

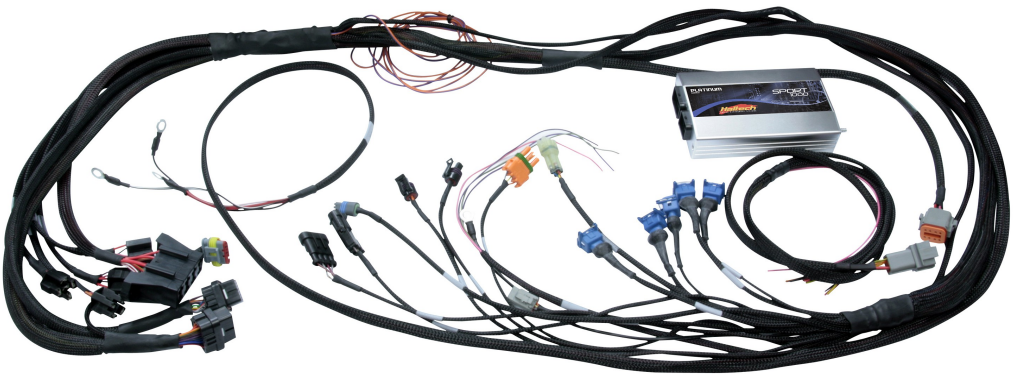


PLATINUM

Sport 1000

***Haltech 13B Terminated
Engine Harness
(HT051202)***

QUICK START GUIDE



LIMITED WARRANTY

Lockin Pty Ltd trading as Haltech warrants the Haltech™ Programmable Fuel Injection System to be free from defects in material or workmanship for a period of **12 months** from the date of purchase.

Proof of purchase, in the form of a bill of sale or receipted invoice, which indicates that the product is within the warranty period, must be presented to obtain warranty service. Lockin Pty Ltd trading as Haltech suggests that the purchaser retain the dealer's dated bill of sale as evidence of the date of retail purchase.

If the Haltech™ Programmable Fuel Injection System is found to be defective as mentioned above, it will be replaced or repaired if returned prepaid along with proof of purchase. This shall constitute the sole liability of Lockin Pty Ltd trading as Haltech.

To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representations, either expressed or implied, including any implied warranty of merchantability or fitness. In no event shall Lockin Pty Ltd trading as Haltech, be liable for special or consequential damages.

DISCLAIMER

Haltech will not be held responsible for any damage caused by the incorrect installation or tuning of this product. It is the installers responsibility to ensure the wiring connections and pinouts match that of the vehicle the unit is being installed into.

Haltech has taken all care to make sure the connections match the specified vehicles listed, but variations in wiring and connections on vehicles can occur and therefore this should be checked BEFORE the unit is installed.

Haltech highly recommends installation and tuning of this product is to be carried out by a professional, with an understanding on installing and tuning engine management systems. Misuse of this product can destroy your engine.

WARNING – HALTECH OFF-ROAD USAGE POLICY

It is unlawful to tamper with your vehicle's emissions equipment.

This ECU is designed and sold for Sanctioned Offroad/Competition Non-Emissions Controlled Vehicles only. Using this product for street / road use on public highways is prohibited by law. It is the responsibility of the installer and/or user of this product to ensure compliance with all applicable local and federal laws and regulations. Please check with your local vehicle authority before using this product.

GENERAL INSTALLATION WARNING

Avoid open sparks, flames or operation of electrical devices near flammable substances. Always disconnect the battery cables when doing electrical work on your vehicle.

Do not charge the battery with a 24 Volt truck charger or reverse the polarity of the battery or any charging unit. Do not charge the battery with the engine running as this could expose the ECU to an unregulated power supply that could destroy the ECU and other electrical equipment.

All fuel system components and wiring should be mounted away from heat sources, shielded if necessary and well ventilated. Disconnect the Haltech ECU from the electrical system whenever doing any arc welding on the vehicle by unplugging the wiring harness connector from the ECU.

