



M142 HONDA CIVIC FK8R 2017 KIT



This kit is designed as a complete replacement for the factory ECU, utilising existing wiring, sensors and mounting hardware to deliver plug-in convenience with fully programmable control. The M1 ECU is supplied with the firmware preloaded, providing all the functionality of MoTeC's GPR-DI Package with additional features unique to the Honda Civic FK8R.

Along with fuel, ignition, camshaft and turbocharger control, this Package also supports other OE ECU features, including:

- Push button start
- Air conditioner control
- High and low speed fan control
- Adjustable driving mode
- Fuel canister purge valve control
- Engine speed matching (throttle blip) on downshifts
- Alternator control
- Reverse lockout
- Cruise control

The supplied start file contains all the calibrations and settings for the sensors, direct fuel injectors, ignition coils, knock control, throttle servo, camshafts and turbocharger wastegate. It has also been calibrated to match the OE factory fuelling, ignition, camshaft phasing and boost pressures. This saves a significant amount of time as it shortcuts the setup process. Users can begin tuning to their desired power level right away with the assurance of a safe base tune that is equivalent to the original ECU.

Included are many ancillary features commonly found on race cars, such as anti-lag, driver switches (e.g. pit switch, launch enable, boost trim), gearbox control, knock control, intercooler sprays, launch control, coolant pumps and traction control.

The ECU fully integrates with other MoTeC products, and provides pre-defined CAN messaging for all current Display Loggers, Loggers, LTCs, E888, VCS, GPS, ADR, BR2, PDM and SLM.

► KIT CONTENTS (11401)

- **13142** – M142 ECU Preloaded with the Honda Civic FK8R M1 Package. (A MoTeC M1 Licence is required to run this Package, see **Additional Requirements** below.)
- **61417** – M142 HONDA CIVIC FK8R 2017 ADAPTOR KIT :
 - 61404 – M1 ADAPTOR 250MM 26W KEY 1 STUB LOOM
 - 61405 – M1 ADAPTOR 250MM 26W KEY 3 STUB LOOM
 - 61406 – M1 ADAPTOR 250MM 34W KEY 1 STUB LOOM
 - 61407 – M1 ADAPTOR 250MM 34W KEY 2 STUB LOOM
 - 61418 – M142 HONDA CIVIC FK8R 2017 ADAPTOR BOX
 - 61430 – M142 HONDA CIVIC FK8R 2017 BREAKOUT LOOM
 - 61300 – LTC - LAMBDA TO CAN - LSU VERSION

See the **Installation** section for mounting instructions.

Additional Requirements

- **23320** – M1 LICENCE - HONDA CIVIC FK8R 2017

This Licence is required to run the Honda Civic FK8R M1 Package in the M142 ECU.

► FEATURES

- Pre-configured calibrations for Original Equipment sensors.
- Pre-configured reference mode for engine synchronisation.
- Pre-configured physical settings for engine displacement, fuel density, stoichiometric ratio, fuel pressure, and injector characterisation, which allow for simplified engine start-up prior to tuning.

- Engine load modelling based on inlet manifold pressure and inlet air temperature, with a pre-configured engine efficiency map that allows for quick and easy engine tuning.
- Pre-configured control of Direct Injector and high pressure pump.
- Optionally configurable secondary (port injector) fuel control with a tuneable balance table. **Note:** Only saturated (high-ohm) secondary injectors are supported in this hardware. Peak-hold (low-ohm) secondary injectors are not supported.
- Optional alternative fuel operation for Flex Fuel using ethanol composition sensor, or Secondary Fuel operation on secondary injectors.
- Closed Loop Lambda control supported; requires optional LTC. OE lambda sensor can be used and does not need to be replaced.
- Pre-configured coolant temp compensations for engine speed limit, ignition timing, fuel volume, fuel mixture, boost limit.
- Pre-configured transient fuelling compensation using physical modelling of fuel film.
- Engine Load Average channel with tables for engine speed limit, ignition timing trim, fuel mixture aim, boost limit, and throttle limit.
- Pre-configured ignition output and coil settings
- Pre-configured on-board knock control for each cylinder using the OE knock sensors and multiple centre frequencies.
- Pre-configured camshaft control of inlet and exhaust cam.
- Pre-configured variable valve lift (VTEC).
- Pre-configured engine start fuel volumes.
- Pre-configured Idle Closed Loop control system using ignition and Drive by Wire actuation.
- Pre-configured Throttle Aim Minimum to control manifold pressure during engine overrun (engine braking control).
- Pre-configured boost control of OE wastegate servo motor. Single and dual wastegate solenoids are also supported.
- Pre-configured turbocharger bypass control.
- Intercooler temperature and spray control.
- Configurable Anti-Lag for single turbo with ignition timing limit, fuel volume trim, ignition cut, engine speed limit, boost aim and throttle aim tables.
- Supports nitrous system with two activation stages and additional fuel pumps, bottle heater control and pressure sensor.
- Configurable Launch Control with tables for engine speed, throttle limit, boost aim and fuel volume trim.
- Traction Control with tables for aim main, aim compensation, control range.
- Pre-configured closed loop alternator system for OE Alternator.
- Pre-configured OE coolant fan output. With support for 2 aftermarket coolant fan outputs (PWM controlled).
- Coolant pump output with PWM control.
- Coolant pump after-run functionality, optionally with additional pump output.
- Supports 2 switchable inlet manifold flaps with position feedback, and 1 switchable inlet manifold runner with position feedback, for variable inlet systems.
- Pre-configured air conditioner control.
- Configurable Fuel pump switched output.
- Closed loop fuel pressure control for lift subsystem.
- Pre-configured Gearbox position detection
- Pre-configured Gearbox shift request
- Gearbox shift support with ignition cut, fuel cut, throttle blip and engine speed matching in forward gears.
- Transmission pump output with transmission temperature threshold and hysteresis control.
- Differential pump output with differential temperature threshold and hysteresis control.
- Pre-configured Drive by Wire throttle servo control.
- Pre-configured Throttle Pedal sensor with translation table for each Drive Mode (Sport, Comfort, +R)
- 8 configurable driver switches and 8 rotary switches each with 10 positions that can be simultaneously mapped to launch control, pit switch, anti-lag, traction, race time reset, engine speed limit maximum, throttle pedal translation, fuel volume trim, ignition timing, fuel mixture aim, boost limit, traction aim, and traction control range.
- Vehicle speed limiting (pit speed control).
- Configurable pulsed tachometer output with configurable output pin and scaling.
- Pre-configured vehicle speed measurement using wheel speed sensors.
- Pre-configured warning system that activates engine check light on OE dash (MIL)
- Test settings for most outputs, including injection and ignition outputs, for easier setup.
- Lap distance, time and number via GPS, BR2 or switched input, with split and sector options.
- Race time system with tables for ignition timing trim, fuel mixture aim, boost limit, and throttle limit.
- Engine run time total for engine hour logging.
- GPS acquisition and logging via CAN or RS232.
- GLONASS messaging support on GPS devices.
- Support of MoTeC devices: ADR, E8XX, PDM, SLM, VCS.
- ECU CAN Receive from other MoTeC devices.
- ECU CAN Transmit of the most common channels using standard MoTeC CAN templates.
- Configurable security for multiple users with differing access options.

