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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

TOWNSEND VANCE and ZACHARY HAINES, individually and on behalf of all others similarly situated, Plaintiffs, v. MAZDA MOTOR OF AMERICA, INC. D/B/A MAZDA NORTH AMERICA OPERATIONS, MAZDA MOTOR CORPORATION, DENSO CORPORATION, and DENSO INTERNATIONAL AMERICA, INC, Defendants.	Case No. CLASS ACTION PLAINTIFFS ¶CLASS ACTION COMPLAINT JURY TRIAL DEMANDED

Plaintiffs Townsend Vance and Zachary Haines (collectively, ³3ODLQWLIIV´ file this Consolidated Amended Class Action Complaint on behalf of themselves and all others similarly situated against defendants Mazda Motor of America, Inc. and Mazda Motor Corporation (collectively, ³Mazda´ 'HQVR &RUSRUDWLRQ Denso International America, Inc. (collectively, ³'HQVR´[1] Based on personal knowledge as to matters relating to themselves, and on information and belief based on the investigation of counsel, including counsel¶s review of consumer complaints available on the database of the National Highway Traffic Safety $GPLQLVWUDWLRQ ³1+76$´ DQG RWKHU SXEOLF other matters, Plaintiffs allege as follows:

I. NATURE OF THE ACTION

1. This class action lawsuit seeks redress for the misconduct of Denso, a $47.6 billion global company that claims to be a leading supplier of advanced automotive technology, systems and components, and Mazda, an international manufacturer of automobiles that claims to manufacture and sell high-quality, safe vehicles, that knowingly exposed the purchasers and lessees of at least hundreds of thousands of Mazda vehicles, such as Plaintiffs and members of the proposed FODVVHV ³&ODVV 0HPEHUV´ WR D GDQJHURXV fuel pump. This defect causes Mazda vehicles to stall, engines to shut down or fail to start, and creates a substantial risk of injury and death for any person operating or riding in a vehicle equipped with the defective fuel pump. Despite being aware of this problem for years, Mazda and Denso failed to disclose it to Plaintiffs until November 12, 2021 when Mazda announced a recall (Denso issued a general recall of its fuel pumps in April 2020).

2. Denso is one of the largest suppliers of original equipment fuel pumps to vehicle manufacturers, including to Mazda. Mazda accounts for 7HQVR

[1] 0D]GD DQG 'HQVR DUH FROOHFWLYHO\ UHIHUUHG

are chosen as standard equipment by the world's most demanding OEMs, especially for their premium vehicles."

3. On April 27, 2020, Denso issued a recall for defective low-pressure fuel pumps it manufactured between September 1, 2017 and October 6, 2018. The number of potentially affected vehicles across manufacturers is 2,020,000.

4. The fuel pump in an automobile is critically important to the overall operation of a vehicle because it lifts gasoline from the fuel tank and delivers it to the engine where it is ignited in the combustion chamber and generates vehicle propulsion. A fuel pump is expected to last for the life of an automobile or a minimum of 200,000 miles

5. In its April 27, 2020 Recall Report[2] filed with NHTSA, Denso admitted its low-pressure fuel pumps contain a defective impeller that poses a risk to consumer safety:

> An impeller in some low pressure fuel pumps may become deformed under certain conditions which could render the fuel pump inoperable.... If an impeller deforms to a point that creates sufficient interference with the fuel pump body, the fuel pump becomes inoperative. According to vehicle manufacturer's system evaluation, an inoperative fuel pump may result in the illumination of the check engine light and/or master warning indicators, rough engine running, engine no start and/or vehicle stall while driving at low speed and, in rare instances, a vehicle stall could occur while driving at higher speeds, increasing the risk of a crash.

6. Specifically, Denso stated its low-pressure fuel pumps could become inoperable if "[a]n impeller is manufactured with lower surface strength or is exposed to production solvent drying for a longer period of time, higher levels of surface cracking may occur which, when excessive

[2] Denso's April 27, 2020 Recall Report is attached hereto as Exhibit A.

fuel absorption occurs, may result in impeded fuel flow or stoppage, which could increase the risk of a crash.[3]

7. On June 11, 2020, Denso expanded its recall by submitting a second Part 573 Safety Recall Report to NHTSA, increasing the number of affected fuel pumps from 2,020,000 to 2,156,057.[4][5]

8. The Denso Recall Reports listed various manufactures that purchased the defective fuel pumps, including Mazda.[6]

9. Despite admitting responsibility for the Fuel Pump Defect, and that the Defect poses a risk to consumer safety, Denso failed to take any corrective action sufficient to remedy the Defect.[7]

10. On November 17, 2020, nearly seven months after Denso's initial recall, Denso again expanded its recall, nearly doubling the months of production and, with that, the number of admittedly defective low-pressure fuel pumps with the Fuel Pump Defect. In this expansion, fuel pumps manufactured as early as June 26, 2017 and as late as June 28, 2019 were included in the recall, and 1,517,721 additional pumps were admitted to be defective.[8]

11. In its November 17, 2020 Recall Report, Denso also set forth the results of additional analysis it conducted concerning the Fuel Pump Defect, confirming that the density of the resin

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[3] Id.

