



Wire Harness Installation Instructions

For Installing:

- Part #10143 – Landcruiser / Scout
Weatherproof Harness

Manual #90548



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P/N 90548 Painless Wiring Manual

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1.0 INTRODUCTION

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

All kits have a built-in-anti-theft feature. Removing the fuse labeled "coil" from the fuse block will prevent the vehicle from starting.

The proper fuses 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. For fuse specifications and wire color designations, see **Section 10.0**.

The Painless wire harness is 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 600 volt, 125°C, TXL. Standard automotive wire is GPT, 300 volt, 80°C, with PVC insulation.

This complete automobile wiring system has been designed with three major groups incorporated into it:

ENGINE/HEADLIGHT GROUP

Includes high beam, low beam, park, right turn, left turn, electric fan, horn, starter solenoid and battery feed, alternator and alternator exciter wire, distributor, water temperature, oil pressure, and air conditioning.

DASH GROUP

Includes wires to connect gauges, indicator lights, and switches to their proper sources.

REAR LIGHT GROUP

Includes tail lights, dome lights (see Paragraph 10.4.2), left and right turn signals, brake lights, and fuel sender.

Installation requires four (4) easy steps:

1. Mount the fuse block
2. Route the wires
3. Cut off the excess wire
4. Terminate the wires

2.0 ABOUT THESE INSTRUCTIONS

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 Contents of Painless Wire Harness Kit
- 5.0 Pre-Installation and General Harness Routing Guidelines
- 6.0 General Harness Installation Instructions
- 7.0 GM - Specific Circuit Connection Details
- 8.0 Ford - Specific Circuit Connection Details
- 9.0 Mopar - Specific Circuit Connection Details
- 10.0 All Makes - Specific Circuit Connection Details
- 11.0 Wire Connection Index and Fuse Requirements

Sections are divided into subsections and **Paragraphs**. Throughout these instructions, the **Figure** numbers refer to illustrations and the **Table** numbers refer to information in table form. These are located in Sections or Paragraphs corresponding to the number. Always pay special and careful attention to any *Notes*, especially those in the Tables, and any text marked **Caution**.

3.0 CONTENTS OF THE PAINLESS WIRE HARNESS KIT

Refer to **Figure 3-1** to take inventory. See that you have everything you're supposed to have in this kit. If anything is missing, contact the dealer where you obtained the kit or Painless Performance at (800) 423-9696. The Painless Wire Harness Kit should contain the following items:

- A** The Main Wire Harness, with the Fuse Block wired in and fuses installed.
- B** Headlamp Connector Cables. (Extra Headlamp Cables are available separately under P/N 80300.)
- C** Maxi Fuse w/ Holder
- D** Firewall Grommet (large)
- E** 2 Fender Well Grommets (for Headlamps)
- F** 1 package of Nylon Tie Wraps
- G** 2 GM Ignition Switch and Turn Signal Switch Connectors w/ Terminals (if applicable)
- H** Parts Box, containing a GM Alternator Connector, Terminals, Splices, etc. This booklet, P/N 90531 [Painless Wiring Manual](#).



Figure 3-1 The Painless Wire Harness Kit

4.0 TOOLS NEEDED

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

- Crimping Tool *Note: Use a quality tool to avoid over-crimping.*
- Wire Stripper
- Test Light or Volt Meter
- Electric Drill
- 1-1/4" Hole Saw
- Small (10 amp or less) Battery Charger

5.0 PRE-INSTALLATION AND GENERAL HARNESS ROUTING GUIDELINES

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

- The physical routing and securing of the wire harness, wires, and groups.
- The proper 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. That 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 **Section 5.2**, GENERAL installation instructions in **Section 6.0**, and precise instructions concerning the electrical connections you will make beginning in **Section 7.0**. To help you begin thinking through the installation of your wire harness, read the following sections:

- 5.1 Familiarize yourself with the harness by locating each of the harness sections in the following list. (Whenever a particular harness section is referred to in these instructions it is shown "all caps": ENGINE SECTION A.) Note that, according to the particular harness you have purchased, some of these sections may not be present, and some are not labeled:

ACCESSORY SECTION SWITCHES	HEADLIGHT SECTION A
ACCESSORY SECTION B+	HEADLIGHT SECTION B
DIMMER SWITCH SECTION (See Section 3.2)	IGNITION SWITCH SECTION (See Section 3.3)
BRAKE SECTION	INSTRUMENT PANEL SECTION
ALTERNATOR SECTION	RADIO SECTION
ENGINE SECTION A	SPEAKER SECTION
TURN SIGNAL SECTION (See Section 3.3)	TAIL SECTION

*Note: For complete information concerning the individual circuits and wires that make up the harness SECTIONS, see **Section 10.0**.*

- 5.2 Decide where the fuse block will be mounted. The Painless Wire Harness is designed for the fuse block to be mounted on the driver's side, under the dash.
- 5.3 Decide which of the following circuits you will be using in your system and where the harness groups or wires will be routed:

ROUTING LOCATION AND PLACEMENT

Emergency Flashers	
Horn	
Dome Lights	
Lights	
Wipers	
Air Conditioner	
Electric Cooling Fan	
Coil	
Turn Signals	
Radio Ignition Switched Power	
Radio Constant Power	
Gauges	
Accessories	

5.4 Where will the following harness groups be routed?

Headlights	
Engine	
Dash	
Tail Lights	

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

6.0 HARNESS GENERAL INSTALLATION INSTRUCTIONS

6.1 Rough Installation

CAUTION: DISCONNECT THE POWER FROM YOUR VEHICLE BY REMOVING THE NEGATIVE (BLACK) BATTERY CABLE FROM THE BATTERY.

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

- 6.1.1 Position the fuse block in its mounting area.
- 6.1.2 Drill a 1-1/4" (1.25") hole near the fuse block for engine and headlight group wires to pass through (ALTERNATOR SECTION, ENGINE SECTION A, and HEADLIGHT SECTION A).
- 6.1.3 Install the Firewall grommet. Route engine and headlight group wires through the grommet and position the harness groups in the areas decided upon in **Sections 5.3 and 5.1**.
- 6.1.4 Route dash group (ACCESSORY SECTION B+, ACCESSORY SECTION SWITCHES, HEADLIGHT SECTION B, INSTRUMENT PANEL SECTION and RADIO SECTION) upward to rear of dash and temporarily tie in place.
- 6.1.5 Position group TAIL SECTION, on the rear floor pan area decided upon in **Sections 5.3 and 5.4**.

6.2 Harness Attachment

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

- 6.2.1 Permanently mount the fuse block. (Note: The fuse block does not have to be grounded.)
- 6.2.2 A silicone based lubricant may need to be added to the weatherproof seal of the fuse block. This will aid in the installation and removal of the fuse block cover.
- 6.2.3 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.
- 6.2.4 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 cowl vent, air conditioning, radio, etc.

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

- 6.2.5 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. Remember to take your time!

6.3 Grounding the Automobile

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

Note: The Painless Wire Harness Kit includes no ground wire except the black wire from the two headlamp connectors. You must supply ground wire (14-16 gauge) for all circuits.

- 6.3.1 Connect a Ground Strap or Cable (2-gauge minimum) from the Negative Battery terminal to the automobile chassis (frame).
- 6.3.2 Connect a Ground Strap from the Engine to the chassis (even a 10-gauge wire is too small). **DO NOT RELY UPON THE MOTOR MOUNTS TO MAKE THIS CONNECTION.**
- 6.3.3 Connect a Ground Strap from the Engine to the Body.
- 6.3.4 If you have a fiberglass body you should install a terminal block to ground all your Gauges and Accessories. Ground the Terminal Block with at least a 12-gauge wire to the chassis.

6.4 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 7.0 through 10.0**, as appropriate, and continually refer to **Section 10.0, 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.*

- 6.4.1 Have all needed tools and connectors handy.
- 6.4.2 Select the correct size terminal for the wire and stud application.
- 6.4.3 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.**
- 6.4.4 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.

- 6.4.5 Crimp the terminal onto the wire.

CAUTION: DO NOT OVER-CRIMP!

- 6.4.6 Connecting the harness throughout the groups is a redundant process. Make sure that each wire is FIRST properly routed and THEN attach. **DO NOT ATTACH FIRST THEN ROUTE AFTERWARD.**
- 6.4.7 When all wires are attached, tighten the mounts and ties to secure harness permanently.

6.5 Testing The System

- 6.5.1 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.

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.

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.

- 6.5.2 INDIVIDUALLY turn on each light, ignition, wiper circuit, etc. and check for proper operation.

Note: The turn signals will not flash properly if you do not have both the front and rear bulbs installed and connected.

- 6.5.3 When all circuits check out THEN attach the battery cable to the battery for vehicle operation.

7.0 GM - SPECIFIC CIRCUIT CONNECTIONS

Note: Your alternator may not appear exactly as represented in the **Figures**. The circuits are wired the same way, though.

7.1 Early GM Alternator (before 1969) - External Regulator. See Figure 7-1.

- 7.1.1 With a short 16-gauge jumper wire, connect Voltage Regulator terminals 3 & 4 together. Connect ALTERNATOR SECTION wire #714 (wht) to Voltage Regulator terminal 3 or 4.
- 7.1.2 Connect ALTERNATOR SECTION wire #715 (red) to the Alternator Output lug (Bat).
- 7.1.3 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.
- 7.1.4 Connect a 16-gauge ground wire from the Alternator Ground lug (G) to chassis ground.

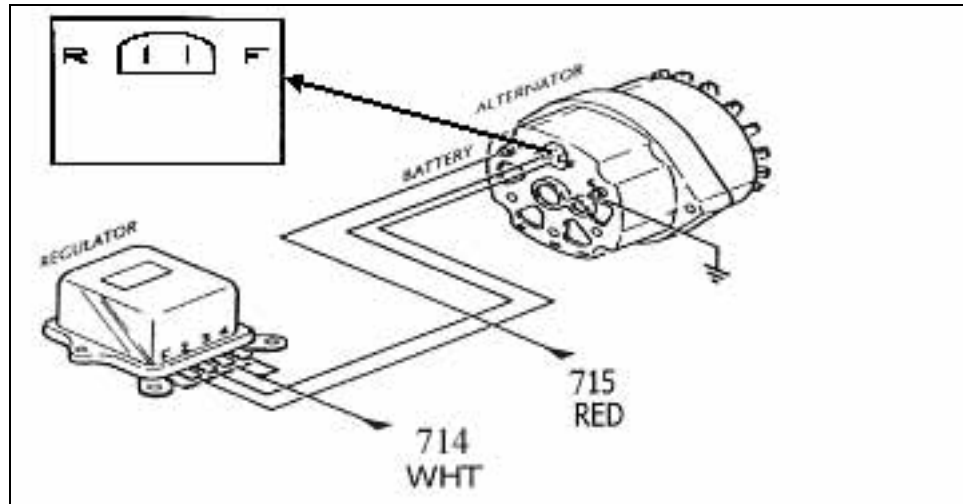
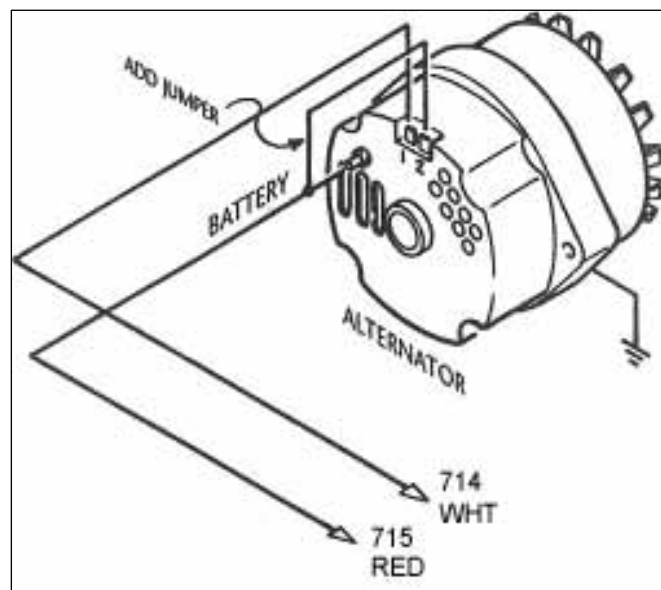


Figure 7-1 Early GM Alternator - External Regulator

7.2 Late GM Alternator (after 1972) - Internal Regulator. See Figure 7-2.

- 7.2.1 Connect ALTERNATOR SECTION wire #714 (wht) to Alternator terminal 1. Connect ALTERNATOR SECTION wire #715 (red) to the Alternator Output lug (Bat).
- 7.2.2 Connect a short 14-gauge jumper wire from Alternator terminal 2 to the Alternator Output lug (Bat).
- 7.2.3 A connector and terminal spades for late GM Alternators are included in the parts box.



