



Dodge Ram 1500 4x4 2002 & Later Dodge Ram 2500/3500 2003 & Later Vehicle Specific Electrical Installation Instructions

Model No. 959 and Model No. 969

Straight Blades (Model 959 and 969)

Hydraulics Box No. 56588
All Years and Models
Harness Kit No. 64053
Headlamp Kit No. 64078

MVP® Blades (Model 969)

Hydraulics Box No. 56777
Harness Kit 64054
Headlamp Kit No. 64078

▲ 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 torque chart. Use standard methods and practices when attaching snowplow including 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.			

UNDER HOOD INSTALLATION

HARNESS KIT SELECTION

Straight Blade

For DUAL replaceable bulb type HB-5 headlamps use the following boxes:

2003 and Later - Ram 2500/3500

- Box No. 64078 Headlamp Kit 12-Pin (White) and 64053 Harness Kit HB-5 12-Pin -G with Park or Turn Harness

2002 and Later - Ram 1500

- Box No. 64078 Headlamp Kit 12-Pin (White) and 64053 Harness Kit HB-5 12-Pin -G with Park or Turn Harness

or

- Box No. 61540-1 Headlamp Kit 9-Pin and 63427 Harness Kit HB-5 9-Pin -G with Park or Turn Kit

MVP® Blade (Ram 2500/3500)

For DUAL replaceable bulb type HB-5 headlamps use Box No. 64078 Headlamp Kit 12-Pin (White) and 64054 Harness Kit HB-5 MVP 12-Pin -G with Park or Turn Kit.

Any Vehicle:

- Install Park or Turn Harness in the plow left and right turn signal circuits.
- DRL's require use of 61584 DRL Kit on headlamp relays. (61584 sold separately.)

Headlamp Kits 64078 and 61550-1 are assembled with the same housings and harnesses, but have different internal wiring. See page 15 for wiring details of these two kits.

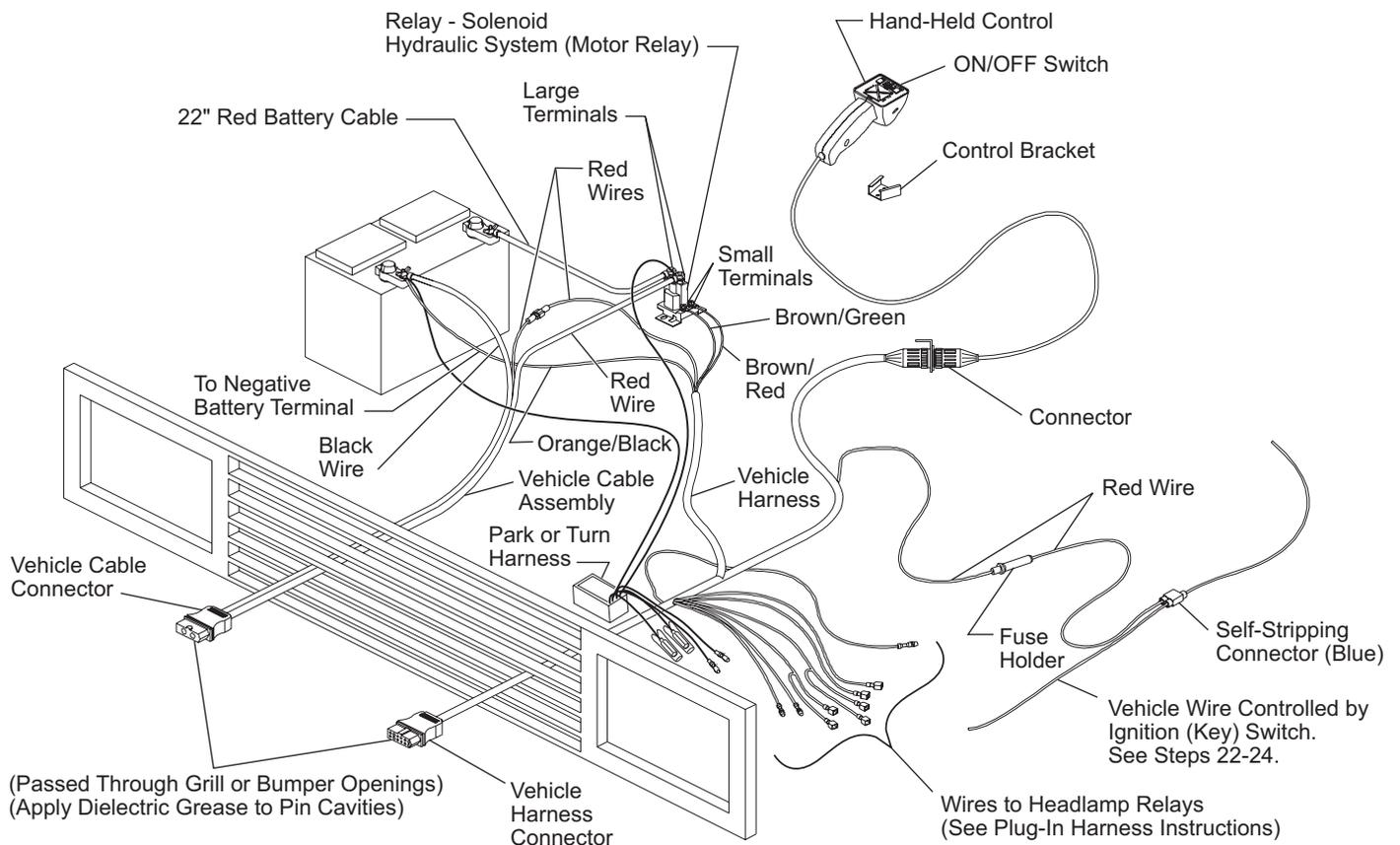
VEHICLE HARNESS AND MOTOR RELAY

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

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

(Continued on next page)

HARNESS, SOLENOID CONTROL & MOTOR RELAY INSTALLATION DIAGRAM



UNDER HOOD INSTALLATION

VEHICLE HARNESS AND MOTOR RELAY

(Continued)

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

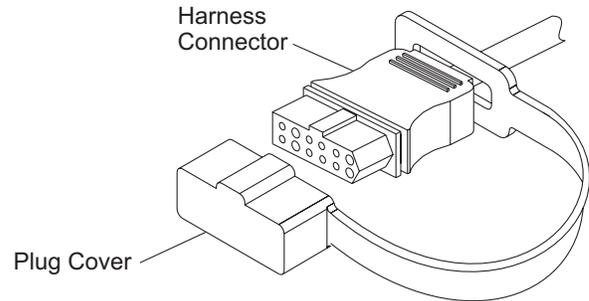
NOTE: During electrical installation, the LONG BATTERY GROUND CABLE (no stripe) MUST BE GROUNDED TO THE NEGATIVE BATTERY TERMINAL.