After completing the installation, make sure that there are no fuel leaks, and no wiring left un-insulated in case a spark or short-circuit occurs and causes a fire. Also make sure that you follow all proper workshop safety procedures. If you're working underneath a jacked-up car, always use safety stands!

PLATINUM Sport 1000

Haltech 13B Terminated Engine Harness

Quick Start Guide

Congratulations on purchasing a Haltech Engine Management Terminated Engine Harness. This *Plug and Play* product allows you to be up and running in a few hours.

The Harness when installed in conjunction with a Haltech Platinum Sport 1000 opens the door to virtually limitless performance modification and tuning of your vehicle. Programmable systems allow you to extract all the performance from your engine by delivering precisely the required amount of fuel and ignition timing that your engine requires for maximum output under all operating conditions.

This quick start guide will walk you through installation of the Haltech Terminated Engine Harness into a vehicle. This guide is accompanied by the full service manual located on the software CD provided with the ECU that you or your tuner will need to refer to before completing your installation and configuration. The Manual can also be downloaded from the Haltech website www.haltech.com

Supported Engine

The Haltech 13B Terminated Engine Harness supports the following engine configurations:

- Mazda 13B – Series 4, 2nd Generation
- Mazda 13B – Series 5, 2nd Generation
- (Modifications can be made to support Mazda 13B – Series 6. Please see Appendix)

Supported Haltech ECU

- Haltech Platinum Sport 1000

Not Supported Engine Functions

- Series 5 Electronic Oil Metering Pump *
- Series 6 Electronic Oil Metering Pump *

** (See appendix for wiring instructions)*

Included in Haltech ECU Kit (HT051202)

- Haltech Platinum Sport 1000 ECU
- Haltech 13B Terminated Engine Harness
- Haltech Flying Lead Ignition Harness

Harness Overview

The Haltech 13B Terminated Engine Harness is a plug and play solution for wiring a Mazda Rotary 13B Engine.

Please note this harness is designed for engine management only and does not incorporate connections for starting, charging or OEM dash gauges etc.

Installation is simple and easy as the harness is designed for the engine, all lengths are correct and all wires are clearly labeled.

Harness Connectors

The Haltech 13B Engine harness is terminated with the following connectors:

- 2 x Haltech ECU main connectors
- 4 x Relay connectors
- 1 x Fuse Block
- 4 x Bosch 2 pin injector connectors
- 1 x Deutsch 8 pin ignition connector
- 1 x 4 pin OEM crank angle sensor connector (suits S4 / S5 CAS)
- 1 x Bosch 2 pin coolant temperature sensor connector
- 1 x 2 pin air temperature sensor connector
- 1 x 3 pin O2 sensor connector
- 1 x 4 pin auxiliary connector
- 1 x 4 pin trim connector
- 1 x 3 pin oil pressure sensor connector (suits TI sensor)
- 1 x 3 pin fuel pressure sensor connector (suits TI sensor)
- 1 x 3 pin GM style MAP sensor connector (suits 2 and 3 bar GM MAP sensors)
- 1 x 3 pin Deutsch connector for TPS sensor
- 4 x 10mm eyelets for harness power and grounds

Notes on installation:

- Make sure your Engine is grounded.
A Ground / earthing strap should be used to ground your engine to the chassis of the vehicle. The Haltech Terminated Engine harness **does not** ground your engine. Damage can occur to your harness and / or ECU if you do not ground your engine properly.
- Factory starting, charging and dash gauge wiring is to be used as the harness does not incorporate these connections.
- Keep all wires away from the Exhaust manifold.

Harness Connections

Main Power

The main power connections are located within the harness labeled as "Main"

Injection Battery + (R)

The Injection Battery + (Red) connection will supply the 12V DC to the Injector relay within the harness. Please connect this cable directly to the Battery + terminal.

