PAINLESS®
PERFORMANCE PRODUCTS

WIRE HARNESS INSTALLATION INSTRUCTIONS

For Installing:

#10205 Classic Plus Customizable GM Pickup Chassis Harness – 1973-87 – 27 Circuit

Manual #90507

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If you have any questions concerning the installation of this product, feel free to call **Painless Performance Products**' tech line at 1-800-423-9696. Calls are answered from 8am to 5pm central time, Monday thru Thursday, 8am-4:30pm Friday, except holidays.

Here we have provided you with accurate instructions for the installation of this product. However, if you have comments/suggestions concerning these instructions, please call or email us (our contact information can be found at the top of this page or online at **www.painlessperformance.com**).We sincerely appreciate your business.

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Installation Manual: **90507**

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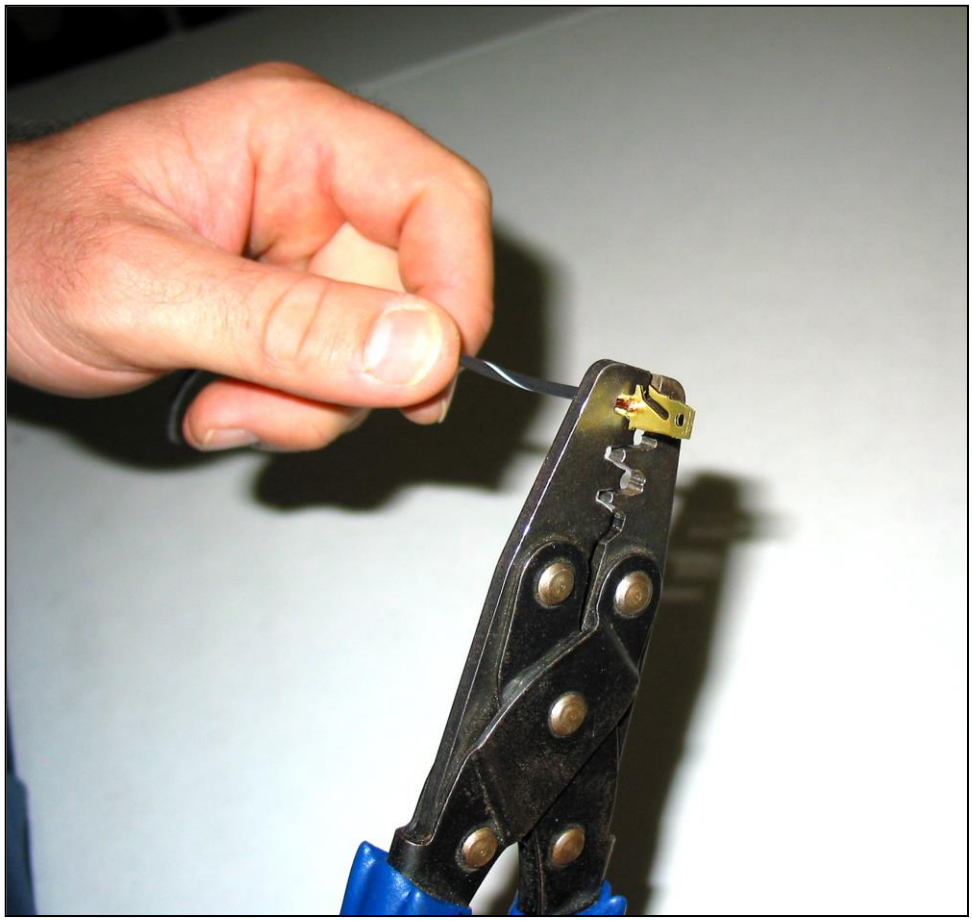
NOTE :

If your vehicle has an existing harness, you will want to retain it for the possible re-use of various Pigtails & Connector housings, particular to your application.

Included in this kit is a sheet of pre-printed labels, to assist in identifying of connections as the existing harness is removed from the vehicle.

If you do not have an existing harness, there is a package of terminals included with the harness that will enable you to make most of the connections needed. Replacement lighting pigtails & sockets can be readily obtained from your local parts distributor

Painless Performance has included 20 extra male and female bulkhead terminals in this harness kit. Use these extra terminals to run wires through the firewall using the male and female bulkhead connectors on the harness. See below for instructions on how to use these terminals. The terminals we have provided you are designed for wire gauges 18-14. Strip ¼" of the insulation from the wire and then crimp it to the terminal using the correct terminal crimping tool. These terminals are roll crimp style. You can purchase this type of terminal crimper from Painless, part # 70900. See below for a picture of the correct terminal crimping tool and how to use them. Take a look at how the terminals we inserted into the bulkhead connector here at the factory. Notice they are orientated a certain direction. Insert the blade (male) terminal into the engine compartment side bulkhead connector. Insert the female terminal into the passenger compartment side of the bulkhead connector.



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1.0 INTRODUCTION

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

The fuse block, can be easily mounted in the factory location. The fuse block, voltmeter, fuel gauge, oil pressure gauge, temperature gauge, turn signal lights, high beam 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 to 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 9.0**.

This complete truck 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, also includes door locks, power windows and electric fuel pump.

Rear Light Group
Includes taillights, left and right turn signals, brake light and fuel sender.

NOTE: ***The wire numbers referred to in these instructions are for reference to the diagrams in the back of this book only.***

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 Contents of PPPI Wire Harness Kit
4.0 Tools needed
5.0 Pre-Installation and General Harness Routing Guidelines
6.0 General Harness Installation Instructions
7.0 GM-Specific Circuit Connection Details
8.0 Specific Circuit Connection Details
9.0 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 and 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 PERFORMANCE WIRE HARNESS KIT

Refer to the following list 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 Performance Wire Harness Kit should contain the following items:

The main wire harness, with the fuse block wired and fuses installed.

The engine harness

4 headlamp connector cables

2 fender well grommets (for headlamps)

2 packages of nylon tie wraps

Parts Box, containing the maxi-fuse, GM alternator connectors, terminals, splices, etc.

Part #90507 Painless Performance Manual (this booklet)

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
Continuity Tester (test light or ohm meter)
Small (10 amp or less) Battery Charger

5.0 PRE-INSTALLATION AND GENERAL HARNESS ROUTING GUIDELINES

CAUTION: IF YOUR 1973-78 VEHICLE IS EQUIPPED WITH FACTORY AIR CONDITIONING, DO NOT REMOVE THE FACTORY WIRING, AS IT MUST BE USED WITH THIS KIT. THE WIRING IN THIS KIT IS FOR A HEATER SYSTEM ONLY. SEE ATTACHED DIAGRAM FOR SUGGESTED CONNECTION OF PAINLESS WIRING TO YOUR SYSTEM. (NOTE: FACTORY AIR CONDITIONING SYSTEMS MAY VARY FROM THIS DIAGRAM. CONSULT FACTORY DIAGRAMS FOR YOUR VEHICLE TO ENSURE PROPER CONNECTIONS.

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 truck. That depends a great deal upon the particular year of your truck 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 have to make in 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 in "all caps"; ENGINE SECTION A):

ACCESSORY SECTION SWITCHES	ENGINE SECTION A
ACCESSORY SECTION B+	ENGINE SECTION B
A/C SECTION A	HEADLIGHT SECTION A
A/C SECTION B	HEADLIGHT SECTION B
BRAKE SWITCH SECTION	IGNITION SWITCH SECTION
COURTESY LIGHT SECTION	INSTRUMENT PANEL SECTION
CRUISE CONTROL SECTION	RADIO SECTION
DIMMER SWITCH SECTION	TAIL SECTION
DOME SECTION	TURN SIGNAL SECTION
DOOR SECTION A	WINDSHIELD WASHER SECTION
DOOR SECTION B	WIPER SECTION A
EMERGENCY BRAKE SECTION	WIPER SECTION B

Note: For complete information concerning the individual circuits and wires that make up harness SECTIONS, see Section 9.0.

5.2 The Painless Wire Harness is designed for the fuse block to be mounted on the driver's side, under the dash, in the factory location.

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	_____
Power Windows	_____
Power Door Locks	_____
Cigarette Lighter	_____
Wipers	_____
Electric Fuel Pump	_____
Air Conditioner	_____
Electric Cooling Fan	_____

Coil _____

Turn Signals _____

Radio Ign. Switched B+ _____

Radio Constant B+ _____

Gauges _____

Accessories _____

Backup Lights _____

Cruise Control _____

5.4 Where will the following harness groups be routed?

Headlights _____

Engine _____

Dash _____

Tail Lights _____

Doors _____

Dome _____

Consider the following guidelines:

5.5 A good exercise is to lay out the wire harness on the floor beside your truck and identify all the **SECTIONS**. 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.

5.6 Route the harness away from sharp edges, exhaust pipes and hood 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 TRUCK BY REMOVING BOTH BATTERY CABLES FROM THE BATTERY, AND RECONNECT THEM AFTER INSTALLATION IS COMPLETE.

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 Route dash group (ACCESSORY SECTION B+, ACCESSORY SECTION SWITCHES, INSTRUMENT PANEL SECTION, RADIO SECTION, etc.) upward to rear of dash and temporarily tie in place.
6.1.3 Position rear groups, consisting of DOOR SECTIONS A & B and SPEAKER SECTION, etc.
6.1.4 Plug in the ENGINE HARNESS and route the HEADLIGHT and ENGINE SECTION forward, and the TAIL SECTION towards the rear.

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. Do not over tighten mounting bolts!
6.2.2 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 and door hinges, etc.
6.2.3 Attach harness groups to your truck with clips or ties starting at the fuse block and working toward the front and along the floor pan or frame for the rear group. The dash wires should be routed out of the way of any under-dash obstacles, such as the cowl vent, air conditioning, radio, etc.

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

6.2.4 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. Remember to take your time!

6.3 Grounding the Truck

A perfectly and beautifully wired truck 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 Performance Wire Harness Kit includes no ground wire except the black wire from the dash and headlamp connectors. You must supply ground wire (14-16 gauge) for all circuits where required.

6.3.1 Connect a ground strap or cable (even a 10 gauge wire is too small) from the negative battery terminal to the engine.

6.3.2 Connect a ground strap from the engine to the chassis. DO NOT RELY UPON THE MOTOR MOUNTS TO MAKE THIS CONNECTION.

6.3.3 Connect a ground strap from the engine to the body.

6.4 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 and 8.0, as appropriate, and continually refer to Section 9.0, 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 truck 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 truck 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, DO SO NOW! DO NOT CONNECT THE BATTERY CHARGER WITH THE BATTERY CONNECTED.

Connect the battery charger's NEGATIVE output to the chassis or engine block and its POSITIVE output to the positive battery terminal on the starter.

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

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. Wire numbers referred to are only for diagram reference only. The wires are marked and color-coded.***

7.1 Late GM Alternator (after 1972) - Internal Regulator. See Figure 7-1.

7.1.1 Connect ENGINE SECTION wire (wht) to alternator terminal 1. Connect ENGINE SECTION wire (red) to the alternator output lug (Bat).