- Channels for sensors via input pin and/or CAN message, including:
 - Airbox Mass Flow*, Temperature and Pressure
 - Air Conditioner Refrigerant Pressure*
 - Ambient Pressure and Temperature
 - Boost Pressure* and Servo Position*
 - Brake Pressure Front and Rear
 - Brake Switch and Vacuum Pressure
 - Clutch Switch, Pressure and Position
 - Coolant Pressure and Temperature* (x2)
 - Engine Oil Pressure* and Temperature
 - Engine Crankcase Pressure
 - Exhaust Pressure
 - Exhaust Temp (EGT) via TCA Thermocouple Amplifier, Generic CAN, or E888 for Collector and Cylinders 1 to 4.
 - Exhaust Lambda via LTC, LTCN, or PLM for Collector and Cylinders 1 to 4.
 - Fuel Flow Supply and Return
 - Fuel Pressure* and Temperature
 - Fuel Composition
 - Fuel Tank Level
 - Gear Position, Lever Force and Input Shaft Speed*
 - Inlet Air Temperature and Manifold Pressure*
 - Intercooler Temperature
 - Steering Angle and Pressure
 - Throttle Pedal* and Position*
 - Transmission Temperature and Pressure
 - Turbocharger Speed, Inlet* and Outlet Temperature
 - G-Force (acceleration) - Longitudinal, Lateral, Vertical
 - Wastegate Pressure and Position
 - Wheel Speed*

* These sensors have been pre-configured with a calibration and settings to match the OE sensor.

▶ VEHICLE COMPATIBILITY

This product includes CAN messaging for full OE vehicle integration. The Package caters for OE vehicle systems such as power steering, ABS, starting systems and dashboards. Bosch Motorsport ABS-M4 integration is also included.

The following table shows compatible vehicles.

Vehicle	Engine Designation	Year	Vehicle Platform	Comment
Honda Civic Type R	K20C	2017-2018	FK8R	Manual Transmission

NOTE: This product is not suitable for other Honda FK8 variants (e.g. 1.5L engine models).

▶ OPERATION

Reference Mode

The M1 Reference Mode in this Package is locked to this engine variant.

Power ECU

The M1 ECU will be powered whenever the ignition is on. With the key inside the vehicle, turn the ignition on by pushing the engine start button twice. To turn off, simply push the engine start button once. The ECU power will remain on if the ignition is turned off while the M1 ECU is connected to M1 Tune.

Resetting the M1 while the ignition is on will interrupt the CAN communications on the vehicle CAN bus causing other CAN modules to display errors on the dash. To avoid this, turn the ignition off before resetting the M1 ECU.

Engine Start

The OE engine start procedure is maintained in this Package. To start the engine, the key must be inside the vehicle. With the engine off, depress the clutch and push the engine start button.



Reverse Lockout

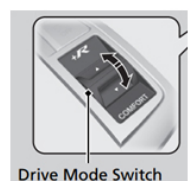
The reverse lockout solenoid will not allow reverse gear to be selected while the Vehicle Speed is greater than 5km/h.

Cruise Control

The Cruise Control functionality of the OE ECU has been maintained in this Package. This includes the Lane Keeping Assist, Adaptive Cruise Control and Low Speed Follow. Refer to the owner's manual for the operation of these features.

Adjustable Driving Modes

The Driving Mode can be changed between Sport, Comfort and +R by toggling the Drive Mode Switch. Changing the driving mode provides alternate settings for Steering, Damper Control and Vehicle Stability Assist.



The Driving Mode can also be used as a customisable driver switch within the Package - this driver switch can be mapped to launch control, pit switch, anti-lag, traction, race time reset, engine speed limit maximum, throttle pedal translation, fuel volume trim, ignition timing, fuel mixture aim, boost limit, traction aim, and traction control range.

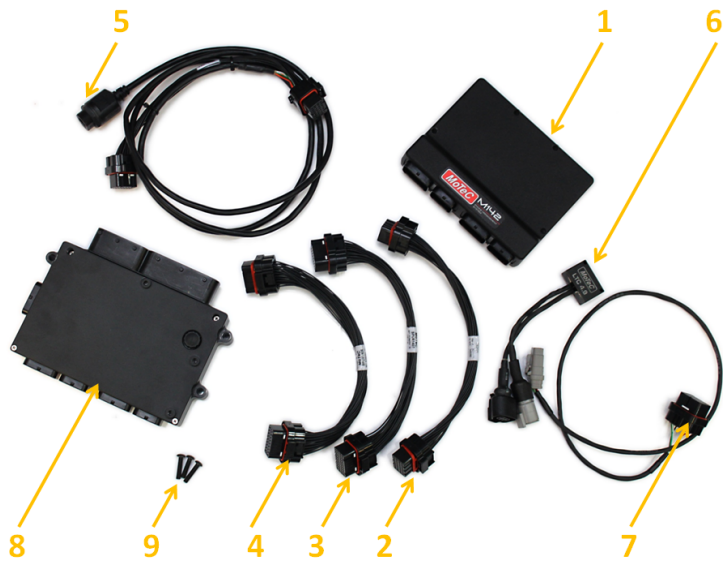
The Driving Mode has been pre-configured to throttle pedal translation to give a more aggressive throttle pedal in +R mode with a relaxed feel in Comfort mode.

