BLOOD HURST & O'REARDON, LLP
TIMOTHY G. BLOOD (149343)
THOMAS J. O'REARDON II (247952)
PAULA R. BROWN (254142)
ADAM M. BUCCI (327312)
501 West Broadway, Suite 1490
San Diego, CA 92101
Tel: 619/338-1100
619/338-1101 (fax)
tblood@bholaw.com
toreardon@bholaw.com
pbrown@bholaw.com
abucci@bholaw.com

BEASLEY, ALLEN, CROW, METHVIN, PORTIS & MILES, P.C.
W. DANIEL "DEE" MILES, III *
H. CLAY BARNETT, III *
J. MITCH WILLIAMS *
DYLAN T. MARTIN *
TRENTON H. MANN *
218 Commerce Street
Montgomery, AL 36104
Tel: 334/269-2343
334/954-7555 (fax)
Dee.Miles@Beasleyallen.com
Clay.Barnett@BeasleyAllen.com
Mitch.Williams@Beasleyallen.com
Dylan.Martin@beasleyallen.com
Trent.Mann@BeasleyAllen.com

Attorneys for Plaintiff

* *pro hac vice forthcoming*

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF CALIFORNIA

CHRIS BISSELL, individually and on behalf of all others similarly situated,

Plaintiff,

v.

AMERICAN HONDA MOTOR CO., INC., and HONDA MOTOR COMPANY LIMITED,

Defendants.

Case No. '24CV2286 AJB MMP

CLASS ACTION COMPLAINT

JURY TRIAL DEMANDED

BLOOD HURST & O'REARDON, LLP

Plaintiff Chris Bissell ("Plaintiff"), individually and on behalf of the other members of the below-defined statewide class, which he respectively seeks to represent ("Class"), hereby alleges against Defendants American Honda Motor Co., Inc. and Honda Motor Company Limited (together, "Honda"), upon personal knowledge as to himself and his own acts, and as to all other matters upon information and belief, based upon the investigation made by the undersigned attorneys, as follows:

NATURE OF THE CASE

1. Honda manufactures and sells certain motor vehicles equipped with its high compression 1.5-liter i-VTEC turbocharged gasoline direct injection engine.

2. Turbocharged engines have advantages but come at a cost. They produce far greater internal pressure and heat than naturally aspirated engines. As a result, they must be designed and manufactured with components that are tolerant of high-compression forces and heat, and must be adequately sealed and cooled to prevent internal component damage and engine failure.

3. For the vehicles equipped with the engines at issue, Honda failed to design vehicles that properly manage the increased compression and heat (the "Defect"). As a result, engine coolant leaches through and collects in the grooves on the engine's cylinder head. The leached coolant then degrades the engine's gasket, allowing coolant to leak into the Engine's cylinders.

4. The coolant leaks cause three related problems. First, once the coolant leaks, an insufficient amount remains to adequately cool the engine, causing the engine to overheat, causing damage that includes warping, engine seizure, and fire.

5. Second, when the coolant leaks into the engine's pistons, the engine misfires and loses motive power.

6. Third, the leaked coolant mixes with the engine oil, diluting and contaminating the oil, causing corrosion and excessive and premature engine wear.

7. In addition to damaging the engine and reducing vehicle performance, the Defect creates a serious safety risk. For example, some owners have complained that their "car effectively lost power and [] was stuck coasting on a road where traffic regularly travels between 45-50+ mph," and how the Defect stranded them "on the far left side of the highway near brick side wall and had to find a way to get to the right shoulder of the highway while in coming car passed by."

8. The Defect is covered by Honda's warranty, but Honda refuses to honor its warranty.

9. Moreover, Honda has not released or made freely available a countermeasure that adequately fixes the Defect.

10. The Class is defined as owners or lessees of 2018 to 2022 model year Honda Accords, 2016 to 2022 model year Honda Civics, and 2017 to 2022 model year Honda CR-Vs equipped with the 1.5-liter i-VTEC turbocharged gasoline direct injection engine (the "Class Vehicles").[1]

11. On behalf of himself and the Class, Plaintiff asserts claims against Honda for breach of express and implied warranties, violations of the Consumers Legal Remedies Act, violations of the California Unfair Competition Law, and unjust enrichment. Plaintiff seeks damages and equitable relief to compensate Plaintiff and the Class and to remedy the defect.

JURISDICTION AND VENUE

12. This Court has subject matter jurisdiction under 28 U.S.C. § 1331 and pursuant to the Class Action Fairness Act of 2005, 28 U.S.C. § 1332(d), because at least one member of the Class is diverse in citizenship from one Defendant and the aggregate amount in controversy exceeds $5,000,000 and minimal diversity exists.

[1] Plaintiff reserves the right to amend or add to the vehicle models and model years included in the definition of Class Vehicles.

13. This Court has personal jurisdiction over American Honda Motor Company, Inc. because it is a California corporation with its corporate headquarters located in this district.

14. This Court has personal jurisdiction over Honda Motor Company Ltd. because Honda Motor Company Ltd. has purposefully availed itself of the privilege of doing business within California, including by marketing and selling the Class Vehicles, and exercising jurisdiction over Honda Motor Company Ltd. does not offend traditional notions of fair play and substantial justice.

15. Venue is proper in this district under 28 U.S.C. § 1391 because American Honda Motor Company, Inc. resides within this district and a substantial part of the events and omission giving rise to Plaintiffs' claims occurred within this district.

PARTIES

Plaintiff

16. Plaintiff Chris Bissel is a citizen of California and resides in Temecula, California.

17. Plaintiff Bissell owns a 2018 Honda Accord which he purchased certified pre-owned from DCH Honda in San Diego, California on November 30, 2020.

18. Prior to purchasing his Honda, Plaintiff Bissell reviewed Honda's promotional materials, the Monroney sticker, sales brochures, test drove the vehicle and interacted with at least one sales representative all without Honda disclosing the Engine Defect.

19. Through his exposure to Honda's advertisements, promotional materials and other public statements, Plaintiff Bissell was aware of and believed Honda's marketing message that its vehicles are safe and dependable, which was material to his decision to purchase his Class Vehicle.

20. When he purchased the vehicle, he believed, based on Honda's marketing message, that he would be in a safe and dependable vehicle, one that is safer and more dependable than other vehicles on the market.

21. At no point before Plaintiff Bissell purchased his vehicle did Honda disclose the Defect to him, including that as a result, the vehicle was not safe and dependable, as advertised.

22. Plaintiff Bissell's vehicle was not safe and dependable. The Defect manifested in his vehicle. At approximately 87,000 odometer miles, Plaintiff experienced multiple dash warning lights, check engine light, and performance issues such as engine sputtering and vibration of the vehicle as it drove. He took the vehicle to an independent mechanic who eventually diagnosed the cause as leaking coolant due to head gasket failure. Wary of the cost at a dealership, Plaintiff Bissell had his independent mechanic replace the head gasket on March 14, 2024. As he continued to have issues with the vehicle, he then took the vehicle to DCH Honda of Temecula, a certified Honda dealership, which confirmed the head gaskets had been an issue with vehicles like his. The Defect has created a dangerous condition that gives rise to a clear, substantial, and unreasonable risk of death or personal injury to Plaintiff Bissell, other occupants in his Class Vehicle, and others on the road.

23. Plaintiff Bissell's Class Vehicle is not subject to any technical service bulletins, special service campaigns, or recalls for the Engine Defect, as further explained below.

24. As such, Plaintiff Bissell has been left without a remedy and, as a result of Honda's conduct and the Engine Defect, is continuously exposed to an increased risk of severe injury or death.

25. Plaintiff Bissell did not receive the benefit of his bargain. He purchased a vehicle of a lesser standard, grade, and quality than represented, and he did not receive a vehicle that met ordinary and reasonable consumer expectations regarding safe and reliable operation.

26. Had Honda disclosed the Engine Defect, Plaintiff Bissell would not have purchased his Class Vehicle or would have paid less to do so.

27. Plaintiff Bissell would purchase a vehicle from Honda in the future if Defendants' representations about the vehicle, including its safety and durability, were accurate.

Defendants

28. Defendant Honda Motor Company, Ltd. ("HML") is a Japanese corporation, with its principal place of business at 2-1-1, Minami-Aoyama Minato-Ku, 107-8556 Japan, and the parent of Defendant American Honda Motor Company, Inc.

29. HML through its various entities (including American Honda Motor Company), designs, manufacturers, markets, distributes, and sells Honda automobiles across the United States.

30. Defendant American Honda Motor Company, Inc. ("AHM") is a California corporation with its principal place of business in Torrance, California.

31. AHM is the United States sales and marketing subsidiary of, and is wholly owned by, HML, and is responsible for distributing, marketing, selling, and servicing Honda vehicles in the United States, including the Class Vehicles.

32. At all relevant times, AHM manufactured and produced the defective engine blocks at the Anna, Ohio Honda engine plant.

33. At all relevant times, AHM acted as an authorized agent, representative, servant, employee, and/or alter ego of HML while performing activities, including but not limited to advertising, marketing, warranties, selling Class Vehicles, disseminating technical information, and monitoring Honda vehicles in the United States.

34. AHM renders services on behalf of HML that are sufficiently important to HML and its sale of vehicles in the United States that HML would perform those services itself if AHM did not exist.

35. HML controls the public name and brand of AHM, and in consumer transactions, like those with Plaintiff and the proposed classes, HML's unified brand and logo serve as its and AHM official seal and signature as to consumers.

36. HML operates AHM with a unity of interest and owners such that AHM is a mere instrumentality of its parent, HML.

37. HML and AHM engage in the same business enterprise and share common board members and employees. Upon information and belief, HML has, and at all relevant times had, the contractual right to exercise and in practice has exercised control over AHM's work, including but not limited to the manner of Honda Class Vehicles' marketing, the scope of written warranties, and representations made, and facts withheld from consumers and the public about the Engine Defect.

38. At all relevant times to this action, HML and AHM manufactured, distributed, sold, leased, and/or warranted the Class Vehicles under the Honda brand name throughout the United States. Defendants and/or its agents designed, manufactured, and/or installed the defective engines and/or components in the Class Vehicles. Additionally, Honda developed and disseminated the owner's manuals, warranty booklets, advertisements, maintenance schedule, and other promotional and technical matter relating to the Class Vehicles.

FACTS COMMON TO ALL CAUSES OF ACTION

39. Honda designs, manufactures, markets, and sells millions of vehicles worldwide, including the Class Vehicles, under the Honda and Acura brand names.

40. In 2023, Honda sold over 1.3 million vehicles in the United States.[2]

41. All Class Vehicles are equipped with a four-cylinder 1.5L turbocharged engine (the "Engine(s)"). The Engines are substantially similar and, for the purposes of this lawsuit, materially identical in all relevant respects.

[2] https://hondanews.com/en-US/releases/release-a463299e9046a088b84018a7580565c4-american-honda-seals-2023-sales-momentum-with-strong-december-annual-sales-up-over-30

A. History of Honda's 1.5L Engine

42. In 1984, Honda introduced the D-series 1.5L naturally-aspirated engine ("D15") for production in Honda-brand vehicles. Honda designed, manufactured, tested, and sold vehicles equipped with several variants of the D15 engine until it was discontinued in 2005.

43. Like the Class Vehicles' Engines, Pre-Class Honda vehicles equipped with the D15 engines suffered from head gasket failures which caused engine coolant to leak through the cylinder head surface into the adjacent combustion chambers, leading to engine overheating and engine damage.[3]

44. On November 10, 1997, Honda acknowledged the defect in the D15 engines when it released a technical service bulletin, TSB 97-047, which covered model year 1988-1995 Honda Civic vehicles.[4]

45. In TSB 97-047, Honda explained "[the] head gasket leaks oil externally or allows coolant into the combustion chambers." *Id.* Honda's countermeasure to the D15 engine defect was a redesign of the cylinder head gasket and head bolts. *Id.*

46. Beginning in 2001, Honda introduced the successor to the D15 engine family, the L-Series 1.5L naturally-aspirated engine ("NA-L15").

47. In 2013, Honda released two new variants of the NA-L15 engine, the L15B and L15C, which featured a dual overhead camshaft ("DOHC") and variable timing control ("VTC"), and a new technology known as the "intelligent Variable Valve Timing and Lift Electronic Control," or "i-VTEC."

48. The i-VTEC is intended to optimize performance and fuel efficiency by dynamically adjusting the timing and lift of the engine's valves based on driving conditions.

[3] *See* Exhibit A, TSB 97-047, dated November 10, 1997.

[4] *Id.*

49. Honda's L15B and L15C engines were plagued with engine issues from the start of production, including head gasket failure and VTC actuator failure, among other things.

50. Hundreds of owners and lessees of the Pre-Class Honda vehicles have filed complaints with the National Highway Traffic Safety Administration ("NHTSA") and online concerning these failures.

B. The Engine in the Class Vehicles

51. In 2016, Honda debuted in the U.S. market the engine at issue, the 1.5-liter i-VTEC turbocharged gasoline direct injection engine (the "Engine"). The Engine features a single-scroll turbocharger, DOHC cylinder head, and dual-VTC.

52. According to Honda, the design changes to the Engine are significantly different in many ways to the NA-L15.

53. The application of the dual VTC and single-scroll turbocharger enabled the engine to provide greater torque while possessing a smaller displacement than naturally aspirated engines.[5]

54. Overall, the engine weight was 30 kg lighter than a conventional naturally aspirated engine with the same output.[6]

55. As part of the design changes, the engines contain shallow-dish pistons, which consist of a curved surface and an upslope surface.[7]

56. These shallow-dish pistons work to produce double the kinetic energy compared to a naturally aspirated engine.[8]

---

[5] Exhibit B (Honda R&D Technical Paper)

[6] *Id.*

[7] *Id.*

[8] *Id.*

57. By using a wide overlap period for the intake and exhaust valves, residual gas is scavenged from the cylinder and funneled to the exhaust system.[9] The flow of the scavenged gas works to increase the turbine speed of the engine.[10]

58. By utilizing the wide overlap period, the cylinder is allowed to fill more air charge and works to reduce knocking.[11]

59. These design changes result in the 1.5-liter i-VTEC turbocharged gasoline direct injection engine to produce a torque output that is about 30% higher than that of the previous NA-L15 engine design.[12]

C. The Engine Defect

60. The Class Vehicles suffer from a dangerous defect, placing Plaintiff and Class Members, as well as others on the road, at an increased risk of severe injury or even death.

61. High compression, heat mitigation, and engine operating temperatures are critical concerns when designing and manufacturing an internal combustion engine.

62. Without proper heat mitigation and temperature control, the engine will overheat and cause critical damage to internal components and engine failure.

63. Similarly, excessive engine and cylinder pressure can cause pre-ignition, pre-detonation, and engine knocking, among other things, which damages the internal engine components, engine seals, including the head gasket, and can lead to catastrophic engine failure.

64. On information and belief, the Engine Defect results from the design and/or manufacturing of the engine block and cylinder head, including use of an inadequate head gasket or other sealing compounds or characteristics on the cylinder

---

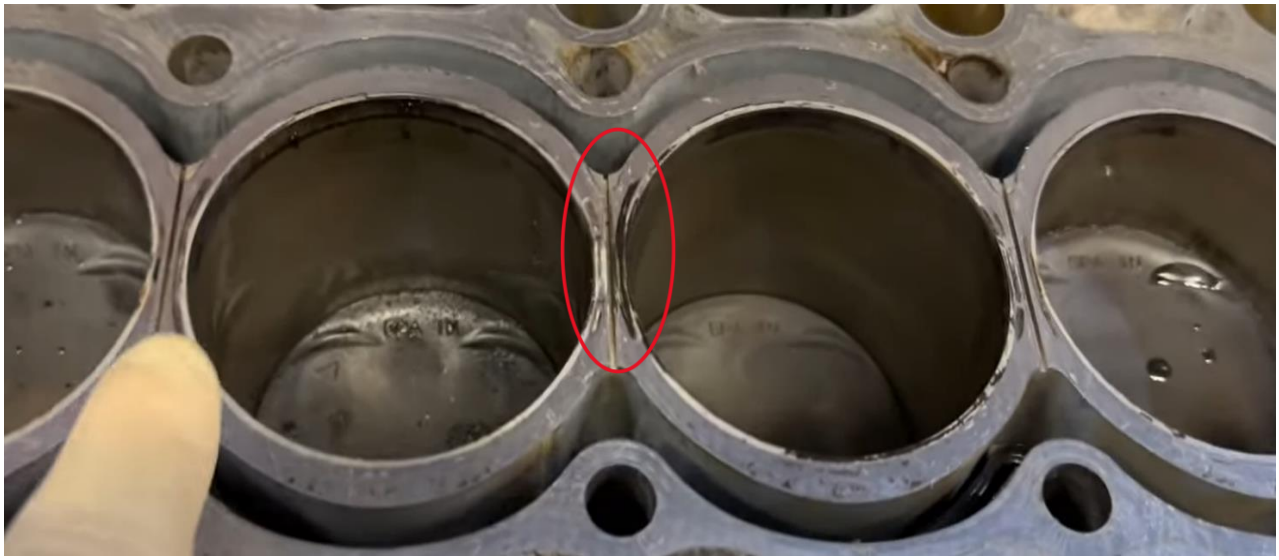
9 *Id.*

10 *Id.*

11 *Id.*

12 Exhibit C, (Honda SAE Technical Paper).

head. This design includes grooves at the point where the engine's cylinder head attaches to the engine block, as seen below, circled for ease of view:



65. In a typical – non-defective – engine, liquid coolant circulates through veins in the engine block and cylinder head to keep the engine cool and prevent overheating.

66. As the coolant circulates, heat is transferred from the engine block to the liquid coolant.

67. The liquid coolant then circulates to the radiator, where it is cooled and recirculated throughout the engine.

68. The liquid coolant is pressurized as it circulates, so all mating surfaces must be properly sealed to prevent liquid coolant from externally or internally leaking, causing the engines to overheat, damage internal components, and lead to catastrophic engine damage.

69. The Class Vehicles, however, fail to properly seal and contain the liquid coolant.

70. In Class Vehicles, the coolant leaches through and collects in the grooves on the cylinder head.

71. The coolant then degrades the Engine's gasket, eventually resulting in the coolant leaking into the Engine's cylinders.

72. The coolant leaks cause three related problems. First, due to the leaking, insufficient coolant remains in the engine to properly cool it, which results in the engine overheating. The engine overheating can then cause catastrophic damage, including cracked cylinder heads from the excessive heat.

73. Engine overheating can also warp other internal components, such as pistons. In addition, when an overheated engine reaches a certain degree, the overheating causes a loss of oil viscosity, which may lead to complete engine seizure, and in some instances, engine fire.

74. Second, coolant leaking into cylinders can cause the engine to misfire and lose motive power.

75. Third, coolant that enters the cylinders can mix with the oil on the cylinder walls, causing oil dilution and/or contamination, which in turn causes corrosion and excessive wear on bearings and other internal engine surfaces.

76. These failure modes can occur at low mileage and can cause catastrophic failure within warranty.

77. The Engine Defect creates a serious safety risk, because it renders the Class Vehicles unexpectedly inoperable without warning, preventing them from moving out of the way of oncoming danger or from moving with the flow of traffic.

78. Because of the grave risks the Engine Defect poses, a vehicle that suffers from the Engine Defect is not fit for its ordinary purpose and does not pass without objection in the trade, and renders the Class Vehicles substantially less drivable, useable, safe, and valuable. This is especially true for the Class Vehicles, which were marketed as safe and reliable family vehicles.

79. Honda has publicly acknowledged the Engine Defect through Manufacturer Communications to Honda dealerships first issued in 2017,[13] as well as cheap design changes made by Honda in 2020 as an attempt to eliminate the Engine

[13] *See* Exhibits D-F.

Defect, including changes to the head gasket.[14] However, these design changes failed to address and remedy the Engine Defect.

D. Honda's Knowledge of the Engine Defect and Associated Safety Risks

80. Honda fraudulently, intentionally, negligently, and/or recklessly concealed from Plaintiff and Class Members the Engine Defect in the Class Vehicles, even though Honda knew or should have known of the design and/or manufacturing defects in the Class Vehicles.

81. Honda became aware of the Engine Defect through sources not available to Plaintiff and the other members of the Class, including, but not limited to: pre-production testing, pre-production design failure mode and analysis data, production design failure mode and analysis data, early consumer complaints made exclusively to Honda's network of dealers and directly to Honda, aggregate warranty data compiled from Honda's network of dealers, testing conducted by Honda in response to consumer complaints, repair order and parts data received by Honda from Honda's network of dealers and suppliers, its investigation and field analysis of the Engine Defect; and its investigation and root cause analysis of failures in pre-Class Vehicles.

82. Despite its exclusive, actual knowledge, Honda has not recalled the Class Vehicles or provided an adequate remedy for Plaintiff and all other Class Members.

1. Pre-Release Testing

83. Honda knew or should have known about the Engine Defect from the testing performed on the Engines and its' components. Prior to the sale of any of the Class Vehicles, Honda–like any other reasonable Original Equipment Manufacturer (OEM) seeking to manufacture and sell vehicles on the U.S. market–completed a multitude of analyses and testing that exposed the existence of the Engine Defect.

[14] https://www.hondapartsnow.com/genuine/honda~gasket~cylinder~head~nippon~leakless~12251-6a0-a01.html

84. Honda and its suppliers, perform various pre-production testing on new vehicle components, including most notably Failure Modes and Effects Analysis ("FMEA") and Design Validation Plan and Report ("DVP&R").

85. Honda and its suppliers performed these tests, and others, on the Class Vehicles and, if performed with due care, each of these tests demonstrated that the relevant systems or components in the Class Vehicles would lead to failure of the Engines.

86. FMEA tests methods or modes by which a particular component might fail. It examines the design of each component, the assembly of the part, and whether use in various manners would cause the part or system to fail. For example, in testing the systems at issue here, FMEA testing would explore, among other things, how and under what conditions the Engines and their components could fail, how likely failure was under different conditions, and how likely each condition tested was to occur.

87. The purpose of the FMEA is to define, based on known and established engineering facts like those asserted by Defendants, potential risks of failures and rank them by severity, likelihood and ability to detect failure. Any conditions resulting in failure, like those associated with the Engine Defect would result in a "high risk" priority and draw additional and more extensive analysis and validation testing during the FMEA and DVP&R phases. Given the reports of Engine failures after sale, these processes were designed to show the various modes of failure caused by the Engine Defect and confirm what Defendants already knew about the Engine Defect.

88. The DVP&R phase includes an extensive battery of tests and other work necessary to validate the robustness of any design and includes three basic types of testing: bench scale, dynamometer, and vehicle/field testing. This testing is discussed below.

89. Bench scale testing is component-specific and establishes a strict set of specifications and guidelines to ensure that the component will operate reliably and durably in foreseeable operating conditions. During this phase of testing, Defendants'

Engine was "bench tested," that is, set up on various machinery to simulate certain operating extremities and conditions to confirm whether it meets the necessary specifications and guidelines set by the supplier in coordination with Defendants. Discovery is expected to reveal that Defendants received the detailed results of the bench testing and resulting Technical Control Documents (TCDs) which outline the operating limitations of Defendants' Engine along with the potential risks associated with installation in the Class Vehicles, including the Engine Defect. Similarly, discovery is expected to show that bench testing of the Engines confirmed what Defendants already knew about its design choice or its workmanship and materials—that the Engines fail to operate as intended and prematurely fails.

90. Dynamometer testing is one of the most important types of testing to ensure durability and performance of the powertrain and its components. In the dynamometer test, the powertrain is operated under extreme conditions such as maximum temperatures, RPMs, or excessive vibration. Dynamometer testing is intended to demonstrate powertrain robustness and reveal necessary improvements or flaws, such as the Engine Defect. Discovery is expected to confirm that dynamometer testing revealed the Engines were poorly designed and manufactured, suffered from premature degradation, underperformance, and, ultimately, catastrophic failure.

91. Honda and its suppliers also performed computer and real-world simulations of the systems, including in extreme conditions, to confirm they are meeting the design goals. Honda tested the Engines in actual vehicles, both prototype vehicles and pre-production line vehicles. In these tests, vehicles are driven through a full range of conditions and extremities that are encountered once a vehicle is sold to the public. These vehicle-specific development tests include mapping extreme operating conditions, which are the kinds of modes that manifest the Engine Defect.

92. Through the rigors of these three phases of DVP&R testing, Defendants' Engines were exposed repeatedly to conditions that cause the Engine Defect to manifest.

93. Defendants admit they perform extensive pre-release testing of the Class Vehicles before they are sold.[15]

94. During this testing, Honda learned that the Class Vehicles' Engines grossly underperform and suffer internal component damage and failure. However, due to the costs of redesigning and fixing the Engines, Honda opted to conceal the Engine Defect.

95. Honda knew or should have known that the Engine Defect was material to owners or lessees of the Class Vehicles and that Plaintiff and Class Members could not reasonably discover the Engine Defect on their own prior to purchasing or leasing the Class Vehicles.

96. Honda had and continues to have a duty to fully disclose the true nature of the Engine Defect to Plaintiff and Class Members, among other reasons, because the Engine Defect poses an unreasonable safety hazard; because Honda had and has exclusive knowledge or access to material facts about the Class Vehicles' Engines that were and are not known to or reasonably discoverable by Plaintiff and the other members of the Class; and because Honda has actively concealed the Engine Defect from its customers at the time of purchase or repair and thereafter.

97. Specifically, Honda (a) failed to disclose, at the time of purchase or repair and thereafter, any and all known material defects or material nonconformities of the Class Vehicles, including the Engine Defect; (b) failed to disclose, at the time of purchase or repair and thereafter, that the Class Vehicles and their Engines were not in good working order, were defective and prone to failure, and were not fit for their intended purpose; and (c) failed to disclose and actively concealed the fact that the Class Vehicles and their Engines were defective, despite the fact that Honda learned of the Engine Defect before it placed the Class Vehicles in the stream of commerce.

[15] https://hondainamerica.com/news/honda-proving-center-returns-operation/

98. The Engine Defect and its associated safety risks were concealed and actively suppressed in order to protect Honda's corporate profits from loss of sales, purchase refunds, warranty repairs, adverse publicity, and brand disengagement. Consumers were misled into believing their Class Vehicles had different qualities than what they purchased or leased, and as a result, were deprived of economic value, the benefit of their bargain, and overpaid for their Class Vehicles.

99. At all relevant times, in promotional materials, advertisements, and other representations, Honda and its authorized Dealers maintained that the Class Vehicles were safe, reliable, and made no reference to the Engine Defect. Plaintiff and Class Members, directly, and indirectly, were exposed to, saw or heard such promotional materials and advertisements prior to purchasing or leasing the Class Vehicles. Indeed, these misleading representations about the Class Vehicles' reliability and safety were material to Plaintiff's and Class Members' ultimate decision to purchase or lease the Class Vehicles.

100. Notwithstanding Honda's superior and exclusive knowledge of the Engine Defect, it failed to disclose the Engine Defect to Plaintiff and Class Members at the time of purchase or lease of the Class Vehicles and made no mention of the Engine Defect in its advertisements, promotional materials, and other representations.

2. Consumer Complaints

101. Federal law requires Honda to monitor defects that can cause a safety issue and report them within five (5) days to NHTSA. Therefore, Honda regularly monitors NHTSA complaints to meet reporting requirements under federal law. Honda, therefore, has knowledge of the Engine Defect due to the numerous consumer complaints, such as those made to NHTSA, as well as by other means.

102. Honda has admitted it routinely monitors these data sources to monitor product performance. *See In re Honda Idle Stop Litigation*, 22-cv-04252-MCS-SK (C.D. Cal.), Doc. No. 137-1, Page ID #:4744.

103. Consumers who purchased or leased Class Vehicles from Honda, as well as owners and lessees of pre-Class Honda vehicles, have filed a significant number of complaints with the National Highway Traffic Safety Administration ("NHTSA"), reporting and detailing the Engine Defect.

104. Honda knew or should have known about the Engine Defect and its associated risks through the numerous consumer complaints filed with NHTSA as early as 2016. *See* TREAD Act, Pub. L. No. 106-414, 114 Stat. 1800 (2000).

105. The following example complaints[16] filed by consumers with NHTSA demonstrate that the Engine Defect is a widespread safety hazard that plagued pre-Class vehicles and continues to plague the Class Vehicles:

106. On September 26, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[17]

> My head gasket went out while I was driving down the road at around 68425 miles. The result was that the car threw a bunch of error codes and went into limp mode while on the highway. I was fortunately able to pull off into a parking lot due to low traffic at that time of day but it was a major road that is full of vehicles during a busy time of day. This was a safety issue because my car effectively lost power and I was stuck coasting on a road where traffic regularly travels between 45-50+ mph. The head gasket failure was confirmed by the local Honda dealer and was replaced under warranty (certified pre-owned).

107. On August 13, 2024, the owner of a 2020 Honda Accord submitted the following complaint to NHTSA:[18]

> Rough start then temperature fluctuates. Coolant is disappearing cause a head gasket problem. This has been known for the 2018-2020 yrs Accord.

[16] All NHTSA complaints included in this Complaint are complete and verbatim copies pulled directly from NHTSA's website.

[17] NHTSA ID: 11614854.

[18] NHTSA ID: 11608357.

108. On August 5, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[19]

Blown head gasket confirmed by dealer.

109. On August 4, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[20]

> Bought the vehicle in 2022 with 90k miles on it. Started experience engine issues shortly after. Engine light and ALL the dash lights came on. Changed spark plugs 4x and coils replaced fuel injectors over the years. Still the lights and engine light comes on. Turns out I have a blown head gasket at just 130k miles. Did routine maintenance on it and changed water pump . I've never had this many issues with a car and I'm quiete upset. The years of head ache is never ending.

110. On July 8, 2024, the owner of a 2019 Honda Accord submitted the following complaint to NHTSA:[21]

> The head gasket on the engine has blown at only 94,000 miles. Car overheated on the side of the freeway and I took it to the dealership. Dealer confirmed that the head gasket was leaking. Check engine light and a temp warning came on as the car overheated.

111. On July 8, 2024, the owner of a 2020 Honda Accord submitted the following complaint to NHTSA:[22]

> During medium acceleration the vehicle engine lost power and all the instrument panel warnings went off. Dealership said a blow head gasket. There are many threads online saying that there needs to be something done because the Honda 1.5 turbo motors are blowing head gaskets prematurely under 100k miles. Mine 2020 Accord has 108k and has been driven with care as I'm a middle aged male commuting to and from work with the car. Some sort of investigation needs to be done to show there is either a design flaw or a gasket flaw.

