



# Wire Harness Installation Instructions

**For Installing:**

**Part #50003 – Race Car Kit**

**(Includes 50002 Race Car Harness/12 Circuit  
& 8 Switch Roll Bar Mount Panel)**

**Part #50002 – Race Car Harness/12 Circuit**

**Manual #90555**



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**P/N 90555 Painless Wiring Manual**

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## TABLE OF CONTENTS

|   |    |
|---|----|
| List of Figures.....  | i  |
| List of Tables.....   | i  |
| 1.0 Introduction.....   | 1  |
| 2.0 About These Instructions.....                                       | 1  |
| 3.0 Tools Needed.....   | 2  |
| 4.0 Pre-installation and General Harness Routing Guidelines.....        | 2  |
| 5.0 General Harness Installation Instructions.....                      | 3  |
| 5.1 Grounding the Automobile.....                                       | 3  |
| 5.2 Rough Installation.....   | 3  |
| 5.3 Harness Attachment.....   | 4  |
| 5.4 Terminal Installation and Making Connections .....                  | 4  |
| 5.5 Testing the System.....   | 4  |
| 6.0 50003 12-Circuit Racing Application Wire Harness Kit.....           | 5  |
| 6.1 Contents of the 50003 Wire Harness Kit.....                         | 5  |
| 6.2 50002 Specific Circuit Connections.....                             | 5  |
| 6.3 Fuse Requirements.....  | 9  |
| 6.3 Switch panel to harness wire connection index.....                  | 10 |
| 7.0 Switch Panel Installation and Connections.....                      | 12 |
| 7.1 Dash Mounting the Switch Panel.....                                 | 12 |
| 7.2 Roll Bar Mounting the Switch Panel.....                             | 13 |
| 8.0 50002 Harness to other than switch panel wire connection index..... | 15 |
| 9.0 Optional Relay Kits and Accessories.....                            | 20 |

## LIST OF FIGURES

|   |    |
|---|----|
| Figure 3.1 Crimp Tool Needed for section 7.....               | 1  |
| Figure 6.1 Early GM Alternator – External Regulator.....      | 5  |
| Figure 6.2 Late GM Alternator – Internal Regulator.....       | 5  |
| Figure 6.3 Fusible Link.....                                  | 6  |
| Figure 6.4 GM Ignition (Start/Run) System.....                | 6  |
| Figure 6.5 Turn Signal and Ignition Switch Connectors.....    | 7  |
| Figure 6.6 Ammeter and Fusible Link.....                      | 7  |
| Figure 6.7 Interior Lighting.....                             | 8  |
| Figure 6.8 “Headlight Section A” Wiring.....                  | 8  |
| Figure 6.9 Dimmer Switches.....                               | 9  |
| Figure 7.1 Terminal insertions into connector method .....    | 12 |
| Figure 7.2 50002 harness to switch panel connector chart..... | 14 |
| Figure 8.1 50002 Instrument Panel Connections.....            | 18 |
| Figure 8.2 50002 Engine Section Connections.....              | 19 |
| Figure 9.1 Optional Relay Kits and Accessories.....           | 20 |

## LIST OF TABLES

|   |       |
|---|-------|
| Table 6.1 GM turn signal connectors pin-out.....                      | 7     |
| Table 6.2 Fuse Requirements.....                                      | 9     |
| Table 6.3 50002 to Switch Panel Wire Connection Index.....            | 10-11 |
| Table 8.1 50002 to other than Switch Panel Wire Connection Index..... | 16-17 |

## 1.0 INTRODUCTION

You have purchased what we at Perfect Performance Products, Inc. believe to be the most up-to-date and easiest-to-install automotive racing wire harness or accessory on the market. It is designed for easy installation, even if you have no electrical experience.

The 50002 fuse block can be easily attached to any under-dash location. There is enough length to the wire at all engine, dash, and trunk locations to complete the installation without splicing. The fuse block, voltmeter, fuel gauge, oil pressure gauge, temperature gauge, turn signal lights, dimmer switch, and dash lights are all pre-wired, allowing for easy hookup. The proper fuses and flashers have been pre-installed in the fuse block. In addition, all wires are color-coded. This will help you identify the different circuits during installation and later on if additions to the overall system are necessary.

PPPI Wire Harness Kits are designed to be used in vehicles with a General Motors-keyed steering column, or other steering columns depending on the kit purchased. All wire is TXL (cross-linked polyethylene), 600 volt, 125° C. Standard automotive wire is GPT, 300 volt, 80° C with PVC insulation.

The **50003 12-Circuit Racing Wire Harness Kit** has been designed with three major groups incorporated into it:

|                                 |   |
|---------------------------------|---|
| ENGINE/HEADLIGHT GROUP<br>water | Includes high beam, low beam, park, right turn, left turn, electric fan, pump, horn, starter solenoid and battery feed, alternator and alternator excitor wire, distributor, water temperature, and oil pressure. |
| REAR LIGHT GROUP                | Includes tail lights, left and right turn signals, brake light, fuel sender, and dome light and electric fuel pump.   |
| ACCESSORY GROUP                 | Includes wires to connect tail and headlamps, ignition, fuel pumps, water pump, cooling fan, and an accessory.  |

## 2.0 ABOUT THESE INSTRUCTIONS

These instructions provide information for the installation of the 50002 12-circuit Racing Application Wire Harness Kit and the 8-circuit Switch Panel. The contents of these instructions are divided into major **Sections**, as follows:

- 1.0 Introduction
- 2.0 About These Instructions
- 3.0 Tools Needed
- 4.0 Pre-Installation and Harness Routing Guidelines
- 5.0 General Installation Instructions
- 6.0 50003 Racing application harness connections
- 7.0 Eight Switch Panel Connections
- 8.0 50002 to other than Switch Panel Connections

Sections are further divided into **Paragraphs** and Steps. Throughout, the **Figure** numbers refer to illustrations and the **Table** numbers refer to information in table form. These are located in or near the sections or paragraphs to which they correspond. Always pay special and careful attention to any *Notes*, especially those in the Tables, and any text marked *CAUTION*.

## 3.0 TOOLS NEEDED

In addition to your regular tools, you will need the following tools:

1. Crimping tool for insulated terminals  
(*Note: Use a quality tool to avoid over-crimping.*)
2. Crimping tool designed for rolled crimps. Needed for Section 7. (*Note: See picture at right*)
3. Wire stripper
4. Continuity tester (Test light or ohmmeter)
5. Electric drill
6. 1-1/4" Hole saw
7. Small (10 amp or less) battery charger



**Figure 3.1** Rolling crimper. (Radio Shack P/N 64-2983 or equivalent.)

## 4.0 PRE-INSTALLATION & HARNESS ROUTING GUIDELINES

The installation of your wire harness kit consists mainly of two parts:

- The physical routing, positioning, and securing of the wire harness, wire groups, and individual wires.
- The proper electrical connection of the individual circuits.

These two major tasks are not separate steps, but are integrated together. That is, you will route some wires and make some connections, route some more wire and make some more connections. We cannot tell you how to physically route the harness in your automobile. The routing depends a great deal upon the particular make of automobile and to what extent you want to secure and conceal the harness. We do offer some general guidelines and routing practices starting in **Paragraph 4.2**, GENERAL installation instructions in **Section 5.0**, and precise instructions concerning the electrical connections you will have to make at the beginning in **Section 6.0**. To help you begin thinking through the installation of your wire harness, read the following sections:

**4.1** Familiarize yourself with the harness by locating each of the harness sections in the following list.

**4.1.1** The eleven SECTIONS of the 50003 12-Circuit Racing Application Wire Harness Kit are listed immediately following. For complete information concerning the individual circuits and wires that make up these harness SECTIONS, see **Section 6.3**.

ACCESSORY SECTION SWITCHES  
ACCESSORY SECTION B+  
DIMMER SWITCH SECTION  
ENGINE SECTION  
ENGINE SECTION A  
HEADLIGHT SECTION A

HEADLIGHT SECTION B  
IGNITION SWITCH SECTION  
INSTRUMENT PANEL SECTION  
TAIL SECTION  
TURN SIGNAL SECTION

**4.2** Decide where and how the Fuse Block or Switch Panel will be mounted. PPPI Wire Harness Kits are designed for the fuse block to be mounted on the driver's side, under the dash.

**4.3** Decide which of the following circuits you will be using in your system and where the harness groups or wires will be routed:

|                          |       |
|--------------------------|-------|
| Emergency Flashers       | _____ |
| Horn                     | _____ |
| Dome Lights              | _____ |
| Lights                   | _____ |
| Wipers                   | _____ |
| Electric Fuel Pump(s)    | _____ |
| Electric Cooling Fan     | _____ |
| Turn Signals             | _____ |
| Radio (Ign. switched B+) | _____ |
| Gauges                   | _____ |
| Accessories              | _____ |

- 4.4 A good exercise is to lay out the wire harness on the floor beside your automobile and identify all the SECTIONS.
- 4.5 You will want to route the harness through and around open areas. Inside edges provide extra protection from hazards and also provide places for tie wraps, clips and other support.
- 4.6 Route the harness away from sharp edges, exhaust pipes, and hood, trunk and door hinges.
- 4.7 Plan where harness supports will be located. Use a support every 12 inches unless the harness routes under the floor carpet.
- 4.8 Allow enough slack in the harness at places where movement could possibly occur (body to frame, frame to engine, etc.).
- 4.9 At wire ends, don't depend on the terminals to support the harness. The weight of the harness could cause terminals to disconnect.
- 4.10 The wires should be bundled into harness groups. Use nylon ties, poly split loom, or tape.

## 5.0 GENERAL INSTALLATION INSTRUCTIONS

### 5.1 GROUNDING THE AUTOMOBILE

A perfectly and beautifully wired automobile will nevertheless have problems if everything is not properly grounded. Don't go to the careful effort of installing a quality wire harness only to neglect proper grounding.