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.
3. Find a location for the motor relay where it will be protected from road splash and within 18" of the vehicle primary battery.

NOTE: Motor relay terminals must be up or horizontal.

4. 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.
5. 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.
6. 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.
7. Attach cable to motor relay terminal with a lock washer and a 5/16"-24 jam nut. Attach cable to battery POSITIVE terminal fastener.

8. 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.



9. Find a location in the vehicle grill/bumper area 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 plow plugs.
10. 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.
11. 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 avoid sharp edges, and hot or moving parts.
12. 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.
13. 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.**

For MVP® installation, continue with In-Cab Installation, step 14, starting on page 10.

For straight blade installation, continue with step 14 on the next page.

(Continued on next page)

UNDER HOOD INSTALLATION

VEHICLE HARNESS AND MOTOR RELAY

(Continued)

For Straight Blades Only

14. Find a grill/bumper area 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.
15. 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.
16. 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.
17. Route brown/red and orange/black wire loom to motor relay.
18. 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.
19. 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.**
20. 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.
21. Inside the cab, route vehicle harness connector to solenoid or CabCommand control and couple the connectors together.
22. Remove the knee panel below the steering column. Next, remove the bezel (heater control and map pocket are part of the bezel) from around the radio and air vents by removing the screw in the lower right corner. Gently pull out on the hook below the screw to release the spring clips that retain the bezel. There are two spring clips at the top (either side of the radio), two spring clips in the middle (either side of the heater control) and six clips along the bottom. Hold down the release tabs to remove the four connectors from the back of the bezel for easy access to the cigar lighter wires.
23. Route the plow vehicle harness red wire with fuse holder to the opening with the cigar lighter wires in it. Route carefully to avoid sharp edges which can cut the wire insulation. Leave enough wire so the fuse holder can be serviced from the opening under the steering column. Trim excess red wire and join the plow vehicle harness fuse holder read wire to the red wire for the cigar lighter.
24. Open blue self stripping connector and place the end of the fuse holder red wire against the inner groove stop (end of wire must not extend from the closed connector, and the cigar lighter 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.

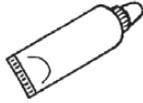
Operating the plow control may require up to 7 amps of current. Using the plow control, while the cigar lighter or other large power consumer plugged into the lighter opening is in use, may "blow" the fuse due to the large current draw. Replace a blown fuse with the same size fuse (cigar lighter circuit is 20 amps). Installing an oversized fuse may allow the wires to overheat resulting in a damaged vehicle wiring harness.
25. Reconnect vehicle ground cable to NEGATIVE battery terminal along with the all black plow battery cable, orange/black wire, and the small black park or turn harness wire.

(Continued on next page)

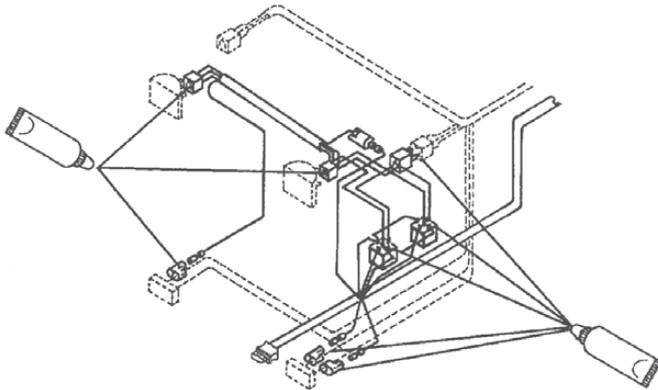
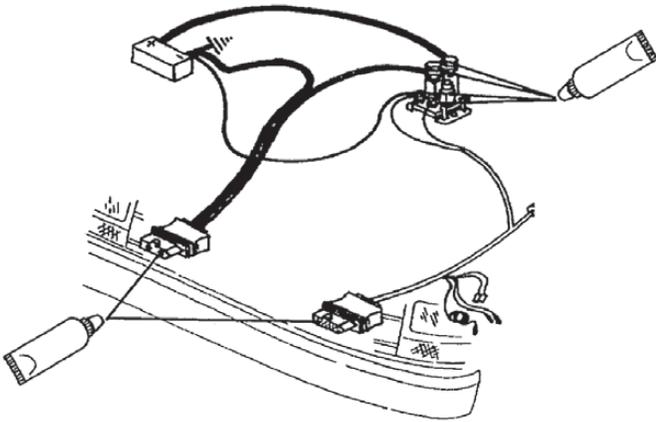
UNDER HOOD INSTALLATION

VEHICLE HARNESS AND MOTOR RELAY (Continued)

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.