Dash Lights

The functionalities of the Engine Check Light (All Warnings), PGMWI Warning Light, Oil Level Warning Light and Oil Pressure Low Warning Light are maintained in this Package. These lights are activated with the associated M1 warning system.

▶ INSTALLATION

M1 Honda Civic FK8R 2017 Kit Components:



1. MoTeC M142 ECU
2. M1 Adaptor 250mm Stub Loom A
3. M1 Adaptor 250mm Stub Loom B
4. M1 Adaptor 250mm Stub Loom C
5. M1 Adaptor 250mm Stub Loom D (Ethernet Cable)
6. MoTeC LTC 4.9 (Bosch LSU version)
7. MoTeC Honda Civic FK8R 2017 Breakout Loom
8. MoTeC M142 Honda Civic FK8R 2017 Adaptor Box
9. M5 x 250mm Button Head Cap Screw (Qty 3)

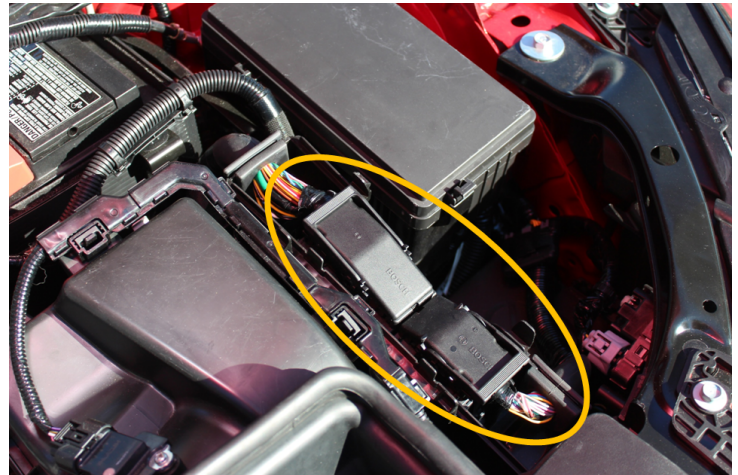
Tools required to install the kit:



- Ratchet, Ratchet Extension and 10mm Socket
- 3mm Allen Key
- Cable Ties
- Side Cutters

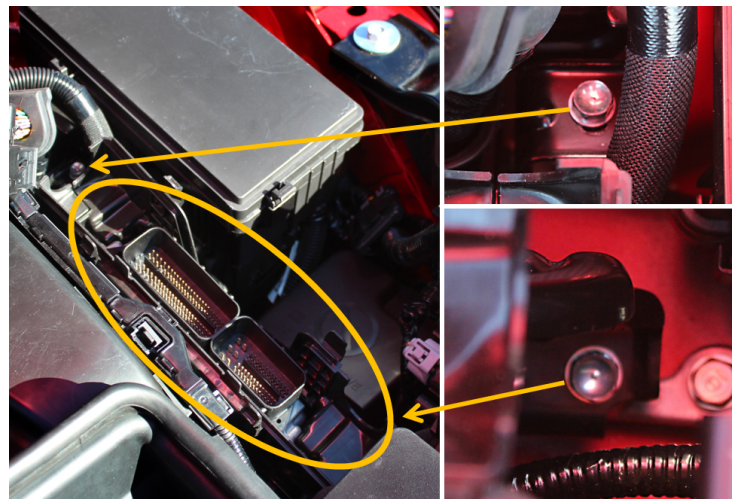
Step 1:

Locate the original Honda ECU to be replaced (front left of engine bay) and disconnect the two Honda engine harness connectors.



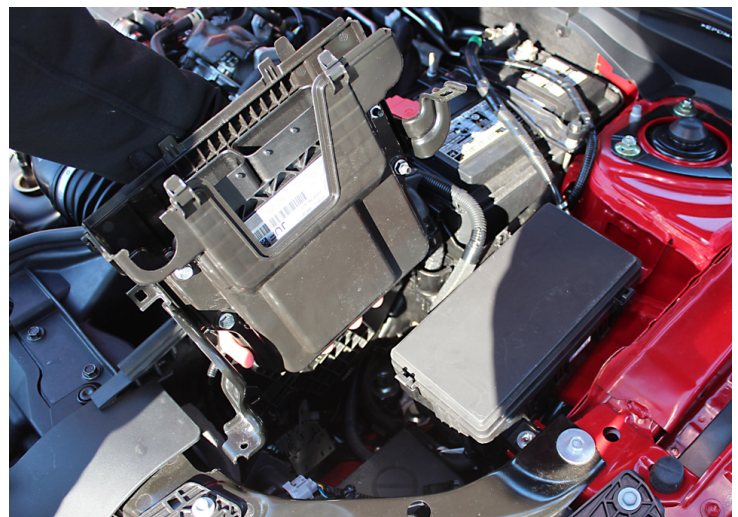
Step 2:

Using the ratchet, extension and 10mm socket, remove the two bolts that secure the factory ECU bracket to the chassis.



Step 3:

Remove the factory Honda ECU.