ECU Battery + (R/W)

The ECU Battery + (Red / White) connection will supply the 12V DC to the ECU Relay within the harness. Please connect this cable directly to the Battery + terminal.

Battery + (R/G)

The Battery + (Red/Green) connection will supply the 12V DC to the Ignition and fuel pump Relay within the harness. Please connect this cable directly to the Battery + terminal.

Signal Ground (B/W)

The Signal Ground (Black / White) connection supplies the Signal Ground for the harness and ECU. Please connect this cable directly to the Battery – terminal.

Ground (B)

The Ground (Black) connection supplies the Ground for the harness and ECU. Please connect this cable directly to a Chassis ground.

WARNING!

Please make sure your engine block is grounded to the chassis of the vehicle by a correct sized grounding strap. This harness will not ground your engine, damage can occur to this harness and / or your ECU if your engine is not properly grounded.



Figure 1 - Main Power Connections

In Cabin Harness

The In Cabin harness comprises of the following wire connections

- ***Digital Pulsed Outputs 1 & 2 (V/B & V/BR)***

When the output is activated by the ECU the output will switch to ground.

Solenoid valves and shift lights etc can be run directly from the output, however high current devices such as thermo fans and additional fuel pumps must be activated through a relay. This way the output is only switching the relay and not a high current draw device.

The Digital Pulsed Outputs are limited to 800mA Max current draw.

These outputs can be programmed within the ECU Manager Software to control auxiliaries such as:

- Air Con Output
- Aux Fuel Pump
- Boost Control
- ECU Diagnostic Light
- Intercooler Fan
- Shift Light
- Thermo fans

For a full list of output options and explanations please go to the help within the ECU Manager Software.

- ***Digital Switched Input 1 (GY/G)***

Digital Switched inputs are inputs that toggle between two states of low (0V) and high (5V) Voltage to describe the state of a switch or sensor.

These outputs can be programmed within the ECU Manager Software to control auxiliaries such as:

- Air Conditioning Request
- Auxiliary Rev Limit
- Datalog Activation
- Launch Anti-Lag Switch
- Nitrous Enable

For a full list of input options and explanations please go to the help within the ECU Manager Software.

- **Analogue Voltage Input (GY/Y)**

Analogue Voltage Inputs accept variable voltage inputs from 0V to 5V.

These inputs can also accept switch inputs that change between two different voltage levels. The on voltage and off voltage define what the thresholds are between the on and off states. The voltage can be viewed as a channel in the ECU Manager software to determine thresholds for a switched input.

This input can be programmed within the ECU Manager Software to read inputs such as:

- 02 Sensors
- Pressure Sensors
- Temperature Sensors
- Various Switches

For a full list of input options and explanations please go to the help within the ECU Manager Software.

- **Switched +12V DC Input (P)**

This input must be connected to a +12VDC Switched Ignition Source.

This is required to turn on the Haltech ECU and all the Relays contained within the terminated harness.

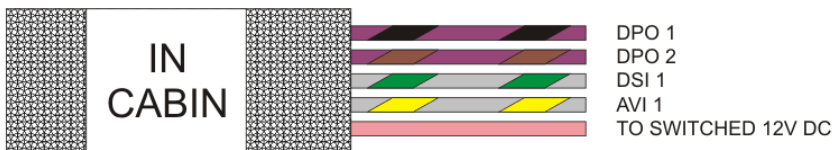


Figure 2 - In Cabin Wire Harness

Auxiliary Output Connector

The Auxiliary Output connector contains two Digital Pulsed Outputs (DPO 3 & DPO 4), and two +12V DC Switched power connections.

When the output is activated by the ECU the output will switch to ground. Solenoid valves and shift lights etc can be run directly from the output, however high current devices such as thermo fans and additional fuel pumps must be activated through a relay. A Relay can be wired between the DPO and the supplied +12V DC on this connector. This way the output is only switching the relay and not a high current draw device.

