position the insulated end (box) of the park or turn harness (found in harness kit) in the area behind the driver side headlamp. Route the red wire with the fuse holder to either the large terminal on the motor relay with the 22" battery cable on it, or to the clamp of the positive post of the battery.

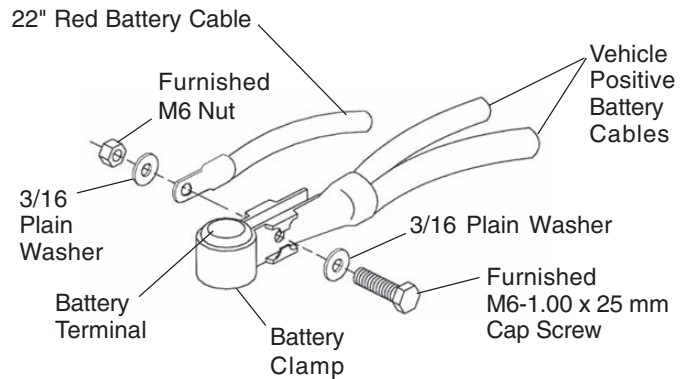
Route the park or turn harness black wire with ring terminal to the negative post clamp of the battery.

Do not connect at this time.

- Attach cable to motor relay terminal with a lock washer and a 5/16"-24 jam nut. Attach cable to battery POSITIVE terminal with hardware provided. **(See diagram and instructions below.)**

On vehicles equipped with diesel engines attach using existing clamp hardware.

NOTE: The original battery terminal clamp screw is not long enough to secure the hydraulic unit 22" red battery cable. Remove the original cap screw and replace it with the blue chromate finished items shown below.



| Part No. | Qty. | Description |
|----------|------|-----------------------------|
| 91055 | 2 | CS HX M6X1.00X25 G8.8 DCB |
| 91056 | 2 | M6-1.00 HX NUT |
| 91119 | 4 | WASHER FL 3/16 TY A WIDE ZP |

| Abbreviations | | | |
|---------------|-----------------|----|------------|
| CS | Cap Screw | HX | Hex |
| DCB | Dichromate-Blue | M | Metric |
| FL | Flat | TY | Type |
| G | Grade | ZP | Zinc Plate |

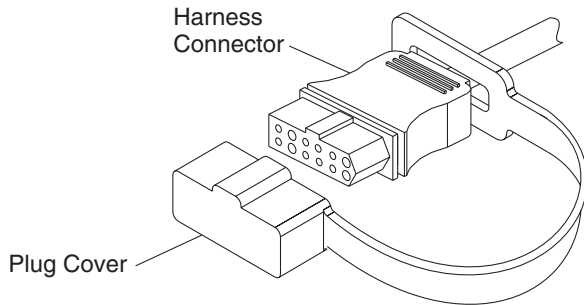
(Continued on next page)

UNDER HOOD INSTALLATION

VEHICLE HARNESS AND MOTOR RELAY

(Continued)

- Stretch rectangular openings of plug cover straps (found in harness kit) over harness connector ends of long battery cable assembly (found in hydraulics box) and vehicle harness (found in harness kit). Place plug covers over harness ends.



- Find a location in the vehicle grill on the battery side for mounting the battery cable connector. The best location is at least 10-1/2" from the center of the grill and at a convenient height for connecting the plug plugs.
- Allow connector of each harness to hang out in front of grill or in bumper openings. Allow enough cable so it is easy to mate and remove connector. Secure with long cable ties (found in mount box).
- Route battery cable through the grill or bumper at the selected location and through or around the radiator bulkhead to motor relay taking care to avoiding sharp edges, and hot or moving parts.
- Attach cable with red stripe to the unused large terminal on the motor relay, and secure it with a lock washer and 5/16"-24 jam nut.
- Route cable without a stripe directly to the NEGATIVE battery terminal (carefully separate the two cables as needed to reach the battery ground connection). **DO NOT reconnect the battery ground at this time.**
- Find a grill/bumper location on driver-side for the vehicle harness (similar position to battery cable mount). See Steps 9 and 10 above for how to install. Route vehicle harness through grill or bumper and around, or through radiator bulkhead (drill 5/8" hole if needed) into engine compartment.
- Route the wires that break out of the vehicle harness to the area behind the driver-side headlamp. Route rest of harness to the firewall. Drill a 5/8" hole through the firewall in a convenient location away from hot or moving engine parts.
- All vehicles with DRL's - Insert fuse holder on pink wire of DRL Adapter Kit (P.N. 61584) through firewall first. Route end of pink wire with receptacles to area of driver-side headlamp.
- Feed vehicle harness fuse holder through hole and then feed the plastic connector and harness through to the cab. Disassembly of the fuse holder may make it easier to pass through 5/8" hole.
- Route brown/red and orange/black wire loom to motor relay.
- Attach the brown/red and orange/black wires small ring terminals to separate small terminals on motor relay using a lock washer and #10-32 nut for each connection.
- Route the 24" long orange/black wire with 3/8" ring terminal to battery NEGATIVE post. **DO NOT attach wire to battery at this time.**