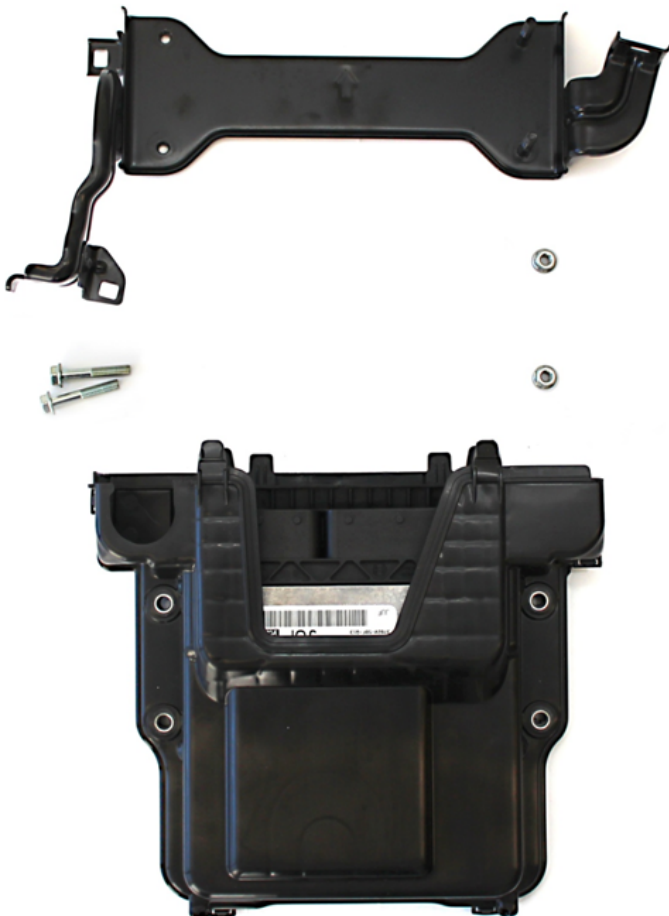


Step 4:

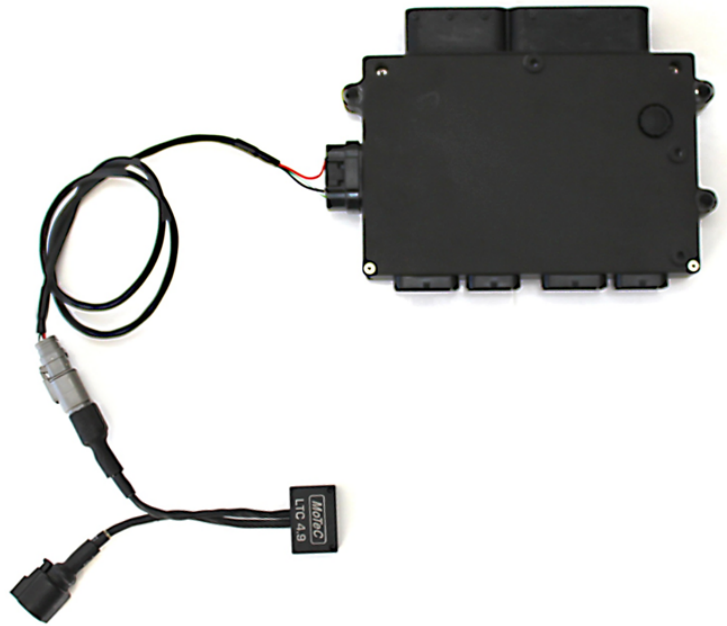
Remove the two nuts and two bolts that fix the factory Honda ECU to the ECU bracket.

**Step 5:**

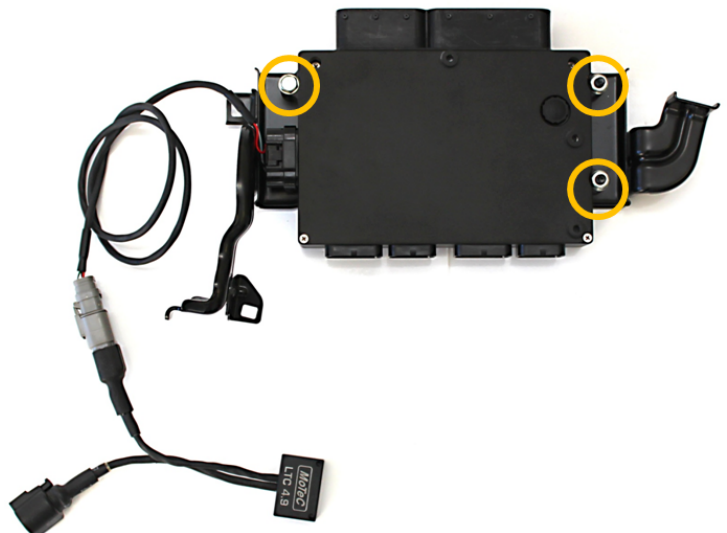
Separate the factory Honda ECU from the bracket.

**Step 6:**

1. Connect the MoTeC LTC to the MoTeC breakout loom.
2. Connect the breakout loom to the breakout connector on the side of the MoTeC adaptor box.


**Step 7:**

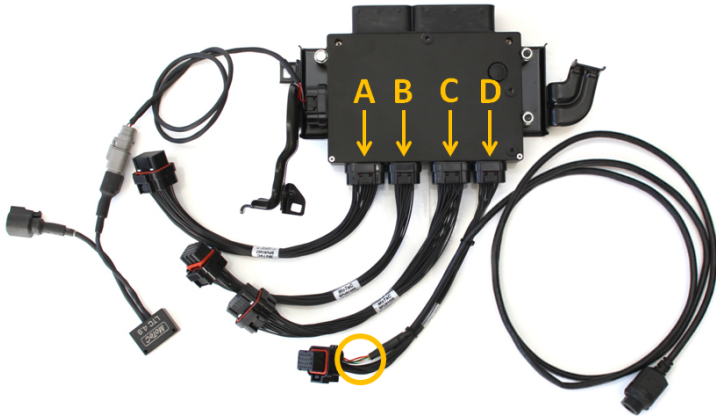
1. Place the adaptor box on the OE Honda ECU bracket.
2. Fasten using one bolt and two nuts that were removed in Step 4.



Step 8:

Connect the adaptor stub looms to the associated adaptor box connectors.

 When connecting Adaptor Stub Loom D, the Ethernet comms cable end **must not** be connected to the adaptor box. Adaptor Stub Looms A, B and C can be connected at either end.



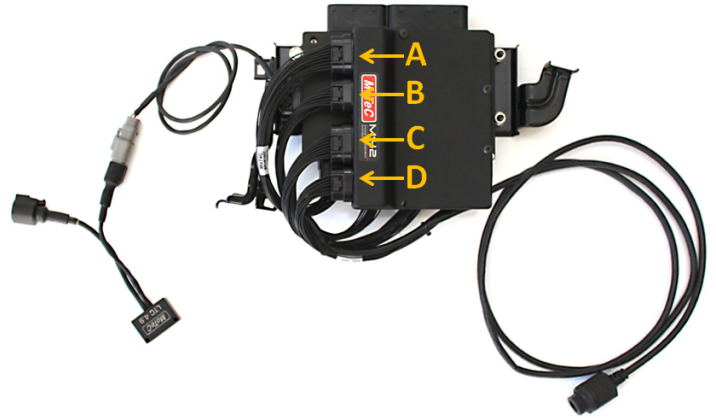
Step 9:

1. Place the ECU on top of the adaptor box as shown.
2. Fix the ECU in place with the three button head cab screws provided.