---

19 NHTSA ID: 11606383.
20 NHTSA ID: 11606322.
21 NHTSA ID: 11601606.
22 NHTSA ID: 11600120.

112. On July 4, 2024 the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[23]

> My vehicle head engine gasket blow while driving on the highway. I was on the far left side of the highway near brick side wall and had to find a way to get to the right shoulder of the highway while in coming car passed by. I'm just upset cause I kept telling Honda dealership something was wrong with my engine every time I went in for a oil change for the past 2 years and they ignored my concern and told me nothing was wrong. I just can't believe Honda a trusted automotive company would have this type of issue without having a recall available for their customers. And I read into the issue and I'm not the only person with this issue. That's not right at all. They need to do better.

113. On July 1, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[24]

> Engine overheated and turns out we have a blown head gasket. The problem escalated quickly from and "your engine may be warm" messages to "Do not drive!" messages. We tried to stop and cool it off when that message happened. To me the safety issue comes with the experience of needing to urgently find a place to stop while driving on a busy road (interstate for us) so the engine doesn't get much worse. Car is currently at a Honda dealer to assess the damage to the engine.

114. On June 20, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[25]

> Blown Head Gasket.

115. On June 20, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[26]

> Head gasket and fuel injector. Causing stalling of the vehicle. Over heating. Have almost been hit with my kids in the car from stalling. Honda has confirmed this and the car has only 125k miles. This is COMMON in this car and should be recalled before someone is killed.

---

23 NHTSA ID: 11598856.
24 NHTSA ID: 11598856.
25 NHTSA ID: 11595432.
26 NHTSA ID: 11595585.

> In this economy who can afford 5500 dollars on a car that isn't old to fix? I have driven all my past vehicles into 200k miles and never had these issues and have taken much better care of this car.

116. On June 5, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[27]

> I got a blown head gasket to cynlinder #3 at under 100k miles. I maintain it regularly as needed by use of the maintenance minder. Never got any indication of engine troubles before. On doing some research this seems to be a common problem for this make and model and seems to be a possible defect. The repair was $4300 to repair the head gasket.

117. On June 4, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[28]

> Drove to work, about 35 miles. Few hours later went to leave to get a cup of coffee, started car and ALL lights came on dash and seems like every feature cycled through indicated nonfunctional. Drove to dealership, head gasket leak and piston misfiring, $4200. Car is a 2018 Honda Accord EX-L with 62000 miles. Seems strange to have such an extensive issue with a honda with such low miles. Can you investigate. Thanks.

118. On June 4, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[29]

> Blown head gasket due to the new 1.5L engine Honda started making on the 2018 models.

119. On June 2, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[30]

> Head Gasket Failure diagnosed by Honda city in New York. The purpose of the diagnostic was to address what I believed to be issues related to the ongoing Fuel Pump recall, as discussed with an American Honda representative prior to my visit. The symptoms I had been experiencing

---

[27] NHTSA ID: 11592678.
[28] NHTSA ID: 11593633.
[29] NHTSA ID: 11592317.
[30] NHTSA ID: 11592014.

> included intermittent stalling or loss of power, what prompted me to reach out immediately was an instance on a highway where the engine lost all power, prompting us to pull over to the side of the road, This could have been a much worse outcome. Additionally, I have noticed occasional trembling upon startup. Per the Service department the conclusion of the diagnostic was that the coolant was low due to washing the piston heads and cylinder walls and ultimately the head gasket needed to be replaced along with spark plugs.The total costs for these services amount to about $4,800. To provide further context, the coolant was last replaced on [XXX] 2024. The first issues began to arise in mid-February when the digital gauge displayed at least 8 warnings across various systems. [XXX], 2024 the car was brought in for more maintenance and further investigation into the warnings. Nothing came about here as the issue couldn't be reproduced and no action was taken. I feel as though there was nothing more I could have done to prevent this situation. The car has a pristine maintenance record and has just over 42,000 miles after a little over 5 years of ownership , an average of 15-20 miles a day. After researching on my own, Ive found this to be much more common issue for the 2018 1.5 accords along with other models. INFORMATION REDACTED PURSUANT TO THE FREEDOM OF INFORMATION ACT (FOIA), 5 U.S.C. 552(B)(6).

120. On May 23, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[31]

> My 2018 Honda Accord began malfunctioning on [XXX]. It completely stalled out and all of the warning lights came on. The vehicle was being driven and began to shudder upon acceleration at just 15 mph. The vehicle ended up seizing and lost all acceleration capabilities. The vehicle was able to be pulled over at idle speed and had trouble starting. once I got the car to start, I was able to drive the vehicle into a safe parking lot but only at idle speed as the acceleration was not functioning. I had received the fuel pump recall and had the car towed to Brandon Honda in Brandon FL, and they determined it was not a fuel pump failure but a blown head gasket. I also received a second opinion that confirmed this diagnosis and determined the issue to be the blown head gasket causing coolant to mix with my oil and leak into spark plugs causing spark plug 3 to fail as well. Upon replacement of the spark plug, the car functions once again with acceleration capabilities, however, to prevent

[31] NHTSA ID: 11584701.

> any further damage, I had the car towed back to my place of residence. Upon further investigation, I am finding more people experiencing this issue with their new Honda Accords as well. The head gasket should not fail this early on in owning this vehicle especially being the only owner of this vehicle and only 130k miles. I have always kept up with coolant levels, and oil changes, and used the recommended octane by Honda, 87. Repair still has not been made as I am exploring all of my options, however, if this malfunction had happened on the interstate, it could have been fatal. INFORMATION REDACTED PURSUANT TO THE FREEDOM OF INFORMATION ACT (FOIA), 5 U.S.C. 552(B)(6).

121. On May 14, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[32]

> All warning systems triggered, repeatedly, over the past year. Honda dealership misdiagnosed as a fuel injector. Had fuel injector replaced, but same issue occurred and this time all warnings came on and vehicle lost power on highway with my baby daughter inside. So, after spending thousands attempting to resolve the issue, I towed again to Honda and it was correctly diagnosed as a failed head gasket requiring $5.5K to repair. Service advisor said he's seen "many of these" recently. Called around Tampa and all mechanics advise (consistent with numerous complaints online car communities) failed head gasket is a known and common safety issue (to the extent that parts are on backorder as a result of repairs). Called American Honda Corporation and they led me to believe they would repair, but after an hour of wasting my time, and repeated requests to hold so agent could speak with supervisor, agent then said repeatedly "there is nothing we can do for you." This abject safety failure and demonstrated bad faith should not be allowed by regulators who have a duty to mandate that auto manufacturers do the right thing and issue safety recalls for known issues such as the head gasket failure I have experienced.

122. On May 2, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[33]

> Engine stall while driving, and blown engine gasket.

---

[32] NHTSA ID: 11588703.

[33] NHTSA ID: 11586583.

123. On April 18, 2024, the owner of a 2019 Honda Accord submitted the following complaint to NHTSA:[34]

> Head Gasket developed holes at 70,000 miles despite all recommended maintenance completed. This can cause serious engine damage which can lead to multiple safety issues.

124. On April 14, 2024, the owner of a 2017 Honda CR-V submitted the following complaint to NHTSA:[35]

> I was driving my Honda CRV 2017 on I-65 in Birmingham - Montgomery area in Alabama in March 2024 and suddenly in the middle of the busy highway the vehicle stalled and wouldn't drive even after stepping on the accelerator a little harder. I then turned on my emergency lights to signal to the behind vehicles that I have and emergency situation became I was in the middle of a busy highway and the vehicle simply wouldn't drive. I managed to pull aside of the highway and turned the engine off because I didn't know what the issue was. After a few minutes I started the vehicle again and drove a few miles and the vehicle stalled again. After a couple of repeated cycle, I got the vehicle to a nearby Honda dealership for diagnostic testing which later revealed that the fuel injectors, the head gasket, the turbo system etc were causing the vehicle to stall. The vehicle is currently not drivable and has since been with the Honda dealership as I am writing. With taxes, the dealership is charging me approximately $5000 USD to fix this problem, money that I cannot afford. Not knowing what to do, I did a brief research to see if anyone else has experienced this issue before and I found out in the consumer report that other drivers have actually experienced exactly the same issue that happened to my vehicle. I currently do not have any additional vehicle for commuting and I am forced to use rented vehicles with the rental cost accumulating on the daily basis while my vehicle remains with the dealership. I am therefore writing this notification for Honda to look into this potentially risk safety incidence and help Honda CRV owners and myself get this problem fixed because such experience doesn't boost consumer confidence for both current and future Honda CRV owners. Thanks

[34] NHTSA ID: 11583859.

[35] NHTSA ID: 11582838.

125. On March 13, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[36]

> Blown head gasket.Car is hesitating/ jerking. Dealership wants 7k to get it fixed.

126. On March 8, 2024, the owner of a2018 Honda Accord submitted the following complaint to NHTSA:[37]

> Head Gasket Failure.

127. On February 22, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[38]

> Cylinder head gasket and cylinders misfire; also loosing coolant.

128. On February 9, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[39]

> This 1.5T has had alot of complaints about head gaskets going out. 50K miles i had it headgaskey went bad.

129. On January 30, 2024, the owner of a 2017 Honda CR-V submitted the following complaint to NHTSA:[40]

> While driving the car it began to spit and sputter and lost power to the point I had to pull out of traffic to the shoulder, stop, and turn hazard lights on. While there I turned the car off and restarted it. I began to enter back into traffic, got to about 10-15 mph and all of a sudden the car ran choppy and every light came on the dash displaying a problem with every function of the car. My husband works about a mile from where I was so I drove from where it happened to his workplace. From there the phone calls began to obtain a tow to the dealership. Diagnostic results said head gasket was leaking and coolant was fouling the spark plugs. Dealer quoted $5700 for repairs. (25 hours of labor). Around 86,000 miles (10

---

36 NHTSA ID: 11577121.
37 NHTSA ID: 11576269.
38 NHTSA ID: 115732892.
39 NHTSA ID: 11570935.
40 NHTSA ID: 11568906.

weeks ago) the same dealership replaced fuel injectors and spark plugs for $1700. Now the 2017 car is just under 90,000 miles.

130. On January 1, 2024, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[41]

> 2018 Honda Accord Touring 1.5T (CVT) 43,600 mi 12/27/2023 -Various warning messages over the course of previous 6 months -Started with a light vibration at cold startup, progressed to CEL flash and engine shut down -Vehicle brought to Honda dealership for a cold start misfire on cylinder 1 12/28/2023 -Vehicle diagnosed with leaking head gasket (cylinder 1) AND failing injectors on 2 and 4 -All repairs covered under Honda power train warranty Disappointed at a head gasket and injector failure at 43,600 mi on a vehicle that may have seen 3500RPM twice in its life.

131. On October 19, 2023, the owner of a 2017 Honda CR-V submitted the following complaint to NHTSA:[42]

> The contact owns a 2017 Honda CR-V. The contact stated that while driving at approximately 50 MPH, the vehicle started losing motive power. The contact stated that several unknown warning lights were illuminated. The vehicle was steered to the side of the road and restarted. The vehicle was taken to a dealer where it was diagnosed that the head gasket needed to be replaced. The vehicle was repaired but the failure persisted. The manufacturer was notified of the failure. The failure mileage was 70,000.

132. On June 19, 2023, the owner of a 2017 Honda CR-V submitted the following complaint to NHTSA:[43]

> Week of April 11th, While driving the car, the vehicle would start to shake and the following warning messages came on as the vehicle would start to decelerate making us drift to the emergency lane avoid getting hit by an oncoming vehicles. The following messages came up on multiple occasions on the panel. (note, we could only select 3 options above so were not able select all of these) 1. Collision Mitigation System Problem 2. Adaptive Cruise Control Problem 3. Road Departure Mitigation

[41] NHTSA ID: 11564284.
[42] NHTSA ID: 11550829.
[43] NHTSA ID: 11527685.

> System Problem 4. Electrical Parking Break Problem 5. Tire Pressure Monitor Problem 6. Power Steering System (EPS) Problem The car was inspected by Danbury Honda service department, who informed us that it was a blown head gasket. The car is a 2017 purchased in 2020 by Danbury Honda Dearlership. As we worked primarily from home for the last 3 years, the car was not driven that often and oil changes have been up to date. There have been no signs of leaking or overheating including the temperature gauge not showing any signs of overheating and remained in neutral or below temperature. The Danbury Honda service department could not explain how a blow head gasket was possible. We then proceeded to have it inspected by Danbury Brewster Service Department week of April 18th, who informed us that it was a spark plug issue. And there was no indication of a head gasket. After spark plug was repaired, the car was being driven with no issues and on May 4th, the incident above happened again (again no overheating or leaking). We went back to Honda Brewster who said it was a blown head gasket with no explanation as to how this as possible. We are attaching the service technician inspection report and photos. This has caused anxiety and stress where we are not safe driving the vehicle. Our daughter just recently obtained a license and, thankfully, this did not happen to her. We have been fans of hondas for many years and between us have owned 4 honda vehicles.

133. On June 7, 2023, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[44]

> My car is 5 years old with 72,000 miles and it now need a new head gasket. Mechanic said Honda is aware of this issue on this model car but my warranty is expired and this is costly fix for something the company is well aware of.

134. On December 20, 2022, the owner of a 2018 Honda Accord submitting the following complaint to NHTSA:[45]

> Hello, On 12/19/2022 when I started my 2018 Honda Accord EX 1.5L it started giving me all the warning lights at a time and suggested me see Honda dealer. I took it nearby Honda dealer and they diagnosed the issue and found that there is issue with fuel injector CODED PO301 CYLINDER 1 MISFIRE 1st - CLEARED CODES Upon

[44] NHTSA ID: 11525856.

[45] NHTSA ID: 11498266.

> rescanning - recorded multiple misfires on cylinder 2,swapped coils and plugs no change misfire did not follow. Failed Air Fuel Test – Step 1: Replace Fuel injectors with Fuel Pipe AND CHECK VALVE CLEARANCE (Valve Adjustment). And Honda dealer mentioned that it is not covered by warranty.

135. On December 13, 2022, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[46]

> Cylinder 2 misfire with check check engine light on and limp mode activated. Dealer diagnosis revealed a blown head gasket at 95,000 miles with coolant leaking into cylinder # 2 & 3. Vehicle always serviced on time and at purchasing dealer with no mods to vehicle.

136. On December 1, 2022, the owner of a 2021 Honda CR-V submitted the following complaint to NHTSA:[47]

> 2021 Honda CRV Hybrid. 11/9/22: When accelerating to merge onto a highway, moving at approximately 50 mph, the vehicle rapidly decelerated as driver tried to accelerate (went into limp mode), the check engine light came on and the engine made a continuous clattering sound. The vehicle would not go above 15 mph in 55-60 mph traffic. Driver put flashers on and drove 1/2 a mile to the first exit, lucky he could move to the right lane. Vehicle was driven 1.5 miles home at 15 mph and lower. Didn't drive car on 11/10/22. Car driven to dealership on 11/11/22 because there was no indication of anything wrong -- no sounds or dashboard lights or limp mode. Drove to dealership where a scan indicated engine misfire DTC: P0304 was stored in the system. Dealership cleared the system and could not recreate the incident after swapping spark plugs and coils and driving 163 miles over 3 days. Took car home on 11/15/22. Six days later, on 11/21/22, the same thing happened on the highway: as driver accelerated, the engine light came on and flashed and stayed flashing, the engine made vibrating noise, and lost acceleration (limp mode) down to 6 mph on the busy highway. Going 6 mph with flashers on, he was able to reach the ramp for the next exit and pull over on the shoulder. On the shoulder, driver made a video of the engine making clattering sounds and of the engine light flashing on the dashboard. He turned the car off, waited a few minutes, then turned the car back on. Everything seemed fine. Driver exited the highway and

[46] NHTSA ID: 11497182.

[47] NHTSA ID: 11495632.

> drove to the dealership which has had car since 11/21/22. Having no ability to accelerate, and having the vehicle go into limp mode -- having no control -- on a busy highway is extremely dangerous and frightening.

137. On April 26, 2022, the owner of a 2018 Honda CR-V submitted the following complaint to NHTSA:[48]

> As I was driving home from work, I tried to accelerate to merge onto the highway and my car would not go over 30-40 mph. It felt like it was going to stall. This could have caused a major accident. I was able to make it home. I took the 2018 honda crv to the dealer that night and was told that Turbocharger was broke. During this whole ordeal, the engine light did not come on once, nor leading up to this event. The dealer ran computer diagnostics and nothing came up. They had to take the car apart to find out what was wrong. Because the turbocharger had been broken, this also caused damage to the fuel injectors and they needed replaced. 25 days later, again on my way home from work, every single light and warning message is flashing on my dash, as if there is a battery problem. THERE WAS NO WARNING APPEAR PRIOR TO THIS EVENT. Took it back to the dealer and was told that there is blown head gasket, coolant leaking into the cylinder, no compression in cylinder. Luckily, nothing happened while I was driving. THIS NOW REQUIRES MY WHOLE ENGINE TO BE REPLACED. Seems due to driving with the malfunctioning Turbo, the original problem, WHICH I HAD NO IDEA OR WARNING LIGHT, damaged my car further. VERY DISAPPOINTED WITH THE HONDA CRV 2018 SAFETY ONBOARD DIAGNOSTICS AND IN MY OPINION MALFUNCTIONED.

138. On April 5, 2022, the owner of a 2018 CR-V submitted the following complaint to NHTSA:[49]

> The contact owns a 2018 Honda CR-V. The contact stated while driving 65 MPH, the vehicle lost motive power and stalled with several unknown warning lights illuminated. The contact used excessive force to steer the vehicle off the highway and immediately called for roadside assistance. The contact had the vehicle initially towed to her home where her son inspected the vehicle. The contact's son informed her that there was an issue with the engine and the vehicle needed to be towed to the dealer.

---

[48] NHTSA ID: 11462330.

[49] NHTSA ID: 11459671.

> The vehicle was towed to the dealer and was diagnosed with a defective cylinder head. The manufacturer had yet to be notified of the failure. The vehicle had yet to be repaired and remained in the possession of the dealer. The failure mileage was approximately 72,000.

139. On March 28, 2022, the owner of a 2018 Honda Civic submitted the following complaint to NHTSA:[50]

> The contact owns a 2018 Honda Civic. The contact stated while driving approximately 20 MPH, several unknown warning lights illuminated and the vehicle started to idle very rough. The contact had taken the vehicle to a local dealer however, the vehicle was not diagnosed. The contact drove the vehicle to an independent mechanic who diagnosed that there was an engine cylinder misfire failure with DTC codes: P0302 and P0303. Additionally, the contact stated that there was a strong smell of gasoline in the cabin of the vehicle. The vehicle was not repaired. The manufacturer had been informed of the failure. The failure mileage was approximately 80,000. Fuel injectors were replaced by owner April 10, 2022. Upon oil change the same day, oil was very dark, despite only having 600 miles use since last changed and there was fuel noted in oil. Pictures were sent to NHTSA. Since changing injectors fuel mileage has improved greatly. The car has gone from averaging 37MPG to around 41MPG. Oil changed on 6/27/22, coloration was normal for routing change and did not note fuel in oil. No warning lights or issues with operation since injectors changed. The P0302 & P0303 codes were to be covered as part of a service bulletin relating to oil dilution but both Honda corp & dealership stated that injectors were not covered as part of the service bulletin. Even though the injectors could be directly responsible for the oil dilution issue if not properly functioning and throwing codes associated with the bulletin. Owner incurred the expense of rental car for a week, two lost days of onsite work with employer, and cost to purchase injectors. Will provide receipts.

140. On February 17, 2022, the owner of a 2019 Honda Accord submitted the following complaint to NHTSA:[51]

> My son was driving and car stalled and wouldn't accelerate . Engine light came on. He shut the car off and restarted. Thank god it happened in a rural road. No issues after restarting. Two days later engine light came

[50] NHTSA ID: 11458677.

[51] NHTSA ID: 11452424.

> on along with a Christmas tree of everything else. Took it to a friend who put it on his snap-on code reader. He said take it too dealership. Find out it's a fault head gasket. They want 3700 to fix. The car has 87000 miles on it. I have never seen a head gasket go bad on normal everyday cars. I thought Honda was reliable. I thought wrong.

141. On November 20, 2021, the owner of a 2019 Honda Accord submitted the following complaint to NHTSA:[52]

> Vehicle repeatedly experiences a "cylinder misfire error" when driving above 45 mph. The check engine light will flash and the car surges like it is stalling. Loss of the ability to accelerate when it occurs. Also, the car shakes violently when the vehicle comes to a stop before turning off the engine. Many times, after restarting problem temporarily stops. I have taken it to the dealership multiple times, but problem is unsolved. Happens at least once a week. Started at 58,000 miles. More recently, the vehicle experiences a safety system failure when driving above 45 mph. 10 system warning lights were activated and will continually appear on instrument panel. Warning lights activated: 1. Hill Start Assist Problem 2. Adaptive Cruise Control System Problem 3. Collision Mitigation Braking System Problem 4. Road Departure Mitigation System Problem 5. Emission System Problem 6. Tire Pressure Monitor System Problem 7.Brake System Problem 8. Electric Power Steering System Problem 9.Vehicle Stability Assist System Problem 10. Brake Hold System Problem.

142. On October 18, 2021, the owner of a 2018 Honda CR-V submitted the following complaint to NHTSA:[53]

> The contact owns a 2018 Honda CR-V. The contact stated while starting the vehicle, multiple unknown warning lights were illuminated. The contact stated an independent mechanic came to her residence and informed her that the engine needed to be repaired. The vehicle was not repaired. The contact stated that on 10/17/2021, while driving 45 MPH, the engine experienced a misfire and the vehicle started to decelerate. The contact stated that multiple warning lights were illuminated. The contact was able to park on the side of the road. The contact stated she was able to drive back to her residence. The vehicle was not diagnosed

[52] NHTSA ID: 11441116.

[53] NHTSA ID: 11437121.

or repaired. A dealer was not contacted. The manufacturer had been informed of the failure. The failure mileage was approximately 27,000.

143. On June 23, 2021, the owner of a 2020 Honda Accord submitted the following complaint to NHTSA:[54]

> The contact owns a 2020 Honda Accord. The contact stated while driving 70 mph while attempting to pass another vehicle, the check engine warning light was illuminated and the vehicle went into limp mode. The contact was able to exit the highway and park safely. The vehicle was not drivable. The contact towed the vehicle to the local dealer where it was diagnosed with a misfire on cylinders 1 and 4. The local dealer reset the code. The vehicle was repaired. The manufacturer had been informed of the failure. The failure mileage was approximately 13,762.

144. On January 22, 2021, the owner of a 2018 Honda CR-V submitted the following complaint to NHTSA:[55]

> I WAS ON HIGHWAY I35 HEADING TO DALLAS DRIVING 70MPH. SUDDENLY MY CHECK ENGINE LIGHT STARTED BLINKING AND MY CAR COMPLETELY SHUT DOWN AUTOMATICALLY WHEN I WAS IN THE MIDDLE OF 18 WHEELERS AND OTHER TRAFFIC ZOOMING BY ME HONKING DUE TO MY SPEED DRASTICALLY DROPPING. I HAD TO COAST ACROSS 3 LANES OF HEAVY TRAFFIC TO GET OVER TO THE SHOULDER. I WAS TERRIFIED I WAS GOING TO GET SLAM INTO BY ONE OF THE MANY SEMI-TRUCKS. IT WAS TERRIFYING. CALLED AND HAD MY CAR TOWED. CLEO BAY HONDA (KILEEN, TX) SAID IT WAS A MISFIRE OF ONE OF THE FUEL INJECTORS. WHEN I PICKED IT UP THE FOLLOWING WEEK, I GOT BACK ON THE FREEWAY TO HEAD BACK TO GEORGETOWN AND THE SAMETHING HAPPENED AGAIN. I AGAIN WAS FORCED TO CROSS 2-3 LANES BY COASTING TO GET OVER TO THE SHOULDER. THEY NOW ARE GOING TO REPLACE ALL 4 FUEL INJECTORS, BUT I HAVE LOST ALL CONFIDENCE IN THIS CAR'S SAFETY. I DO NOT WANT TO TAKE IT ON THE FREEWAY AGAIN, FEARING THE 3RD TIME I WILL BE KILLED. I DODGED TWO BULLETS WITH THIS CAR, WHY SHOULD I BE FORCED TO DODGE ANYMORE? VERY

---

54 NHTSA ID: 11422013.

55 NHTSA ID: 11389341.

> SCARY! THIS CAR WAS PROGRAMED TO SHUT DOWN WHEN A MISFIRE OCCURS BUT THEY FAIL TO CONSIDER WHERE THE DRIVER MIGHT BE WHEN IT HAPPENS. TWICE IT HAPPENED WHEN I WAS ON A BUSY FREEWAY AND I LOST ALL SPEED WITH CARS/SEMI-TRUCKS GOING 70-75MPH PAST ME AND I AM FORCED TO CROSS 3 LANES OF TRAFFIC TO GET TO A SAFE LOCATION. THE FEAR THAT HAPPENED THE FIRST TIME WAS STILL FRIGHTENING AND TO HAVE IT HAPPEN A SECOND TIME WAS TERRIFYING AND I DON'T FEEL SAFE ANYMORE DRIVING IT. IF NOT ME SOMEONE WILL BE KILLED OR SERIOUSLY INJURED DUE TO THIS DEFECT!

145. On November 20, 2020, the owner of a 2018 Honda Accord submitted the following complaint to NHTSA:[56]

> DRIVING DOWN THE HIGHWAY GOING 70MPH AND CHECK ENGINE LIGHT STARTS FLASHING. CAR STOPS ACCELERATING I LIMP OVER TO THE MEDIAN. I TURN THE VEHICLE OFF AND TURN IT BACK ON. THE CAR HAS A SOLID CHECK ENGINE ON ALONG WITH ALL THE ASSISTING LIGHTS ON. THE CAR ACCELERATES LIKE NORMAL AND WHEN I GET HOME I DISCONNECT THE BATTERY AND EVERYTHING CLEARS ONCE I RECONNECT. IN ANOTHER INSTANCE I GO TO TURN MY CAR ON THE CHECK ENGINE LIGHT STAYS ON BUT THE VEHICLE WON'T GO PAST 1500 RPMS AND IT'S BASICALLY IN LIMP MODE WITH THE CHECK ENGINE LIGHT ON AGAIN TO GO ALONG WITH ROAD DEPARTURE SYSTEM, VEHICLE STABILITY SYSTEM, TIRE PRESSURE MONITORING, BRAKE SYSTEM, ELECTRIC POWER STEERING, HILL START ASSIST, ADAPTIVE CRUISE CONTROL , COLLISION MITIGATION AND EMISSION SYSTEM WARNINGS ALL LIGHT UP. I DID THE SAME THING DISCONNECT THE BATTERY AND AGAIN THEY ALL GO AWAY. THIS HAS BEEN GOING ON FOR A MONTH. AT LEAST 9 TIMES WHERE ALL THE WARNING LIGHTS COME ON ALONG WITH THE CHECK ENGINE LIGHT. ONCE WHEN I'M TRAVELING AS EXPLAINED AND 2 TIMES WHERE IT GOES INTO LIMP MODE FROM THE START. TOOK VEHICLE TO A FRIEND AND GOT A P0303 CYLINDER 3 MISFIRE. HAVING DONE RESEARCH OF

[56] NHTSA ID: 11366497.

> THE CODE NOTICED THAT 2012-2018 HONDA'S HAVE HAD SIMILAR ISSUES ADDRESSED BY A BULLETIN AND EXTENDED THE WARRANTY FOR THOSE VEHICLES. MY CAR HAS 70K AND IT'S CURRENTLY OUT OF THE WARRANTY PERIOD. THANK YOU.

146. On November 3, 2019, the owner of a 2017 Honda CR-V submitted the following complaint to NHTSA:[57]

> 2017 HONDA CRV WITH 1.5 L TURBO 4 CYLINDER ENGINE. HEALTH HAZARD: NOTED GASOLINE FUMES IN CABIN AFTER STARTING THE CAR. THE FUMES ARE COMING IN THROUGH THE VENTILATION SYSTEM. HAPPENING IN BOTH COLD AND HOT WEATHER. CAR HAS 30K MILES ON IT. FUMES NOTICED WHEN CAR IS STATIONARY AFTER STARTING IT. ALSO FOUND TO HAVE GAS ENTERING OIL PAN, DILUTING THE OIL, AND CAUSING HIGH OIL LEVELS. SIMILAR REPORTS FROM MANY OTHER OWNERS OF THIS VEHICLE WITH THIS ENGINE AND APPARENTLY A MAJOR RECALL IN CHINA FOR THE PROBLEM. AM CONCERNED ABOUT HYDROCARBON LEVELS IN THE PASSENGER CABIN WHICH CAN BE A MAJOR HEALTH HAZARD. JUST BECAUSE THE FUMES DISSIPATE AFTER A MINUTE OR SO DOES NOT NECESSARILY MEAN THAT THE HYDROCARBON LEVELS IN THE CABIN ARE NORMAL FOR THE REST OF THE RIDE. OTHER MAJOR CONCERN IS PREMATURE WEAR ON THE ENGINE DUE TO GAS MIXING WITH OIL. ANOTHER CONCERN IS REPORTS OF CRVS WITH THIS PROBLEM STALLING AT HIGH SPEEDS AND FAILING TO ACCELERATE PROPERLY. HONDA USA HAS NOT ADDRESSED THE PROBLEM AS OF THIS DATE NOR HAVE THEY OFFERED ANY SOLUTIONS. I FEEL LIKE I WASTED OVER $30K ON A VEHICLE THAT IS NOW UNSAFE AND DESTINED TO PREMATURE ENGINE FAILURE. I THINK THERE NEEDS TO BE A RECALL TO FIX THIS PROBLEM.

147. On December 27, 2018, the owner of a 2018 Honda CR-V submitted the following complaint to NHTSA:[58]

---

[57] NHTSA ID: 11145159.

[58] NHTSA ID: 11163629.

> ABNORMAL OIL DILUTION CAUSING EXCESSIVE WEAR AND TEAR ON THE ENGINE. CAR TALKING LONG TIME TO WARM UP. NOT RUNNING SMOOTHLY. FOUL SMELL OF GAS IN THE CABIN.