[4] Denso's June 11, 2020 Recall Report is attached hereto as Exhibit B.

[5] Denso's April 27, 2020 Recall Report and June 11, 2020 Recall Report are collectively referred to as the "Denso Recall Reports."

[6] See Exhibit A at 3.

[7] Id. at 2.

[8] Denso's November 17, 2020 Recall Report is attached hereto as Exhibit C.

closely correlate with the occurrence of field cases and [illegible] VXUIDFH VWUHQJWK >RI LPSHOOHUV@ WKDQ SU

> Additional analysis was conducted regarding the density of impellers manufactured during various periods. Because the impeller material contains three elements (resin, glass fiber, and calcium carbonate), but only one element (resin) is susceptible to swelling, only resin density was examined for this analysis. Resin density was found to more closely correlate with the occurrence of field cases than overall impeller density. The resin density findings indicated additional material lots which could contribute to the occurrence of the condition in combination with other factors. In addition, the surface strength of impellers manufactured during various periods was examined with additional variables considered. This analysis demonstrated that a lower minimum surface strength than previously estimated could be possible. The new resin density and surface strength information can be collated by vehicle manufacturers with warranty data, production timing data, vehicle specific variables, and other information to determine which vehicles, if any, may be susceptible to the condition.[9]

12. On July 17, 2020, Mazda filed a Part 579.12 Foreign Safety Recall Campaign Report with NHTSA, alerting NHTSA of recalls in China, Japan, Thailand, Malaysia, Vietnam, and Mexico for vehicles equipped with Denso)XHO 3XPSV WKDW VXIIHU IURP [illegible][10]

13. Mazda's Foreign Recall Data WHVW WKDW ³IXHO SXPS inside the fuel delivery module (FDM) may experience surface cracks due to low part density during the manufacturing process and/or length of time between pump production and vehicle installation. As a result, the impeller may deform, causing LQWHUIHUHQFH ZLWK VXUURXQGLQJ SXPS FRPS[11]

[9] Id.

[10] See Exhibit D.

[11] Id.

14. Mazda ¶V) R U H L J Q 5 H F D O O D O V R L G H Q W L I 9 H K L F O H V L Q W K H 8 6 Mazda CX-3, CX-5, CX-9, Mazda2, Mazda3, Mazda6, MX-5, and Toyota Yaris vehicles.[12]

15. Despite using the same Fuel Pump, Mazda failed to recall the Class 9 H K L F O H V ³ G X H W R G L I I H U H Q F H V L Q 8 6 O R J L V D Q G R W K H U I D F W R U V ´[13]

16. On November 12, 2021, over one year after the initial Denso Recall and Mazda¶V Foreign Recall, Mazda finally issued its own U.S. recall of its vehicles equipped with the defective low-pressure Denso fuel pumps. Mazda filed L W V R Z Q 3 D U W 6 D I HW\ 5 H F D O O C with NHTSA,[14] confirming that at least 121,038 of its vehicles are equipped with the defective Denso fuel pumps. Mazda¶V Recall covers Mazda¶V 2019 CX-3, 2018-2019 CX-5, 2018-2019 CX-9, 2019-2020 Mazda2, 2018 Mazda3, 2018 Mazda6, and 2018-2019 MX-5 vehicles manufactured at various times between April 2018 and January 2020. Mazda¶V 5 H F D O O H G 9 H K L F O H V ´

17. Mazda¶V Recall Report confirms the existence and seriousness of the Fuel Pump Defect: ³7 K H L P S H O O H U L Q V R P H O R Z S U H V V X deformed under certain conditions, which could cause fuel pump failure. . . . Fuel pump failure may result in engine no start and/or vehicle stall while driving at low speed and, in rare instances, a vehicle stall could occur while driving at higher speeds, increa V L Q J W K H U L V N R I D F U D V K ´[15]

18. Mazda claims to have accurately identified the total population of vehicles equipped with the defective fuel pumps.

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[12] Id.

[13] Id.

[14] Mazda¶V November 12, 2021 Recall Report is attached hereto as Exhibit E.

[15] Id.

19. However, Mazda's Recall fails to include other 2014-2020 Mazda manufactured vehicles equipped with the same defective Denso made low-pressure fuel pump with a part number suffix 13350 ³ & O D V V 9 as those in the Recall

20. While Mazda's Recall includes only certain model year 2014-2020 vehicles that suffer from the Fuel Pump Defect, a recall by another manufacturer over the same Fuel Pump Defect covers model year 2013 vehicles equipped with Denso's same defective fuel pumps. Moreover, Mazda customers have been submitting Fuel Pump Defect complaints to NHTSA since 2013.

21. Mazda admits it knew about the Fuel Pump Defect as early as March 2019.[16] Nevertheless, Mazda failed to make public the existence of the Fuel Pump Defect until November 12, 2021, over two years later. Moreover, Mazda failed to notify consumers directly or instruct them to stop driving their dangerous vehicles until they are repaired. Nor did Mazda offer a timely remedy.

