



Wire Harness Installation Instructions

For Installing:

Part #50001 – Race Car Kit/10 Circuit

Part #50201 – 8 Switch Dash Mounted Panel

Part #50202 – 8 Switch Roll Bar Mounted Panel

Manual #90502

Painless Performance Products, LLC

2501 Ludelle Street

Fort Worth, TX 76105-1036

800-423-9696 phone – 817-244-4024 fax

Web Site: www.painlessperformance.com

E-Mail: painless@painlessperformance.com

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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Should you damage or lose part of your manual, a full color copy of these instructions can be found online at www.painlessperformance.com

Installation Manual: **90502**

10th Edition: March 2014

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1.0 INTRODUCTION

You have purchased what we at Perfect Performance Products, Inc. believe to be the most up-to-date and easiest-to-install automotive racing wire harness or accessory on the market. It is designed for easy installation, even if you have no electrical experience. PPPI Wire Harness Kits are designed to be used in vehicles with a General Motors-keyed steering column, or other steering columns depending on the kit purchased. All wire is TXL (cross-linked polyethylene), 600 volt, and 225°f. Standard automotive wire is GPT, 300 volt, 144° f. with PVC insulation.

The **50001 8-Circuit Racing Wire Harness Kit** consists of two major groups:

| | |
|-----------------|--|
| DASH GROUP | Provides for switching of lights, two fuel pumps, water pump, cooling fan, start and ignition, and an accessory. |
| ACCESSORY GROUP | Includes wires to connect tail and headlamps, ignition, fuel pumps, water pump, cooling fan, and an accessory. |

2.0 ABOUT THESE INSTRUCTIONS

These instructions provide information for the installation of the 50001 8-circuit competition Wire Harness Kit, and the 50201/50202 8-circuit Switch Panel. The contents of these instructions are divided into major **Sections**, as follows:

- 1.0 Introduction
- 2.0 About These Instructions
- 3.0 Tools Needed
- 4.0 Pre-Installation and Harness Routing Guidelines
- 5.0 General Installation Instructions
- 6.0 50001 8-Circuit Racing Wire Harness Kit
- 7.0 50201/50202 8-Circuit Switch Box/Panel

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

3.0 TOOLS NEEDED

In addition to your regular tools, you will need, 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)
- Electric drill
- 1-1/4" Hole saw
- Small (10 amp or less) battery charger

4.0 PRE-INSTALLATION & HARNESS ROUTING GUIDELINES

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

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

These two major tasks are not separate steps, but are integrated together. That is, you will route some wires and make some connections, route some more wire and make some more connections.

We cannot tell you how to physically route the harness in your automobile. That depends a great deal upon the particular make of automobile and, secondarily, to what extent you want to secure and conceal the harness. We do offer some general guidelines and routing practices starting in **Paragraph 4.1**.

4.1 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.

4.1.1 The two SECTIONS of the 50001 8-Circuit Competition Wire Harness Kit are listed immediately following. The 50201/50202 8-Circuit Switch Panel wire assignments are not separated into SECTIONS.

ACCESSORY SECTION B+
INSTRUMENT PANEL SECTION

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

4.11 GROUNDING THE AUTOMOBILE

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

- 4.11.1** Connect a Ground Strap or Cable (even a 10-gauge wire is too small) from the Negative Battery terminal to the automobile chassis (frame).
- 4.11.2** Connect a Ground Strap from the Engine to the chassis. **DO NOT RELY UPON THE MOTOR MOUNTS TO MAKE THIS CONNECTION.**
- 4.11.3** Connect a Ground Strap from the Engine to the Body.
- 4.11.4** If you have a fiberglass body you should install a terminal block to ground all your gauges, lights, and accessories. Ground the Terminal Block and everything connected to it will be grounded.

5.0 50001 8-CIRCUIT COMPETITION WIRE HARNESS KIT

The 50001 8-circuit relay-activated wiring system is designed to give maximum output with the utmost reliability. The relays enable the switches to activate the circuit with low current (amperage) requirements for extended life of the switches and the system.