* Under some circumstances the connection of the alternator will not allow the engine to be shut off. If this occurs a diode will need to be installed inline on wire #714. This will prevent the alternator from back feeding into the ignition system and thus causing the engine to run with the ignition switch turned off. The Radio Shack part number for the diode is 276-1661. **It is to be installed with the stripe towards the alternator.**

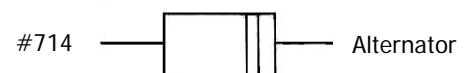


Figure 7-2A Late GM Alternator - Internal Regulator

7.3 GM One-Wire Alternator.

- 7.3.1 Connect ALTERNATOR SECTION wire #715 (red) to the Alternator Output lug (Bat). Insulate and stow ALTERNATOR SECTION wire #714 (wht). Do not install jumper wire. No wires are connected to Alternator terminals 1 & 2. If alternator output is greater than 65 amps refer to Figure 7-2B and the caution below.
- 7.3.2 When using a 1-wire alternator you can either use a voltmeter or ammeter. A WARNING LIGHT CANNOT BE WIRED IN.

CAUTION: IF USING AN ALTERNATOR WITH AN OUTPUT LARGER THAN 65 AMPS, YOU WILL ALSO NEED TO USE THE RED 10 GAUGE WIRE #960 AND THE RED 8 GAUGE WIRE INCLUDED IN THE BOX. THE WIRE END WITH THE RING TERMINAL AND RUBBER BOOT WILL CONNECT TO THE ALTERNATOR OUTPUT LUG WITH #715. ROUTE THE OTHER END TO THE MAXI FUSE TERMINAL WITH WIRE #716. CUT THE WIRE AND CRIMP ON A RING TERMINAL. NOW INSTALL A RING TERMINAL ON THE REMAINING RED 8 GAUGE WIRE AND ATTACH IT TO THE STARTER SIDE TERMINAL OF THE MAXI FUSE. CUT THE 8 GAUGE RED WIRE TO LENGTH, CRIMP ON A RING TERMINAL AND ATTACH IT TO THE MAIN SOLENOID LUG WITH THE POSITIVE BATTERY CABLE. SEE FIGURE 7-2B.

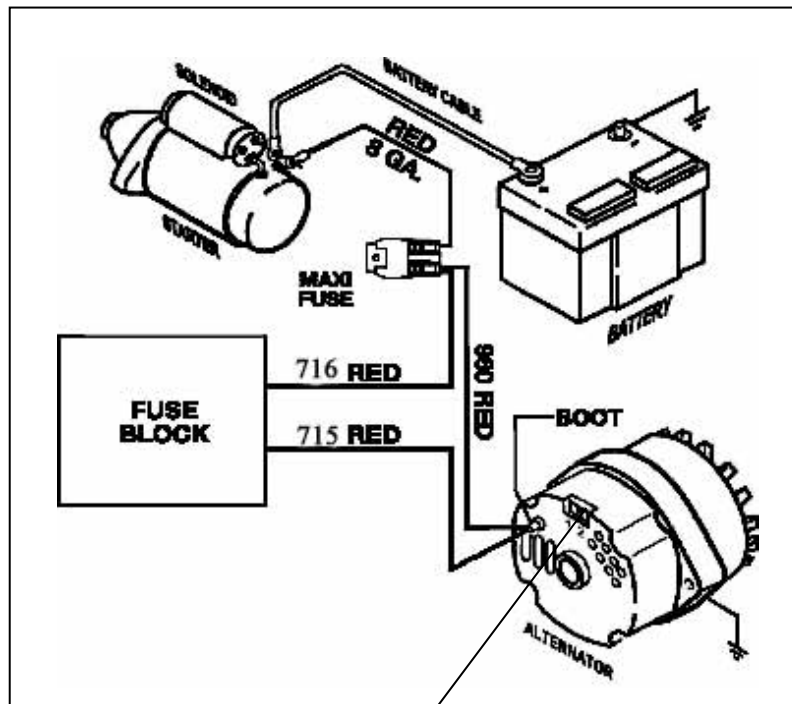


Figure 7-2B High Output Wire

* These terminals will not be used on One Wire alternators. They will normally have a black plastic plug which blocks off the terminals.
** If you do not have a One Wire alternator refer to Figure7-2A.

7.4 GM Ignition (Start/Run) System. See Figure 7-4.

Note: If you are going to install an ammeter, see Section 9.3 first.

7.4.1 With crimping tool, attach Maxi Fuse (**Figure 7-3**) onto end of ENGINE SECTION A (single) 10 ga. wire #716 (red) AFTER having routed wire from the Fuse Panel to the Starter Solenoid. This serves as a fuse to protect the entire harness. DO NOT OMIT IT!

7.4.2 Connect wire #716 - with Maxi Fuse installed - to the Starter Solenoid Battery terminal. This is the same lug that the large red cable from the battery is normally connected to.

7.4.3 Connect ENGINE SECTION A wire #719 (pur) to the Starter Solenoid Start (S) terminal.

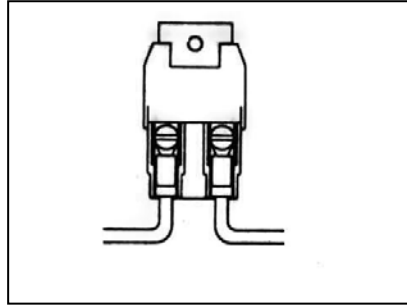


Figure 7-3 Maxi Fuse

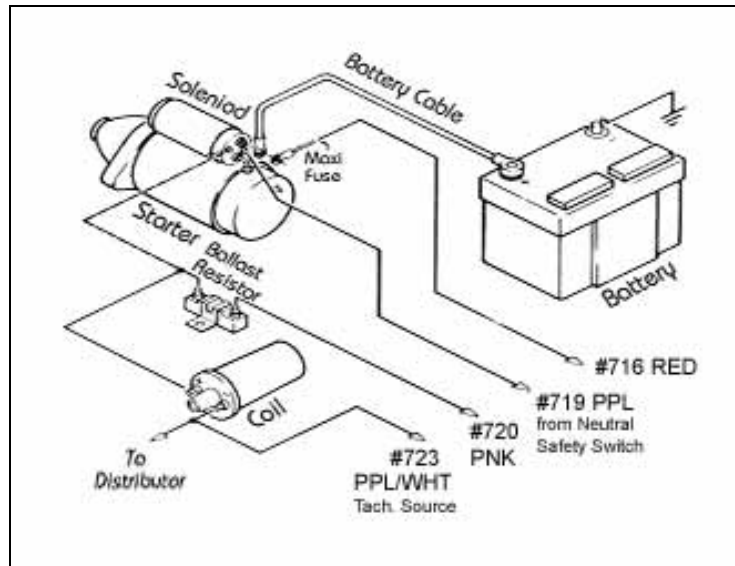


Figure 7-4 GM Ignition (Start-Run) System

7.4.4 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 #720 (pnk) to one end of the Ballast Resistor. Connect the other end of the Ballast Resistor to the Ignition Coil B+ 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 #720 directly to the Ignition Coil B+ terminal.

Note: The ballast resistor has been deleted from this kit due to lack of consumer usage. If one is needed in your application, please call Painless Performance at 800-423-9696 for assistance.

Important Note! For HEI systems route wire #720 (pnk) to the Distributor and attach it to the terminal labeled BAT. No Ballast Resistor is required.

7.4.5 The Ignition Coil NEGATIVE (-) terminal is connected to the Distributor. Also Connect ENGINE SECTION A wire #723 (pur/wht) to the Ignition Coil NEGATIVE (-) terminal. This is the tachometer source. If you are not using a tachometer, insulate and stow wire #723.

7.4.6 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 7-4**) 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.

7.5 Steering Column Wiring - Turn Signal & Ignition Switch Connectors

7.5.1 There are two different turn signal switch plugs on most tilt columns. The difference is in the length of the male plug that is mounted ON THE COLUMN. One plug is 3-7/8" (3.875") long and the other is 4-1/4" (4.250"). This is only a difference of 3/8" (0.375"), so measure the plug carefully. The Wire Harness Kit has included two different female connectors to mate with the column-mounted plug. See **Figure 7-5** to determine which female connector is correct for your automobile.

Cut Turn Signal Section wires to length and install terminals provided. Choose the proper plug and install the terminals according to **Table 7-1**, as shown in **Figure 7-5**. The GM wire color codes have been included for reference.

*Note: The terminals will only insert into the connector ONE WAY, as shown in **Figure 7-5**. Make certain you are inserting the wire into the CORRECT LOCATION as the terminals are difficult if not impossible to remove once inserted.*

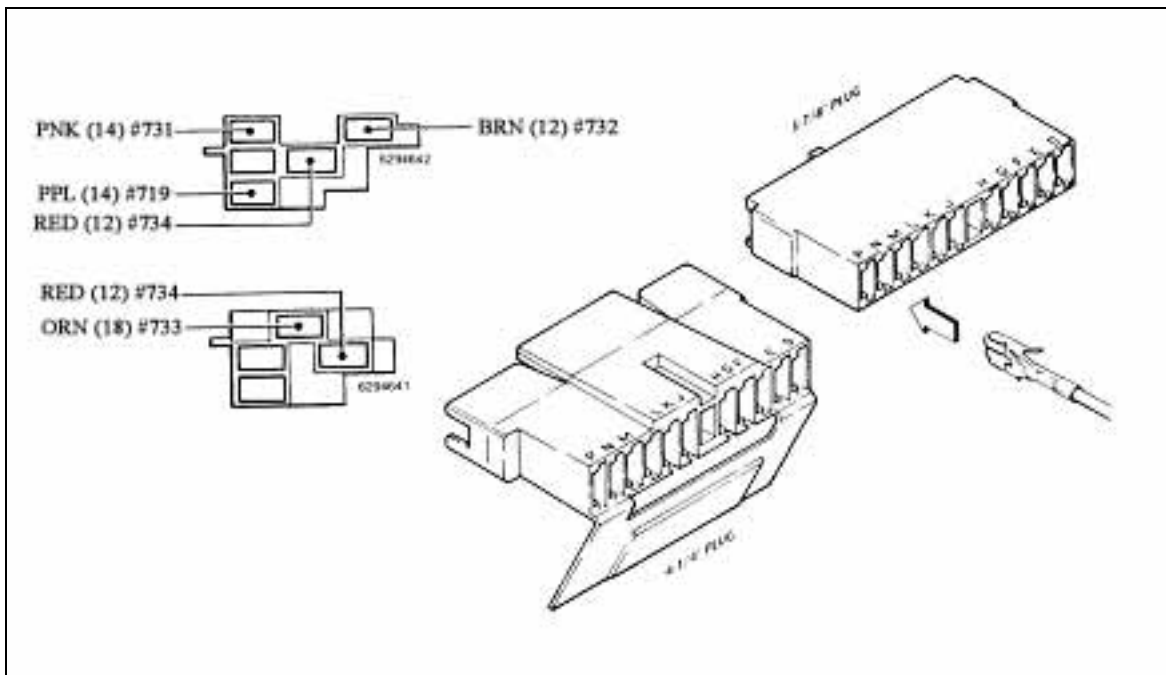


Figure 7-5 GM Turn Signal Connectors

7.5.2 Cut Ignition Section wires to length and install terminals provided. See **Table 7-1** and **Figure 7-5** for color codes, wire numbers, and wire designations for the Ignition Switch Connectors.