22. Despite admitting in its recall that the Fuel Pump Defect could occur Z K L O H G U L Y L Q J ³ L Q F U H D V L Q J O \ Mazda did not directly notify the owners and lessees of the Recalled Vehicles to immediately cease driving their cars. Mazda also did not offer owners and lessees loaner cars they could drive until an adequate remedy could be implemented.

23. Moreover, though Mazda has not made public its repair instructions to dealerships, Mazda's Recall is identical to those of three other manufacturers (Toyota, Honda, and Subaru) and each have implemented the same repair provided by Denso. But Mazda's Recall repairs are inadequate on multiple levels.

24. Rather than following the industry standard and replacing the entire fuel pump module, Mazda's Recall directs technicians to replace only the fuel pump motor, which is part of the module. This is an extremely delicate and

[16] Exhibit F.

difficult procedure with a high risk of damaging the entire fuel pump module, which can result in gas leaking out of the fuel tank, creating hazardous conditions and exacerbating the Fuel Pump Defect instead of correcting it. As set forth below in Section IV, there are numerous reports from individuals who received the same repair from Toyota, Honda, and Subaru that detail the dangerous consequences of the recall repair.

25. Thus, Mazda's Recall failed to adequately repair the Fuel Pump Defect, and often caused additional damage to the fuel pump module and the Vehicle.

26. As a result, at least hundreds of thousands of Mazda's customers in the United States are driving vehicles that pose a serious safety risk.

27. The Fuel Pump Defect in the Class Vehicles exposes occupants and others to extreme danger, even death. A vehicle that stalls or suffers engine shutdown is at heightened risk for collision. A vehicle that stalls or suffers engine shutdown causes drivers to react to remove themselves from danger, typically by exiting the road. Drivers stranded on the side of the road experience a heightened risk of danger, whether it is from other vehicles, remoteness or weather elements.

28. Fuel pump failure can also prevent the driver from accelerating at the necessary and anticipated pace. Diminished acceleration ability creates unexpected hazards, startling drivers of the Class Vehicles and other drivers in their proximity. Finally, once a Class Vehicle fuel pump fails, the vehicle becomes totally inoperable and will not start.

29. Despite Mazda's indisputable knowledge of the danger posed by defective fuel pumps in its vehicles, Mazda's Recall is woefully inadequate because it (1) failed to identify and include the full scope of Mazda manufactured vehicles equipped with defective fuel pumps; (2) failed to offer a timely or effective repair; (3) failed to warn consumers about the serious safety hazards posed by the Fuel Pump Defect and recommend customers stop driving their

vehicles until they are repaired; and (4) failed to offer free loaner vehicles until Plaintiffs' and Class Members' vehicles are repaired.

30. As in Section IV, throughout the relevant period, Mazda's marketing of the Class Vehicles was and is replete with assurances about their safety and dependability. A vehicle that can suddenly stall and lose power during normal operating conditions is inherently unsafe and not dependable, and renders Mazda's marketing of the Class Vehicles untrue and materially misleading. Plaintiffs and other Class Members have been damaged as a result.

31. Despite marketing and selling the Class Vehicles as safe and dependable, as alleged above, Mazda has long known of the Fuel Pump Defect. It amassed years of research, data gathering, and hundreds of thousands of Fuel Pump Defect warranty claims. Moreover, under the TREAD Act, 49 U.S.C. § 30118, Mazda is duty-bound to, and does, monitor complaints from consumers that are posted on NHTSA's website. As set forth in Section IV below, there were consumer complaints on NHTSA's website about the Fuel Pump Defect in Mazda's vehicles that predate Mazda's 2021 Recall by over eight years (submitted in 2013).

32. Denso is equally culpable because it designed, engineered, tested, validated, manufactured, and placed into the stream of commerce defective fuel pumps, which it knew would be installed the Class Vehicles. As described in Section IV below, Denso indisputably had exclusive knowledge of the Fuel Pump Defect well before October 2016, when Denso filed a patent application seeking to improve the durability and absorption qualities of the defective fuel pump impeller. However, at no time did Denso disclose to others what it knew about the Fuel Pump Defect nor was that information reasonably available to Plaintiffs and the public. Denso's knowing and intentional failure to disclose the Fuel Pump Defect was a direct and proximate cause of harm to Plaintiffs and Class Members.

33. With or without a viable remedy for the Fuel Pump Defect, Mazda's Recalls have decreased the intrinsic and resale value of the Class Vehicles. Plaintiffs and other Class Members have been damaged as a result. Additionally, Class Members must still honor their lease and loan payments (without proration), even while their vehicles are inoperable and devalued.

34. Plaintiffs bring this lawsuit on behalf of themselves and all others similarly situated who own or lease a Class Vehicle equipped with a defective Denso fuel pump, and assert claims for breach of express warranty, breach of implied warranty, strict liability, negligent undertaking, and fraudulent omission.