For MVP® Blade Installation, Continue on Page 9.

- Inside the cab, route vehicle harness connector to solenoid or CabCommand control and couple the connectors together.
- Reconnect vehicle ground cable to NEGATIVE battery along with the all black plow battery cable, orange/black wire and the small black park or turn harness wire.

(Continued on next page)

UNDER HOOD INSTALLATION

VEHICLE HARNESS AND MOTOR RELAY

(Continued)

23. In the right side of the panel opening below the steering column...

[1999 to 2001 - Locate the hot in run, fuse no. 27 (10 amp) light blue/pink blunt cut wire.

2002 - Locate the hot in run 10 amp fused white/blue blunt cut wire above the diagnostic connector.]

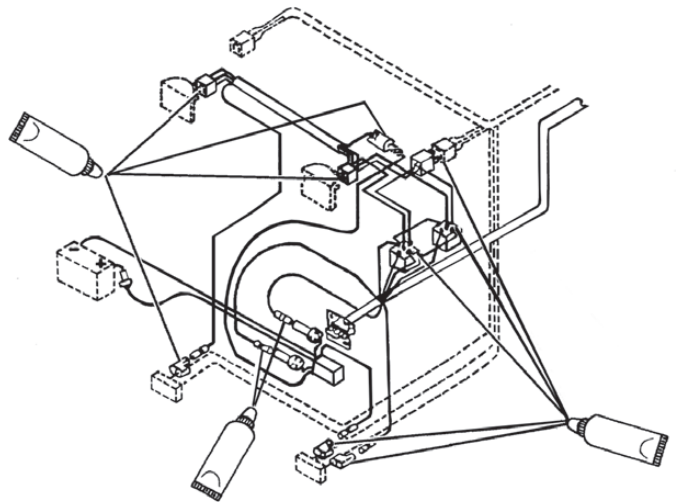
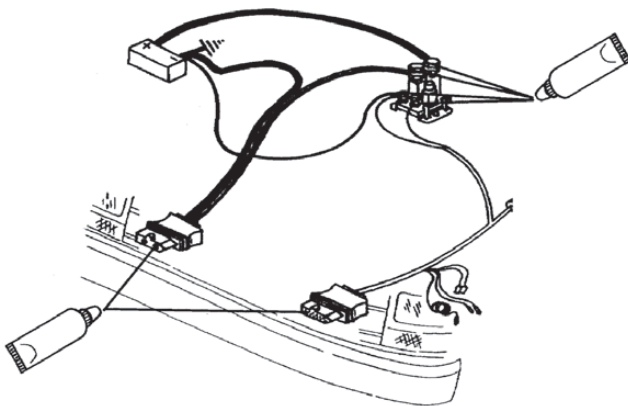
...route the vehicle harness SFE-6 fuse holder red wire to this location and trim off any excess length of wire (keep fuse holder in system). If used, DRL pink wire requires 0.4 amps.

24. Open blue self stripping connector and place the end of the red wire against the inner groove stop (end of wire must not extend from the closed connector), and the accessory wire in the outer groove. Close connector over the wires using a pliers and snap the locking tab in place. Repeat with DRL pink wire.