7.1.2 Connect a short 14-gauge jumper wire from alternator terminal 2 to the alternator output lug (Bat).

7.1.3 A connector and terminal spades for late GM alternators are included in the parts box.

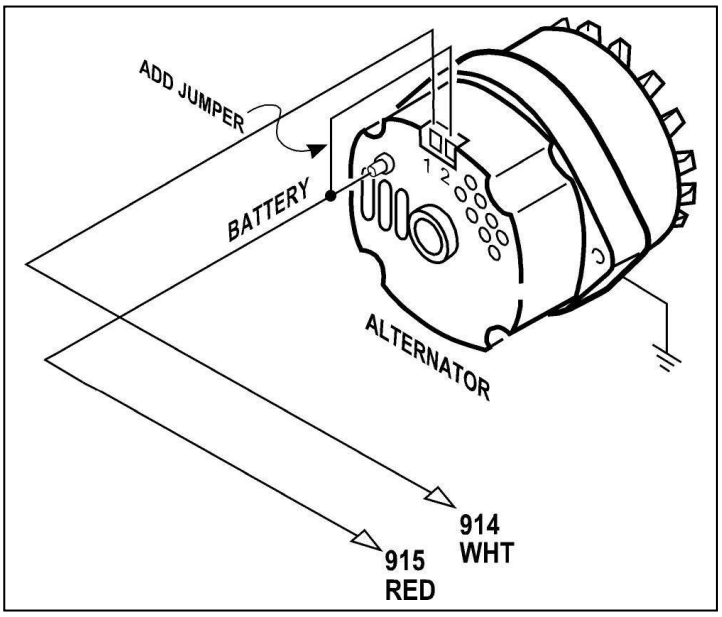


Figure 7.1 Late GM Alternator – Internal Regulator

7.1.4 **NOTE:** Under some circumstances, the connection of the Alternator will not allow the engine to shut off. If this occurs, a diode will need to be installed in-line on wire # 914. This will prevent the alternator from back feeding into the ignition system & causing the engine to run on with the ignition switch off. The Radio Shack # on this diode is 276-1661. It is to be installed with the stripe end to the alternator

7.2 GM One-Wire Alternator

7.2.1 Connect ENGINE SECTION wire (red) to the alternator output lug (Bat).

7.2.2 Insulate and stow ENGINE SECTION wire (wht #914). Do not install jumper wire. No wires are connected to alternator terminals 1 & 2.

7.2.3 When using a 1-wire alternator you must use a voltmeter or ammeter. A WARNING LIGHT CANNOT BE WIRED IN.

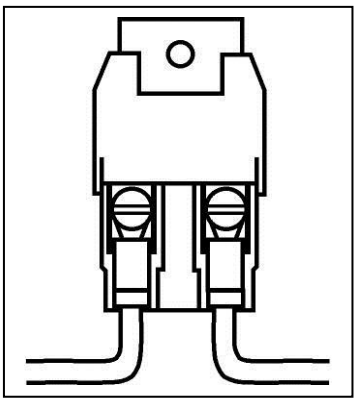


Figure 7.2 Maxi-Fuse

7.3 GM Ignition (Start/Run) System. See Figure 7-3

Note: If you are going to install an add-on ammeter, see Section 8.1 first.

7.3.1 A fusible link is no longer supplied with the 10205 kit. Instead, a "Maxi-Fuse" is supplied (**Figure 7.2**). It will be connected onto the end of ENGINE SECTION (single) 10 gauge wire #916 (red-10 ga) AFTER having routed wire from the fuse panel to the starter solenoid.

7.3.2 Connect wire #916 to the starter solenoid battery terminal. This is the same lug that the large cable from the battery is normally connected to.

7.3.3 Connect ENGINE SECTION wire #919 (pur) to the starter solenoid start (S) terminal.

7.3.4 If the Coil you are using is not internally resisted, a ballast resistor will be required. If a coil is not internally resisted and a ballast resistor is not used, the coil will overheat within a few minutes to the point that it will no longer work. A ballast resistor can be obtained at your local parts store using part number **RU11**.

7.3.5 If you are using the ballast resistor (for 1973 & 1974 only), mount it away from other wiring or hoses. The ballast resistor gets ***very hot*** during operation. Connect ENGINE SECTION wire #920 (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 #920 directly to the ignition coil B+ terminal.

Important Note: For HEI systems route wire #920 (pnk) to the distributor and attach it to terminal labeled BAT. No ballast resistor is required. The tachometer wire #923 (pur/wht) attaches to the tach terminal.

7.3.5 The ignition coil NEGATIVE (-) terminal is connected to the distributor. Also connect ENGINE SECTION wire #923 (pur/wht) to the ignition coil NEGATIVE (-) terminal. This is the tachometer source. If you are not using a tachometer, insulate and stow wire #923.

7.3.6 A 14-gauge wire connected from the starter solenoid (I) terminal to the ignition coil side of the ballast resistor is optional. This wire (the dashed line in **Figure 7-3**) 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.

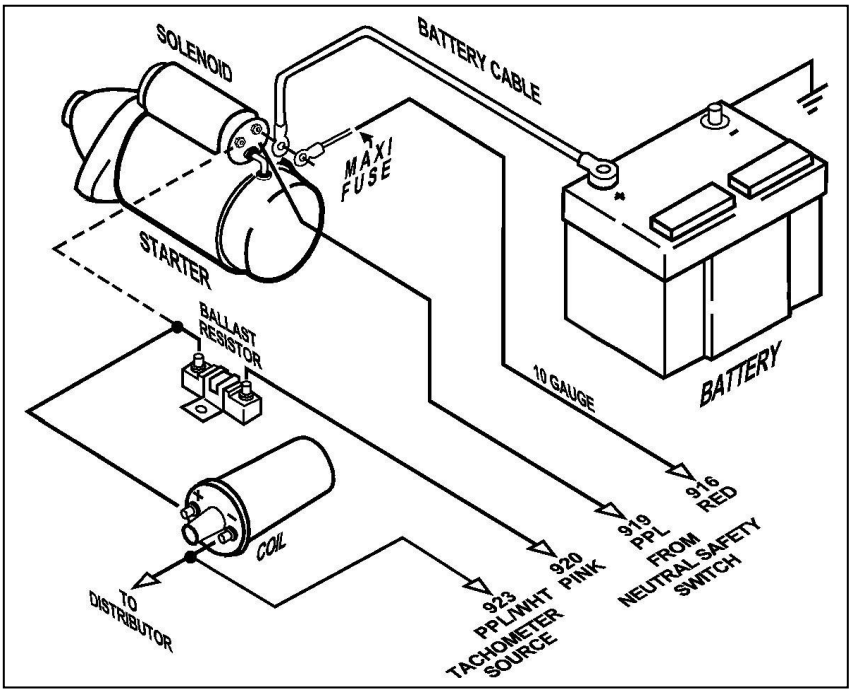


Figure 7.3 GM Ignition (Start/Run) System

7.4 Steering Column Pigtail - Turn Signal & Ignition Switch Connectors

7.4.1 There are two different turn signal plugs on most keyed 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 only a difference of 3/8" (0.375"), so measure the plug carefully. The wire harness kit has included two (2) different female connectors to mate with the column-mounted plug. See **Figure 7-1** to determine which female connector is correct for your truck. The TURN SIGNAL SECTION wires have already been terminated for you. Choose the proper plug and install the terminals according to **Table 7-1**, as shown in **Figure 7-1**. The wire color codes have been included for reference.

7.4.2 The ignition switch connector is pre-wired. See **Table 7-1** for color codes, wire numbers, and wire designations for the ignition switch connectors.

7.4.3 IGNITION SWITCH SECTION wire #919 (pur) has been cut and spade lugs installed to be connected to the **Neutral Safety Switch** at the base of the steering column. If the switch is mounted on the floor shifter, add some length of wire to reach it. FOR SAFETY, PLEASE USE A NEUTRAL SAFETY SWITCH!

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

7.4.5 To supply power to a throttle body or tuned port fuel injection use ENGINE SECTION wire #920 (pnk) as the fused ignition power source.

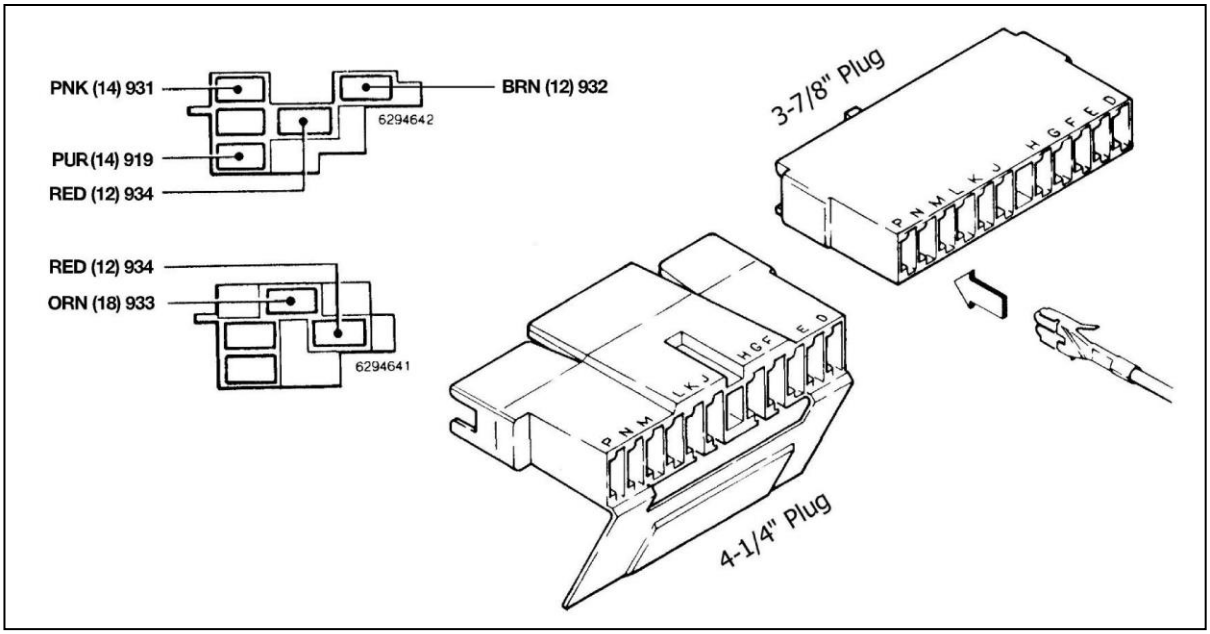


Figure 7.4 GM Turn Signal Connectors

TURN SIGNAL SECTION

GM COLOR	DESIGNATION	PAINLESS WIRE #	PAINLESS COLOR	TURN SIGNAL CONNECTOR
Blk	Horn	953	Blk	G
Lt.Blu	LF Turn Signal	926	Lt.Blu	H
Dk.Blu	RF Turn Signal	925	Blu	J
Brn	Hazard Flasher	951	Brn	K
Pur	Turn Flasher	952	Pur	L
Ylw	LR Turn Signal	949	Ylw	M
Grn	RR Turn Signal	948	Grn	N
Wht	Stop Lamp Switch	918	Wht	P

IGNITION SWITCH SECTION

Pur/Wht	Ignition Start	919	Pur
Pnk	Ignition Coil	931	Pnk
Brn	Ignition Accessory	932	Brn
Orn	Ignition (Ign)	933	Orn
Red	Battery B+	934	Red
Grn	Temp. Ground		Grn
Tan	Brake Warning Light		Tan

Table 7-1 GM Ignition and Turn Signal Wiring

8.0 SPECIFIC CIRCUIT CONNECTIONS

8.1 Connecting an Add-On Ammeter and the Maxi-Fuse. See Figure 8-1.

8.1.1 The ammeter must be inserted IN SERIES onto the ENGINE SECTION (single) 10 gauge wire #916 (red) that routes from the fuse panel to the starter solenoid.

