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**Installing a Haltech E6K on a 1990-97 MX5 Miata Parallel with the OEM ECU using MSD DIS-2 w/ 1.6l Coils.**

*The following inputs can be run in parallel with the stock ECU*

CAS Cam angle sensor  
O2 Air/Fuel sensor

*I first mounted the E6K in the car. You can mount this wherever you want, as the harness will be long enough to reach all the inputs/outputs. I chose to mount it up against the firewall above the OEM ECU and routed the wires through one of the holes in the firewall from the AC system that I removed. You may want to drill a hole and add a grommet to get the harness through the firewall. Once you have the wires through the firewall, you can begin to separate each labeled harness and route them to the area that they will be hooked up.*



## Connecting input sensors.

### Trigger Input

Haltech E6K

Trigger (Yellow)  
Home (Green)

CAS Connector

White (shared signal with stock ECU)  
Yellow w/ Blue (shared signal)



## MAP

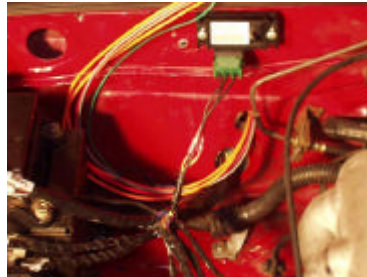
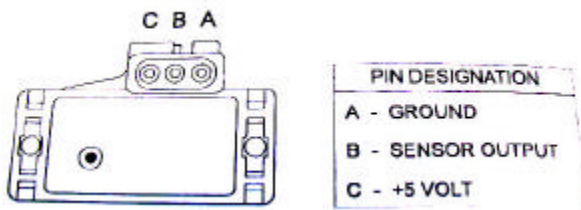
Haltech E6K

Ground (Black)  
MAP (Yellow)  
+5VDC(Orange)

MAP Connector

A  
B  
C

*The diagram below shows the letter association. A vacuum line needs to be connected to the map sensor to create a load signal. The best place to get the signal is from the center of the intake manifold plenum to avoid a disrupted signal from pulsation in other locations.*



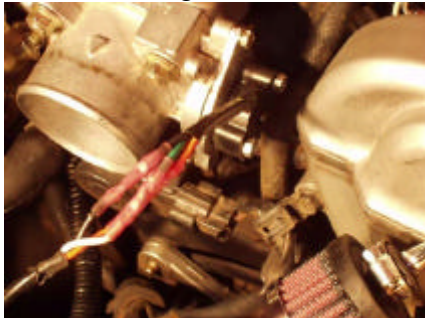
## TPS

Haltech E6K

Ground (Black)  
Throttle Position (White)  
+5VDC(Orange)

TPS Harness

Black  
Green  
Orange



*Refer to [WWW.MXFAB.COM/TPS](http://WWW.MXFAB.COM/TPS) for TPS install help. It will show you how to deal with the various OEM TPS setups on different models.*

## Air Temperature Sensor

Haltech E6K

Ground (Black)  
Air Temp (Grey)

*The Haltech air temp sensor should be placed about 4-12" before your throttle body in the intake pipe. You will need to drill a 15-17mm hole and weld or epoxy a 14mm x 1.5 nut to screw the sensor into.*

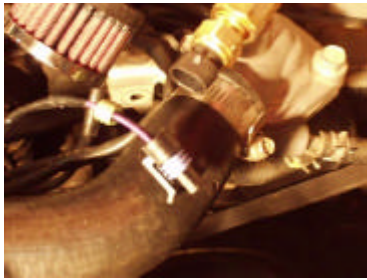
## Coolant Temperature Sensor

Haltech E6K

Ground (Black)

Coolant Temp (Violet)

*The Haltech coolant temp sensor is 3/8" NPT. Below is a picture of the setup I had on a 1.6l setup using an 90 degree adapter fitting. Another simple option is to get some brass fittings and "T" into a heater hose.*



## Oxygen Sensor

Haltech E6K

Ground (Black)

+13.8VDC (Grey/Red)

O2 Signal (Grey)

O2 Harness

Ground (White, Gray)

PWR ( White)

Signal(Black)

*This is using a Bosch 4-wire o2 sensor as opposed to the stock single wire o2 sensor. It has 2 white wires. You have to use one of the white wires joined with the gray wires to the ground from the E6K. It does not matter which one goes where. Bosch Part # 15730 available at Autozone etc. All o2 sensors have a thread size of 18mm x 1.5 so it will replace the OEM single wire. Any narrowband o2 sensor will work but the 4-wire's are the most accurate narrowband available. You don't have to use the part # above either, most any 4-wire o2 sensor will work the same.*



## Connecting Outputs.

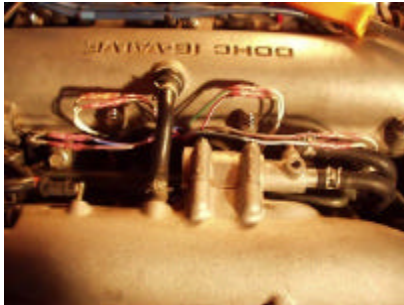
### Wiring injectors for batch fire

Haltech

Injector # 1 (Light blue)  
Injector # 2 (Blue w/red)  
Injector # 3 (Green w/red)  
Injector # 4 (Pink)