148. On November 27, 2018, the owner of a 2016 Honda Civic submitted the following complaint to NHTSA:[59]

> ENGINE STALLED MULTIPLE TIMES IN LAST ONE YEAR WHEN ACCELERATING FROM YELD/STOP. IT HAPPED TWICE WHILE YIELDING AND MERGING ONTO HIGHWAYS; WE WERE LUCKY THERE WERE NO VEHICLES ON HIGHWAY DURING MERGING, OTHERWISE SITUATION WOULD HAVE THE WORST . ALSO ALL WARNING LIGHTS ON THE DASH BOARD FLASHES WITH FAILURE WARNINGS. AT THAT POINT ENGINE ALMOST STALLED RUNNING ONLY AT SPEED OF 10 M/H ATLEAST WHICH HELPED ME TO PULL OFF THE HIGHWAY. I SWITCHED OFF AND ON, ENGINE CAME LIVE, BUT ALL THE WARNING LIGHTS WERE STILL THERE. WARNINGS ON THE DASHBOARD WERE CLEARED ONLY NEXT DAY AFTER WHOLE NIGHT IDLE. I TOOK THE VEHICLE TO HONDA DEALER, EXPLAINED THE PROBLEM AND ALSO PROVIDED THEM THE VIDEO THAT MY FRIEND SITTING IN THE PASSENGER SEAT RECORDED WHILE INCIDENT HAPPENED. DEALERSHIP TRIED TO PULL THE ERROR CODE, BUT NONE WERE FOUND. DEALER ASKED ME TO KEEP THE VEHICLE WITH DEALERSHIP AS THEY NEED TO REPRODUCE THE ISSUE. FORTUNATELY THEY REPRODUCED THE EXACT SAME ISSUE, AND FOUND THE ENGINE CYLINDER MISFIRES IN 1 AND 4. THEY INTIMATED HONDA ENGINEERING FOR ASSISTANCE, AND HONDA ASSISTED THEM TO RECALIBRATE THE SYSTEM WITHOUT FINDING THE ROOT CAUSE. DEALERSHIP RECALIBRATED AND DIRECTED BY HONDA AND TOLD ME THAT IF THE ISSUE HAPPENS AGAIN THAT WILL BE FIXED UNDER WARRANTY. ALL THESE TRANSCRIPTS WERE RECORDED IN SERVICE HISTORY OF MY VEHICLE. THE SAME ISSUE APPEARED YESTERDAY AGAIN. WHEN I RESEARCHED ABOUT THE ISSUE ON INTERNET, MOST OF THEM COMPLAINED ABOUT THE ENGINLE OIL AND GAS MIXUP. I CHECKED MY OIL LEVEL WITH OIL CHECK

[59] NHTSA ID: 11154143.

> STICK PROVIDED BY HONDA, AND OIL LEVELS ARE WAY ABOVE THAN MAX MARK AND OIL SMELLS LIKE GASOLINE; AND MORE OVER THE OIL LOOK VERY THIN ALMOST LIKE WATER THICKNESS.

149. On November 26, 2018, the owner of a 2017 Honda CR-V submitted the following complaint to NHTSA:[60]

> MY 2017 HONDA CRV EX 1.5 LTR TURBO ENGINE HAS AN OIL DELUTION ISSUE FUEL IS GETTING INTO THE CRANKCASE DELUTING THE OIL TOOK IT TO THE DEALER ALL THEY DID WAS CHANGE THE OIL I CONTACTED HONDA GOT A CASE NUMBER#09145359 THEY SAID SOMEONE WOULD CALL ME ABOUT THE ISSUE. NO ONE HAS CALLED AT THIS TIME NOV 26TH 2018.

150. On November 25, 2018, the owner of a 2017 Honda CR-V submitted the following complaint to NHTSA:[61]

> MY 1.5L TURBO CHARGED ENGINE HAS A STRONG GASOLINE ODOR IN THE ENGINE OIL. SO GASOLINE IS MIXING WITH MY ENGINE OIL AND MAY CAUSE EARLY ENGINE FAILURE OR A SAFETY ISSUE. I NOTICED THE GASOLINE SMELL WHEN CHANGING MY ENGINE OIL AND THE CAR IS PARKED.

151. On November 20, 2018, the owner of a 2017 Honda CR-V submitted the following complaint to NHTSA:[62]

> FUEL IS GETTING IN ENGINE OIL AND DELUTING IT. 1.5 TURBO ENGINE. CALL HONDA OF AMERICA THEY SAID TO TAKE TO DEALER FOR INSPECTION. HONDA GAVE ME A CASE NUMBER. DEALER CHANGE OIL TOLD TO KEEP A WATCH ON IT. CALLED HONDA BACK WITH CASE NUMBER THEY SAID HONDA HAS NO FIX AT THIS TIME. I WAS TOLD JUST TO WATCH FOR SOMETHING ON THE INTERNET TO SEE IF THERE WAS GOING TO BE A FIX. MEANWHILE MY ENGINE IN BEING

---

60 NHTSA ID: 11154124.

61 NHTSA ID: 11153597.

62 NHTSA ID: 11152828.

> DAMAGED BY NOT HAVING PROPER OIL LUBERCATION FROM FUEL BEING IN OIL.

152. On November 15, 2018, the owner of a 2016 Honda Civic submitted the following complaint to NHTSA:[63]

> ISSUE WITH THE 1.5 TURBO CALLED OIL DILUTION. CHINA HAD A RECALL ON THE TURBO DUE TO THE FUEL DILUTION PROBLEM (FUEL GETTING INTO OIL). BACK IN SEPTEMBER ON THE WAY TO OHIO FROM INDIANA CIVIC BROKE DOWN AND STALLED WHILE DRIVING DOWN INTERSTATE 70, DURING A RAIN STORM. NOT A SAFE SITUATION AT ALL. CIVIC WAS TOWED TO A HONDA DEALER IN DAYTON. WAS TOLD OIL WAS OVERFULL AND THEIR SOLUTION WAS TO DRAIN AND FILL WITH PROPER AMOUNT. WAS TOLD BY THE DEALER THEY HAD SEEN THAT BEFORE. IT IS COMING TOGETHER FOR ME NOW WHEN I SAW A CONSUMER REPORT YOUTUBE DISCUSSING THIS ENGINE ISSUE AND THIS YOUTUBE: HTTPS://WWW.YOUTUBE.COM/WATCH?V=J80BFJS-16U. 1.5 TURBO IS BUILDING UP FLUID IN THE CRANKCASE LIKE ON THE 1.5 TURBOS IN THE CIVIC. HAD THE OIL CHANGED AGAIN RIGHT AT TWO MONTHS LATER, HERE IN INDIANA, WITH LIKELY LESS THAN 2000 MORE MILES AND THERE IS AGAIN BUILDUP OF FLUID IN THE CRANKCASE. THE OIL WAS OVERFULL AS CONFIRMED BY THE TECHS AT THE LOCAL INDIANA HONDA DEALER. THIS IS A SAFETY ISSUE.

153. On July 1, 2016, the owner of a 2016 Honda Civic submitted the following complaint to NHTSA:[64]

> I HAVE A BRAND NEW 2016 CIVIC 1.5T EX-L WITH 1,000 MILES AND A CRACKED ENGINE BLOCK. WE NOTICED THE ENGINE OIL ALL OVER OUR GARAGE. IT'S BEEN LEAKING FOR A WHILE, PROBABLY SINCE WE GOT IT, BUT WE DIDN'T REALIZE UNTIL TODAY THAT THE OIL WAS COMING FROM OUR BRAND NEW CAR. AFTER OUR OWN INVESTIGATION, WE

63 NHTSA ID: 11151864

64 NHTSA ID: 10882160.

RULED OUT ALL OF OUR OTHER CARS AND TOOK IT INTO DEALERSHIP TODAY.

154. The above complaints are just a small sample of the thousands of complaints submitted to NHTSA and Honda and posted online.

155. As demonstrated above, Class Vehicles suffer from a uniform defect in the Engines and/or related components that causes the vehicles to leak coolant through the cylinder head surface into the adjacent combustion chambers, leading to overheating and blown head gaskets, among other component failures, as well catastrophic Engine failure.

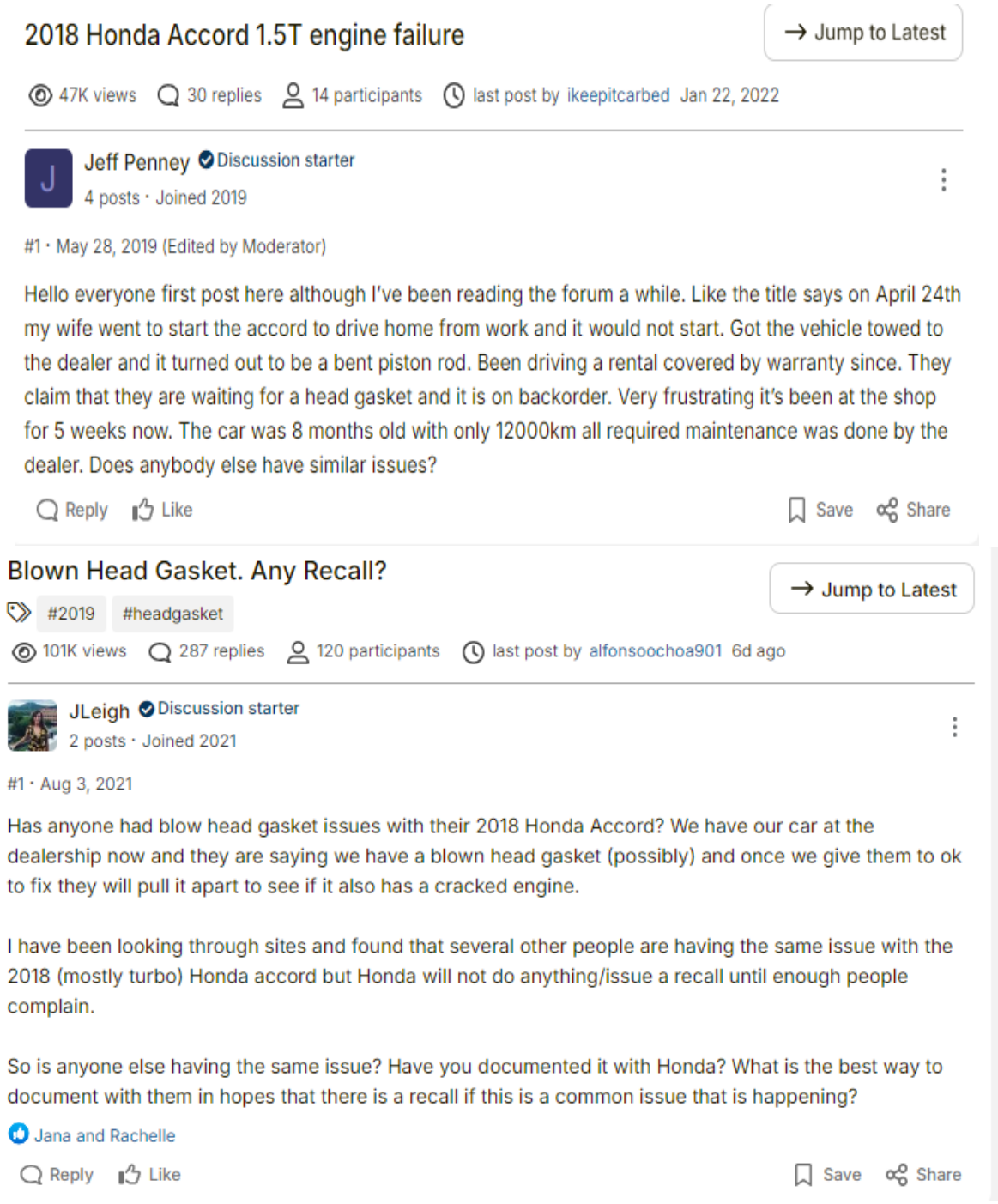
156. Honda also monitors social media platforms and online forums, including Honda-specific forums, which, upon information and belief, Honda monitors to track product performance and customer satisfaction. Accordingly, Honda is and was aware of the numerous, widespread complaints about the Engines in the Class Vehicles.

157. Owners and lessees of the Class Vehicles have also reported the Engine Defect on social media platforms and online forums, including Honda-specific forums such as "accordxclub.com"[65] and "Driveaccord.net."[66]

[65] https://www.accordxclub.com/threads/2018-honda-accord-1-5t-engine-failure.6664/?post_id=24588&nested_view=1&sortby=oldest#post-24588

[66] https://www.driveaccord.net/threads/blown-head-gasket-any-recall.559243/

158. Below are samples of complaints posted to those forums:



2018 Honda Accord 1.5T engine failure

→ Jump to Latest

47K views 30 replies 14 participants last post by ikeepitcarbed Jan 22, 2022

Jeff Penney Discussion starter

4 posts · Joined 2019

#1 · May 28, 2019 (Edited by Moderator)

Hello everyone first post here although I've been reading the forum a while. Like the title says on April 24th my wife went to start the accord to drive home from work and it would not start. Got the vehicle towed to the dealer and it turned out to be a bent piston rod. Been driving a rental covered by warranty since. They claim that they are waiting for a head gasket and it is on backorder. Very frustrating it's been at the shop for 5 weeks now. The car was 8 months old with only 12000km all required maintenance was done by the dealer. Does anybody else have similar issues?

Reply Like Save Share

Blown Head Gasket. Any Recall?

→ Jump to Latest

#2019 #headgasket

101K views 287 replies 120 participants last post by alfonsoochoa901 6d ago

JLeigh Discussion starter

2 posts · Joined 2021

#1 · Aug 3, 2021

Has anyone had blow head gasket issues with their 2018 Honda Accord? We have our car at the dealership now and they are saying we have a blown head gasket (possibly) and once we give them to ok to fix they will pull it apart to see if it also has a cracked engine.

I have been looking through sites and found that several other people are having the same issue with the 2018 (mostly turbo) Honda accord but Honda will not do anything/issue a recall until enough people complain.

So is anyone else having the same issue? Have you documented it with Honda? What is the best way to document with them in hopes that there is a recall if this is a common issue that is happening?

Jana and Rachelle

Reply Like Save Share

159. Honda knew that the Engine Defect was present in all Class Vehicles but has failed to recall them and provide an adequate remedy. Honda's unconscionable acts deprive Class Members of an adequate remedy, if one is devised and implemented.

160. **The Engine Defect renders the Class Vehicles inoperable and creates an unreasonable risk of injury or death to Plaintiff, Class Members, and others, and, thus, the Class Vehicles are not fit for their ordinary purpose.**

3. Warranty Data

161. **Honda also knew about the Engine Defect from its warranty data. Per the TREAD Act, Honda tracks customer complaints, vehicle diagnoses, and repairs from dealership technicians in a single, aggregated database.[67] Honda employs persons who monitor the database for repair trends, and engineering and management staff review such trends in regular meetings.[68] For every one complaint filed with NHTSA, Honda likely receives hundreds or thousands of related warranty claims.[69] Accordingly, Honda has likely received thousands of Engine Defect warranty claims from the start of production.**

162. Based on pre-production testing, pre-production design failure mode analysis, production design failure mode analyses, early consumer complaints made to Defendants' network of exclusive dealers, aggregate warranty data compiled from those dealers, repair order and parts data received from the dealers, consumer complaints to NHTSA, public consumer complaints made online, and the testing performed in response to the consumer complaints, Honda knew the Engine Defect

---

67 https://one.nhtsa.gov/nhtsa/announce/testimony/tread.html

68 https://static.nhtsa.gov/odi/rcl/2020/RCLRPT-20V439-2939.PDF

69 https://static.nhtsa.gov/odi/rcl/2017/RMISC-17V418-5009.pdf (zero field reports, 3,826 warranty claims).

was present in all Class Vehicles, but it has not disclosed the Engine Defect or provided an adequate repair to all Class Vehicles. Honda's halfhearted and unconscionable acts deprived and continues to deprive Plaintiff and Class Members of the benefit of their bargain. Had Plaintiff and Class Members known what Honda knew about the Engine Defect, they would not have purchased their Class Vehicles, or certainly would have paid less to do so.

163. Accordingly, Honda likely received hundreds or thousands of Engine Defect warranty claims starting as early as 2016.

164. Based on the voluminous count of early warranty complaints likely submitted to Honda and other sources, Honda likely knew of the Engine Defect well before the Class Vehicles were purchased by Class Members.

4. Honda's Manufacturer Communications Related to the Engine Defect

165. On October 4, 2017, Honda issued an inspection request to Authorized Honda Dealerships requesting to inspect certain 2016-2018 Civics and 2017-2018 CR-Vs for complaints of oil leaks from the head cover gasket.[70] No root cause was identified, and no repair was offered for customers suffering from the Engine Defect.[71]

166. On July 26, 2024, Honda issued a parts request[72] to Honda Authorized Dealerships for certain 2018-2022 1.5L's Accords, as well as 2017-2022 1.5Ls CR-V, and 2020-2020 CR-V FHEVs with customer complaints of the Malfunction Indicator Light (MIL) on with the DTC P030X (Cylinder Misfire Detected) stored. Honda also stated that customers may experience rough running of the engine.

167. A qualifier for the parts request was that "Head Gasket coolant leak to cylinder has been confirmed."[73] Honda offered technicians VISA gift cards for

---

70 Exhibit D.
71 *Id.*
72 Exhibit E.
73 Exhibit E.

reporting the qualifying failures, but no repair was offered to customers suffering from the Engine Defect.

168. On August 15, 2024, Honda issues a second parts request[74] to Honda Authorized Dealerships for certain 2018-2022 1.5's Accords, as well as 2017-2022 CR-V 1.5Ls, and 2020-2020 CR-V FHEVs with customer complaints of the Malfunction Indicator Light (MIL) on with the DTC P030X (Cylinder Misfire Detected) stored.

169. Again, a qualifier for the parts requests was that "Head Gasket coolant leak to cylinder has been confirmed."[75] No repair was offered for the customers suffering from the Engine Defect, but Honda again offered technicians VISA gift cards for reporting the qualifying failures.[76]

170. Despite knowledge of the Engine Defect, Honda did not offer repairs for customers suffering from the Defect, nor did Honda cover any attempted repairs under warranty.

5. Honda's Design Changes

171. Honda modified the short block design of the Class Vehicles starting for the 2019 Model Year (Part No. 10002-6A0-A01).[77]

172. However, this design change did not eliminate the root cause of the Engine Defect because the design continued to include grooves at the point where the engine's cylinder head attaches to the engine block.

173. Starting for the 2020 model year Accord, Honda introduced a modified head gasket design in an attempt to eliminate the Engine Defect. This design change was later implemented in the Civic and CR-V starting in model year 2021.

---

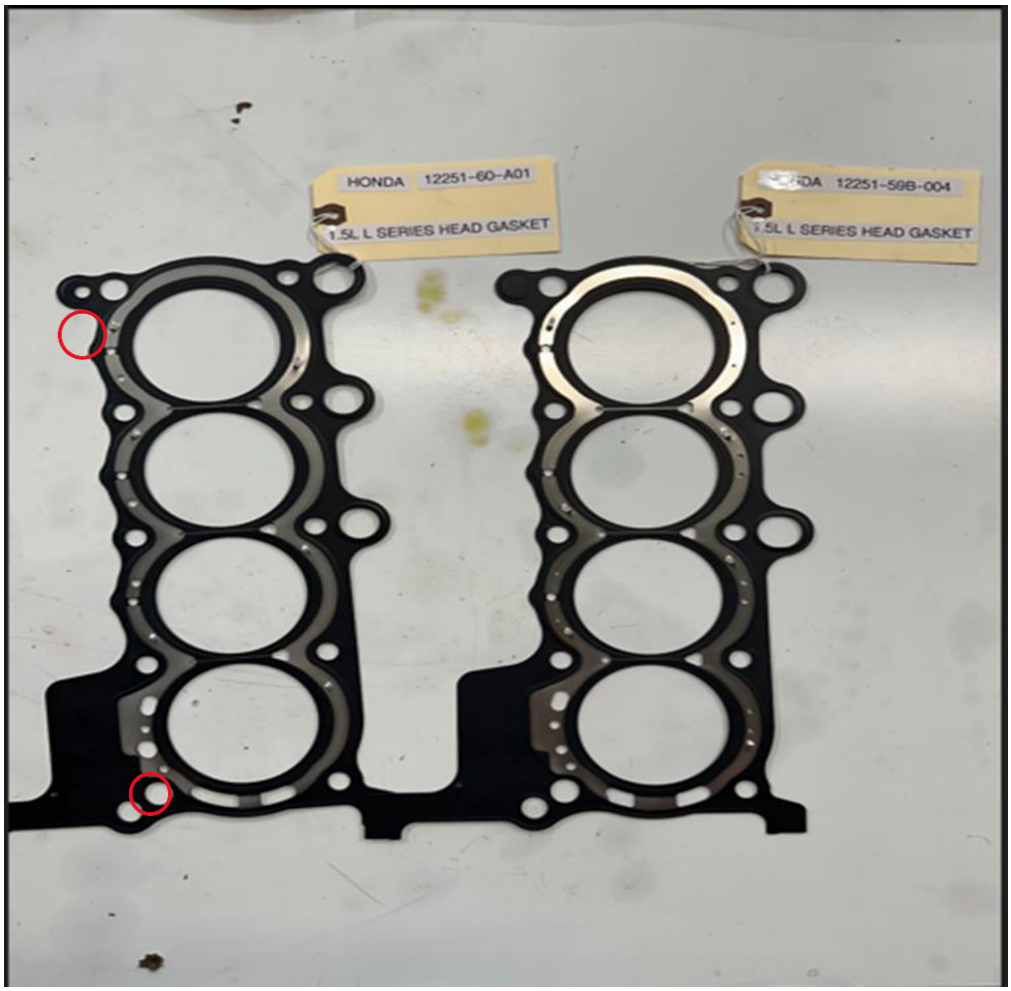
74 Exhibit F.

75 *Id.*

76 *Id.*

77 https://www.hondapartsnow.com/genuine/honda~general~assy~cylinder~block~10002-6a0-a01.html

174. For illustrative purposes, the below image contains the newly designed head gasket (left) and the previous head gasket design (right):



175. As highlighted above, the 2020 design change only modified the size and location of certain oil and coolant passages in an attempt to better manipulate oil and coolant flow.

176. However, through Plaintiff's independent automotive consultant's testing, this design change proved to be ineffective, and the Class Vehicles' engines continue to suffer from the Engine Defect.

177. Specifically, coolant continues to leak through the gasket, causing coolant to mix with engine oil, resulting in the engine overheating due to pressure build-up in the cooling system, potentially leading to significant engine damage.

178. The below image of a 2022 Honda Accord equipped with the 2020 head gasket design demonstrates the Engine Defect eroding the head gasket between the cylinder and combustion chambers leading to head gasket failure, among other things:

179. Finally, starting in the 2023 model year for the Class Vehicles, Honda introduced its second short engine block design change.[78]

180. Since the specifics of the 2023 design change are currently in the exclusive and superior possession of Honda, Plaintiffs can only confirm if the 2023

[78] https://www.hondapartsnow.com/genuine/honda~general~assy~10002-6a0-a02.html

model years and onward are free of the Engine Defect through discovery.

181. Because the Engine Defect is a latent defect, few failures for the Engine Defect for the 2023 to present Honda Accord, Civic, and CR-V model years have been reported. For this reason, those vehicles are not currently covered under the Class Vehicle definition.

182. The full scope of the Class Vehicles can only be properly determined through discovery.

E. Honda Touted the Safety, Quality, and Reliability of the Class V, Concealing the Engine Defect

183. Honda has operated in the United States since 1959, manufacturing and selling passenger cars such as the Accord and Civic, and light trucks such as the CR-V, since 1976, 1972, and 1997, respectively.

184. In its tenth generation, the Honda Accord underwent major changes in 2017, and Model Year 2018-2022 Accords now come standard with the 1.5-liter Turbocharged engine, depending on trim level.

185. Since 2015, the tenth-generation Civic sedan has been sold by Honda. Model Year 2016-2022 Civics come equipped with the 1.5-liter Turbocharged engine, depending on trim level.

186. In 2017, Honda introduced its fifth generation CR-V. Its Model Year 2017-2023 CR-Vs contain the 1.5-liter turbocharged engine, depending on trim level.

187. Through its network of over 1,000 dealerships across the United States,[79] Honda has become one of the top automakers in the United States in terms of sales.

188. In 2020 and 2021, Honda sold 1.34 million and 1.46 million vehicles, respectively.[80]

---

[79] https://hondanews.com/en-US/pages/honda-in-america

[80] https://www.best-selling-cars.com/usa/2021-full-year-usa-honda-and-acura-sales-by-model/#:~:text=Honda%20Brand%20Sales%20in%20the,top%2D selling%20Honda%20car%20 (last visited August 27, 2024)

189. In 2021, 95% of the Honda and Acura automobiles sold in the United States were produced in North America.[81]

190. The Accord has been Honda's third bestselling vehicle, selling over 199,000 vehicles and over 202,000 vehicles in 2020 and 2021, respectively.[82]

191. The Civic sold over 261,000 vehicles and over 263,000 vehicles in 2020 and 2021, respectively.[83]

192. The CR-V has been Honda's best-selling vehicle in the United States, selling over 333,000 vehicles in 2020, and over 361,000 vehicles in 2021.[84]

193. Honda is a large player in the United States auto-market based on its assurances to consumers of care, durability, and quality.

194. Consistent with its marketing and public statements, Honda falsely represents its vehicles as safe and dependable so that consumers can rely upon the build and quality of the vehicles for daily use.

195. Honda's overarching marketing message for the Class Vehicles was and is that it creates safe, efficient, and dependable vehicles. This marketing message is false, and misleading given the Engine Defect, which can cause the Class Vehicles' Engines to suffer from coolant leakage through the cylinder head surface into the adjacent combustion chambers, leading to overheating and blown head gaskets, among other component failures, as well catastrophic Engine failure.

196. Honda directly markets, for its benefit, the Class Vehicles to consumers via extensive nationwide multimedia advertising campaigns on television, the internet, billboards, print, mailings, social media, and other mass media, which impart a universal and pervasive marketing message: safe and reliable vehicles.

---

81 *Id.*

82 *Id.*

83 *Id.*

84 *Id.*

197. Honda dedicates a page on its website entitled "safety," where Honda represents the safety of its vehicles.[85] Therein, Honda states that it conducts "3D Model Testing," and touts that it has "developed an advanced safety visualization technology to create highly detailed three-dimensional models of a vehicle's crash safety structure."

198. Further, Honda states that "[f]or 50 years, Honda has built some of the most-praised vehicles on the road – and some of the safest," linking to a webpage listing Honda's lineup of awards.[86]

199. Honda further represents that it conducts "Virtual & Real-World Tests[,]" and touts that it has "developed two of the world's most advanced crash-test facilities – including the largest ever built and first to allow multi-directional crashes." Honda states that it also "dreamt bigger to digitally savvy used-car consumers (June 6, 2019), create some of the most advanced virtual crash tests in the world. All this combines to make safer roads for everyone."[87]

200. Notwithstanding the presence of the Defect in millions of Class Vehicles which prevents drivers from safely driving their cars, Honda calls itself "a mobility company–we move people. But, for us, safety is an enormous priority. We don't just want to move you; we want to move you safely."[88]

201. Honda claims that the safety testing procedures it utilizes "allows [Honda] to make the road safer for everybody on it by engineering for worst case scenarios in an unprecedented way."[89]

---

85 https://www.honda.com/safety

86 *Id.*

87 *Id.*

88 https://www.honda.com/safety/virtual-and-real-world-tests

89 *Id.*

202. Honda's website has a section devoted to safety, called "Safety For Everyone."[90] Therein, it includes promotional videos touting the pre-sale safety testing it conducts.

203. For example, the webpage includes a video interview with Bryan Hourt, Chief Engineer for North America Safety Strategy and Planning, in which he touts the various pre-sale tests that Honda conducts and its "development of core safety technologies."[91]

204. Honda's YouTube channel similarly displays a commercial titled "Each Honda is engineered with Safety for Everyone in mind," dated January 8, 2021.[92]

205. In the commercial, Honda's Manager/Principal Engineer of Crash Safety touts Honda's "safety for everyone philosophy." The video description reads, "[f]rom our own family members to yours, safety is a top priority when engineering our vehicles. When you or your loved ones get behind the wheel of a Honda, you're driving a vehicle that's been designed with Safety for Everyone in mind." [93]

206. A screenshot of the advertisement is included below.

///

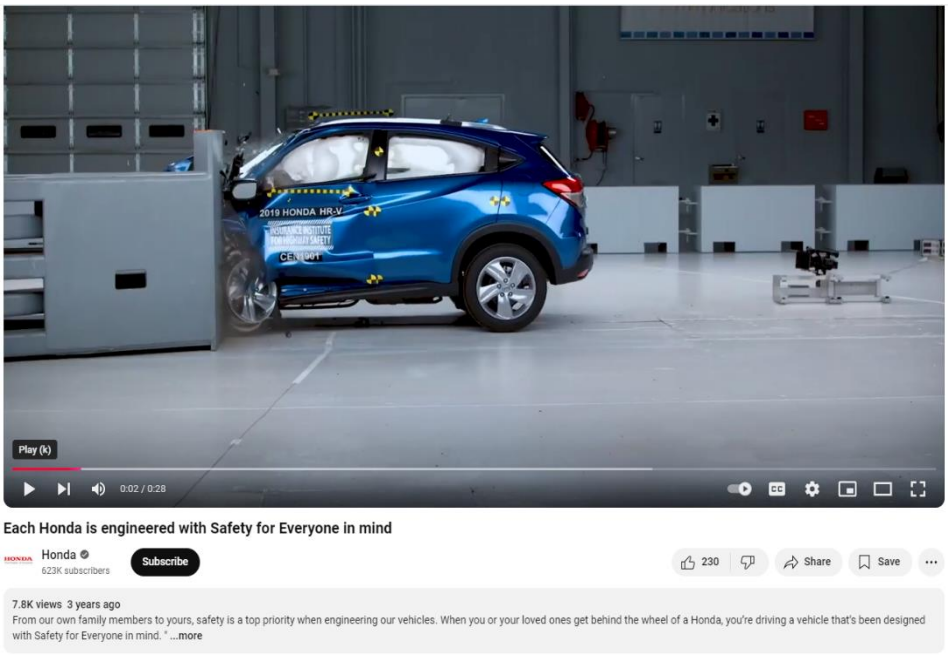
---

90 https://hondanews.com/en-US/safety

91 https://hondanews.com/en-US/safety/channels/channel-ca54ead83e3667d0b2045585b001b6d4?sortOrder=PublishedAscending&selectedTabId=channel

92 https://www.youtube.com/watch?v=t5VltkR4J_w

93 *Id.*



207. The consistently uniform marketing message from Honda concerning the reliability of its vehicles is also found in Honda's marketing brochures for the Class Vehicles.

