FK8 CTR Fuel system install

Revision date 31 May 2020
What’s in the box

Software activation card

In tank components
- Honda low pressure in-tank fuel pump
- Electrical harness
- O-Rings (2)
- 1 tube of lubricant
- Filter sock
- Fine tipped flat screwdriver

Under hood components
- Honda direct injection fuel pump
- Two direct injection fuel pump bolts 10mm (not pictured)
- Honda direct injection fuel pump wiring harness
- Honda low pressure fuel line. Banjo with 2 washers.
- Honda high pressure fuel line
- Honda direct injection electrical adapter cable
- 4 high flow fuel injectors

Tools needed
- Honda 07AAA-TBAA100 fuel sender lock tool. Can be purchased from Honda or Amazon https://amzn.to/3fpymIx
- Allen 5mm
- Wrenches open ended, 14 and 19mm
- Sockets 14, 12 and 10
- Screwdriver flathead
- Sharpie pen - black
- 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
- Install and test the in tank Honda low pressure fuel pump
- Remove stock DI fuel pump
- Remove intake manifold, fuel rail and injectors
- Install new injectors. Re-install fuel rail
- Install Honda high pressure fuel line
- Connect Honda low pressure fuel line to the Honda DI pump
- Install Honda DI pump and low pressure line
- Install Honda 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.
Low pressure fuel pump install

Refer to your Honda manual for the low pressure fuel pump install details.

If the fuel level is more than 90% fuel will spill. Jack the front of the car more than 345 mm.

Relieving fuel pressure
Unplug the low pressure fuel pump electrical connector. Start and run the engine until it stalls. Crank for a further 4 seconds. Keep your fire extinguisher by the car.

Removal of fuel cage
Clear the area around the fuel basket, preferably with compressed air.

Use the Honda tool 07AAA-TBAA100 to remove the securing ring. Take note of the locating marks A and B. A much less recommended way to loosen the ring is to use a large hammer and pry bar / screwdriver or air hammer.

Tie the vent hose to the side. If fuel gets in the vent hose, you will throw DTCs

Removal of the stock pump
- Disconnect the fuel sender and fuel pump power leads
- Loosen the three fuel pump cage clips
- Remove the center cage assembly
- Disconnect the fuel filter clips and remove the fuel filter
- Remove the stock fuel pump

Fuel pump fly lead
- Mark the black wire location with a black sharpie.
- Remove the nylon plug from the stock fuel pump fly lead using the supplied fine tip screwdriver.
- Transfer the plug to the Hondata supplied fuel pump fly lead
- Plug the fly lead into the Hondata low pressure fuel pump
- When connecting the white plug, hold and push the red and black wires to firmly locate them in the female fuel cage receptacle.

O-Rings
- Transfer the nylon spacer from the stock fuel pump and add two O-rings onto the Hondata low pressure fuel pump
- The original O-ring and spacer might stick in place. Lever them out with a small screwdriver
- Coat the O-rings in lubricant
Installation of the Honda low pressure fuel pump
• Install the fuel filter sock. No clips necessary.
• Install the Honda low pressure fuel pump into the inner cage
• Apply the O-ring lubricant generously and insert the pump gently
• The filter is held against the bottom of the fuel pump cage

Installation of the center cage
• Install the centre cage. The fuel filter sock will bend at a right angle.
• The last cage clip may need assistance with a little force on the left hand side of the clip with a flat headed screwdriver.
• Connect the fuel sender and fuel pump wiring
• Insert the fuel pump nylon clip holding just the wires for full electrical engagement
• Re-install the fuel pump cage into the car
• The locating ring should engage with a click

Testing the Low pressure pump and relieving pressure
• Plug in the low pressure fuel pump electrical connector.
• Cycle the key twice to build up pressure. Start and idle for 1 minute.
• Unplug the low pressure fuel pump electrical connector, start and allow the car to stall.
• Unplug the high pressure fuel pump electrical connector and crank for 4 seconds.
• Disconnect the 12V negative battery terminal

Troubleshooting the low pressure pump
If your car runs poorly and occasionally stops running when the engine is warmed up, datalog DIFP and DIFPCMD. These must closely match. If DIFP is a lot lower than DIFPCMD, then it is likely the low pressure pump is not providing sufficient fuel. The most common cause of this is incorrectly seated low pressure pump O-rings. Dissassemble the fuel pump cage and check the O-rings. Forceful pump insertion can damage the low pressure pump. Check the pump for cracks.
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

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

Intake Manifold

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

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.

![FlashPro screenshot](image1)

![Fuel system mod](image2)
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. Modify your existing calibration by enabling the Hondata Fuel System modification and set the overall fuel trim to –20%. 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%.
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

<table>
<thead>
<tr>
<th>In tank pump</th>
<th>In tank flow l/h @ 4.8 bar (70 psi)</th>
<th>Current (amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock</td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>Honda</td>
<td></td>
<td>205</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>High pressure Pump</th>
<th>mm³ per cyl</th>
<th>Working Pressure (bar)</th>
<th>Max Pressure (bar)</th>
<th>Max pump/engine RPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock</td>
<td>254</td>
<td>200</td>
<td>225</td>
<td>3600/7200</td>
</tr>
<tr>
<td>Honda</td>
<td>314</td>
<td>200</td>
<td>225</td>
<td>3800/7600</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Injector</th>
<th>Flow gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honda</td>
<td>20% over stock</td>
</tr>
</tbody>
</table>

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.