Haltech

Elite 750 Plug 'n' Play Adaptor Harness HT-140621

Supported Models

MX-5 MAZDASPEED SPECIAL EDITION (FACTORY TURBO)
MX-5 NB 1.8 VCT (2000-2004)
MX-5 NB 1.8 NON-VCT (2000-2004 Australian Delivered) (2001-2005 USDM)

Package Contents

THIS MAZDA MX-5 PACKAGE CONTAINS THE FOLLOWING:

- MAZDA MX-5 ELITE 750 PLUG 'N' PLAY ADAPTOR (HT-140621)
- ELITE SERIES PLUG 'N' PLAY ADAPTOR HARNESS (HT-130202)
- INTAKE AIR TEMPERATURE SENSOR (HT-010200)

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Application Notes

THIS MAZDA MX-5 SPECIAL EDITION (FACTORY TURBO), VCT, NON-VCT ELITE 750 PLUG 'N' PLAY ADAPTOR HARNESS IS SUITABLE FOR USE WITH A HALTECH **ELITE 750** ECU ONLY.

ENSURE THAT THE CORRECT BASEMAP IS LOADED BEFORE STARTING THE VEHICLE.

THE BASEMAP IS ONLY FOR USE AS A STARTING POINT AND THE ECU WILL REQUIRE APPROPRIATE TUNING.

HALTECH WILL NOT BE HELD RESPONSIBLE FOR ENGINE DAMAGE DUE TO THE IMPROPER USE OF BASEMAPS.

THE 16 PIN AUXILIARY CONNECTOR PROVIDES A NUMBER OF ADDITIONAL INPUT/OUTPUT LINKS TO THE HALTECH ELITE ECU. THIS KIT IS SUPPLIED WITH SPARE PINS FOR USE WITH THE 16 PIN AUXILIARY CONNECTOR.

AN APPROPRIATE CRIMPING TOOL IS RECOMMENDED TO USE THE 16 PIN AUXILIARY CONNECTOR.

A CRIMPING TOOL KIT (PART # HT-070300) CAN BE PURCHASED AT **WWW.HALTECH.COM**

AFTER THE INSTALLATION OF THIS PLUG 'N' PLAY KIT, FACTORY PANELS MAY BE RE-INSTALLED.

Elite 750 Basemaps

MAKE	MODEL	CODE	ENGINE	BASEMAP
MAZDA	MX-5 SPECIAL EDITION (FACTORY TURBO)	NB	BP-4W	HT-140621 - Mazda MX5 SE Turbo.e750
MAZDA	MX-5 1.8 VCT (00-04)	NB	BP-Z3	HT-140621 - Mazda MX5 VCT.e750
MAZDA	MX-5 1.8 NON-VCT (00-04 Aus Del.)(01-05 USDM)	NB	BP-4W	HT-140621 - Mazda MX5 Non-VCT.e750

Jumper ID Settings

THIS MX-5 PLUG 'N' PLAY ADAPTOR HARNESS IS PRE-CONFIGURED FOR USE WITH AN ELITE 750 ECU, HOWEVER, THE JUMPERS ON BOARD CAN PROVIDE CAPABILITY WITH OTHER ECUS, INDICATED BELOW WITH (Elite 1000-2500).

Jumper	Connection	Jumper	Connection
A	Connects Check Engine Light to Injector Output 5 (Elite 750)	I	Supplies VCT Solenoid (+) with +12V
B	Connects Check Engine Light to Stepper 1 (Elite 1000-2500)	J	Connects Wastegate Solenoid to Wastegate Control Monitor
C	Connects Alternator Control to Ignition Output 6 (Elite 750)	K	Connects VCT Solenoid Control to Injector Output 6 (Elite 750)
D	Connects Alternator Control to Stepper 4 (Elite 1000-2500)	L	Connects VCT Solenoid Control to Stepper 3 (Elite 1000-2500)
E	Connects Wastegate Solenoid to Ignition Output 5 (Elite 750)	M	Connects A/C Request to a 1k Pulldown
F	Connects Wastegate Solenoid to Stepper 2 (Elite 1000-2500)	N	Connects Mass Air Flow Sensor to a 1k Pulldown
G	Connnects ECR Relay to the on-board ECR Circuit (Elite 750)	O	Use when Alternator Control circuit requires +5V Signal
H	Connects ECR Relay to DPO 6 (Elite 1000-2500)	P	Use when Alternator Control circuit requires +12V Signal