The Digital Pulsed Outputs are limited to 800mA Max current draw.

These outputs can be programmed within the ECU Manager Software to control auxiliaries such as:

- Air Con Output
- Aux Fuel Pump
- Boost Control
- ECU Diagnostic Light
- Intercooler Fan
- Shift Light
- Thermo fans

For a full list of output options and explanations please go to the help within the ECU Manager Software.

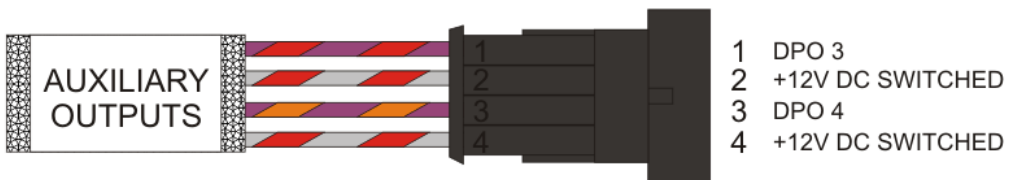


Figure 3 - Auxiliary Output Connector

02 Sensor Connector

The 02 Sensor connector comprises of the following connections:

02 Input Signal (GY/O)

Connect the output of a Narrowband 02 Sensor or the output of a Wideband Controller to this connection.

Signal Ground (B/W)

This is a signal ground and can be used for grounding a 3 wire 02 Sensor or a Wideband 02 Controller.

+12V DC Switched (GY/R)

This is the +12V DC Supply for powering the heater on a 02 Sensor or for powering the Wideband 02 Controller

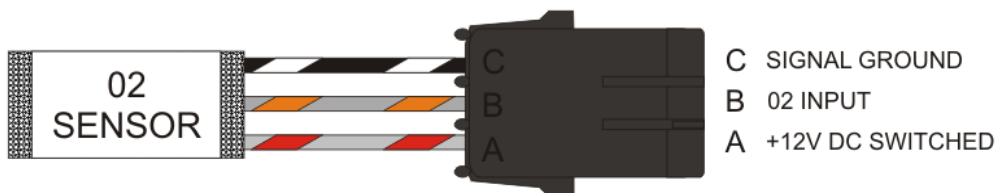


Figure 4 - 02 Sensor Connector

Throttle Position Sensor Connections

The Throttle Position Sensor comprises of the following connections
Connection diagrams can be found in the Appendix of this guide.

Signal Ground (B/W)

This wire supplies the Signal Ground to the Throttle Position Sensor

TPS Signal (W)

This wire is the signal to your ECU, Please connect this to the signal output of your Throttle Position Sensor

+5V DC (O)

This wire supplies the Throttle Position Sensor with an ignition switched +5V DC Supply

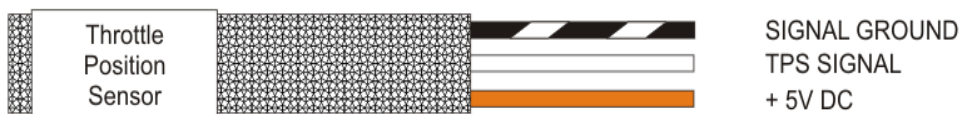


Figure 5 – Throttle Position Sensor Connections

Ignition Output Connector

The Ignition Output Connector comprises of the following connections:

Ignition Outputs (IGN1 – IGN4)

The Platinum Sport 1000 13B Terminated Loom has two options for the ignition harness, please select option upon ordering of your terminated harness kit:

- Flying Lead Ignition Harness (Kit # HT051202)
- Terminated LS1 Ignition Harness (Kit # HT051203)

The chosen Ignition harness will connect to the 8 position Deutsch connector labeled as "Ignition Outputs"

The Haltech Platinum Sport 1000 cannot fire the coils directly, and an optional ignition module will need to be purchased if the LS1 ignition option is not chosen.