II. JURISDICTION AND VENUE

35. Subject matter jurisdiction is proper in this Court pursuant to the Class Action Fairness Act, 28 U.S.C. § 1332(a) and (d), because Plaintiffs and Class Members are citizens of a state different than Defendants' home states, and the aggregate amount in controversy exceeds $5,000,000, exclusive of interest and costs.

36. Subject matter jurisdiction is also proper in this Court pursuant to 28 U.S.C. § 1331 because Plaintiffs' Magnuson-Moss Warranty Act claim arises under federal law, and this Court has supplemental subject matter jurisdiction over Plaintiffs' state law claims under 28 U.S.C. § 1367.

37. Venue is proper in this Court pursuant to 28 U.S.C. § 1391 because a substantial portion of actions giving rise to these claims occurred in this District, Mazda and Denso have caused harm to Plaintiffs in this District, Mazda and Denso are residents of this District under 28 U.S.C. § 1391(c)(2) because they are subject to personal jurisdiction in this District. Venue is also proper in this District pursuant to 18 U.S.C. § 1965.

III. THE PARTIES

Plaintiffs

38. Plaintiff Townsend Vance is a citizen of Texas and resides in Houston, Texas.

39. Plaintiff Vance owns a 2018 Mazda CX-5 which she purchased new from Med Center Mazda in Pelham, Alabama on August 31, 2018.

40. Prior to purchasing her Mazda, Plaintiff Vance reviewed Mazda's promotional materials touting its safety and reliability, such as, Mazda's television advertisements, the Monroney sticker, and sales brochures, and interacted with at least one sales representative without Mazda disclosing the Fuel Pump Defect.

41. Through her exposure and interaction with Mazda, Plaintiff Vance was aware of Mazda's uniform and pervasive marketing message that its vehicles are safe and dependable, which was material to her decision to purchase her Class Vehicle. When she purchased the vehicle, she believed, based on Mazda's marketing message, that she would be in a safe and dependable vehicle, one that is safer than a vehicle that is not marketed as safe and dependable. At no point before Plaintiff Vance purchased her vehicle did Mazda disclose to her that her vehicle was not safe or dependable, or that it was equipped with a defective Denso fuel pump.

42. Plaintiff Vance's Mazda suffers from the Fuel Pump Defect because the impeller in her vehicle started absorbing fuel and deforming the moment it was exposed to gasoline.

43. Plaintiff Vance's Mazda suffers from the Fuel Pump Defect and during at least six different usages experienced hesitated and interrupted acceleration and near engine stall-out.

44. The Fuel Pump Defect creates a dangerous condition that gives rise to a clear, substantial, and unreasonable danger of death or personal injury to Plaintiff Vance, other occupants in her Class Vehicle, and others on the road. At no time did Mazda inform Plaintiff Vance of the seriousness of the Fuel Pump

Defect or recommend that she discontinue use of her vehicle until there is a repair or a replacement fuel pump.

45. Plaintiff Vance purchased her Class Vehicle with the Fuel Pump Defect as part of a transaction in which Mazda did not disclose material facts related to the automobile's essential purpose—safe and dependable transportation. Plaintiff Vance did not receive the benefit of her bargain. She purchased a vehicle that is of a lesser standard, grade, and quality than represented, and she did not receive a vehicle that met ordinary and reasonable consumer expectations regarding safe and reliable operation. The Fuel Pump Defect has significantly diminished the value of Plaintiff Vance's Class Vehicle.

46. Had Mazda disclosed the Fuel Pump Defect, Plaintiff Vance would not have purchased her Class Vehicle, or would have paid less to do so.

47. Plaintiff Vance would purchase a Mazda from Mazda in the future if Defendants' representations about the vehicle, including its safety and durability, were accurate.

48. Plaintiff Zachary Haines is a citizen of California and resides in Los Angeles, California.

49. Plaintiff Haines owns a 2018 Mazda 3 Touring which he purchased used from Russell Westbrook Hyundai of Garden Grove, California on June 15, 2019.

50. Prior to purchasing his Mazda, Plaintiff Haines reviewed Mazda's promotional materials touting its safety and reliability, such as, Mazda's television advertisements, the Monroney sticker, and sales brochures without Mazda disclosing the Fuel Pump Defect.

51. Through his exposure and interaction with Mazda, Plaintiff Haines was aware of Mazda's uniform and pervasive marketing message that its vehicles are safe and dependable, which was material to his decision to purchase his Class Vehicle. When he purchased the vehicle, he believed, based on Mazda's marketing

message, that he would be in a safe and dependable vehicle, one that is safer than a vehicle that is not marketed as safe and dependable. At no point before Plaintiff Haines purchased his vehicle did Mazda disclose to him that his vehicle was not safe or dependable, or that it was equipped with a defective Denso fuel pump.

52. Plaintiff Haines's Mazda suffers from the Fuel Pump Defect because the impeller in his vehicle started absorbing fuel and deforming the moment it was exposed to gasoline.

53. Plaintiff Haines's Mazda suffers from the Fuel Pump Defect and on numerous occasions has experienced hesitated acceleration and difficulty with starting the vehicle.

