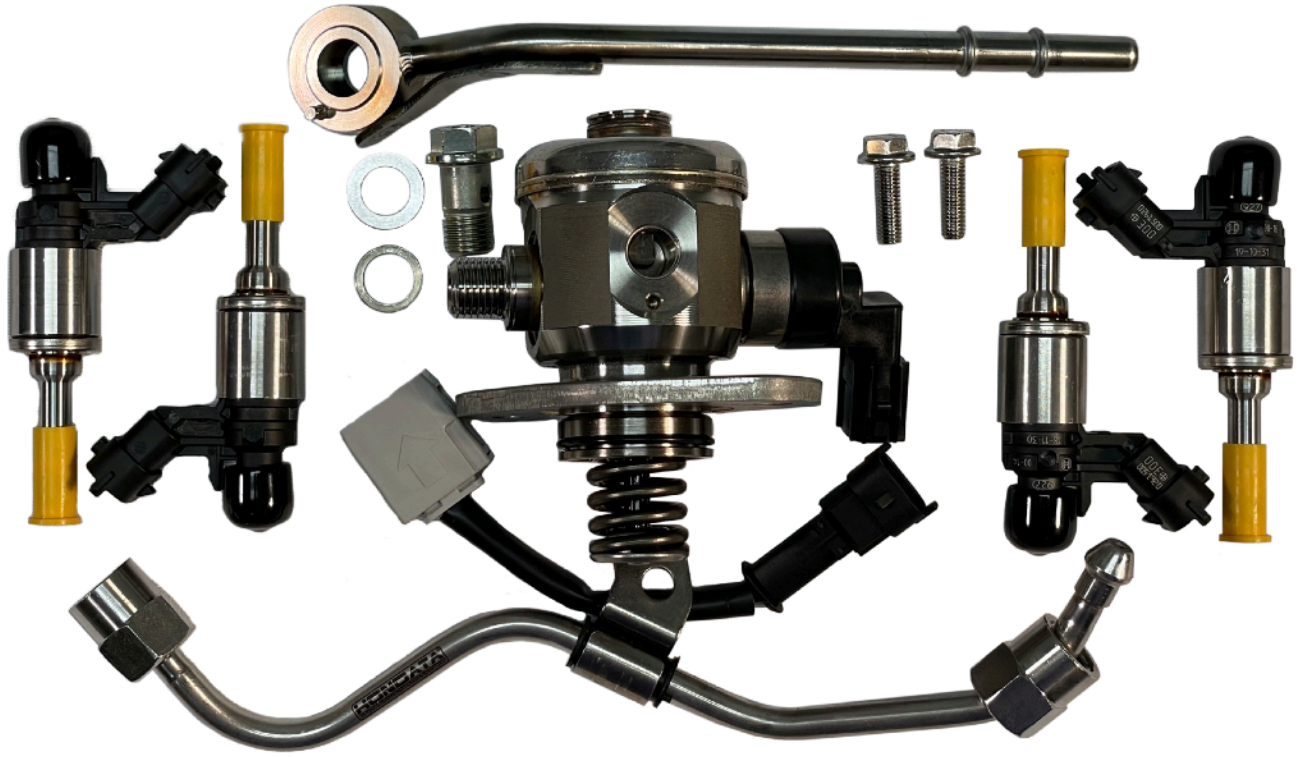
FK8 CTR Fuel system install

Revision date 1 August 2022

What's in the box



Software activation card

Under hood components

- Hondata direct injection fuel pump
- Two direct injection fuel pump bolts 10mm
- Hondata direct injection fuel pump wiring harness
- Hondata low pressure fuel line. Banjo with 2 washers.
- Hondata high pressure fuel line
- Hondata direct injection electrical adapter cable
- 4 high flow fuel injectors

Tools needed

Allen 5mm
Wrenches open ended, 14 and 19mm
Sockets 14, 12 and 10
Screwdriver flathead
BrakeClean
Class ABC fire extinguisher. Hondata is not responsible for any fire.
Compressed air for cleaning