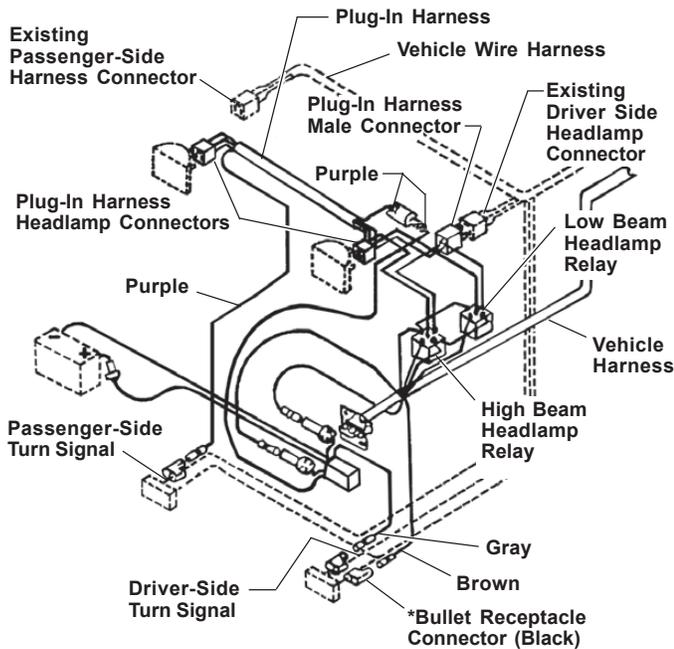


UNDER HOOD INSTALLATION

PLUG-IN HARNESS AND HEADLAMP RELAY INSTALLATION

VEHICLE HEADLAMP WIRING DIAGRAM (TYPE G)

Add 61584 DRL Kit to vehicles with day-time running lights



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.

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

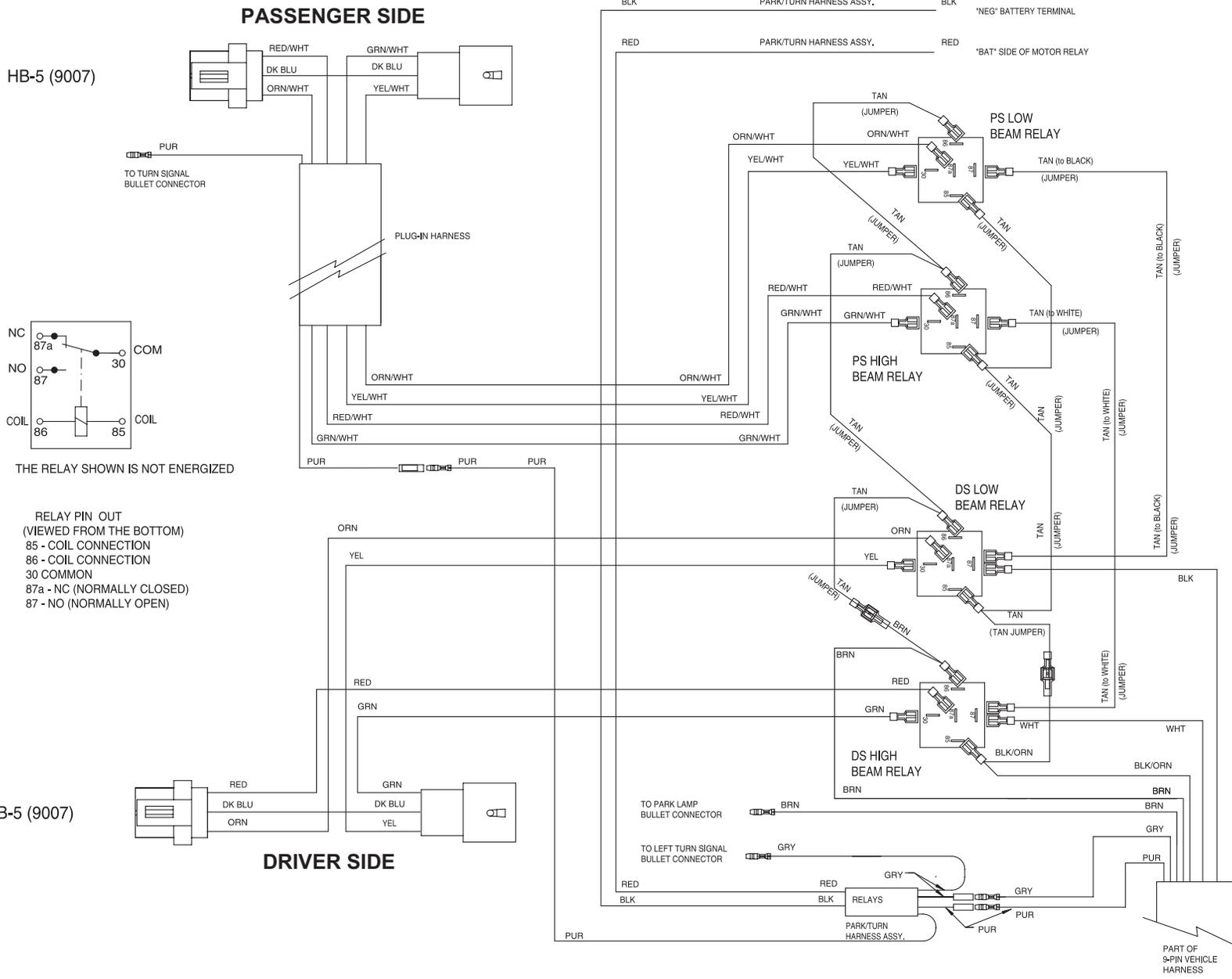
Vehicle Harness	Park or Turn Harness	Plug-In Harness	Black Bullet Receptacles*
From Brown Wire Bullet			To Park Lamp Wire Receptacle
From Gray Wire Bullet	To Gray Wire Receptacle		
	From Gray Wire Bullet		To DS Turn Wire Receptacle
From Purple Wire Bullet	To Purple Wire Receptacle		
	From Purple Wire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

*Installed Step 1 previous section

- 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.
- Route other end of plug-in harness along radiator bulkhead or over radiator shroud to passenger-side headlamp. Remove headlamp connector and couple matching connector with plug-in harness 3-wire male plug. Attach plug-in harness headlamp connector to headlamp terminals.
- On the passenger-side, insert purple wire bullet from plug-in harness into vehicle turn signal black bullet connector installed in Step 1 of the previous section.
- At driver-side headlamp, connect vehicle and plug-in harness wires with receptacles to the four headlamp relays (found in harness kit) as shown on diagrams page 7, 8 or 9. (If vehicle has DRL's, replace brown wires with pink wire from DRL kit. Brown wires from vehicle harness are not used in DRL installations.)
- 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, park or turn harness, and wires away from sharp edges, and hot or moving engine parts and to prevent accidental grounding of connections.
- Lubricate terminal cavities of both harness connectors with dielectric grease.