7.5.3 **IGNITION SECTION wire #719 (pur) must be cut and spade terminals installed. These spade terminals are to be connected to the Neutral Safety Switch at the base of the steering column. If using a neutral safety switch on a floor shifter or in the transmission, the (pur) #719 needs to be routed to the neutral safety switch, cut and connected to it, then continued on to the starter solenoid.**

7.5.4 The harness does not support seat belt buzzers or key alarms.

7.5.5 To supply power to a fuel injection harness use ENGINE SECTION A wire #720 (pnk) as the fused ignition power source.

TURN SIGNAL SECTION

GM Color	Toyota Color	Designation	Painless Wire No.	Painless Color	*Turn Signal Connector
Blk	Grn/Ylw	Horn	753	Blk	G
Lt.Blu	Grn/Blk	LF Turn Signal	726	Lt.Blu	H
Dk.Blu	Grn/Ylw	RF Turn Signal	725	Dk.Blu	J
Brn	Grn/Blu	Hazard Flasher	751	Brn	K
Pur	Grn/Blu	Turn Flasher	752	Pur	L
Ylw	Grn/Blk	LR Turn Signal	749	Ylw	M
Grn	Grn/Ylw	RR Turn Signal	748	Grn	N
Wht	Grn/Red	Stop Lamp Switch	718	Wht	P

IGNITION SWITCH SECTION

			Painless Wire No.	Painless Color	
Pur/Wht	Blk/Wht	Ignition Start	719		Pur
Brn	Blu/Red	Accessory Fuse Panel	732		Brn
Orn	Blk/Ylw	Ignition Switched Fuse Panel	733		Orn
Red	Wht/Blu	Battery B+	734		Red

* GM Only

Table 7-1 GM/Toyota Ignition & Turn Signal Wiring

8 TOYOTA - SPECIFIC CIRCUIT CONNECTIONS

8.1 Toyota Alternator (early- 1977) See Figure 8-1

*Note: Your Alternator may not appear exactly as represented in **Figure 8-1**. The circuits are wired the same way, though.*

- 8.1.1** Connect ALTERNATOR SECTION wire #715 (red) to the Alternator Output lug (Bat).

CAUTION: IF USING AN ALTERNATOR WITH AN OUTPUT LARGER THAN 65 AMPS, YOU WILL ALSO NEED TO USE JUMPER WIRE #960 (RED), INCLUDED IN BOX. THE WIRE END WITH THE RING TERMINAL AND RUBBER BOOT WILL CONNECT TO THE ALTERNATOR OUTPUT LUG. ROUTE THE OTHER END TO THE STARTER RELAY. CUT THE WIRE AND CRIMP ON A RING TERMINAL. INSTALL ON RELAY TERMINAL WITH CABLE COMING FROM BATTERY. SEE FIGURE 7-2B.

- 8.1.2** Connect ALTERNATOR SECTION wire #714 (wht) to the Voltage Regulator (IG) terminal.
8.1.3 Connect a 14-gauge wire from the Voltage Regulator F terminal to the Alternator F terminal.
8.1.4 Connect a 14-gauge wire from the Voltage Regulator E terminal to the Alternator E terminal.

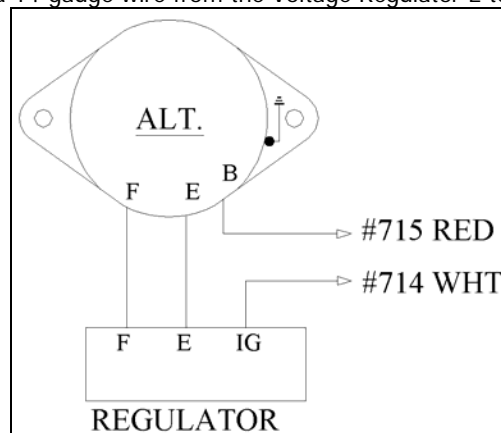


Figure 8-1 Toyota Alt. Diagram (early- 1977)

8.2 Toyota Alternator (1977-1979) See Figure 8-2

*Note: Your Alternator may not appear exactly as represented in **Figure 8-2**. The circuits are wired the same way, though.*

- 8.2.1** Connect ALTERNATOR SECTION wire #715 (red) to the Alternator Output lug (Bat).

CAUTION: IF USING AN ALTERNATOR WITH AN OUTPUT LARGER THAN 65 AMPS, YOU WILL ALSO NEED TO USE JUMPER WIRE #960 (RED), INCLUDED IN BOX. THE WIRE END WITH THE RING TERMINAL AND RUBBER BOOT WILL CONNECT TO THE ALTERNATOR OUTPUT LUG. ROUTE THE OTHER END TO THE STARTER RELAY. CUT THE WIRE AND CRIMP ON A RING TERMINAL. INSTALL ON RELAY TERMINAL WITH CABLE COMING FROM BATTERY. SEE FIGURE 7-2B.

- 8.2.2** Connect ALTERNATOR SECTION wire #714 (wht) to the Voltage Regulator (IG) terminal.
8.2.3 Connect a 14-gauge wire from the Voltage Regulator F terminal to the Alternator F terminal.
8.2.4 Connect a 14-gauge wire from the Voltage Regulator N terminal to the Alternator N terminal.
8.2.5 Connect the Voltage regulator E terminal and the Alternator E terminal to a chassis ground.

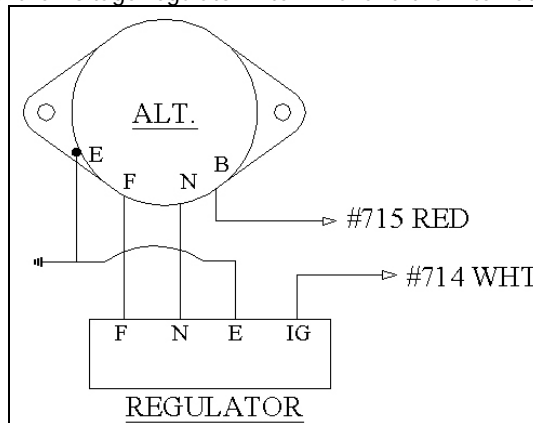


Figure 8-2 Toyota Alt. Diagram (1977-1979)

8.3 Toyota Alternator (1975, 1981+) See Figure 8-3

*Note: Your Alternator may not appear exactly as represented in **Figure 8-3**. The circuits are wired the same way, though.*

- 8.3.1** Connect ALTERNATOR SECTION wire #715 (red) to the Alternator Output lug (Bat) and the Voltage Regulator B terminal.

CAUTION: IF USING AN ALTERNATOR WITH AN OUTPUT LARGER THAN 65 AMPS, YOU WILL ALSO NEED TO USE JUMPER WIRE #960 (RED), INCLUDED IN BOX. THE WIRE END WITH THE RING TERMINAL AND RUBBER BOOT WILL CONNECT TO THE ALTERNATOR OUTPUT LUG. ROUTE THE OTHER END TO THE STARTER RELAY. CUT THE WIRE AND CRIMP ON A RING TERMINAL. INSTALL ON RELAY TERMINAL WITH CABLE COMING FROM BATTERY. SEE FIGURE 7-2B.

- 8.3.2** Connect ALTERNATOR SECTION wire #714 (wht) to the Voltage Regulator (IG) terminal.
8.3.3 Connect a 14-gauge wire from the Voltage Regulator F terminal to the Alternator F terminal.
8.3.4 Connect a 14-gauge wire from the Voltage Regulator N terminal to the Alternator N terminal.
8.3.5 Connect the Voltage regulator E terminal and the Alternator E terminal to a chassis ground.
8.3.6 Make connections to Voltage Regulator L terminal according to the factory schematic for your year model.

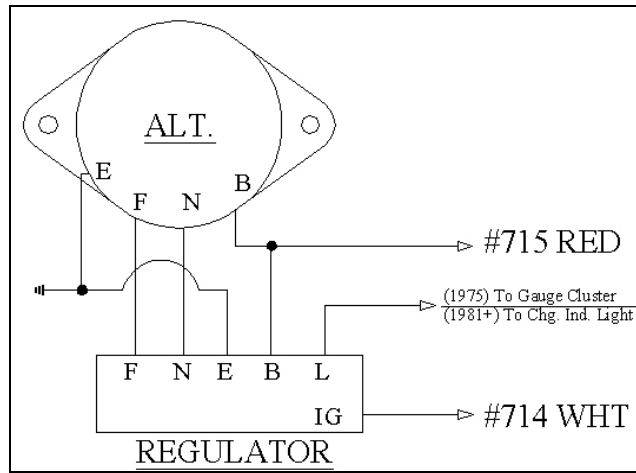


Figure 8-3 Toyota Alt. Diagram (1975, 1981+)

8.4 Toyota Alternator w/Internal Regulator. See Figure 8-4

Note: Your Alternator may not appear exactly as represented in Figure 8-4. The circuits are wired the same way, though.

- 8.4.1 Connect ALTERNATOR SECTION wire #715 (red) to the Alternator Output lug (Bat)

CAUTION: IF USING AN ALTERNATOR WITH AN OUTPUT LARGER THAN 65 AMPS, YOU WILL ALSO NEED TO USE JUMPER WIRE #960 (RED), INCLUDED IN BOX. THE WIRE END WITH THE RING TERMINAL AND RUBBER BOOT WILL CONNECT TO THE ALTERNATOR OUTPUT LUG. ROUTE THE OTHER END TO THE STARTER RELAY. CUT THE WIRE AND CRIMP ON A RING TERMINAL. INSTALL ON RELAY TERMINAL WITH CABLE COMING FROM BATTERY. SEE FIGURE 7-2B.

- 8.4.2 Connect ALTERNATOR SECTION wire #714 (wht) to the Alternator (IG) terminal.
 8.4.3 Make connections to the Alternator L terminal according to the factory schematic for your year model.

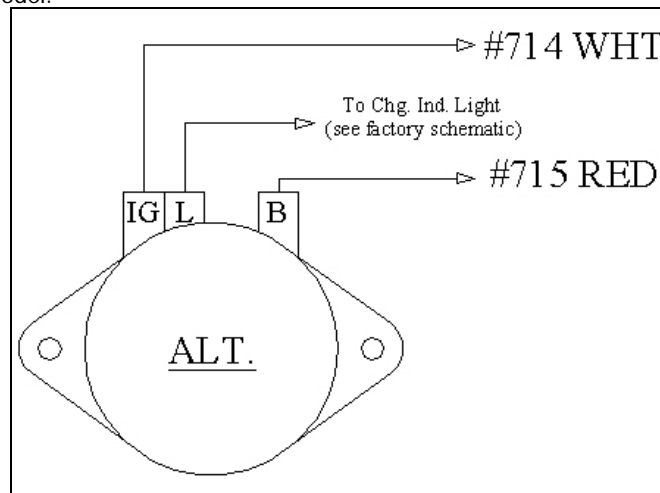


Figure 8-4 Toyota Alt. Diagram (Internal Regulator)

8.5 Toyota Ignition (Start/Run) System. See Figure 7-4.

Note: Your Igniter may not appear exactly as represented in Figures 8-5A-C. The circuits are wired the same way though.