8.1.2 The overall physical length of this circuit should be as short as possible (allow some slack, however). You may have to cut wire #916 and you may have to add some additional length of 10-gauge wire. USE ONLY 10-GAUGE WIRE.

8.1.3 Route wire #916 (from the fuse panel) and connect to the ammeter NEGATIVE terminal.

8.1.4 Route the remainder of wire #916 from the ammeter POSITIVE terminal to the starter solenoid battery (B+) terminal. This is the terminal the battery cable is connected to. Splice the maxi-fuse (**Figure 7-2**) onto the end of wire #916 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. PAINLESS PERFORMANCE 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).

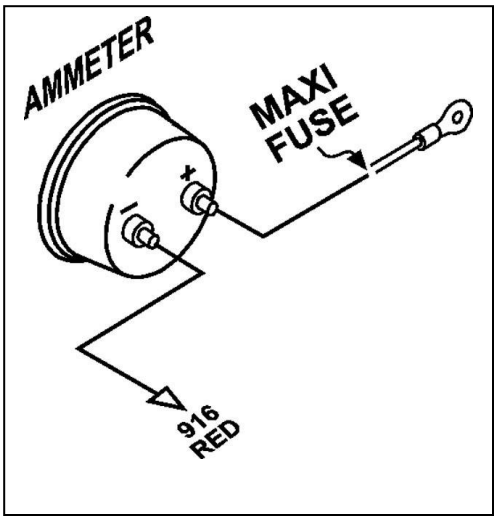


Figure 8.1 Ammeter & Maxi-Fuse

8.2 Interior Lighting. See Figure 8-2

8.2.1 Interior lights are switched through the optional door switches and/or 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 THE GROUND WIRES that go to the door switches. 12V is continually present at the light bulbs. See **Figure 8-2**.

8.2.2 If you are using door switches, you will need to add the wires connecting them. Connect one end of the wire to the door switch and the other end to the ground wire on the light switch. See **Figure 8-2**.

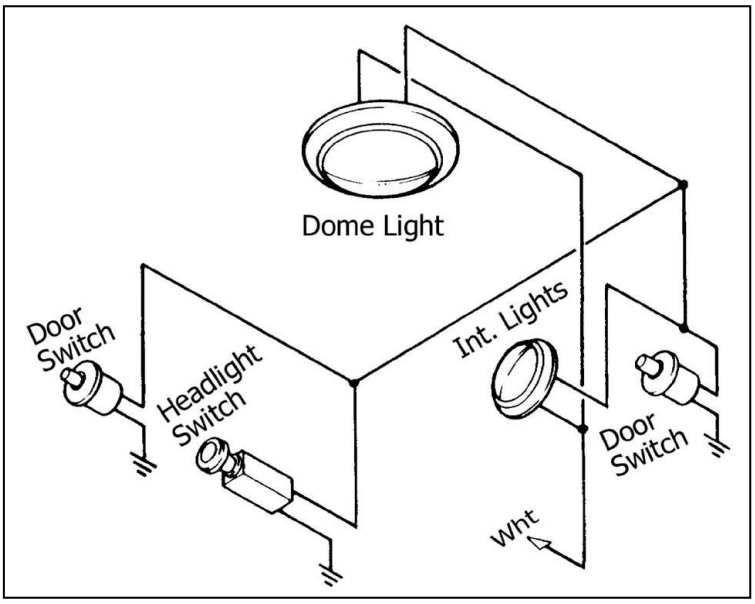


Figure 8.2 Interior Lighting **(Door Jamb Switch – Painless Part #80170)**

8.3 HEADLIGHT SECTION "A" WIRING. See Figure 8-3

8.3.1 Connect HEADLIGHT SECTION A wire #924 (grn) to the Horn's hot terminal. TURN SIGNAL SECTION wire #953 (blk) was connected in the turn signal connector section of these instructions. The horn relay is pre-wired into the fuse panel.

8.3.2 Connect HEADLIGHT SECTION A wire #908 (lt.grn) to the green wire of BOTH headlamp connectors. If you have a quad headlamp setup you will need to connect the two high beam headlamps to this wire as shown in **Figure 8-3**. Connect wire #909 (tan) to the 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 should you need to pass these wires through a fender well. Don't forget to thread them onto the wires BEFORE you connect the wires.

8.3.3 Connect HEADLIGHT SECTION A wire #927 (brn) to ALL front park lights. Connect HEADLIGHT SECTION A wire #925 (blu) to the RIGHT FRONT turn signal. Connect wire #926 (lt.blu) to the LEFT FRONT turn signal.

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

8.3.4 Connect HEADLIGHT SECTION A wire #901 (gry/wht) to the electric fan relay. This wire is an activation wire for the relay, **NOT A POWER FEED**. The gry/wht wire #906 of ACCESSORY SECTION B+ and gry/wht wire #901 of ACCESSORY SECTION SWITCHES (neither shown) connect to the electric fan switch in the dash.

8.3.5 Connect the DIMMER SWITCH SECTION cable to the floor mounted dimmer switch. If you have a column mounted dimmer switch, the plug is the same as the floor mount version. See **Figure 8-4**.

Note: Painless suggests that a relay should be used in wires #906/901 circuit, Painless part number 30101.

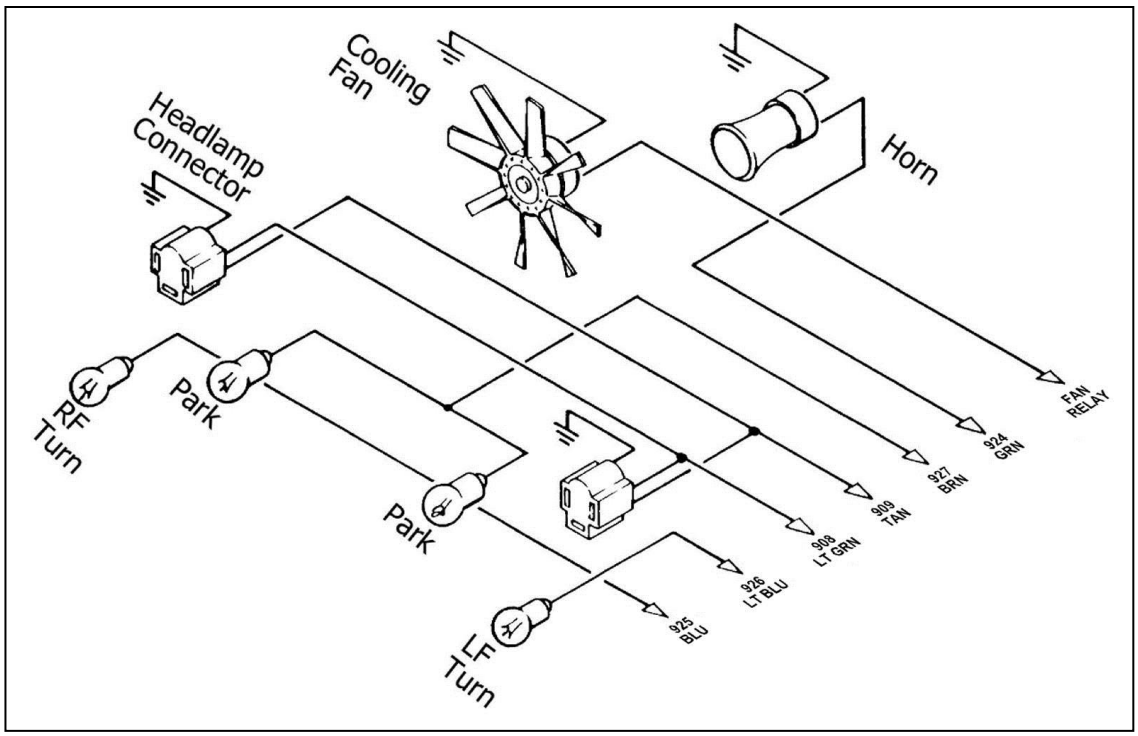


Figure 8.3 Headlight Section "A" Wiring

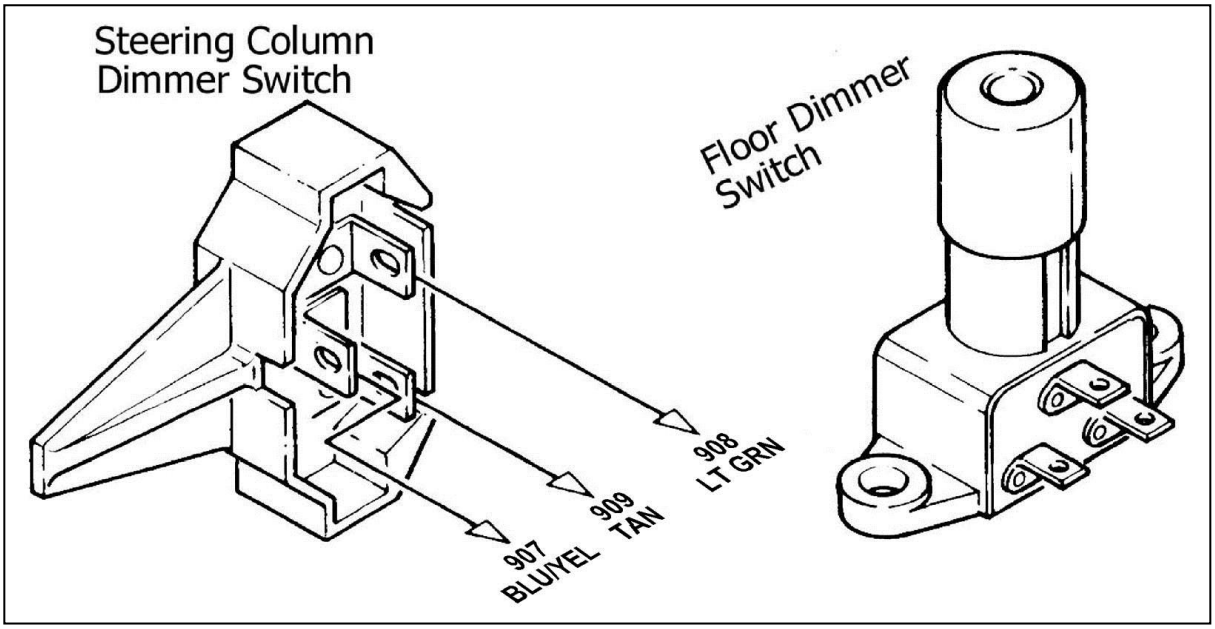


Figure 8.4 Dimmer Switches **(Push Button Style – Painless Part #80150)**

8.4 HEADLIGHT SECTION "B" WIRING. See Figure 8-5.

8.4.1 Connect the 6 wires of HEADLIGHT SECTION B, the dome and interior light return circuit and the headlamp switch ground as shown, according to **Table 9-2**.