*Note: PPMI Wire Harness Kits include no ground wire except the black wire from the Switch Panel. You must supply ground wire (14-16 gauge) for all other circuits.*

- 5.1.1 Connect a Ground Strap or Cable from the Negative Battery terminal to the automobile chassis frame.
- 5.1.2 Connect a Ground Strap from the Engine to the chassis. DO NOT RELY UPON THE MOTOR MOUNTS TO MAKE THIS CONNECTION.
- 5.1.3 Connect a Ground Strap from the Engine to the Body.
- 5.1.4 If you have a fiberglass body you should install terminal blocks to ground all your gauges, lights, and accessories. The terminal blocks work as remote grounding sources. Painless Performance offers the fiberglass body ground kit part number #40026 to make easy work of installing remote grounding sources.

### 5.2 ROUGH INSTALLATION

**CAUTION: DISCONNECT THE POWER FROM YOUR VEHICLE BY REMOVING THE NEGATIVE BATTERY TERMINAL FROM THE BATTERY.**

*Note: Your kit comes equipped with a fusible link. This safety device is designed to go between wire #816 and the battery source for overall harness protection.*

*Note: Make no wire connections or permanent mounting of any kind at this time!*

- 5.2.1 Position the Fuse Block and/or Switch Panel in their intended locations.
- 5.2.2 Drill a 1-1/4" (1.25") hole near the fuse block for engine and headlight group wires to pass through (ENGINE SECTION, ENGINE SECTION A, and HEADLIGHT SECTION A).
- 5.2.3 Install the firewall grommet. Route engine and headlight group wires through the grommet and position the harness groups in the areas decided upon in **Paragraphs 4.3 and 4.4.**
- 5.2.4 Route dash group INSTRUMENT PANEL SECTION upward to rear of dash and temporarily tie in place.
- 5.2.5 Position rear group (TAIL SECTION), on floor pan area decided upon in **Paragraphs 4.3 and 4.4.**
- 5.2.6 Route the ACCESSORY SECTION SWITCHES, ACCESSORY SECTION B+, HEADLIGHT SECTION B and IGNITION SWITCH SECTION wires towards the switch panel if you are using one. If you are not using a switch panel, route these sections of wires towards the factory switch locations.

### 5.3 HARNESS ATTACHMENT

*Note: Harness routing and shaping should be a time-consuming task. Taking your time will enhance the beauty of your installation. Please be patient and TAKE YOUR TIME!*

**5.3.1** Permanently mount the fuse block.

**5.3.2** Mold harness groups to the contour of floor pan, firewall, fender panels, and any other area where wires or harness groups are routed. Remember to route the harness away from sharp edges, exhaust pipes, hood, trunk and door hinges, etc.

**5.3.3** Attach harness groups to your automobile with clips or ties starting at the fuse block and working toward the rubber grommet for the front groups and along the floor pan for the rear group. The dash wires should be routed out of the way of any under-dash obstacles, such as the cowl vent, radio, etc.

*Note: Do not tighten tie wraps and mounting devices at this time. Make all harness attachments LOOSELY.*

**5.3.4** When used every 1-1/2" or so on the visible areas of the harness, the plastic wire ties make a very attractive assembly. A tie installed in other areas every 6" or so will hold the wires in place nicely.

### 5.4 TERMINAL INSTALLATION AND MAKING CONNECTIONS

*Note: In the following steps you will be making the circuit connections. Before you start, you should carefully read **Sections 6.0 through 7**, and continually refer to the wire connection indexes, **DOUBLE-CHECKING** your routing and length calculations before cutting any wires and making connections. Give special attention to Turn Signal and Ignition Switch connections. These can be somewhat confusing.*

**5.4.1** Have all needed tools and connectors handy.

**5.4.2** Select the correct size terminal for the wire and stud application.

**5.4.3** Determine the correct wire length and cut the wire. Remember to allow enough slack in the harness and wires at places where movement could possibly occur, such as automobile body to frame, frame to engine, etc. Double check your calculations.

**5.4.4** Strip insulation away from wire. Strip only enough necessary for the type of terminal lug you are using.

*Note: In the following step, make sure that the terminal is crimped with the proper die in the crimping tool. An improper crimp will NOT make a good connection. DO NOT OVER-CRIMP!*

**5.4.5** Crimp the terminal onto the wire.

**5.4.6** Connecting the harness throughout the groups is a repeating process. Make sure that each wire is FIRST properly routed and THEN attach. **DO NOT ATTACH THE WIRE FIRST AND THEN ROUTE AFTERWARD.**

**5.4.7** When all wires are attached, tighten the mounts and ties to secure harness permanently.

### 5.5 TESTING THE SYSTEM

**5.5.1** Use a small (10 amp or less) battery charger to power up the vehicle for circuit testing. If there is a problem anywhere, the battery charger's low amperage and internal circuit breaker will provide circuit protection. Connect the battery charger's NEGATIVE output to the automobile chassis or engine block and its POSITIVE output to the automobile's positive battery terminal.

**CAUTION: IF YOU HAVE NOT YET DISCONNECTED THE BATTERY FROM THE AUTOMOBILE, DO SO NOW! DO NOT CONNECT THE BATTERY CHARGER WITH THE BATTERY CONNECTED. YOU WILL SIMPLY DEFEAT THE PURPOSE OF USING THE CHARGER.**

**5.5.2** Individually turn on each light, ignition, wiper circuit, etc, and check for proper operation.

**5.5.3** When all circuits check out THEN attach the battery cable to the battery for vehicle operation.

## 6.0 50003 12-CIRCUIT RACING APPLICATION WIRE HARNESS KIT

### 6.1 CONTENTS OF THE 50003/50002 WIRE HARNESS KIT

Take inventory to see that you have everything you're supposed to have in this kit. If anything is missing, go to the dealer where you obtained the kit or contact Perfect Performance Products, Inc. at (817) 244-6212. The 50003/50002 Wire Harness Kit should contain the following items:

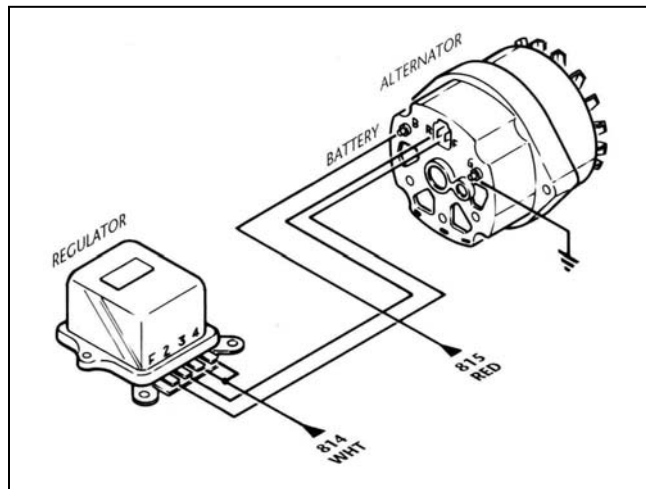
- The Main Wire Harness, with the Fuse Block wired in and fuses installed
- (8) switch panel, connectors and terminals (These will not be included in P/N 50002)
- Firewall grommet
- 1 Package of nylon tie wraps
- 2 GM turn signal connectors (See **Figure 6.5**)
- 2 GM ignition switch connectors (See **Figure 6.5**)
- Parts box, containing the Fusible Link (See **Figure 6.3**), a GM alternator connector, terminals, splices
- Race Car Wire Harness Installation Instructions P/N 90555 (This booklet)

### 6.2 50003/50002 GENERAL CIRCUIT CONNECTIONS

If you have not already done so, read **Sections 4.0** and **5.0** of these instructions and think through the installation of the harness kit before securing or cutting any wires.

#### 6.2.1 Early GM Alternator (before 1969) - External Regulator. See **Figure 6.1**.

*Note: Your Alternator may not appear exactly as represented in the **Figures**, but the circuits are wired the same.*

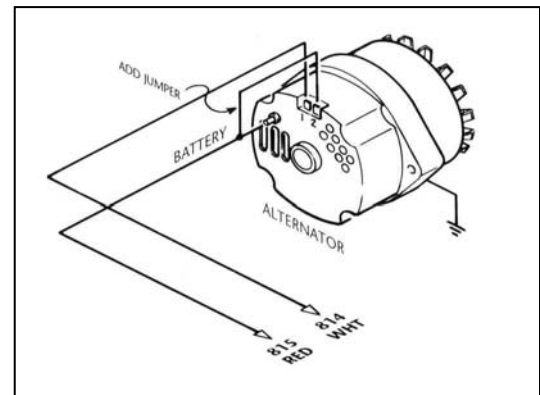


**Figure 6.1** Early GM alternator with external regulator.

- With a short 16-gauge jumper wire, connect Voltage Regulator terminals 3 & 4 together. Connect ENGINE SECTION wire #814 (wht) to Voltage Regulator terminal 3 or 4.
- Connect ENGINE SECTION wire #815 (red) to the Alternator Output lug (Bat).
- Connect a 14-gauge wire from voltage-regulator terminal 2 to Alternator terminal R. Connect a 14-gauge wire from Voltage Regulator terminal F to Alternator terminal F.
- Connect a 16-gauge ground wire from the Alternator Ground lug (G) to chassis ground.

#### 6.2.2 Late GM Alternator (after 1972) Internal Regulator. See **Figure 6.2**.

- Connect ENGINE SECTION wire #814 (wht) to alternator terminal #1. Connect ENGINE SECTION wire #815 (red) to the alternator output lug (Bat).
- Connect a short 14-gauge jumper wire from alternator terminal #2 to the alternator output lug (Bat).
- A connector and terminal spades for late GM Alternators are included in the parts box.



