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# INSTALLATION MANUAL

## AEROFLOW PERFORMANCE

### IGNITION COIL-ON-PLUG

## WARNING!

BEFORE PROCEEDING WITH INSTALLATION PLEASE READ INSTRUCTIONS CAREFULLY. THIS PRODUCT REQUIRES DETAILED KNOWLEDGE OF AUTOMOTIVE SYSTEMS. WE RECOMMEND THAT THIS INSTALLATION BE CARRIED OUT BY A QUALIFIED AUTOMOTIVE TECHNICIAN.

*These instructions must be read and fully understood before beginning the installation. Failure to follow these instructions may result in poor performance, vehicle damage, personal injury or death. If these instructions are not fully understood, installation should not be attempted.*

### INTRODUCTION

Congratulations on your purchase of Aeroflow Performance ignition coil on plug. Aeroflow Performance products cannot and will not be responsible for any damage, or other conditions resulting from misapplication of the parts described herein. However, it is our intention to provide the best possible products for our customer, products that perform properly and satisfy your expectations. Should you have any questions? Please call technical support at +61 2 8825 1900 and have the product part number on hand when calling.

Is your car miss firing, have you burnt a coil pack out or simply looking to upgrade to provide a much stronger and more consistent spark? These Hitachi style high performance coil on plug coil packs are the answer. They are a great upgrade when increasing boost pressure and can be used with a variety of engines with the correct fitting kit (sold separately).

These are a direct fit for the R35 GTR VR38DETT engine and similar to OEM Nissan part number 22448-JF00B or Hitachi part number HEX EXA 2410N.

Heat can be the enemy of these coils. Therefore, installation should be away from any extreme heat sources. Custom heat shields are recommended to prolong the life of the coils.



*For more information or technical enquires*

*Contact: Aeroflow Performance on*

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**TEST DATA (shown across 6 ignition coil packs)**

| Dynamic Parameter |        | Test Conditions   |
|-------------------|--------|---|
| Primary Current   | 4.7±1A | Input Voltage : 14±0.2V<br>Load : 25pf<br>Frequency : 50±1HZ<br>Pulse Width : 1.85ms<br>Zener Diode Regulator : 1000V |
| Secondary Voltage | ≥31kv  |   |
| Energy            | ≥27mj  |   |

| Dynamic Parameter Test |                     |                        |             |
|------------------------|---------------------|------------------------|-------------|
| Ignition Coil          | Primary Current (A) | Secondary Voltage (KV) | Energy (mj) |
| 1                      | 4.88                | 34.40                  | 32.70       |
| 2                      | 4.88                | 34.80                  | 32.90       |
| 3                      | 4.92                | 34.80                  | 32.50       |
| 4                      | 4.68                | 34.00                  | 32.10       |
| 5                      | 4.76                | 33.60                  | 32.20       |
| 6                      | 4.76                | 33.60                  | 32.30       |

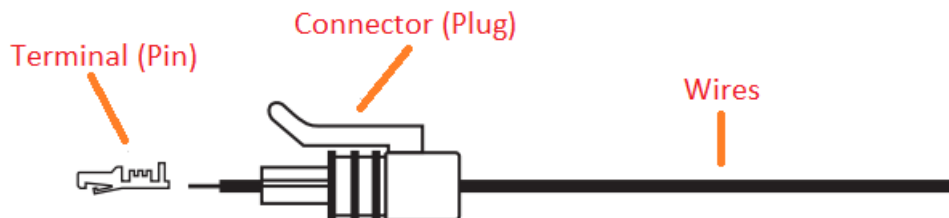
**WIRING**

Plug and pins are sold separately (AF49-8299).

The terminals in the plug are a "Pull to Seat" meaning you must feed the wire through the connector housing BEFORE you crimp on the terminals. The wire is then pulled back into the housing and the terminal locks in place. The contact cannot be inserted or removed from the rear (wire side entry) of the housing.

The connectors for the coils must be assembled and wired. Connector assembly procedure is stated below, and wiring for connector is mentioned on the following page along with recommended wire gauges.

1. Feed wire through the back of the housing and out the front side.
2. Crimp pins onto the wire.
3. Pull back on the wires to seat in the connector cavities.