Note: On late style GM headlight switches, the park lights terminal to which wire #927 (brn) is connected (shown in Figure 8-5) has been omitted. In this case, wire #927 must be connected as indicated by the dashed line in Figure 8-5.

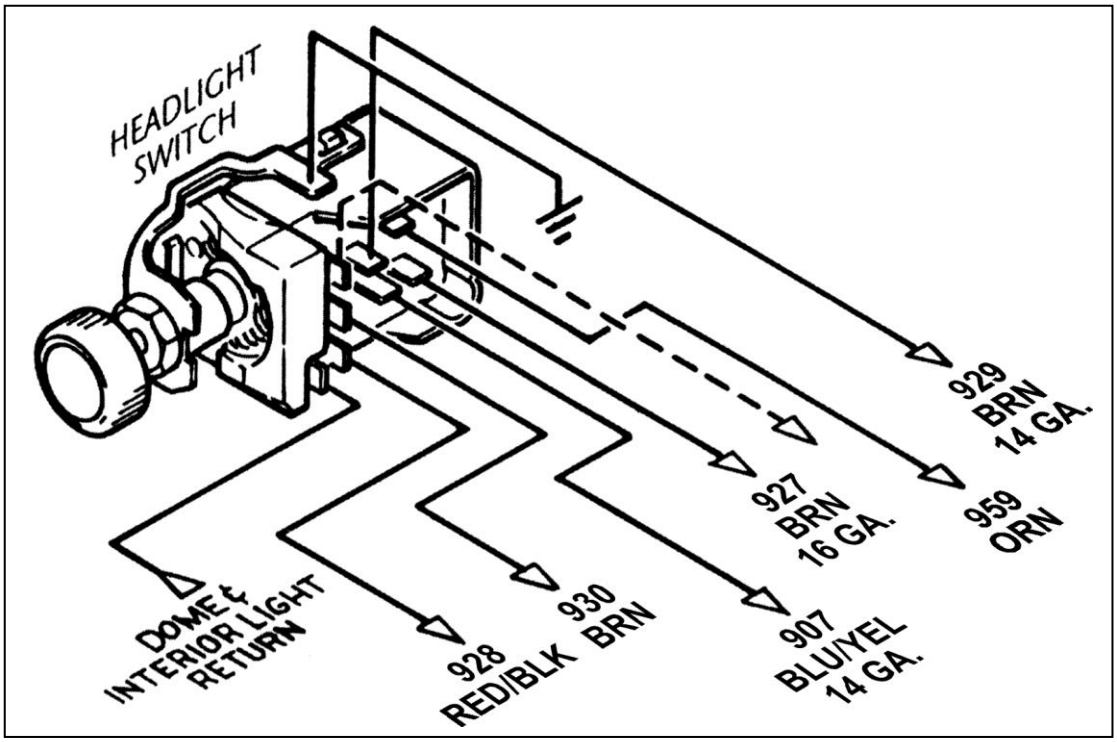


Figure 8.5 Headlight Section "B" Wiring **(Headlight Switch – Painless Part #80152)**

8.5 Instrument Panel Wiring

8.5.1 The wires of the INSTRUMENT PANEL SECTION as indicated in **Table 9.2** are pre-terminated into the printed circuit connector per GM specifications. Your truck may wire differently due to optional dashes. Refer to Diagrams 3, 4, 5 and 6 for your specific application. Insulate and stow any wires you do not use.

8.6 Brake Light Switch

8.6.1 Connect BRAKE SECTION wires #917 (orn) and #918 (wht) to the brake light switch near the steering column.

8.6.2 The (orn) third brake light wire is pre-connected on the switch end and is located in the SPEAKER SECTION. Connect it to the third brake light if applicable.

8.7 Windshield Wiper Section A & B

Note: Refer to Diagram #1. Your 73-77 vehicle may have a different wiper switch than the one depicted in Diagram # 1. If you have a 3-way switch, all wires from the original factory harness must be reused. Only Painless #905 Blu wire will be connected to the 18-gauge Blk/Ylw wire at the center terminal of the 3-wire windshield washer motor connector.

8.7.1 Black Ground Wire

There is a black ground wire supplied in the **Wiper Section A** to ground the switch. Attach one end to the switch, and then attach the other end to a clean un-painted metal surface under the dash. (**Refer to diagram #1 or #2 of this section**).

8.7.2 Blk/Blu Wire

The blk/blu #966 wire in **Wiper Section A & B** are for the park cycle of the newer style wiper motors. If your wiper motor is the older type, you won't need this wire. Tape and stow away. (**Refer to Diagrams #1 or #2 to determine if your wiper motor is the early or late model**).

8.7.3 Gray

Note: Change in wire color in Wiper Section A & B

There is now a **gry** #930 wire and a **gry/wht** #965 wire in the **Wiper Section A. The gry #930 wire will now power the light in the wiper switch**, (switch in the dash). When the headlights are on, this wire will have power to it. The new gry/wht #965 wire in **Wiper Section A & B** will now be the low speed for the wiper motor. When wiring the wiper motor and the switch, look at the **Diagrams #1 or #2** for reference of the gry/wht #930 wire.

8.8 Instrument Panel Section

8.8.1 We have now included additional wire (pnk/blk #935), ground (blk), and fuel (Pnk #939) wires in the **Instrument Panel Section**. Depending on the year, some models require additional wires and some don't. If your particular year model doesn't require the use of these wires, just tape and stow away. But first, look at (**Diagrams #5, #6, #7 & #8**) to determine your year model, then begin plugging in the wires into the **Instrument Section Connector**. Any wires remaining, tape and stow away.

Note: The terminals will only insert into the connector one way. Make certain you are inserting the wire into the correct location as the terminals are difficult if not impossible to remove once inserted.

8.8.2 Dash Cluster With Warning Lights

There is a white wire (wht #914) that loops up and through the **Instrument Panel Section**. This wire has a male and female push on connector in line. **If your vehicle has (warning lights) instead of gauges, then you will need to disconnect this connection and install the (2) short pigtail wires (included in this harness)**. After connecting the two short pigtail wires, then plug them into the **Instrument Section Connector**. The location for these wires will be pin #6 and #7. Either white wire can be plugged into pin #6 or #7. (**Refer to Diagram #8, 1973-1986 warning lights, no gauges**).

8.8.3 Oil Pressure Switch With (2) Wires

Some year models had two wires going to the oil pressure switch. If this is the case on your model, attach the red wire labeled choke (red #954, refer to **Engine Section A**) to a terminal on the oil pressure switch, then attach wire (tan #922) to the other terminal.

8.8.4 Black Ground Wire

We have included several short black (jumper) wires in the **Instrument Panel Section**. One end of this wire (approx. 15") will need to be attached to a clean un-painted metal surface under the dash. On the other end there will be short jumper wires. They will need to be plugged into the **Instrument Section Connector.** (**Refer to Diagram #5, #6, #7 or #8 for pin placement)**. If only one wire is used, then tape and stow away the other.

8.9 Heat Only

8.9.1 Units with **heat only** will connect wires brn #904 and brn/wht #967 together in **AC Section A** using a blue 1/4" push on connector. Attach as per **Diagram #9**.

Note: The tan wire #969 will be omitted at the switch and the resistor. Tape and stow away. The grn wire #902 will also be omitted in Engine Section B and in AC Section B, because there is no compressor. Tape and stow away.

8.10 A/C Section "A" (see Diagrams 9 & 10, Pg 28-29)

8.10.1 Blower Motor Relay Connector (connector w/pur, red, blk, blu & orn wires)

This connector will plug into most models that have a blower motor relay, however, some early models (1973-1978) didn't use a blower motor relay. Without this relay, the current draw is too much for the blower motor switch (causing the **Hi-Speed** to burn out in the switch). We have pre-wired this blower motor relay connector into the harness for safety. If you don't presently have a blower motor relay on your truck, then one will need to be purchased at your local parts store.

8.11 A/C Section "B"

8.11.1 Blower Resistor Connector

The blower resistor (located on top of the ac/heat box under the hood) has 4 pins on it. Just plug in the blower resistor connector and you are done. If the blower resistor has only 3 pins, then cut off the connector (connector with brn/wht, tan, blu, lt.blu) and wire as followed. (**Refer to Diagram #9**). Use the blue push on connectors supplied in the parts kit.

Note: The brn/wht wire will not be used with the 3-pin resistor. It is a B+ positive wire and will need to be taped off and stowed away.

9.0 WIRE CONNECTION INDEX AND FUSE REQUIREMENTS

9.1 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 number in parenthesis such as the one at the end of this sentence. **(1)**

Table 9-2 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 five columns: COLOR, GA., NO., CONNECT TO and ORIGIN.

The column labeled ORIGIN is for your reference ONLY. The item in this column tells you where each wire originates (ORIGIN) and from which section 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. **These numbers are physically marked on the wires themselves**.

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 horn relay, the dimmer switch and the instrument panel section. These pre-connected wires are identified by an asterisk (*) in the ORIGIN column.