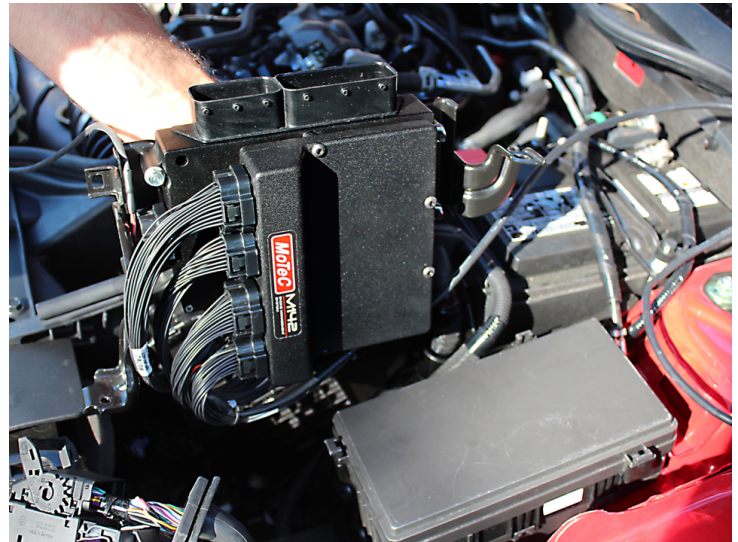
Step 10:

Connect the adaptor stub looms to the associated M142 connectors.



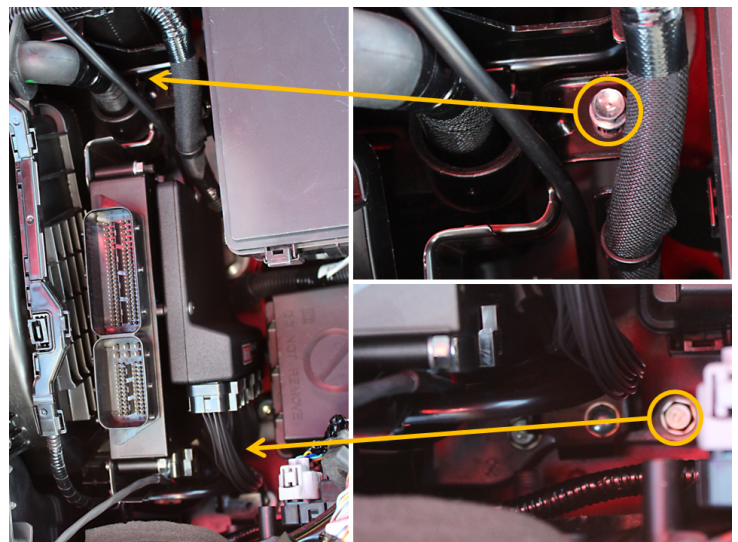
Step 11:

Orientate the assembled ECU kit as shown and place back into the cavity from which the factory Honda ECU was removed.



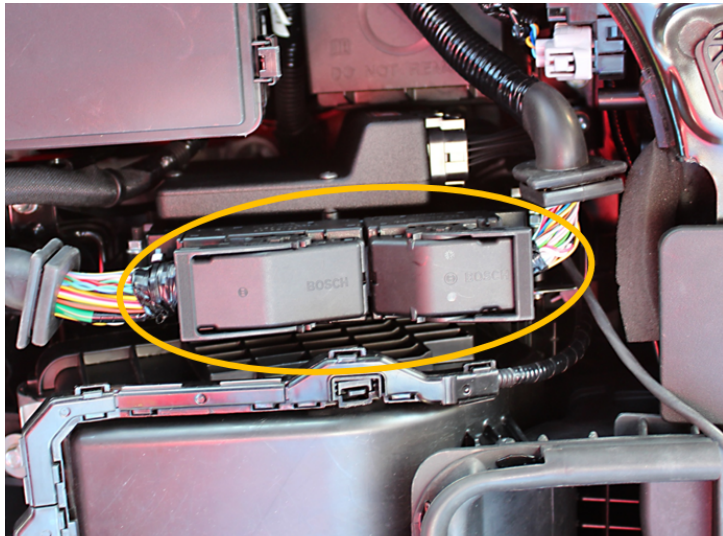
Step 12:

Reinstall the bolts that were removed in Step 2.



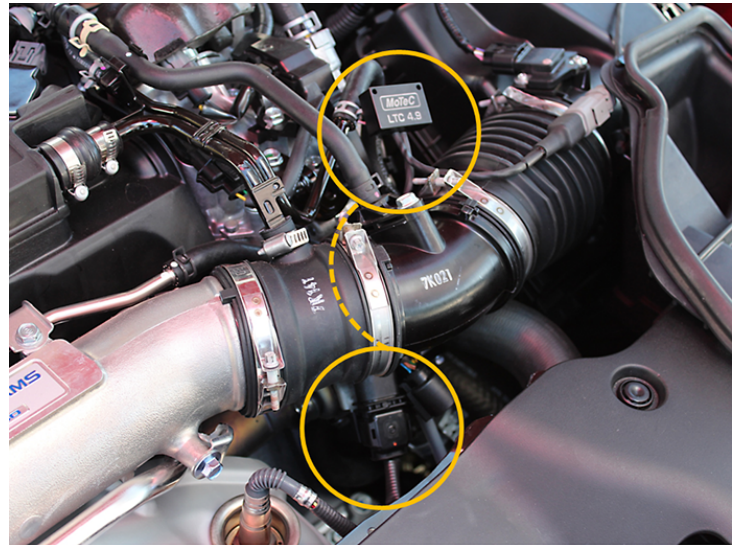
Step 13:

Connect the Honda engine harness to the mating adaptor box connectors.