Overview

Have your Honda dealer or experienced mechanic install this system
Remove stock DI fuel pump
Remove intake manifold, fuel rail and injectors
Install new injectors. Re-install fuel rail
Install Hondata high pressure fuel line
Install Hondata DI pump and low pressure line
Install Hondata DI fuel pump driver software with FlashPro Manager

Cleanliness - important notice

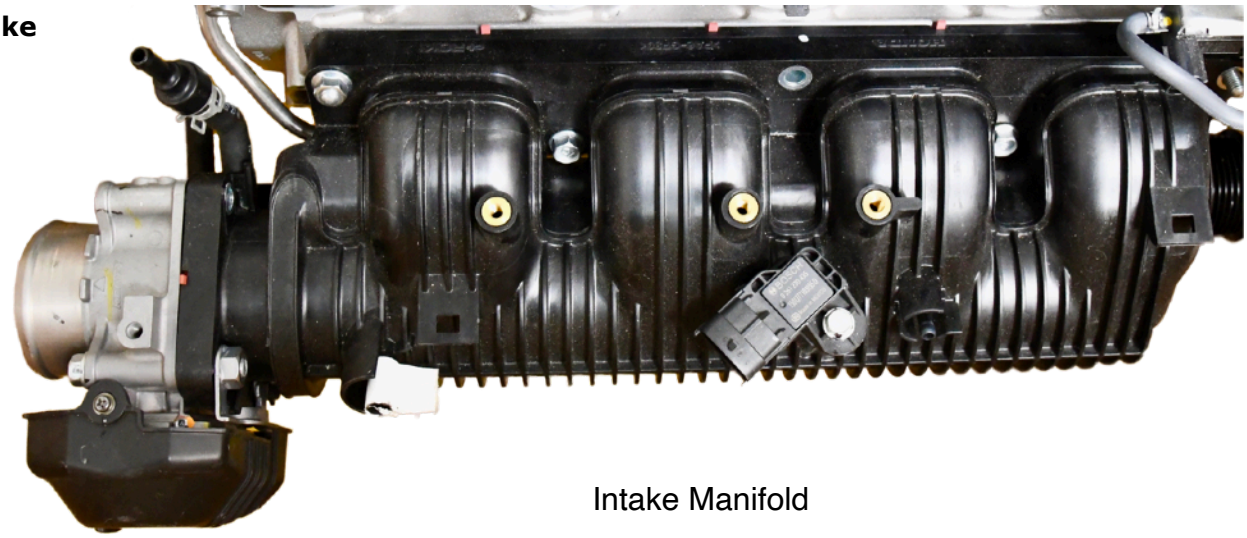
The fuel system components use extremely fine clearances. It is critical that all components are kept clean and free of contamination at all times. Even the slightest amount of dirt can damage the high pressure pump or fuel injectors. Contamination on mating surfaces can cause fuel leakage.

- Keep hands and tools clean.
- Take care handling the fuel system components. Do not place them on dirty surfaces. Keep ports capped until ready to use.
- Clear around all components and fittings before disconnecting them with brake parts cleaner and compressed air.
- Failure from contamination is not covered by warranty.