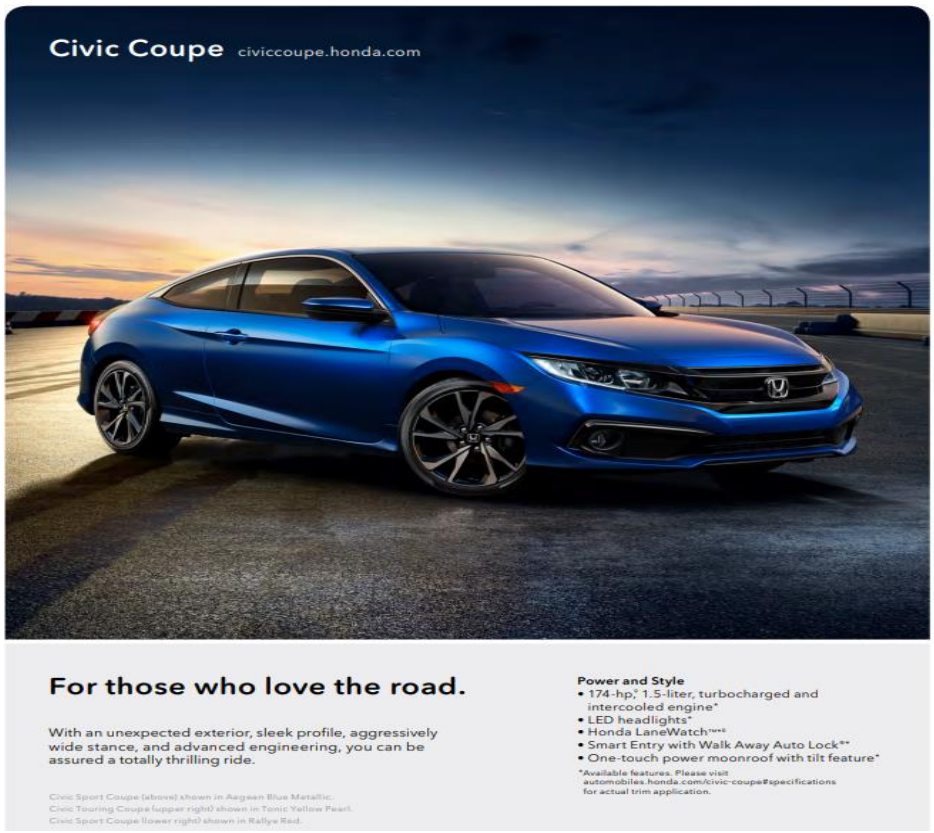
208. Featured prominently in Honda's marketing materials are claims of excellence in quality, design, safety, and reliability.

209. On information and belief, Honda requires its marketing brochures to be provided to prospective customers at its network of dealerships.

210. Advertised by Honda as "comfortable, secure[,]" and "impressive[,]" Honda touts the "1.5-liter, turbocharged and intercooled engine" found in 2022 Civic vehicles.[94]

211. Honda further claimed the 2021 Civic has "advanced engineering[,]" and noted the vehicle's "1.5-liter, turbocharged and intercooled engine[.]" An excerpt of the 2021 Honda Civic advertisement follows:

94 https://cdn.dealereprocess.org/cdn/brochures/honda/2022-civic.pdf



212. Honda makes similar claims throughout its brochures for the 2019 Civic, stating the vehicle is "[p]acked with cutting-edge technology[,]" including the "1.5-liter, turbocharged" engine.[95]

213. In the brochure for Honda's model year 2021 vehicles, Honda states the Accord is "[t]he most impressive Honda ever," with "more advanced features than ever," including "the latest technology."[96]

214. In a 2022 Honda Accord brochure, Honda emphasized its "dedicat[ion] to identifying and implementing advanced designs and features that help enhance the safety of drivers and passengers[.]"[97]

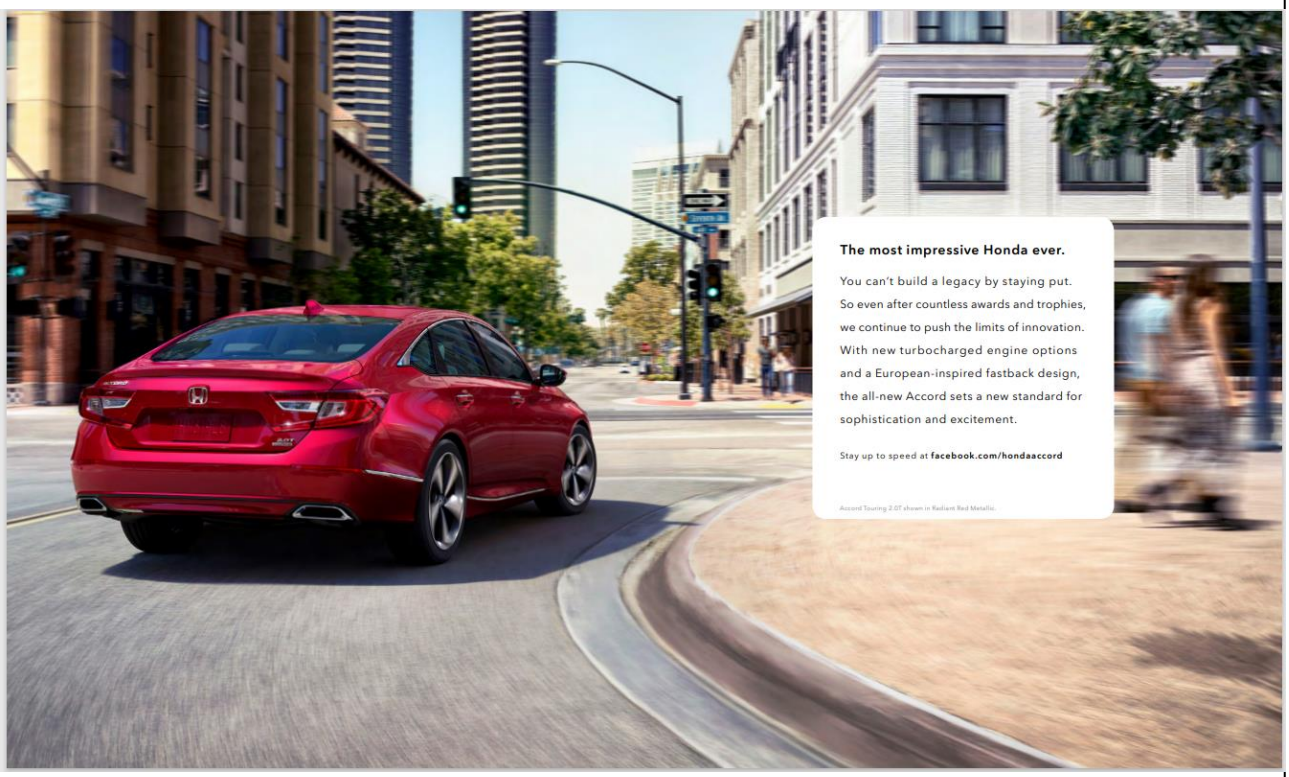
95 https://cdn.dealereprocess.org/cdn/brochures/honda/2019-civic.pdf
96 https://dealerinspire-brochure.s3.amazonaws.com/2021.pdf
97 https://cdn.dealereprocess.org/cdn/brochures/honda/2022-accord.pdf

215. Honda's 2018 brochure for the Accord makes similar claims, describing the "1.5-liter . . . turbocharged engine[ ]" as "[f]ast forward thinking," and the vehicle as "[a]t the forefront of safety."[98] The 2018 Accord brochure is copied below:

216. In addition, Honda stated that its 2021 Civic is "[a]n extraordinary ride . . . culminating in a driving experience not soon forgotten" because of its "advanced engineering[,]" and "suite of safety and driver-assistive features[.]" In light of all these purported safety features and attention to detail, Honda promises its drivers "[c]onfidence on the road."[99]

217. In its brochure for the 2018 Accord, Honda states that the vehicle is "[t]he most impressive Honda ever."[100]

98 https://cdn.dealereprocess.org/cdn/brochures/honda/2018-accord.pdf
99 https://cdn.dealereprocess.org/cdn/brochures/honda/2019-civic.pdf
100 https://pictures.dealer.com/rivertownhonda/8b4ec4800a0e0ca37432ffaa8919ba2f.pdf



218. Additional representations about reliability-related topics include affirmative promises that the vehicle was "[b]uilt for what-if" and is "[a]t the forefront of safety."[101]

219. Similarly, in a January 2020 tweet, Honda spotlighted the "impressive safety features" of its 2020 Honda Civic.

///

101 *Id.*

220. Honda's touting of the safety and reliability of the Class Vehicles while knowing of the Engine Defect and the Engines' gross underperformance is unfair and unconscionable.

221. Honda has marketed its products, including the Class Vehicles, as safe and reliable vehicles for years.

222. Although Honda markets the Class Vehicles as safe and reliable, in the field, the Class Vehicles fail to meet that promise. Instead, Honda omits the true nature of the Class Vehicles and the fact that the Class Vehicles suffer from the Engine Defect. Honda has never disclosed the Engine Defect to Plaintiff or the other Class Members.

223. Plaintiff and the other Class Members were exposed to Honda's pervasive and long-term marketing campaign touting the supposed quality, safety, and reliability of the Class Vehicles.

224. Plaintiff and the other Class Members, as any reasonable customer would, justifiably made their decisions to purchase or lease their Class Vehicles based, in material part, on Honda's misleading marketing, including affirmations of facts, promises, and representations, which also omitted any disclosure of the Engine Defect.

225. Honda has actively concealed the Engine Defect throughout the Class period despite its pervasive knowledge. Specifically, Honda has:

a. Failed to disclose, at and after the time of purchase, lease, and/or service, any and all known material defects of the Class Vehicles, including the Engine Defect;

b. Failed to disclose, at and after the time of purchase, lease, and/or service, that the Class Vehicles suffered the Engine Defect, were defective, and not fit for their intended purposes;

c. Failed to disclose, and actively concealed, the fact that the Class Vehicles suffered the Engine Defect and were defective, despite that Honda learned of the Engine Defect as early as 2016 or before, and certainly well before Plaintiff and the other Class Members purchased or leased their Class Vehicles; and

d. Failed to disclose, and actively concealed, the existence and pervasiveness of the Engine Defect even when Class Members directly asked about it during communications with Honda, Honda dealerships, and Honda service centers.

226. Honda also creates or approves much, if not all, of the marketing materials provided by a Honda-authorized dealership to consumers prior to or at the time of purchase. Honda, through its dealers and those marketing materials, could have disclosed the Engine Defect and the true nature of the Class Vehicles, but it

failed to do so. As a result of Honda's omissions of material facts at the point of sale, Plaintiff and Class Members were misled and have overpaid for their Class Vehicles.

F. Honda's Dealers Are Its Agents and Plaintiff and Class Members Are Third Party Beneficiaries

227. Honda controls its dealerships, and the dealerships act for the benefit of Honda.

228. Namely, Honda controls, among other things, what vehicles the dealerships sell; the number of vehicles supplied to dealerships (based on sales performance); how dealerships market the vehicles; what incentives and rebates a dealership can offer; the layout of dealerships, including logo placements; and how to diagnose and repair issues. Moreover, when dealerships sell the vehicles to consumers, they bind Honda to a contract (e.g., warranties).

229. Honda "sells" the vehicles to dealerships. Plaintiff and Class Members are third-party beneficiaries of these sales contracts between dealerships and Honda because the terms of the contracts, such as the warranties, are for the benefit of the end user, not the dealerships, and Honda designed, manufactured and marketed the Class Vehicles intending that they would be purchased by consumers such as Plaintiff and Class Members.

G. Honda Received Pre-Suit Notice Multiple Times and in Multiple Ways

230. Honda had extensive and exclusive notice of the Engine Defect, as detailed in Section D, *supra*, paragraphs 80-164. Additionally, given Honda's extensive and exclusive knowledge of the Engine Defect, its latency, and Honda's inability to repair it, any additional notice requirement would be futile.

231. However, Honda also had notice of Plaintiff's claims. At the time of filing this complaint, Plaintiff Bissell served Defendants a letter providing pre-suit notice and demand for corrective action concerning the defect at issue in this complaint. Exhibit G. The notice specifically described the defect at issue, stated the

notice was being sent pursuant to California Civil Code § 1782 and stated Defendants had breached warranties and violated California consumer statutes. The notice letter further stated that it was being sent on behalf of Chris Bissell and all other members of the Class as defined herein. Once the time-period set forth in California Civil Code section 1782(a) has expired after providing Notice and Demand to Defendant, Plaintiff will amend this cause of action to seek recovery of damages pursuant to California Civil Code section 1782(d).

H. Applicable Warranties

232. Honda issued a New Vehicle Limited Warranty for the Class Vehicles. Honda issued its Limited Warranty for the benefit of Plaintiff and Class Members, and for the purpose of persuading Plaintiff and Class Members to purchase the Class Vehicles.

233. Honda provides these warranties to buyers and lessees after the purchase/lease of the Class Vehicles is completed; buyers and lessees have no pre-sale/lease knowledge or ability to bargain as to the terms of the warranties.

234. The Class Vehicles sold and leased by Honda included a written express warranty, which provides: "All new Honda vehicles are covered by a 3-Year/36,000-Mile New Vehicle Limited Warranty, plus a 5-Year/60,000-Mile Powertrain Limited Warranty."[102]

235. Honda instructs vehicle owners and lessees to take their Class Vehicles to a Honda-certified dealership for warranty repairs. Many owners and lessees have presented their Class Vehicles to Honda-certified dealerships with complaints arising from the Engine Defect and have been denied a free repair.

[102] https://owners.honda.com/Documentum/Warranty/Handbooks/2022_Honda_Warranty_Basebook.pdf

236. Honda has evaded its warranty obligations by (1) failing to tell consumers that the Class Vehicles are defective, and (2) refusing to perform and/or failing to timely issue adequate repairs to correct the Engine Defect.

237. Moreover, Honda's warranty fails in its essential purpose because the company has failed to offer an effective and permanent repair for the Engine Defect. Rather, Honda simply replaces defective head gaskets and other failed components with equally defective head gaskets and other failed components and fails to correct and/or properly diagnose the underlying cause.

238. Honda has notice of its breach and fraud based on its actual and exclusive knowledge of the Engine Defect.

239. Moreover, Honda's failure to effectively repair the Engine Defect makes any notice requirement futile.

240. Both warranties are applicable to the Engine Defect; however, Honda has failed to correct the issue.

241. Under the terms of the New Vehicle Limited Warranty, Honda is required to "repair or replace any part that is defective in material or workmanship under normal use."

242. Each Class Vehicle's original engine is included in the New Vehicle Limited Warranty. This includes "[c]ylinder block and head and all internal parts, timing gears and gaskets, timing chain/belt and cover, flywheel, valve covers, oil pan, oil pump, intake and exhaust manifolds, engine mounts, engine/powertrain control module, water pump, fuel pump, seals and gaskets."[103]

243. The New Vehicle Limited Warranty period begins once "[t]he vehicle is delivered to the first purchaser by a Honda automobile dealer" or "[t]he vehicle is leased."[104]

---

103 *Id.*

104 *Id.*

244. Buyers and lessees have no pre-sale/lease knowledge or ability to bargain as to the terms of the warranties.

245. Honda's attempt to disclaim or limit these express warranties vis-à-vis consumers is unconscionable and unenforceable here. Specifically, Honda's warranty limitation is unenforceable because it knowingly sold or leased a defective product without informing consumers about the Engine Defect.

246. The time limits contained in Honda's warranty periods were also unconscionable and inadequate to protect Plaintiff and other Class members.

247. Among other things, Plaintiff and other Class members had no meaningful choice in determining these time limitations, the terms of which unreasonably favored Honda.

248. A gross disparity in bargaining power existed between Honda and other Class Members, and Honda knew of the Defect at the time of sale.

Tolling OF THE STATUTE OF LIMITATIONS

a. Discovery Rule Tolling

249. Plaintiff and the other Class Members could not have discovered through the exercise of reasonable diligence that their Class Vehicle was defective within the time period of any applicable statutes of limitation.

250. Neither Plaintiff nor the other Class Members knew or could have known of the Engine Defect in their Class Vehicles.

b. Fraudulent Concealment Tolling

251. Throughout the time period relevant to this action, Honda concealed from and failed to disclose to Plaintiffs and the other Class Members vital information about the Engine Defect described herein.

252. Indeed, Honda kept Plaintiff and the other Class Members ignorant of vital information essential to the pursuit of their claims. As a result, neither Plaintiff nor the other Class Members could have discovered the defect, even upon reasonable exercise of diligence.

253. Specifically, since at least 2016, Honda has been aware that the 1.5L engines installed in the Class Vehicles were defective.

254. Despite its knowledge of the defect, Honda failed to disclose and concealed, and continues to conceal, this critical information from Plaintiff and the other Class Members, even though, at any point in time, it could have done so through individual correspondence, media release, or by other means.

255. Honda affirmatively and actively concealed the Engine Defect when it continued marketing the Class Vehicles and introducing new vehicles with this engine, despite knowing that it was defective.

256. Plaintiff and the other Class Members justifiably relied on Honda to disclose the Engine Defect in the Class Vehicles that they purchased or leased, because that defect was hidden and not discoverable through reasonable efforts by Plaintiff and the other Class Members.

257. Thus, the running of all applicable statutes of limitation have been suspended with respect to any claims that Plaintiff and the other Class Members have sustained as a result of the defect, by virtue of the fraudulent concealment doctrine.

Estoppel

258. Honda knew about the Engine Defect since at least 2016.

259. However, Honda did not disclose the Engine Defect to Plaintiff or the other Class Members, nor did Honda warn Plaintiff and Class Members of the dangers of the Engine Defect.

260. Instead, Honda continued to mass-market the Class Vehicles solely for the purpose of generating revenues for Honda's benefit.

261. Honda still has not released a countermeasure to remedy the Engine Defect.

262. Because of Honda's unwillingness to provide adequate repairs, Plaintiff and Class Members were led to believe that no problem existed or that the issue was resolved, only to find out it would later fail again. Honda was merely replacing

defective components with other equally defective components, rather than eliminating the Engine Defect for good.

263. Honda was under a continuous duty to disclose to Plaintiff and the other Class Members the true character, quality, and nature of the Class Vehicles.

264. Honda knowingly concealed the true nature, quality, and character of the Class Vehicles.

265. Based on the foregoing, Honda is estopped from relying on any statutes of limitations in defense of this action.

CLASS ALLEGATIONS

266. Plaintiff brings this action as a class action pursuant to Federal Rule of Civil Procedure 23 on behalf of the following statewide class:

> California Class: All current and former owners or lessees of a Class Vehicle (as defined herein) that was purchased or leased in California.

267. Subject to additional information obtained through further investigation and discovery, the foregoing definitions of the Class may be expanded or narrowed by amendment or amended complaint or narrowed at class certification.

268. Excluded from the Classes are HML and AHM and any of their members, affiliates, parents, subsidiaries, officers, directors, employees, successors, or assigns; the judicial officers, and their immediate family members; and Court staff assigned to this case. Plaintiff reserves the right to modify or amend the Class definition, as appropriate, during the course of this litigation.

269. This action has been brought and may properly be maintained on behalf of the Classes proposed herein under the criteria of Rule 23 of the Federal Rules of Civil Procedure.

270. **Numerosity – Federal Rule of Civil Procedure 23(a)(1)**. The members of the Class are so numerous and geographically dispersed that individual joinder of all Class Members is impracticable. While Plaintiff is informed and believes that there are thousands of Class Members, the precise number of Class Members is unknown

to Plaintiff but may be ascertained from Honda's books and records. Class Members may be notified of the pendency of this action by recognized, Court-approved notice dissemination methods, which may include U.S. Mail, electronic mail, Internet postings, and/or published notice.

271. **Commonality and Predominance – Federal Rule of Civil Procedure 23(a)(2) and 23(b)(3)**. This action involves common questions of law and fact, which predominate over any questions affecting individual Class Members, including, without limitation:

a. whether Honda engaged in the conduct alleged herein;

b. whether Honda's alleged conduct violates applicable law;

c. whether Honda designed, advertised, marketed, distributed, leased, sold, or otherwise placed the Class Vehicles into the stream of commerce in the United States;

d. whether Honda misled Class Members about the quality of the Class Vehicles;

e. whether the Class Vehicles contain the Engine Defect;

f. whether Honda had actual or imputed knowledge about the alleged defect but failed to disclose it to Plaintiff and the other Class Members;

g. whether Honda's omissions and concealment regarding the quality of the Class Vehicles were deceptive in violation of state consumer protection laws;

h. whether Honda breached its express warranty to the Class Members with respect to the Class Vehicles;

i. whether Class Members overpaid for their Class Vehicles as a result of the Engine Defect alleged herein;

j. whether Class Members are entitled to damages, restitution, restitutionary disgorgement, equitable relief, statutory damages, exemplary damages, and/or other relief; and

k. the amount and nature of relief to be awarded to Plaintiff and the other Class Members.

272. **Typicality – Federal Rule of Civil Procedure 23(a)(3).** Plaintiff's claims are typical of the other Class Members' claims because Plaintiff and the other Class Members purchased or leased Class Vehicles with a uniform defect. Neither Plaintiff nor the other Class Members would have purchased the Class Vehicles, or would have paid less for the Class Vehicles, had they known of the Engine Defect in the Class Vehicles. Plaintiff and the other Class Members suffered damages as a direct proximate result of the same wrongful practices in which Honda engaged. Plaintiff's claims arise from the same practices and course of conduct that give rise to the claims of the other Class Members.

273. **Adequacy of Representation – Federal Rule of Civil Procedure 23(a)(4).** Plaintiff is an adequate Class representative because their interests do not conflict with the interests of the other members of the Class that they seek to represent, Plaintiff has retained counsel competent and experienced in complex class action litigation, and Plaintiff intends to prosecute this action vigorously. The Class's interests will be fairly and adequately protected by Plaintiff and their counsel.

274. **Declaratory and Injunctive Relief – Federal Rule of Civil Procedure 23(b)(2).** Honda has acted or refused to act on grounds generally applicable to Plaintiff and the other Class Members, thereby making appropriate final injunctive relief and declaratory relief, as described below, with respect to the Class Members as a whole.

275. **Superiority – Federal Rule of Civil Procedure 23(b)(3).** A class action is superior to any other available means for the fair and efficient adjudication of this controversy, and no unusual difficulties are likely to be encountered in the

management of this class action. The damages or other financial detriment suffered by Plaintiff and the other Class Members are relatively small compared to the burden and expense that would be required to individually litigate their claims against Honda, so it would be impracticable for the Class Members to individually seek redress for Honda's wrongful conduct. Even if the Class Members could afford litigation the court system could not. Individualized litigation creates a potential for inconsistent or contradictory judgments and increases the delay and expense to all parties and the court system. By contrast, the class action device presents far fewer management difficulties, and provides the benefits of single adjudication, economy of scale, and comprehensive supervision by a single court.

CLAIMS FOR RELIEF

COUNT 1

Breach of Express Warranty

U.C.C. § 2-313, *et seq*.

276. Plaintiff incorporates and realleges each preceding paragraph as though fully set forth herein.

277. Plaintiff brings this count on behalf of himself and the other Class Members.

278. Defendants marketed the Class Vehicles as safe, built to last, and reliable vehicles. Such representations formed the basis of the bargain in Plaintiff's and the other Class Members' decisions to purchase or lease the Class Vehicles.

279. Defendants are and were at all relevant times merchants and sellers of motor vehicles as defined under the Uniform Commercial Code.

280. With respect to leases, Defendants are and were at all relevant times lessors of motor vehicles as defined under the Uniform Commercial Code.

281. The Class Vehicles are and were at all relevant times goods within the meaning of the Uniform Commercial Code.

282. In connection with the purchase or lease of each of the Class Vehicles, Defendants provide warranty coverage for the Class Vehicles under one or more manufacturer's warranties. For illustrative purposes, all new Honda vehicles are covered by a 3-Year/36,000-Mile New Vehicle Limited Warranty, plus a 5-Year/60,000-Mile Powertrain Limited Warranty. Under warranties provided to Plaintiff and the other members of the Class, Defendants promised to repair or replace defective Engines and/or components arising out of defects in materials and/or workmanship, such as the Engine Defect, at no cost to owners or lessors of the Class Vehicles.

283. Defendants' warranties formed part of the basis of the bargain that was reached when Plaintiff and the other Class Members purchased or leased their Class Vehicles. The affirmations of fact and/or promises made by Defendants in the warranties are express warranties, became part of the basis of the bargain, and are part of a standardized contract between Plaintiff and the members of the Class on the one hand and Defendants on the other.

284. Despite the existence of the warranties, Defendants failed to inform Plaintiff and the other Class Members that the Class Vehicles contained the Engine Defect, and, thus, wrongfully transferred the costs of repair or replacement of the Engines to Plaintiff and the other Class Members.

285. Defendants have failed to provide Plaintiff or the other members of the Class with a meaningful remedy for the Engine Defect, in clear breach of the express warranty described above, promising to repair and correct a manufacturing defect or defect in materials or workmanship of any parts they supplied.

286. Plaintiff and the Class Members performed all conditions precedent under the contract between the parties.

287. As described above in paragraphs 230-231, Defendants were provided pre-suit notice of the Engine Defect, and as such have been afforded a reasonable opportunity to cure their breach of written warranties. Any additional time to do so

would be unnecessary and futile because Defendants have known of and concealed the Engine Defect and, on information and belief, have refused to repair or replace the Engines free of charge despite the Engine Defect's existence at the time of sale or lease of the Class Vehicles.

288. Defendants are in privity with Plaintiff and members of the Class. Plaintiff and Class Members, not the dealers, were the intended beneficiaries of Honda's Class Vehicles and the associated written warranties. Defendants designed and manufactured the Class Vehicles, and created the advertising, marketing, and representations at issue and warranted the Class Vehicles to Plaintiff and members of the Class directly and/or through the doctrine of agency. Defendants' sale of the Class Vehicles was through authorized dealers. Purchase or lease through authorized dealers is sufficient to create privity because such authorized sellers are Defendants' agents for the purpose of the sale and lease of the Class Vehicles. Further, Defendants knew the identity, purpose and requirements of Plaintiff and members of the Class and designed, manufactured and marketed the Class Vehicles to meet their requirements.

289. As a direct and proximate result of Defendants' breach of express warranties, Plaintiff and the other Class Members have been damaged in an amount to be determined at trial.

290. Finally, because of Defendants' breach of express warranty as set forth herein, Plaintiff and the other members of the Class assert, as additional and/or alternative remedies, the revocation of acceptance of the goods and the return to Plaintiff and the other Class Members of the purchase or lease price of all Class Vehicles currently owned or leased, and for such other incidental and consequential damages as allowed.

COUNT 2

Breach of Implied Warranty

U.C.C. § 2-314, *et seq*.

291. Plaintiff incorporates and realleges each preceding paragraph as though fully set forth herein.

292. Plaintiff brings this count on behalf of himself and the other members of the Class.

293. Plaintiff and the other Class Members purchased or leased the Class Vehicles from Defendants by and through their authorized agents for retail sales or were otherwise expected to be the eventual purchasers of the Class Vehicles when bought from a third party. At all relevant times, Defendants were the manufacturers, distributors, warrantors, and/or sellers of Class Vehicles. Defendants knew or had reason to know of the specific use for which the Class Vehicles were purchased or leased.

294. Defendants are and were at all relevant times merchants and sellers of motor vehicles as defined under the Uniform Commercial Code.

295. With respect to leases, Defendants are and were at all relevant times lessors of motor vehicles as defined under the Uniform Commercial Code.

296. The Class Vehicles are and were at all relevant times goods within the meaning of the Uniform Commercial Code.

297. Defendants impliedly warranted that the Class Vehicles were in merchantable condition and fit for the ordinary purpose for which vehicles are used.

298. The Class Vehicles, when sold or leased and at all times thereafter, were not in merchantable condition and are not fit for the ordinary purpose of providing safe and reliable transportation. The Class Vehicles contain the Engine Defect and present an undisclosed safety risk to drivers and occupants. Thus, Defendants breached their implied warranty of merchantability.

299. Plaintiff and the Class Members performed all conditions precedent under the contract between the parties.

300. As described above in paragraphs 230-231, Defendants were provided pre-suit notice of the Engine Defect, and as such have been afforded a reasonable opportunity to cure their breach of written warranties. Any additional time to do so would be unnecessary and futile because Defendants have known of and concealed the Engine Defect and, on information and belief, have refused to repair or replace the Engines free of charge despite the Engine Defect's existence at the time of sale or lease of the Class Vehicles.

301. Defendants are in privity with Plaintiff and members of the Class. Plaintiff and Class Members, not the dealers, were the intended beneficiaries of Honda's Class Vehicles. Defendants designed and manufactured the Class Vehicles, and created the advertising, marketing, and representations at issue and warranted the Class Vehicles to Plaintiff and members of the Class directly and/or through the doctrine of agency. Defendants' sale of the Class Vehicles was through authorized dealers. Purchase or lease through authorized dealers is sufficient to create privity because such authorized sellers are Defendants' agents for the purpose of the sale and lease of the Class Vehicles. Further, Defendants knew the identity, purpose and requirements of Plaintiff and members of the Class and designed, manufactured and marketed the Class Vehicles to meet their requirements.

302. As a direct and proximate result of Defendants' breach of the implied warranty of merchantability, Plaintiff and the other Class Members have been damaged in an amount to be proven at trial.

///

///

///

///

///

COUNT 3

Violation of the Song-Beverly Consumer Warranty Act

For Breach of Express Warranty

(Cal. Civil Code § 1790 *et seq.*)

303. Plaintiff incorporates by reference the allegations set forth in the preceding paragraphs as though fully set forth herein.

304. Plaintiff brings this cause of action on behalf of himself and on behalf of members of the Class who purchased, leased, or owned the Class Vehicles in the state of California.

305. Plaintiff and other Class members are "buyers" or "lessees" within the meaning of California Civil Code § 1791(b) and (h).

306. The Class Vehicles are consumer goods within the meaning of California Civil Code § 1791(a).

307. The Class Vehicles include new motor vehicles, as Civil Code section 1793.22, subdivision (e)(2), defines the term "new motor vehicle."

308. Honda is a "manufacturer" of the Class Vehicles within the meaning of California Civil Code § 1791(j).

309. Plaintiff and the other Class members bought or leased Class Vehicles manufactured by Honda.

310. Honda made an express warranty to Plaintiffs and the other Class Members within the meaning of California Civil Code §§ 1791.2 and 1793.2 as described above.

311. The Class Vehicles share a common design defect (i.e., the Engine Defect).

312. The Class Vehicles are covered by Honda's express warranty.

313. The Engine Defect substantially impairs the use, value, and safety of the Class Vehicles to reasonable consumers, including Plaintiff and the other Class Members.

314. As described above in paragraphs 230-231, Defendants were provided pre-suit notice of the Engine Defect, and as such have been afforded a reasonable opportunity to cure their breach of written warranties. Any additional time to do so would be unnecessary and futile because Defendants have known of and concealed the Engine Defect and, on information and belief, have refused to repair or replace the Engines free of charge despite the Engine Defect's existence at the time of sale or lease of the Class Vehicles.

315. Honda has had the opportunity to cure the defect in the Class Vehicles, but it has chosen not to do so. Giving Honda a chance to cure the defect is not practicable in this case and would serve only to delay this litigation unnecessarily.

316. As a result of Honda's breach of its express warranty, Plaintiff and the other Class Members received goods with substantially impaired value.

317. Plaintiff and the other Class Members have been damaged by the diminished value of the Class Vehicles resulting from the Engine Defect.