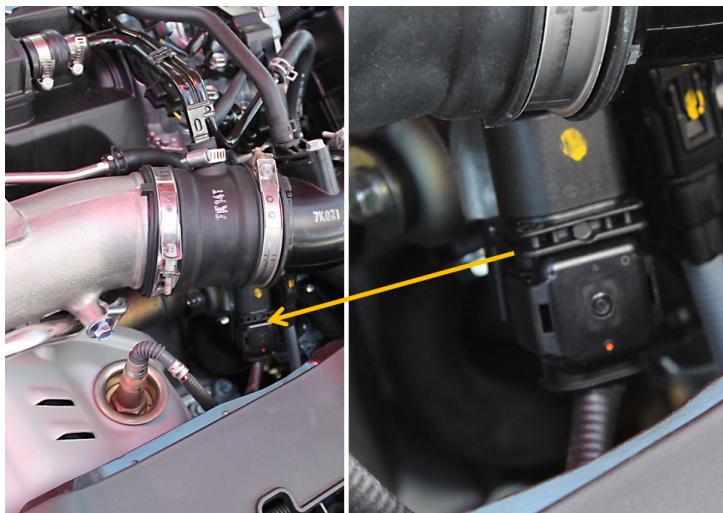
Step 15:

Feed the MoTeC LTC lambda sensor connector underneath the intake pipe and connect to the Honda lambda sensor.



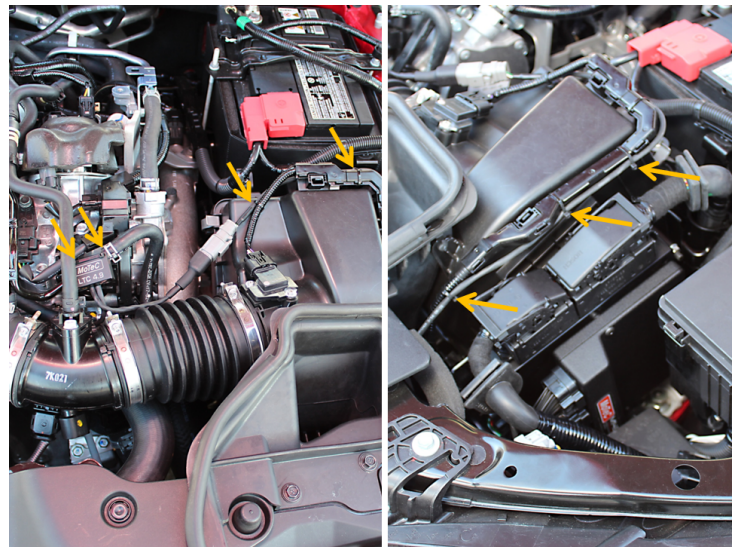
Step 14:

Disconnect the Honda lambda sensor connector from the Honda engine harness.



Step 16:

Use cable ties to hold the LTC and LTC loom in position.



► M142 PINOUT

M142 Connector A - 34 Way

Mating Connector: Tyco Superseal 34 Position Keying 2 – MoTeC #65067

Pin	Designation	Full Name	Tyco Pin*	Honda Pin*	Function
A01	AT5	Analogue Temperature Input 5			
A02	AT6	Analogue Temperature Input 6			
A03	AV15	Analogue Voltage Input 15			
A04	AV16	Analogue Voltage Input 16			
A05	AV17	Analogue Voltage Input 17			
A06	INJ_D1A_NEG	Direct Injector 1A -	T96-03	T96-18	Injector 1 Low
A07	INJ_D1A_POS	Direct Injector 1A +	T96-04	T96-17	injector 1 High
A08	INJ_D1B_POS	Direct Injector 1B +			
A09	INJ_D1B_NEG	Direct Injector 1B -			
A10	SEN_5V0_C1	Sensor 5.0V C	T58-11, T96-46	T58-55, T96-62	
A11	LA_NB1	Lambda Narrow Input 1			
A12	LA_NB2	Lambda Narrow Input 2			
A13	KNOCK3	Knock Input 3			
A14	KNOCK4	Knock Input 4			
A15	DIG2	Digital Input 2			
A16	DIG3	Digital Input 3			
A17	DIG4	Digital Input 4			
A18	SEN_5V0_C2	Sensor 5.0V C	T58-45	T58-23	
A19	SEN_5V0_B2	Sensor 5.0V B	T96-47, T96-45, T96-44, T96-43, T96-20	T96-61, T96-63, T96-64, T96-65, T96-82	
A20	LIN	LIN Bus	T96-08	T96-94	LIN Comms - LIN
A21	RS232_RX	RS232 Receive			
A22	RS232_TX	RS232 Transmit			
A23	DIG1	Digital Input 1			
A24	BAT_NEG3	Battery Negative	T58-06	T58-01	Chassis Ground
A25	BAT_NEG4	Battery Negative	T58-04	T58-03	Chassis Ground
A26	SEN_0V_C1	Sensor 0V C	T58-36, T96-18	T58-32, T96-84	
A27	SEN_0V_C2	Sensor 0V C			
A28	CAN3_HI	CAN Bus 3 High	T58-39	T58-29	CAN B High
A29	CAN3_LO	CAN Bus 3 Low	T58-52	T58-17	CAN B Low
A30	CAN2_HI	CAN Bus 2 High	T58-54	T58-15	CAN A High
A31	CAN2_LO	CAN Bus 2 Low	T58-41	T58-27	CAN A Low
A32	BAT_NEG5	Battery Negative	T58-02	T58-05	Chassis Ground
A33	SEN_0V_B1	Sensor 0V B	T58-20, T58-07, T96-30	T58-09, T58-10, T96-78	
A34	SEN_0V_A1	Sensor 0V A	T96-34, T96-32	T96-74, T96-76	

*Tyco pin numbers, listed above, match the pin numbering found on the Tyco connectors fitted to both the OE engine harness and adaptor box. Honda pin numbers, listed above, match the pin numbering found on the Honda electrical schematics.