Note: If you are going to install an ammeter, see Section 10.3 first.

- 8.5.1 With crimping tool, attach Maxi Fuse (Figure 7-3) onto end of ENGINE SECTION A (single) 10 ga. wire #916 (red) AFTER having routed wire from the Fuse Panel to the Starter Solenoid. This serves as a fuse to protect the entire harness. DO NOT OMIT IT!
- 8.5.2 Connect wire #916 - with Maxi Fuse installed - to the Starter Solenoid Battery terminal. This is the same lug that the large red cable from the battery is normally connected to.
- 8.5.3 Connect ENGINE SECTION A wire #919 (pur) to the Starter Solenoid Start (S) terminal. (See illustration on page 31)

- 8.5.4** 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 #720 (pnk) to one end of the Ballast Resistor. Connect the other end of the Ballast Resistor to the Ignition Coil B+ 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 #720 directly to the Ignition Coil B+ terminal.

Note: The ballast resistor has been deleted from this kit due to lack of consumer usage. If one is needed in your application, please call Painless Performance at 800-423-9696 for assistance.

- 8.5.5** The Ignition Coil NEGATIVE (-) terminal is connected to the Distributor. Also Connect ENGINE SECTION A wire #723 (pur/wht) to the Ignition Coil NEGATIVE (-) terminal. This is the tachometer source. If you are not using a tachometer, insulate and stow wire #723.
- 8.5.6** 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 7-4**) 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.

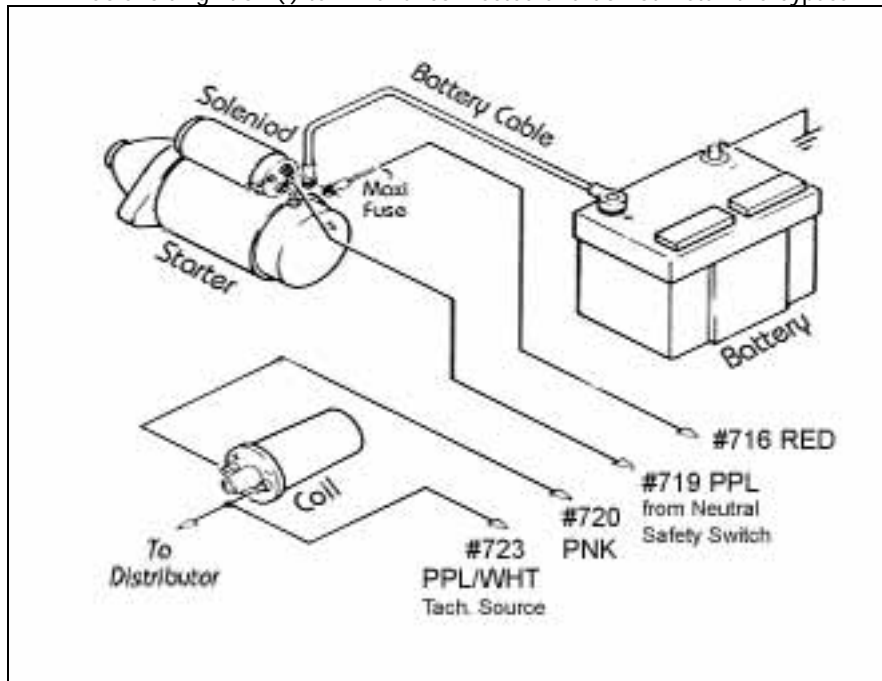


Figure 8-5A Toyota Ignition (Start-Run) System, without Elect. Igniter

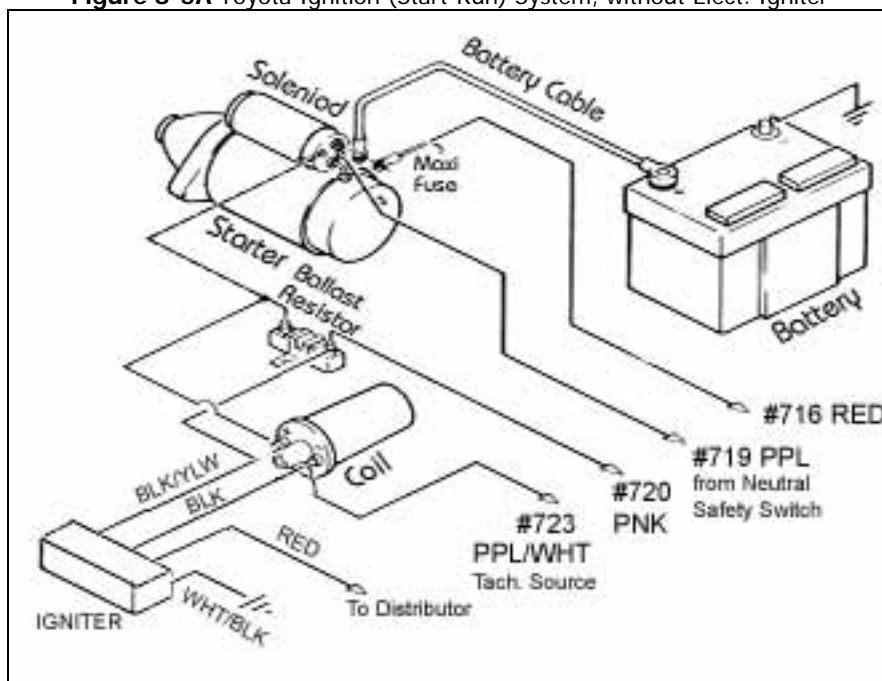


Figure 8-5B Toyota Ignition (Start-Run) System

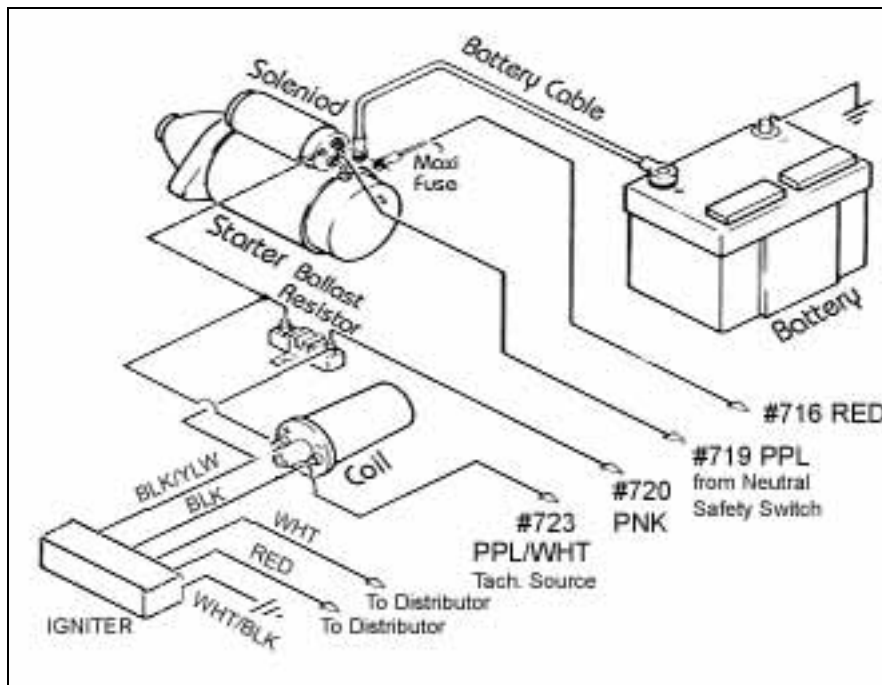


Figure 8-5C Toyota Ignition (Start-Run) System

9.0 ALL MAKES - SPECIFIC CIRCUIT CONNECTIONS

9.1 Generator Charging System. See Figure 10-1.

- 9.1.1 Connect Generator ARMATURE terminal (A) to Voltage Regulator terminal A. Connect Generator FIELD terminal (F) to Voltage Regulator terminal F. Use 14-gauge wire (color optional) for FIELD and 12-gauge wire for Armature.
- 9.1.2 Be sure both the generator and the voltage regulator are securely grounded. The voltage regulator may have a terminal for this purpose (labeled "G") or you may have to ground the regulator case.
- 9.1.3 Connect ALTERNATOR SECTION wire #715 (red) to Voltage Regulator terminal B.
- 9.1.4 Insulate and stow ALTERNATOR SECTION wire #714 (wht).

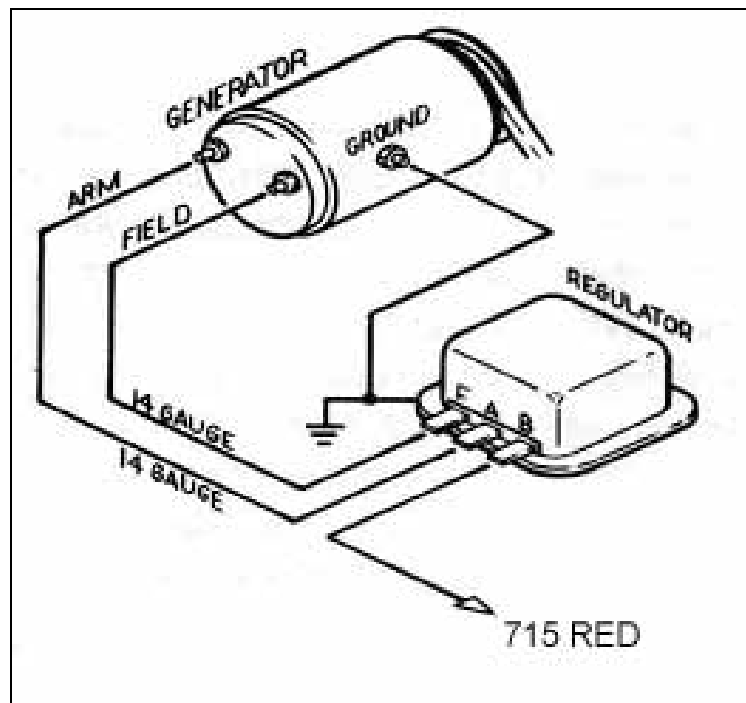


Figure 9-1 Generator Charging System

9.2 Generator to Alternator Conversion

- 9.2.1 You may be able to convert your generator charging system to use an alternator and external regulator without altering or re-routing existing wires.
- 9.2.2 Install the new alternator and replace the existing generator voltage regulator with the new, alternator compatible one.
- 9.2.3 Connect the existing wiring according to either **Section 7.0, 8.0**, as appropriate.

9.3 Connecting an Ammeter and the Maxi Fuse. See Figure 9-3.

- 9.3.1 Most, but not all Ammeters must be inserted IN SERIES onto the ENGINE SECTION A (single) 10-gauge wire #716 (red) that routes from the Fuse Panel to the Starter Solenoid.
- 9.3.2 The overall physical length of this circuit should be as short as possible (allow some slack, however). You may have to cut wire #716 and you may have to add some additional length of 10-gauge wire. USE ONLY 10-GAUGE WIRE OR LARGER.
- 9.3.3 Route wire #716 (from the Fuse Panel) and connect to the Ammeter NEGATIVE terminal.
- 9.3.4 Route the remainder of wire #9716 from the Ammeter POSITIVE terminal to the Maxi Fuse terminal. Connect the other side of the Maxi Fuse (**Figure 7-3**) 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, LLC 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).