Injector install

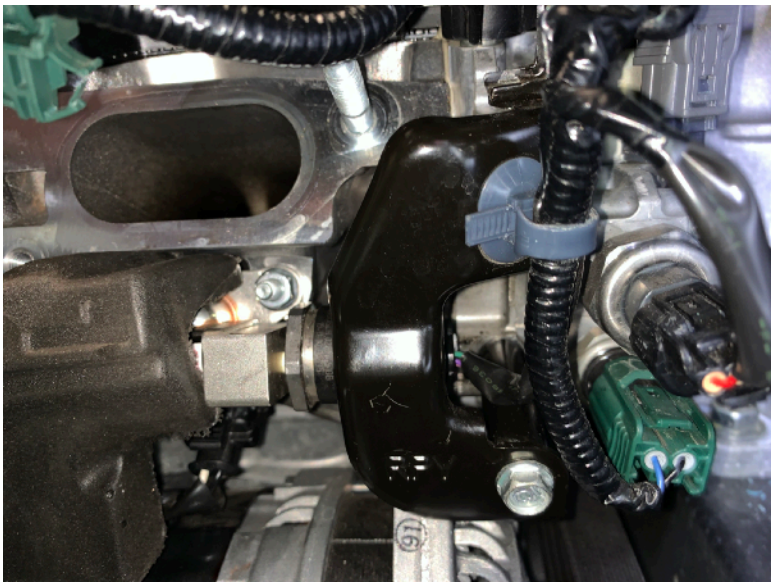
Remove battery and battery tray. Remove the red plastic head cover. Clean around the fuel pump and lines with compressed air then with BrakeClean. Wrap then unclip the low pressure fuel line. Wrap a rag around the high pressure fuel flare nut as it exits the fuel pump. Loosen then remove the fuel line and use the rag to absorb any excess fuel.
*** ***Danger*** ***.
The high pressure fuel system operates at up to 200 bar (2900 psi). Although the fuel pressure should be relieved, fluid exiting at this pressure can cause damage. Slowly loosen the high pressure fuel line flange nuts using a rag to mop up fuel. Loosen the HPFP nuts 1/2 a turn per time to remove the pump. Clean the mating surfaces then cover the hole with a rag.

Remove the intake manifold



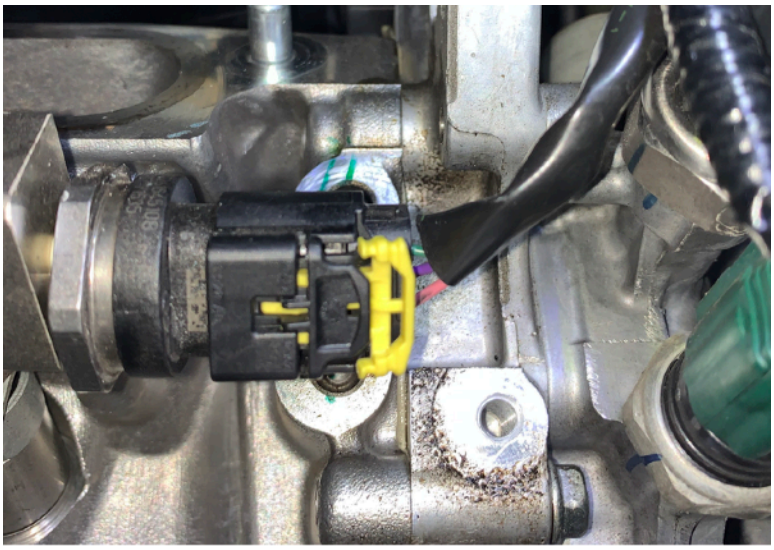
Intake Manifold

Fuel rail.
Remove the black bracket covering the fuel rail pressure sensor.