M142 Connector B - 26 Way

Mating Connector: Tyco Superseal 26 Position Keying 3 – MoTeC #65068

Pin	Designation	Full Name	Tyco Pin*	Honda Pin*	Function
B01	OUT_HB9	Half Bridge Output 9	T96-95	T96-25	Rocker Arm Oil Control Solenoid
B02	OUT_HB10	Half Bridge Output 10	T58-18	T58-48	AC Compressor Clutch Relay
B03	UDIG8	Universal Digital Input 8	T58-47	T58-22	Clutch Position Switch A
B04	UDIG9	Universal Digital Input 9	T96-39	T96-69	Input Shaft Speed Sensor
B05	UDIG10	Universal Digital Input 10			
B06	UDIG11	Universal Digital Input 11	T58-49	T58-20	Starter Switch Signal
B07	UDIG12	Universal Digital Input 12	T58-15	T58-51	Ignition Signal
B08	INJ_LS5	Low Side Injector 5	T58-17	T58-49	Starter Cut Relay 1
B09	INJ_LS3	Low Side Injector 3	T58-42	T58-26	Main Relay 1 & Ign Coil Relay
B10	AV9	Analogue Voltage Input 9	T96-38	T96-70	Turbo Wastegate Position Sensor
B11	AV10	Analogue Voltage Input 10	T58-24	T58-43	Brake Booster Pressure Sensor
B12	AV11	Analogue Voltage Input 11	T58-10	T58-56	Air Conditioner Pressure Sensor
B13	BAT_POS	Battery Positive	T58-05	T58-02	Power Source
B14	INJ_LS6	Low Side Injector 6	T58-29	T58-38	Starter Cut Relay 2
B15	INJ_LS4	Low Side Injector 4	T58-56	T58-13	Fuel Pump Relay
B16	AV12	Analogue Voltage Input 12	T96-90	T96-30	Neutral Switch 1
B17	AV13	Analogue Voltage Input 13	T96-92	T96-28	Neutral Switch 2
B18	AV14	Analogue Voltage Input 14	T96-61	T96-53	Mass Airflow Sensor
B19	BAT_POS	Battery Positive	T58-03	T58-04	Power Source
B20	OUT_HB7	Half Bridge Output 7	T96-52	T96-07	High Pressure Fuel Pump
B21	OUT_HB8	Half Bridge Output 8	T96-76	T96-02	High Pressure Fuel Pump
B22	INJ_D2A_NEG	Direct Injector 2A -	T96-02	T96-19	Injector 2 Low
B23	INJ_D2A_POS	Direct Injector 2A +	T96-01	T96-20	Injector 2 High
B24	INJ_D2B_POS	Direct Injector 2B +			
B25	INJ_D2B_NEG	Direct Injector 2B -			
B26	SEN_5V0_A	Sensor 5.0V A	T96-19	T96-83	

*Tyco pin numbers, listed above, match the pin numbering found on the Tyco connectors fitted to both the OE engine harness and adaptor box. Honda pin numbers, listed above, match the pin numbering found on the Honda electrical schematics.

M142 Connector C - 34 Way

Mating Connector C: Tyco Superseal 34 Position Keying 1 – MoTeC #65044

Pin	Designation	Full Name	Tyco Pin*	Honda Pin*	Function
C01	OUT_HB2	Half Bridge Output 2	T96-75	T96-03	Throttle Servo Motor +
C02	SEN_5V0_A	Sensor 5.0V A	T96-41, T96-22	T96-67, T96-80	
C03	IGN_LS1	Low Side Ignition 1	T96-55	T96-59	Ignition 1
C04	IGN_LS2	Low Side Ignition 2	T96-54	T96-60	Ignition 2
C05	IGN_LS3	Low Side Ignition 3	T96-79	T96-41	Ignition 3
C06	IGN_LS4	Low Side Ignition 4	T96-78	T96-42	Ignition 4
C07	IGN_LS5	Low Side Ignition 5	T58-32	T58-35	Reverse Lockout Solenoid
C08	IGN_LS6	Low Side Ignition 6	T58-19	T58-47	Sub Relay
C09	SEN_5V0_B	Sensor 5.0V B	T58-21, T58-08, T96-42, T96-21	T58-46, T58-58, T96-66, T96-81	
C10	BAT_NEG1	Battery Negative			
C11	BAT_NEG2	Battery Negative			
C12	IGN_LS7	Low Side Ignition 7	T58-57	T58-12	Radiator Fan Relay - Low
C13	IGN_LS8	Low Side Ignition 8	T58-31	T58-36	Radiator Fan Relay - High
C14	AV1	Analogue Voltage Input 1	T58-09	T58-57	Throttle Pedal Sensor - Main
C15	AV2	Analogue Voltage Input 2	T58-22	T58-45	Throttle Pedal Sensor - Tracking
C16	AV3	Analogue Voltage Input 3	T96-13	T96-89	Throttle Servo Position Sensor - Main
C17	AV4	Analogue Voltage Input 4	T96-14	T96-88	Throttle Servo Position Sensor - Tracking
C18	OUT_HB1	Half Bridge Output 1	T96-51	T96-08	Throttle Servo Motor -
C19	INJ_D3A_POS	Direct Injector 3A +	T96-25	T96-15	Injector 3 High
C20	INJ_D3B_POS	Direct Injector 3B +			
C21	INJ_D4A_POS	Direct Injector 4A +	T96-28	T96-12	Injector 4 High
C22	INJ_D4B_POS	Direct Injector 4B +			
C23	INJ_LS1	Low Side Injector 1	T96-96	T96-21	Turbo Bypass Solenoid
C24	INJ_LS2	Low Side Injector 2	T96-06	T96-96	EVAP Canister Purge Valve
C25	AV5	Analogue Voltage Input 5	T96-93	T96-27	Manifold Pressure Sensor
C26	BAT_POS	Battery Positive	T58-01	T58-06	Power Source
C27	INJ_D3A_NEG	Direct Injector 3A -	T96-26	T96-14	Injector 3 Low
C28	INJ_D3B_NEG	Direct Injector 3B -			
C29	INJ_D4A_NEG	Direct Injector 4A -	T96-27	T96-13	Injector 4 Low
C30	INJ_D4B_NEG	Direct Injector 4B -			
C31	OUT_HB3	Half Bridge Output 3	T96-49	T96-10	Turbo Wastegate Actuator -
C32	OUT_HB4	Half Bridge Output 4	T96-73	T96-05	Turbo Wastegate Actuator +
C33	OUT_HB5	Half Bridge Output 5	T96-77	T96-01	VTC Oil Solenoid B (Ex Cam)
C34	OUT_HB6	Half Bridge Output 6	T96-53	T96-06	VTC Oil Solenoid A (In Cam)

*Tyco pin numbers, listed above, match the pin numbering found on the Tyco connectors fitted to both the OE engine harness and adaptor box. Honda pin numbers, listed above, match the pin numbering found on the Honda electrical schematics.