DIELECTRIC GREASE (1/4 oz)
Part Number 56099



*A larger tube (2 oz) of dielectric grease is available.
Part Number for larger tube is 49326.*

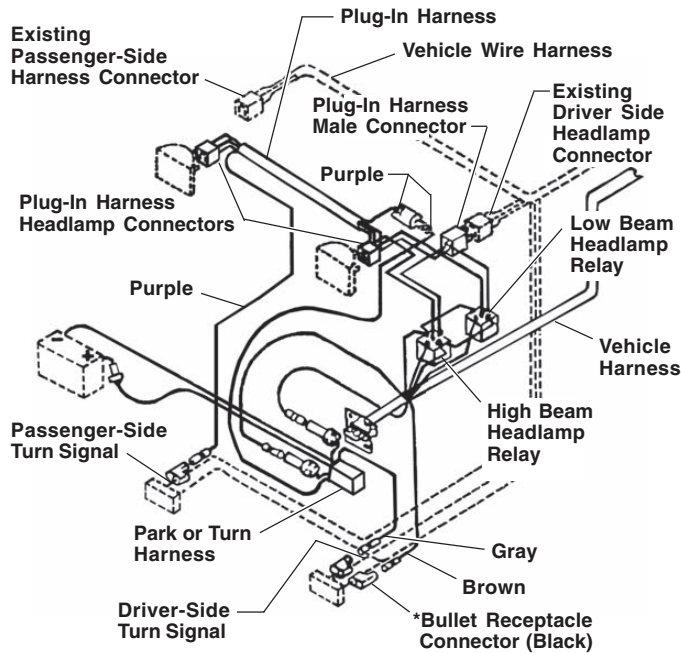


UNDER HOOD INSTALLATION

PLUG-IN HARNESS AND HEADLAMP RELAY INSTALLATION

(Add 61185 relay kit on vehicles with cab marker lights.)

VEHICLE HEADLAMP WIRING DIAGRAM (TYPE A)



NOTE: All installations of this mount shall have the Park or Turn Harness Kit installed in the plow lights left and right turn signal circuit.

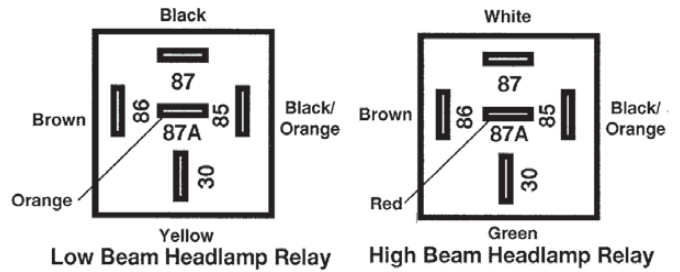
1. In the engine compartment behind the driver-side headlamp, make the following wire connections (read chart left to right...from - to):

| Vehicle Harness | Park or Turn Harness | Plug-In Harness | Black Bullet Receptacles* |
|-------------------------|---------------------------|---------------------------|--------------------------------|
| From Brown Wire Bullet | | | To Park Lamp Wire Receptacle** |
| From Gray Wire Bullet | To Gray Wire Receptacle | | |
| From Purple Wire Bullet | To Purple Wire Receptacle | | |
| | From Gray Wire Bullet | | To Turn Wire Receptacle |
| | From Purple Wire Bullet | To Purple Wire Receptacle | |

*Installed Step 1 previous section

**Vehicle with cab marker lights: Install a second 61185 park or turn harness in park lamp circuit. Follow kit instructions for Cab Marker/ Park Lamp installation. (Second 61185 kit sold separately.)

HEADLAMP RELAY WIRING DIAGRAM (TYPE A)