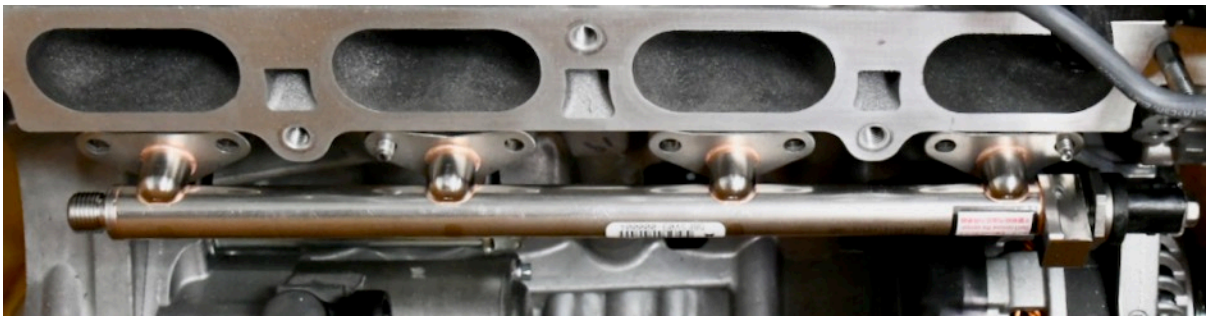


Fuel pressure sensor cover bracket

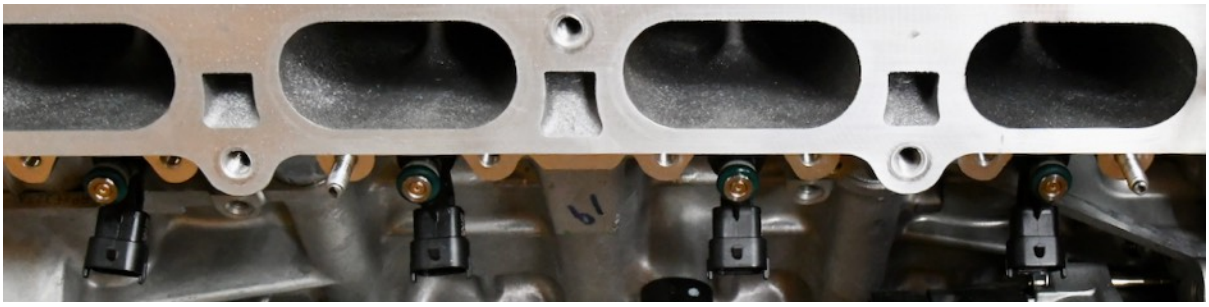
Side back the yellow lock tab before depressing the black button to release the connector.