**Figure 6.2** Late GM alternators with internal regulator

#### 6.2.3 GM One-Wire Alternator.

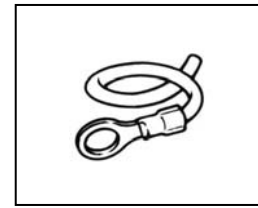
- Connect ENGINE SECTION wire #815 (red) to the Alternator Output lug (Bat).
- Insulate and stow ENGINE SECTION wire #814 (wht). Do not install jumper wire. No wires are connected to alternator terminals 1 & 2.
- When using a 1-wire alternator you must use a voltmeter or ammeter. A warning light cannot be wired in.



## 6.2.4 GM Ignition (Start/Run) System. See Figure 6.4.

*Note: If you are going to install an ammeter, see Section 6.2.6 first.*

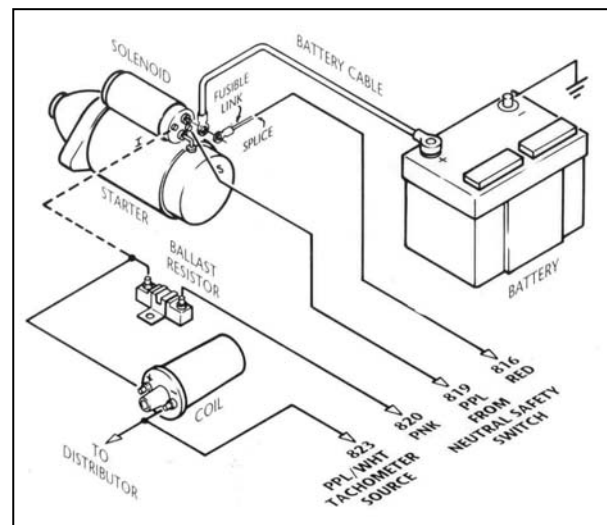
- A. After you have routed the wires from the fuse panel to the starter solenoid, attach the fusible link (**Figure 6.3**) onto the end of ENGINE SECTION (single) 10 gauge red wire #816 with a crimping tool. This link is 2 gauges smaller than wire #816 and serves as a fuse to protect the entire harness. **DO NOT OMIT IT!**
- B. Connect wire #816, with fusible link already installed, to the starter solenoid battery terminal. This is the same lug that the large red cable from the battery is normally connected to.
- C. Connect ENGINE SECTION A wire #819 purple to the starter solenoid start (S) terminal.
- D. If you are using the ballast resistor, mount it away from other wiring or hoses. The ballast resistor gets very hot during operation. Connect ENGINE SECTION A wire #820 pink to one end of the ballast resistor. Connect the other end of the ballast resistor to the ignition coil POSITIVE (+) terminal with 14-gauge wire (you may have enough pink wire left over to accomplish this). If you are not using a ballast resistor, connect wire #820 pink directly to the ignition coil POSITIVE (+) terminal.



**Figure 6.3** fusible link

*Note: Older model vehicles ('55-'59) used ballast resistors. From about '59 to about '74 resistor wire was used, and from about '74 on HEI electronic ignition has been employed.*

- E. The ignition coil NEGATIVE (-) terminal is connected to the distributor. Also connect ENGINE SECTION A wire #823 (purple/white) to the ignition coil NEGATIVE (-) terminal. This is the tachometer source. If you are not using a tachometer, insulate and stow wire #823.
- F. A 14-gauge wire connected from the starter solenoid ignition (I) terminal to the ignition coil side of the ballast resistor is optional. This wire (the dashed line in **Figure 6.4**) serves as a ballast resistor bypass during engine starting. However, if the starter solenoid shorts out, which is not unusual, the engine will stop running and will not restart as long as this wire is connected. You may therefore choose to omit it. If you are not using a ballast resistor, leave the starter solenoid ignition (I) terminal unconnected and do not install the bypass wire.



**Figure 6.4** GM ignition system

- G. When using an HEI Distributor connect wire #820 (pink) to the BAT B+ terminal of the distributor. If a Tachometer is used, wire #823 (purple/white) is connected to the TACH terminal. The cap of the HEI distributor will be labeled as such.

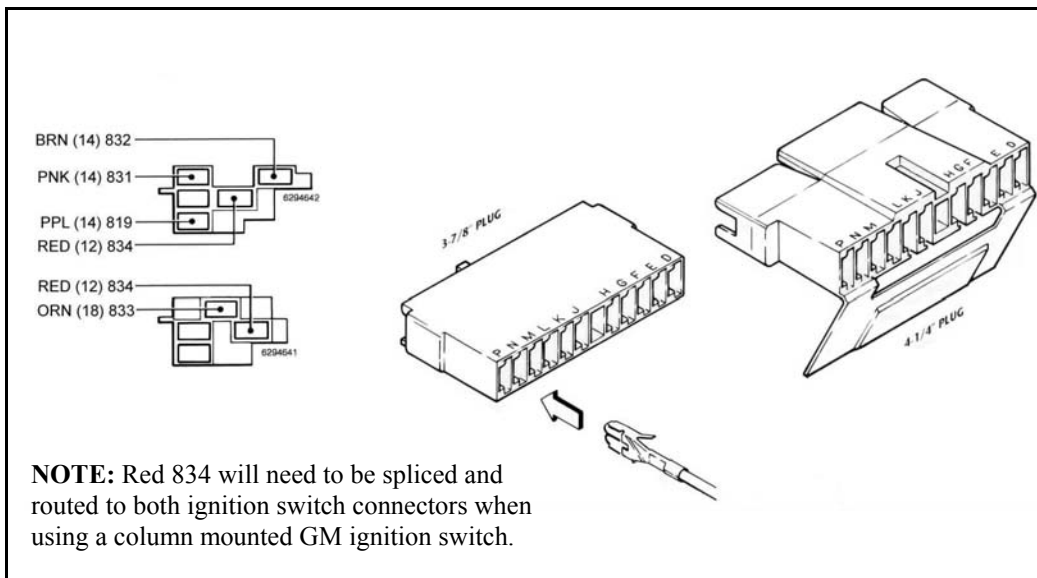
## 6.2.5 GM Ignition and Turn Signal Connectors. See Table 6.1 and Figure 6.5.

- A. There are two different turn signal plugs for GM tilt columns. The difference is in the length of the male plug that is mounted ON THE COLUMN. One plug is 4-1/4" (4.25") long and the other is 3-7/8" (3.875"). This is a mere 3/8" (0.375") difference, so measure the plug carefully. This kit has included female connectors to mate with either size column-mounted plug. See **Figure 6.5** to determine which connector is correct for your vehicle.

The TURN SIGNAL SECTION wires have already been terminated for you. Choose the proper connector and install the contacts according to **Table 6.1** and **Figure 6.5**.

*Note: The contacts will only insert into the connectors ONE WAY, as shown in Figure 6.5. Make certain you are inserting the wires into the CORRECT LOCATIONS as the contacts are difficult if not impossible to remove once inserted.*

- D. The harness does not support seat belt buzzers or key alarms.
- E. To supply power to a throttle body or tuned port fuel injection use ENGINE SECTION A wire #820 (pink) as the fused ignition power source.



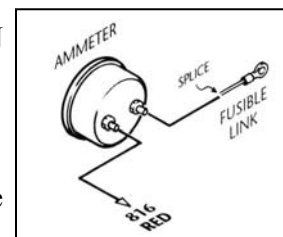
**Figure 6.5** GM Ignition and Turn Signal Connectors

| Designation  | Wire No. | Color  | Turn Signal Connector |
|--|----------|--------|-----------------------|
| <b>Turn Signal Section</b>   |          |        |                       |
| Horn   | 853      | Blk    | G                     |
| LF Turn Signal   | 826      | Lt.Blu | H                     |
| RF Turn Signal   | 825      | Blu    | J                     |
| Hazard Flasher   | 851      | Brn    | K                     |
| Turn Flasher   | 852      | Ppl    | L                     |
| LR Turn Signal   | 849      | Ylw    | M                     |
| RR Turn Signal   | 848      | Grn    | N                     |
| Stop Lamp Switch   | 818      | Wht    | P                     |
| <b>Ignition Switch Section</b><br>(This section only applicable when not using the switch panel) |          |        |                       |
| Ign. Start   | 819      | Ppl    |                       |
| Ign. Coil  | 831      | Pnk    |                       |
| Acc. Fuse Block  | 832      | Brn    |                       |
| Ign. Switch B+   | 833      | Orn    |                       |
| Battery B+   | 834      | Red    |                       |
| Ground   | 861      | Blk    |                       |

**Table 6.1** GM Ignition and Turn Signal Wiring

### 6.2.6 Connecting an Ammeter and the Fusible Link. See Figure 6.6.

- The ammeter must be connected **IN SERIES** onto the **ENGINE SECTION** (single) 10-gauge red wire #816 that routes from the fuse panel to the starter solenoid on GM vehicles (**Section 6.2.4**) and from the fuse panel to the starter relay on Ford and Mopar.
- The overall physical length of this circuit should be as short as possible still allowing the slack needed. You may have to cut or add length to wire #816. **USE ONLY 10 gauge wire** for this.
- Route wire #816 (from the Fuse Panel) and connect to the ammeter **NEGATIVE** terminal. To complete the installation, follow **ONE** of the next three paragraphs, as appropriate.
- If you are using a GM starter, route the remainder of wire #816 from the ammeter **POSITIVE** terminal to the starter solenoid battery (B+) terminal. This is the terminal the battery cable is connected to. Splice the Fusible Link or Maxi fuse (**Figure 6.3**) onto the end of wire #816 and connect to the Starter Solenoid Battery (B+) terminal.