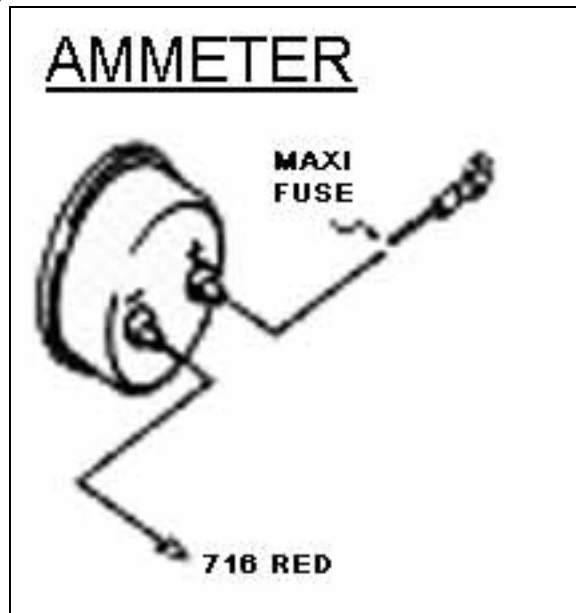


Figure 9-3 Ammeter & Maxi Fuse

9.4 Interior Lighting. See Figure 9-4

- 9.4.1 Interior Lights are switched through the door switches and the dash-mounted headlight switch, which is usually rotated counter-clockwise to turn on. These switches apply ground to the circuit. YOU WILL NEED TO SUPPLY THESE GROUND WIRES. 12V is continually present at the light bulbs. See **Figure 9-4**.
- 9.4.2 If possible leave your existing interior light wiring intact. The Painless harness supplies the 12V feed (B+) to the circuit via TAIL SECTION wire #745 (wht) and a ground via TAIL SECTION wire #761 (blk).

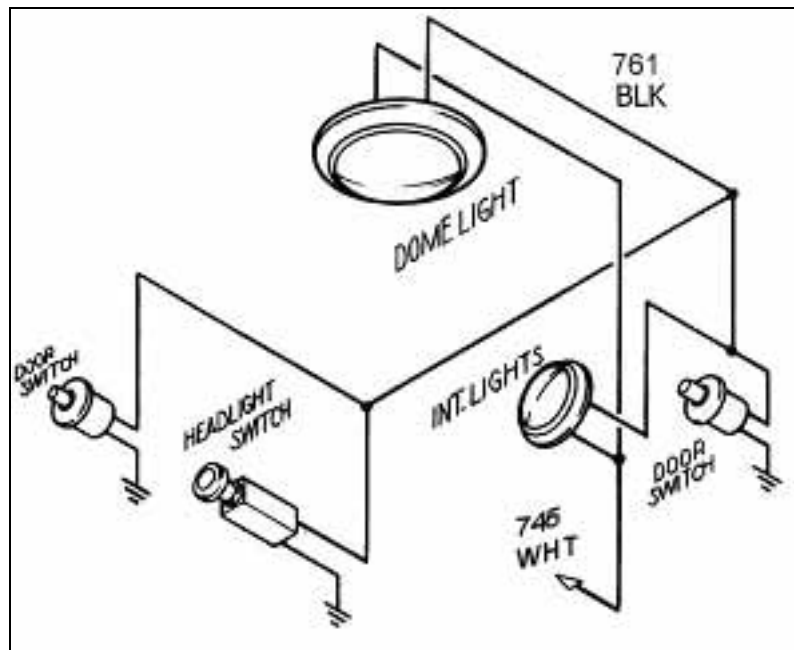


Figure 9-4 Interior Lighting (GM Style Jamb Switch – Painless Part #80170)

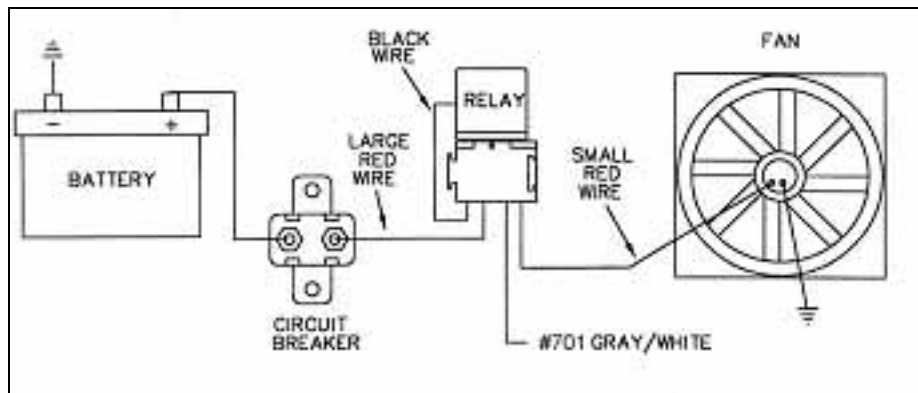


Figure 9-5A Typical Fan Relay Installation (Fan Relay Kit – Painless Part #30101)

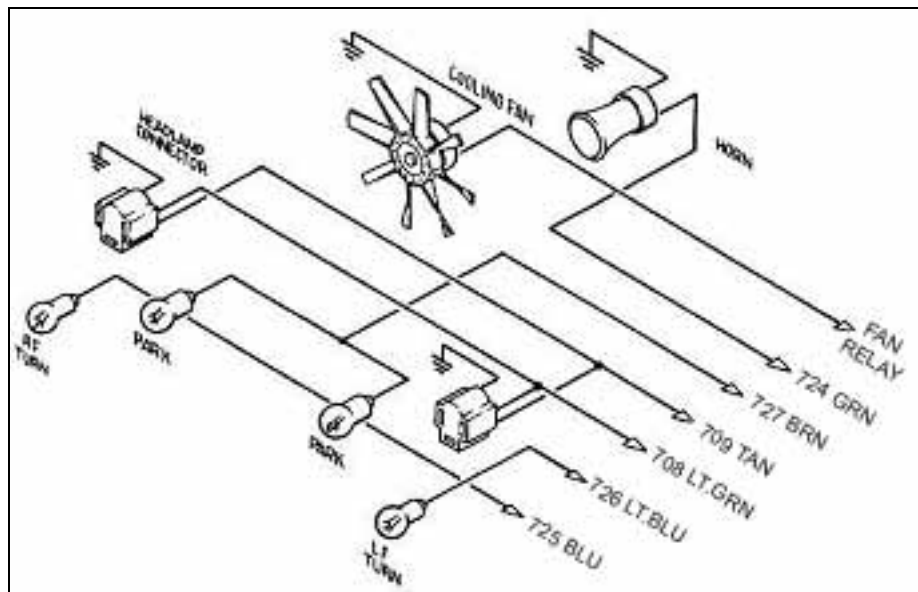


Figure 9-5B HEADLIGHT SECTION A Wiring

9.5 HEADLIGHT SECTION A. See Figure 9-5B.

- 9.5.1 Connect HEADLIGHT SECTION A wire #724 (grn) to the Horn's hot terminal. TURN SIGNAL SECTION wire #753 (blk) was connected in the Turn Signal Connector section of these instructions. The Horn Relay is pre-wired into the Fuse Panel.
- 9.5.2 Connect HEADLIGHT SECTION A wires #708 (lt.grn) and #709 (tan) to the green and tan wires of BOTH Headlamp Connectors. Connect the black wires of the Headlamp Connectors to Chassis Ground. You should have enough wire to accomplish this. You have been supplied with two small grommets (**Figure 3-1**) should you need to pass these wires through a fender well. Don't forget to heat shrink both sides of the pre-installed butt connectors on the headlight pigtails.
- 9.5.3 Connect HEADLIGHT SECTION A wire #727 (brn) to ALL front Park Lights. Connect HEADLIGHT SECTION A wire #725 (blu) to the RIGHT FRONT Turn Signal. Connect wire #726 (lt.blu) to the LEFT FRONT Turn Signal.

Note: Don't confuse Park Lights with Turn Signals.

- 9.5.4 Connect HEADLIGHT SECTION A wire #701 (gry/wht) to the Electric Fan Relay. This wire is an activation wire for the relay, **NOT A POWER FEED**. The other end of wire #701 is in the ACCESSORY SECTION SWITCHES and should be connected to the electric fan switch in the dash. Wire #706 is the power feed wire for the electric fan switch. **Figure 9-5A** shows a typical fan relay installation.

Note: The wire connected to the fan in Figure 9-5B will need to come from a fan relay output terminal. Wire #701 (gry/wht) from the ACCESSORY SECTION SWITCHES is an activation wire for a fan relay only. It will NOT power an electric fan by itself.

- 9.5.5 Connect the DIMMER SWITCH SECTION Extension Cable (**Figure 3-1**) to its mating connector in the harness (if applicable) and your floor-mounted Dimmer Switch or column-mounted Dimmer Switch.

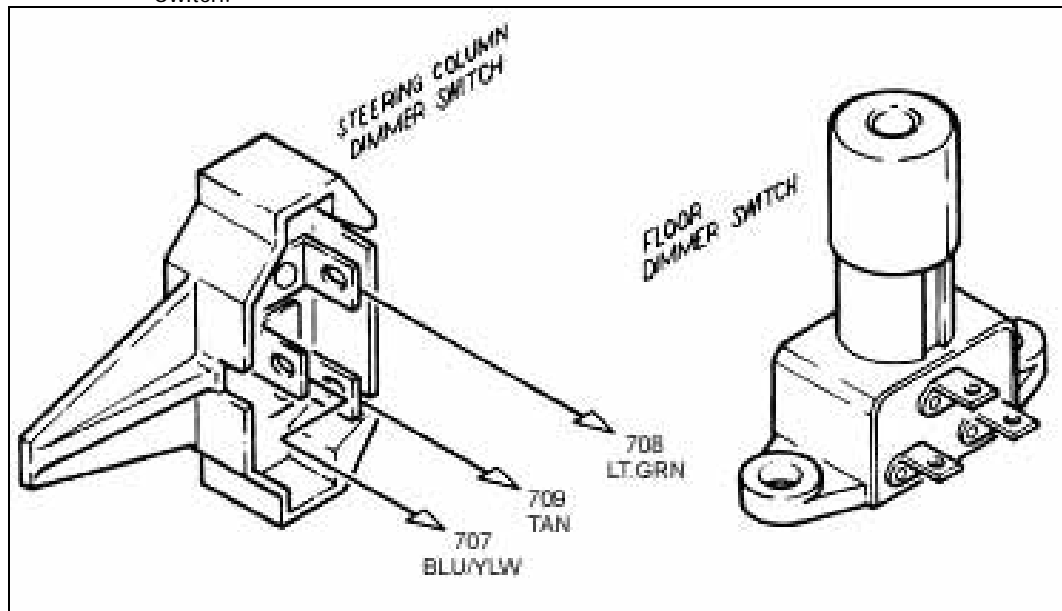


Figure 9-5C Dimmer Switches (Push Button Style – Painless Part #80150)

9.6 HEADLIGHT SECTION B Wiring. See Figure 9-6.

- 9.6.1 Connect the 6 wires of HEADLIGHT SECTION B, the Dome and Interior Light return circuit, and the Headlamp Switch Ground as shown. If you do not have a GM headlight switch, you should trace out the wires of your existing harness and connect the new harness according to **Table 11-2**.