54. The Fuel Pump Defect creates a dangerous condition that gives rise to a clear, substantial, and unreasonable danger of death or personal injury to Plaintiff Haines, other occupants in his Class Vehicle, and others on the road. At no time did Mazda inform Plaintiff Haines of the seriousness of the Fuel Pump Defect or recommend that he discontinue use of his vehicle until there is a repair or a replacement fuel pump.

55. Plaintiff Haines purchased his Class Vehicle with the Fuel Pump Defect as part of a transaction in which Mazda did not disclose material facts related to the automobile's essential purpose—safe and dependable transportation. Plaintiff Haines did not receive the benefit of his bargain. He purchased a vehicle that is 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. The Fuel Pump Defect has significantly diminished the value of Plaintiff Haines's Class Vehicle.

56. Had Mazda disclosed the Fuel Pump Defect, Plaintiff Haines would not have purchased his Class Vehicle, or would have paid less to do so.

57. Plaintiff Haines would purchase a Mazda in the future if Defendants representations about the vehicle, including its safety and durability, were accurate.

Defendants

58. Defendant Mazda Motor Corporation ("MMC") is a Japanese corporation with its principal place of business in Fuchu, Aki District, Hiroshima Prefecture, Japan, and the parent company of Mazda Motor of America, Inc. ("MMA"). MMC exercises substantial control over MMA, and MMA acts for the benefit of MMC.

59. At all relevant times, MMC acted in the United States by itself and through MMA and its various entities including in this District. MMC, itself and through MMA and its various entities, is in the business of designing, engineering, testing, validating, manufacturing, marketing, and selling Mazda branded vehicles throughout the United States, including within this District.

60. Defendant MMA is incorporated in California with its principal place of business in Irvine, California.

61. MMA is a holding company of sales, manufacturing, engineering, and research and development strategies of MMC in the United States and is wholly owned by MMC. MMA is in the business of designing, engineering, testing, validating, manufacturing, distributing, marketing, selling, and servicing Mazda branded vehicles in the United States, including within this District.

62. MMA, through its various entities, designs, manufactures, markets, distributes and sells Mazda automobiles through its hundreds of dealerships in the United States, including within this District.

63. Defendant Denso Corporation ("Denso") is located at 1-1, Showa-cho, Karlya, Alchi 448-9661, Japan. DC is the parent company of Denso International America, Inc. ("Denso America").

64. DIAM is a wholly owned subsidiary of DC. DIAM acts for the benefit and at the discretion of DC.

65. DC, itself, and through DIAM and its various subsidiaries and agents, designed, engineered, tested, and validated the low-pressure fuel pump that is equipped in Mazda vehicles sold/leased in the United States, including in Plaintiffs' states.

66. DIAM is incorporated in Delaware and has its principal place of business at 2477 Denso Drive Southfield, Michigan 48033. DIAM is a holding company of sales, manufacturing, engineering, and research and development subsidiaries of Denso Corporation located in the United States. DIAM is in the business of designing, engineering, testing, validating, manufacturing, selling, among other things, fuel pumps throughout the United States, including within this District.

67. ' , $ 0 L V ³ ' H Q V R Q R American regional headquarters and parent company for its North American operations, including design and production engineering, technical support, sales and marketing.

68. DIAM, through its various entities and on behalf of DC, designed, engineered, tested, and validated the low-pressure fuel pump that is equipped in Mazda and Acura Vehicles across the Unites States, including in Plaintiffs' states.

IV. FACTUAL ALLEGATIONS

69. Mazda manufactures, markets, and sells vehicles all over the United States, including California.

70. Mazda has branded itself as the maker of safe and dependable vehicles and has spent millions of dollars on extensive marketing and advertising campaigns to cement the association of safety and reliability with its Mazda brand, including the Class Vehicles. Through its investment marketing, Mazda sought to portray itself as the safest vehicle brand on the market.

71. Denso is the world's second largest Tier 1 Original Equipment 0DQXIDFWXUHU ³2(0´ SURGXFLQJ SDUWV DQG manufacturers. According to its website, Denso records nearly $10.9 billion in annual sales in the United States, including in California.

72. According to Denso itself, when designing, engineering, testing, and PDQXIDFWXULQJ LWV SURGXFWV 'HQVR DLPV W VDIHU PRUH FRPIRUWDEOH DQG FRQYHQLHQW I fails to meet Denso's published standard.

73. Defendants collectively designed, engineered, tested, validated, manufactured and placed in the stream of commerce Class Vehicles equipped with defective fuel pumps, thereby subjecting Plaintiffs and Class Members to an unreasonable risk of death or injury, and damaging Plaintiffs and Class Members as further detailed below. Nonetheless, Mazda marketed and sold the Class Vehicles, and has, at all times, uniformly branded the Class Vehicles as safe and dependable.