9.2 Fuse Requirements

Headlight Switch	30
Emergency Flashers	15
Turn Signals	15
Gauges	10
AC/Heat	30
Radio (Constant)	10
Horn	20
Door Locks	20
Wipers	15
Brake Switch	20
Dome/Trunk	10
Electric Fan	5
Power Windows	20
Electric Fuel Pump	15
Coil	30
Radio Ignition (Switched)	10
Backup/Cruise Control	10
Cigarette Lighter	20

Table 9-1 Fuse Requirements

Color	Ga.	No.	Connect to	Origin
			ACCESSORY SECTION SWITCHES	
Gry/Wht(8)	18	901	Cooling Fan Switch	Electric Fan Relay
Ylw/Wht(7)	14	947	Fuel Pump Switch	Fuel Pump
			ACCESSORY SECTION B+	
Ylw/Wht	14	959	Fuel Pump Switch B+	Fuse Panel
Tan(1)	14	903	Cigarette Lighter B+	Fuse Panel
Gry/Wht	14	906	Cooling Fan Switch B+	Fuse Panel
Ylw/Red	16	960	Fuel Tank Switch B+	Fuse Panel
			A/C SECTION "A" (5-WIRE PLUG)	
			Note: this connector plugs directly into the Blower Speed Switch.	**Note: Not applicable to 73-78. Use factory harness. See Section 5.0 and Diagram #3.**
Tan	14	969	Blower Switch	Blower Resistor
Orn	16	971	Blower Switch	Blower Relay
Lt.Blu	14	970	Blower Switch	Blower Resistor
Brn/Wht	14	967	Blower Switch	Blower Resistor
			A/C SECTION "A" (3-WIRE PLUG)	
			Note: This Mode Selector Switch connector is obsolete: insert wires into corresponding slot of original conn.	**Note: Not applicable to 73-78. Use factory harness. See Section 5.0 and Diagram #3.**
Brn/Wht	14	968	A/C – Heat Switch Pin B	Blower Resistor
Grn	14	902	A/C – Heat Switch Pin C	A/C Compressor
Brn	14	904	A/C – Heat Switch Pin E	Fuse Panel
			A/C SECTION "B"	
			Note: The wires in this section plug directly into the Blower Relay and Resistor.	**Note: Not applicable to 73-78. Use factory harness. See Section 5.0 & Diagram #3.**
Brn/Wht	14	967	Blower Resistor	A/C – Heat Switch
Blu	14	972	Blower Resistor	Blower Relay
Tan	14	969	Blower Resistor	Blower Switch
Lt.Blu	14	970	Blower Resistor	Blower Switch
Pur	14	968	Blower Motor	Blower Relay
Red	14	973	Blower Relay	Battery
Blk	18	974	Blower Relay	Ground
Orn	16	971	Blower Relay	Blower Switch
			BRAKE SWITCH SECTION	
Orn(3)	14	917	Brake Switch B+	Fuse Panel
Wht	14	918	Brake Switch	Turn Signal Switch
			CRUISE CONTROL SECTION	
Pnk	18	957	Cruise Control Switch	Fuse Panel
Lt.Grn	16	958	Backup Switch	Fuse Panel
Lt.Grn	16	956	Backup Switch	Backup Lights
			DIMMER SWITCH SECTION	
Ylw	12	907	Dimmer Switch	Headlight Switch
Lt.Grn	14	908	Dimmer Switch	High Beam
Tan	14	909	Dimmer Switch	Low Beam

Table 9-2 Wire Connection Index, 1 of 4

Color	Ga.	No.	Connect to	Origin
			DOME SECTION	
Wht	18	976	Dome Light Ground	Headlight Section
Orn	18	978	Dome Light B+	Fuse Panel
Orn/Wht	18	979	Third Brake Light	Brake Switch
Blk/Wht(5)	18	944	Left Rear Speaker	Radio Left Rear Speaker Out
Blk/Wht(5)	18	943	Right Rear Speaker	Radio Right Rear Speaker Out
			DOOR SECTION "A"	
Ylw/Blk (1)	14	910	Right Door Lock B+	Fuse Panel
Ylw	14	911	Right Power Window B+	Fuse Panel
			DOOR SECTION "B"	
Ylw/Blk(1)	14	912	Left Door Lock B+	Fuse Panel
Ylw	14	913	Left Power Window B+	Fuse Panel
			EMERGENCY BRAKE SECTION	
Tan	18	983	Emergency Brake	Instrument Panel
			ENGINE SECTION (SINGLE WIRE)	
Red(2)	10	916	Lg. Starter Solenoid Terminal	Fuse Panel
			ENGINE SECTION "A"	
Pur	12	919	Starter Solenoid ("S" Terminal)	Ignition Switch Start
Pnk	14	920	Coil B+	Fuse Panel
Lt.Grn	18	921	Coolant Temp Sender	Instrument Panel Section
Tan	18	922	Oil Pressure Sender	Instrument Panel Section
Pur/Wht	18	923	Tachometer Source	Tachometer
Red	16	954	Electric Choke	Fuse Panel
			ENGINE SECTION "B"	
Wht(10)	14	914	Alternator Exciter	Fuse Panel
Red	10	915	Alternator B+	Fuse Panel
Grn(9)	14	902	A/C Compressor Clutch B+	A/C Section "A"
			HEADLIGHT SECTION "A"	
Grn	14	924	Horn B+	Horn Relay
Blu	16	925	Right Front Turn Signal	Turn Signal Switch
Lt.Blu	16	926	Left Front Turn Signal	Turn Signal Switch
Brn	16	927	Park Lights	Headlight Switch
Lt.Grn	14	908	High Beam	Dimmer Switch
Tan	14	909	Low Beam	Dimmer Switch
Gry/Wht	14	901	Cooling Fan	Fan Switch
Tan/Wht	18	975	Brake Pressure Warning Switch	Instrument Panel
			COURTESY LIGHT SECTION	
Orn	18	978	Courtesy Light B+	Fuse Panel
Wht	18	976	Courtesy Light Ground	Headlight Section "B"

Table 9-2 Wire Connection Index, 2 of 4

Color	Ga.	No.	Connect to	Origin
			HEADLIGHT SECTION "B"	
Brn	14	929	Headlight Switch	Tail Lights
Brn	16	927	Headlight Switch	Park Lights
Gry	18	930	Headlight Switch	Instrument Panel Lighting
Wht	18	976	Headlight Switch	Dome Light Ground
Ylw	12	907	Headlight Switch	Dimmer Switch
Red	14	928	Headlight Switch	Fuse Panel
Red	14	928	Headlight Switch	Fuse Panel
			IGNITION SWITCH SECTION	
Brn	12	932	Ignition Switch IGN	Fuse Panel
Orn	12	933	Ignition Switch ACC	Fuse Panel
Red	12	934	Ignition Switch B+	Fuse Panel
Pur(4)	12	919	Ignition Switch Start	Starter Solenoid
Pnk	14	931	Ignition Switch (Coil IGN)	Fuse Panel
			INSTRUMENT PANEL SECTION	
Lt.Grn	18	921	Temperature Light	Temperature Sending Unit
Lt.Blu	18	937	Left Turn Indicator	Left Front Turn Signal
Blu	18	938	Right Turn Indicator	Right Front Turn Signal
Gry	18	930	Instrument Panel Lighting	Headlight Switch
Pnk	18	939	Fuel Gauge	Fuel Sending Unit
Grn	18	936	High Beam Indicator	Dimmer Switch
Tan	18	922	Oil Pressure Indicator	Oil Pressure Sending Unit
Tan/Wht	18	975	Brake Warning Indicator	Brake Warning Switch
Orn/Blk(6)	18	955	4-Wheel Drive Switch B+	Fuse Panel
Pnk/Blk	18	935	Voltmeter Source & Gauges B+	Fuse Panel
Orn(6)	18	982	Clock B+	Fuse Panel
Pur/Wht	18	923	Tachometer	Tachometer Source
Wht(10)	14	914	Male Terminal End	
Wht(10)	14	914	Female Terminal End	
Blk	18		Ground(s)	
			RADIO SECTION	
Red	18	940	Radio B+ Constant Hot	Fuse Panel
Red/Blk	18	941	Radio B+ Ignition On	Fuse Panel
Blk/Wht	18	944	Left Rear Speaker Out	Left Rear Speaker
Blk/Wht	18	943	Right Rear Speaker Out	Right Rear Speaker
			TAIL SECTION	
Ylw/Wht(7)	14	947	Electric Fuel Pump	Accessory Section Switches
Grn	14	948	Right Rear Turn Signal	Turn Signal Switch
Ylw	14	949	Left Rear Turn Signal	Turn Signal Switch
Pnk	18	939	Fuel Sending Unit	Fuel Gauge
Brn	14	929	Tail Lights	Headlight Section
Orn	18	984	Camper Cover Light B+	Fuse Panel
Lt.Grn	16	956	Backup Lights	Backup Switch

Table 9-2 Wire Connection Index, 3 of 4

Color	Ga.	No.	Connect to	Origin
			TURN SIGNAL SECTION	
Brn	14	951	Emergency Flasher Switch B+	Emergency Flasher Relay
Pur	14	952	Turn Signal Switch Flasher B+	Turn Flasher Relay
Lt.Blu	16	926	Turn Signal Switch	Left Front Turn Signal
Blu	16	925	Turn Signal Switch	Right Front Turn Signal
Ylw	14	949	Turn Signal Switch	Left Rear Turn Signal
Grn	14	948	Turn Signal Switch	Right Rear Turn Signal
Wht	14	918	Turn Signal Switch	Brake Switch
Blk	18	953	Horn Switch	Horn Relay
			WINDSHIELD WASHER SECTION	
Pnk	18	962	Windshield Washer B+	Wiper Switch
Wht	18	961	Windshield Washer	Wiper Switch
			WINDSHIELD WIPER SECTION "A"	
Pnk	18	962	Wiper Switch	Washer Pump
Pur	18	964	Wiper Switch	Wiper Motor
Gry/Wht	18	965	Wiper Switch	Wiper Motor
Blk/Blu	18	966	Wiper Switch	Wiper Motor
Gry	18	930	Wiper Switch Light	Light Switch
			WINDSHIELD WIPER SECTION "B"	
Blk/Blu	18	966	Wiper Motor	Wiper Switch
Gry/Wht	18	965	Wiper Motor	Wiper Switch
Pur	18	964	Wiper Motor	Wiper Switch
Wht	14	963	Wiper Motor B+	Fuse Panel

Table 9-2 Wire Connection Index, 4 of 4

Notes:

(1) Two-color wire: 2nd color (stripe) may not be intense color. Observe 2-color wires closely.

(2) This consists of only one large 10-gauge wire. Wire #916 is connected to the original firewall junction block on the passenger side center of the engine.

(3) From fuse panel to brake 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 Motor's steering column. Do not attempt to defeat your truck's neutral safety switch, please install one.

(5) These are not striped wires, but two (2) wires bonded together. The white (Wht) wire is Speaker POSITIVE (+) and the black (Blk) wire is Speaker NEGATIVE (-).

(6) There is no terminal on the end of this wire.

(7) Wire #947 is a feed wire from a customer installed dash switch, or relay, to the fuel pump. This was not an original wire in the factory harness. Ignition-on power for this circuit would come from wire #960 in the Accessory Section B+ wire group.

(8) Wire #901 is a feed wire from a customer installed switch or relay to the cooling fan. Ignition-on power for this circuit would come from wire #906 in the Accessory Section B+ wire group.

(9) Depending on the model year, the A/C compressor power wire #902 from the A/C control switch may have to first be connected to a compressor cycling switch and then connected to the compressor.

(10) See **Section 8.8.2** for proper hookup of these two (2) #914 Wht wires. This section must be followed exactly for your alternator to charge and your instruments to work properly.