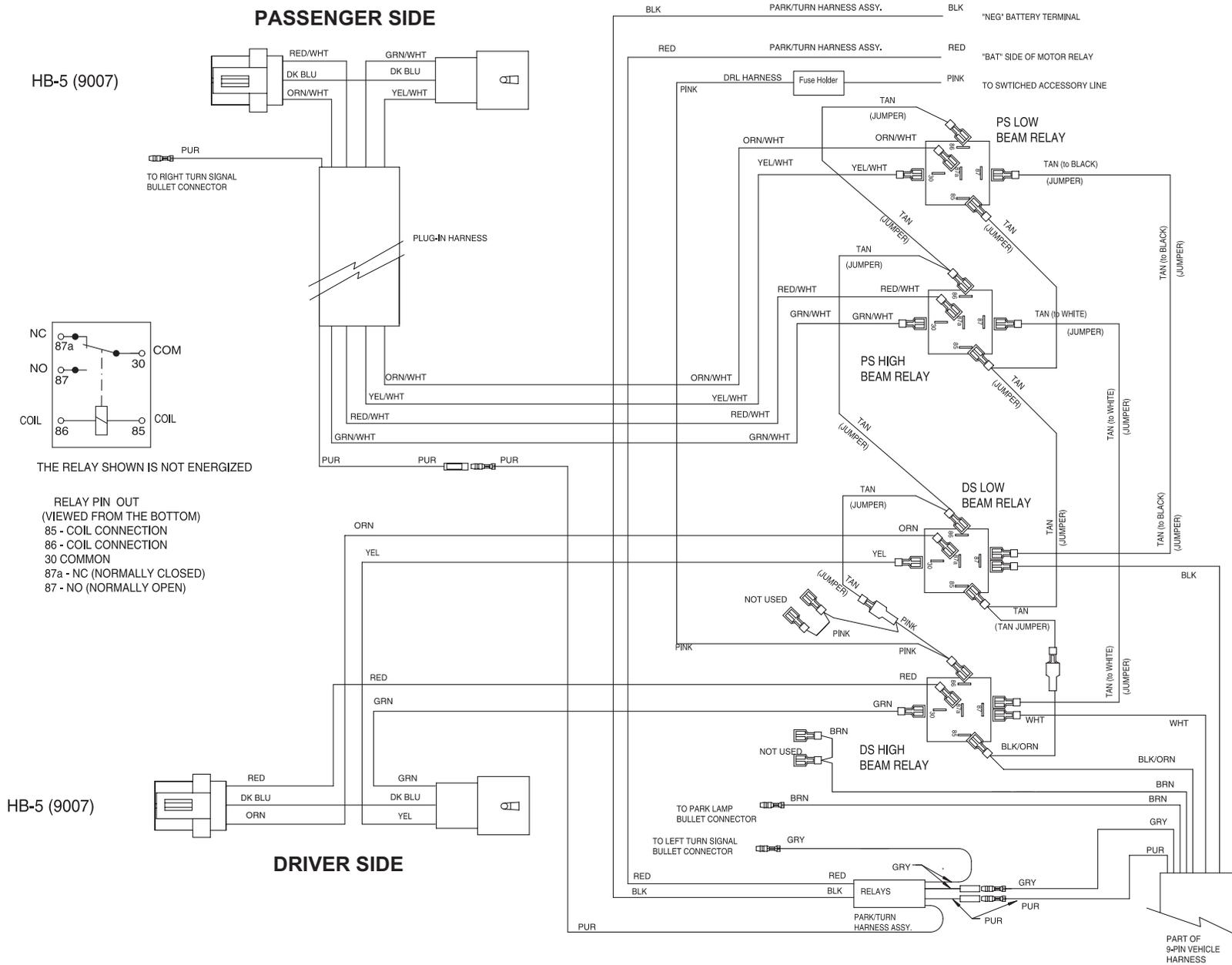
Please refer to AQ&L assembly instructions for additional information on operational tests and adjustments.

2002 RAM 1500 with DUAL HB-5 without DRL's 63427 HARNESS KIT with 61540-1 9-PIN HEADLAMPS



WIRING DIAGRAM

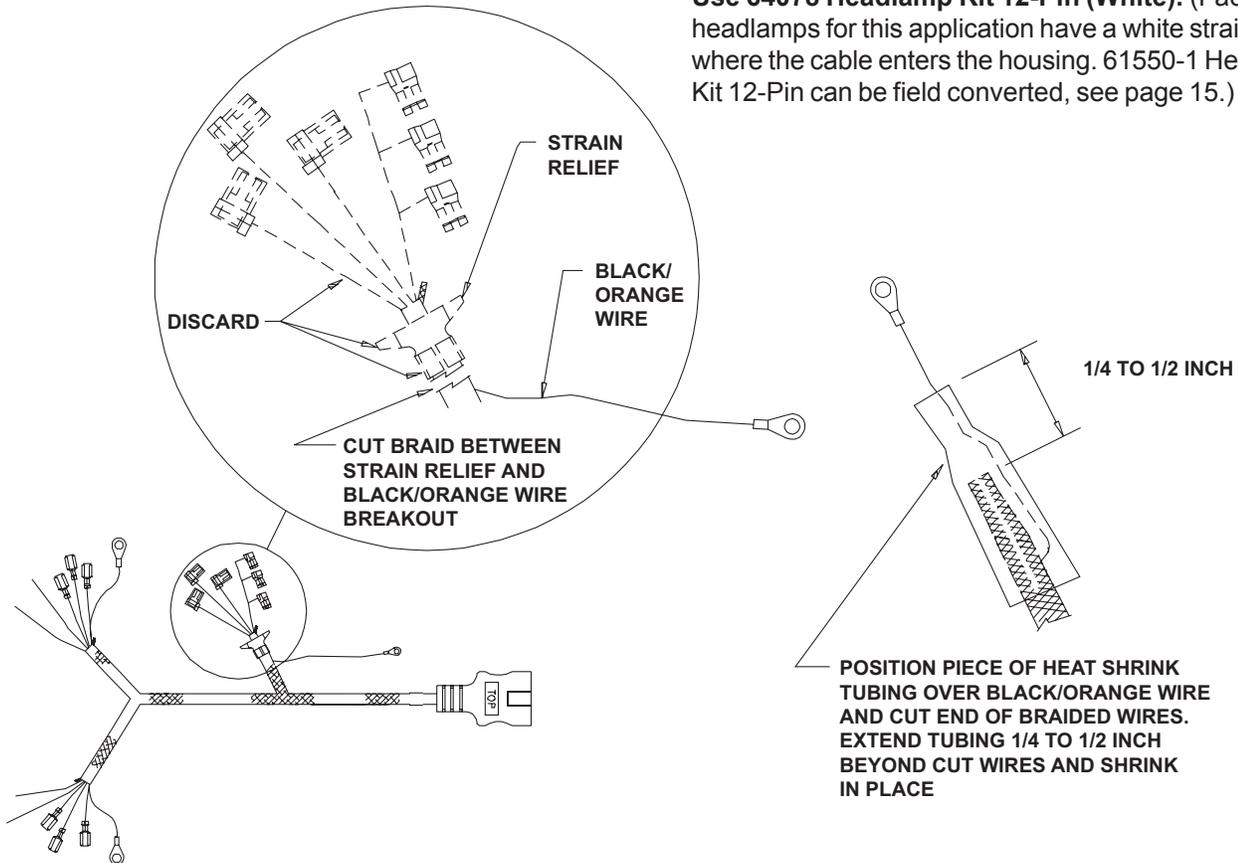
2002 RAM 1500 with DUAL HB-5-G with DRL's 63427 HARNESS KIT with 61540-1 9-PIN HEADLAMPS