A. THE OPERATION OF CLASS VEHICLES' LOW-PRESSURE FUEL PUMP

74. The Class Vehicles are equipped with Denso made low-pressure fuel SXPSV WKH ³)XHO 3XPS´

75. All Class Vehicles are equipped with the same or substantially similar defective Fuel Pumps.

76. Fuel Pumps serve a critical role in the function of combustion engines. In simple terms, the fuel pump lifts gasoline out of the fuel tank and sends it to the engine where it is injected into the combustion chamber and ignited, driving the pistons and creating propulsion. Denso explains the role of the electric IXHO SXPS DV ³GHOLYHU>LQJ@ IXHO IURP WKH

depending on the vehicle application's specific requirements. The fuel is transported to fuel injectors which sprays fuel into the engine.[17]

77. The Fuel Pump assembly is mounted inside of the fuel tank. The Fuel Pump assembly consists of a fuel intake strainer at one end and a fuel output line at the other. At the heart of the Fuel Pump assembly is an electric motor with a plastic impeller attached to a rotating shaft. The impeller is a plastic disk that rotates and draws in fuel and pushes it up through the pump.[18] The impeller is equipped with vanes or blades that, when spun, creates negative pressure which lifts the gasoline out of the fuel tank and sends it to the engine. Protruding from the side of the Fuel Pump assembly is a fuel level float and fuel level sender. Figure One illustrates the parts of the Fuel Pump assembly. Figure Two illustrates the internal components of the Denso Fuel Pump's electric motor.

Figure 1 Fuel Pump Assembly Diagram[19]

[17] https://www.denso.am.eu/media/1462778/2020_dems_web.pdf (last visited November 16, 2021)

[18] https://www.denso.am.co.uk/products/automotive-aftermarket/ems-lambda-sensor/fuel-pumps/how-they-work/ (last visited November 16, 2021).

[19] http://www.agcoauto.com/content/news/p2_articleid/1195 (last visited

Figure 2 Electric Motor Internal Components[20]

78. As the electric motor rotates, the impeller spins generating negative pressure. The negative pressure pulls fuel into the pump housing where it passes through the electric motor assembly and exits through the output, into the fuel line and forward to the fuel filter. After exiting the fuel filter, the fuel flow is accelerated via a high pressure pump which delivers pressurized fuel to injectors mounted in the engine. Denso describes the operation of its in-tank fuel pump as follows:[21]

> When the fuel pump motor rotates, the blade moves around the impeller, creating a swirling motion inside the pump to deliver fuel. The fuel then passes around the motor, forcing the check valve upwards to supply fuel to the fuel line.

Figures Three and Four, below, illustrates this sequence.

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[20] https://aftermarket.denso.com.sg/product_info/?cat_id=194 (last visited November 16, 2021).

[21] https://www.denso.com.eu/media/966284/dems180001-fp.pdf (last visited November 16, 2021).

Figure 3 Fuel Pump Sequence[22]

Figure 4 Impeller Rotation Operation[23]

[22] https://www.autoplusdubai.net/blog/fuel-pumps-common-causes-and-how-to-identify-it/ (last visited November 16, 2021)

[23] https://aftermarket.denso.com.sg/product_info/?cat_id=194 (last visited November 16, 2021)

79. At all times, by design, the Fuel Pump assembly and all its components are exposed to gasoline within the tank. Fuel pumps are designed to survive the harsh environment for at least 200,000 miles.[24] Denso claims its fuel SXPSV [3] RIIHU PRUH WKDQ WULSOH WKH OLIHWLP[25]

Figure 5

B. THE CLASS VEHICLES SUFFER FROM A FUNDAMENTALLY DEFECTIVE FUEL PUMP

80. As described herein, the Class Vehicles' Fuel Pumps suffer from a fundamental defect causing them to prematurely fail. Engines operate within a narrow and precisely calibrated air fuel mixture range, which means they are very sensitive to fuel pressure and delivery requirements. Partial, intermittent, or

[24] https://www.autoblog.com/2015/12/24/how-long-does-a-fuel-pump-usually-last/ (last visited November 16, 2021).

[25] https://densoautoparts.com/fuel-pumps.aspx (last visited November 16, 2021).

complete fuel pump failure disturbs the calculated precision and results in engine stalling or hesitancy.

81. Based on Mazda's and Denso's own admissions, and the findings of Plaintiffs' Expert to date, the failure results from a defectively designed plastic impeller in the Fuel Pump.

82. A manufacturer's goal in designing and manufacturing a fuel pump must be to design and create one that operates safely and dependably for the life of the vehicle. According to the analysis of Plaintiffs' Expert to date, and by Mazda's and Denso's admissions, the Fuel Pump assembly in the Class Vehicles was poorly designed and/or manufactured.

83. As Defendants admit, the subject Fuel Pumps contain an impeller that could deform due to excessive fuel absorption.[26] The Denso Fuel Pump impeller's material is unsuitable for its environment due to its excessive fuel absorption propensity, which causes swelling and premature and unexpected Fuel Pump failure.[27]

84. Plaintiffs' Expert's research to date indicates that the Denso impeller uses an unsuitable material for its intended use. The impeller material has an inferior long-term dimensional instability (it deforms, swells and changes shape), resulting in premature and unexpected failure due to component distortion and the resultant swelling induced friction.