5.1 CONTENTS OF THE 50001 WIRE HARNESS KIT

Take inventory to see that you have everything you're supposed to have in this kit. If anything is missing, go to the dealer where you obtained the kit or contact Perfect Performance Products, Inc. at (800) 423-9696. The 50001 Competition Wire Harness Kit should contain the following items:

- The main harness, with the fuse block wired in and fuses and relays installed.
- Spare fuses
- 1 60amp MIDI fuse holder and fuse
- 1 firewall grommet
- Parts box, containing terminals, splices, etc.
- 1 package nylon tie wraps
- Race Car Wire Harness Installation Instructions part number 90502 (this booklet)

5.2 INSTALLATION AND CONNECTIONS (Refer to Table 5.1)

5.2.1 General (Connecting the 50001 harness to other than 50201/50202)

- A. Mount the 50001 Fuse/Relay Block in the desired interior location. Route the INSTRUMENT PANEL SECTION wires to the activating switches. See **Table 5.1** and terminate the wires as shown.
- B. Route the ACCESSORY SECTION B+ to the Water Pump, Fuel Pumps, Ignition, etc., according to **Table 5.1**. Route 10-gauge wire #816 (red) to the Battery POSITIVE (+) terminal or the Starter Solenoid BATTERY terminal to provide power to the system. Install the MIDI fuse (60amp) and holder between the battery source and the end of the 10-gauge Red wire for system protection.
- C. If you are not using a second fuel pump, ACCESSORY SECTION B+ wire #863 (green) can be used to power an optional accessory of your choice. Wire #863 only has power when the accessory relay is activated.

FUSE REQUIREMENTS

| | |
|----------------------------|----|
| Switches..... | 10 |
| Ignition..... | 30 |
| Accessory..... | 15 |
| Electric Fuel Pump #1..... | 20 |
| Electric Fuel Pump #2..... | 20 |
| Electric Cooling Fan..... | 15 |
| Electric Water Pump..... | 15 |
| Lights..... | 20 |

WIRE CONNECTION INDEX

ACCESSORY SECTION B+

| Color | Ga. | No. | Connect To | Function |
|---------|-----|-----|------------------------|---------------------------------|
| Red | 10 | 816 | Battery Source | 50001 Harness Power |
| Black | 12 | 860 | Ground | 50001 Harness Ground |
| Purple | 10 | 870 | Starter Solenoid START | Starter Solenoid Activation |
| Gry/Wht | 14 | 801 | Cooling Fan | Cooling Fan Power |
| Ylw/Wht | 14 | 847 | Fuel Pump #1 | Fuel Pump #1 Power |
| Green | 14 | 863 | Fuel Pump #2 | Fuel Pump #2 Power |
| Brown | 14 | 829 | Tail Lights | Tail Lights Power (Not Relayed) |
| Blu/Ylw | 14 | 807 | Headlights | Headlights Power |
| Blue | 14 | 862 | Water Pump | Water Pump Power |
| Pink | 14 | 820 | Ignition Coil | Ignition Power |
| Orange | 14 | 869 | Accessory | Accessory Power |

INSTRUMENT PANEL SECTION

| Color | Ga. | No. | Connect To | Function |
|---------|-----|-----|---------------------|-------------------------------|
| Red | 14 | 867 | Switch Power | B+ Power for Switches |
| Brown | 14 | 829 | Headlamp Sw. (Tail) | Tail Lights Power |
| Orange | 18 | 833 | Ignition Sw. Accy. | Accessory Relay Activation |
| Ylw/Wht | 18 | 861 | Fuel Pump #1 Switch | Fuel Pump #1 Relay Activation |
| Green | 18 | 868 | Fuel Pump #2 Switch | Fuel Pump #2 Relay Activation |
| Blue | 18 | 864 | Water Pump Switch | Water Pump Relay Activation |
| Pink | 18 | 831 | Ignition Sw. RUN | Ignition Relay Activation |
| Gry/Wht | 18 | 806 | Cooling Fan Switch | Cooling Fan Relay Activation |
| Purple | 18 | 819 | Ignition Sw. START | Start Relay Activation |
| Blu/Ylw | 18 | 828 | Headlamp Sw. (Head) | Headlight Relay Activation |
| Black | 18 | 871 | Switch Ground | Ground for Switches |