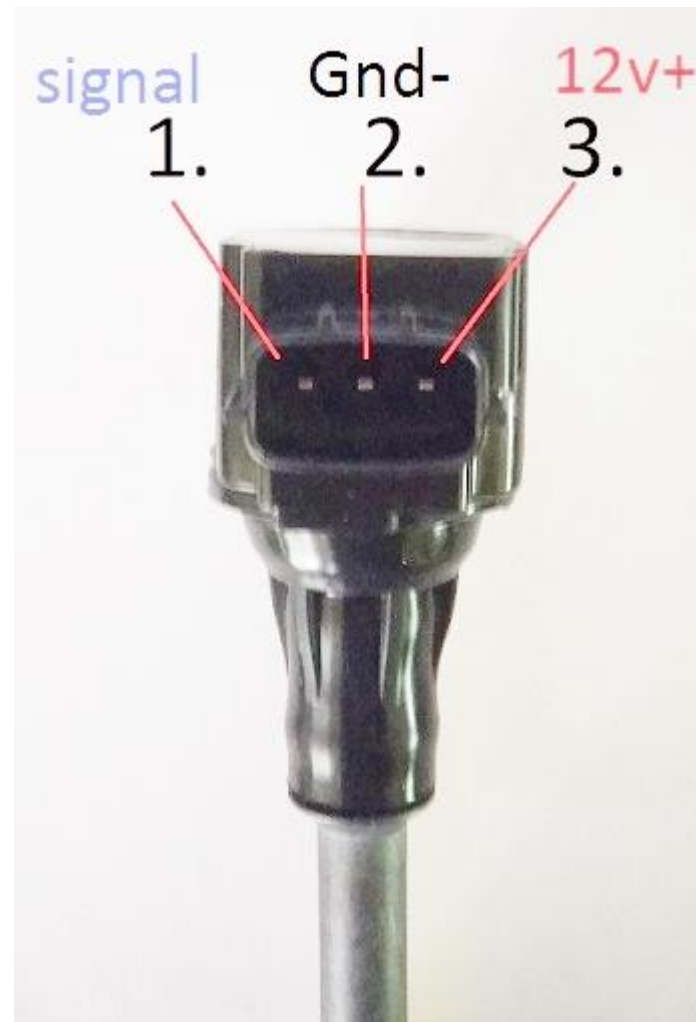
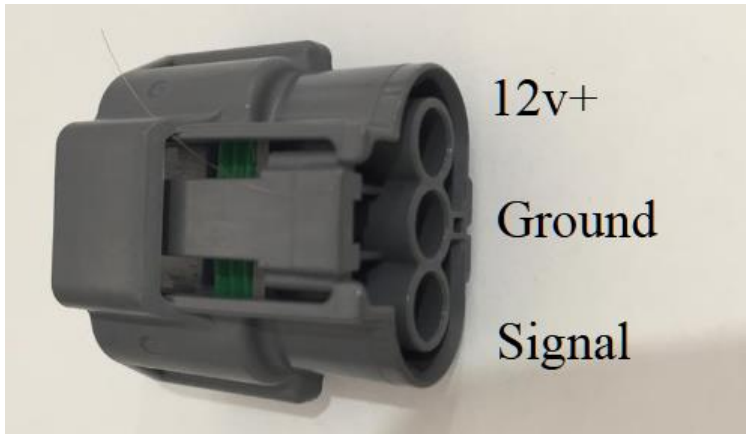


## Wiring Plug Pinouts

**Pin 1:** *Coil Signal Trigger.* This uses a 5 Volt signal to trigger the coil.

**Pin B:** *Coil Trigger Ground.* All coil grounds can be tied together to the ECU.

**Pin C:** *Coil Power Wire.* 12 Volts required to provide power to each individual coil



## DWELL SETTING

It is recommended to target a base dwell time of 3mS and only increase it when needed due to high cylinder pressures.

The maximum individual coil dwell "ON" time must not exceed 9mS at any time, regardless of engine RPM. For continuous duty the maximum "ON" time must remain below 40% duty (on 40% of the time, off 60% of the time). Exceeding either of these will cause the coil to overheat and fail.

Below is a recommended dwell setting. Each application may or may not be different so it is important ensure to contact your tuner and dyno the car to gain the maximum power from these coil packs.

### **Recommended dwell settings:**

- 5.0ms @ 8v
- 4.8ms @ 9v
- 4.7ms @ 10v
- 4.6ms @ 11v
- 4.4ms @ 12v
- 4.2ms @ 13v
- 4.1ms @ 14v
- 4.0ms @ 15v
- 3.8ms @ 16v

In order to determine the correct dwell setting, first determine your engines HP per cubic inch. To do this divide the engines horsepower by engine displacement in cubic inches. Once determined, follow the dwell setting recommendations below.

- For street cars below 1.5 HP per cubic inch, dwell should be set to 4.0 milliseconds.
- For cars that exceed 1.5 HP per cubic inch, dwell should be set to 4.5 milliseconds.
- For long duration racing, such as road racing or off-road, dwell can be set to 5.0 milliseconds.
- For short duration racing, such as drag racing, dwell can be set to 7.0 milliseconds.