Optional Modules (Sold Separately)

Haltech High Power Igniter- Quad Channel (HPI 4) # HT020032

Single Channel Igniter : # HT020000

Dual Channel Igniter: # HT020002

Triple Channel Igniter: # HT020004

Quad Channel Igniter: # HT020006

+12V DC Switched (P)

This wire supplies a switched +12V DC to the ignition connector this can be used in CDI applications to enable the CDI unit.

Ground (B)

This wire supplies a ground to the ignition module or coils

+12V DC From Ignition Relay (R/Y)

This wire supplies a switched +12V DC to the ignition module or coils from the ignition relay.

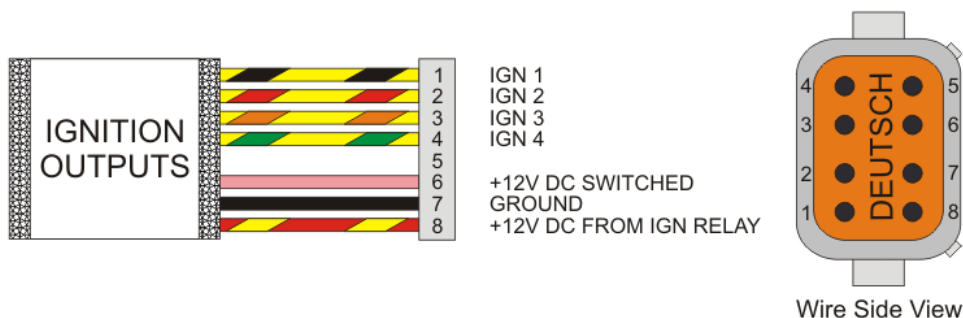


Figure 6 - Ignition output connector

Trim Module Connector

The Trim Module connector can be used in conjunction with the optional Haltech Trim Module (#HT010502) to make quick manual adjustments to the Boost level / Fuel Injection Times and Ignition Timing depending on software setup. Only one option can be adjusted at any one time with the single Haltech Trim Module.

Alternatively this connection uses Analogue Voltage Input 2 (AVI2) which can be used / wired as a standard function input if required.

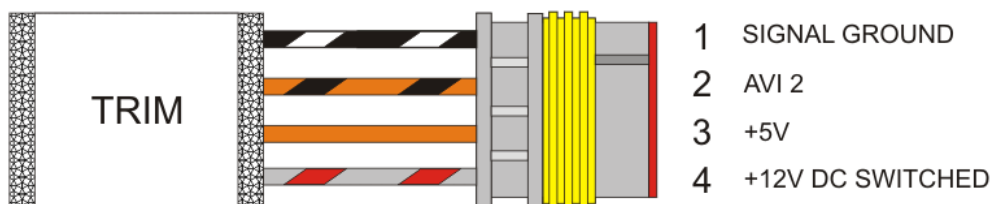


Figure 7- Trim Module Connector Pinout

Fuel Pump Output (O/L)

Fuel Pump Output supplies a continuous +12V DC supply to the fuel pump when the engine is running. This output wire is rated for a max continuous current draw of 15A . The Fuel Pump Output wire can be connected directly to the positive side of the fuel pump, providing the pump in use will draw less than 15A of current under full load. If your pump will draw more than 15A or if dual pumps are to be used it is recommended that you use this wire to control a relay to turn on the fuel pumps.



Figure 8 - Fuel Pump Output Wire, 15A Max Continuous Current

Haltech Ignition Harness Overview

The Haltech 13B Terminated Harness has two ignition harnesses available
Please specify at time of purchase.

Haltech LS1 Ignition Harness (Supplied with kit # HT051203)

The Haltech LS1 Ignition harness is designed to be a plug and play solution when used with Haltech LS1 Coils (Purchased separately, order as part # HT020102).
With the additional purchase of four LS1 coils this harness will simply plug in.