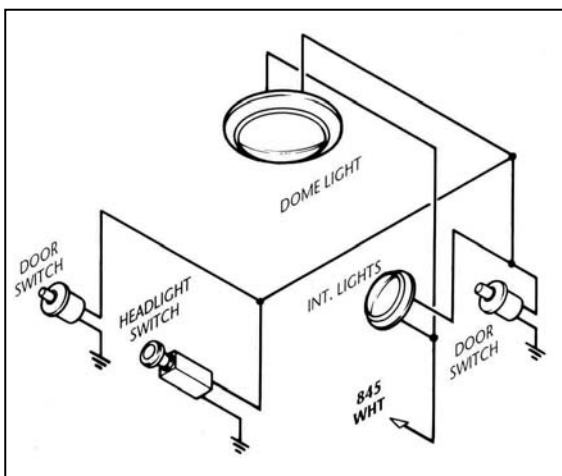
**Figure 6.6** Ammeter and fusible link

- E. If you are using a Ford starter with a starter relay, route the remainder of wire #816 from the ammeter POSITIVE terminal to the starter relay battery (B+) terminal. This is the terminal the battery cable is connected to. Splice the Fusible Link or Maxi fuse (**Figure 6.3**) onto the end of wire #816 and connect to the Starter Relay Battery (B+) terminal.
- F. If you are using a Mopar starter with a starter relay, route the remainder of wire #816 from the ammeter POSITIVE terminal to the starter relay battery (B+) terminal, and from this terminal to the Starter Solenoid Battery (B+) terminal. This is the terminal the battery cable is connected to. Splice the Fusible Link or Maxi fuse (**Figure 6.3**) onto the end of wire #816 and connect to the Starter Solenoid Battery (B+) terminal.

**CAUTION: BOTH AMMETER TERMINALS MUST ABSOLUTELY BE ISOLATED FROM GROUND. IF EITHER AMMETER TERMINAL COMES IN CONTACT WITH GROUND, A HARNESS FIRE IS INEVITABLE. USE EXTREME CARE AND DILIGENCE IN CONNECTING AMMETERS.**

**CAUTION: BE SURE YOUR AMMETER'S CURRENT (AMPS) RATING EXCEEDS THE CURRENT OUTPUT OF YOUR ALTERNATOR. PERFECT PERFORMANCE PRODUCTS, INC. DOES NOT RECOMMEND USING ANY AMMETER RATED AT LESS THAN 65 AMPS. DO NOT USE AN AMMETER WITH ANY HIGH-OUTPUT ALTERNATOR (MORE THAN 65 AMPS).**

### 6.2.7 Interior Lighting. See Figure 6.7.



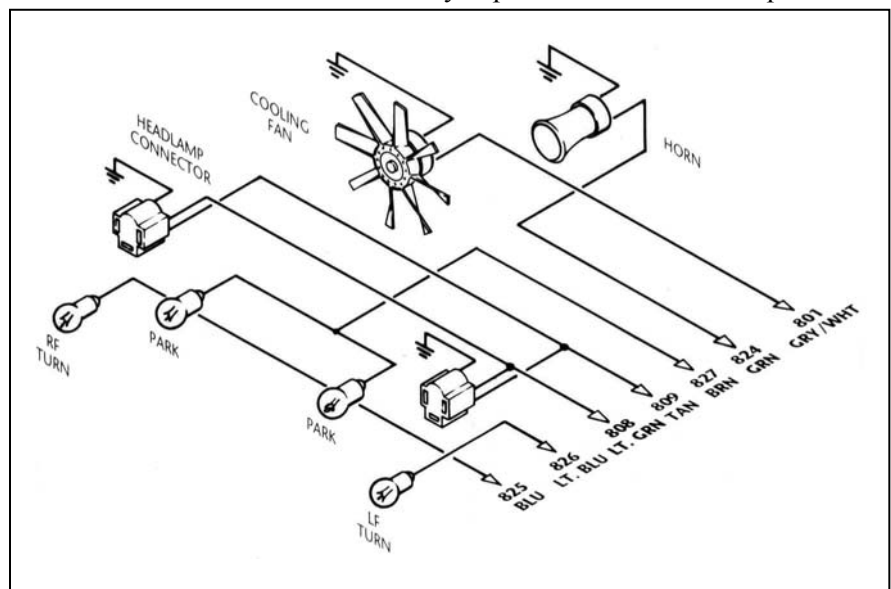
**Figure 6.7** Interior Lighting

- A. Interior lights are switched through the door switches and the dash-mounted headlight switch, which is usually rotated counter-clockwise to activate. These switches apply ground to the circuit. 12V (B+) is continually present at the light bulbs.
- B. You should leave your existing interior light wiring intact. The 50002 harness supplies only the 12V (B+) to the circuit via TAIL SECTION wire #845 white.
- C. Locate the existing 12V feed wire and connect it to TAIL SECTION wire #845 white.

### 6.2.8 HEADLIGHT SECTION A. See Figure 6.8.

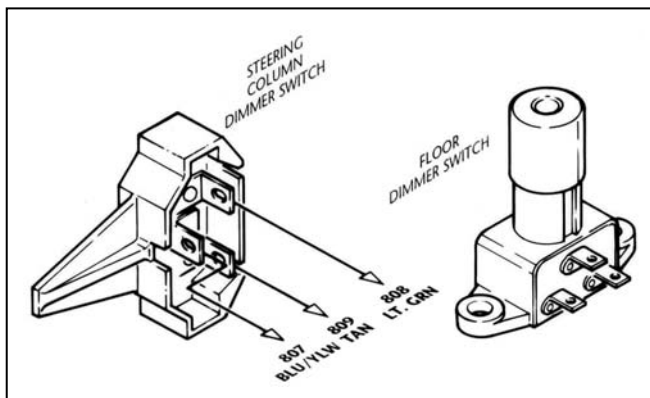
- A. Connect HEADLIGHT SECTION A wire #824 green to the Horn's hot terminal. TURN SIGNAL SECTION wire #853 black was connected in the turn signal connector section of these instructions. The horn relay is pre-wired into the fuse panel.

- B. Connect HEADLIGHT SECTION A #808 light green and #809 tan to BOTH head-lamps. These are the high and low beam wires. Connect the black wires of the headlamp connectors to chassis ground. You should have enough wire to accomplish this. Should you need to pass these wires through a fender well, use grommets. Don't forget to thread the grommets onto the wires BEFORE you connect them.



**Figure 6.8** HEADLIGHT SECTION A Wiring

- C. Connect HEADLIGHT SECTION A wire #827 brown to ALL front Park Lights. Connect HEADLIGHT SECTION A wire #825 blue to the right front turn signal. Connect wire #826 light blue to the LEFT FRONT turn signal. **Note:** Don't confuse Park Lights with Turn Signals.



- D. Painless Performance suggests using an electric fan relay when using an electric cooling fan setup. Painless Performance offers the 30101 Electric Fan Relay kit. Connect HEADLIGHT SECTION #801 grey/white to the Electric Fan Relay activation wire.
- E. Connect DIMMER SWITCH SECTION wires #807, #808, and #809 to your floor-mounted Dimmer Switch or column-mounted Dimmer Switch.

**Figure 6.9 Dimmer Switches (Push Button Style – Painless Part #80150)**

### 6.2.9 Instrument Panel Wiring

- A. Connect the wires of the INSTRUMENT PANEL SECTION as indicated in **Table 6.3**. Insulate and stow any wires you do not use.
- B. Connect a jumper wire from wire #835 red/white to all gauges' B+ terminals. Connect a jumper wire from wire #830 brown to all gauges' instrument lighting terminals. Connect a jumper wire to all gauges' ground terminals and connect this to a chassis ground.

### 6.2.10 Brake Light Switch

- A. Connect ENGINE SECTION A wires #817 orange and #818 white to the brake light switch.
- B. The third brake light wire is pre-connected on the switch end. Connect TAIL SECTION wire #850 orange to the third brake light if applicable.

## 6.3 WIRE CONNECTION INDEX (CONNECTING 50002 TO SWITCH PANEL)

In each section, connect the wire as identified by its wire color and wire number, to the appropriate item in the CONNECT TO column. Pay close attention to any **Notes** in this section as identified by a small raised number. **Table 6.3** is divided into sections that correspond to the sections of the 50002 wire harness. For example ACCESSORY SECTION SWITCHES refers to the wires in the harness labeled as accessory section switches. The Index is divided vertically into six columns: COLOR, GAUGE, NUMBER, CONNECT TO, COMES FROM, and FROM SECTION. The columns labeled COME FROM and FROM SECTION are for your reference only. The items in these columns tell you where each wire originates (COMES FROM) and from which section (FROM SECTION) of the harness. The column labeled NUMBER contains an 800-series number that is used to identify various wires in the wiring diagrams that are a part of these instructions. Each wire is labeled with its specific number every 12 inches. Many of the wire numbers occur twice in this index. This is because you will be connecting both ends of these particular wire segments. However, some wire segments are pre-connected at one end. For instance, all wires originating from the fuse block and certain other wires such as those originating from the horn relay, the dimmer switch, and the instrument panel section. These pre-connected wires are identified by an asterisk (\*) in the COMES FROM column.

|                                       |    |
|---------------------------------------|----|
| Headlight/Dome.....                   | 25 |
| Emergency Flashers/Stop.....          | 15 |
| Turn Signals/Wiper.....               | 15 |
| Gauges/Radio.....                     | 10 |
| Horn/Accy. B+.....                    | 20 |
| Electric Cooling Fan.....             | 20 |
| Electric Fuel Pump(s).....            | 20 |
| Coil.....                             | 30 |
| Electric Water Pump.....              | 10 |
| Ignition Accessory (Center).....      | 15 |
| Ignition Accessory (Lower Right)..... | 20 |