85. The Denso impeller's material has inadequate heat resistance, potentially resulting in dimensional distortion and loss of structural integrity when exposed to high temperatures or repeated temperature cycling (i.e., intended and repeated temperature changes of operation).

[26] Compare Exhibits A-B with Exhibits G-G.

[27] See Exhibit A at 1-2.

86. The impeller's material is also highly porous, which may lead not only to absorption of gasoline, but also fuel contaminants may become lodged in the impeller's pores, leading to Fuel Pump failure.

87. Plastics absorb liquids, typically. However, the degree of absorption varies depending on the type of plastic and its environmental conditions. When plastics absorb liquid, such as gasoline, the plastic parts' intended dimensions change. Therefore, manufacturers like Denso and Mazda must adequately design and validate plastic materials exposed to liquids to ensure that they remain dimensionally stable.[28] Here, Mazda and Denso clearly failed to do that with respect to the Fuel Pumps in the Class Vehicles.

88. Moreover, according to Plaintiff's Expert's research to date, Denso's further hypothesis that lower surface strength of the impeller contributes to the Fuel Pump Defect is an obvious and expected correlation rather than a separate issue. Notably, it is typical and expected for a low-density material to exhibit lower surface strength when compared to a higher density material. It is also expected that low density materials would have higher porosity and absorption propensity compared to higher density materials.

89. Mazda and Denso admitted the impeller was poorly designed to the point that it cannot remain dimensionally stable under its intended conditions. Specifically, the Mazda Recall admitted that ³ > I @ X H O S X P S I D L O X U H engine no start and/or vehicle stall while driving at low speed and, in rare instances, a vehicle stall could occur while driving at high speeds, increasing the U L V N R I [29] Moreover, Denso admitted in the Denso Recalls that the impeller ³ P D \ E H F R P H G H I R U P H Fuel Pump to fail and become inoperable.[30]

[28] https://www.ensingerplastics.com/en-us/shapes/plastic-material-selection/dimensionally-stable (last visited November 16, 2021).

[29] Exhibit E.

[30] Exhibit A.

90. The Fuel Pump Defect manifests from the moment the Fuel Pump is installed in the fuel tank and submerged in gasoline. Once exposed to gasoline, the impeller begins to absorb fuel, swell, and deform.

91. The Fuel Pump and/or the Fuel Pump impeller was not designed and/or manufactured with the necessary robustness to operate safely under normal operating conditions.

92. At the time the Fuel Pumps were designed, engineered, tested, validated, manufactured, and placed in the stream of commerce by Defendants, Defendants were aware of, and had access to, reasonable alternative designs. Such designs would mitigate or eliminate the Fuel Pump Defect.

93. For example, Defendants could have mitigated or eliminated the Fuel Pump Defect by using different designs and/or materials where:

a. The impeller was not fuel permeable under intended and foreseeable purposes;

b. The impeller would not deform when exposed to operating temperatures under intended and foreseeable purposes;

c. The impeller would not prematurely age under intended and foreseeable purposes;

d. The impeller would not lose its dimensional stability under intended and foreseeable purposes; and/or

e. The impeller would not contact the fuel pump body under intended and foreseeable pump speeds; and/or

f. The Fuel Pump would not overheat under intended and foreseeable purposes.

94. Nevertheless, Defendants designed, engineered, tested, validated, manufactured, and placed in the stream of commerce Class Vehicles equipped with

the defective Fuel Pumps that cause an unreasonable risk of injury or death to the Plaintiff, Class Members, and others.

C. THE FUEL PUMP DEFECT REDUCES ENGINE POWER, CAUSES VEHICLE STALLING, AND CAN LEAVE THE CLASS VEHICLES COMPLETELY INOPERABLE COMPROMISING CONSUMER SAFETY

95. The Fuel Pump Defect in the Class Vehicles exposes occupants and others to extreme danger, even death. In fact, Mazda and Denso tacitly admitted as much in their respective recalls, stating that the Fuel Pump Defect can ³LQFUHDVH>H@ WKH ULVN RI D FUDVK´[31]

96. The Fuel Pump is an integral component of safe vehicle operation. But as described herein, the Class Vehicles suffer from a fundamental design flaw that causes the Fuel Pump to prematurely fail. As Mazda admitted in its recall, the deformed impeller comes in contact with the Fuel Pump body, creating excess running resistance, UHVXOWLQJ LQ ³HQJLQH SHUIRUPDQFH DQG WDUV ³LQFUHDVLQJ WKH[32] In the Denso Recalls, Denso admitted the deformed impeller contacts the Fuel Pump body, creating excess running resistance and causing reduced engine performance or complete engine failure:

> If an impeller deforms to a point that creates sufficient interference with the fuel pump body, the fuel pump becomes inoperative. According to vehicle manufacturer system evaluation, an inoperative fuel pump may result in the illumination of the check engine light and/or master warning indicators, rough engine running, engine no start and/or vehicle stall while driving at low speed and, in rare instances, a vehicle stall could occur while driving at higher speeds, increasing the risk of a crash.[33]

[31] Compare Exhibits A-B with Exhibit E.

[32] Exhibit E.

[33] See Exhibits A and B.