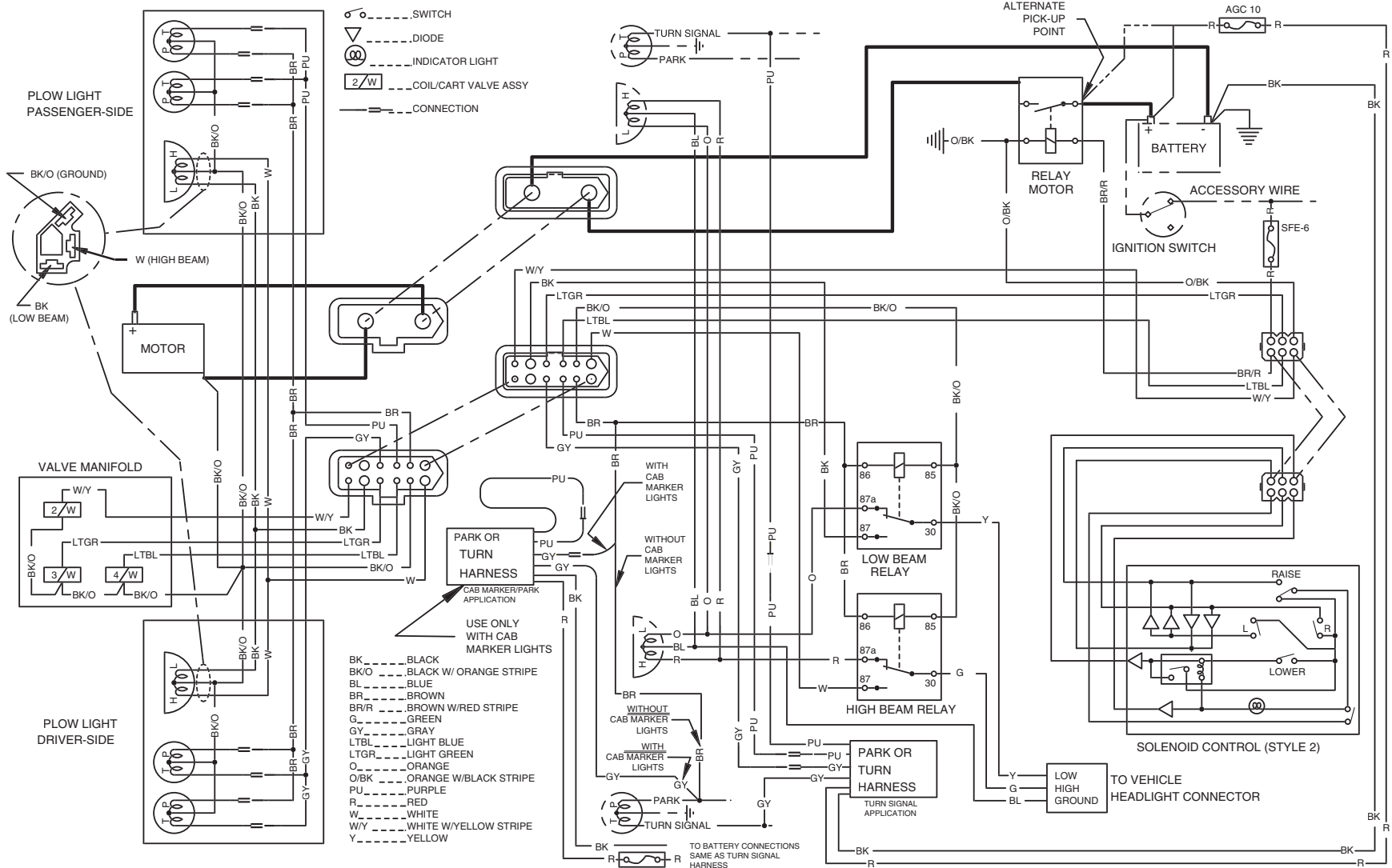
2. At the vehicle driver-side headlamp, remove the connector from the headlamp and couple matching connector with plug-in harness 3-wire male plug (plug-in harness found in harness kit). Attach plug-in harness headlamp connector to headlamp terminals.
3. Route other end of plug-in harness along radiator bulkhead or over radiator shroud to passenger-side headlamp. Remove headlamp connector and secure connector with a cable tie. Attach plug-in harness headlamp connector to headlamp terminals.
4. On the passenger-side, insert purple wire bullet from plug-in harness into vehicle turn signal black bullet connector installed in step one of the previous section.
5. At driver-side headlamp, connect vehicle and plug-in harness wires with receptacles to the two headlamp relays (found in harness kit) as shown in the above diagram. (If vehicle has DRLs, replace brown wires with pink wire from DRL kit. Brown wires from vehicle harness are not used in DRL installations.)
6. Place grommet around vehicle harness and insert into firewall hole (also put a grommet in the radiator bulkhead hole if one was drilled). Use cable ties (found in harness kit) to secure harnesses, relays and wires away from sharp edges, and hot or moving engine parts and to prevent accidental grounding of connections.
7. Lubricate terminal cavities of both harness connectors with dielectric grease.

Please refer to AQ&L assembly instructions for additional information on operational tests and adjustments.