THIS MX-5 PLUG 'N' PLAY ADAPTOR HARNESS IS PRE-CONFIGURED FOR USE WITH AN MX-5 SPECIAL EDITION MAZDASPEED (FACTORY TURBO). BELOW ARE THE JUMPER SETTINGS REQUIRED FOR ITS USE WITH THE OTHER SUPPORTED MX-5 MODELS.
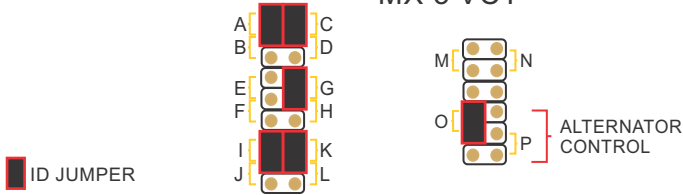UNSCREW THE FRONT PLATE AND SLIDE OUT THE PCB TO ACCESS JUMPERS.

DEFAULT CONFIGURATION

MX-5 SPECIAL EDITION (FACTORY TURBO)

A C
B D

E G
F H

M N

O P   ALTERNATOR CONTROL

I K
J L
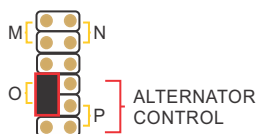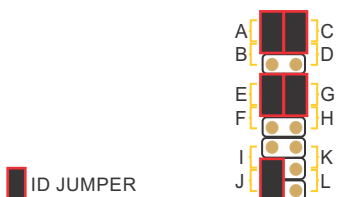
ID JUMPER

JUMPERS REQUIRED
A
C
E
G
J
O

ALTERNATE CONFIGURATION

MX-5 VCT

JUMPERS REQUIRED
A
C
G
I
K
O

ALTERNATOR CONTROL

ID JUMPER

ALTERNATE CONFIGURATION

MX-5 NON-VCT

JUMPERS REQUIRED
A
C
G
O
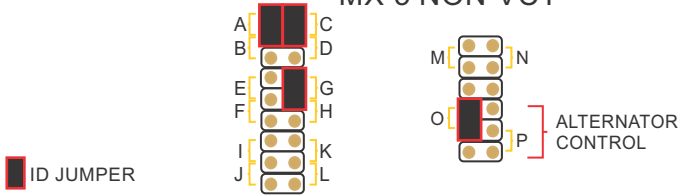
ALTERNATOR CONTROL

ID JUMPER

NOTE: SOME VEHICLE VARIANTS WILL REQUIRE A +5V SIGNAL TO THE ON-BOARD ALTERNATOR CONTROL CIRCUIT, WHILE OTHERS WILL REQUIRE A +12V SIGNAL. THE DEFAULT JUMPER CONFIGURATION PROVIDES +5V. THE JUMPER MAY HAVE TO BE CHANGED TO JUMPER P IF THE ALTERNATOR CONTROL IS NOT FUNCTIONING CORRECTLY. SEE IMAGES BELOW FOR JUMPER LOCATIONS.

ECU Location

THE FACTORY MAZDA MX-5 ECU IS LOCATED UNDER A PROTECTIVE PLATE ON THE PASSENGER SIDE FOOT WELL. REMOVING THIS PANEL WILL ALLOW FOR THE INSTALLATION OF THIS HALTECH PLUG 'N' PLAY PRODUCT. THE FACTORY PROTECTIVE PLATE CAN BE RE-INSTALLED AFTER FITMENT OF HALTECH PRODUCTS.

Figure 1 - Haltech Installation

Figure 2 - Factory protective plate covering Haltech products

Air Temperature Sensor

An air temperature sensor is a required sensor used in Volumetric Efficiency (VE) tuning to compensate for changes in air density due to air temperature. Cold air has a higher density than warm air and therefore requires a greater volume of fuel to maintain the same air/fuel ratio.

The Haltech ECU can automatically compensate the fuel delivery for changes in air density based on temperature using the signal received from the air temperature sensor.