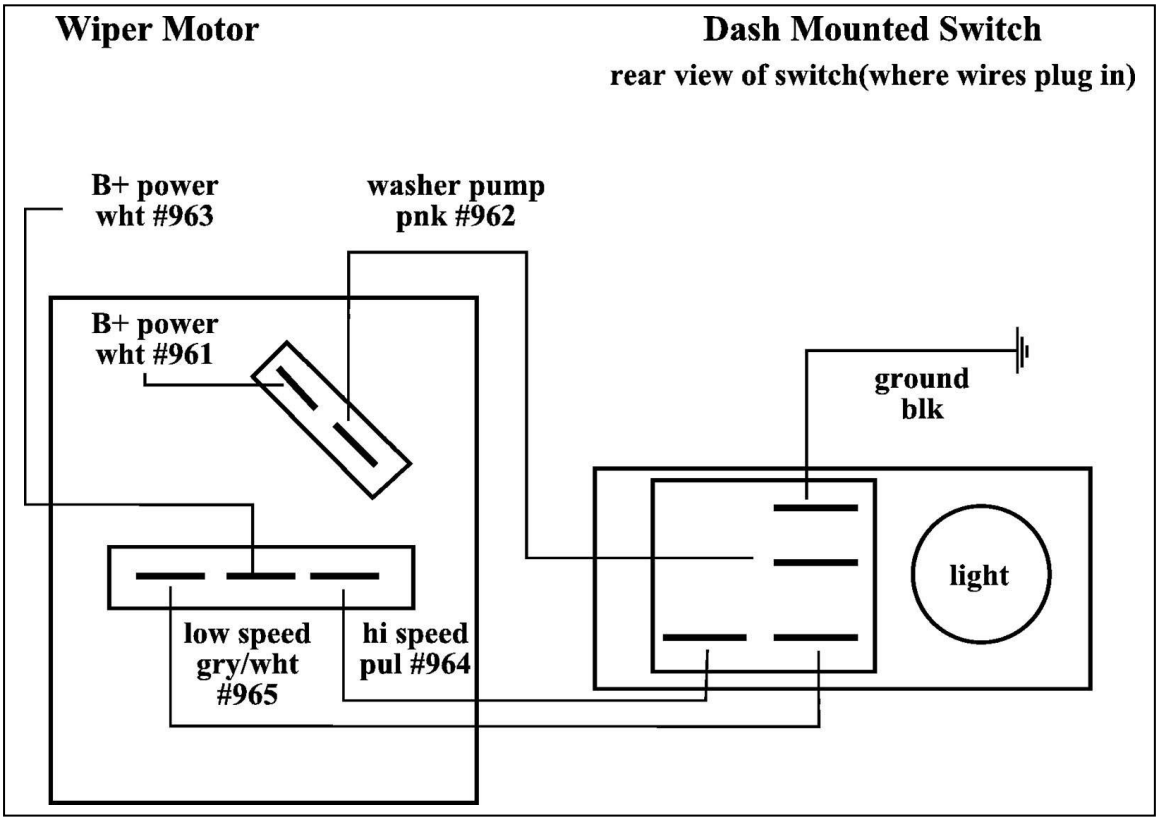


Diagram 1 Wiper Washer System (1973-1978)

Note: ***There is a Blk ground wire supplied in the Wiper Section "A" to ground the switch. Attach one end to the switch, and then attach the other end to a clean un-painted surface under the dash (refer to diagram).***

Note: ***The Blk/Blu wire is intended for the park cycle of the newer style wiper motors. if your wiper motor is the older type, you won't need this wire. Tape and stow away.***

Note: ***This diagram shows 1973-78 wiper hook-up. The wire connectors on the 10205 harness must be replaced with the ones from your original harness and matched to these wires.***

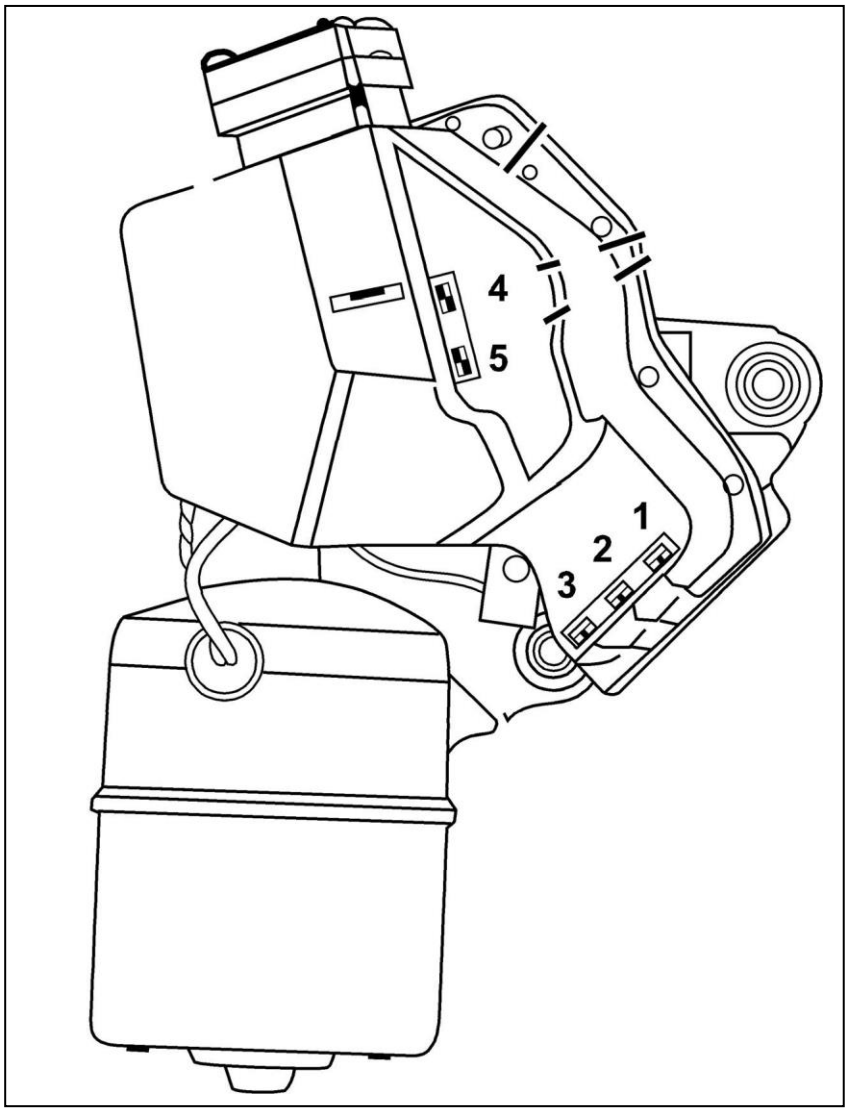


Diagram 2 Wiper Washer Motor & Pump (1973-1978)

#1 - Blk/Wht
#2 - Blk/Ylw (Blu #905 attaches here)
#3 - Blk/Lt.Blu
#4 - Blk/Blu
#5 - Blk/Ylw

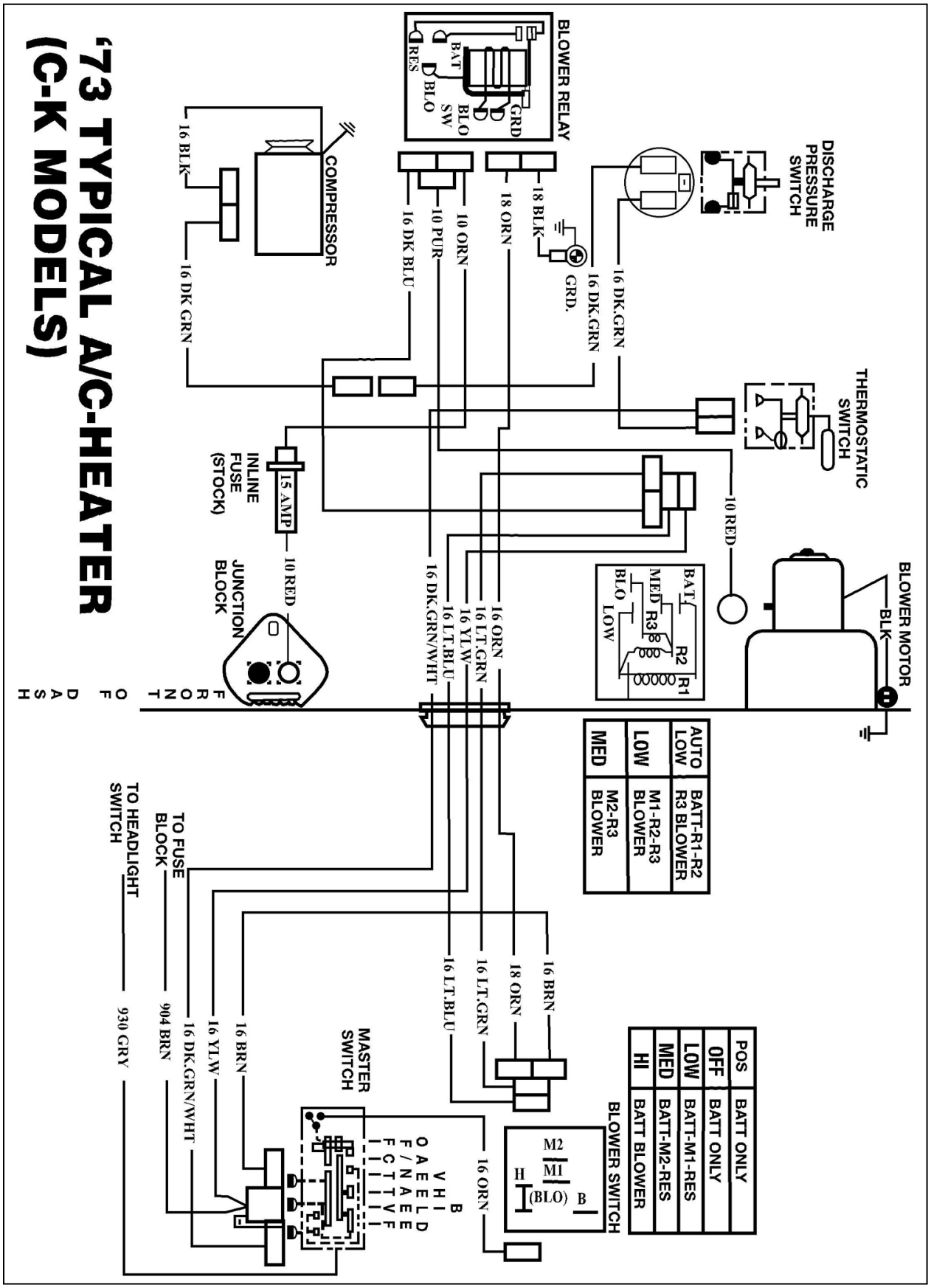


Diagram 3 1973 Typical A/C-Heater (C-K Models)