Fuel pressure sensor lock connector



Fuel rail



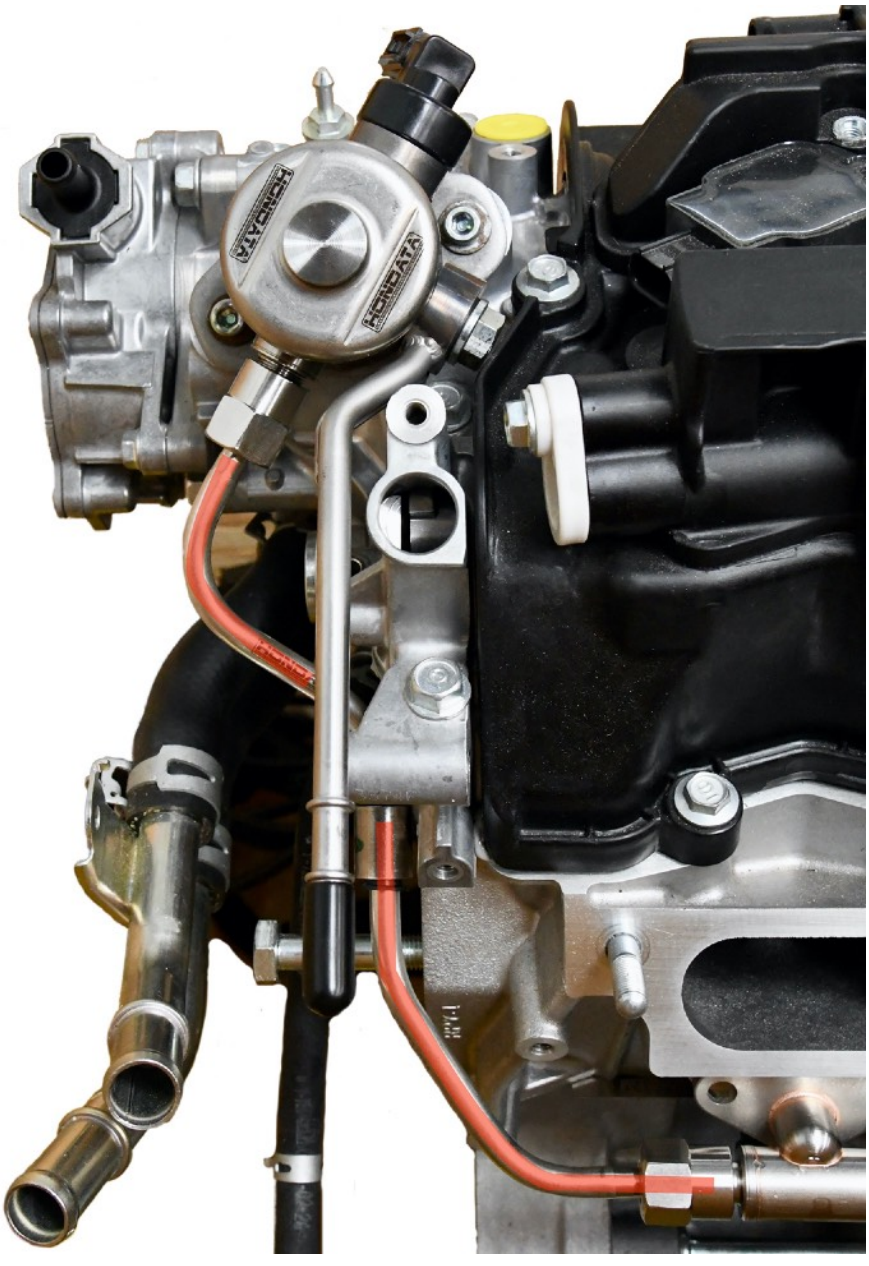
Fuel Injectors

Replace the stock injectors with the Hondata high flow fuel injectors. These can be difficult to remove due to carbon build up. Reuse the stock injector retaining clips. Replace the fuel rail and loosely connect the Hondata high pressure fuel line.

High Pressure fuel pump install

Bolt the Hondata low pressure line with banjo fitting to the Hondata DI pump. A washer goes either side of the banjo. Place the pump loosely in position. Install the Hondata high pressure fuel line finger tight at both ends. Bolt in the Hondata DI pump. Torque the Hondata DI pump M8 allen bolts to 10lb. ft (14 Nm) tightening each bolt 1/2 a rotation at a time. Tighten the Hondata high pressure flange nuts line at the pump and rail. Reinstall the intake. Plug in the Hondata DI pump pigtail.