Table 5.1 50001 Wire Connection Index and Fuse Requirements

5.3 RELAY PLACEMENT See Figure 5.2.

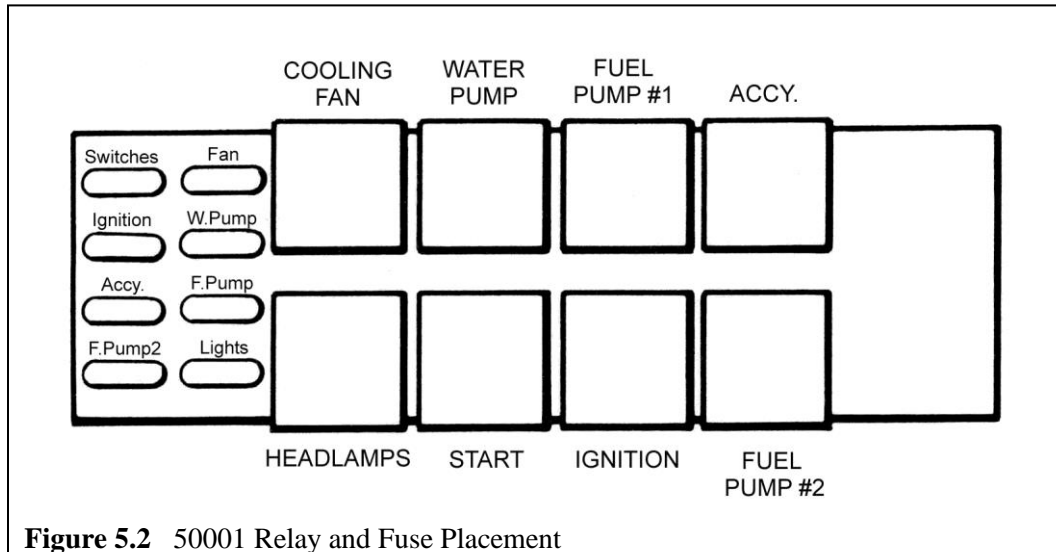


Figure 5.2 50001 Relay and Fuse Placement

6.0 CONNECTING 50001 TO 50201/50202 8-CIRCUIT SWITCH PANEL

6.1 CONTENTS OF THE SWITCH PANEL KIT

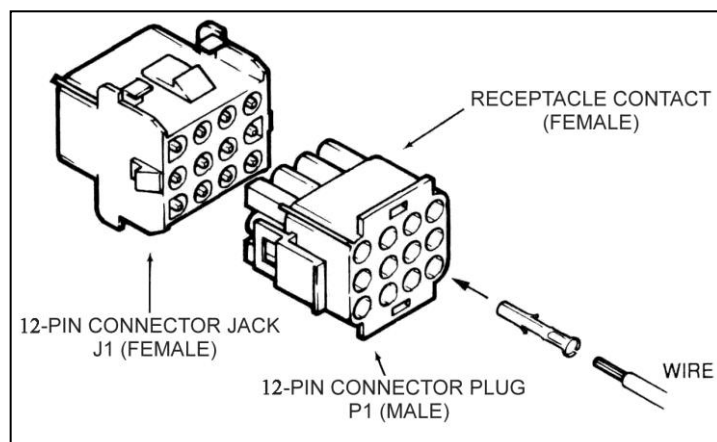
Take inventory to see that you have everything you're supposed to have in this kit. If anything is missing, go to the dealer where you obtained the kit or contact Perfect Performance Products, Inc. at (817) 244-6898. The 50201/50202 Switch Panel Kit should contain the following items:

- The 50201 Switch Panel (to be mounted in-dash) or the 50202 Switch Box (for roll bar mounting).
- 4 mounting screws
- 2 (12-pin) connector housings: 1 male (plug) and 1 female (jack)
- 15 mating female electrical contacts for the connectors. The male contacts are pre-installed.
- 1 grommet (50202 ONLY)
- 3 cap plugs (50202 ONLY) to fill unused holes.
- Race Car Wire Harness Installation Instructions P/N 90502 (This booklet)

6.2 INSTALLATION AND CONNECTIONS (Refer to Figure 6.1, Table 6.1 and 6.2)

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

Figure 6.1 Proper method of terminal insertion into connectors.