On many vehicles the OEM air temperature sensor is located either within the mass airflow sensor or molded into the intake air manifold, however in performance applications the airflow sensor and air intake piping are often modified, removed or replaced. For this reason an air temperature sensor (HT-010200) is provided for use as a substitute to the factory air temperature sensor.

This sensor should be mounted to provide the best representation of the actual temperature of the air entering the combustion chamber, i.e. after any turbocharger, supercharger and intercooler.

The sensor needs to be in the moving air stream to give fast response times and reduce heat soak effects. Be aware in some situations, mounting the sensor into the inlet manifold (especially at the rear) may cause heat soak problems (where the sensor reads the temperature of the manifold itself rather than the air that is moving through the manifold into the engine).

Once a suitable position has been located for the air temperature sensor to be installed, a hole should be drilled and tapped to accept the sensor. The intake manifold or inlet piping should be removed from the engine before this is done to prevent any metal shavings or swarf entering the engine.
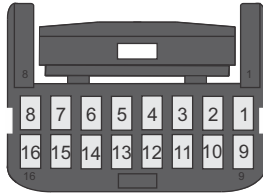
This package includes an air temperature sensor (HT-010200). This air temperature sensor should be installed by utilising an auxiliary Analogue Voltage Input (AVI) and signal ground located on the 16 pin auxiliary connector.

Please refer to the auxiliary connector pinout table and sensor wiring diagram below.

Termination	
A	Signal Ground
B	Air Temperature Signal

LOOKING INTO FRONT OF CONNECTOR

INSERT WIRE THROUGH PLUG, THEN CRIMP THE PIN INTO THE WIRE AND DRAW BACK TO LOCK
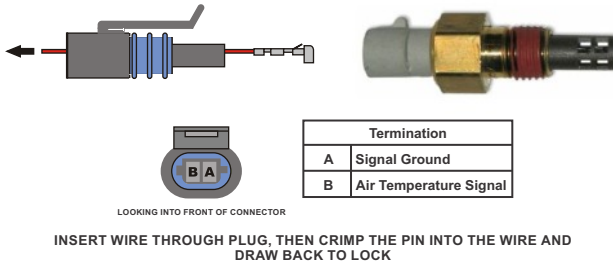
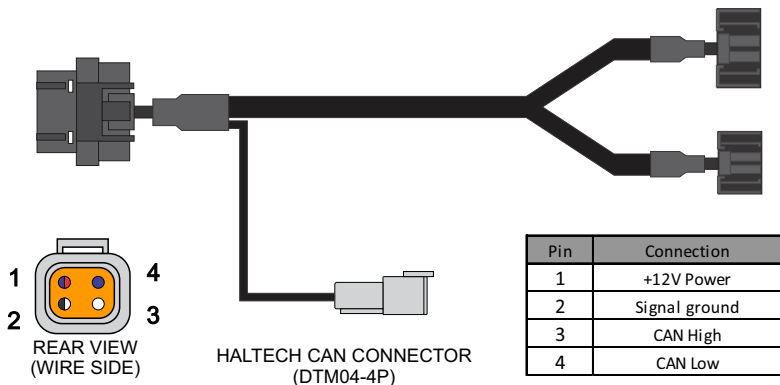**Figure 3 - Air Temperature Sensor wiring**

Auxiliary Connector

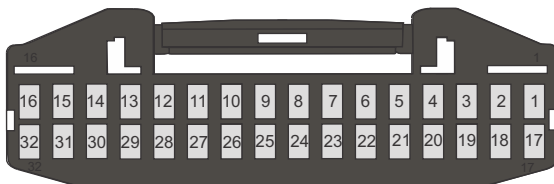AUXILIARY CONNECTOR (16 PIN)
REAR VIEW (WIRE SIDE)

An auxiliary connector allows easy connection of additional ECU inputs and outputs.
Please see pinout information below for spare inputs and outputs available to this application.