*Note: On late-style GM headlight switches, the park lights terminal to which wire #927 (brn) is connected (shown in **Figure 9-6**) has been omitted. In this case, wire #927 must be connected as indicated by the dashed line in **Figure 9-6**.*

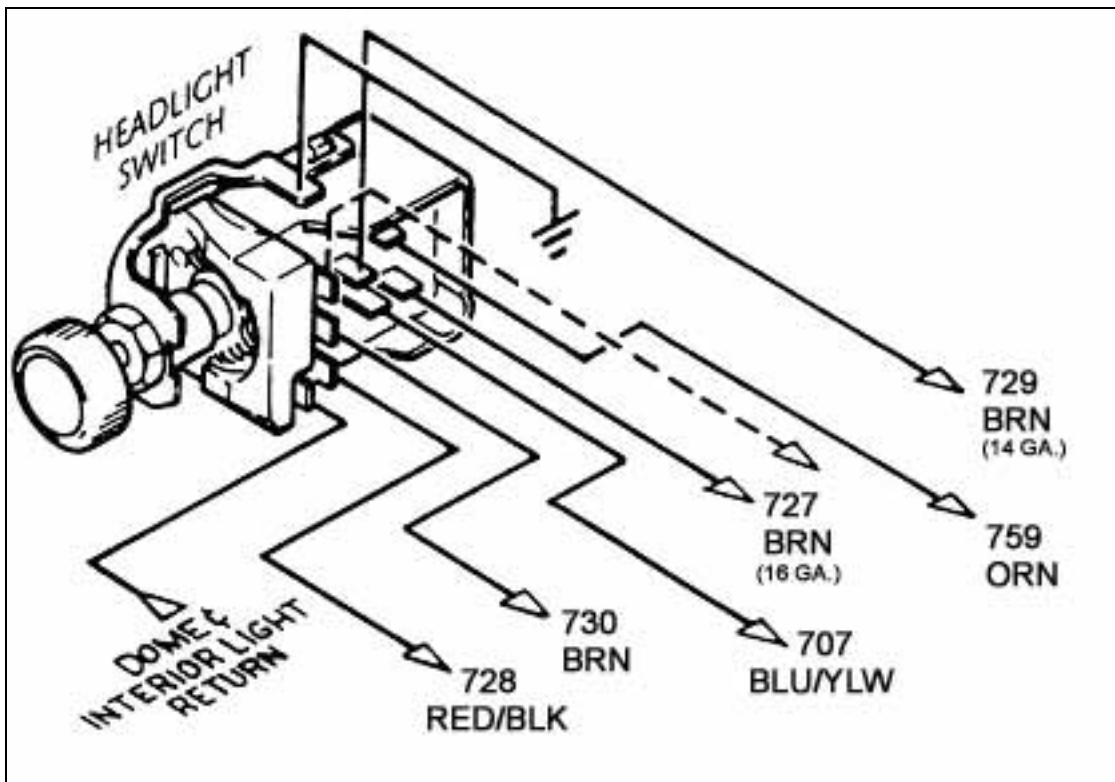


Figure 9-6 HEADLIGHT SECTION B (GM Style Switch – Painless Part #80152)

9.7 Instrument Panel Wiring

- 9.7.1 Connect the wires of the INSTRUMENT PANEL SECTION as indicated in **Table 11-2**. Insulate and stow any wires you do not use.
- 9.7.1 Connect a jumper from wire #735 (red/wht) to all Gauges' power or "I" terminals. Connect a jumper from wire #730 (brn) to all Gauges' Instrument Lighting terminals. Connect a jumper to all Gauges' Ground terminals and connect to Chassis Ground.

9.8 Brake Section

- 9.8.1 Connect BRAKE SECTION wires #717 (orn) and #718 (wht) to the Brake Light Switch wherever it may be mounted.
- 9.8.2 The Third Brake Light wire is pre-connected on the Switch end. Connect TAIL SECTION wire #750 (orn) to the Third Brake Light if applicable.

9.9 Tail Section Wiring

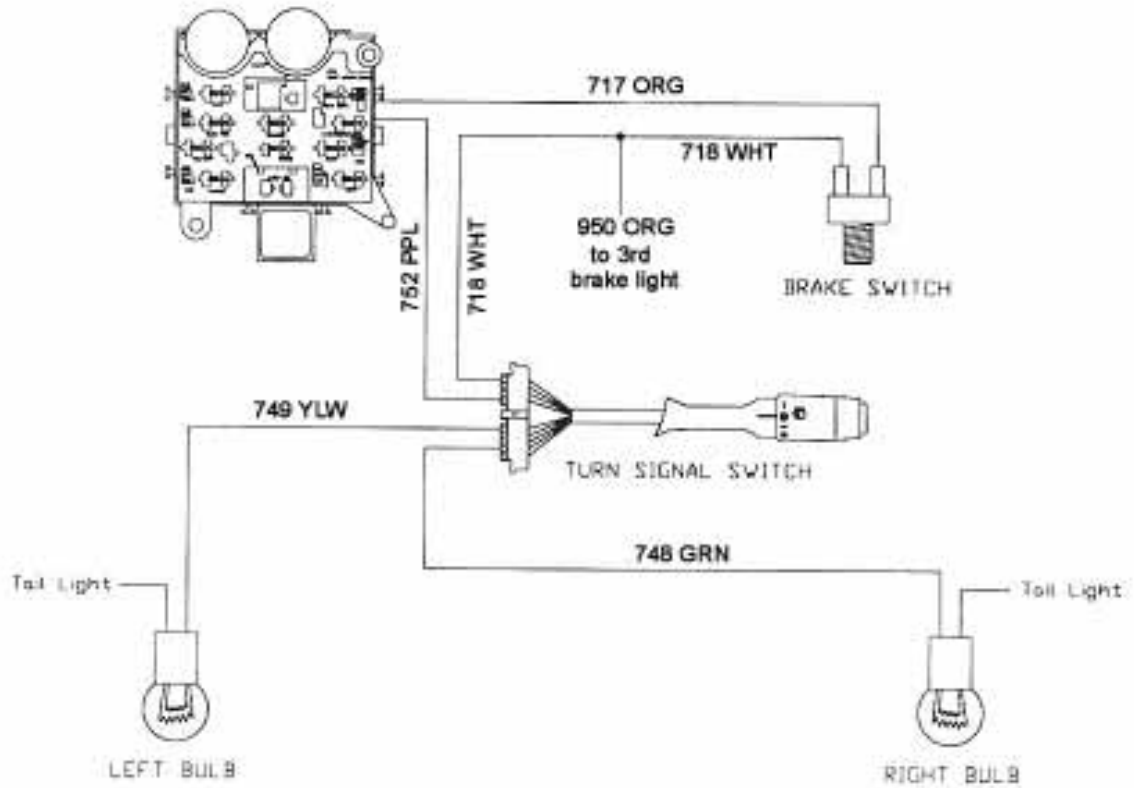
- 9.9.1 Connect the wires of the TAIL and TURN SIGNAL SECTIONS as indicated in **Table 10-2** with the exception of #718 (wht), #748 (grn), #749 (ylw) and #750 (orn).
- 9.9.2 These 4 wires will be connected according to one of the diagrams shown in **Figure 9-9**. Which diagram you will use depends on whether or not you have one bulb on each side of the vehicle that is for the brake/tail **and** Turn Signal Lights (this is referred to as integrated lights) **or** you have **more than one** bulb on each side **and** the Brake and Turn Signal Lights are hooked to different bulbs (referred to as separate Brake/Turn Lights).

Note A: *If you have Integrated Brake Lights you must use bulbs that have two (2) filaments in them such as in an 1157 bulb.*

Note B: *The three wires shown in these diagrams are connected to the "brighter" of the two filaments when using a two-filament bulb (the Tail Lights are usually connected to the "Dimmer" filament). The Tail Lights, License Plate Lights, Reverse Lights, etc. are not shown on the diagrams for clarity.*

Note C: *In the separate Brake Light diagram the arrangement shown is only one of several ways to wire a vehicle. The important thing is that the Brake and Turn Signal Lights use completely separate bulbs.*

INTEGRATED BRAKE LIGHTS



SEPARATE TURN/ BRAKE LIGHTS

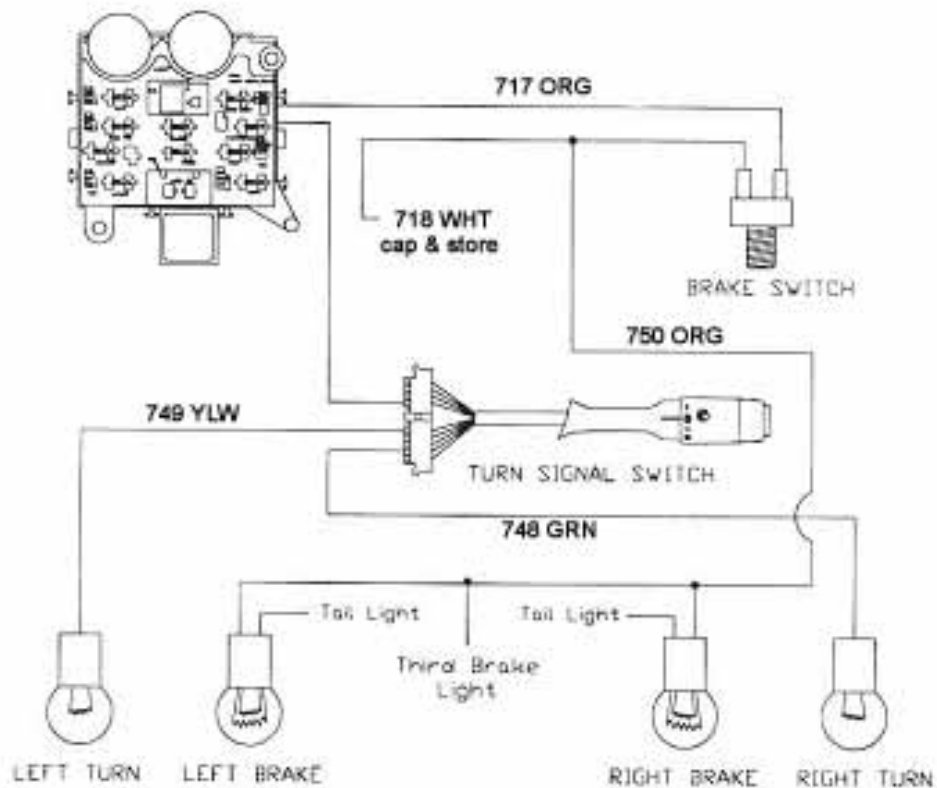


Figure 9-9 Integrated Brake Lights & Separate Turn/Brake Lights

9.10 Helpful Hints for Tail Section Wiring

- 9.10.1** When you have Integrated Brake Lights on your vehicle the Turn Signal switch acts as a brain to control when the Lights in the rear are on constantly (braking) or flashing (turning) or a combination of both. **The Turn Signal switch you use must be built to do this! If you are using a steering column out of a salvage yard that was originally in a vehicle that had separate Brake Lights then the switch will not work for Integrated Brake Lights.**
- 9.10.2** Almost all light bulbs get the ground they need through the socket housing. If you mount your socket housing into anything other than a grounded metal part then you will need to provide a separate ground wire.