A. Connect the Accessory Section B+ wires according the Table 7.1.

| WIRE CONNECTION INDEX | | | | |
|------------------------------|------------|------------|------------------------|---------------------------------|
| ACCESSORY SECTION B+ | | | | |
| Color | Ga. | No. | Connect To | Function |
| Red | 10 | 816 | Battery Source | 50001 Harness Power |
| Black | 12 | 860 | Ground | 50001 Harness Ground |
| Purple | 10 | 870 | Starter Solenoid START | Starter Solenoid Activation |
| Gry/Wht | 14 | 801 | Cooling Fan | Cooling Fan Power |
| Ylw/Wht | 14 | 847 | Fuel Pump #1 | Fuel Pump #1 Power |
| Green | 14 | 863 | Fuel Pump #2 | Fuel Pump #2 Power |
| Brown | 14 | 829 | Tail Lights | Tail Lights Power (Not Relayed) |
| Blu/Ylw | 14 | 807 | Headlights | Headlights Power |
| Blue | 14 | 862 | Water Pump | Water Pump Power |
| Pink | 14 | 820 | Ignition Coil | Ignition Power |
| Orange | 14 | 869 | Accessory | Accessory Power |

Table 6.1 Accessory Section B+ Connections

6.2.2 50201 Switch Panel.

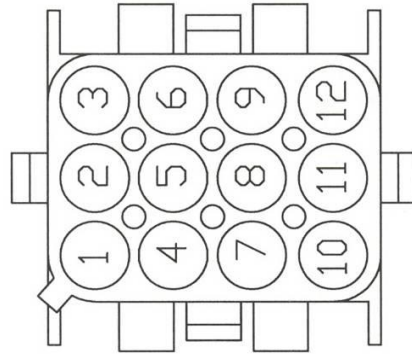
- A. Mount the switch panel in the desired location by drilling holes in the dash to suit your needs. Use the four (4) mounting screws that are provided to secure the panel.
- B. Insert the pre-terminated wires on the switch panel into the provided 12 way pin (male) connector housing according to **Table 6.2**. Be sure you have threaded the wires through any holes and grommets before installing the connectors. The electrical contacts are almost impossible to remove without damage once they have been inserted into the connector body.
- C. Using the proper crimping tool, install the provided (female) receptacle contacts onto the 50001 Instrument Panel Section wires according to **Table 6.2** and insert the contacts into the connector plug provided. NOTE: We have provided you with 3 additional terminals in case any become damaged during installation.
- D. Connect the Switch Panel to the main harness and perform an operational check.

6.2.3 50202 Switch Box.

- A. Mount the Switch Box in the desired location. Bolts or heavy screws are recommended.
Note: The box is pre-punched to allow the Switch Box wires to exit from any chosen side. The rubber grommet is provided to protect the wires as they exit from the box. Cap plugs are included to plug the remaining unused holes for a finished look.
- B. Attach the Switch Panel to the box with the four (4) screws provided, routing the wires out the desired hole.
- C. Insert the pre-terminated wires on the switch panel into the provided 12 way pin (male) connector housing according to **Table 6.2**. Be sure you have threaded the wires through any holes and grommets before installing the connectors. The electrical contacts are almost impossible to remove without damage once they have been inserted into the connector body.
- D. Using the proper crimping tool, install the provided (female) receptacle contacts onto the 50001 Instrument Panel Section wires according to **Table 6.2** and insert the contacts into the connector plug provided. NOTE: We have provided you with 3 additional terminals in case any become damaged during installation.
- E. Connect the Switch Panel to the main harness and perform an operational check.

View is from wire side of connector.