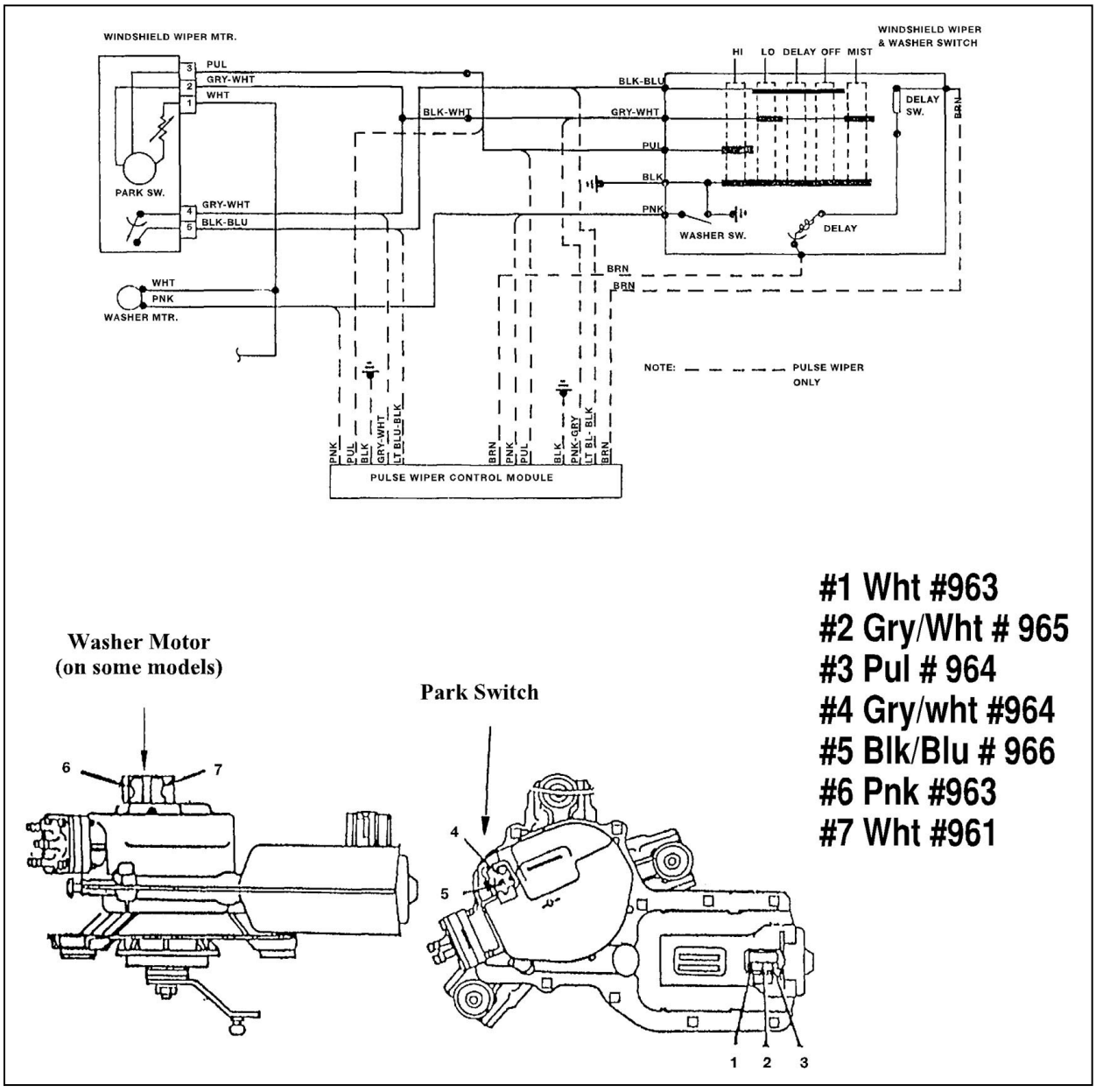


Diagram 4 Wiper Washer System (1978-1986)

Note: Some windshield washer pumps are mounted in the windshield washer reservoir. The reservoir will be located on the driver's side inner fender-well. If this is the case, connect the Pnk and Wht wires at this location.

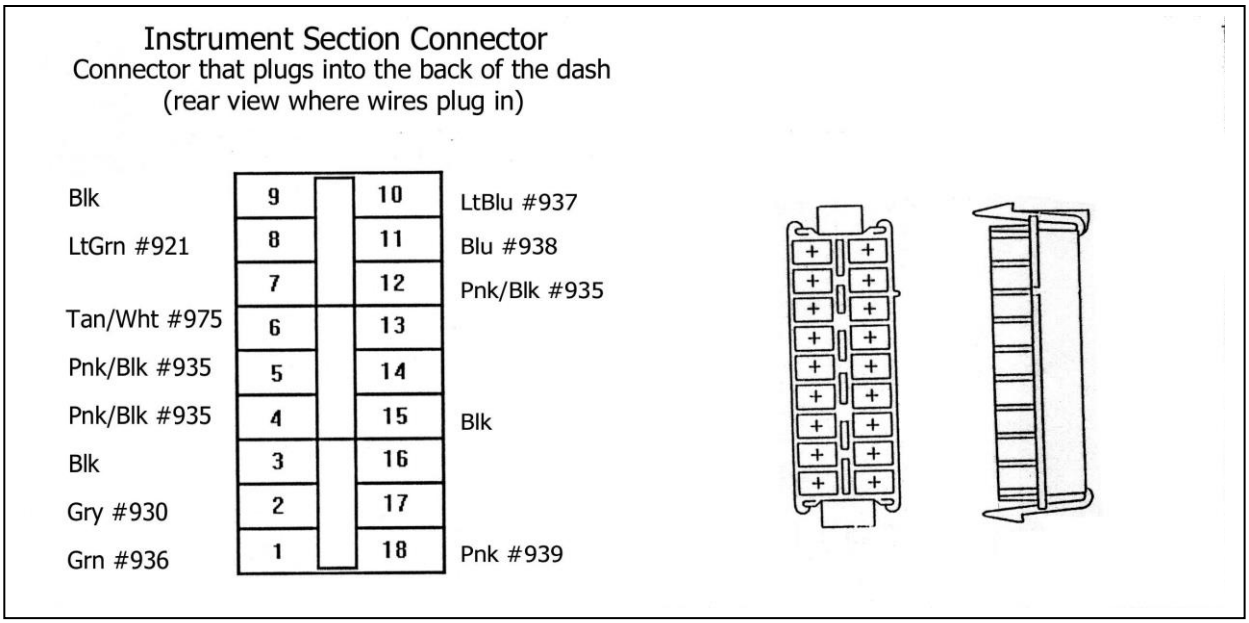


Diagram 5 1973-1978 with Gauges (mechanical oil gauge)

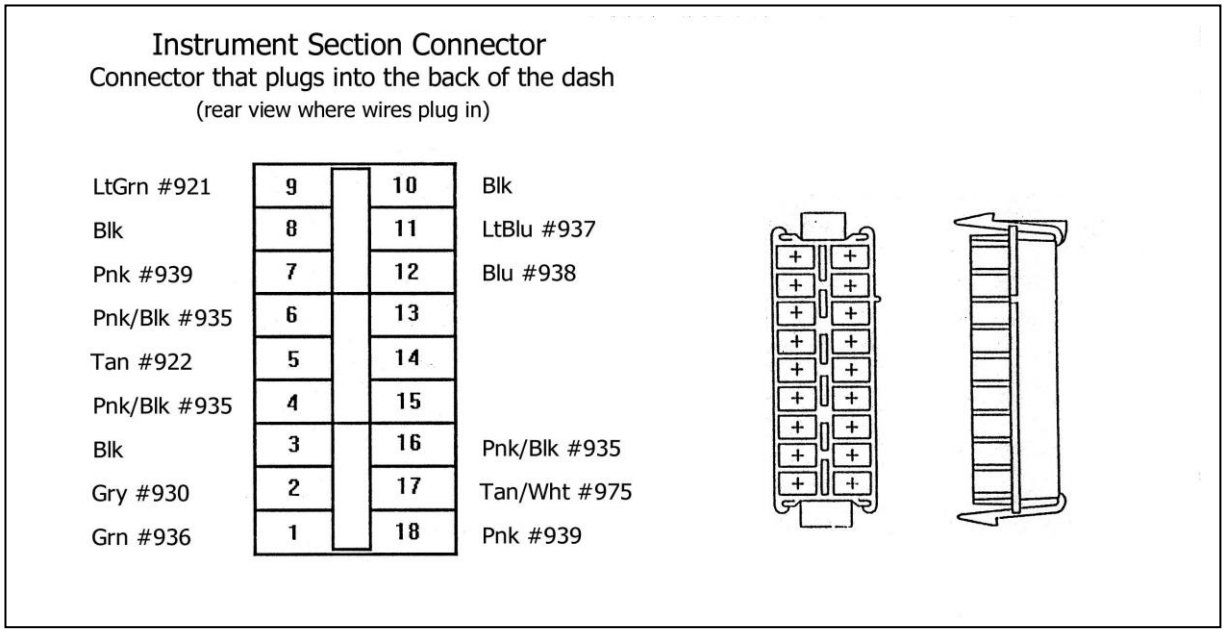


Diagram 6 1973-1985 with Gauges (mechanical oil gauge)