**Table 6.2 Fuse Requirements**

**For use when connecting 50002 harness to switch panel.**

| <b>Color</b>                      | <b>Ga.</b> | <b>No.</b> | <b>Connect To:</b>                  | <b>Comes From:</b>    | <b>From Section:</b>     |
|-----------------------------------|------------|------------|-------------------------------------|-----------------------|--------------------------|
| <b>ACCESSORY SECTION SWITCHES</b> |            |            |                                     |                       |                          |
| Gry/Wht <sup>1</sup>              | 14         | 801        | Cooling Fan Switch <sup>5</sup>     | Cooling Fan           | Headlight Section A      |
| Blue <sup>2</sup>                 | 14         | 862        | Water Pump Switch <sup>5</sup>      | Water Pump            | Engine Section           |
| Ylw/Wht                           | 14         | 847        | Fuel Pump #1 Switch <sup>5</sup>    | Fuel Pump #1          | Tail Section             |
| Green                             | 14         | 863        | Fuel Pump #2 Switch <sup>5</sup>    | Fuel Pump #2          | Tail Section             |
| <b>ACCESSORY SECTION B+</b>       |            |            |                                     |                       |                          |
| Blue                              | 16         | 805        | Wiper Switch B+ Input               | Fuse Block*           |                          |
| Gry/Red                           | 14         | 806        | Cooling Fan Switch B+ <sup>5</sup>  | Fuse Block*           |                          |
| Blue/Red                          | 14         | 864        | Water Pump Switch B+ <sup>5</sup>   | Fuse Block*           |                          |
| Ylw/Red                           | 14         | 861        | Fuel Pump #1 Switch B+ <sup>5</sup> | Fuse Block*           |                          |
| Ppl/Wht                           | 14         | 865        | Optional Accessory B+               | Fuse Block*           |                          |
| Tan                               | 14         | 866        | Optional Accessory B+               | Fuse Block*           |                          |
| <b>ENGINE SECTION</b>             |            |            |                                     |                       |                          |
| White                             | 14         | 814        | Alternator Excitor                  | Fuse Block*           |                          |
| Red                               | 10         | 815        | Alternator B+                       | Fuse Block*           |                          |
| Blue                              | 14         | 862        | Water Pump B+                       | Water Pump Switch     | Accy. Section Switches   |
| Red                               | 10         | 816        | Battery at Str. Solenoid B+         | Fuse Block*           |                          |
| <b>ENGINE SECTION A</b>           |            |            |                                     |                       |                          |
| Orange <sup>3</sup>               | 16         | 817        | Brake Switch B+                     | Fuse Block*           |                          |
| White                             | 16         | 818        | Brake Switch                        | Turn Signal Switch    | Turn Signal Section      |
| Purple                            | 12         | 819        | Starter Solenoid                    | Ignition Switch Start | Ign. Switch Section      |
| Pink                              | 14         | 820        | Coil B+                             | Fuse Block*           |                          |
| Lt.Grn                            | 18         | 821        | Temp. Sending Unit                  | Temp. Gauge           | Instrument Panel Section |
| Lt.Blu/Blk                        | 18         | 822        | Oil Pressure Sending Unit           | Oil Pressure Gauge    | Instrument Panel Section |
| Ppl/Wht                           | 18         | 823        | Tachometer Source                   | Tachometer            | Instrument Panel Section |
| <b>HEADLIGHT SECTION A</b>        |            |            |                                     |                       |                          |
| Green                             | 14         | 824        | Horn B+                             | Horn Relay*           | (Fuse Block)             |
| Blue                              | 18         | 825        | Right Front Turn Signal             | Turn Signal Switch    | Turn Signal Section      |
| Lt.Blue                           | 18         | 826        | Left Front Turn Signal              | Turn Signal Switch    | Turn Signal Section      |
| Brown                             | 18         | 827        | Parking Lights                      | Headlight Switch      | Headlight Section B      |
| Lt.Grn                            | 14         | 808        | High Beam                           | Dimmer Switch         | Dimmer Switch Section    |
| Tan                               | 14         | 809        | Low Beam                            | Dimmer Switch         | Dimmer Switch Section    |
| Gry/Wht                           | 14         | 801        | Cooling Fan                         | Fan Switch            | Accy. Section Switches   |
| <b>HEADLIGHT SECTION B</b>        |            |            |                                     |                       |                          |
| Red/Blk                           | 12         | 828        | Headlight Switch B+ <sup>5</sup>    | Fuse Block*           |                          |
| Blu/Ylw                           | 14         | 807        | Headlight Switch <sup>5</sup>       | Dimmer Switch         | Dimmer Switch Section    |
| Brown                             | 14         | 829        | Headlight Switch <sup>5</sup>       | Tail Lights           | Tail Section             |
| Brown                             | 18         | 827        | Headlight Switch <sup>5</sup>       | Parking Lights        | Headlight Section A      |
| Brown                             | 18         | 830        | Headlight Switch <sup>5</sup>       | Instr. Panel Lighting | Instrument Panel Section |
| <b>DIMMER SWITCH SECTION</b>      |            |            |                                     |                       |                          |
| Blu/Ylw                           | 14         | 807        | Dimmer Switch                       | Headlight Switch      | Headlight Section B      |
| Lt.Grn                            | 14         | 808        | Dimmer Switch                       | High Beam             | Headlight Section A      |
| Tan                               | 14         | 809        | Dimmer Switch                       | Low Beam              | Headlight Section A      |

**Table 6.3** 50002 Wire Connection Index, 1 of 2

## For use when connecting 50002 harness to switch panel.

| Color                           | Ga. | No. | Connect To:                           | Comes From:              | From Section:          |
|---------------------------------|-----|-----|---------------------------------------|--------------------------|------------------------|
| <b>IGNITION SWITCH SECTION</b>  |     |     |                                       |                          |                        |
| Pink                            | 14  | 831 | Ignition Switch Coil B+ <sup>5</sup>  | Fuse Block*              |                        |
| Brown                           | 18  | 832 | Ignition Switch Accy. B+ <sup>5</sup> | Accy. Power Relay*       | (Fuse Block)           |
| Orange                          | 18  | 833 | Ignition Switch Accy. B+ <sup>5</sup> | Fuse Block*              |                        |
| Red                             | 10  | 834 | Ignition Switch B+ <sup>5</sup>       | Fuse Block*              |                        |
| Purple <sup>4</sup>             | 12  | 819 | Ignition Switch Start <sup>5</sup>    | Starter Solenoid         | Engine Section A       |
| Black                           | 14  | 860 | Ground <sup>5</sup>                   | Fuse Block Mounting Bolt |                        |
| <b>INSTRUMENT PANEL SECTION</b> |     |     |                                       |                          |                        |
| Red/Wht                         | 18  | 835 | Radio & Gauges B+                     | Fuse Block*              |                        |
| Green                           | 18  | 836 | High Beam Indicator                   | Dimmer Switch*           | Dimmer Switch Section  |
| Lt.Blue                         | 18  | 837 | Left Turn Indicator                   | Left Front Turn Signal*  | Turn Signal Section    |
| Blue                            | 18  | 838 | Right Turn Indicator                  | Right Front Turn Signal* | Turn Signal Section    |
| Brown                           | 18  | 830 | Instr. Panel Lighting                 | Headlight Switch         | Headlight Section B    |
| Pink                            | 18  | 839 | Fuel Gauge                            | Fuel Sending Unit        | Tail Section           |
| Lt.Grn                          | 18  | 821 | Temperature Gauge                     | Temp. Sending Unit       | Engine Section A       |
| Lt.Blu/Blk                      | 18  | 822 | Oil Pressure Gauge                    | Oil Pres. Sending Unit   | Engine Section A       |
| Ppl/Wht                         | 18  | 823 | Tachometer                            | Tachometer Source        | Engine Section A       |
| <b>TAIL SECTION</b>             |     |     |                                       |                          |                        |
| White                           | 14  | 845 | Dome Lights B+                        | Fuse Block*              |                        |
| Green                           | 18  | 848 | Right Rear Turn Signal                | Turn Signal Switch       | Turn Signal Section    |
| Ylw/Wht                         | 14  | 847 | Fuel Pump #1 B+                       | Fuel Pump #1 Switch      | Accy. Section Switches |
| Green                           | 14  | 863 | Fuel Pump #2 B+                       | Fuel Pump #2 Switch      | Accy. Section Switches |
| Yellow                          | 18  | 849 | Left Rear Turn Signal                 | Turn Signal Switch       | Turn Signal Section    |
| Pink                            | 18  | 839 | Fuel Sending Unit                     | Fuel Gauge               | Instr. Panel Section   |
| Brown                           | 14  | 829 | Tail Lights                           | Headlight Switch         | Headlight Section B    |
| Orange                          | 18  | 850 | Third Brake Light                     | Turn Signal Switch*      | Turn Signal Section    |
| <b>TURN SIGNAL SECTION</b>      |     |     |                                       |                          |                        |
| Brown                           | 14  | 851 | Emergency Flasher Switch B+           | Emergency Flasher*       | Fuse Block             |
| Purple                          | 14  | 852 | Turn Signal Switch Flasher B+         | Turn Flasher*            | Fuse Block             |
| Black                           | 18  | 853 | Horn Switch Ground                    | Horn Relay*              | Fuse Block             |
| Green                           | 18  | 848 | Turn Signal Switch                    | Right Rear Turn Signal   | Tail Section           |
| Yellow                          | 18  | 849 | Turn Signal Switch                    | Left Rear Turn Signal    | Tail Section           |
| Blue                            | 18  | 825 | Turn Signal Switch                    | Right Front Turn Signal  | Headlight Section A    |
| White                           | 16  | 818 | Turn Signal Switch                    | Brake Switch             | Engine Section A       |
| Lt.Blu                          | 18  | 826 | Turn Signal Switch                    | Left Front Turn Signal   | Headlight Section A    |