318. Pursuant to California Civil Code §§ 1793.2 and 1794, Plaintiffs and the other Class Members are entitled to damages and other legal and equitable relief including, at their election, the purchase price of their Class Vehicles or the overpayment or diminution in value of the vehicles.

319. Pursuant to California Civil Code § 1794, Plaintiffs and the other Class Members are also entitled to costs and attorneys' fees.

Count 4

Violation Of The Song-Beverly Consumer Warranty Act

For Breach Of Implied Warranty

(Cal. Civ. Code §§ 1790 et seq.)

320. Plaintiff Chris Bissell ("Plaintiff," for purposes of the California Class's claims) incorporate by reference each allegation as if fully set forth herein.

321. Plaintiff brings this Count individually and on behalf of the other members of the California Class (the "Class," for purposes of this Count).

322. Plaintiff and the other Class Members are "buyers" or "lessees" within the meaning of California Civil Code § 1791(b) and (h).

323. The Class Vehicles are "consumer goods" within the meaning of California Civil Code § 1791(a).

324. Honda is a "manufacturer" of the Class Vehicles within the meaning of California Civil Code § 1791(j).

325. Honda impliedly warranted to Plaintiff and the other Class Members that the Class Vehicles were "merchantable" within the meaning of California Civil Code §§ 1791.1(a) and 1792.

326. California Civil Code § 1791.1(a) provides that consumer goods must meet the following requirements in order to fulfill the implied warranty of merchantability: "(1) Pass without objection in the trade under the contract description; (2) Are fit for the ordinary purposes for which such goods are used; (3) Are adequately contained, packaged, and labeled; and (4) Conform to the promises or affirmations of fact made on the container or label."

327. The Class Vehicles would not pass without objection in the automotive trade because they share a common design defect (i.e., the Engine Defect), which causes the vehicles to, suddenly and without notice, become inoperable and undriveable.

328. Because of the Engine Defect, the Class Vehicles are not fit for their ordinary purposes.

329. The Class Vehicles were not adequately labeled because the labeling failed to disclose the Engine Defect.

330. As described above in paragraphs 230-231, Defendants were provided pre-suit notice of the Engine Defect, and as such have been afforded a reasonable opportunity to cure their breach of written warranties. Any additional time to do so would be unnecessary and futile because Defendants have known of and concealed the Engine Defect and, on information and belief, have refused to repair or replace

the Engines free of charge despite the Engine Defect's existence at the time of sale or lease of the Class Vehicles.

331. Honda has had the opportunity to cure the defect in the Class Vehicles, but it has chosen not to do so. Giving Honda a chance to cure the defect is not practicable in this case and would serve only to delay this litigation unnecessarily.

332. As a result of Honda's breach of the implied warranty of merchantability, Plaintiff and the other Class Members received goods with substantially impaired value. Plaintiff and the other Class Members have been damaged as a result of the diminished value of the Class Vehicles.

333. Under California Civil Code §§ 1791.1(d) and 1794, Plaintiff and the other Class Members are entitled to damages and other legal and equitable relief including, at their election, the purchase price of their Class Vehicles or the overpayment or diminution in value of the vehicles.

334. Pursuant to California Civil Code § 1794, Plaintiff and the other Class Members are also entitled to costs and attorneys' fees.

COUNT 5

Violation of California's Consumer Legal Remedies Act

(Cal. Civil Code § 1750, *et seq.*)

335. Plaintiff incorporates by reference each preceding paragraph as though fully set forth herein.

336. Plaintiff brings this claim on behalf of himself and the other members of the Class who purchased or leased Class Vehicles in states with state consumer laws that are similar to California's Consumer Legal Remedies Act (the "CLRA") as applied to the facts of this case, or, in the alternative, on behalf of members of the Class who purchased, leased, or owned the Class Vehicles in the state of California.

337. HML is a "person" as defined by California Civil Code § 1761(c). AHM is a "person" as defined by California Civil Code § 1761(c).

338. Plaintiff and the Class Members are "consumers" within the meaning of California Civil Code § 1761(d).

339. By failing to disclose and concealing the defective nature of the Class Vehicles' Engines from Plaintiff and the other Class Members, Defendants violated California Civil Code § 1770(a), as they represented that the Class Vehicles had characteristics and benefits that they do not have, represented that the Class Vehicles were of a particular standard, quality, or grade when they were of another, and advertised the Class Vehicles with the intent not to sell them as advertised. See Cal. Civ. Code §§ 1770(a)(5), (7) & (9).

340. Defendants' unfair and deceptive acts or practices occurred repeatedly in Defendants' trade or business, were capable of deceiving a substantial portion of the purchasing public, and imposed a serious safety risk on the public.

341. Defendants knew that the Class Vehicles' Engines suffered from an inherent defect, were defectively designed or manufactured, would fail prematurely, and were not suitable for their intended use.

342. Defendants were under a duty to Plaintiff and the other Class Members to disclose the defective nature of the Class Vehicles' Engines and/or the associated repair costs because: a) Defendants were in a superior position to know the true state of facts about the safety defect contained in the Class Vehicles' Engines; b) Plaintiff and the other Class Members could not reasonably have been expected to learn or discover that their Engines have a dangerous safety defect until after they purchased the Class Vehicles; and c) Defendants knew that Plaintiff and the other Class Members could not reasonably have been expected to learn about or discover the Engine Defect.

343. By failing to disclose the Engine Defect, Defendants knowingly and intentionally concealed material facts and breached their duty not to do so.

344. The facts concealed or not disclosed by Defendants to Plaintiff and the other Class Members are material because a reasonable consumer would have

considered them to be important in deciding whether to purchase the Class Vehicles, or to pay less for them. Had Plaintiff and the other Class Members known that the Class Vehicles' Engines are defective, they would not have purchased the Class Vehicles or would have paid less for them.

345. Plaintiff and the other Class Members are reasonable consumers who do not expect that their vehicles will suffer from a Engine Defect. That is the reasonable and objective consumer expectation for vehicles and their Engines.

346. As a result of Defendants' misconduct, Plaintiff and the other Class Members have been harmed and have suffered actual damages in that the Class Vehicles and their Engines are defective and require repairs or replacement.

347. As a direct and proximate result of Defendants' unfair or deceptive acts or practices, Plaintiff and the other Class Members have suffered and will continue to suffer actual damages.

348. As described above in paragraphs 230-231, Defendants were provided pre-suit notice of the Engine Defect, and as such have been afforded a reasonable opportunity to cure their breach of written warranties. Additionally, pursuant to Cal. Civ. Code § 1782(a), Defendants were notified in writing by certified mail of the particular violations of Section 1770 of the CLRA, which notification demanded that Defendants rectify the problems associated with the actions detailed above and give notice to all affected consumers of Defendants' intent to so act. A copy of the letter is attached hereto as Exhibit G.

349. If Defendants fail to rectify or agree to rectify the problems associated with the actions detailed above and give notice to all affected consumers within 30 days of the date of written notice pursuant to § 1782 of the CLRA, Plaintiff will amend this complaint to add claims for actual, punitive and statutory damages, as appropriate.

350. Defendants' conduct is fraudulent, wanton and malicious.

351. Plaintiff seeks all available relief under the CLRA for all violations complained of herein, including, but not limited to, damages, punitive damages, attorneys' fees and cost and any other relief that the Court deems proper.

352. Accordingly, Plaintiff and the other Class Members seek an order enjoining the acts and practices described above.

353. Pursuant to § 1780(d) of the CLRA, attached hereto as Exhibit H is the affidavit showing that this action has been commenced in the proper forum.

COUNT 6

Violation of California's Unfair Competition Law ("UCL")

(Cal. Bus. & Prof. Code § 17200, *et seq.*)

354. Plaintiff incorporates by reference each preceding paragraph as though fully set forth herein.

355. Plaintiff brings this claim on behalf of himself and the other members of the Class who purchased or leased Class Vehicles in states with state consumer laws that are similar to California's Unfair Competition Law (the "UCL") as applied to the facts of this case, or, in the alternative, on behalf of members of the Class who purchased, leased, or owned the Class Vehicles in the state of California.

356. As a result of their reliance on Defendants' omissions and/or misrepresentations, owners and lessees of the Class Vehicles suffered an ascertainable loss of money, property, and/or value in connection with the purchase or lease of their Class Vehicles. Additionally, as a result of the Engine Defect, Plaintiff and members of the Class were harmed and suffered actual damages in that the Class Vehicles are substantially certain to fail before their expected useful life has run.

357. California Business & Professions Code Section 17200 prohibits acts of "unfair competition," including any "unlawful, unfair or fraudulent business act or practice" and "unfair, deceptive, untrue or misleading advertising.

358. Defendants knew that the Class Vehicles' Engines suffered from an inherent defect, were defectively designed and/or manufactured, would fail prematurely, and were not suitable for their intended use.

359. In failing to disclose the Engine Defect, Defendants knowingly and intentionally concealed material facts and breached their duty not to do so, thereby engaging in a fraudulent business act or practice within the meaning of the UCL.

360. Defendants were under a duty to Plaintiff and the other members of the Class to disclose the defective nature of the Class Vehicles' Engines because: a) Defendants were in a superior position to know the true state of facts about the safety defect in the Class Vehicles' Engines; b) Defendants made partial disclosures about the quality of the Class Vehicles without revealing the defective nature of the Class Vehicles' Engines; and c) Defendants actively concealed the defective nature of the Class Vehicles' Engines from Plaintiff and the other Class Members at the time of sale/lease and thereafter.

361. The facts concealed or not disclosed by Defendants to Plaintiff and the other Class Members are material because a reasonable person would have considered them to be important in deciding whether to purchase or lease Defendants' Class Vehicles, or to pay less for them. Had Plaintiff and the other Class Members known that the Class Vehicles suffered from the Engine Defect described herein, they would not have purchased or leased the Class Vehicles or would have paid less for them.

362. Defendants continue to conceal the defective nature of the Class Vehicles and their Engines even after Plaintiff and the other Class Members began to report problems. Indeed, Defendants continue to cover up and conceal the true nature of this systematic problem today.

363. Defendants' omissions of material facts, as set forth herein, also constitute "unfair" business acts and practices within the meaning of the UCL, in that Defendants' conduct was injurious to consumers, offended public policy, and was unethical and unscrupulous. Plaintiff also asserts a violation of public policy arising

from Defendants' withholding of material safety facts from consumers. Defendants' violation of consumer protection and unfair competition laws resulted in harm to consumers.

364. Defendants' omissions of material facts, as set forth herein, also constitute unlawful business acts or practices because they violate consumer protection laws, warranty laws and the common law as set forth herein.

365. Defendants' acts, conduct, and practices were fraudulent, in that they constituted business practices and acts that were likely to deceive reasonable members of the public. Defendants' acts, conduct, and practices were fraudulent because they are immoral, unethical, oppressive, unscrupulous, and/or are substantially injurious to consumers.

366. Defendants' acts, conduct, and practices were unfair in that they constituted business practices and acts the utility of which does not outweigh the harm to consumers. Defendants' business acts and practices were further unfair in that they offend established public policy, are immoral, unethical, oppressive, unscrupulous, and substantially injurious to consumers.

367. A business practice is unlawful if it is forbidden by any law. Defendants' acts, conduct, and practices were unlawful, in that they constituted:

a. Violations of the California Consumers Legal Remedies Act;
b. Violations of the Song-Beverly Consumer Warranty Act;
c. Violations of the False Advertising Law;
d. Violations of Magnuson-Moss Consumer Warranty Act;
e. Violations of California Civil Code sections 1572, 1573, 1709, 1710 and 1711; and
f. Violations of the express and implied warranty provisions of California Commercial Code sections 2313 and 2314.

368. Thus, by their conduct, Defendants have engaged in unfair competition and unlawful, unfair, and fraudulent business practices.

369. Defendants' unfair or deceptive acts or practices occurred repeatedly in Defendants' trade or business and were capable of deceiving a substantial portion of the purchasing public.

370. As described above in paragraphs 230-231, Defendants were provided pre-suit notice of the Engine Defect, and as such have been afforded a reasonable opportunity to cure their fraud and breach of written warranties. Any additional time to do so would be unnecessary and futile because Defendants have known of and concealed the Engine Defect and, on information and belief, have refused to repair or replace the Engines free of charge despite the Engine Defect's existence at the time of sale or lease of the Class Vehicles.

371. As a direct and proximate result of Defendants' unfair and deceptive practices, Plaintiff and the other Class Members have suffered and will continue to suffer actual damages.

372. Defendants have been unjustly enriched and should be required to make restitution to Plaintiff and the other Class Members pursuant to sections 17203 and 17204 of the California Business & Professions Code.

COUNT 7

Unjust Enrichment

373. Plaintiff incorporates and realleges each preceding paragraph as though fully set forth herein.

374. Plaintiff brings this count on behalf of himself and the other members of the Class.

375. Plaintiff and the other members of the Class conferred a benefit on Defendants by leasing or purchasing the Class Vehicles. Defendants were and should have been reasonably expected to provide Class Vehicles free from the Engine Defect.

376. Defendants unjustly profited from the lease and sale of the Class Vehicles at inflated prices as a result of their false representations, omissions, and concealment of the Engine Defect in the Class Vehicles.

377. As a proximate result of Defendants' false representations, omissions, and concealment of the Engine Defect in the Class Vehicles, and as a result of Defendants' ill-gotten gains, benefits and profits, Defendants have been unjustly enriched at the expense of Plaintiff and the other Class Members. It would be inequitable for Defendants to retain their ill-gotten profits without paying the value thereof to Plaintiff and the other Class Members.

378. There is a direct relationship between Defendants on the one hand, and Plaintiff and the other Class Members on the other, sufficient to support a claim for unjust enrichment. Defendants, acting in concert, failed to disclose the Engine Defect to improve retail sales, which in turn improved wholesale sales. Conversely, Defendants knew that disclosure of the Engine Defect would suppress retail and wholesale sales of the Class Vehicles, suppress leasing of the Class Vehicles, and would negatively impact the reputation of Defendants' brand among Plaintiff and the other Class Members. Defendants also knew their concealment and suppression of the Engine Defect would discourage Plaintiffs and the other Class Members from seeking replacement or repair concerning the Engine Defect, thereby increasing profits and/or avoiding the cost of such replacement or repairs.

379. Plaintiff and the other Class Members are entitled to restitution of the amount of Defendants' ill-gotten gains, benefits and profits, including interest, resulting from their unlawful, unjust and inequitable conduct.

380. Plaintiff and the other Class Members seek an order requiring Defendants to disgorge their gains and profits to Plaintiff and the other Class Members, together with interest, in a manner to be determined by the Court.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff, individually and on behalf of the other Class members, respectfully request that the Court enter judgment in their favor and against Defendants Honda Motor Company Limited and American Honda Motor Co., Inc., as follows:

A. An order certifying the proposed Classes and designating the named Plaintiff as the named representative of the Classes and designating the undersigned as Class Counsel for the Class;

B. A declaration that the engines and/or related components in Class Vehicles are defective;

C. A declaration that Honda is financially responsible for notifying all Class Members about the defective nature of the Class Vehicles;

D. An order enjoining Honda to desist from further deceptive distribution, sales, and lease practices with respect to the Class Vehicles and directing Honda to permanently, expeditiously, and completely repair the Class Vehicles;

E. An award to Plaintiff and Class Members of compensatory, exemplary, and statutory penalties, damages, including interest, including overpayment and diminution in value damages, and punitive damages, in an amount to be proven at trial, as well as other damages available at law;

F. An award to Plaintiff and Class Members for the return of the purchase or lease price of the Class Vehicles, with interest from the time it was paid, the reimbursement of the reasonable expenses occasioned by the sale or lease, and damages;

G. A Defendant-funded program, using transparent, consistent, and reasonable protocols, under which out-of-pocket expenses and damages claims associated with the Engine Defect in Plaintiff's and Class Members' Class Vehicles, can be made and paid, such that Honda, not the Class Members, absorb the losses and expenses fairly traceable to the recall of the vehicles and correction of the Defect;

H. A declaration that Honda must disgorge, for the benefit of Plaintiff and Class Members, all or part of the ill-gotten profits they received from the sale or lease of the Class Vehicles, or make full restitution to Plaintiff and Class Members;

I. An award of attorneys' fees and costs, as allowed by law;

J. An award of pre-judgment and post-judgment interest, as provided by law;

K. Leave to amend this Complaint to conform to the evidence produced at trial; and

L. Such other relief as may be appropriate under the circumstances.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a trial by jury on all claims so triable.

Respectfully submitted,

Dated: December 6, 2024

BLOOD HURST & O'REARDON, LLP
TIMOTHY G. BLOOD (149343)
THOMAS J. O'REARDON II (247952)
PAULA R. BROWN (254142)
ADAM M. BUCCI (327312)

By: *s/ Timothy G. Blood*
TIMOTHY G. BLOOD

501 West Broadway, Suite 1490
San Diego, CA 92101
Tel: 619/338-1100
619/338-1101 (fax)
tblood@bholaw.com
toreardon@bholaw.com
pbrown@bholaw.com
abucci@bholaw.com

BEASLEY, ALLEN, CROW, METHVIN, PORTIS & MILES, P.C.
W. DANIEL "DEE" MILES, III *
H. CLAY BARNETT, III *
J. MITCH WILLIAMS *
DYLAN T. MARTIN *
TRENTON H. MANN *
218 Commerce Street
Montgomery, AL 36104
Tel: 334/269-2343
334/954-7555 (fax)
Dee.Miles@Beasleyallen.com
Clay.Barnett@BeasleyAllen.com
Mitch.Williams@Beasleyallen.com
Dylan.Martin@beasleyallen.com
Trent.Mann@BeasleyAllen.com

Attorneys for Plaintiff

EXHIBIT A

HONDA Service Bulletin 97-047

Applies To: **1988 – 95 Civic –** All, except VTEC

November 10, 1997

Head Gasket Leaks

(Supersedes 97-047, dated September 29, 1997)

PROBLEM

The head gasket leaks oil externally or allows coolant into the combustion chambers.

CORRECTIVE ACTION

Install the new-style cylinder head gasket **and** the new head bolts in the Cylinder Gasket Kit listed under PARTS INFORMATION. Use the cylinder head bolt torque sequence described in this bulletin.

PARTS INFORMATION

Cylinder Gasket Kit: H/C ***0031
Kit includes:
Cylinder Head Gasket (new-style):
P/N 12251-P01-004, H/C 4489530
Cylinder Head Bolts
(10 required, use with new-style gasket):
P/N 90005-PM3-004, H/C 2894988

WARRANTY CLAIM INFORMATION

In warranty: The normal warranty applies.

OP #	Description	FRT	Template ID
110130	Replace cylinder head gasket – *vehicles without power steering* (includes engine oil and filter change)	2.8	97-047A
110092	Test-drive	0.3	
110130B	Replace cylinder head gasket – *vehicles with power steering* (includes engine oil and filter change)	3.0	97-047B
110092	Test-drive	0.3	

NEW

Failed part: P/N 12251-PM5-S02
H/C 4032470

Defect code: 060

Contention code: B06

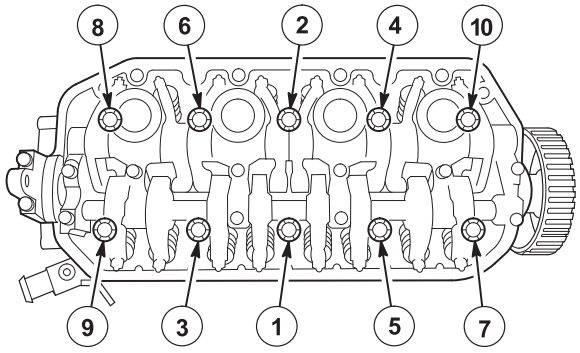
Skill level: Repair Technician

Out of warranty: Any repair performed after warranty expiration may be eligible for goodwill consideration by the District Service Manager or your Zone Office. You must request consideration, and get a decision, before starting work.

REPAIR PROCEDURE

1. Remove the cylinder head. (See *Cylinder Head Removal* in section 6 of the appropriate service manual.)
2. *Carefully* remove all gasket material from the head and the block with gasket solvent and a heavy duty scraper. The head and block mating surfaces must be clean, flat, and smooth for the new head gasket to seal properly.

   NOTE: *Do not* use power tools or abrasives to remove the gasket material; they would damage the head and block surfaces, causing the new head gasket to leak.
3. *Before the gasket solvent dries,* rinse any pieces of the gasket from the coolant passages in the head and block with water. You must remove all of the gasket material to prevent engine overheating.
4. Install the cylinder head with a new gasket. Do not use any gasket sealers.
5. Apply engine oil to the threads and washers of the new cylinder bolts. Install the bolts, and torque them in the sequence and steps shown below. *Do not use the head bolt tightening steps in the service manual.*



Cylinder head bolt torque sequence

Step 1. Tighten all 10 bolts to 20 N·m (14 lb-ft).
Step 2. Tighten all 10 bolts to 49 N·m (36 lb-ft).
Step 3. Tighten all 10 bolts to 67 N·m (49 lb-ft).
Step 4. Tighten bolts 1 and 2 to 67 N·m (49 lb-ft).

6. Reinstall the parts you removed to replace the head gasket. (See *Cylinder Head Installation* in section 6 of the appropriate service manual.)
7. Test-drive the vehicle, and check for external oil leaks.

Skill Level R REPAIR

CUSTOMER INFORMATION: The information in this bulletin is intended for use *only* by skilled technicians who have the proper tools, equipment, and training to correctly and safely maintain your vehicle. These procedures should not be attempted by "do-it-yourselfers," and you should not assume this bulletin applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Honda automobile dealer.

EXHIBIT B

New In-Line 4-Cylinder Gasoline Direct Injection Turbocharged Downsizing Engine

Koji NAKANO* Yusuke WADA*
Mitsutaka JONO* Shigeru NARIHIRO*

ABSTRACT

Two new models of in-line four-cylinder VTEC turbo engine have been developed as part of the cluster of new-generation power train technologies known as EARTH DREAMS TECHNOLOGY, which achieves a high-level balance between driving performance and fuel consumption. Both VTEC engines use high-tumble ports, valve timing control (dual VTC) of both intake and exhaust camshafts, multi-hole direct side injectors, and high-response turbochargers with attached electric waste gate actuator. With these technologies in common, the new engines successfully yield maximum thermal efficiency and power through cooperative control and turbocharging conditions based on combustion technology that uses high-tumble flow. The 1.5 L engine puts out the same 110 kW of maximum power as the 2.0 L naturally aspirated engine while increasing low- and medium-speed torque by a maximum of 30%. A vehicle with this engine installed achieved fuel consumption of 17 km/L in JC08 mode, which puts it at the top of the minivan class, and a 75% reduction relative to the level required by Japanese 2005 regulations for exhaust emissions. As a high-powered sport engine, the 2.0 L model achieves maximum output of 228 kW and maximum torque of 400 Nm. A vehicle with this engine installed achieved CO_2 emissions of 170 g/km in European fuel economy mode and Euro 6b compliance.

1. Introduction

Target values for fuel economy regulations have been set to be met in developed countries in North America, Europe, and elsewhere from 2020 to 2025, and in developing countries by 2015. As a technology that achieves a balance between compliance with those fuel economy regulations and product competitiveness, the downsizing turbocharged engine is being developed by OEM manufacturers in Europe, in particular, and is being marketed in Europe, the United States, and China. Honda has also issued press releases announcing global marketing of VTEC TURBO variations that are part of the cluster of new-generation power train technologies known as EARTH DREAMS TECHNOLOGY, which achieve a balance of driving performance and fuel consumption. The VTEC turbo engine provides greater torque, and it can achieve dynamic performance matched to the vehicle class even with a smaller displacement than naturally aspirated (NA) engines. The reduction of engine friction also makes it possible to increase fuel economy.

This VTEC turbo engine is scheduled for global marketing, to include the Europe market, and it is positioned as a world strategy engine intended to contribute to heightened fuel economy and increased product competitiveness. Figure 1 shows the EARTH DREAMS TECHNOLOGY line-up and the positioning of the two types of developed engine described herein.

This paper will introduce the applications of these technologies and the performance they achieve.

Fig. 1 EARTH DREAMS TECHNOLOGY

* Automobile R&D Center

2. Development Aims

The main aim of the downsizing turbocharged engine is to heighten fuel economy[1, 2]. Reducing displacement and actively using the high-load range at low engine speeds can lower the proportion of torque required for driving that is engine friction, thereby heightening fuel economy. The tendency of torque in the range of actual use as it differs with different engine displacements is shown in Fig. 2(a) and the tendency of friction at normal engine speeds is likewise shown in Fig. 2(b). On the one hand, these tendencies suggest that when engine displacement is changed from 2.0 L to 1.5 L, friction can be expected to decrease by approximately 30%, and fuel economy to increase. On the other hand, an increase of approximately 35% or more in torque will be required in order to maintain the same level of practical performance. That is why the engine is combined with a highly efficient turbocharger that yields effective turbocharged pressure in the low engine speed range to produce that part of the power accounted for by the reduced displacement.

In order to be competitive on the downsizing turbocharger market where European OEM manufacturers have gone first, development was carried out with the aim of achieving the top category in its class by balancing fuel economy, power, emissions (EM), and cost.

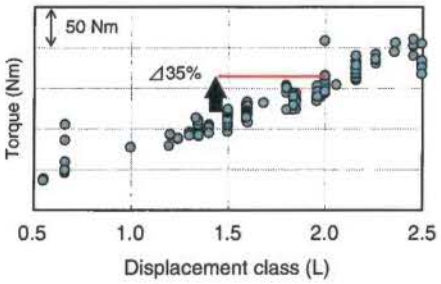
The newly developed 1.5 L downsizing turbocharged engine was intended to replace 1.8 L to 2.0 L displacement class NA engines. A compact turbocharger that delivers good response with peak torque from low engine speeds was selected, and the aim of development was defined as simultaneously achieving acceleration performance for ease of handling on city streets and top level power performance in its class together with low fuel consumption and low emissions.

The development objectives for the 1.5 L downsizing turbocharged engine were:

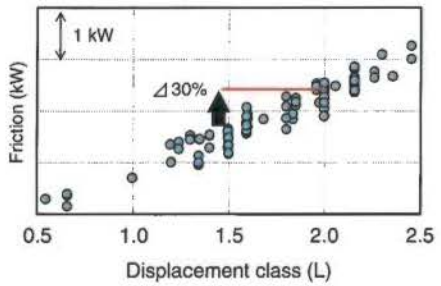
(1) A balance of high power and high torque at low engine speeds
(2) Low fuel consumption and low emissions at the top level in its class

The newly developed 2.0 L downsizing turbocharged engine, as a high-powered sport engine, was equipped with a large turbocharger. The aim of development was defined as achieving a balance between the world's highest speed for a front-engine, front-drive vehicle, based on lap times on the Nürburgring circuit, and excellent environmental performance.

The development objective for the 2.0 L downsizing turbocharged engine was to achieve a balance between the top class of per-liter power in the world and environmental performance.



(a) 2000 rpm wide open throttle engine



(b) 1500 rpm friction (partial)

Fig. 2 Improved fuel efficiency by downsizing turbo

3. Main Engine Specifications

The 1.5 L and 2.0 L VTEC turbo engines were made with the same bore pitch and other main specifications, and with the same block structure as the updated NA engine[3]. At the same time, the specifications were configured with the optimal combustion concept for turbocharged engines as the basis.

In a turbocharged engine, the rise in temperature of the compressed air-fuel mixture makes knocking more likely to occur, and even if the ignition timing is retarded for that reason because of the rapid combustion, it becomes important to obtain stable combustion. Therefore a high-tumble port was adopted to generate stronger tumble motion inside the cylinder and heighten the turbulent kinetic energy, and the piston crown was shaped so that the high tumble flow could be maintained until close to compression top dead center. The main combustion system was also configured with a multi-hole direct injector to form a homogeneous air-fuel mixture while limiting its adhesion to the surfaces of the piston and sleeve wall and with dual-VTC for optimal control of the scavenging effect and the amount of internal exhaust gas recirculation (EGR). Combining this with a high-response turbocharger achieved higher thermal efficiency and higher output.

The engines were matched to the requirements of the vehicles in which they are installed, and in the case of the 1.5 L type, the emphasis was placed on ease of handling on city streets and economy, and priority was therefore given to high low-speed torque and low fuel consumption. The 2.0 L turbocharged engine to be installed in the CIVIC TYPE R was configured with specifications to achieve maximum power performance

Table 1 Engine specifications

Engine type	1.5 L		2.0 L	
	Developed	BASE	Developed	BASE
Cylinder configuration	In-line 4-cylinder	In-line 4-cylinder	In-line 4-cylinder	In-line 4-cylinder
Bore x Stroke (mm)	73 x 89.4	73 x 89.4	86 x 85.9	86 x 86
Displacement (cm^3)	1496	1496	1996	1998
Aspiration	Turbocharged	Natural	Turbocharged	Natural
Turbin/Compressor diameter (mm)	37/46	no	47/58	
Crank journal diameter (mm)	46	46	55	55
Compression ratio	10.6	11.5	9.8	11.0
Valve train	DOHC In-Ex VTC	DOHCi-VTEC In VTC	DOHC In-Ex VTC	DOHC VTEC In-Ex VTC
Number of valves	4 per cylinder	4 per cylinder	4 per cylinder	4 per cylinder
Valve diameter (mm) Intake/exhaust	28/23	29/25	35/29	35/30
Engine oil	0W-20	0W-20	0W-20	5W-30
Fuel injection type	DI	DI	DI	PI
Fuel	RON91	RON91	RON95	RON95
Maximum Power (kW/rpm)	130/5500	97/6600	228/6500	148/7800
Maximum Torque (Nm/rpm)	230/1600-5000	155/4600	400/2500-4000	193/5600
Maximum thermal efficiency (%)	38.0	34.8	36.6	-

while maintaining a high level of environmental performance as a high-powered sport engine. Table 1 shows the main specifications of the engines.

The 1.5 L type runs on regular gasoline but has a compression ratio of 10.6, and achieves a high level of environmental performance with maximum thermal efficiency of 38% together with maximum torque of 203 Nm from 1600 rpm for low-speed characteristics that are favorable for usability on city streets. The 2.0 L type was equipped with a larger turbocharger in order to realize the top class of per-liter power in the world with maximum power of 228 kW, while at the same time achieving a balance with high-level environmental performance with maximum thermal efficiency of 36.6%.

Figure 3 shows comparisons of each engine with the base NA engine in terms of power performance. The 1.5 L type was a replacement for the 2.0 L NA engine, but it has the same maximum power of 110 kW while yielding low and medium-speed torque that is a maximum of 30% higher. In the case of the 2.0 L turbocharged engine, the base NA engine for the CIVIC TYPE R is a 2.0 L engine, so heightened performance was achieved in all areas with power 50% higher at maximum and torque 100% higher.

The substance of the technology adopted in order to achieve the balance of power performance and environmental performance described to this point will be described below.