Loosely position the DI pump



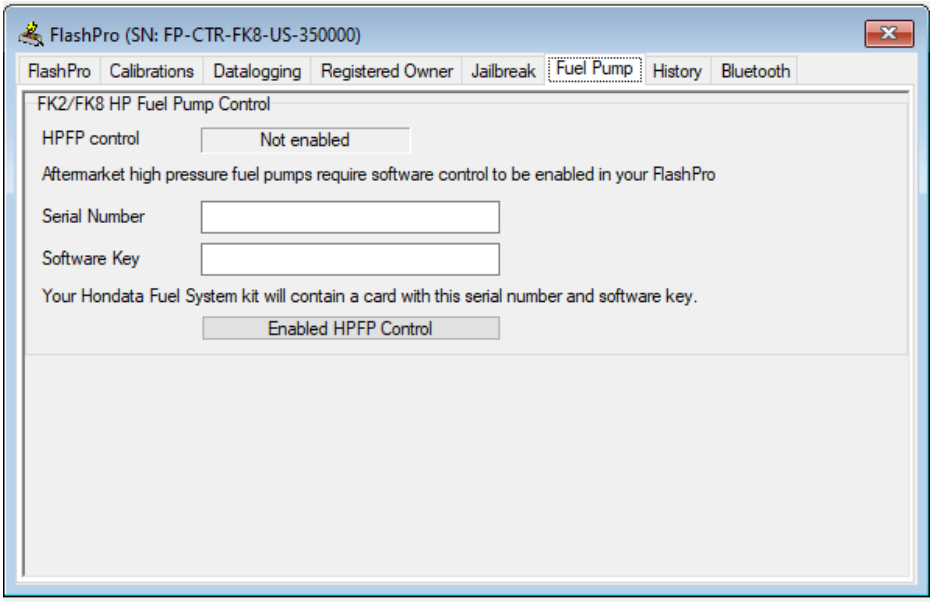
Connect the Hondata high pressure line

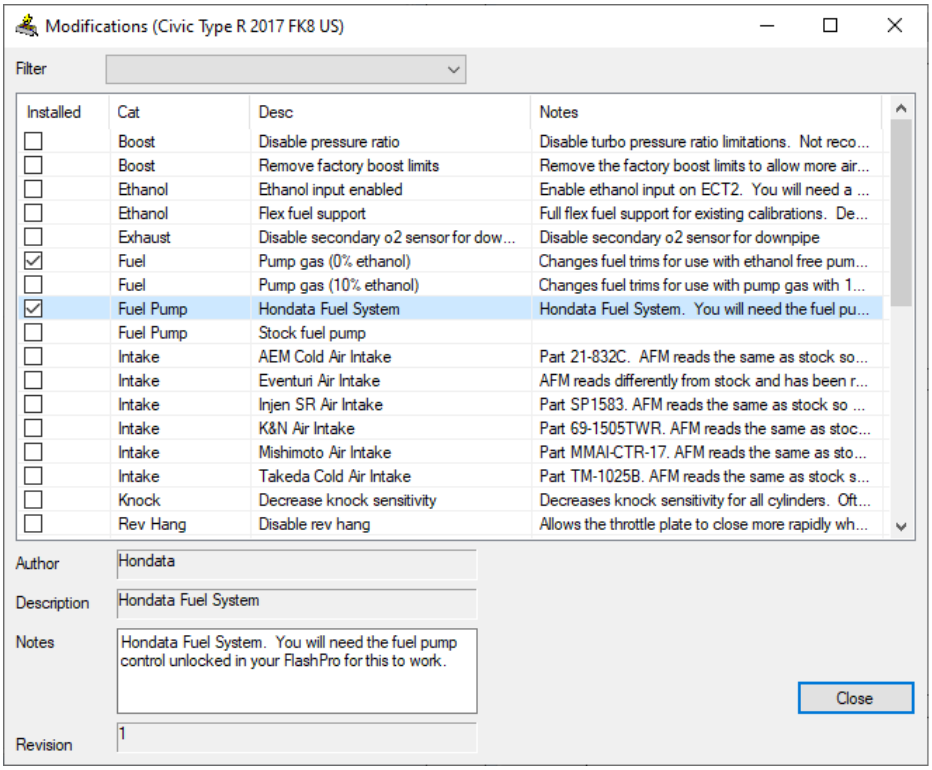
Replace the intake manifold. Reconnect the low pressure fuel line, Connect the battery negative terminal. Reinstall the red valve cover. Cycle the ignition twice times to build up the low pressure. Start and idle the engine. Check for leaks.

Software install

You must update your FlashPro with a HPFP unlock code before the vehicle will run.

- Update FlashProManager to the latest version (at least 3.5.7).
- With the FlashPro plugged into the laptop open the FlashPro window.
- Select the Fuel Pump tab.
- From the software activation card type in the serial number and key.
- The HPFP unlock code is stored permanently in the FlashPro.





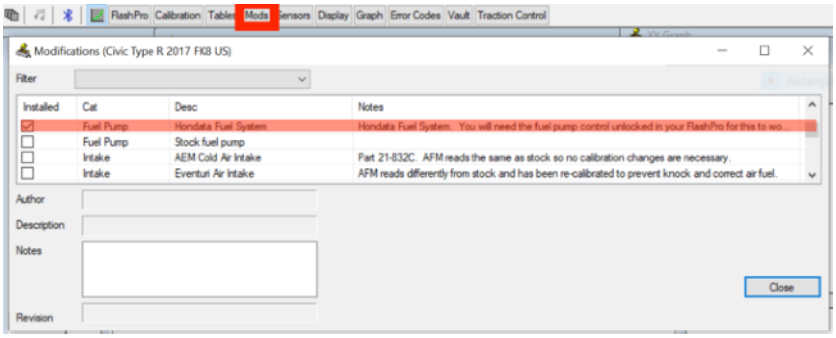
Fuel system mod

Software configuration

The updated HPFP will not run without uploading a calibration with settings for the updated HPFP. Likewise the stock pump will not run with a calibration which has the Hondata Fuel System settings.
The Hondata Fuel System does not alter how the calibration runs. Only the fuel pump and injector settings are altered. Calibrations do not need to be retuned.