Engine

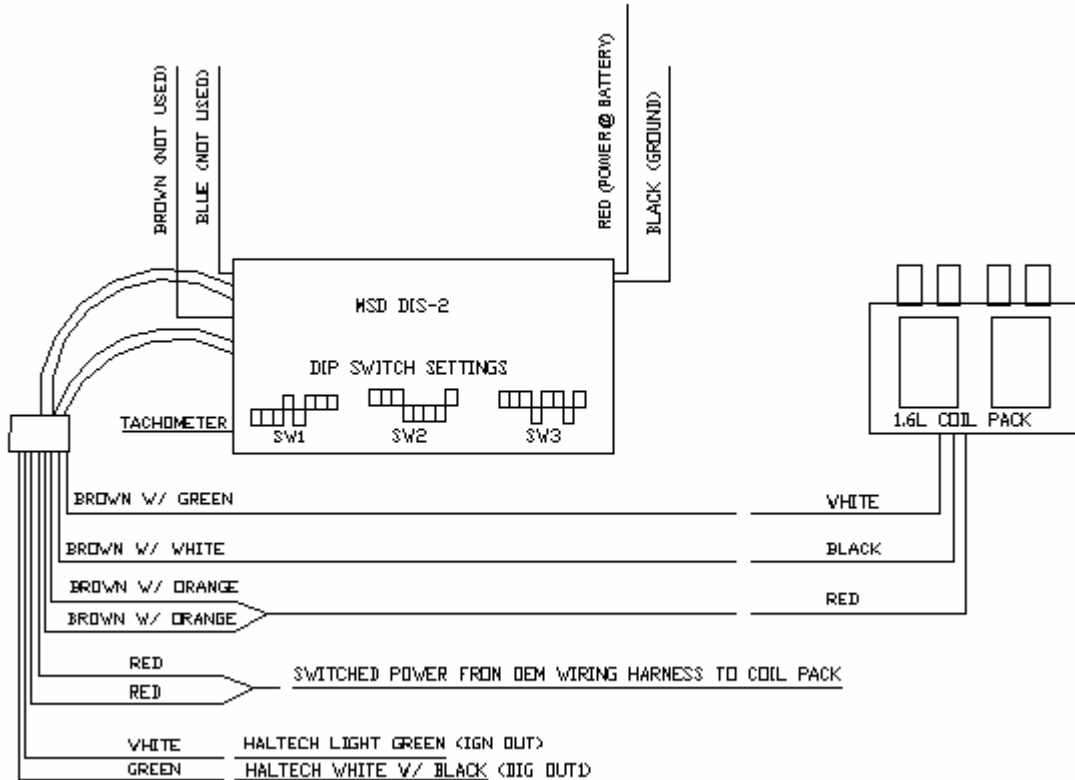
Cylinder #1  
Cylinder #4  
Cylinder #2  
Cylinder #3



*The polarity on the injectors does not matter, they can be wired with power/ground on either pin. There is 13.8vdc power sent to each injector and the Haltech pulsates the ground signal to fire the injectors.*

*I set my injection up for batch firing. It is the simplest way and will work just fine for virtually all situations. The E6K is not capable of running sequential injection without the use of trailing igniters. For those that want to run sequential injection, I would suggest using the E6X because the cost of setting up the sequential injection with the E6K won't net you much of any savings in time or money unless you get these parts for free.*

## Ignition Output with MSD DIS-2 and 1.6l Coil Pack (no igniter necessary)



### Connecting the main power:

Haltech main power (red) is spliced into ignition switch or at power on starter.  
Haltech switched 12v (Gray) is spliced into ignition switch.

The main ground wire(s) can be connected to a common chassis ground that is located to the left of the steering column. (Use a large ring terminal)

### Connecting the fuel pump relay:

Haltech fuel pump supply (Orange) is connected to the blue/red fuel pump power wire that runs on parallel with the driver's side door sill next to the driver seat. Trace it forward and cut it. Then connect it to Haltech (Orange) on the fuel pump side. Tape the other end of the cut wire.

Haltech (gray) from Haltech fuel pump relay is connected to the switched ignition.

## **E6K Software notes:**

### **Main page setup:**

Cylinders :4  
Load sensing by : Manifold  
Map sensor: 3 (Match to the sensor that you purchased and installed)  
RPM Limits: 7200 rpm w/ cut by ignition  
RPM mode: 10500 rpm  
Units: US  
Road Speed Value: 12750(not applicable)

### **Ignition setup:**

Trigger and Home inputs are set to hall effect, trigger and home edge is rising.  
Trigger angle: around 70  
Trigger type: Standard  
Spark mode: Direct fire with 2 coils on 4 cyl.  
Engine type: Piston  
Output type: Constant Duty  
Coil charge time: .8ms (not applicable with constant duty)  
Output edge: Rising

### **Fuel Setup:**

Ign /By : 1  
Decel Cut Off: Enable  
Decel Cut Off RPM: 3500  
Injection mode: Batch Firing  
Post Start Temp Limit: 127 Below  
Post Start Time Limit: 1  
Staging Bar Number: 10  
Zero Throttle Map: Disable                      Throttle Pump Dead Band: 0  
Full Throttle Map: Disable  
Full Throttle Threshold: 95 (NA)  
Barometric Lock: Enabled  
Barometric Pressure Lock at: 931 mBars  
Disable Injector Outputs: No

*Make sure you set your timing at 10 BTDC as the manual describes before beginning.*

*Thus article was written by Skyler Schmitt*