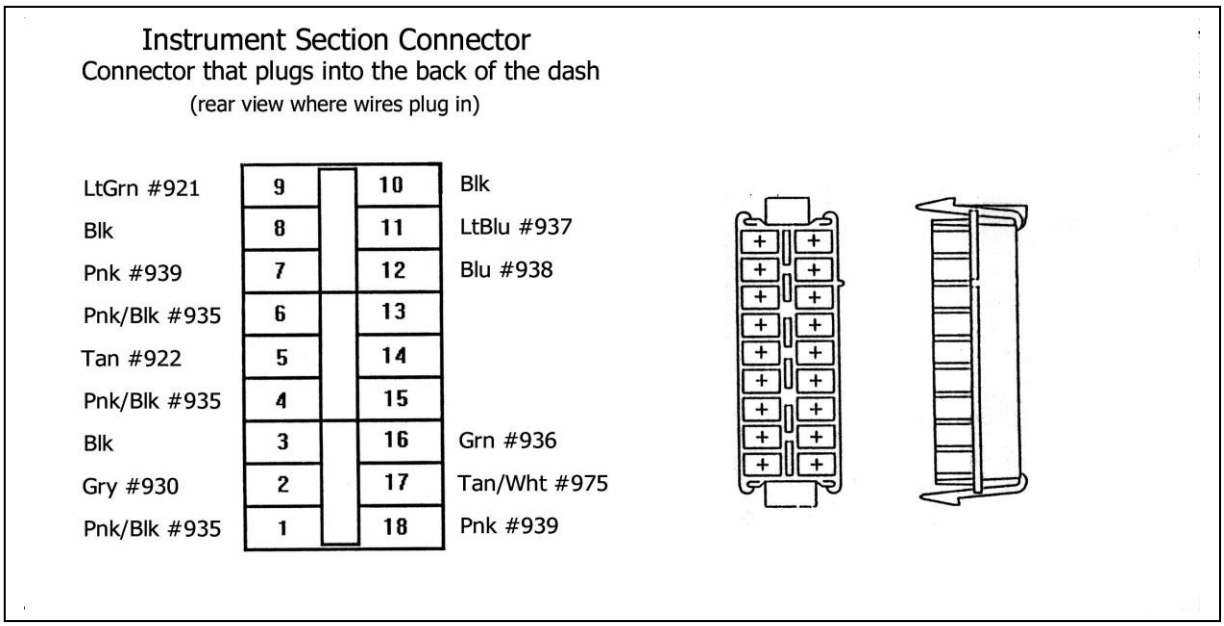


Diagram 7 1986 with Gauges

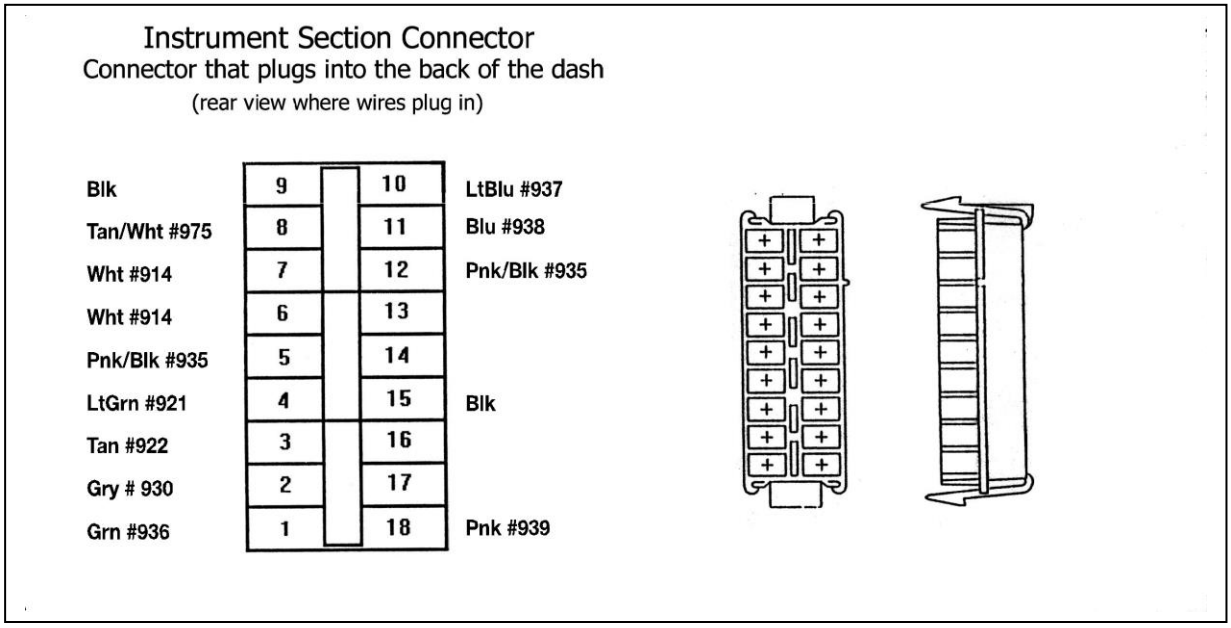


Diagram 8 1973-1986 with Warning Lights (no gauges)

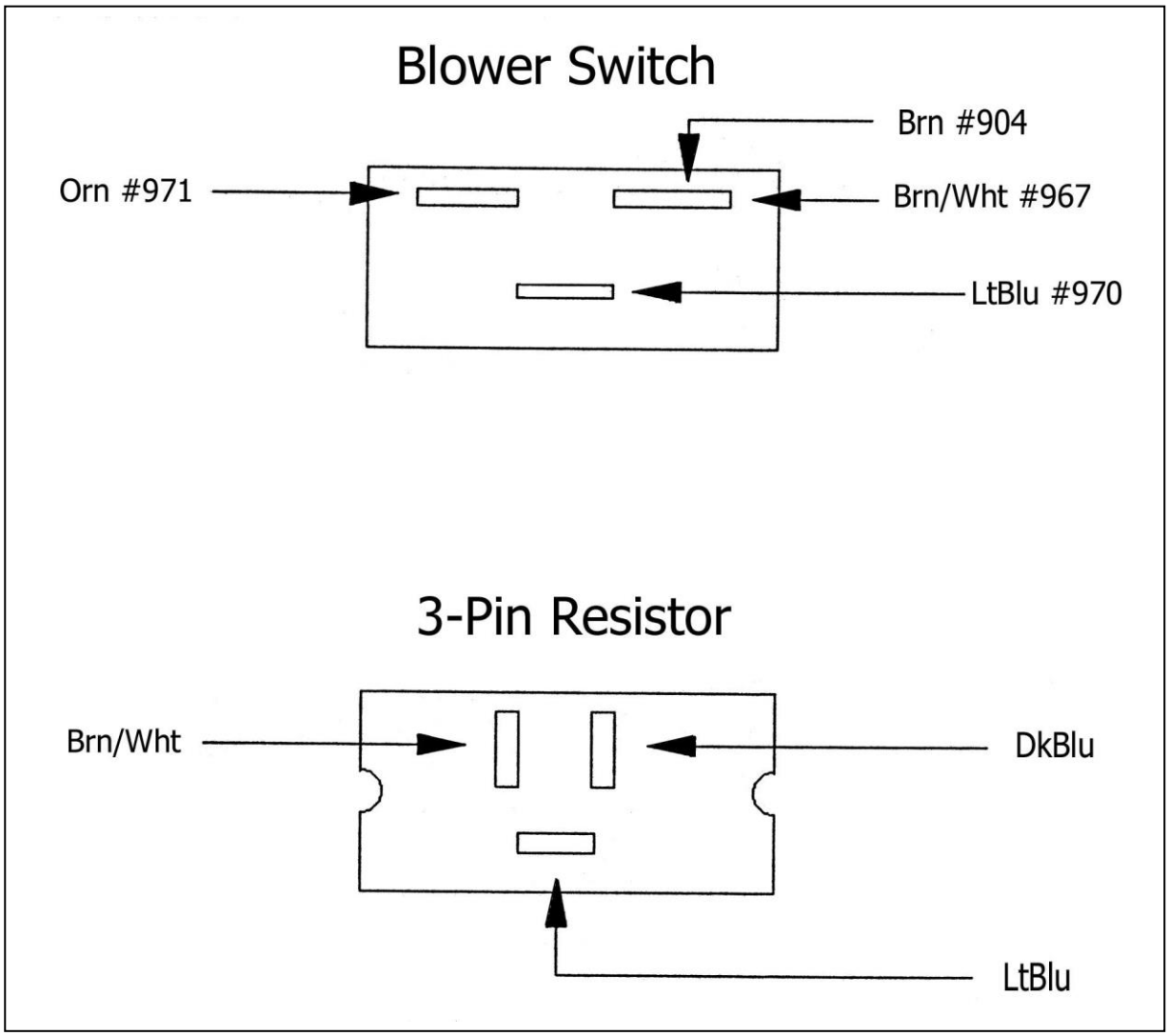


Diagram 9 Blower Switch and 3-Pin Resistor

Notes: Units with HEAT ONLY will connect wires Brn #904 and Brn/Wht #967 together in A/C Section "A" using a blue ¼" push-on connector. Attach as per diagram. The tan #969 will be omitted at the switch and the resistor. Tape and stow away. The Grn #902 will also be omitted in Engine Section "B" and in A/C Section "B" because there is no compressor. Tape and stow away.

The plastic connector which plugs into the Blower Speed Switch is no longer available. We have terminated the wires of **A/C SECTION "A"** with the correct terminals so that your original housing can be re-used. See the instruction manual, section **8.10** and **A/C SECTION "A**" in the Wire Index for specifics and year coverage.

Before the old terminals can be removed, the terminal lock must be pulled up from the connector (See Figure 1). Remove the old terminals by using a small screwdriver or paperclip to push the release tang (pin) in and pull the wire out.

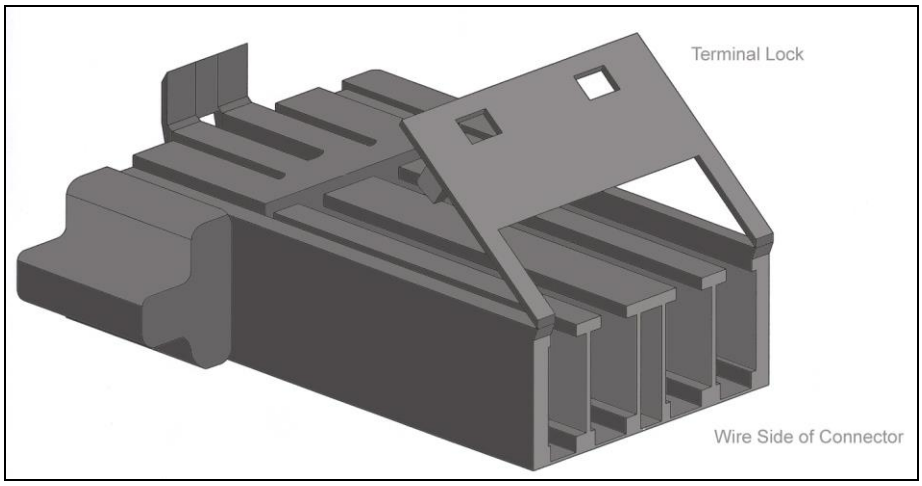
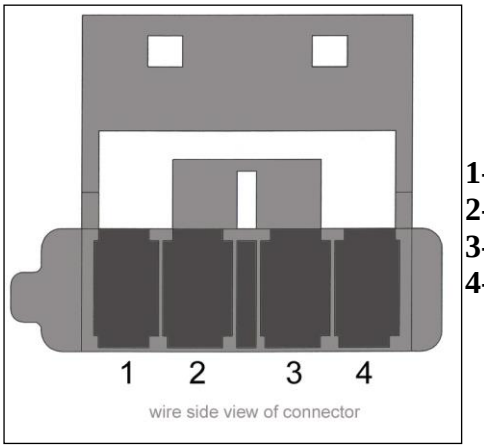


Figure 1 (Blower Speed Switch Connector)

Following the pin out listed in **Figure 2**, install the wires from the Painless harness by inserting the terminals into the connector. The terminals will only lock into place if installed correctly. Make certain the terminals are facing the same direction as those which were removed.



PIN OUT

1- BRN/WHT #967
2- Lt.Blu #970
3- Orn #971
4- Tan #969

Figure 2 (Blower Speed Switch Connector Pin Out)

Diagram 10 Blower Speed Switch

Painless Performance Limited Warranty and Return Policy

Chassis harnesses, fuel injection harnesses, and Trail Rocker units 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.

NOTES