### NOTES:

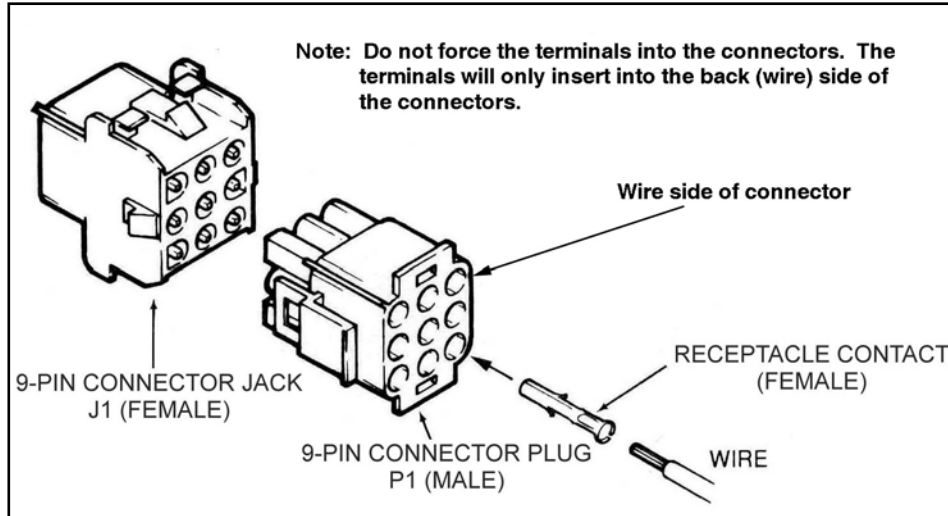
1. 2-color wires: 2nd color (stripe) may not be intense color. Observe two-color wires closely.
2. Wire has identification tag.
3. B+ power from fuse block to brake switch. Third brake light B+ is taken from the turn signal switch.
4. This wire is cut and spade lugs have been installed so that your existing neutral safety switch circuit can be wired into your harness. The neutral safety switch is located at the base of General Motors and Ford steering columns and in Mopar transmissions. Do not attempt to defeat your automobile's neutral safety switch. If your automobile does not have a neutral safety switch, please install one.
5. These wires are connected to the Switch Panel. See section 7.0.

**Table 6.3** 50002 Wire Connection Index, 2 of 2

## 7.0 SWITCH PANEL INSTALLATION AND CONNECTIONS (Refer to figure 7.1 & 7.2)

If you have not already done so, read sections 4.0 and 5.0 of these instructions and think through the installation of the harness kit before securing or cutting any wires.

**Note:** See figure 7.1 for the correct method of terminal insertion into the connectors.



**Figure 7.1** terminal insertions into connector method

### 7.1 Dash mounting the switch panel.

- A. Mount the Switch Panel in the desired location by drilling holes in the dash to suit your needs. When dash mounting this switch panel you will not use the provided switch panel rear cover. Four (4) mounting screws are provided. Be sure you have threaded the wires through any holes and grommets before installing the connectors. The electrical contacts are almost impossible to remove without damage once they have been inserted into the connector body.
- B. Insert the eight (8) wires pre-terminated with the socket style terminals into one of the white, nine (9) way, pin (male) connectors. See connector **P-2** in figure 7-2 for the correct wire insertion position.
- C. Insert the eight (8) wires pre-terminated with the pin style terminals into one of the white, nine (9) way, socket (female) connectors. See connector **S-1** in figure 7-2 for the correct wire insertion position.
- D. Locate the harness wires listed in figure 7-2 that are needed for connectors **S-2** and **P-1**. Be sure you have threaded the wires through any holes and grommets before installing the terminals onto the wires and inserting them into the connectors. The electrical contacts are almost impossible to remove without damage once they have been inserted into the connector body. Using a good wire stripper, strip all wires to be terminated by 3/16." Use the proper crimping tool to avoid terminal damage.

Installation of the provided **pin terminals** for the wires listed for connector **S-2** is as follows. There are two sizes of pin terminals provided in this kit. Crimp one of the large (10-12 gauge) pin terminals onto wire #819 Purple. Crimp all three brown #827, #829 and #830 wires into **ONE** of the large (10-12 gauge) pin terminals. Crimp the smaller size pin terminals onto the remaining wires for connector **S-2**. **NOTICE:** We have provided you with two extra pin terminals of each size just incase any become damaged during installation. Insert these eight wires into connector **S-2**. See connector **S-2** in figure 7-2 for correct wire insertion position

Installation of the provided **socket terminals** for the wires listed for connector **P-1** is as follows. Crimp one of the large (10-12 gauge) socket terminals onto wire #834 Red. Crimp one of the large (10-12 gauge) socket terminals onto wire #828 Red/Bk. Crimp the smaller size socket terminals onto the remaining wires for connector **P-1**. **NOTICE:** We have provided you with two extra socket terminals of each size just incase any become damaged during installation. Insert these eight wires into connector **P-1**. See connector **P-1** in figure 7-2 for correct wire insertion position.

- E. Connect the Switch Panel to the main harness and perform an operational check. Refer to section 5.5.

## 7.2 Roll bar mounting the switch panel.

- A. Mount the switch box in the desired location. Bolts or heavy screws are recommended when doing this.

*Note: The box is pre-punched to allow the switch panel wires to exit from any chosen side. The rubber grommet is provided to protect the wires as they exit from the box. Cap plugs are included to plug the remaining unused holes for a finished look.*

- B. Attach the switch panel to the box with the four (4) screws provided, routing the wires through the grommet and out the desired hole. Be sure you have threaded the wires through any holes and grommets before installing the connectors. The electrical contacts are almost impossible to remove without damage once they have been inserted into the connector body.
- C. Insert the eight (8) wires pre-terminated with the socket style terminals into one of the white, nine (9) way, pin (male) connectors. See connector **P-2** in figure 7-2 for the correct wire insertion position.
- D. Insert the eight (8) wires pre-terminated with the pin style terminals into one of the white, nine (9) way, socket (female) connectors. See connector **S-1** in figure 7-2 for the correct wire insertion position.
- E. Locate the harness wires listed in figure 7-2 that are needed for connectors **S-2** and **P-1**. Be sure you have threaded the wires through any holes and grommets before installing the terminals onto the wires and inserting them into the connectors. The electrical contacts are almost impossible to remove without damage once they have been inserted into the connector body. Using a good wire stripper, strip all wires to be terminated by 3/16.” Use the proper crimping tool to avoid terminal damage.

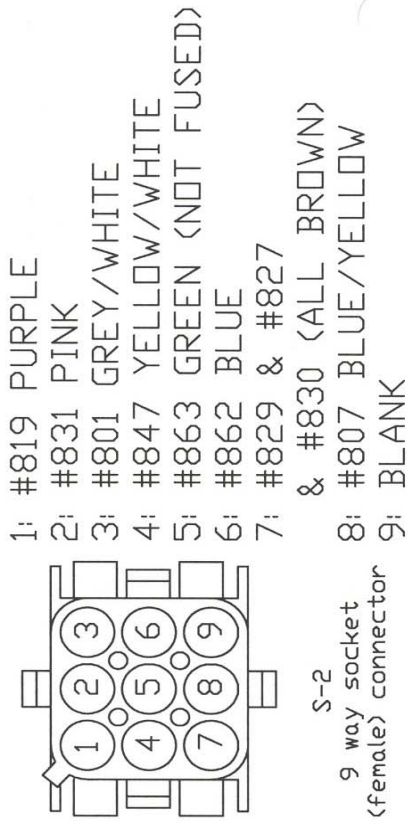
Installation of the provided **pin terminals** for the wires listed for connector **S-2** is as follows. There are two sizes of pin terminals provided in this kit. Crimp one of the large (10-12 gauge) pin terminals onto wire #819 Purple. Crimp all three brown #827, #829 and #830 wires into **ONE** of the large (10-12 gauge) pin terminals. Crimp the smaller size pin terminals onto the remaining wires for connector **S-2**. **NOTICE:** We have provided you with two extra pin terminals of each size just incase any become damaged during installation. Insert these eight wires into connector **S-2**. See connector **S-2** in figure 7-2 for correct wire insertion position  
Installation of the provided **socket terminals** for the wires listed for connector **P-1** is as follows. Crimp one of the large (10-12 gauge) socket terminals onto wire #834 Red. Crimp one of the large (10-12 gauge) socket terminals onto wire #828 Red/Bk. Crimp the smaller size socket terminals onto the remaining wires for connector **P-1**. **NOTICE:** We have provided you with two extra socket terminals of each size just incase any become damaged during installation. Insert these eight wires into connector **P-1**. See connector **P-1** in figure 7-2 for correct wire insertion position.

- F. Connect the Switch Panel to the main harness and perform an operational check. Refer to section 5.5.