10.0 WIRE CONNECTION INDEX AND FUSE REQUIREMENTS

10.1 Wire Connection Index

In each section, connect the wire, as identified by its wire color, to the appropriate item in the CONNECT TO column. Pay close attention to the **Notes** in this section, as identified by a small, raised number such as the one at the end of this sentence. ❶

Table 10-2 is divided into sections that correspond to the sections of your wire harness. (ACCESSORY SECTION B+, DIMMER SWITCH SECTION, etc.). The index is divided vertically into six columns. COLOR, GAUGE, NUMBER, CONNECT TO, ORIGIN, and SECTION OF ORIGIN.

The columns labeled ORIGIN and SECTION OF ORIGIN are for your reference ONLY. The items in these columns tell you where each wire originates (ORIGIN) and from which section (SECTION OF ORIGIN) of the harness.

The column labeled NO. contains a 900-series number that is used to identify various wires in the wiring diagrams that are a part of these instructions.

Many (but not all) of the wire numbers occur TWICE in this index. That is because you will be connecting BOTH ENDS of many of the particular wire segments. However, some wire segments are pre-connected at one end. For instance, all wires originating from the fuse panel and certain other wires such as those originating from the fuse panel 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 ORIGIN column.

10.2 Fuse Requirements

COMPONENT	FUSE (AMP)		COMPONENT	FUSE (AMP)
Hazard	15		Elect. Fan	5
Brake	20		Wipers	15
Horn	20		Backup	10
Headlight	30		Radio (switched)	10
Dome/Hood Lt.	10		Turn	20
Radio B+/Clock	10		Coil	30
Cig. Lighter	20		A/C-Heat	5
ACC. #2	15		Gauges/4X4	10
ACC.#3	15		Choke	10
ACC.#4	15		ACC.#1	15

Table 10-1 Fuse Requirements

Color	Ga.	No.	Connect to	Wire Starting Point	Section of Starting Point
ACCESSORY SECTION SWITCHES					
Gry/Wht ¹	18	701	Cooling Fan Switch	Fan Relay	Headlight Section A
Blk/Wht ¹	14	702	AC/Heat Switch	A/C Compressor	Engine Section A
ACCESSORY SECTION B+					
Blk/Wht ¹	18	704	AC/Heat Switch B+	Fuse Panel*	Fuse Panel
Blu	16	705	Wiper Switch B+	Fuse Panel*	Fuse Panel
Gry/Wht ¹	18	706	Cooling Fan Switch B+	Fuse Panel*	Fuse Panel
Wht/Red ¹	18	759	Radio B+ /Clock	Fuse Panel*	Fuse Panel
Org/Blk ¹	18	770	4WD Switch	Fuse Panel*	Fuse Panel
Tan	14	703	Cigarette Lighter B+	Fuse Panel*	Fuse Panel
Orn/Blu ¹	16	792	Accessory #1 Power (Switched)	Fuse Panel*	Fuse Panel
Red/Gry ¹	16	795	Accessory #2 Power (B+)	Fuse Panel*	Fuse Panel
Red/Blu ¹	16	796	Accessory #3 Power (B+)	Fuse Panel*	Fuse Panel
Red/Ylw ¹	16	797	Accessory #4 Power (B+)	Fuse Panel*	Fuse Panel
DIMMER SWITCH SECTION					
Blu/Ylw	14	707	Dimmer Switch	Headlight Switch	Headlight Section B
Lt.Grn	14	708	Dimmer Switch	High Beam	Headlight Section A
Tan	14	709	Dimmer Switch	Low Beam	Headlight Section A
BRAKE SECTION					
Org ²	16	717	Brake Switch Power B+	Fuse Panel*	Fuse Panel
Wht	16	718	Brake Switch	Turn Signal Switch	Turn Signal Section
ENGINE SECTION					
Wht	14	714	Alternator Exciter	Fuse Panel*	Fuse Panel
Red	12	715	Alternator B+	Fuse Panel*	Fuse Panel
Tan	18	760	Brake Press. Sw. (M.Cyl)	Emergency Brake Ind.	Instr. Panel Section
Orn	18	763	Hood Light	Fuse Panel*	Fuse Panel
ENGINE SECTION A					
Red	10	716	Battery Positive or Starter Solenoid (Large Terminal)	Fuse Panel*	Fuse Panel
Pur ³	12	719	Start Solenoid ("S" Terminal)	Ignition Switch Start	Ignition Switch Section
Pnk	14	720	Coil B+	Fuse Panel*	Fuse Panel
Lt.Grn	18	721	Temperature Sending Unit	Temperature Gauge	Instrument Panel Section
Lt.Blu/Blk ¹	18	722	Oil Pressure Sending Unit	Oil Pressure Gauge	Instrument Panel Section
Pur/Wht ¹	18	723	Tachometer Source	Tachometer	Instrument Panel Section
Red	18	754	Electric Choke	Fuse Panel*	Fuse Panel
Blk/Wht ¹	14	702	A/C Compressor	A/C Central Switch	Accy. Section Switches
Blk	18	771	4 Wheel Drive Switch	4 Wheel Drive Light	Instr. Panel Section
HEADLIGHT SECTION A					
Grn	14	724	Horn B+	Horn Relay*	Fuse Panel
Blu	18	725	Right Front Turn Signal	Turn Signal Switch	Turn Signal Section
Lt.Blu	18	726	Left Front Turn Signal	Turn Signal Switch	Turn Signal Section
Brn	18	727	Park Lights	Headlight Switch	Headlight Switch Section
Lt.Grn	16	708	High Beam	Dimmer Switch	Dimmer Switch Section
Tan	16	709	Low Beam	Dimmer Switch	Dimmer Switch Section
Gry/Wht	18	701	Fan Relay	Fan Switch	Accessory Section Switches

Table 10-2 Wire Connection Index, 1 of 3

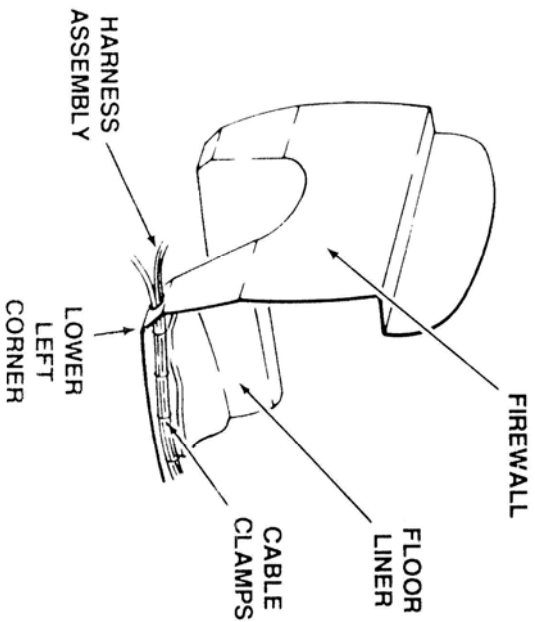
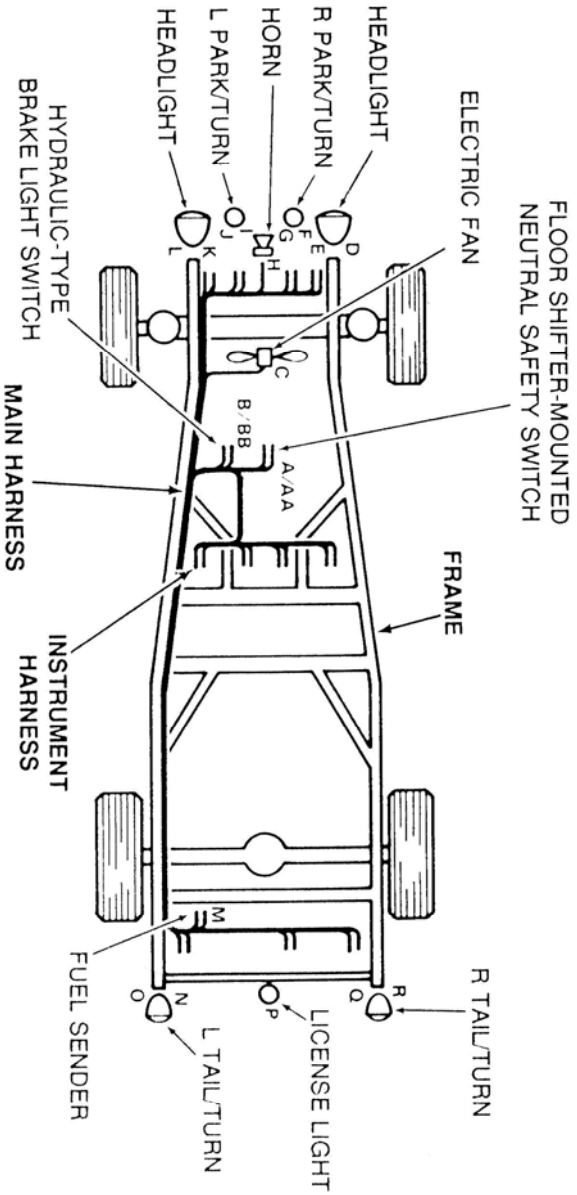
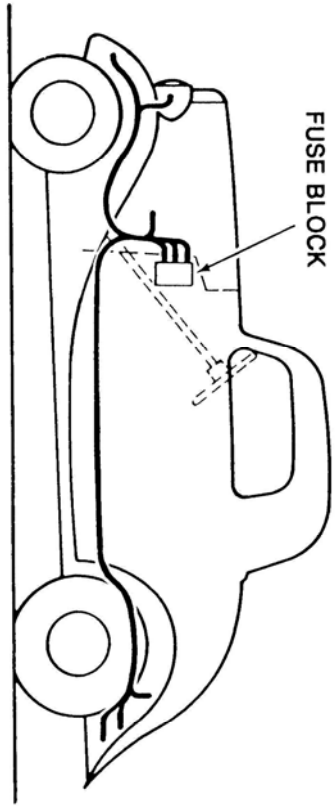
Color	Ga.	No.	Connect to	Wire Starting Point	Section of Starting Point
			Backup Light Section		
LtGrn	18	758	Backup Switch	Fuse Panel*	Fuse Panel
LtGrn	18	756	Backup Switch	Backup Lights	Tail Section
			HEADLIGHT SECTION B		
Red/Blk ¹	14	728	Headlight Switch B+	Fuse Panel*	Fuse Panel
Blu/Ylw ¹	14	707	Headlight Switch	Dimmer Switch	Dimmer Switch Section
Brn	14	729	Headlight Switch	Tail Lights	Tail Section
Brn	18	727	Headlight Switch	Park Lights	Headlight Section A
Brn ⁵	18	730	Headlight Switch	Instr. Panel Lighting	Instrument Panel Section
			IGNITION SWITCH SECTION		
Brn	16	732	Ignition Switch Accessory	Inline Fuse	Accessory Fuse Holder
Orn	12	733	Ignition Switch Ignition	Fuse Panel*	Fuse Panel
Red	12	734	Ignition Switch B+	Fuse Panel*	Fuse Panel
Pur ³	12	719	Ignition Switch Start	Starter Solenoid	Engine Section A
			INSTRUMENT PANEL SECTION		
Red/Wht ¹	18	735	Voltmeter Source & Gauges B+	Fuse Panel*	Fuse Panel
Grn	18	736	High Beam Indicator	Dimmer Switch*	Dimmer Switch Section
Lt.Blu	18	737	Left Turn Indicator	Left Front Turn Signal*	Turn Signal Section
Blu	18	738	Right Turn Indicator	Right Front Turn Sig.*	Turn Signal Section
Brn ⁴	18	730	Instrument Panel Lighting	Headlight Switch	Headlight Section B
Pnk	18	739	Fuel Gauge	Fuel Sending Unit	Tail Section
Lt. Grn	18	721	Temperature Gauge	Temp. Sending Unit	Engine Section A
Lt.Blu/Blk ¹	18	722	Oil Pressure Gauge	Oil Pres. Sending Unit	Engine Section A
Pur/Wht ¹	18	723	Tachometer	Tachometer Source	Engine Section A
Tan	18	760	Emergency Brake Ind.	Emergency Brake Switch	Engine Section
Tan	18	761	Emergency Brake Ind.	Fuse Panel*	Fuse Panel
Blk	18	771	4 Wheel Drive Light	4 Wheel Drive Switch	Engine Section A
			RADIO SECTION		
Red/Blk	18	741	Radio Power (Switched)	Fuse Panel*	Fuse Panel
			TURN SIGNAL SECTION		
Brn	14	751	Emergency Flasher Switch B+	Emer. Flasher Relay*	Fuse Panel
Pur	14	752	Turn Signal Switch Flasher B+	Turn Flasher Relay*	Fuse Panel
Blk	18	753	Horn Switch	Horn Relay*	Fuse Panel
Grn	14	748	Turn Signal Switch	Right Rear Turn Signal	Tail Section
Ylw	14	749	Turn Signal Switch	Left Rear Turn Signal	Tail Section
Blu	18	725	Turn Signal Switch	Right Front Turn Signal	Headlight Section A
Wht	16	718	Turn Signal Switch	Brake Switch	Engine Section A
Lt.Blu	18	726	Turn Signal Switch	Left Front Turn Signal	Headlight Section A
			TAIL SECTION		
Wht	18	745	Dome Lights B+	Fuse Panel*	Fuse Panel
Grn	14	748	Right Rear Turn Signal	Turn Signal Switch	Turn Signal Section
Ylw	14	749	Left Rear Turn Signal	Turn Signal Switch	Turn Signal Section
Pnk	18	739	Fuel Sending Unit	Fuel Gauge	Instrument Panel Section
Brn	14	729	Tail Lights	Headlight Switch	Headlight Section B
Orn	18	750	Third Brake Light	Turn Signal Switch*	Turn Signal Section
LtGrn	18	756	Backup Lights	Backup Switch	Backup Light Section