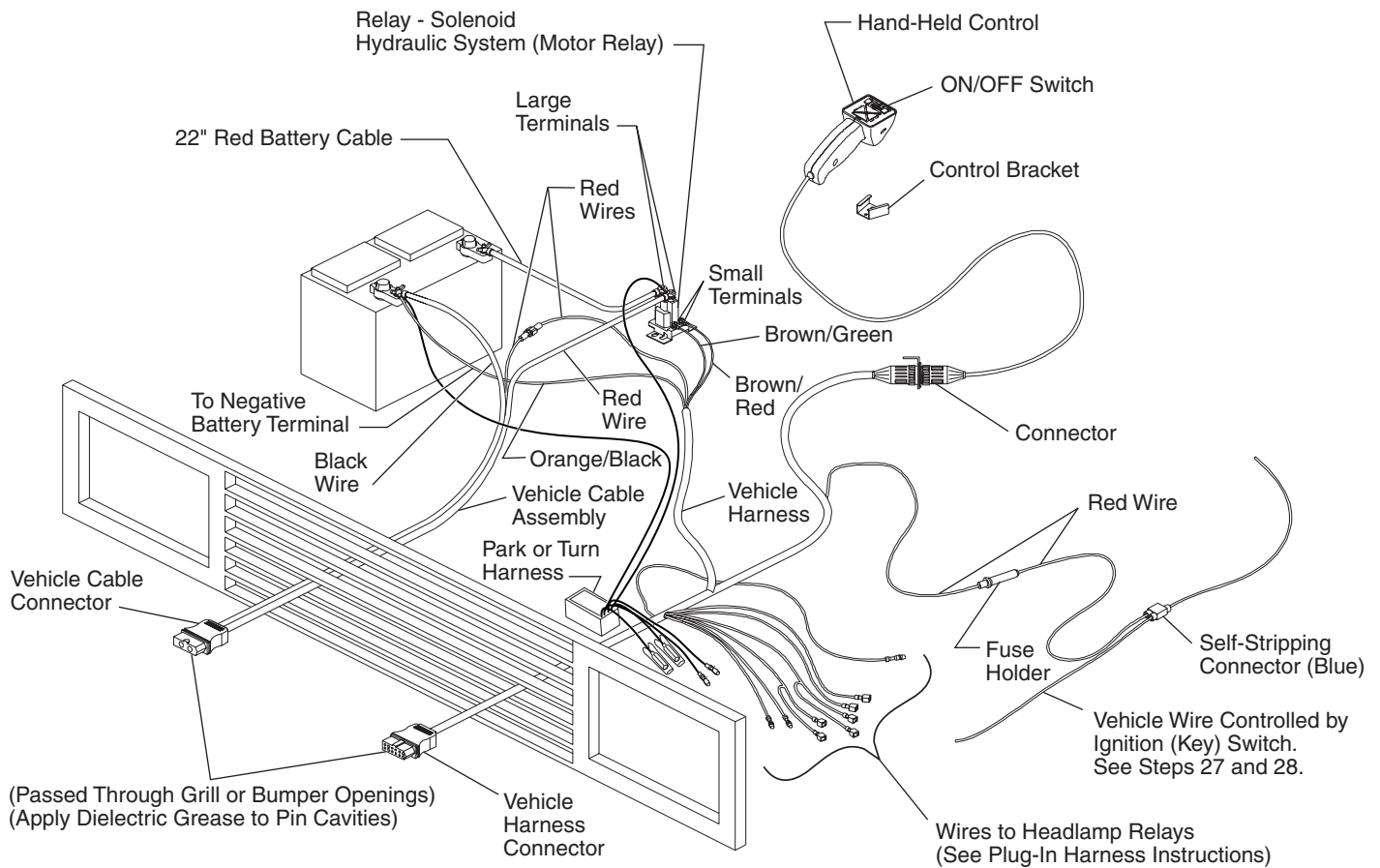
Wiring Diagram Harness Type - A W/ 9 Pin Headlamp Kit & SAE Headlamp Types 2B/2D HB-1 HB-5

WIRING DIAGRAM



MVP® IN-CAB INSTALLATION INSTRUCTIONS

VEHICLE HARNESS AND VEHICLE CABLE INSTALLATION

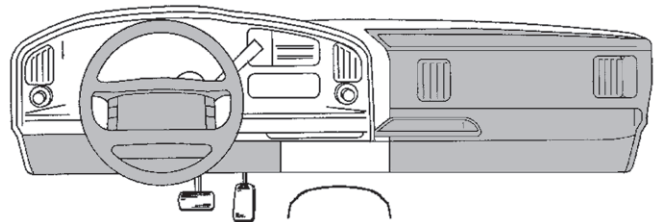


(Continued from page 5.)