2003 AND LATER INSTALLATIONS WITH 12-PIN (WHITE) HEADLAMP KIT 64078

Headlamp Kit Harness Modification

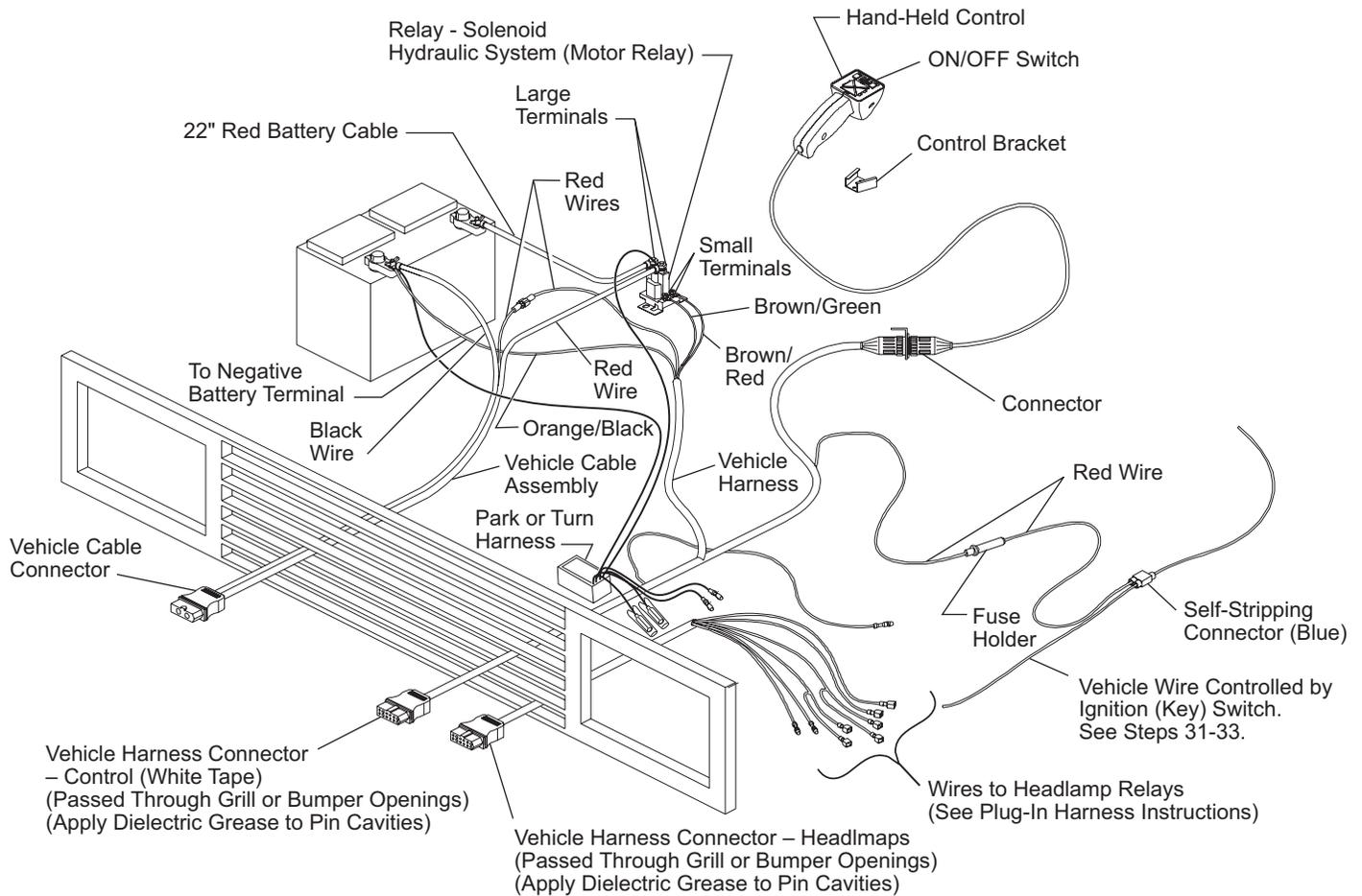
Use 64078 Headlamp Kit 12-Pin (White). (Factory wired headlamps for this application have a white strain relief where the cable enters the housing. 61550-1 Headlamp Kit 12-Pin can be field converted, see page 15.)