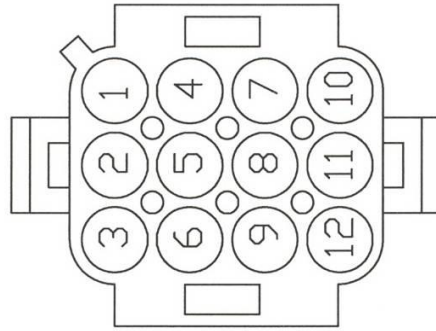
50001
Harness



S-1
12 way socket
(female) connector

- 1: #867 RED
- 2: #871 BLACK
- 3: #806 GRY/WHT
- 4: #828 BLU/YLW
- 5: #861 YLW/WHT
- 6: #833 DRG
- 7: #829 BRN
- 8: #831 PINK
- 9: #868 GRN
- 10: #864 BLU
- 11: #819 PPL
- 12: BLANK

50201/50202
Switch Panel

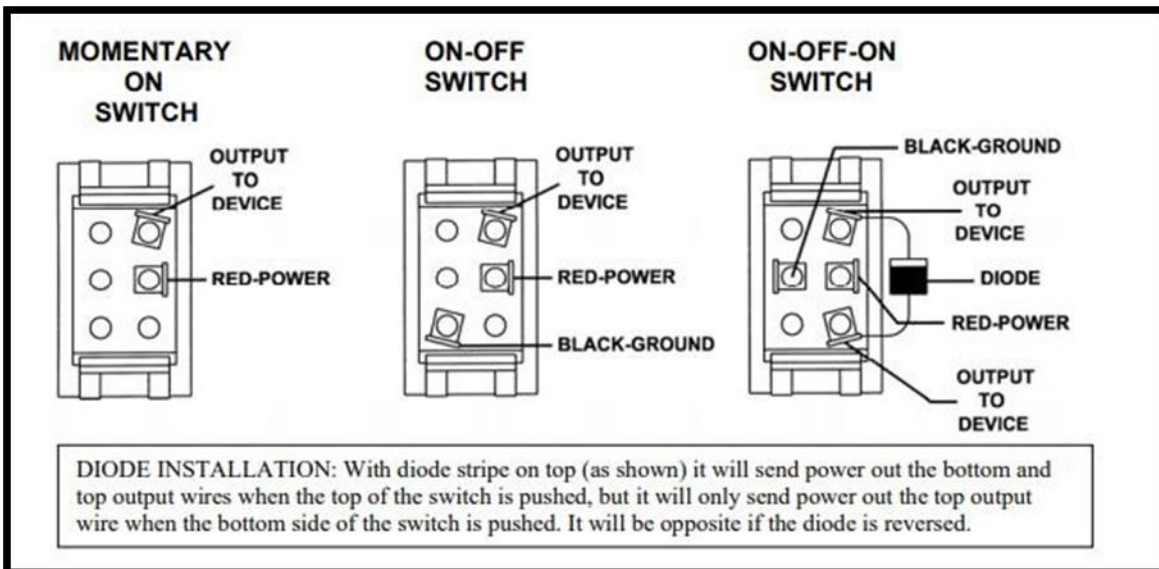


P-1
12 way pin
(male) connector

- 1: #770 RED
- 2: #771 BLACK
- 3: #701 GRY/WHT
- 4: #707 BLU/YLW
- 5: #747 YLW/WHT
- 6: #769 DRG
- 7: #729 BRN
- 8: #720 PINK
- 9: #763 GRN
- 10: #762 BLU
- 11: #719 PPL
- 12: BLANK

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

Table 6.2 Connector pin-out



THE FOLLOWING INDEX IS A LIST OF WHAT EACH COLOR WIRE IS USED FOR.

| | |
|-----------------------------|--------------------------------------|
| RED (12 GA) | SWITCH PANEL POWER INPUT WIRE |
| BLACK (12 GA) | GROUND |
| BLUE/YELLOW (14 GA) | TO HEADLIGHT OR DIMMER SWITCH |
| BLUE (14 GA) | TO ELECTRICAL WATER PUMP |
| PINK (14 GA) | IGNITION (TO COIL) |
| PURPLE (14 GA) | START (STARTER SOLENOID) |
| YELLOW/WHITE (14 GA) | TO ELECTRIC FUEL PUMP #1 |
| BROWN (14 GA) | TO TAIL LIGHTS |
| GREEN (14 GA) | TO ELECTRIC FUEL PUMP #2 |
| GRAY/WHITE (14 GA) | TO ELECTIRC FAN |
| ORANGE (14 GA) | TO ACCESSORY |

Painless Performance Products, LLC **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.

Painless Performance Products LLC
2501 Ludelle Street
Fort Worth, TX 76105
Phone (817) 244-6212