21. Remove the packing material from the end of the harness near the fuse. This will expose 10 socket-type terminals. Push the fuse holder through the firewall hole and then carefully feed the end of the harness with the 10 terminals through to the cab.
22. Locate a connector bracket mounting position under the dash where it will not interfere with other equipment. Mount the connector bracket using #8 x 5/8" tapping screws and washers.

CAUTION

Do not alter, modify, or install additional components in shaded areas of the illustration below. Failure to comply may cause damage to the product or property.



(Continued on next page.)

MVP® IN-CAB INSTALLATION INSTRUCTIONS

VEHICLE HARNESS AND VEHICLE CABLE INSTALLATION (Continued)

23. Feed the vehicle harness through the bracket.
24. Insert each of the 10 socket-type terminals into the connector housing. **(See Figure Below.)**

Refer to the Table 1 below for under-dash vehicle harness connector pin assignments.

NOTE: A “snap” will be felt as the terminals are successfully inserted. An extraction tool is provided for removal of pin terminals if necessary.

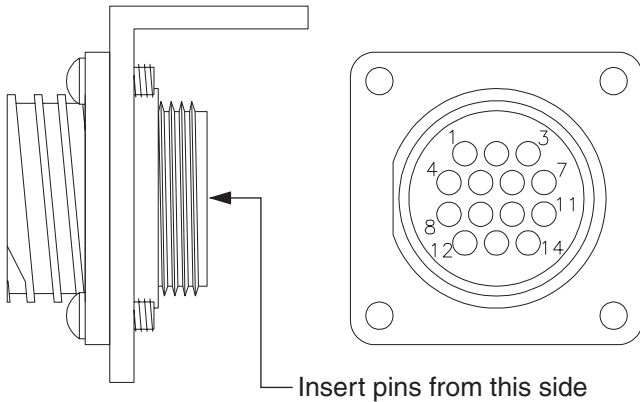


Table 1

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

25. Secure the connector to the bracket with the provided #6-32 x 1/4" tapping screws and lock washers.

26. In the right side of the panel opening below the steering column...

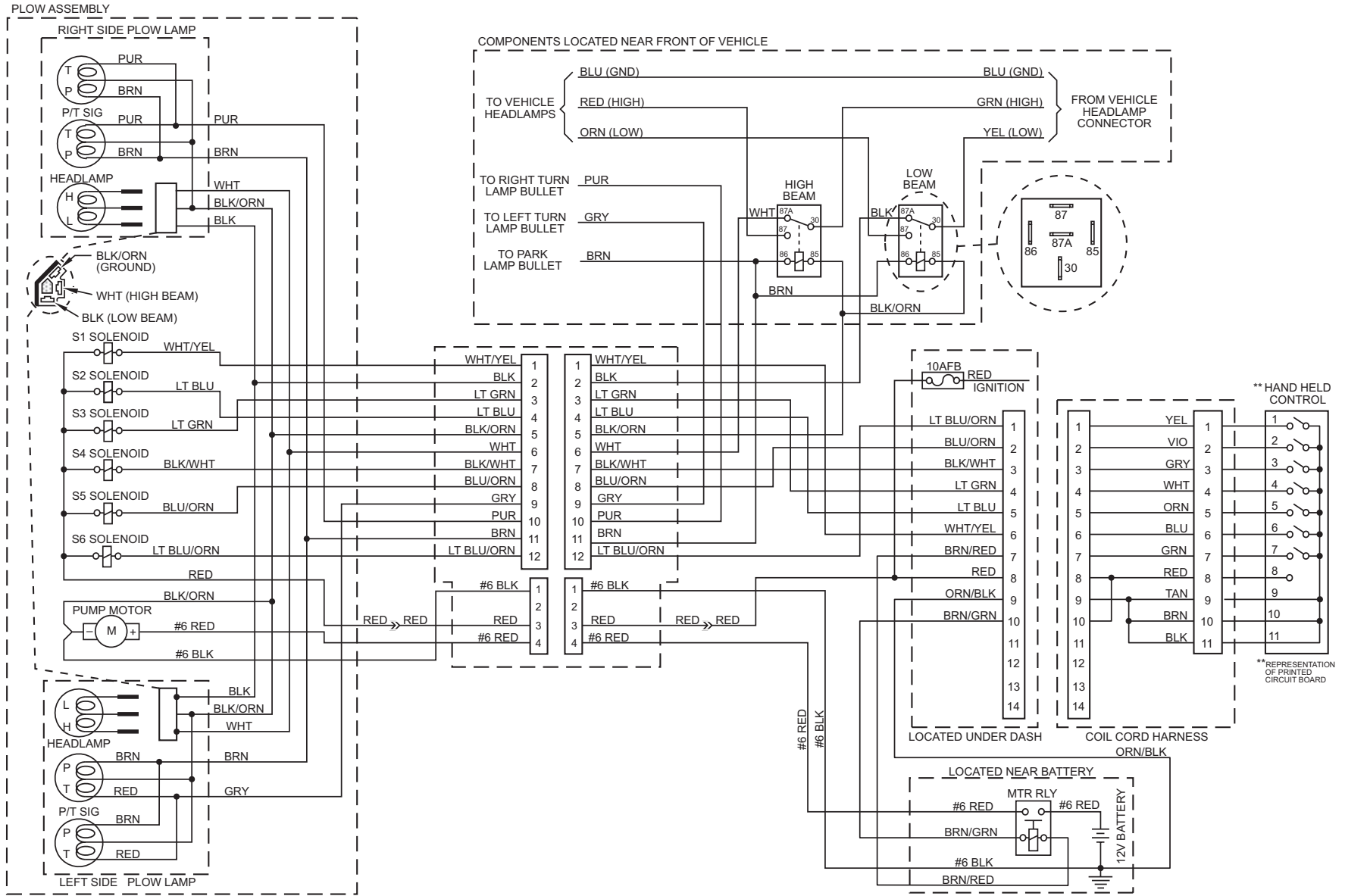
[1999 to 2001 - Locate the hot in run, fuse no. 27 (10 amp) light blue/pink blunt cut wire.