M142 Connector D — 26 way

Mating Connector D: Tyco Superseal 26 Position Keying 1 – MoTeC #65045

Pin	Designation	Full Name	Tyco Pin*	Honda Pin*	Function
D01	UDIG1	Universal Digital Input 1	T96-33	T96-75	Crank Reference Position Sensor
D02	UDIG2	Universal Digital Input 2	T96-35	T96-73	Inlet Camshaft Position Sensor
D03	AT1	Analogue Temperature Input 1	T96-69	T96-45	Inlet Air Temperature Sensor
D04	AT2	Analogue Temperature Input 2	T96-65	T96-49	Coolant Temperature Sensor
D05	AT3	Analogue Temperature Input 3	T96-17	T96-85	Coolant Temperature Sensor 2
D06	AT4	Analogue Temperature Input 4	T96-62	T96-52	MAF Temperature Sensor
D07	KNOCK1	Knock Input 1	T96-37	T96-71	Knock +
D08	UDIG3	Universal Digital Input 3	T96-57	T96-57	Exhaust Camshaft Position Sensor
D09	UDIG4	Universal Digital Input 4	T96-80	T96-40	Engine Oil Level Sensor
D10	UDIG5	Universal Digital Input 5	T96-66	T96-48	Rocker Arm Oil Pressure Switch
D11	UDIG6	Universal Digital Input 6	T58-46	T58-07	Reverse Switch
D12	BAT_BAK	Battery Backup	T58-16	T58-50	Permanent Power
D13	KNOCK2	Knock Input 2	T96-12	T96-90	Knock -
D14	UDIG7	Universal Digital Input 7	T58-37	T58-31	Brake Switch
D15	SEN_OV_A	Sensor 0V A	T96-56	T96-58	
D16	SEN_OV_B	Sensor 0V B	T96-24, T96-91, T96-85, T96-11, T96-07	T96-23, T96-29, T96-35, T96-91, T96-95	
D17	CAN1_HI	CAN Bus 1 High			MoTeC 1 Mbit/sec CAN
D18	CAN1_LO	CAN Bus 1 Low			MoTeC 1 Mbit/sec CAN
D19	SEN_6V3	Sensor 6.3V			
D20	AV6	Analogue Voltage Input 6	T96-88	T96-32	Fuel Rail Pressure Sensor
D21	AV7	Analogue Voltage Input 7	T96-67	T96-47	Rocker Arm Oil Pressure Sensor
D22	AV8	Analogue Voltage Input 8	T96-63	T96-51	Boost Pressure Sensor
D23	ETH_TX+	Ethernet Transmit +			
D24	ETH_TX-	Ethernet Transmit -			
D25	ETH_RX+	Ethernet Receive +			
D26	ETH_RX-	Ethernet Receive -			

*Tyco pin numbers, listed above, match the pin numbering found on the Tyco connectors fitted to both the OE engine harness and adaptor box. Honda pin numbers, listed above, match the pin numbering found on the Honda electrical schematics.

Breakout Connector

Mating Connector: Tyco Superseal 34 Position Keying 2 – MoTeC #65044

Pin	Designation	Full Name	M142 Pin#	Function
Breakout 01*	BAT_POS	Battery Positive	B13, B19, C26	LTC DTM Pin 4 (Battery +)
Breakout 02	BAT_POS	Battery Positive	B13, B19, C26	
Breakout 03	SENS_6V3	SEN_6V3	D19	
Breakout 04	SENS_5V0_B2	Sensor 5.0V B	A19	
Breakout 05	SENS_5V0_B2	Sensor 5.0V B	A19	
Breakout 06	SENS_5V0_B2	Sensor 5.0V B	A19	
Breakout 07	SENS_5V0_B2	Sensor 5.0V B	A19	
Breakout 08	BAT_NEG	Battery Negative	A23, A25, A32, C10, C11	
Breakout 09*	BAT_NEG	Battery Negative	A23, A25, A32, C10, C11	LTC DTM Pin 1 (Battery -)
Breakout 10	BAT_POS	Battery Positive	B13, B19, C26	
Breakout 11	AV13	Analogue Voltage Input 13	B17	
Breakout 12	AV15	Analogue Voltage Input 15	A03	
Breakout 13	AV16	Analogue Voltage Input 16	A04	
Breakout 14	AV17	Analogue Voltage Input 17	A05	
Breakout 15	AT5	Analogue Temperature Input 5	A01	
Breakout 16	RS232RX	RS232 Receive	A21	
Breakout 17	BAT_NEG	Battery Negative	A23, A25, A32, C10, C11	
Breakout 18				Not Connected
Breakout 19	AT6	Analogue Temperature Input 6	AT6	
Breakout 20	SENS_0V_B2	Sensor 0V B	D16	
Breakout 21	SENS_0V_B2	Sensor 0V B	D16	
Breakout 22	SENS_0V_B2	Sensor 0V B	D16	
Breakout 23	DIG3	Digital Input 3	DIG3	
Breakout 24	DIG4	Digital Input 4	DIG4	
Breakout 25				Not Connected
Breakout 26				Not Connected
Breakout 27	CAN2LO	CAN Bus 2 Low	A31	
Breakout 28	CAN2HI	CAN Bus 2 High	A30	
Breakout 29	SENS_0V_B2	Sensor 0V B	D16	
Breakout 30	SENS_0V_B2	Sensor 0V B	D16	
Breakout 31	SENS_0V_B2	Sensor 0V B	D16	
Breakout 32*	CAN1LO	CAN Bus 1 Low	D18	LTC DTM Pin 2 (CAN Lo)
Breakout 33*	CAN1HI	CAN Bus 1 High	D17	LTC DTM Pin 3 (CAN Hi)
Breakout 34				Not Connected

*This pin is connected to the 4-pin DTM connector of the breakout loom that is supplied with the kit.