The use of Haltech LS1 Coils with your engine package will save you time and money, as these coils have inbuilt ignitors, so ignition modules will not need to be purchased.

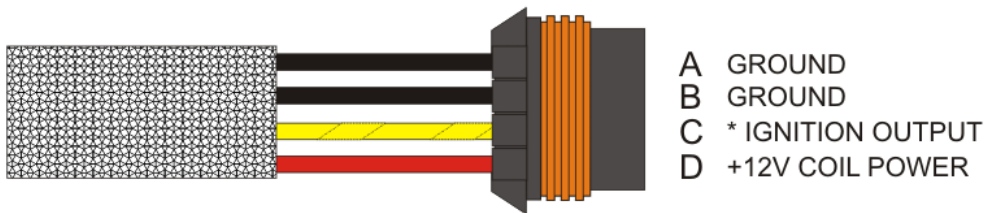


Figure 9 – Haltech LS1 Ignition Harness Connections

Haltech Flyloom Ignition Harness (Supplied with kit # HT051202)

The Haltech Flyloom Ignition harness is designed to allow the end user alternative options for their ignition system. The Haltech Fly loom ignition harness can be wired to existing ignition modules or used to trigger a CDI system.



Figure 10 – Haltech Flyloom Ignition Harness Connections

***Ignition Output Identification**

The outputs of the Ignition Harness can be identified by the coloured stripe on the yellow wires, Please see figure 10 below:

	YELLOW / BLACK	=	IGNITION OUTPUT 1
	YELLOW / RED	=	IGNITION OUTPUT 2
	YELLOW / ORANGE	=	IGNITION OUTPUT 3
	YELLOW / GREEN	=	IGNITION OUTPUT 4

Figure 11 – Haltech Ignition Looms Output Colour Guide

Appendix

Series 6 Engine Harness Conversion

Crank Angle Sensor

To Convert the Haltech Terminated harness to be used with a Series 6 engines the Crank angle sensor connection must split into two sensor connectors.

Cut your existing connectors off your original harness and solder them to the Haltech terminated harness as shown below

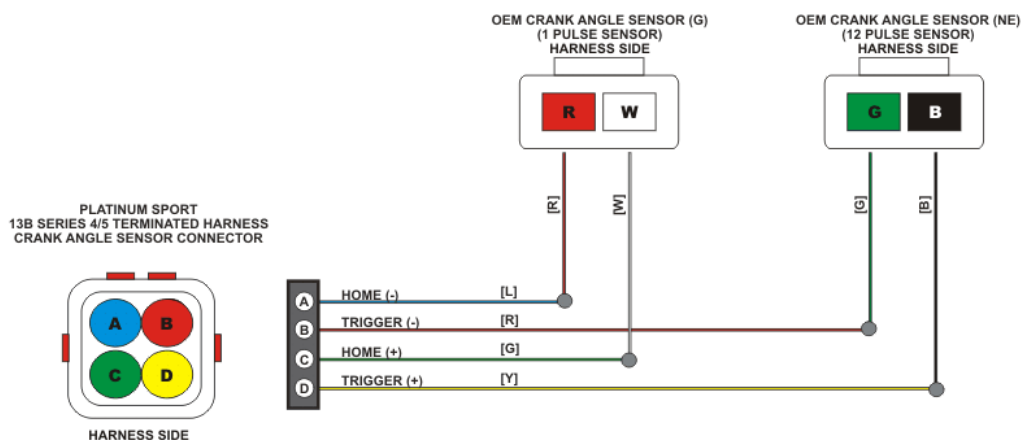


Figure 12 – Series 6 Crank Angle Sensor Wiring

Throttle Position Sensor Connections

Connections to the Throttle Position Sensor for both series of engines are outlined below .