4. Achieved Technology

4.1. Rapid Combustion Technology

In order to suppress knocking and enable high-load operation with a direct injection turbocharged engine, as well as to take steps to promote the evaporation of direct injected fuel and to make the air-fuel mixture homogeneous, and also to satisfy particulate matter (PM) regulations, it is important to strengthen the tumble motion inside the pipe. Ordinarily, tumble flow is strengthened by narrowing down the area of the intake port to increase the flow velocity inside the intake port, but this lowers the flow coefficient. Since the engine is also required to output power at high engine speeds, this requires enhancing the flow coefficient while maintaining the high-tumble flow. This optimization was carried out using CFD.

Figure 4 shows the differences in intake port and piston shape between the naturally aspirated and turbocharged 1.5 L engines.

The intake port lies closer to the horizontal than the angle of the port in the NA engine to realize an intake flow that follows the pentroof shape. The edge of the port at the bottom side (A in Fig. 4) is raised more toward the perpendicular, and this suppresses the opposing tumble flow inward from the opposite direction, limiting the lowering of the flow coefficient while realizing a high tumble ratio. Steps were then taken for rapid combustion by adopting a piston top with a shape that smoothly reverses the main tumble flow in the piston direction that occurs during the intake stroke and maintains the tumble flow until close to compression top dead center. Figure 5 shows the flow pattern in the cylinder at an engine speed of 1500 rpm and wide-open throttle as sought using CFD (VECTIS Ver. 3.12 from Ricardo). Figure 6 shows a comparison of the tumble ratio and turbulent kinetic energy.

A powerful flow in the direction of the piston was observed to form during the first half of the intake stroke (crank angle of 100 deg). This flow is reversed by the shallow-dish shape of the piston crown, forming a tumble flow. Tumble vortices observed during the compression stroke (crank angle of 270 deg) are flattened down into

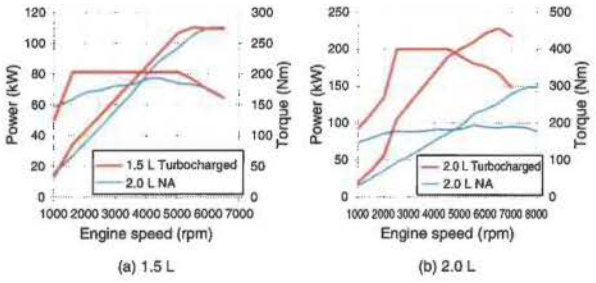


Fig. 3 Comparison of performance curve

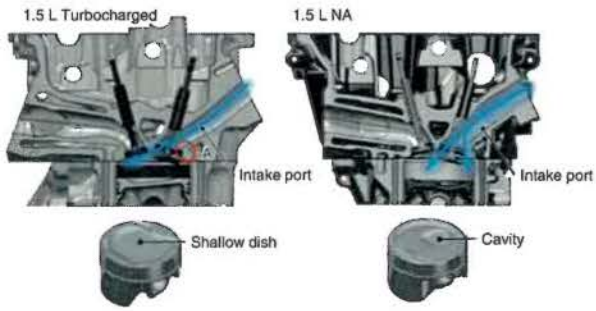


Fig. 4 Comparison of intake port and piston shape

the pentroof, are held there from 60 deg to 0 deg before top dead center, are converted into turbulent kinetic energy (turbulence), and promote flame propagation combustion. The turbulent kinetic energy near compression top dead center has approximately twice the value of the corresponding energy in an NA engine.

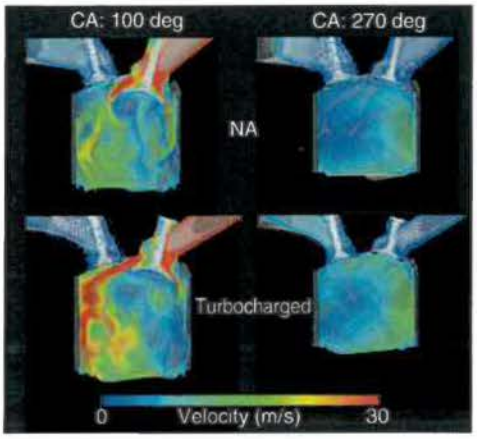


Fig. 5 In-cylinder flow pattern (1500 rpm motoring)

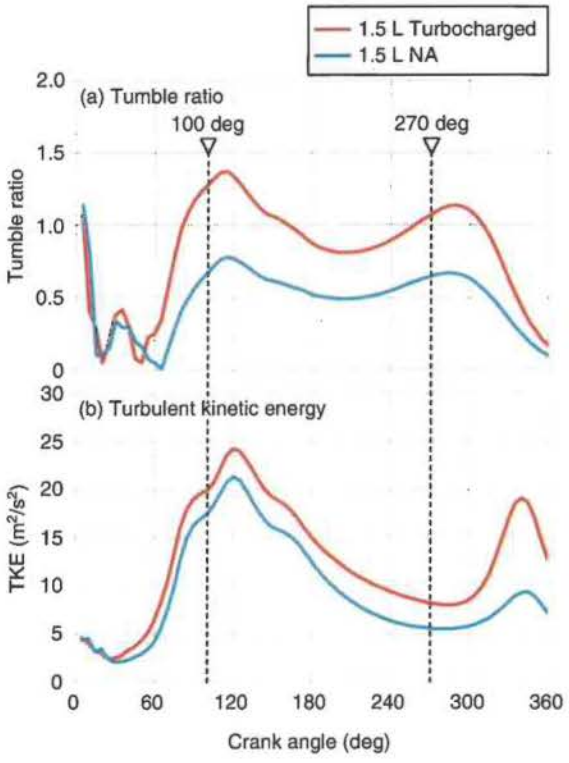


Fig. 6 In-cylinder flow pattern (1500 rpm motoring)

Table 2 Turbocharger specifications

		1.5 L	2.0 L
Turbocharger supplier		Mitsubishi	Mitsubishi
Turbine	Scrawl	Mono	Mono
	Wheel Diameter/Vane	ϕ37/11	ϕ47/11
	Permissible speed	245000 rpm	195000 rpm
	Housing material	A3K (austenitic cast steel)	A3K (austenitic cast steel)
Compressor	Wheel Diameter/Vane	ϕ46/6+6	ϕ58/6+6
	Permissible speed	241000 rpm	191000 rpm
Waste gate	Actuator	Electronic	Electronic
	Valve diameter	ϕ28	ϕ35

4.2. Turbocharger Technology

Single-scroll-type turbochargers were adopted and their optimal specifications were chosen according to their performance targets.

A cylinder head with integrated exhaust port was adopted for highly efficient cooling of exhaust gases together with a turbine housing made of cast stainless steel for high heat resistance. The aim was to raise high-load fuel economy by expanding the range in which driving in stoichiometric mode is possible. This established specifications capable of withstanding exhaust gases at temperatures up to 950°C without relying on enriching the air-fuel ratio to lower the exhaust gas temperature, even when the exhaust gases are at high temperatures. A newly developed electric waste gate actuator (E-W/G ACT.) was adopted as a means for heightening fuel economy under low-load conditions.

Table 2 shows the turbocharger specifications for each engine, and Fig. 7 shows an external view of the turbocharger. The 1.5 L type was configured as a compact turbocharger that emphasizes high torque and response from low engine speeds. For the 2.0 L type, a size was chosen to provide flow volume that satisfies the requirement for 228 kW power output. The compressor

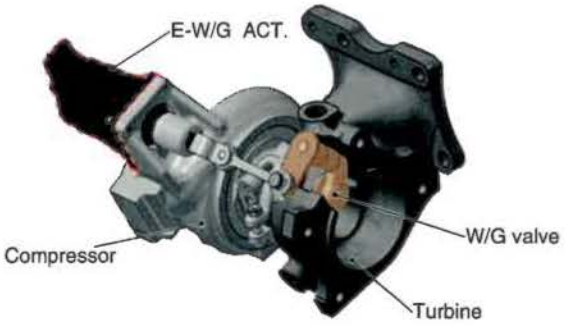


Fig. 7 Turbocharger assembly

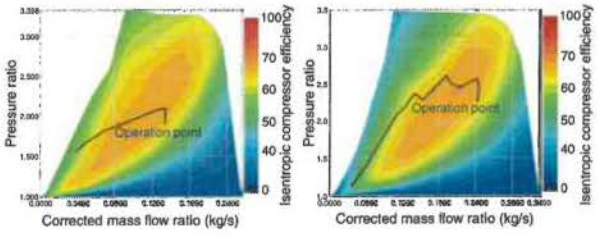
map for the 1.5 L engine is shown in Fig. 8(a) and for the 2.0 L engine in Fig. 8(b). The compressors were adopted each with its own broad flow volume range characteristics, allowing for an extra margin in the surge limit and speed limit with regard to operation points.

Figure 9 shows the E-W/G ACT. The E-W/G ACT. has a screw lead system in the thrust transmission unit of the waste gate valve (W/G valve) to provide greater retention by means of friction. Consequently, it is capable of retention with a smaller holding current even when the exhaust pressure is high.

The adoption of an E-W/G ACT. made it possible to set up and control the optimal turbocharged pressure by making use of the degree of freedom in opening and closing the W/G valve [Fig. 10(a)]. In the NA range, the W/G valve is set wide open to limit the difference between the pressure in the exhaust manifold and the pressure after the turbine. The reduction in the exhaust pumping loss yielded greater fuel economy. Cooperative control of the intake throttle and W/G valve aperture also generated torque according to the vehicle demand, and when it is excessive, the intake throttle aperture and W/G valve aperture are controlled according to the target turbocharged pressure, enhancing response [Fig. 10(b)].

With the former, positive-pressure W/G valve, the valve could not be opened unless the intake pressure (PBA) matched or exceeded the W/G valve set pressure. Consequently, the valve could not be opened in the NA high engine speed range, where the PBA is close to atmospheric pressure. The turbocharger was therefore made to do unproductive work, causing exhaust pressure to rise and increasing the pumping loss. Here, the adoption of an E-W/G ACT. avoids this issue (Fig. 11).

Figure 12 shows the rate of decrease in brake specific fuel consumption (BSFC) due to adoption of



(a) 1.5-L compressor efficiency map (b) 2.0-L compressor efficiency map

Fig. 8 Compressor efficiency map

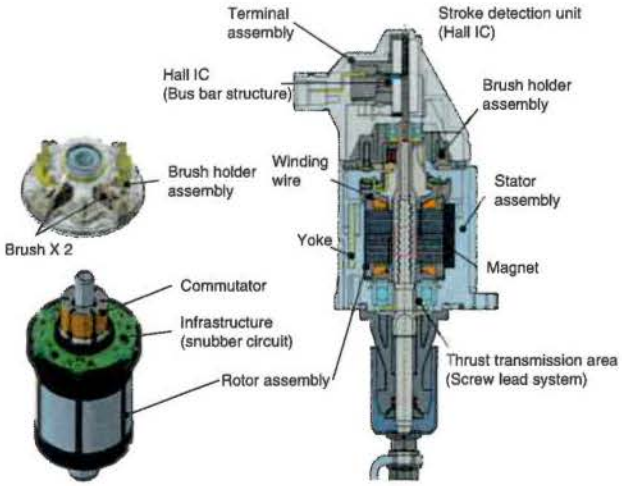
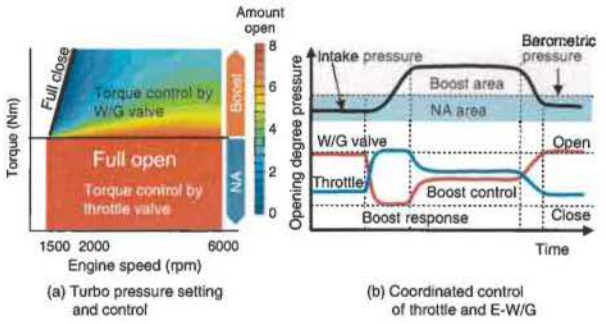


Fig. 9 E-W/G ACT.



(a) Turbo pressure setting and control (b) Coordinated control of throttle and E-W/G

Fig. 10 Coordinated control

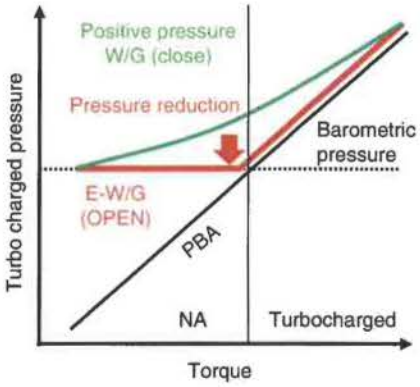


Fig. 11 Comparison of W/G valve specification

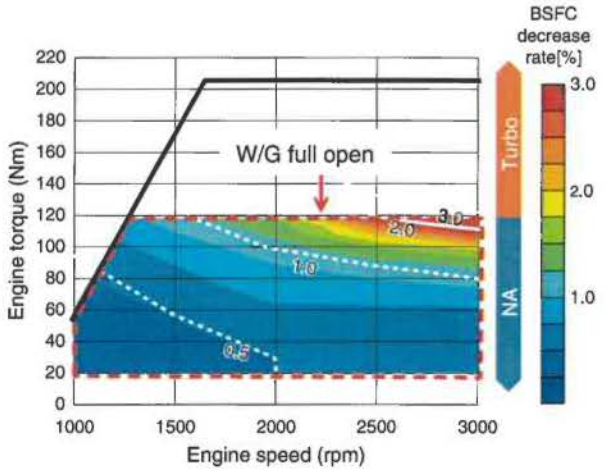


Fig. 12 BSFC decrease map

the E-W/G ACT. In the NA range, the positive impact on BSFC becomes greater on the higher engine speed side, where the exhaust flow increases, reaching a maximum of 3.0%.

4.3. Dual VTC Technology

Dual VTC was adopted for the 1.5 L type while the 2.0 L type additionally adopted VTEC on the exhaust side. Figure 13 shows some typical operating regions, and the following describes the use of valve timing control in these regions.

4.3.1. Low engine speed, high-load range

The region shown as (1) in Fig. 13 contributes greatly to response when a vehicle starts moving from a stop, and it requires greater low-speed torque. It is effective in that case to take advantage of the scavenging effect that uses the unique turbocharger condition in which the intake pressure is higher than the exhaust pressure. When the intake and exhaust valve overlaps are set larger under conditions where intake pressure is relatively high, the residual gas in the cylinder is scavenged to the exhaust system, and this can raise charging efficiency and suppress knocking (area (a) in Fig. 14).

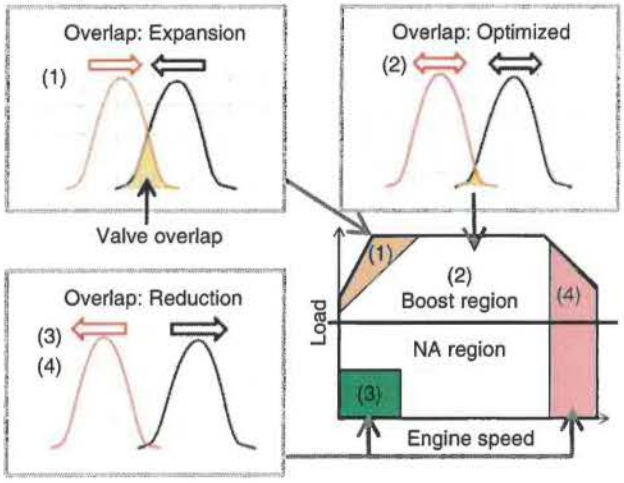


Fig. 13 Dual-VTC strategy

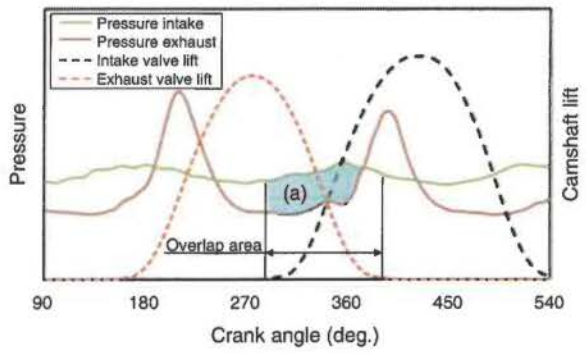


Fig. 14 Intake, exhaust pressure and scavenging area

At the same time, the increased gas flow due to scavenging can increase the turbine speed, yielding a 30% increase in torque at 1500 rpm relative to the 2.0 L NA engine.

Figure 15 shows a comparison of the pressure diagrams for the 2.0 L NA base engine and the 1.5 L turbocharged engine under full load at 1500 rpm. The decrease in stroke volume caused by downsizing is compensated for by the turbocharged pressure, so that high pressure is generated in a small stroke volume. The ignition timing is retarded in order to avoid the knocking due to increased pressure from turbocharging, but the rapid combustion produces a higher rate of heat release, which enables a higher indicated mean effective pressure (IMEP).

4.3.2. Medium engine speed range

In the medium to high engine speed range shown in graph (2) in Fig. 13, gradually reducing the overlap limits the increase in residual gas that accompanies increased exhaust pressure. When driving under acceleration, immediately controlling the electric waste gate valve to close completely makes it possible to raise the turbocharged pressure effectively.

4.3.3. Low vehicle speed and low engine speed range and high power range

In the low vehicle speed and low engine speed range shown in graph (3) in Fig. 13, the overlaps are reduced in order to heighten combustion stability by reducing the internal EGR amount as well as to lower exhaust resistance in the high-speed range at (4) and heighten knocking resistance.

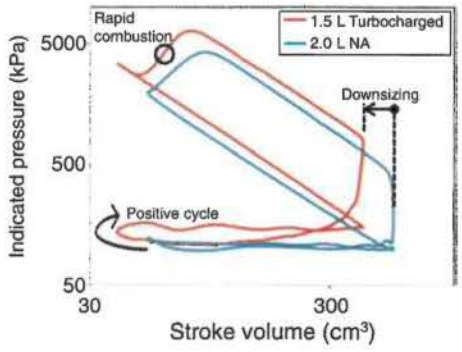


Fig. 15 Comparison of P-V diagram (1500 rpm WOT)

5. Fuel Consumption and Emissions

5.1. Fuel Consumption

Figure 16 shows the separate fuel consumption characteristics of each engine. The 1.5 L engine achieves the lowest BSFC of 220 g/kWh, and the 2.0 L engine achieves the lowest BSFC of 230 g/kWh. Comparison

with the separate fuel consumption characteristics of the 2.0 L NA engine, shown for reference at (b) in the figure, indicates not only that both the 1.5 L and 2.0 L engines have more favorable maximum efficiency point values, but that they have a broader range of higher efficiency.

The downsizing turbocharged engine can make active use of low engine speed and high-load operation. Therefore it is important to reduce fuel consumption in this range. Taking the 1.5 L engine as an example, Fig. 17 shows the breakdown of BSFC reduction under full load at 1500 rpm compared to the 2.0 L NA engine. In the case of the NA engine, the air-fuel ratio is set richer in order to increase power at wide-open throttle, and this avoids knocking. The downsizing turbocharged engine, on the other hand, increases its knocking resistance by means of rapid combustion and the scavenging effect, and therefore it can be operated stoichiometrically. Stoichiometric operation contributes 75% of the BSFC reduction effects, which is larger than cooling loss and pumping loss at 24% and friction reduction at 1%. Control of the internal EGR amount by dual VTC and stable combustion by means of a high-tumble flow also reduce pumping loss and yield lower fuel consumption across a wide load range up to the medium-load range. A 2015 model STEPWGN with this engine installed achieved fuel consumption of 17 km/L in JC08 mode, which puts it at the top of the minivan class. By means of similar technology, a vehicle with the 2.0 L engine installed achieved CO_2 emissions of 170 g/km in European fuel economy mode.

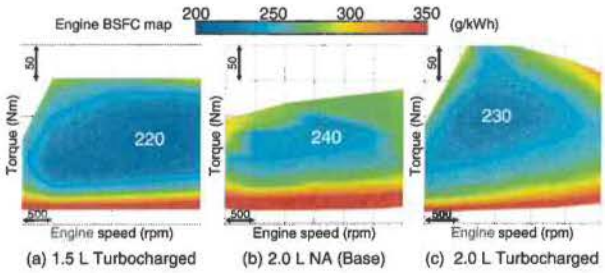


Fig. 16 Comparison of BSFC maps

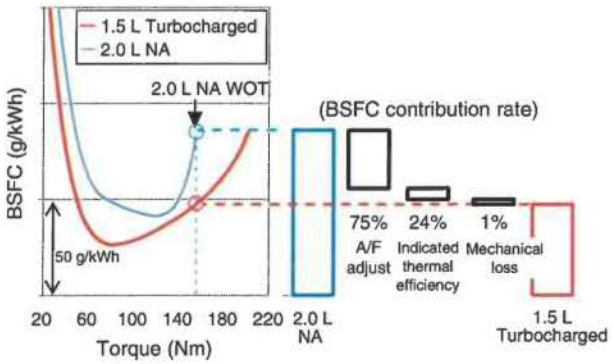
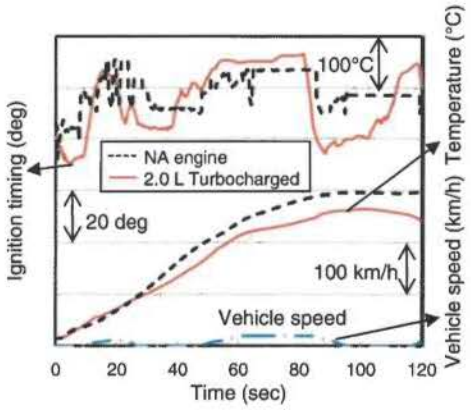


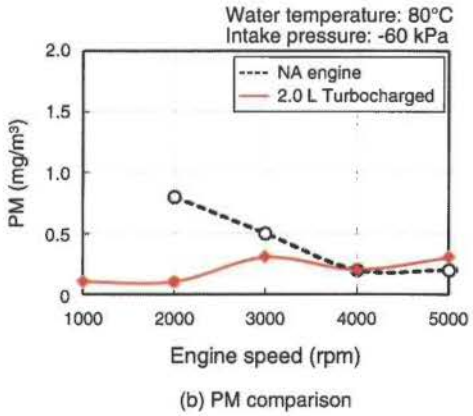
Fig. 17 Breakdown of BSFC reduction (1500 rpm WOT)

5.2. Low Emissions

In catalyst warm-up mode in a turbocharged engine, the increased heat mass due to the turbocharger becomes an issue. By contrast, the higher combustion stability gained by the use of a high-tumble port makes it possible to enlarge the valve overlap to introduce hot internal EGR into the combustion chamber, and this yields promotion of fuel evaporation. The ignition timing can also be retarded by comparison with the NA engine, making it possible to achieve a rise in catalyst temperature sufficient for application of Euro 6b [Fig. 18(a)]. With regard to soot emission performance after the engine is completely warmed up, the high-tumble flow and fuel injection pressure of 20 MPa together with optimal injection timing also successfully reduce the adhesion of fuel in the cylinder. Figure 18(b) shows measurement data for the 2.0 L engine. This engine achieved Euro 6b compliance by soot emission performance equal to or better than a mass-production direct injection NA engine. Using similar technology, the 1.5 L engine achieved a 75% reduction relative to the level required by Japanese 2005 regulations for exhaust emissions.



(a) Catalytic activity temperature comparison



(b) PM comparison

Fig. 18 Emission measurement data

6. Conclusion

A turbocharged downsizing engine employing a wide-range turbocharger with electric waste gate actuator, dual VTC, multi-hole direct side injector, and high-tumble port producing high-tumble flow was developed and obtained the following results.

(1) The 1.5 L engine raised low and medium-speed torque by a maximum of 30% relative to the 2.0 L NA engine while maintaining maximum power of 110 kW. A vehicle with this engine installed achieved fuel consumption of 17 km/L in JC08 mode, which puts it at the top of the minivan class, and a 75% reduction relative to the level required by Japanese 2005 regulations for exhaust emissions.

(2) As a high-powered sport engine, the 2.0 L engine achieved maximum output of 228 kW and maximum torque of 400 Nm. A vehicle with this engine installed achieved CO_2 emissions of 170 g/km in European fuel economy mode and Euro 6b compliance.

References

(1) Petitjean, D., Bernardini, L., Middlemass, C., Shahed, S. M.: Advanced Gasoline Engine Turbocharging Technology for Fuel economy Improvements, SAE Technical Paper, 2004-01-0988, (2004)

(2) Shahed, S. M., Bauer, K.: Parametric Studies of the Impact of Turbocharging on Gasoline Engine Downsizing, SAE Technical Paper, 2009-01-1472, (2009)

(3) Suzuki, M., Hayakawa, S., Ishihaya, Y., Shindo, T.: Development of the New L4 Gasoline Engine for Compact Cars, JSAE Annual Congress Proceedings, No. 91-14, p.9-12, (2014)

■ Author ■


Koji NAKANO


Yusuke WADA


Mitsutaka JONO


Shigeru NARIHIRO

EXHIBIT C

SAE INTERNATIONAL

2016-01-1020

Published 04/05/2016

Development of a New 1.5L I4 Turbocharged Gasoline Direct Injection Engine

Yusuke Wada, Koji Nakano, Kei Mochizuki, and Ryuichi Hata
Honda R&D Co., Ltd.

CITATION: Wada, Y., Nakano, K., Mochizuki, K., and Hata, R., "Development of a New 1.5L I4 Turbocharged Gasoline Direct Injection Engine," SAE Technical Paper 2016-01-1020, 2016, doi:10.4271/2016-01-1020.

Abstract

A 1.5 L downsizing turbocharged engine was developed to achieve both driving and environmental performance. The engine is intended to replace 1.8 - 2.4 L class NA engines. In downsizing turbocharged engines, mixture homogeneity is important for suppressing knocking and emission reduction. Particularly under high load, creating rapid combustion and a homogeneous mixture are key technologies. The authors used a long-stroke direct injection engine, which has outstanding rapid combustion and thermal efficiency, as a base engine meeting these requirements. They combined this with a high-tumble port and shallow-dish piston intended to support tumble flow. The combination enhanced flow within the cylinder. The combustion system was built to include a sodium-filled exhaust valve to reduce knocking and a multi-hole injector (six holes) for mixture homogeneity and to reduce the fuel wall wetting. The above combustion system is able to achieve high rates of in-cylinder pressure rise with its rapid combustion and therefore improves IMEP, even with a retard ignition timing setting at 1500 rpm full load. Dual VTC makes it possible to set the optimal intake and exhaust valve overlap and valve timing for the engine speed and load. The use of this in combination with the above-described combustion system achieved a minimum BSFC of 220 g/kWh and maximum thermal efficiency of 38%. This paper will also introduce the engine's output, fuel economy, its technologies for achieving lower emissions, reducing vibration and noise, and achieving light weight, and the performance of the finished vehicle.

Introduction

The authors' aims to develop engines that make it fun to drive while staying within environmental regulations, which are growing stricter worldwide. We developed a 1.5 L downsizing turbocharged engine to achieve both thermal efficiency and output performance. The engine is intended to replace 1.8 - 2.4 L class NA (Naturally Aspirated) engines. This paper will particularly examine the benefits of using this engine to replace the 1.8 L NA engine on the Honda CIVIC compact car. The following four development aims were set:

1. Realization of a new combustion system with an intake port producing a high-tumble in-cylinder flow;
2. Power characteristic producing abundant torque from the low-engine-speed range;
3. Class-topping fuel economy and emission performance; and 4) Excellent vibration and noise level through the use of a lightweight, high stiffness engine framework.

This paper will introduce the engine's specifications, combustion concept, output properties, fuel economy properties, lower emissions, vibration and noise reduction, light weight and vehicle performance.

Engine Specifications

As the base engine, the authors chose an existing 1.5 L NA engine [1] to achieve enhanced driving and fuel economy over the previous models of 1.8 L NA engine. The starting point of this development was to adopt this reference model of 1.5 L NA engine to achieve high thermal efficiency. Long-stroke structure can provide relatively fast intake flow, which increases turbulence in the combustion chamber. By this way, resulting in rapid combustion and suppressing the knocking [2]. Especially in case of turbocharged engines, the knocking countermeasure brings more thermal efficiency in the high boost pressure condition [3]. So, it would accomplish this by using a turbocharger with a long-stroke (stroke/bore = 1.22) and small-bore (φ73 mm) structure, which are advantageous for combustion as described above. Figure 1 shows that this downsizing turbocharged engine is better in terms of both thermal efficiency and BMEP. Engine specifications are given in Table 1, while Figure 2 shows the front view of the engine.

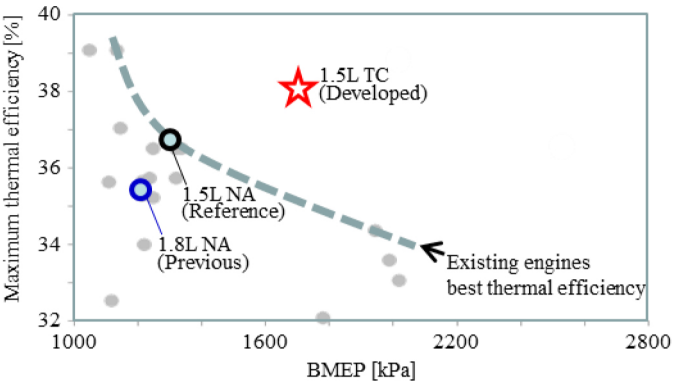


Figure 1. New 1.5 L downsizing turbocharged engine position. Three engines plotted in this graph correspond to the engines described in Table 1

Table 1. Engine Specifications

Engine	Previous	Developed	Reference
Cylinder configuration	In-line 4 cylinder	In-line 4 cylinder	In-line 4 cylinder
Displacement [cm^3]	1798	1496	1496
Bore [mm]	81	73	73
Stroke [mm]	87.3	89.4	89.4
Bore / Stroke [-]	1.07	1.22	1.22
Compression ratio [-]	10.6	10.6	11.5
Valve number In/Ex [-]	2/2	2/2	2/2
Valve diameter In/Ex [mm]	33/26	28/23	29/25
Crankshaft Main/Pin journal diameter [mm]	55/45	46/40	46/40
VTC	None	Dual VTC	In-VTC
External EGR system	Hot	None	Hot
Fuel injection system	Port injection	Direct injection	Direct injection
Fuel	Regular unleaded	Regular unleaded	Regular unleaded
Power [kW/rpm]	107/6500	130/6000	97/6600
Torque [Nm/rpm]	175/4300	220/1700-5500	155/4600

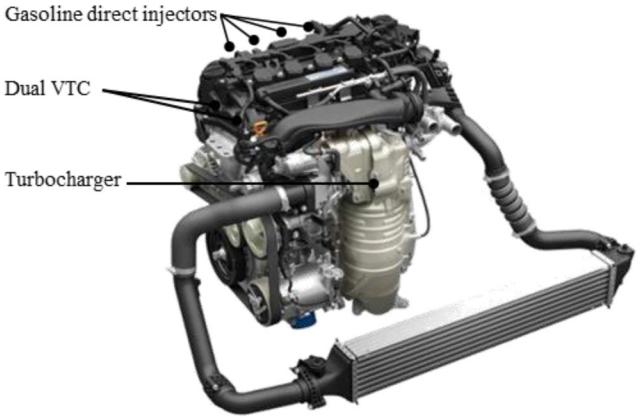


Figure 2. Front view of 1.5 L downsizing Engine

The use of dual VTC made it possible to optimally control intake/ exhaust valve overlap and valve timing for the load and engine speed. By adjusting the amount of internal EGR and the charge efficiency, enabling the engine to achieve the target fuel economy and output. Gasoline direct injectors were utilized for thermal efficiency improvement and homogeneous mixture formation described later. The engine was designed to run on regular gasoline that will become customer's benefit with a compression ratio of 10.6. To activate the exhaust catalyst early light off, a low heat mass construction was applied all the way from the exhaust valve to the catalyst (Figure 3). This structure includes a single scroll turbocharger directly mounted on the cylinder head integrated exhaust manifold, and, downstream from that, a close coupled 2 bed catalysts directly. The engine was tilted 7 deg towards the back, and these exhaust system components were placed in front of the engine.