After installing the updated HPFP you have two methods of reflashing your ECU to run correctly:

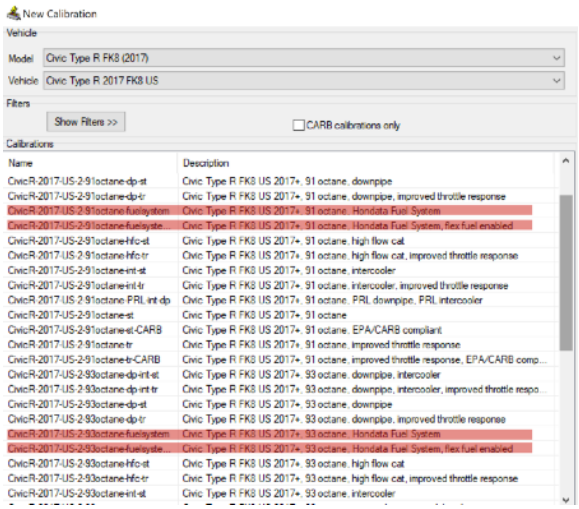
1. 1. Modify your existing calibration by enabling the Hondata Fuel System modification. Make sure the overall fuel trim is 0% (or 4.5% if the E10 modification is selected). The injector size should be 1330cc. You will not achieve maximum gains unless you (tune) increase the air charge and torque tables. See https://www.hondata.com/tech-tuning-the-k20c-fk8-civic-type-r for details.



2. Start with a new base calibration which has the Hondata Fuel System enabled.

Supplied starting fuel system base calibrations

91 octane with bolt-ons Hondata fuel system
93 octane with bolt-ons Hondata fuel system
91 octane with Flex Fuel, bolt-ons Hondata fuel system
93 octane with Flex Fuel, bolt-ons Hondata fuel system



These Hondata fuel system calibrations have been tuned to run more boost. Dyno charts for 91 octane and flex fuel are posted on the Hondata Fuel System web pages. You can retune your existing calibrations for more boost and torque, or start with one of these 4 tuned calibrations. After calibration upload, start and idle the engine. Examine the fuel lines for leaks. Drive the car at light load for 2.5 minutes and for a distance of 2 km (1.5 miles) until STFT moves from 0%.

Testing

Conduct all tests with low ethanol fuel. Run a ***minimum of 2 bars*** of fuel at all time for additional cooling.

Configure FlashPro Manager to log a full throttle idle to redline pass.