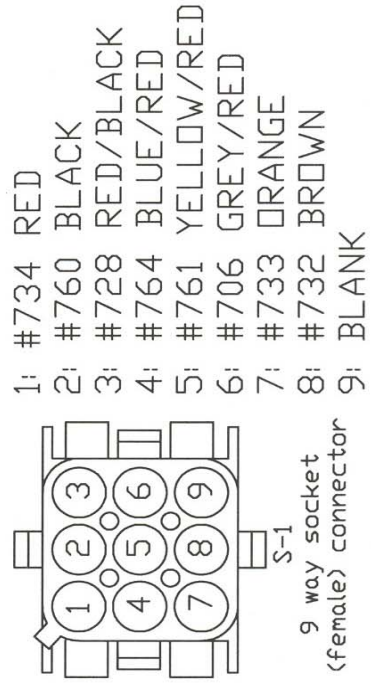
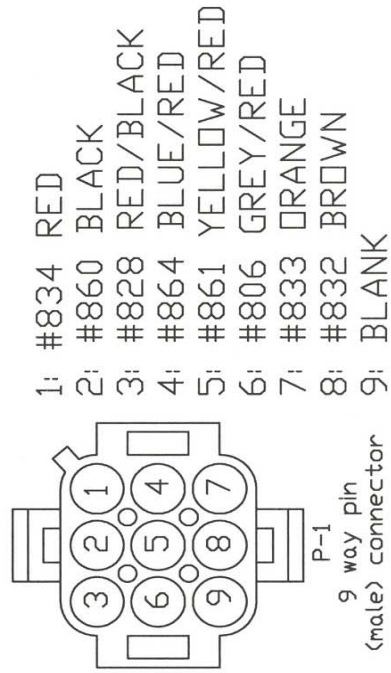
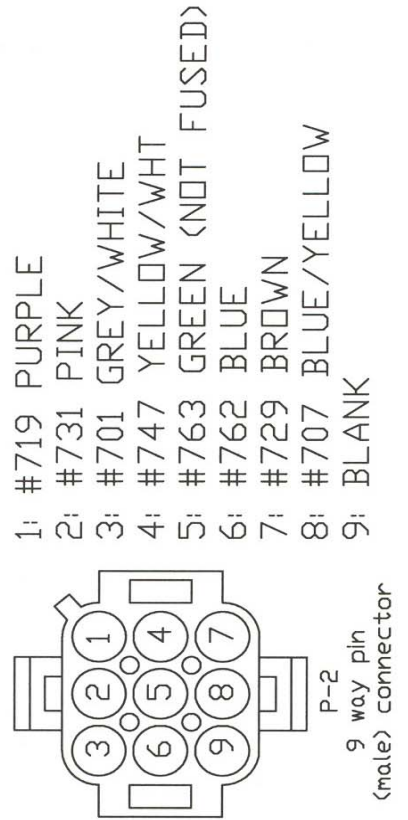


View is from wire side of connector.

50003  
Harness



Switch Panel



NOTE: Wire numbers in this column are for reference only. Switch panel wires are not printed.

Figure 7.2 50002 harness to switch panel connector chart

## 8.0 WIRE CONNECTION INDEX (CONNECTING 50002 TO OTHER THAN SWITCH PANEL)

In each section, connect the wire as identified by its wire color and wire number, to the appropriate item in the CONNECT TO column. Pay close attention to any **Notes** in this section as identified by a small raised number.

**Table 8.1** is divided into sections that correspond to the sections of the 50002 wire harness. For example ACCESSORY SECTION SWITCHES refers to the wires in the harness labeled as accessory section switches. The Index is divided vertically into six columns: COLOR, GAUGE, NUMBER, CONNECT TO, COMES FROM, and FROM SECTION. The columns labeled COME FROM and FROM SECTION are for your reference only. The items in these columns tell you where each wire originates (COMES FROM) and from which section (FROM SECTION) of the harness. The column labeled NUMBER contains an 800-series number that is used to identify various wires in the wiring diagrams that are a part of these instructions. Each wire is labeled with its specific number every 12 inches.

Many of the wire numbers occur twice in this index. This is because you will be connecting both ends of these particular wire segments. However, some wire segments are pre-connected at one end. For instance, all wires originating from the fuse block and certain other wires such as those originating from the horn relay, the dimmer switch, and the instrument panel section. These pre-connected wires are identified by an asterisk (\*) in the COMES FROM column.

**For use when connecting 50002 harness to OTHER than switch panel.**

| <b>Color</b>                      | <b>Ga.</b> | <b>No.</b> | <b>Connect To:</b>           | <b>Comes From:</b>    | <b>From Section:</b>   |
|-----------------------------------|------------|------------|------------------------------|-----------------------|------------------------|
| <b>ACCESSORY SECTION SWITCHES</b> |            |            |                              |                       |                        |
| Gry/Wht <sup>1</sup>              | 14         | 801        | Cooling Fan Switch Output    | Cooling Fan           | Headlight Section A    |
| Blue <sup>2</sup>                 | 14         | 862        | Water Pump Switch Output     | Water Pump            | Engine Section         |
| Ylw/Wht                           | 14         | 847        | Fuel Pump #1 Switch Output   | Fuel Pump #1          | Tail Section           |
| Green <sup>5</sup>                | 14         | 863        | Fuel Pump #2 Switch Output   | Fuel Pump #2          | Tail Section           |
| <b>ACCESSORY SECTION B+</b>       |            |            |                              |                       |                        |
| Blue                              | 16         | 805        | Wiper Switch B+ Input        | Fuse Block*           |                        |
| Gry/Red                           | 14         | 806        | Cooling Fan Switch B+ Input  | Fuse Block*           |                        |
| Blue/Red                          | 14         | 864        | Water Pump Switch B+ Input   | Fuse Block*           |                        |
| Ylw/Red                           | 14         | 861        | Fuel Pump #1 Switch B+ Input | Fuse Block*           |                        |
| Ppl/Wht                           | 14         | 865        | Accessory Switch B+ Input    | Fuse Block*           |                        |
| Tan                               | 14         | 866        | Accessory Switch B+ Input    | Fuse Block*           |                        |
| <b>ENGINE SECTION</b>             |            |            |                              |                       |                        |
| White                             | 14         | 814        | Alternator Exciter           | Fuse Block*           |                        |
| Red                               | 10         | 815        | Alternator B+                | Fuse Block*           |                        |
| Blue                              | 14         | 862        | Water Pump B+                | Water Pump Switch     | Accy. Section Switches |
| Red                               | 10         | 816        | Battery at Start Solenoid B+ | Fuse Block*           |                        |
| <b>ENGINE SECTION A</b>           |            |            |                              |                       |                        |
| Orange <sup>3</sup>               | 16         | 817        | Brake Switch B+              | Fuse Block*           |                        |
| White                             | 16         | 818        | Brake Switch                 | Turn Signal Switch    | Turn Signal Section    |
| Purple                            | 12         | 819        | Starter Solenoid             | Ignition Switch Start | Ign. Switch Section    |
| Pink                              | 14         | 820        | Coil B+                      | Fuse Block*           |                        |
| Lt.Grn                            | 18         | 821        | Temp. Sending Unit           | Temp. Gauge           | Inst. Panel Section    |
| Lt.Blu/Blk                        | 18         | 822        | Oil Pressure Sending Unit    | Oil Pressure Gauge    | Inst. Panel Section    |
| Ppl/Wht                           | 18         | 823        | Tachometer Source            | Tachometer            | Inst. Panel Section    |
| <b>HEADLIGHT SECTION A</b>        |            |            |                              |                       |                        |
| Green                             | 14         | 824        | Horn B+                      | Horn Relay*           | (Fuse Block)           |
| Blue                              | 18         | 825        | Right Front Turn Signal      | Turn Signal Switch    | Turn Signal Section    |
| Lt.Blue                           | 18         | 826        | Left Front Turn Signal       | Turn Signal Switch    | Turn Signal Section    |
| Brown                             | 18         | 827        | Parking Lights               | Headlight Switch      | Headlight Section B    |
| Lt.Grn                            | 14         | 808        | High Beam                    | Dimmer Switch         | Dimmer Switch Section  |
| Tan                               | 14         | 809        | Low Beam                     | Dimmer Switch         | Dimmer Switch Section  |
| Gry/Wht                           | 14         | 801        | Cooling Fan B+ Input         | Fan Switch            | Accy. Section Switches |
| <b>HEADLIGHT SECTION B</b>        |            |            |                              |                       |                        |
| Red/Blk                           | 12         | 828        | Headlight Switch B+ Input    | Fuse Block*           |                        |
| Blu/Ylw                           | 14         | 807        | Headlight Switch Output      | Dimmer Switch         | Dimmer Switch Section  |
| Brown                             | 14         | 829        | Headlight Switch Output      | Tail Lights           | Tail Section           |
| Brown                             | 18         | 827        | Headlight Switch Output      | Parking Lights        | Headlight Section A    |
| Brown                             | 18         | 830        | Headlight Switch Output      | Instr. Panel Lighting | Instr. Panel Section   |
| <b>DIMMER SWITCH SECTION</b>      |            |            |                              |                       |                        |
| Blu/Ylw                           | 14         | 807        | Dimmer Switch Input          | Headlight Switch      | Headlight Section B    |
| Lt.Grn                            | 14         | 808        | Dimmer Switch Output         | High Beam             | Headlight Section A    |
| Tan                               | 14         | 809        | Dimmer Switch Output         | Low Beam              | Headlight Section A    |

**Table 8.1** 50002 Wire Connection Index, 1 of 2

**For use when connecting 50002 harness to OTHER than switch panel**

| Color                          | Ga. | No. | Connect To:              | Comes From:              | From Section:    |
|--------------------------------|-----|-----|--------------------------|--------------------------|------------------|
| <b>IGNITION SWITCH SECTION</b> |     |     |                          |                          |                  |
| Pink                           | 14  | 831 | Ignition Switch Coil B+  | Fuse Block*              |                  |
| Brown                          | 18  | 832 | Ignition Switch Accy. B+ | Accy. Power Relay*       | (Fuse Block)     |
| Orange                         | 18  | 833 | Ignition Switch Accy. B+ | Fuse Block*              |                  |
| Red                            | 10  | 834 | Ignition Switch B+       | Fuse Block*              |                  |
| Purple <sup>4</sup>            | 12  | 819 | Ignition Switch Start    | Starter Solenoid         | Engine Section A |
| Black                          | 14  | 860 | Ground                   | Fuse Block Mounting Bolt |                  |