MVP® Installations Only

14. The 64078 12-pin (White) headlamp kit plow harness needs to be modified to remove the wires and terminals that normally connect to the hydraulic unit. Follow the diagram above for this modification.
15. The vehicle harness for the headlamps (no white tape on braid behind the mold) has been shortened and should be routed from the bumper/grill area to behind the driver-side headlamps for connection to the headlamp relays.
16. Attach wires from the modified vehicle harness and the plug-in harness as shown in the wiring diagram for your vehicle.
17. Attach the plow harness with the white tape on the mold provided in this kit to the hydraulic unit on the MVP® plow. Secure the harness to the side angle of the lift frame.

(Continued on next page.)



MVP® Installations Only (Continued)

18. On the vehicle, install the modified vehicle harness with the white tape on the braid routing it from the bumper/grill area to the cab and also to the motor relay.
19. 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.
20. 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.
21. Route brown/red and orange/black wire loom to motor relay.
22. 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.
23. 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.**
24. Secure both special vehicle harnesses behind the bumper/grill area.
25. Pass along to the owner/operator, that when attaching the plow to the vehicle, the two ends with the white tape are to be mated together. The two ends without the white tape are mated together.

(Continued on next page.)

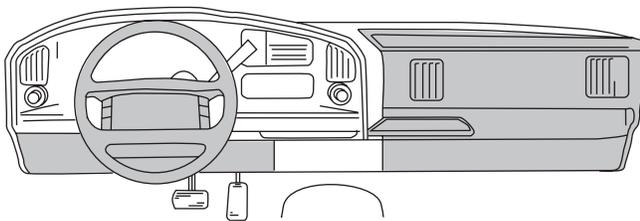
MVP® Installations Only (Continued)

NOTE: MVP installations - The operator will have three connector sets to mate and disconnect when mounting and removing the plow from the vehicle. There will be 12-pin connector set for the operation of the headlamps, turn signals and parking lights. A separate 12-pin connector set is used to control the hydraulic system. This kit contains a special plow and vehicle harness for the operation of the hydraulic system, and a second special vehicle harness for the lights. The connectors for the hydraulic system are identified by white marking tape at the molded ends.

26. 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.
27. Locate a connector bracket mounting position under the dash where it will not interfere with other equipment. Mount the connector bracket using #3 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.



28. Feed the vehicle harness through the bracket.
29. 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.

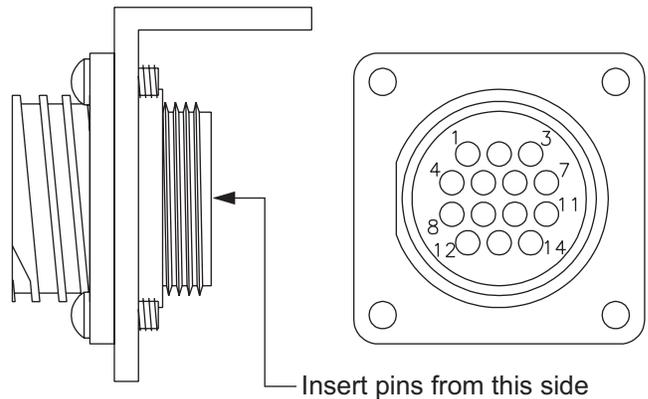


Table 1

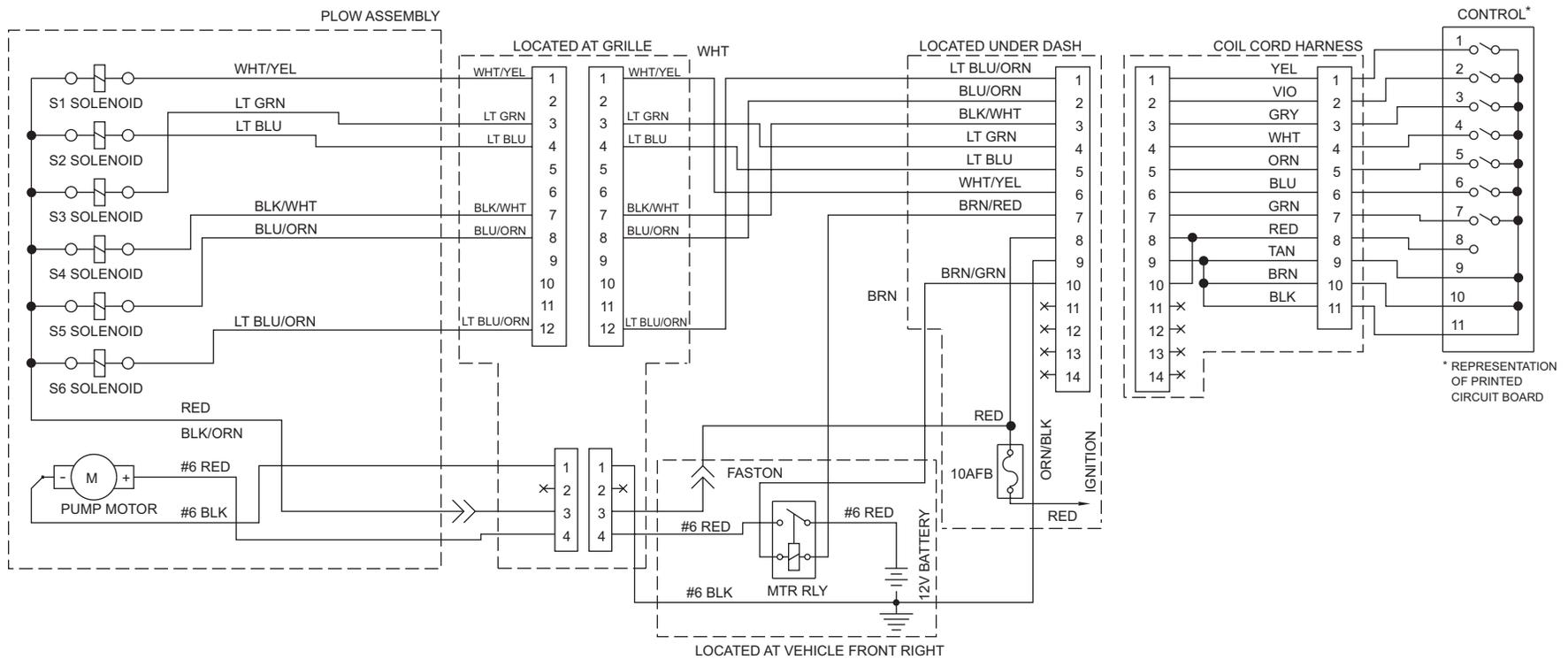
Wire Color	Pin No.
Light Blue With Orange Stripe	1
Blue With Orange Stripe	2
Black With White Stripe	3
Light Green	4
Light Blue	5
White With Yellow Stripe	6
Brown With Red Stripe	7
Red	8
Orange With Black Stripe	9
Brown With Green Stripe	10

(Continued on next page.)