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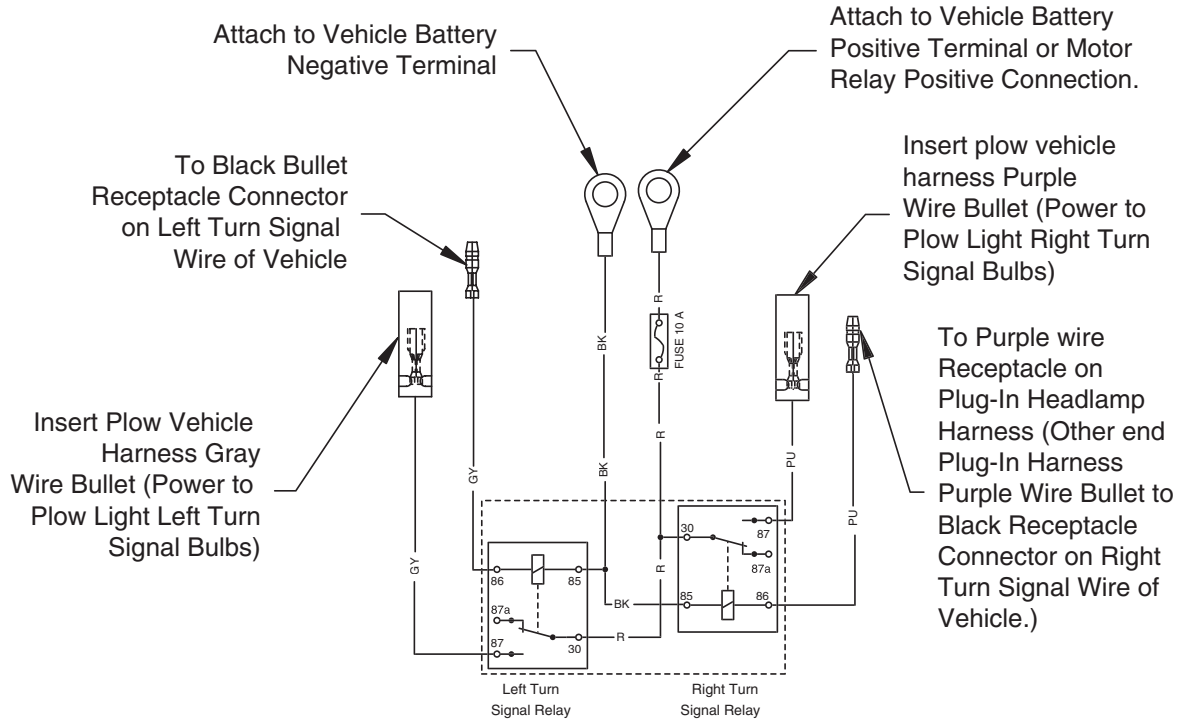
...route the vehicle harness 10 amp fuse holder red wire to this location and trim off any excess length of wire (keep fuse holder in system). If used, DRL pink wire requires 0.4 amps.