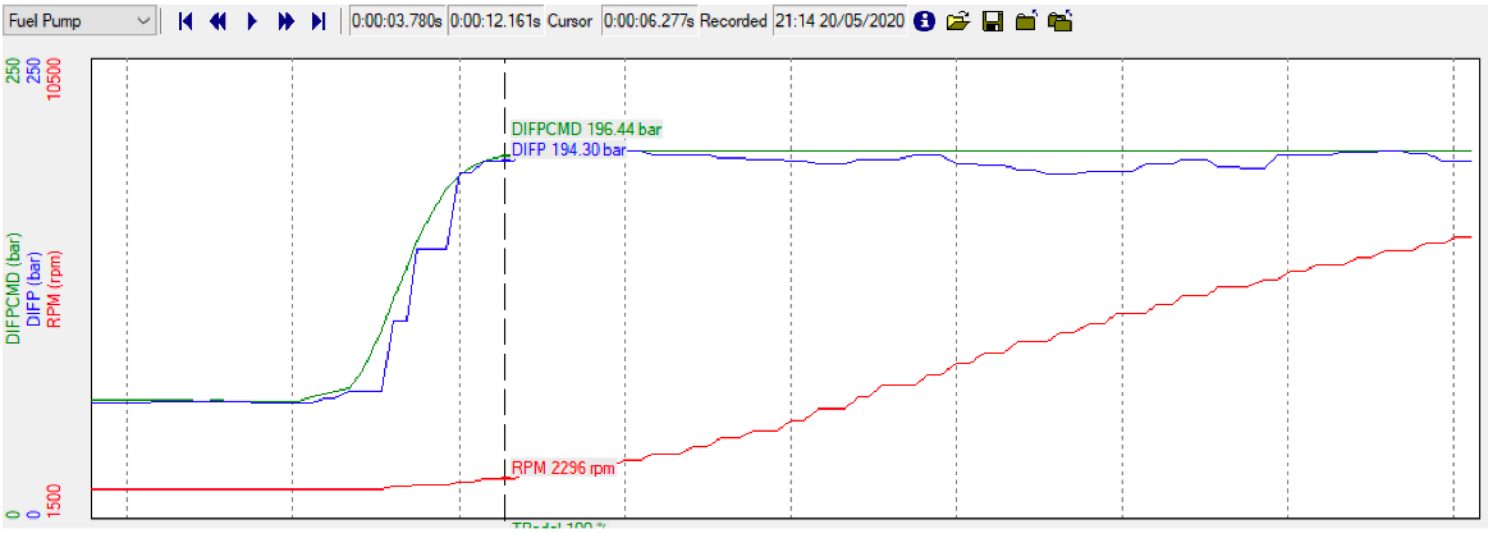
A typical Civic Type R idles at 64 bar fuel pressure, rising to and maintaining 200 bar to redline.

DIFPCMD - Direct Injection Fuel Pressure command. What the ECU asks for.

DIFP - The fuel rail pressure sensor measurement

A few % DIFP variation from DIFPCMD is typical. This datalog indicates what to expect from a correctly functioning fuel system.

Low fuel pressure can cause high rpm lean out. This can be seen as a drop in DIFP in the higher revs.



1500-6500 rpm 7 second third gear

P0087 Fuel Rail/System Pressure - Too Low

This code is triggered after a continuous pressure drop of 20 bar for a period of three seconds.

The fuel rail pressure sensor is at the end of the fuel rail under the intake manifold. This indicates the high pressure pump is not getting enough volume or pressure from the low pressure pump.

This code puts the car into a limp mode which limits the throttle to no more than 10 %.

For further technical support email support@hondata.com with

- Fuel system serial number
- Name & phone
- Installer name and phone
- Error codes
- Calibration
- Datalog

Returning to stock
If you remove the Hondata Fuel System components then, in order for the vehicle to run you must upload a calibration with the Hondata Fuel System modification disabled.

Transfer of ownership
If you sell the Hondata Fuel System then the new owner will need to either:
* Purchase the FlashPro as well from the original owner or
* Purchase an HPFP unlock code for their FlashPro. If you plan to sell the Hondata fuel system, all the original FK8 fuel system parts can restored.

Specifications

Injectors	cc/min @100 bar	Working Pressure (bar)	Max Pressure (bar)
Stock	1059	200	225
Hondata	1330	200	225

High pressure Pump	mm^3 per cyl	Working Pressure (bar)	Max Pressure (bar)	Max pump/ engine RPM
Stock	254	200	225	3600/7200
Hondata	314	200	225	3800/7600

Disclaimer
Specifications are subject to change without notice. Hondata products are designed for specific applications and should not be used for any purpose (including, without limitation, automotive, aerospace, medical, life-saving applications, or any other application which requires especially high reliability for the prevention of such defect as may directly cause damage to the third party's life, body or property) not expressly set forth in applicable Hondata product documentation. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Warranties granted by Hondata shall be deemed void for products used for any purpose not expressly set forth in applicable Hondata product documentation. Hondata shall not be liable for any claims or damages due to incorrect installation or contamination of fuel system components. Hondata shall not be liable for any claims or damages arising out of products used in applications not expressly intended by Hondata as set forth in applicable Hondata product documentation. The sale and use of Hondata products is subject to Hondata terms and conditions of sale.

Warranty
1 year replacement with proof of purchase. Exchange only.