Position (16 Pin Plug)	Connection	Function	Notes
1	From Haltech ECU (Pin 9)	+5V	+5V Supply for Input Sensors (50mA Max)
2	-	-	-
3	-	-	-
4	From Haltech ECU (Pin 11)	SIGNAL GROUND	Signal Ground For Input Sensors
5	Not Used	-	-
6	Not Used	-	-
7	From Haltech ECU (Pin 12)	DPI 1	Spare Input (Optional Flex Fuel Input)
8	From Haltech ECU (Pin 26)	+12V (ECU/INJ)	+12V Supply for Relays and Solenoids (500mA Max)
9	From Haltech ECU (Pin 9)	+5V	+5V Supply for Input Sensors (50mA Max)
10	Not Used	CAN H	For Revision 1 harness. See diagram below for Revision 2.
11	Not Used	CAN L	
12	From Haltech ECU (Pin 11)	SIGNAL GROUND	Signal Ground For Input Sensors
13	Not Used	-	-
14	Not Used	-	-
15	Not Used	-	-
16	From Haltech ECU (Pin 26)	+12V (ECU/INJ)	+12V Supply for Relays and Solenoids (500mA Max)

Revision 2 Plug n Play Adaptor harness kits are fitted with a 4 pin DTM04 plug, for direct connection to low current Haltech CAN devices. High current CAN devices, such as a Haltech WB1 or WB2 wideband controller will need to be wired with external power and ground using the DTM04 power supply cable (HT-130043) included with the Haltech wideband kits.

REAR VIEW
(WIRE SIDE)

HALTECH CAN CONNECTOR
(DTM04-4P)

Pin	Connection
1	+12V Power
2	Signal ground
3	CAN High
4	CAN Low

Main Connectors

CONNECTOR (32 PIN)
REAR VIEW (WIRE SIDE)

Position (32 Pin Plug)	ECU Connector (34 Pin Plug)	Function	Description
1	1	DPO 2	A/C Control
2	Not Used	-	-
3	3	IGN 1	Igniton Coils 1 & 4
4	4	IGN 2	Ignition Coils 2 & 3
5	5	IGN 3	Thermofan
6	6	IGN 4	VTCS Solenoid
7	7	IGN 5	Wastegate Solenoid
8	8	IGN 6	Alternator Control
9	9	+5V	+5V DC Sensor Supply
10	10	BATTERY GROUND	Battery Negative
11	Not Used	-	-
12	Not Used	-	-
13	Not Used	-	-
14	14	TPS INPUT	Throttle Position Sensor
15	15	AVI 3	A/C Request
16	Not Used	-	-
17	Not Used	-	-
18	18	DPO 1	Tachometer
19	19	INJ 1	Injector #1
20	20	INJ 2	Injector #2
21	21	INJ 3	Injector #3
22	22	INJ 4	Injector #4
23	23	DPO 3	Idle Control Motor (BAC)
24	24	DPO 5	Fuel Pump Relay
25	Not Used	-	-
26	26	+12V SWITCHED POWER	Fused Power
27	27	INJ 5	Check Engine Light
28	28	INJ 6	VCT Cam Solenoid
29	Not Used	-	-
30	Not Used	-	-
31	Not Used	-	-
32	Not Used	-	-
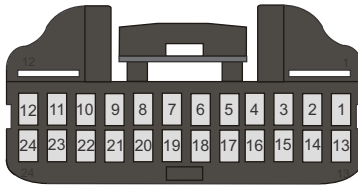
CONNECTOR (24 PIN)
REAR VIEW (WIRE SIDE)

Position (24 Pin Plug)	ECU Connector (34 Pin Plug)	Function	Description
1	31	TRIGGER +	Crankshaft Position Sensor
2	32	HOME +	Camsahft Position Sensor
3	29	AVI 4 (ATS)	Air Temperature Sensor
4	30	AVI 5 (CTS)	Coolant Temperature Sensor
5	33	TRIGGER -	Not Used
6	34	HOME -	Not Used
7	Not Used	-	-
8	12	DPI 1	Spare Input (Optional Flex Fuel Input)
9	13	DPI 2	Vehicle Speed Sensor
10	Not Used	-	-
11	26	+12V (ECU)	Fused Power
12	Not Used	-	-
13	2	AVI 1	O2 Sensor
14	Not Used	-	-
15	11	SIGNAL GROUND	Signal Ground for Input Sensors
16	Not Used	-	-
17	Not Used	CAN High	Access on Auxiliary connector
18	Not Used	CAN Low	(Revision 1 adaptor harness)
19	25	DPO 4	Condensor Fan
20	Not Used	-	-
21	Not Used	-	-
22	Not Used	-	-
23	Not Used	-	-
24	Not Used	-	-

Need more help?

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