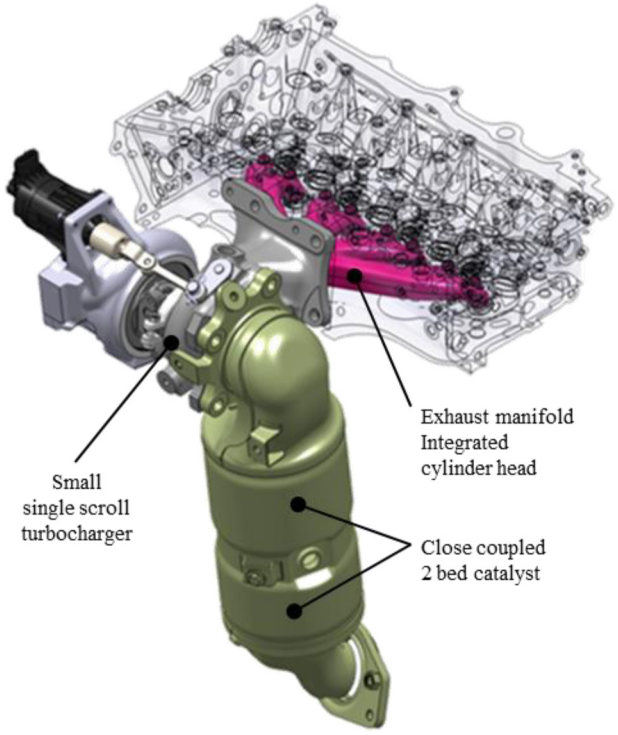


Figure 3. Low heat mass structure applied all the way from exhaust valves to catalyst

Combustion Concept

A combustion system was built combining a high-tumble port (to create rapid combustion and a homogeneous mixture under the high loads called for in a downsizing turbocharged engine), a shallow-dish piston (to support tumble flow), a sodium-filled exhaust valve (to reduce knocking), and a multi-hole injector (to reduce cylinder wall wetting of fuel) (Figure. 4).

Figure 4. The components of the combustion system

Figure 5 shows the relation of tumble ratio and flow coefficient. The positioning of the new intake port is high-tumble ratio as compared to other intake ports. Figure 6 shows the differences in intake port and piston shape in the 1.5 L NA engine used as the base and the turbocharged engine. Compared to that of the NA engine, the intake port of the turbocharged engine is more slant angle. Its air flow mostly follows a pent roof below the exhaust valves, and opposite air flow is restricted going into cylinder. This behavior is brought by an edge, called a jump-ramp (Detail A in Figure 6), which is set around intake port lower side connected to valve sheet. As a result, reverse tumble flow (i.e. air flowing back in the opposite direction) can be restricted.

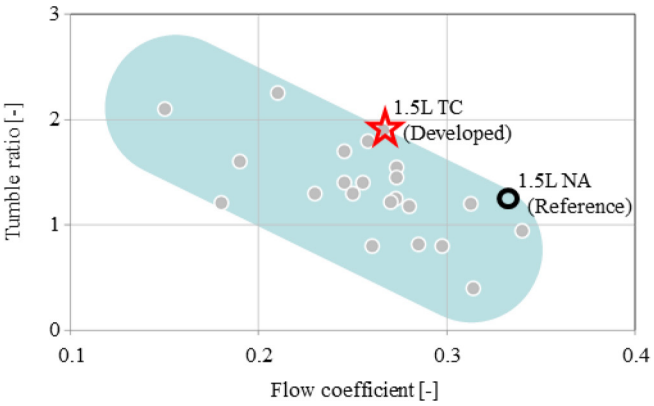


Figure 5. Adopted new tumble port position on the tumble ratio to flow coefficient diagram

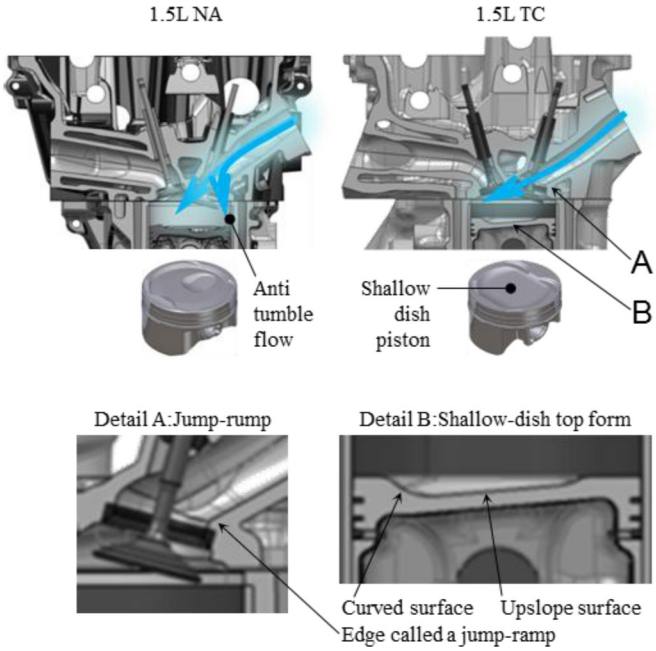


Figure 6. Intake port and piston shape comparison

The newly developed turbocharged engine also has shallow-dish pistons. This shallow-dish top form consists of gentle curved surface and upslope surface (Detail B in Figure 6). The curved surface is for the direction conversion of tumble downward flow during the intake stroke, and the latter upslope shape guides the flow direction toward the upward. In this way, the piston top form supports the tumble flow during compression stroke. Figure 7 shows the in-cylinder flow pattern at 1500 rpm full load as found by CFD (VECTIS Ver. 3.12, Ricardo). Figure 8 compares the tumble ratio and turbulent kinetic energy of the two engines. A strong flow is observed in the direction of the piston, which forms in the first half of the intake process (crank angle = 100 deg). The shallow-dish on the top face of the piston makes this flow reverse, creating a tumble vortex. The tumble vortex observed in the compression process (crank angle = 270 deg) is squeezed in the pent roof at 60 deg - 0 deg before the dead center on top and converted into turbulent kinetic energy (turbulence), which promotes flame propagation. Turbulent kinetic energy near the dead center of compression is about double that of a naturally aspirated engine.

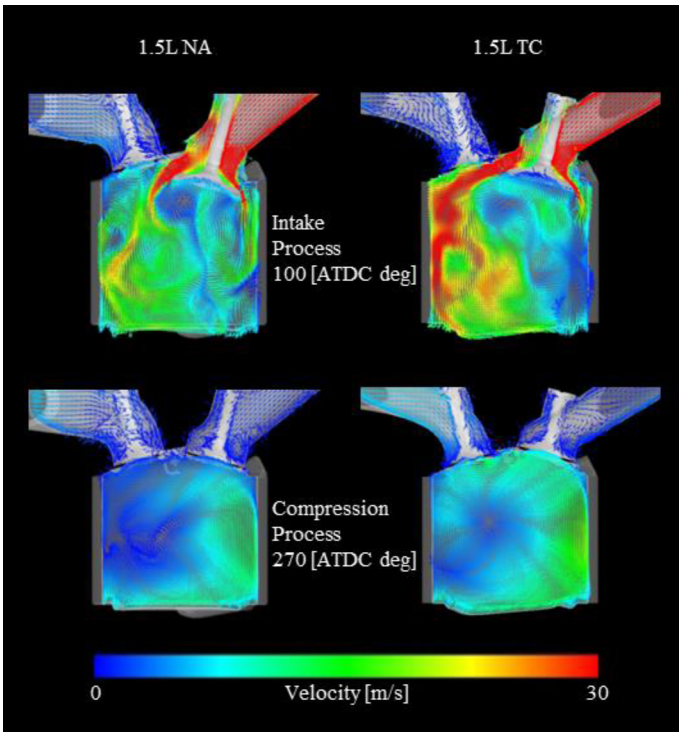


Figure 7. In-cylinder flow pattern (1500 rpm motoring)

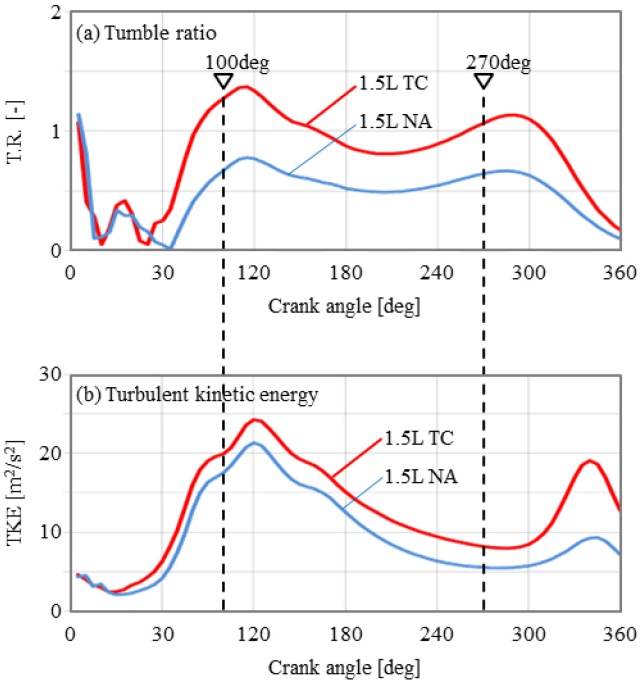
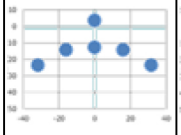
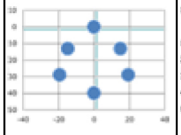
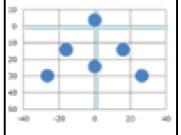


Figure 8. Tumble ratio and turbulent kinetic energy (1500 rpm motoring)

The direct injector chosen was of the multi-hole type, which offers a high degree of freedom to the spray pattern. The one chosen, in combination with the high tumble flow, was capable of reducing sleeve wetting (which affects oil dilution) and piston surface wetting (which results in soot). Table 2 shows some typical spraying patterns that were considered. Three spray directions were suggested based on the tumble mainstream direction in the intake stroke: upward (toward the sleeve), downward (toward the piston), and intermediate. Using CFD, these were selected as indicators of mixture homogeneity, and amount of fuel wall wetting. Type C was selected for this engine.

Table 2. Three types of offered fuel spray form. As for fuel spray layout figure of the table, x-axis value is the horizontal angular shift amount, and y-axis value is the vertical angular shift amount. Each shift amount is measured at 40 mm downstream from the injector tip with respect to the central axis of the injector.

	Type A	Type B	Type C
Fuel spray layout			
Piston impingement	++	-	++
Liner impingement	-	++	+
Homogeneity	++	-	+
Ranking	2	3	1
++:Good +:Average -:Poor			

Output Performance

The maximum output of 130 kW was a 21% increase over the 1.8 L NA engine. At the same time, torque rose by 26% while the engine speed decreased by 2600 rpm. Torque at 2000 rpm was about the same as that of a 2.4 L engine. This helps ensure easy handling in urban areas as well as enough output for comfortable high-speed acceleration (Figure 9). These results were possible because of the combustion specifications, the dual VTC, and the compact turbocharger with low inertia and high response.

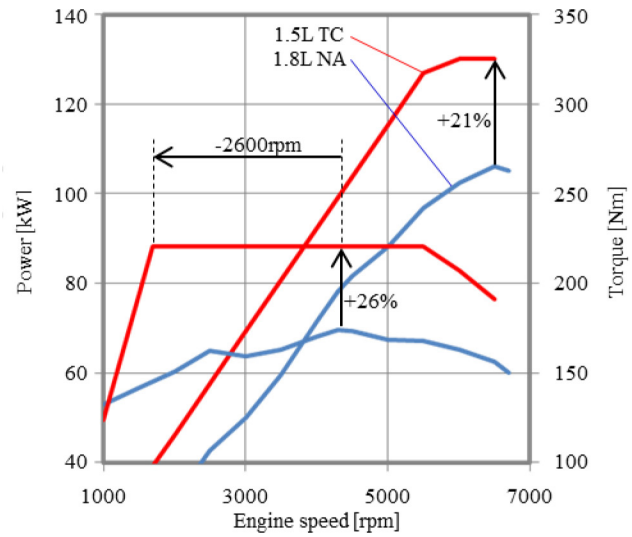


Figure 9. Comparison of performance curve

A unique aspect of turbochargers is that their intake pressure is greater than or equal to their exhaust pressure. The scavenged air effect, which takes advantage of this characteristic, is an effective means of increasing low-speed torque. Using a wide overlap period for the intake and exhaust valves under conditions of relatively high intake pressure scavenges residual gas from the cylinder to the exhaust system. This allows the cylinder to fill more flesh air charge and reduces knocking. At the same time, the flow of scavenged gas can increase turbine speed (Figure 10).

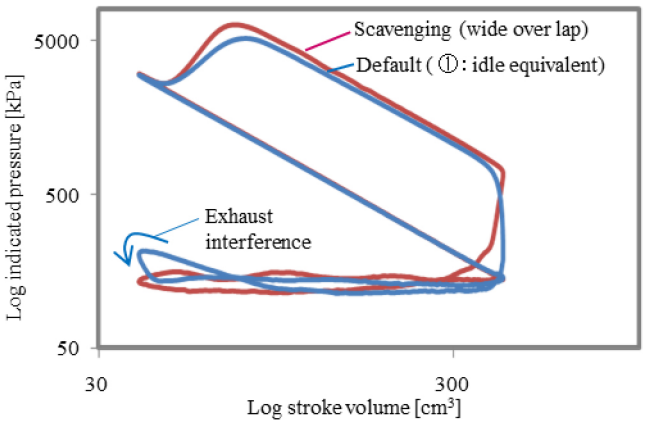


Figure 10. 1.5 L turbocharged engine scavenging effect 1500 rpm full load. (①: idle equivalent, see Figure 13)

As a result, the torque of the developed engine is about 30% higher than that of the 1.8 L NA at 1500 rpm. Moreover, by setting the exhaust air/fuel ratio for this scavenge timing stoichiometric, it is possible to clean the exhaust gas by catalyst. Figure 11 compares the cylinder pressure curves for the 1.8 L NA base engine and the 1.5 L turbocharged engine at 1500 rpm full load. The boost pressure makes up for the loss of IMEP from downsizing, meaning that high pressure is generated even with little stroke volume. Figure 12 shows that rapid combustion can achieve a high heat release rate even with the ignition timing retard that results from the rise in boost pressure.

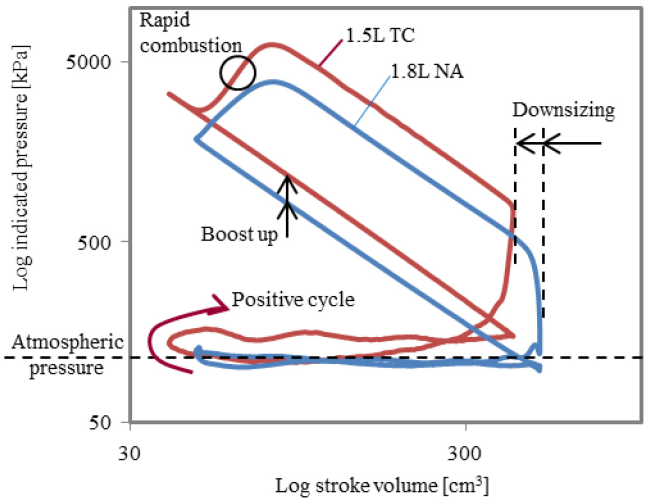


Figure 11. Comparison of P-V diagram 1.5 L turbocharged engine versus 1.8 L NA (1500 rpm full load)

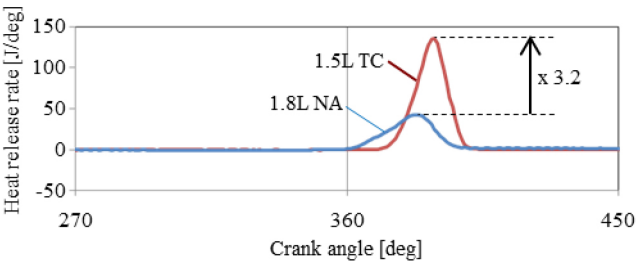


Figure 12. Comparison of heat release rate 1.5 L turbocharged engine versus 1.8 L NA (1500 rpm full load)

At medium and high engine speed in Figure 13, the amount of overlap gradually decreases from part 2 to part 4. This inhibits the increase in residual gas that would have resulted from rising exhaust pressure. During acceleration, the electric waste gate is controlled so that it completely closes immediately, making it possible to increase the boost pressure quickly.

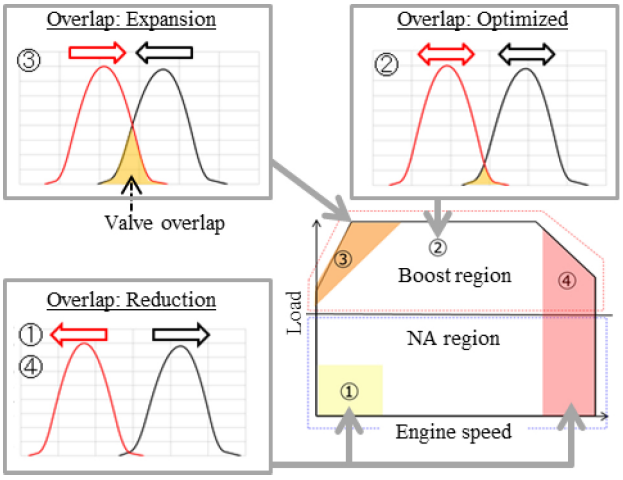


Figure 13. Dual VTC control strategy

Fuel Economy

Figure 14 compares BSFC maps for the 1.8 L NA engine and 1.5 L downsizing engine. It shows that the range of BSFC 240 g/kWh expands to include higher and lower torques and higher and lower engine speeds. The minimum BSFC for the developed engine is 220 g/kWh with a maximum thermal efficiency of 38%.

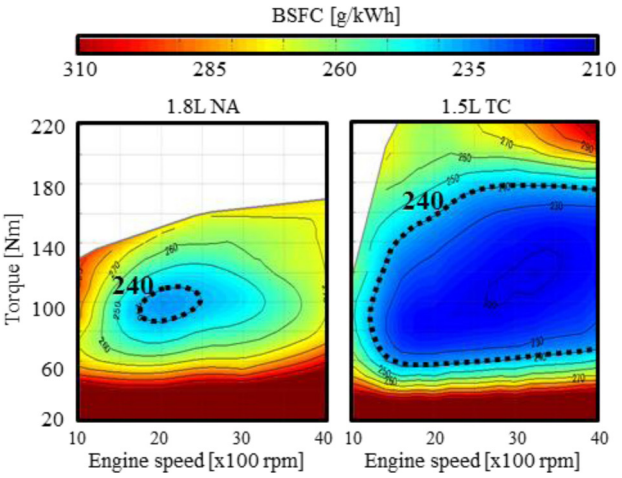


Figure 14. Comparison of BSFC map 1.5 L turbocharged engine versus 1.8 L NA

Therefore the development has met the target of reducing BSFC by 10% at 1500 rpm and 70 Nm, the mode center of gravity load for BSFC. In addition, because the downsizing engine is meant to replace an engine with higher displacement, it needs to provide good fuel economy, not just under everyday loads, but also high loads. Fuel economy in the developed engine at 1500 rpm at close to full load at 140 Nm decreased by 16% compared to the 1.8 L NA engine. That reduction is broken down in Figure 15.

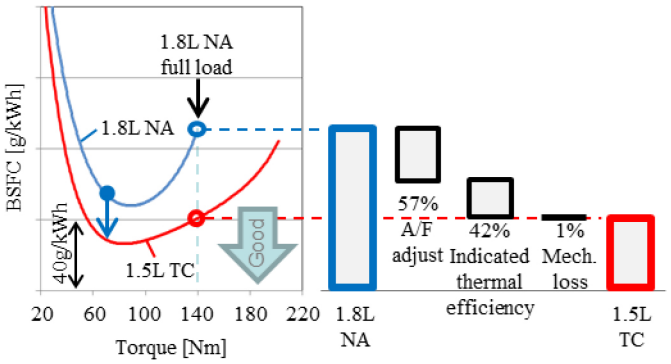


Figure 15. BSFC improvement factors (1500 rpm 1.8 L full load)

In an NA engine, the air/fuel ratio is enriched to increase output at full load. An increase in output of the downsizing turbocharged engine, however, is possible with some adjustment of the boost pressure. With the developed engine, BSFC can be improved by 57% by making the air-fuel ratio stoichiometric. Indicated thermal efficiency resulting from reduced cooling loss and pumping loss resulted in a 42% improvement, and reduced friction resulted in a 1% improvement. The dual VTC played a major role in the above-described improvement of fuel economy across a wide range of loads. Providing the optimal internal EGR enhanced thermal efficiency. On the other hand, it was predicted that making so much use of internal EGR would lead to the issue of deposits building up on the intake valve and port surface. One factor in this is the oil mist contained in blow-by gas. There are in addition reports of oil mist resulting in Low-Speed Pre-Ignition (LSPI) at low engine speeds and when driving under high loads.[4] Using a structure that traps oil mist, as shown below, has the potential to limit deposits and LSPI. Figure 16 shows breather system circuit. For the purpose of separating oil mist from the blow-by gas, two separation chambers are built in the cylinder head cover. PCV chamber is located in upstream of intake manifold, and breather chamber is located in upstream of the air intake tube before compressor. Figure 17 shows the inner structure of PCV and breather chamber. Both chambers, called a vortex chamber, consist of two parts. One is built in the cylinder head cover and another is a dedicated chamber cover, which has ribs respectively. The upper and lower ribs make the twist path of gas flow. When the blow-by gas passes through this chamber, two vortex flows are generated. When these flows is diverted to the left and right and up and down, oil mist in the blow-by gas can be separated from the gas by impinging on the wall, eventually liquid oil is returned to the cam chamber.

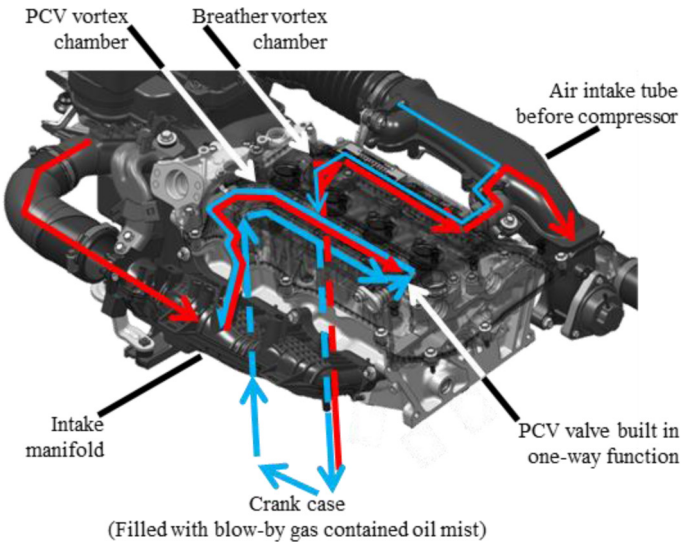


Figure 16. Breather system circuit: Red line expresses partial load condition, Blue line expresses boosting condition

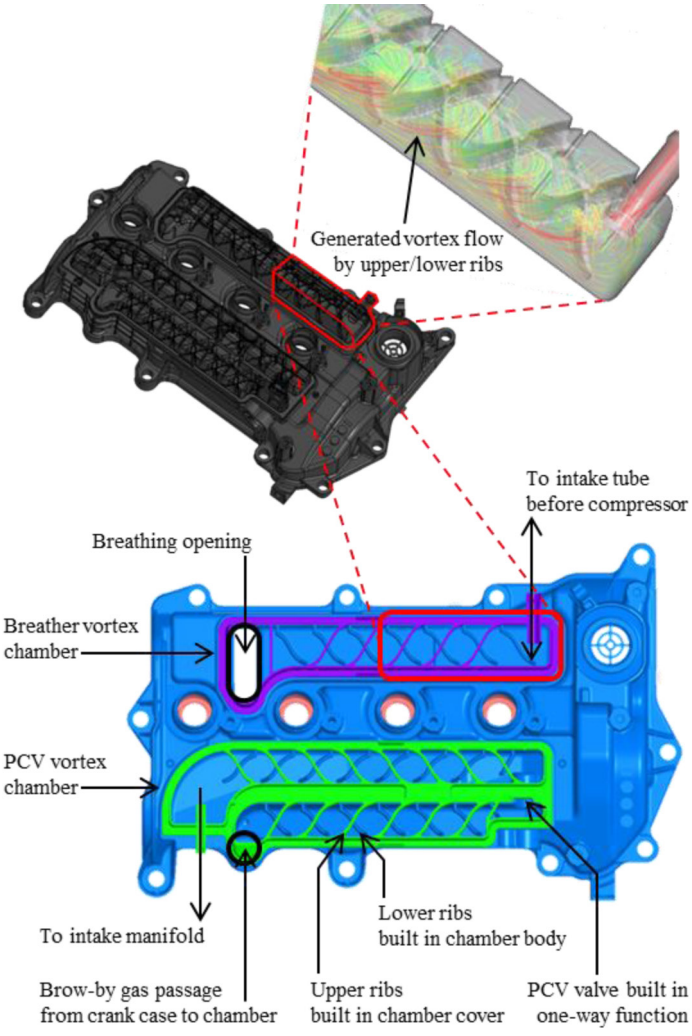


Figure 17. Vortex chamber structure built in cylinder head cover for oil mist capture

Low Emissions

The combination of a downsizing engine and a turbocharger is effective method to address both fuel economy and output. On the other hand, the slow rise after a cold start in catalyst temperature as a result of the turbocharger's increasing heat mass is an issue. Figure 18 shows the reduction items of NMOG+NOX component to the LEV3-SULEV30 target. Base NMHC+NOX level was decided by the previous models of 1.8 L NA engine, meeting the LEV2-SULEV, with exhaust system, which increased the heat mass in the turbocharger equivalent.

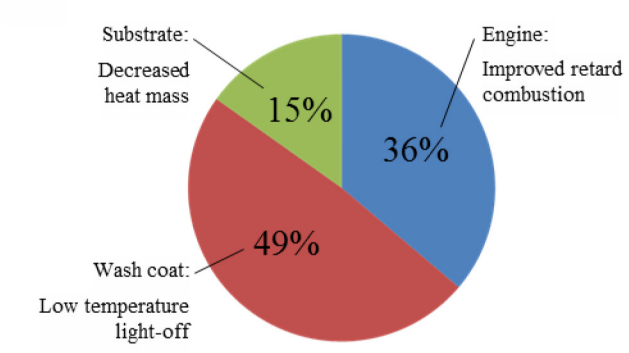


Figure 18. NMOG+NOX reduction items and effects for FTP-75 testing

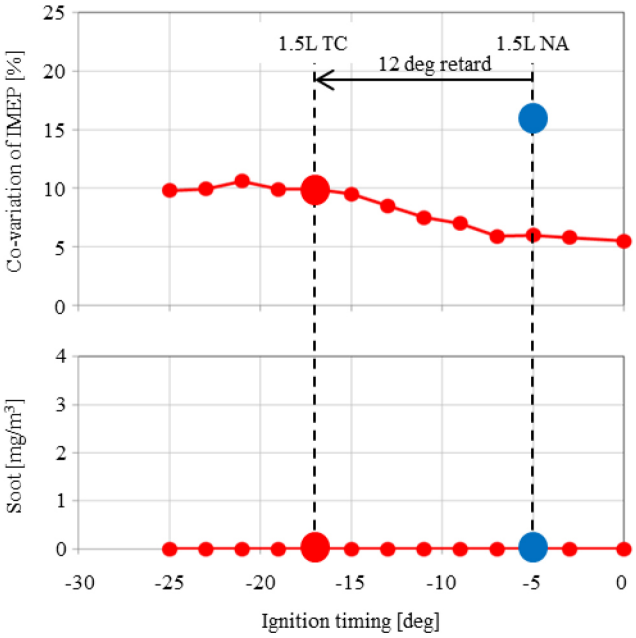


Figure 19. Co-variation of IMEP and soot amount versus ignition timing retard 1500 rpm Tw=25°C fast idle (bench test)

Figure 19 shows the combustion fluctuation and amount of soot in relation to ignition timing upon cold start (1500 rpm, fast idle load, water temperature 25°C). Mixture homogeneity and improved turbulent kinetic energy by the high-tumble also have the effect of stabilizing retard combustion. Compared to a conventional 1.8 L NA engine, there is more stability during wide-scale retard combustion, which is a one-time fuel injection event during the intake process. Moreover, there is no direct injection on the top face of the piston at low temperatures, so soot can also be reduced. Setting ignition timing to a 12 deg retard as compared to the 1.8 L NA engine ensure the heat

exhaust necessary for the increase in catalyst temperature, even in exhaust systems in which a turbocharger increases heat mass (Figure 20).