MVP® Installations Only (Continued)

30. Secure the connector to the bracket with the provided #6-32 x 1/4" tapping screws and lock washers.
 31. Remove the knee panel below the steering column. Next, remove the bezel (heater control and map pocket are part of the bezel) from around the radio and air vents by removing the screw in the lower right corner. Gently pull out on the hook below the screw to release the spring clips that retain the bezel. There are two spring clips at the top (either side of the radio), two spring clips in the middle (either side of the heater control) and six clips along the bottom. Hold down the release tabs to remove the four connectors from the back of the bezel for easy access to the cigar lighter wires.
 32. Route the plow vehicle harness red wire with fuse holder to the opening with the cigar lighter wires in it. Route carefully to avoid sharp edges which can cut the wire insulation. Leave enough wire so the fuse holder can be serviced from the opening under the steering column. Trim excess red wire and join the plow vehicle harness fuse holder red wire to the red wire for the cigar lighter.
 33. Open the 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 into place.
- Operating the plow control may require up to 10 amps of current. Using the plow control, while the cigar lighter or other large power consumer plugged into the lighter opening is in use, may "blow" the fuse due to the large current draw. Replace a blown fuse with the same size fuse (cigar lighter circuit is 20 amps). Installing an oversized fuse may allow the wires to overheat resulting in a damaged vehicle wiring harness.
34. Install grommet around the harness at the firewall hole if drilled. Install second grommet if hole was drilled in radiator bulk head. Cable tie harness as required.
 35. 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.
 36. Reconnect the vehicle battery POSITIVE (+) and NEGATIVE (-) cables.
 37. Go to Page 6-9 (without or with DRL's) and follow the diagram for connections to the headlamp relays and turn signal relays.

MVP® BLADE - HYDRAULIC CONTROL ELECTRICAL SCHEMATIC



12-PIN HEADLAMP KIT MODIFICATION

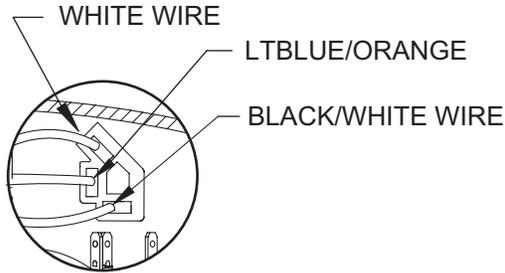
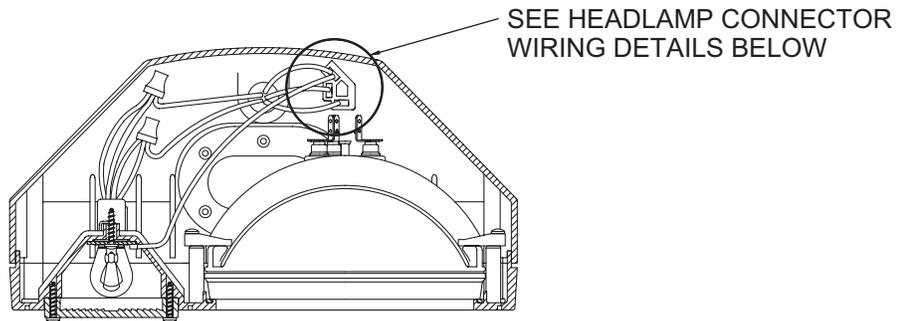
61550-1 HEADLAMP KIT 12-PIN 64078 HEADLAMP KIT 12-PIN (WHITE)

The 64078 Headlamp Kit 12-Pin (White) is being introduced for use on 2003 GM Pick-ups and 2003 Dodge Ram Trucks.

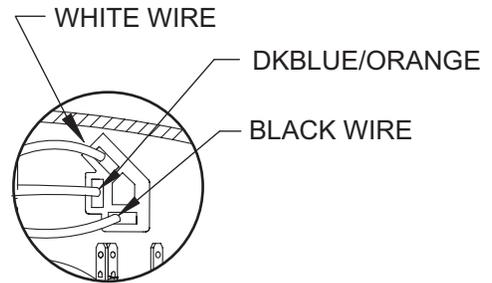
Both these kits have the same housings and wiring harness. The insertion of the WHITE and LIGHT BLUE/ORANGE or DARK BLUE/ORANGE wires into the seal beam connector is the difference between the assemblies.

When wired for the 64078 kit at the factory, a white strain relief is inserted into the cable entrance opening to identify the internal wiring.

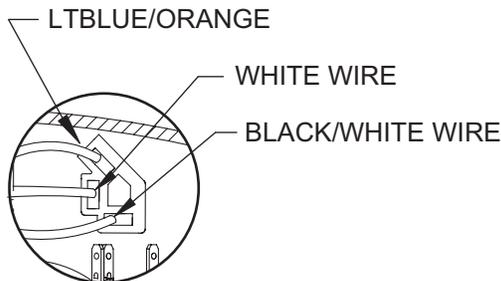
61550-1 Headlamp Kits can be field reworked into 64078 Headlamp Kits by switching the two wires in the sealed beam connector. See details below for correct positions of wires in connectors. If available, change strain reliefs to white to indicate that the internal wiring is changed.