Table 10-2 Wire Connection Index, 2 of 3

NOTES:

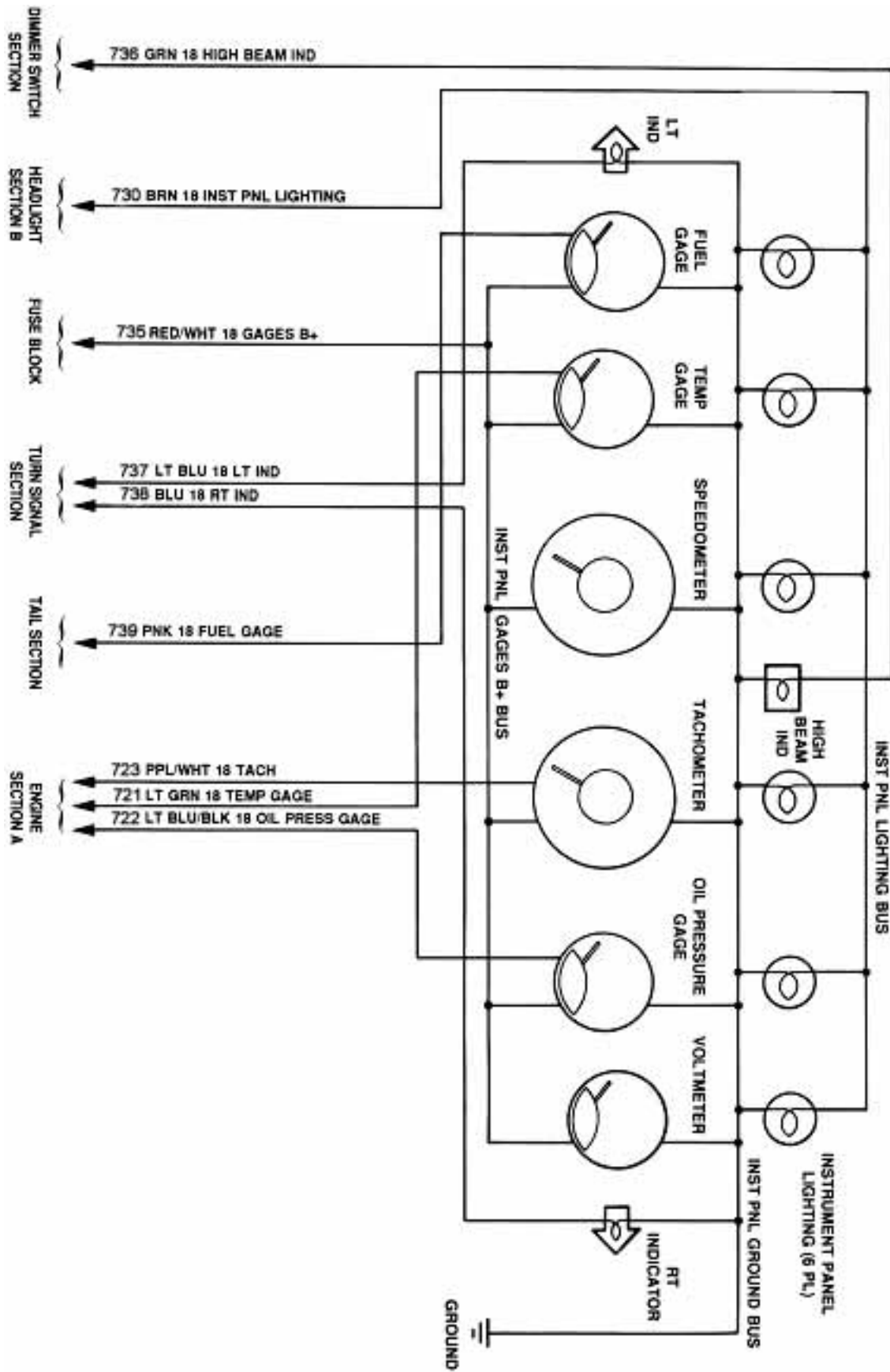
1. 2-color wires: 2nd color (stripe) may not be intense color. Observe two-color wires closely.
2. From fuse panel to brake switch.
3. The neutral safety switch is located at the base of General Motors and Ford steering columns and in Mopar transmissions. Do not attempt to defeat your automobile's neutral safety switch. If your automobile does not have a neutral safety switch, please install one.
4. This wire needs to go from the headlight switch to the instrument panel lights.
5. This wire is a short length of 18 gauge Brown wire that is not connected at either end.

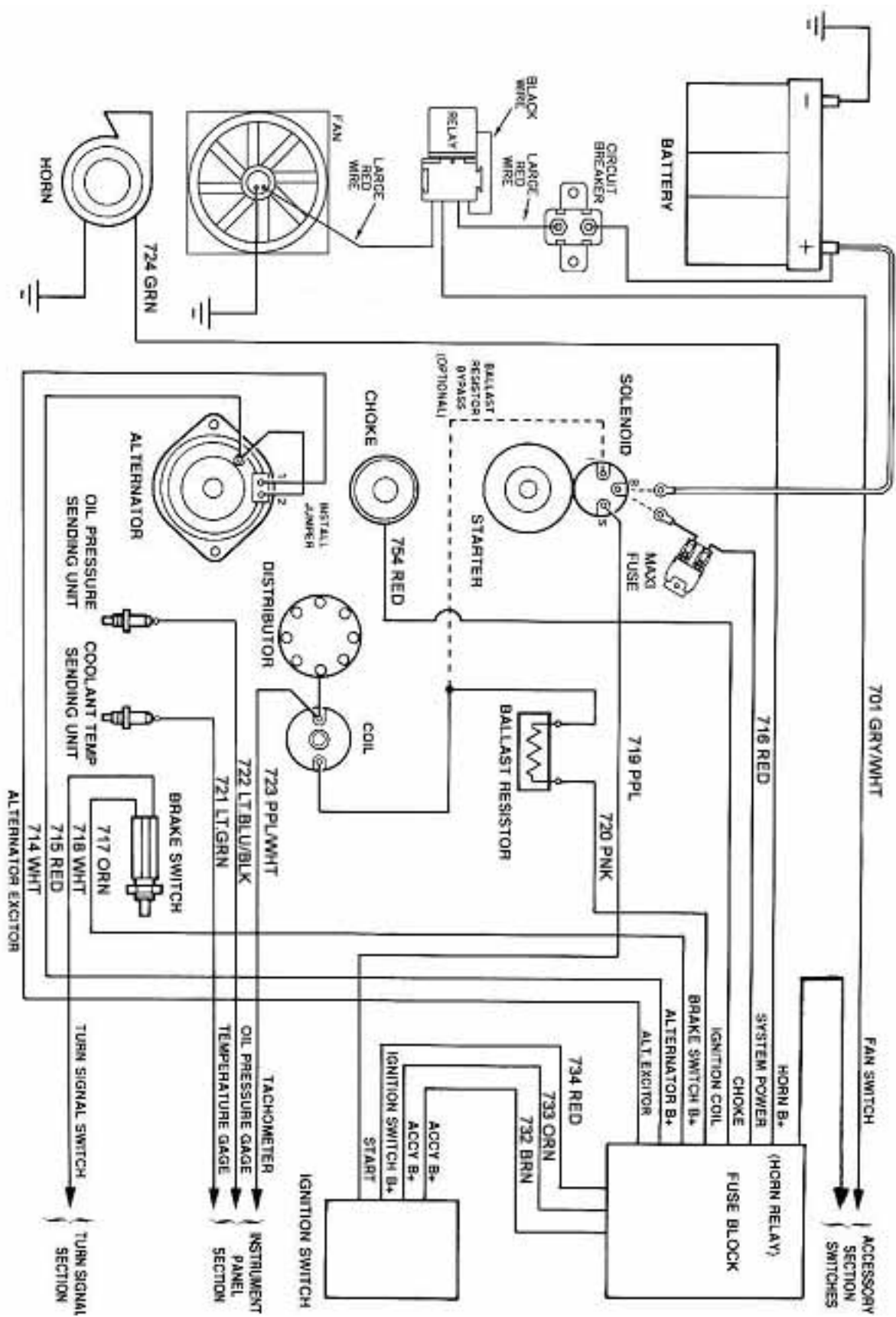
CHASSIS WIRING SUGGESTED ROUTING



INDEX	
A	PPL TO IGNITION SWITCH
AA	PPL TO STARTER SOLENOID
B	ORN TO FUSE BLOCK
BB	WHT TO TURN SIGNAL SWITCH
C	GRY/WHT ELEC. FAN TO FAN RELAY
D	TAN LOW BEAM TO DIMMER
E	LT.GRN HIGH BEAM TO DIMMER
F	BRN PARK LIGHT TO SWITCH
G	BLU RIGHT TURN TO SWITCH
H	GRN TO HORN RELAY
I	LT.BLU LEFT TURN TO SWITCH
J	BRN PARK LIGHT TO SWITCH
K	LT.GRN HIGH BEAM TO DIMMER
L	TAN LOW BEAM TO DIMMER
M	PNK TO FUEL GAGE
N	YLW LEFT TURN TO SWITCH
O	BRN TAIL TO SWITCH
P	BRN LAMP TO SWITCH
Q	GRN RIGHT TURN TO SWITCH
R	BRN TAIL TO SWITCH

INSTRUMENT PANEL SECTION WIRING





ENGINE WIRING

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.