**INSTRUMENT PANEL SECTION**

|            |    |     |                           |                          |                       |
|------------|----|-----|---------------------------|--------------------------|-----------------------|
| Red/Wht    | 18 | 835 | Radio & Gauges B+         | Fuse Block*              |                       |
| Green      | 18 | 836 | High Beam Indicator       | Dimmer Switch*           | Dimmer Switch Section |
| Lt.Blue    | 18 | 837 | Left Turn Indicator       | Left Front Turn Signal*  | Turn Signal Section   |
| Blue       | 18 | 838 | Right Turn Indicator      | Right Front Turn Signal* | Turn Signal Section   |
| Brown      | 18 | 830 | Instrument Panel Lighting | Headlight Switch         | Headlight Section B   |
| Pink       | 18 | 839 | Fuel Gauge                | Fuel Sending Unit        | Tail Section          |
| Lt.Grn     | 18 | 821 | Temperature Gauge         | Temp. Sending Unit       | Engine Section A      |
| Lt.Blu/Blk | 18 | 822 | Oil Pressure Gauge        | Oil Pres. Sending Unit   | Engine Section A      |
| Ppl/Wht    | 18 | 823 | Tachometer                | Tachometer Source        | Engine Section A      |

**TAIL SECTION**

|         |    |     |                        |                     |                        |
|---------|----|-----|------------------------|---------------------|------------------------|
| White   | 14 | 845 | Dome Lights B+         | Fuse Block*         |                        |
| Green   | 18 | 848 | Right Rear Turn Signal | Turn Signal Switch  | Turn Signal Section    |
| Ylw/Wht | 14 | 847 | Fuel Pump #1 B+ Input  | Fuel Pump #1 Switch | Accy. Section Switches |
| Green   | 14 | 863 | Fuel Pump #2 B+ Input  | Fuel Pump #2 Switch | Accy. Section Switches |
| Yellow  | 18 | 849 | Left Rear Turn Signal  | Turn Signal Switch  | Turn Signal Section    |
| Pink    | 18 | 839 | Fuel Sending Unit      | Fuel Gauge          | Instr. Panel Section   |
| Brown   | 14 | 829 | Tail Lights            | Headlight Switch    | Headlight Section B    |
| Orange  | 18 | 850 | Third Brake Light      | Turn Signal Switch* | Turn Signal Section    |

**TURN SIGNAL SECTION**

|        |    |     |                               |                         |                     |
|--------|----|-----|-------------------------------|-------------------------|---------------------|
| Brown  | 14 | 851 | Emergency Flasher Switch B+   | Emergency Flasher*      | Fuse Block          |
| Purple | 14 | 852 | Turn Signal Switch Flasher B+ | Turn Flasher*           | Fuse Block          |
| Black  | 18 | 853 | Horn Switch Ground            | Horn Relay*             | Fuse Block          |
| Green  | 18 | 848 | Turn Signal Switch            | Right Rear Turn Signal  | Tail Section        |
| Yellow | 18 | 849 | Turn Signal Switch            | Left Rear Turn Signal   | Tail Section        |
| Blue   | 18 | 825 | Turn Signal Switch            | Right Front Turn Signal | Headlight Section A |
| White  | 16 | 818 | Turn Signal Switch            | Brake Switch            | Engine Section A    |
| Lt.Blu | 18 | 826 | Turn Signal Switch            | Left Front Turn Signal  | Headlight Section A |

**NOTES:**

1. 2-color wires: 2nd color (stripe) may not be intense color. Observe two-color wires closely.
2. Wire has identification tag.
3. B+ power from fuse block to brake switch. Third brake light B+ is taken from the turn signal switch.
4. This wire is cut and spade lugs have been installed so that your existing neutral safety switch circuit can be wired into your harness. The neutral safety switch is located at the base of General Motors and Ford steering columns and in Mopar transmissions. Do not attempt to defeat your automobile's neutral safety switch. If your automobile does not have a neutral safety switch, please install one.
5. This wire is the fuel pump #2 power wire which runs to the tail section. The harness does not provide a fused power wire for a fuel pump #2 switch.

**Table 8.1** 50002 Wire Connection Index, 2 of 2

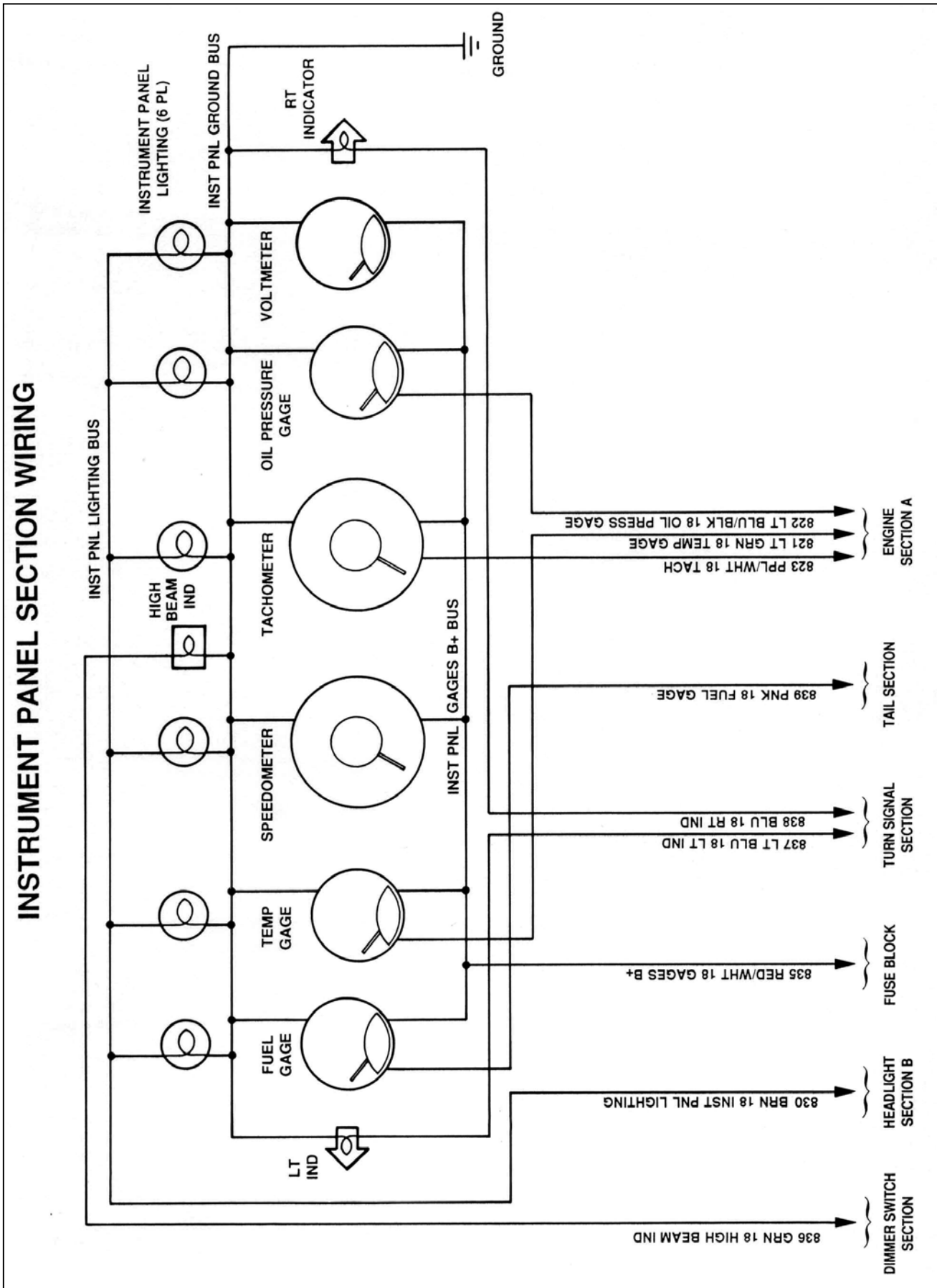


Figure 8.1 50002 Instrument Panel Connections



## 9.0 OPTIONAL RELAY KITS AND ACCESSORIES

| <u>ACCESSORY</u>   | <u>PAINLESS<br/>STANDARD RELAY KIT</u> | <u>PAINLESS<br/>WEATHERPROOF RELAY KIT</u> |
|--|--|--|
| Electric Cooling Fan   | #30101                                 | #30130                                     |
| Electric Fuel Pump   | #50102                                 | #30131                                     |
| Electric Water Pump  | #50106                                 | #30132                                     |
| High Amp Alternator  | #50105                                 |  |
| Shutdown Relay Kit   |  |  |
| <br>   |  |  |
| <b><u>POWERBRAID WIRE WRAP</u></b>   |  |  |
| Protect and clean up any harness installation with our new braided wire wrap. Laterally split design closes around wire bundle without the need for additional taping or fasteners. Available in black only. |  |  |
| Powerbraid Wire Wrap   | #70901                                 | 1/4" Diameter, 20 ft.                      |
|  | #70902                                 | 1/2" Diameter, 10 ft.                      |
|  | #70903                                 | 3/4" Diameter, 6 ft.                       |
|  | #70904                                 | 1 1/2" Diameter, 4 ft.                     |

**Figure 9.1** Optional relay kits and accessories

## **Painless Performance Limited Warranty and Return Policy**

Chassis harnesses and fuel injection harnesses are covered under a lifetime warranty.

All other products manufactured and/or sold by Painless Performance are warranted to the original purchaser to be free from defects in material and workmanship under normal use. Painless Performance will repair or replace defective products without charge during the first 12 months from the purchase date. No products will be considered for warranty without a copy of the purchase receipt showing the sellers name, address and date of purchase. You must return the product to the dealer you purchased it from to initiate warranty procedures.