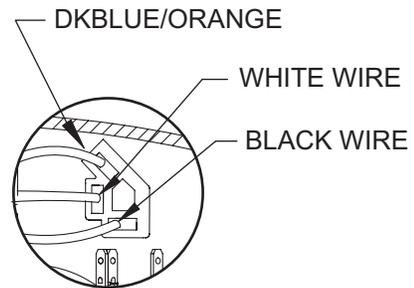
64078 12-Pin (White)
Driver Side



64078 12-Pin (White)
Passenger Side

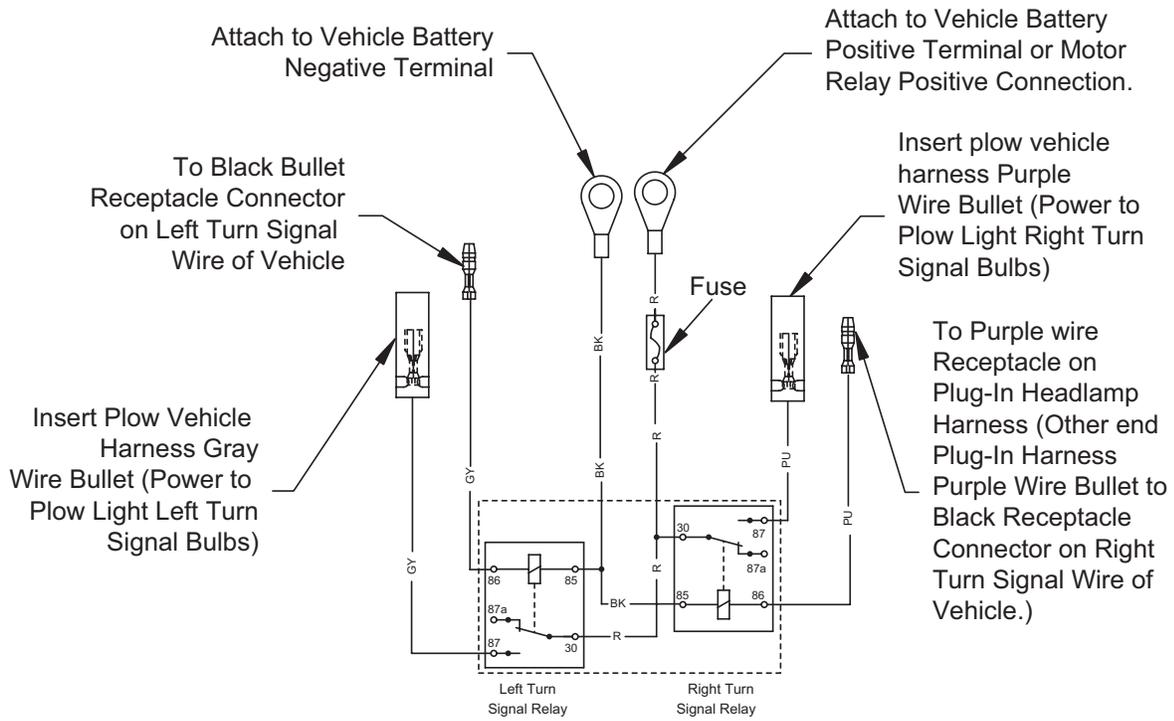


61550-1 12-Pin
Driver Side

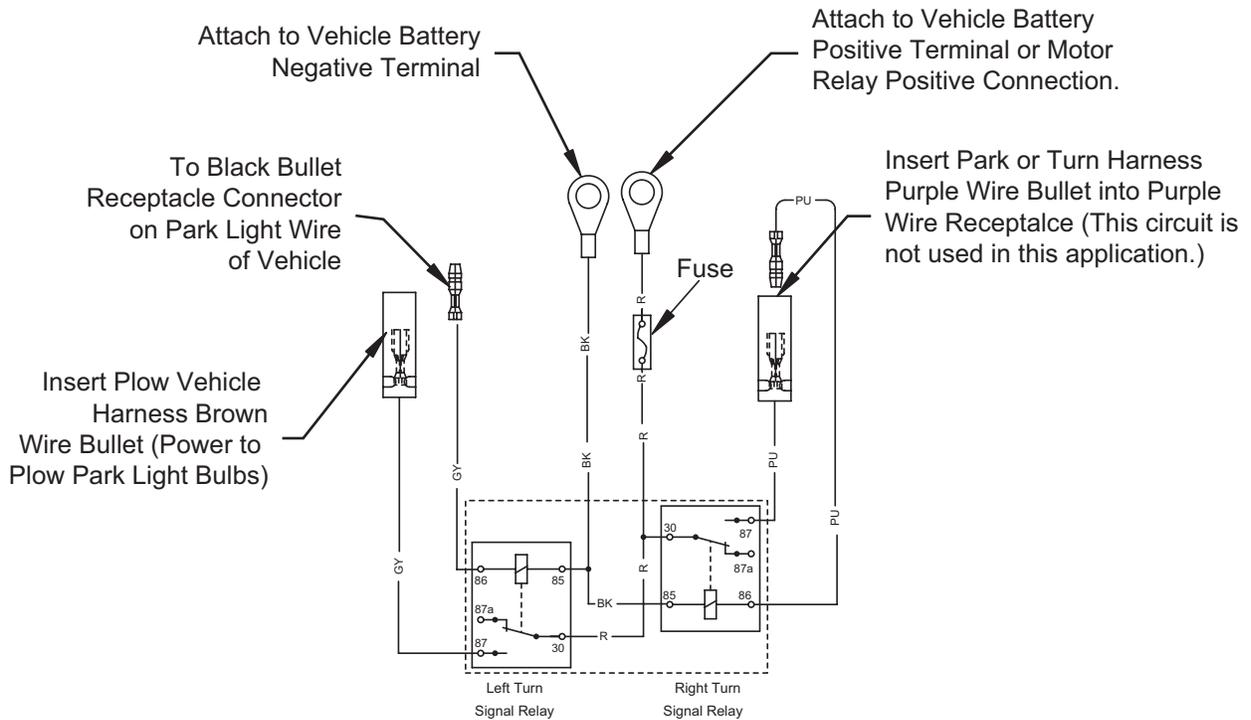


61550-1 12-Pin
Passenger Side

WIRING DIAGRAM - 61185 Park or Turn Harness Kit



Turn Signal Application



Cab Marker / Park Lamps Application



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