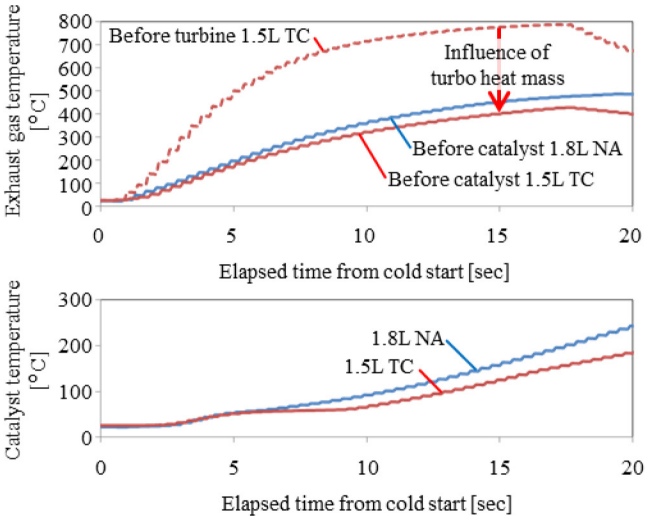


Figure 20. Temperature transition of exhaust gas and catalyst after cold start

Figure 21 shows the structure and details of the catalyst. Latest catalyst is able to activate itself early light off. The catalyst consists of substrate that can be raised at a small amount of heat and a recently developed wash coat that has reliable reduction performance even at low temperatures. The substrate has porosity of 55%, up from the 27% - 35% of conventional substrate. This can lower heat mass by 30% - 38%. The Platinum group metal in the recently developed wash coat [5] [6] is better dispersed, which enhances the reaction of the Platinum group metal. As a result, the catalyst provides the same level of reduction as a conventional device at a catalyst temperature about 30°C cooler (Figure 22).

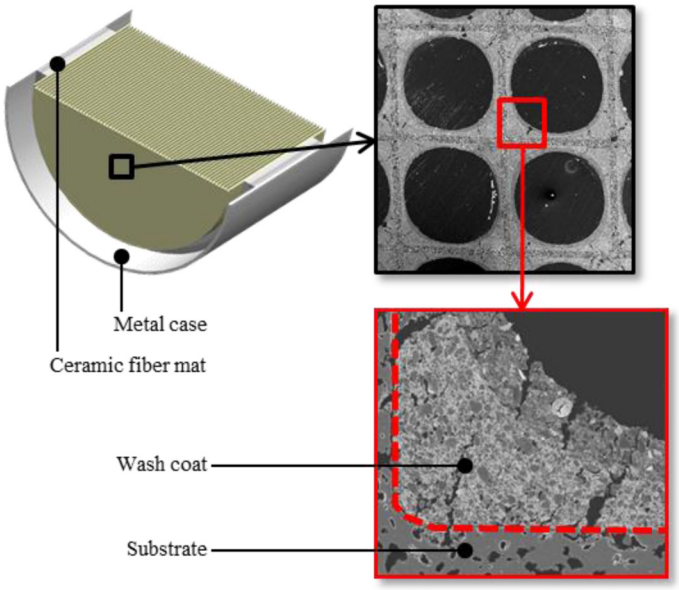


Figure 21. Catalyst structure and detail

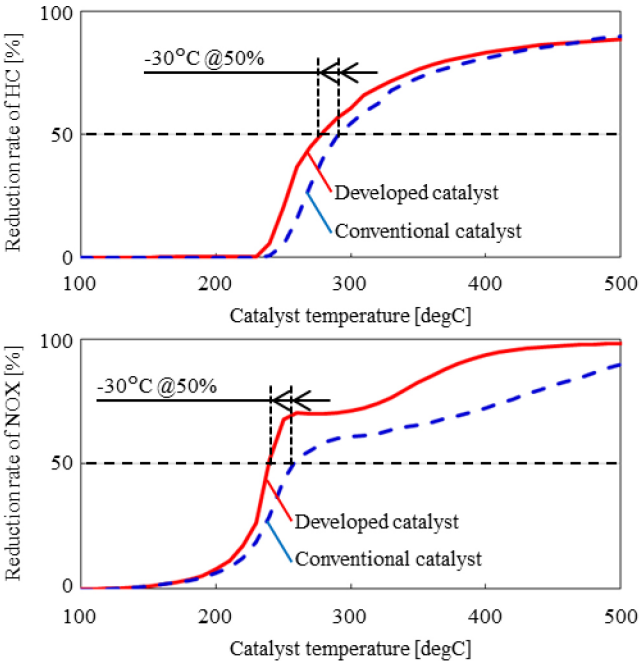


Figure 22. Improved reduction of HC and NOX by adopting newly developed catalyst (test piece dimension: diameter 25.4 mm and length 30 mm, aging conditions: 980°C and 20 hr, model gas: A/F 14.6 +/-0.9 and 1 Hz, space velocity: 100000 1/hr)

Vibration and Noise Decrease

In a downsizing engine, achieving high output, a lightweight structure, and lower noise and vibration all at the same time is a challenge. The developed engine uses a long-stroke crankshaft of a small journal diameter to help ensure low friction and high thermal efficiency. Using an independent crankshaft bearing cap, this bearing support system helps achieve a much lighter weight. The authors optimized the shape of the various components by using Honda own optimization tool to deal with vibration and noise. They made the structure more rigid by modifying the shape of the crankshaft, and reduced vibration of main motion system of the engine by revising the specifications of the crank pulley. One example is the reshaping of the independent bearing cap (Figure 23). The authors reshaped the different journal bearings aimed at their contribution to vibration transmission. In this manner, they could provide enough rigidity to reduce vibration while also lowering the weight.

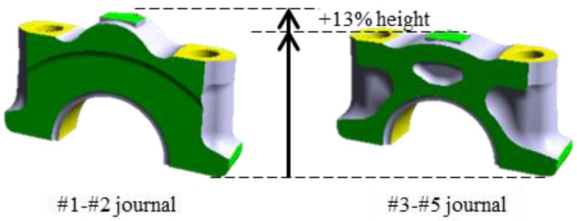


Figure 23. Optimized bearing caps for noise and vibration reduction and light weight

Moreover, rapid combustion and the use of a direct injection system present another challenge: high-frequency radiation noise. The developed engine achieved among the lowest noise levels in its class by optimally shaping the surface of each part as typified by the chain case and by using a urethane insulator in those parts with a high contribution to radiation (Figure 24).

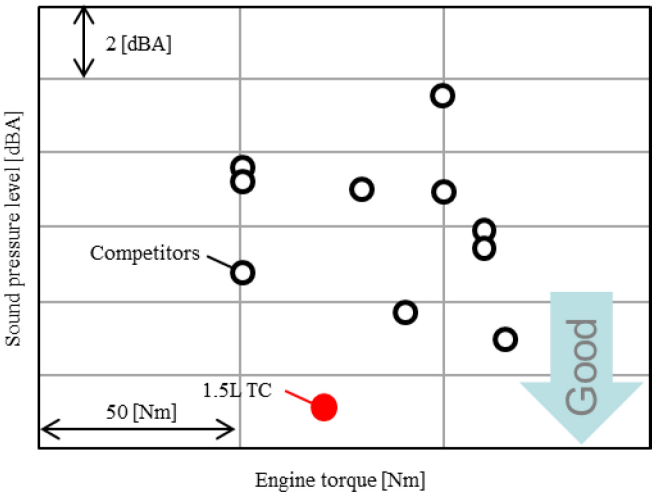


Figure 24. New downsizing 1.5 L turbocharged engine position on sound pressure level to engine torque diagram (radiation noise level, full load 3000-5000 rpm average)

Lightweight Structure

Lowering engine weight also has a major impact on vehicle fuel consumption. The authors' investigation of how to reduce engine weight resulted in a reduction of about 30 kg compared to a conventional NA engine with the same output. The specific technologies used are listed below.

Exhaust Valve

It is important that components are reliably durable to the rise in heat resulting from supercharging. The engine uses hollow-head exhaust valves that are filled with sodium (Na). To help ensure efficient transfer of heat from the head valve back and prevent overheating of the exhaust valve and the nearby structure, the use of sodium filler was extended all the way to the head (conventional valves only fill the stem with sodium). This helped reduce valve temperature. As a result, the valve material was made more durable and 18% lighter without actually changing the material from the 1.5 L NA engine (Figure 25, Figure 26).

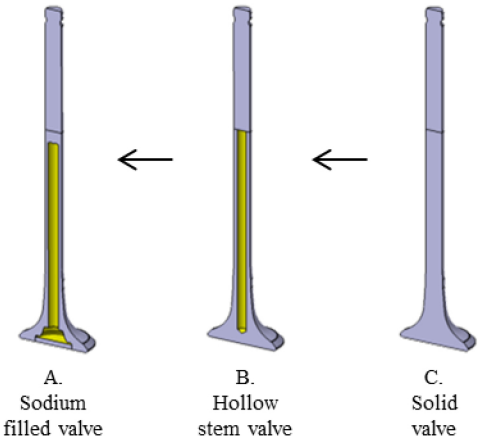


Figure 25. Sodium filled exhaust valve cross section

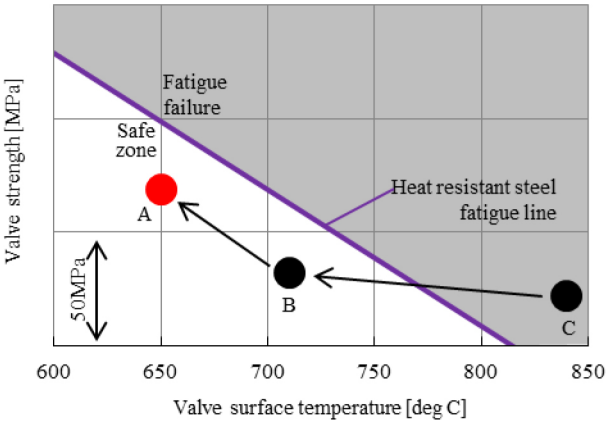


Figure 26. Exhaust valve temperature and strength (peak power points)

Connecting Rod Strengthened I-beam Area

New forging technology [7] was used in the I-beam area of the connecting rod to deal with the high combustion cylinder pressure that results from supercharging. This new forging process used for the turbocharged engines is the partial reinforce method consisting two steps forging process. The first forging is normal hot forging, with slightly bigger cross section of beam area than the final design. The second forging process is cold forging applied only to the beam area, with very precise die stroke control. As a result, the connecting rod is able to withstand high loads. This effect corresponds to an increase of about 30% in connecting rod buckling strength. Typical measures for increasing strength address the entire connecting rod by replacing the materials with something stronger or using some type of heat treatment, such as tempering. In contrast, the connecting rods used here were strengthened only in the I-beam area. Material hardness at the big and little ends is the same as in conventional materials. This makes machining of the big and little ends easy while boosting connecting rod strength and lowering the weight by 15% (Figure 27). And Figure 28 shows the connecting rod comparison.

Figure 27. Connecting rod strengthened I-beam area

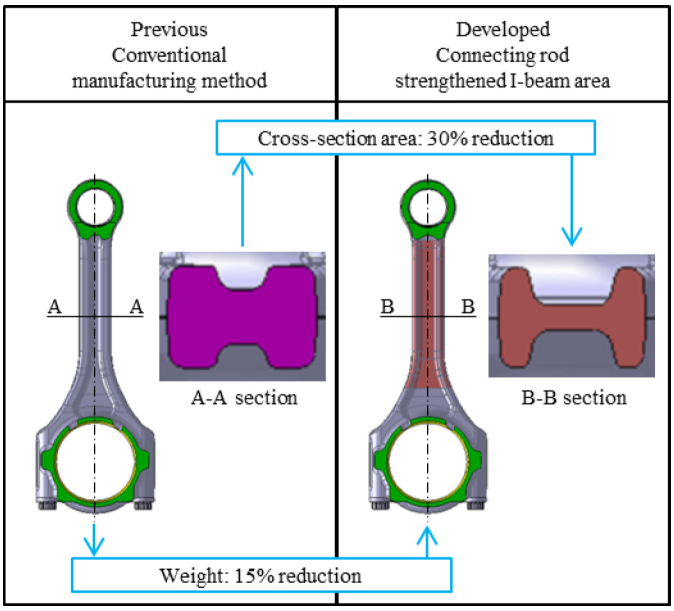


Figure 28. Connecting rod comparison

Lightweight Intercooler Pipes

Conventionally, aluminum is used for the pipes before and after the intercooler, but the developed engine replaces that with PP-GF15 resin formed by blow molding. The ACM (acrylic rubber) hose was formed into a bellows shape, which shortens the overall length and helps absorb pipe shaking. The pipes are less costly and 20% lighter than the conventional structure (Figure 29).

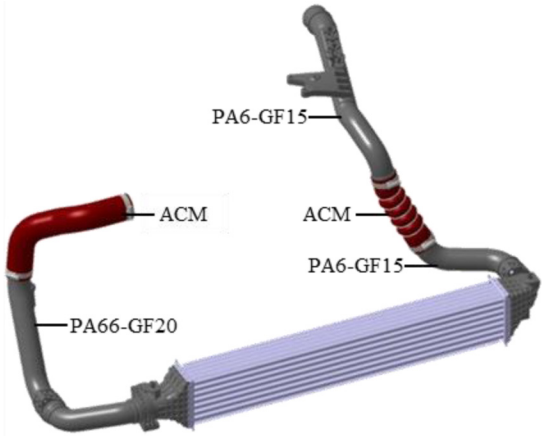


Figure 29. Light weight material application to intercooler pipes

Vehicle Performance

Because of the above measures to improve fuel economy and lighten the weight of the engine, vehicles with the 1.5 L downsizing turbocharged engine have achieved the values described in Table 3.

Table 3. Vehicle performance

Model	EPA Mileage Ratings [mpg]			CARB Emission Standard
	CITY	HWY	Combined	
Previous 1.8L-NA, CVT	30	39	33	LEV2-SULEV
Developed 1.5L-TC, CVT	31	42	35	LEV3-SULEV30

Conclusions

A 1.5 L downsizing turbocharged engine was developed to achieve both driving and environmental performance. The engine is intended to replace 1.8 - 2.4 L class NA engines. To combining a high tumble port, a shallow-dish piston, and a multi-hole injector to a long stroke structure, a rapid combustion and homogeneous mixture was realized. And the application of a dual VTC and a small turbocharger have enabled to deliver an enhanced low-end torque, which make customer benefits in view of driving by using a regular gasoline. This engine achieved as follows.

1. The maximum output of 130 kW was by 21% increase over the 1.8 L NA engine. At the same time, the torque rose by 26% while the engine speed decreased by 2600 rpm.
2. The minimum BSFC for the developed engine was 220 g/kWh with a maximum thermal efficiency of 38%.
3. LEV3-SULEV30 emission standard adaptation.

References

1. Suzuki, M., Hayakawa, S., Ishihara, Y., Shindo, T., "Development of the New L4 Gasoline Engine for Compact Cars," JSAE Lecture Proceedings 20145057, No.91-14, May, 2014.
2. Tagishi, R., Kobayashi, S., Iino, J., "Development of DOHC VTC 0.66L Gasoline Engine for New K-car" Honda R&D Technical Review 2012, Vol.24 No.1, April 2012
3. Nishida, M., Isobe, R., Goto, T., Hanzawa, T., Aiga, S., "The new 2.3L Direct Injection Turbo Gasoline Engine from Mazda" 14th. Aachen colloquium Automobile and Engine Technology, October 05-06, 2005
4. Dahnz, C., Han, K., Spicher, U., Magar, M. et al., "Investigations on Pre-Ignition in Highly Supercharged SI Engines," *SAE Int. J. Engines* 3(1):214-224, 2010, doi:10.4271/2010-01-0355.
5. Tanner, C., Twiggs, K., Tao, T., Bronfenbrenner, D. et al., "High Porosity Substrates for Fast-Light-Off Applications," SAE Technical Paper 2015-01-1009, 2015, doi:10.4271/2015-01-1009.
6. Otsuka, S., Suehiro, Y., Koyama, H., Matsuzono, Y. et al., "Development of a Super-Light Substrate for LEV III/Tier3 Emission Regulation," SAE Technical Paper 2015-01-1001, 2015, doi:10.4271/2015-01-1001.
7. Fujiwara, M., Yoshida, H., Kimura, T., "Controlled Forging Technique for Mechanical Properties using Thermo-Mechanical Heat Treatment," Daido Corporate Research & Development Center Technical Review 2011, Vol.82 No.2

ISSN 0148-7191

http://papers.sae.org/2016-01-1020

EXHIBIT D

Next Unread Message

View Message

Sent on	10	04	2017	**Expires on**	10	18	2017	
From	Parts and Service Division							
Subject	Request for Visit: 2016-2018 Civic & CR-V Oil Leak from Head Cover Gasket							

PRIORITY/ACTION REQUIRED

To: All Honda Service Managers/Advisors
From: Technical Research & Support Group
RE: Request for Visit: 2016-2018 Civic & CR-V Oil Leak from Head Cover Gasket

This message is solely directed to Honda dealership personnel; please handle accordingly.
Print this *iN* message and provide a copy to the Shop Foreman and all Service Advisors.

Background
American Honda Motor Co., Inc. (AHM) is investigating certain 2016-2018 Civics & 2017-2018 CR-Vs with a customer complaint of an oil leak. To fully understand the cause of this condition, AHM would like to inspect the vehicle prior to you attempting a repair of any kind.

Qualifiers
AHM is interested ONLY if the vehicle meets the following requirement:

1. VIN must start with 2HK for CR-V & 2HG for Civic.
2. Must confirm source of oil leak.
3. No repair has been attempted for this issue.

Action Required
If you have or know of such a vehicle, please call the Technical Research & Support (TRS) Group at 800-880-1072. TRS will need to record certain vehicle information and provide you with further instructions.

Thank you.

EXHIBIT E

Next Unread Message

View Message

Sent on 07 26 2024 **Expires on** 08 09 2024

From Technical Information & Support Group

Subject Request for Parts: 2017-2022 Accord/CR-V 1.5L & FHEV MIL On DTC P030X Stored

PRIORITY/ACTION REQUIRED

To: All Honda Service Managers/Advisors
From: Technical Information & Support Group
RE: **Request for Parts: 2017-2022 Accord/CR-V 1.5L & FHEV MIL On DTC P030X Stored (ACTION REQUIRED)**

This message is solely directed to Honda dealership personnel; please handle it accordingly.
Print this iN message and provide a copy to the Shop Foreman and all Service Advisors.

Background
American Honda Motor Co., Inc. (AHM) is searching for certain 2018-2022 Accord 1.5Ls (no 2.0L) & FHEVs, as well as 2017-2022 CR-V 1.5Ls (no 2.4L), & 2020-2022 CR-V FHEVs with a customer complaint of the Malfunction Indicator Light (MIL) on with the DTC P030X (Cylinder Misfire Detected) stored. Customer may also experience engine running rough condition. To better understand the cause of this condition, AHM would like to collect specific parts from the vehicle prior to you attempting a repair of any kind.

Qualifiers
AHM is interested ONLY if the vehicle meets the following requirements:

1. Petrol Accords & CR-Vs must be equipped with 1.5L engine (2.0L Accord and 2.4L CR-V not accepted).
2. No modifications to the vehicle including the intake or exhaust system (take photo of engine bay, front, and rear of vehicle - click **HERE** for example).
3. Must have one of the following DTCs stored (Email All DTC printout to TIS & submit an “on demand” manual PGM-FI snapshot through HDS):
   - P0300 (Random Misfire Detected)
   - P0301 (No.1 Cylinder Misfire Detected)
   - P0302 (No.2 Cylinder Misfire Detected)
   - P0303 (No.3 Cylinder Misfire Detected)
   - P0304 (No.4 Cylinder Misfire Detected)
4. Head Gasket coolant leak to cylinder has been confirmed by performing borescope inspection or pressure test (Email results to TIS).
5. No prior repair attempts.

Action Required
If a vehicle matching the qualifiers above comes into your dealership, please e-mail Technical Information & Support (TIS) at **tis@ahm.honda.com**, or call us at 800-880-1072 (Monday-Friday, 7am-5pm PST). TIS will contact you to record certain vehicle information and provide you with further instructions.

Please be sure to include the following information in your e-mail.
E-mail Title:

1. Model Year (e.g. 2024)
2. Model Name (e.g. Accord)
3. Issue (e.g. Brake Judder)
4. VIN

E-Mail Body:

1. Dealer Number
2. Your Name
3. Best Phone Number to be Reached
4. Current Mileage
5. Confirm that the vehicle meets qualifiers #1-#5 listed above. Email the photos, All DTC check printout, and borescope or pressure test results to TIS. Send the manual PGM-FI snapshot through HDS.
6. DPTS#

As a gesture of appreciation to dealer technicians who identify and report a vehicle that meets the qualifiers, was accepted as a candidate and is the subject of a successful Dealer Visit/Parts Collection/Info Collection, AHM will provide the referring technician with a **VISA gift card**. Technical Information & Support (TIS) will provide additional information if this situation applies.

Thank you.

EXHIBIT F

Next Unread Message

View Message

Sent on 08 15 2024 **Expires on** 08 29 2024

From Technical Information & Support Group

Subject Request for Parts: 2017-2022 Accord/CR-V 1.5L & FHEV MIL On DTC P030X Stored

PRIORITY/ACTION REQUIRED

To: All Honda Service Managers/Advisors
From: Technical Information & Support Group
RE: **Request for Parts: 2017-2022 Accord/CR-V 1.5L & FHEV MIL On DTC P030X Stored (ACTION REQUIRED)**

This message is solely directed to Honda dealership personnel; please handle it accordingly.
Print this iN message and provide a copy to the Shop Foreman and all Service Advisors.

Background
American Honda Motor Co., Inc. (AHM) is searching for certain 2018-2022 Accord 1.5Ls (no 2.0L) & FHEVs, as well as 2017-2022 CR-V 1.5Ls (no 2.4L), & 2020-2022 CR-V FHEVs with a customer complaint of the Malfunction Indicator Light (MIL) on with the DTC P030X (Cylinder Misfire Detected) stored. Customer may also experience engine running rough condition. To better understand the cause of this condition, AHM would like to collect specific parts from the vehicle prior to you attempting a repair of any kind.

Qualifiers
AHM is interested ONLY if the vehicle meets the following requirements:

1. Petrol Accords & CR-Vs must be equipped with 1.5L engine (2.0L Accord and 2.4L CR-V not accepted).
2. No modifications to the vehicle including the intake or exhaust system (take photo of engine bay, front, and rear of vehicle - click **HERE** for example).
3. Must have one of the following DTCs stored (Email All DTC printout to TIS & submit an “on demand” manual PGM-FI snapshot through HDS):
   - P0300 (Random Misfire Detected)
   - P0301 (No.1 Cylinder Misfire Detected)
   - P0302 (No.2 Cylinder Misfire Detected)
   - P0303 (No.3 Cylinder Misfire Detected)
   - P0304 (No.4 Cylinder Misfire Detected)
4. Head Gasket coolant leak to cylinder has been confirmed by performing borescope inspection or pressure test (Email results to TIS).
5. No prior repair attempts.

Action Required
If a vehicle matching the qualifiers above comes into your dealership, please e-mail Technical Information & Support (TIS) at **tis@ahm.honda.com**, or call us at 800-880-1072 (Monday-Friday, 7am-5pm PST). TIS will contact you to record certain vehicle information and provide you with further instructions.

Please be sure to include the following information in your e-mail.
E-mail Title:

1. Model Year (e.g. 2024)
2. Model Name (e.g. Accord)
3. Issue (e.g. Brake Judder)
4. VIN

E-Mail Body:

1. Dealer Number
2. Your Name
3. Best Phone Number to be Reached
4. Current Mileage
5. Confirm that the vehicle meets qualifiers #1-#5 listed above. Email the photos, All DTC check printout, and borescope or pressure test results to TIS. Send the manual PGM-FI snapshot through HDS.
6. DPTS#

As a gesture of appreciation to dealer technicians who identify and report a vehicle that meets the qualifiers, was accepted as a candidate and is the subject of a successful Dealer Visit/Parts Collection/Info Collection, AHM will provide the referring technician with a **VISA gift card**. Technical Information & Support (TIS) will provide additional information if this situation applies.

Thank you.

EXHIBIT G

BLOOD HURST & O'REARDON | LLP

501 W. Broadway, Suite 1490 | San Diego, CA 92101
T | 619.338.1100 F | 619.338.1101
www.bholaw.com

Timothy G. Blood
tblood@bholaw.com

December 6, 2024

VIA CERTIFIED MAIL (RETURN RECEIPT)
(RECEIPT NO. 7021 2720 0001 0088 7825)

Toshihiro Mibe, CEO
Honda Motor Company Ltd.
1919 Torrance Blvd.
Torrance, CA 90501

VIA CERTIFIED MAIL (RETURN RECEIPT)
(RECEIPT NO. 7021 2720 0001 0088 7702)

Kazuhiro Takizara, CEO
American Honda Motor Co., Inc.,
1919 Torrance Blvd.
Torrance, CA 90501

Dear Sirs:

We represent Chris Bissell and a putative class of similarly situated Honda customers who contend that Honda sold vehicles with defective 1.5 liter turbo engines. The engines are unable to tolerate the high compression forces of the turbocharge, resulting in engine coolant leaching through and collecting in the grooves of the engine's cylinder head. The leached coolant then degrades the engine's gasket, allowing coolant to leak into the engine's cylinders. This causes engine damage, reduced vehicle performance, and serious safety risks for the driver and passengers. Those relevant vehicles are 2018-2022 model year Honda CR-Vs, 2018-2022 Honda Accords, and 2018-2022 Honda Civics ("Honda Vehicles").

Consumers purchased these vehicles with the expectation that the vehicles were safe and had engines that would perform under normal circumstances. In advertising and selling these vehicles, Honda represented that these vehicles were safe, efficient, and dependable vehicles. Honda publicly touts its advancements in developing safe driving vehicles and claims their testing procedures, "allow[] [Honda] to make the road safer for everybody on it by engineering for worst case scenarios in an unprecedented way. All the while, Honda has been aware of this engine defect since before circulating the vehicles to the public. However, Honda failed to disclose the engine defect.

As a result of the omissions and representations detailed in the attached class action Complaint, our clients purchased their Honda Vehicles. Contrary to Honda's representations, these vehicles were not safe or reliable. Plaintiffs were left with vehicles that needed extra maintenance, broke down frequently, and cost them more money. Honda has and continues to fail to honor the warranty associated with this group of vehicles.

Honda's omissions and representations are false and misleading and constitute unfair methods of competition and unlawful, unfair, and fraudulent acts or practices, undertaken by Defendants with the intent to result in the sale of the Honda Vehicles to the consuming public. These practices constitute violations of the Consumers Legal Remedies Act ("CLRA"), California Civil Code §§ 1750, *et seq.* Specifically, Honda's practices violate California Civil Code §§ 1770(a) under, *inter alia*, the following subdivisions:

BLOOD HURST & O'REARDON | LLP

(5) Representing that goods or services have sponsorship, approval, characteristics, ingredients, uses, benefits, or quantities that they do not have or that a person has a sponsorship, approval, status, affiliation, or connection that the person does not have.

(7) Representing that goods or services are of a particular standard, quality, or grade, or that goods are of a particular style or model if they are of another.

(9) Advertising goods or services with intent not to sell them as advertised.

While the Complaint constitutes sufficient notice of the claims asserted, pursuant to California Civil Code § 1782, we hereby demand on behalf of our clients and all others similarly situated that Defendants immediately correct and rectify these violations by properly informing consumers of the engine defects present in the Honda Vehicles, obtain redress for those who have purchased Honda Vehicles, and initiate a corrective advertising campaign to re-educate purchasers regarding the engine defect in their Honda Vehicles. In addition, Defendants must offer repair and replacement remedies to all Class members who experience the engine defect alleged in the attached Complaint, and restitution and disgorgement, plus provide reimbursement for interest, costs, and fees.

Please inform us within 30 days of your intention to take corrective action after which time we will proceed to file the complaint and pursue legal remedies.

We await your response.

Sincerely,

TIMOTHY G. BLOOD

TGB:jk

Enclosure

EXHIBIT H

BLOOD HURST & O'REARDON, LLP
TIMOTHY G. BLOOD (149343)
THOMAS J. O'REARDON II (247952)
PAULA R. BROWN (254142)
ADAM M. BUCCI (327312)
501 West Broadway, Suite 1490
San Diego, CA 92101
Tel: 619/338-1100
619/338-1101 (fax)
tblood@bholaw.com
toreardon@bholaw.com
pbrown@bholaw.com
abucci@bholaw.com

BEASLEY, ALLEN, CROW, METHVIN, PORTIS & MILES, P.C.
W. DANIEL "DEE" MILES, III *
H. CLAY BARNETT, III *
J. MITCH WILLIAMS *
DYLAN T. MARTIN *
TRENTON H. MANN *
218 Commerce Street
Montgomery, AL 36104
Tel: 334/269-2343
334/954-7555 (fax)
Dee.Miles@Beasleyallen.com
Clay.Barnett@BeasleyAllen.com
Mitch.Williams@Beasleyallen.com
Dylan.Martin@beasleyallen.com
Trent.Mann@BeasleyAllen.com

Attorneys for Plaintiff

* *pro hac vice forthcoming*

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF CALIFORNIA

CHRIS BISSELL, individually and on behalf of all others similarly situated,

Plaintiff,

v.

AMERICAN HONDA MOTOR CO., INC., and HONDA MOTOR COMPANY LIMITED,

Defendants.

Case No.

AFFIDAVIT OF TIMOTHY G. BLOOD PURSUANT TO CAL. CIVIL CODE §1780(d)

Complaint Filed:
Trial Date: Not Yet Set

JURY TRIAL DEMANDED

I, TIMOTHY G. BLOOD, declare as follows:

1. I am an attorney duly licensed to practice before all of the courts of the State of California. I am the managing partner of the law firm of Blood Hurst & O'Reardon LLP, and one of the counsel of record for plaintiff in the above-entitled action.

2. Plaintiff is a resident of Riverside County and purchased his Honda vehicle at issue in San Diego County. Additionally, Defendants American Honda Motor Co. and Honda Motor Company Limited have done and are doing business in San Diego County, including the sale, marketing, distributions and servicing, through their authorized dealers and distributors, the Honda vehicles at issue.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed on December 6, 2024, at San Diego, California.

Respectfully submitted,

Dated: December 6, 2024

BLOOD HURST & O'REARDON, LLP
TIMOTHY G. BLOOD (149343)
THOMAS J. O'REARDON II (247952)
PAULA R. BROWN (254142)
ADAM M. BUCCI (327312)

By: *s/ Timothy G. Blood*
TIMOTHY G. BLOOD

501 West Broadway, Suite 1490
San Diego, CA 92101
Tel: 619/338-1100
619/338-1101 (fax)
tblood@bholaw.com
toreardon@bholaw.com
pbrown@bholaw.com
abucci@bholaw.com

BEASLEY, ALLEN, CROW, METHVIN, PORTIS & MILES, P.C.
W. DANIEL "DEE" MILES, III *
H. CLAY BARNETT, III *
J. MITCH WILLIAMS *
DYLAN T. MARTIN *
TRENTON H. MANN *
218 Commerce Street

Montgomery, AL 36104
Tel: 334/269-2343
334/954-7555 (fax)
Dee.Miles@Beasleyallen.com
Clay.Barnett@BeasleyAllen.com
Mitch.Williams@Beasleyallen.com
Dylan.Martin@beasleyallen.com
Trent.Mann@BeasleyAllen.com

Attorneys for Plaintiff

ClassAction.org
