U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

VEHICLE TECHNOLOGIES PROGRAM

2012 Honda Civic CNG VIN 2590

Advanced Vehicle Testing – Compression Testing Results

VEHICLE SPECIFICATIONS[1]		
Vehicle VIN:19XFB5F57CE002590 Class: Compact Seatbelt Positions: 5 Type: Sedan CARB[2]: AT-PZEV EPA City/Hwy/Combined[3]: 27/38/32 MPGe **Tires** Manufacturer: Firestone Model: Affinity Size: P195/65R16 Pressure F/R: 30/30 psi Spare Installed: T135/80D15 99M	**Engine** Model: 16 Valve SOHC i-VTEC® Output: 82 kW @ 6500 rpm Torque: 143.72 Nm @ 4300 rpm Configuration: Inline 4-Cylinder Displacement: 1.8 L Compression Ratio: 12.7:1 Fuel Type: Compressed Natural Gas **Compression Test Service Limits[4]** Minimum Manufacturer Compression per Cylinder: 135.0 psi Maximum Compression Variation Between Cylinders: 29.0 psi **Transmission** Type: Electronically Controlled 5-Speed Automatic Features: ECO Mode	**Weights** Design Curb Weight: 2,855 lb GVWR: 3,814 lb GAWR F/R: 2,029/ 1,852 lb Max. Payload: 959 lb **Dimensions** Wheelbase: 105.1 in Track F/R: 59.0 / 60.2 in Length/Width: 177.3 in / 69 in Height: 56.5 in Ground Clearance: 5.5 in **Fuel Tank** Type: Structural Composite Pressure Rating: 3600 psi Fuel Tank Capacity[4]: 8.03 GGE

NOTES:

1. Vehicle specifications were supplied by the manufacturer, measured, or derived from a literature review.
2. The vehicle was certified as an Advanced Technology Partial Zero Emission Vehicle by the California Air Resources Board (CARB).
3. The fuel economy is given in units of "miles per gallon of gasoline equivalent" (MPGe).
4. Service limits provided from the 2012 Honda Civic CNG online service manual. There is an alternate minimum compression value of 127.6 psi from the Honda Civic CNG Service Manual Engine Compression Inspection R002800.
5. The fuel tank capacity is given in units of "gallons of gasoline equivalent" (GGE).

COMPRESSION TEST RESULTS[1]

Cylinder Measured	BOT Compression Measurement (Max psi)[2]	BOT Difference from Minimum Manufacturer Compression (psi)[3]	First ICD Compression Measurement (Max psi)[4]	First ICD Difference from Minimum Manufacturer Compression (psi)[5]	% Difference Between First ICD and BOT[6]
1	234.78	99.78	240.59	105.59	2.5
2	222.39	87.39	224.64	89.64	1.0
3	223.81	88.81	233.05	98.05	4.1
4	239.38	104.38	247.45	112.45	3.4
Average (psi)	**230.09**	**95.09**	**236.43**	**101.41**	**2.8**
Max Variation (psi)	**16.99**		**22.80**		
Min Variation (psi)	**1.42**		**6.86**		

NOTES:

1. Compression test completed using Model 4223 or equivalent PicoScope with a calibrated WPS500 pressure transducer. Vehicle fuel injection and ignition fuse removed from vehicle fuse box. Throttle blade was held wide open to minimize pumping loss.
2. Beginning of Test (BOT) completed on 01/4/2013 with an odometer reading of 4,872 miles.
3. BOT measured compression is compared against the manufacturer-supplied minimum compression value per cylinder.
4. First Interim Component Durability (ICD) completed on 05/14/2013 with an odometer reading of 21,726 miles.
5. First ICD measured compression is compared against the manufacturer-supplied minimum compression value per cylinder.
6. % Difference between BOT and First ICD calculated with the following equation: ((BOT-First ICD)/BOT).

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