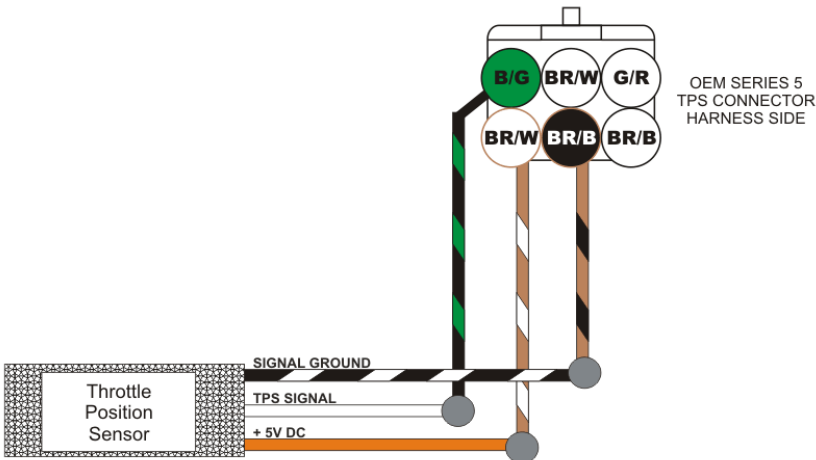


Figure 13 – Series 5 Throttle Position Sensor Wiring

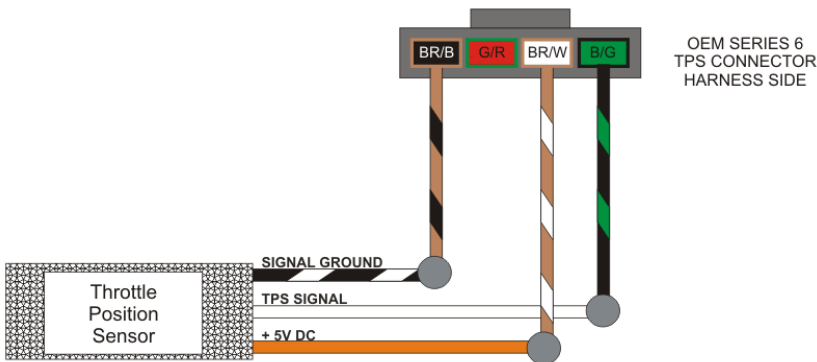


Figure 14 – Series 6 Throttle Position Sensor Wiring

Oil Metering Pump Connection

The Haltech 13B Terminated Harness does not support the electronic oil metering pump.

This feature can be added by the addition of 7 wires.

Please follow the wiring diagrams below.