27. Open blue, self stripping connector and place the end of the red wire against the inner groove stop (end of wire must not extend from the connector when it is closed), and the accessory wire in the outer groove. Close the connector over the wires using a pliers and snap the locking tab in place.
28. Under hood near motor relay, connect the female spade terminal on the small red wire from the vehicle cable to the male spade terminal on the red wire from the vehicle harness.
29. Reconnect vehicle ground cable to NEGATIVE battery along with the all black plow battery cable, orange/black wire, and the small black park or turn harness wire.
30. Install plug-in harness, park or turn harness, and relays as shown on page 7 of these instructions.

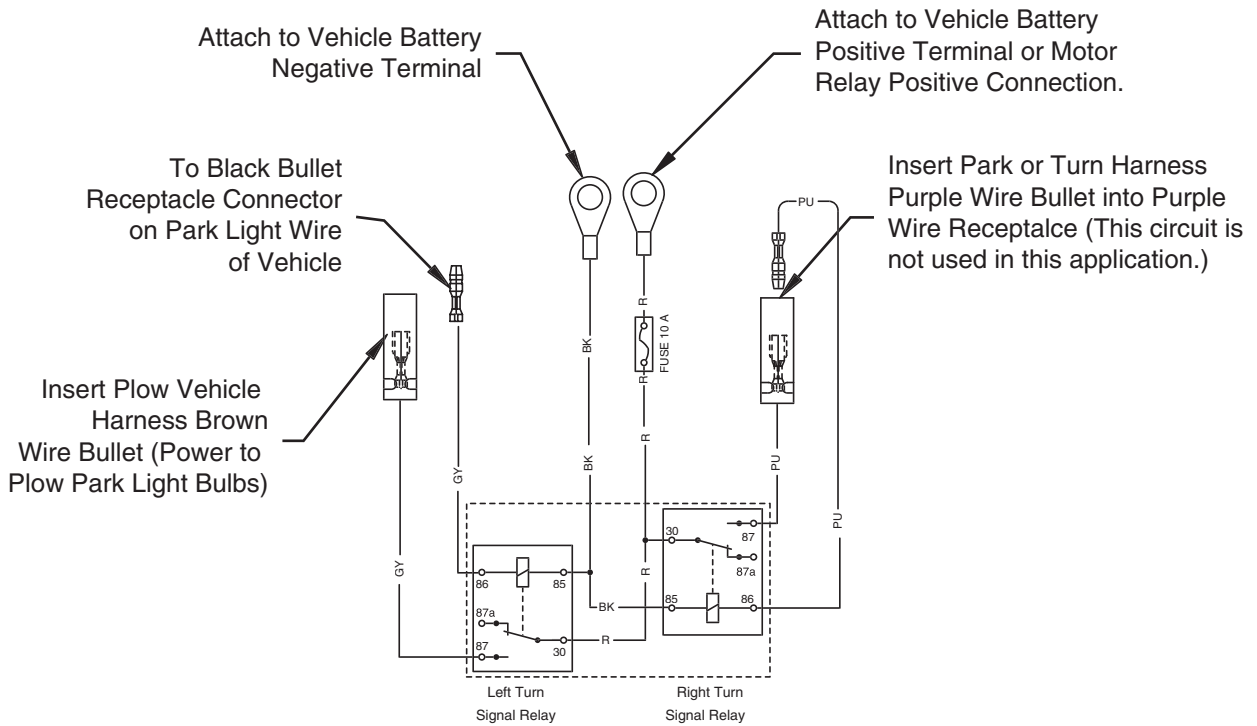
Electrical Schematic - MVP®



WIRING DIAGRAM - 61185 Park or Turn Harness Kit



Turn Signal Application



Cab Marker / Park Lamps Application



WESTERN PRODUCTS
P.O. BOX 245038
MILWAUKEE, WI 53224-9538

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