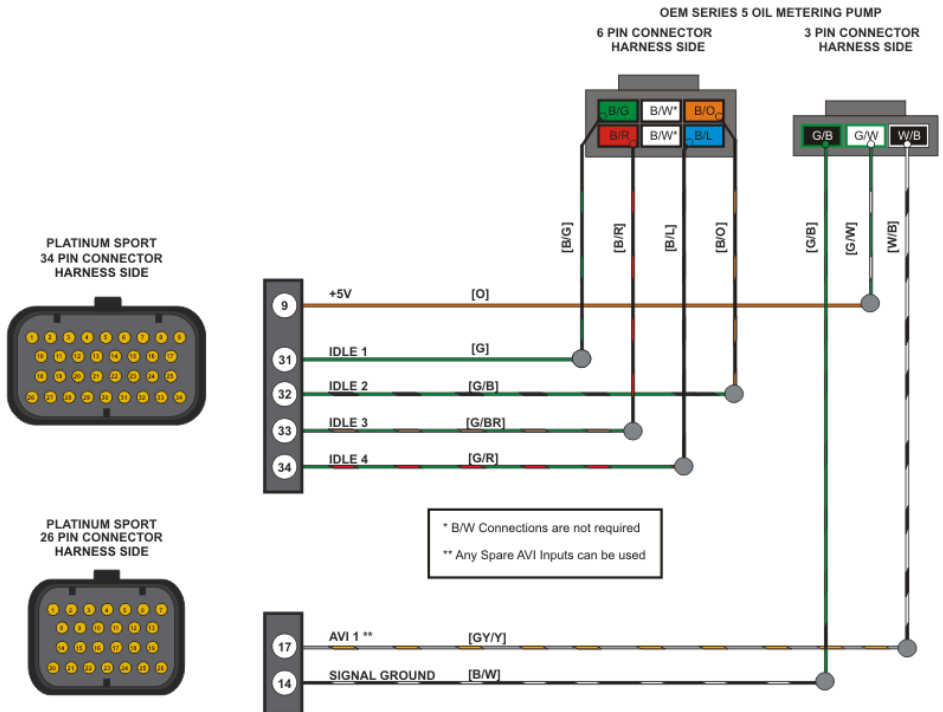


Figure 15 - Wiring in a Series 5 electronic Oil Metering Pump

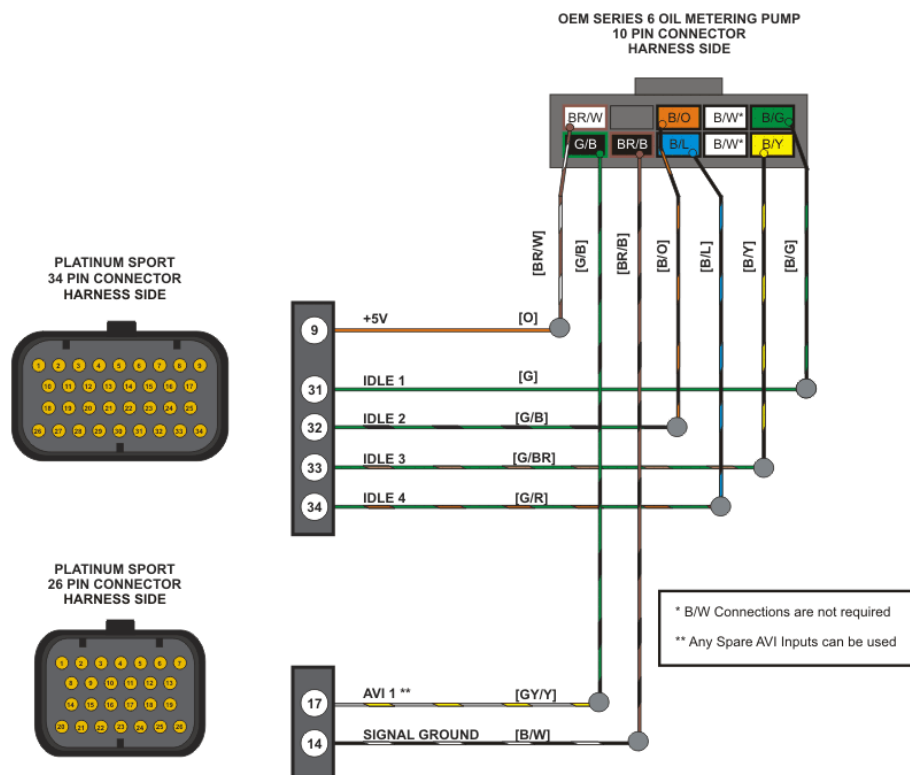


Figure 16 - Wiring in a Series 6 electronic Oil Metering Pump

Installation Table

Upon installation fill out the table below, this will help when it comes to setup and tuning of the vehicle

Input / Output	Wire Colour	Harness Location	Configuration
Analogue Voltage Inputs			
AVI 1	(GY/Y)	In Cabin	
Digital Switched Inputs			
DSI 1	(GY/G)	In Cabin	
Digital Pulsed Outputs			
DPO1	(V/B)	In Cabin	
DPO2	(V/BR)	In Cabin	
DPO3	(V/R)	Auxiliary Outputs	
DPO4	(V/O)	Auxiliary Outputs	

Figure 17 - User Definable Inputs and Outputs Allocation Table

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