97. Engines necessarily require steady gasoline supply to function properly. The Fuel Pump's primary purpose is to transfer gasoline from the tank to the engine. But when the Fuel Pump fails, gasoline is not supplied to the engine, causing reduced engine power, stalling, and/or engine shutdown.

98. Compounding the problem, Fuel Pump Defect occurs spontaneously with no advance warning to the consumer, thereby creating an extremely dangerous condition for drivers, including those on the road who may be left helpless and unable take action to get out of the way of oncoming traffic or reach safety.

99. Class Members' complaints set forth below exemplify the real-world dangers caused by the Fuel Pump Defect.

100. Vehicle manufacturers like Mazda monitor NHTSA and other databases for consumer complaints as part of their ongoing obligation to uncover and report potential safety-related defects. Accordingly, Mazda knew, or should have known, of the many complaints lodged with NHTSA and elsewhere about the specific safety hazard that is the subject of the Recalls.

101. By way of example, the consumer complaints set forth below demonstrate the seriousness of the Fuel Pump Defect and further show that Mazda knew or should have known of them as early as 2017, or was reckless in not knowing of them. These consumer complaints represent a small fraction of the hundreds of similar complaints submitted to NHTSA by owners and lessees of the Class Vehicles regarding the Fuel Pump Defect.

102. On August 21, 2017, the owner of a 2015 Mazda3 filed the following complaint with NHTSA:

> HOT WEATHER ACCELERATION AND BLIND SPOT MONITORING SYSTEM (BSM) ISSUE: IN EXTREMELY HOT WEATHER BSM OFF LIGHT TURNS ON REPEATEDLY WHILE THE VEHICLE IS IN MOTION OR STARTING FROM COMPLETE STOP. AT THE SAME TIME THE INFOTAINMENT SYSTEM DISPLAY FLICKERS IN SYNC WITH THE BSM OFF

> LIGHT APPEARANCE. WHEN THIS OCCURS THERE IS A CLICKING SOUND COMING FROM THE FRONT OF THE CAR/WHERE THE ENGINE IS LOCATED. THE SOUND IS ACCOMPANIED BY TEMPORARY LOSS OF ACCELERATION WHEN IN MOTION OR STARTING TO MOVE FROM A COMPLETE STOP. WHEN THIS OCCURS WHILE STARTING FROM A COMPLETE STOP, THE ENGINE REVOLUTIONS (REV) DROPS BELOW 1K RPM DESPITE GAS PEDAL INPUT THUS THE CAR WOULD NOT MOVE/ACCELERATE FOR ABOUT 5 SECONDS. WHENT OCCURS WHEN THE CAR IS IN MOTION SUCH AS ON THE HIGHWAY OR MERGING ONRAMP INTO THE HIGHWAY THE CAR UNSAFELY SLOWS DOWN DESPITE GAS PEDAL INPUT. AGAIN THIS ISSUE IS OBSERVED DURING UNUSUALLY HOT DAYS EG. JULY 22, 2017 IN ST. LOUIS, MISSOURI[34]

103. On January 31, 2018, the owner of a 2013 Mazda CX-7 filed the following complaint with NHTSA:

> TL* THE CONTACT INQUIRED ABOUT A 2013 MAZDA CX-7. THE CONTACT STATED THAT THE VEHICLE EXPERIENCED A LACK OF ACCELERATION AND REDUCED ENGINE POWER. ALSO, THE TRACTION CONTROL WARNING INDICATOR ILLUMINATED. THE DEALER WAS NOT CONTACTED. THE MANUFACTURER WAS NOT NOTIFIED. THE FAILURE MILEAGE WAS APPROXIMATELY 59,400.[35]

104. On May 13, 2018, the owner of a 2018 Mazda CX-5 filed the following complaint with NHTSA:

> SITUATION: DRIVING UPHILL ON HWY 120 ON NEW PRIEST ROAD, BIG OAK FLAT, CA, TWO LANE MOUNTAIN ROAD. SLOW CAR IN FRONT OF ME AND A DELIVERY TRUCK TAILGATING. SLOW CAR EVENTUALLY MOVES ASIDE IN A TURNOUT AND I ACCELERATE TO OPEN UP SPACE BETWEEN MYSELF AND WHAT I THOUGHT WOULD BE THE TRUCK BUT SOMEHOW THE SLOW CAR RETURNED TO THE DRIVING LANE AHEAD OF THE TRUCK. I CONTINUE TO ACCELERATE TO ATTEMPT TO OPEN UP SPACE BETWEEN

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[34] NHTSA ID 11018752.
[35] NHTSA ID 11066016.

> MYSELF AND THE CAR BEHIND ME WHEN I LOST POWER, THE CAR BEHIND ME MOVES TO THE OPPOSING TRAFFIC LANE TO AVOID REAR ENDING MY CAR THAT IS RUNNING IN DEGRADED MODE (ACCELERATOR HAS NO EFFECT, BASICALLY MOVING ON IDLE POWER) AND NARROWLY MISSES AN ONCOMING CAR AS I MOVE TOWARDS THE RIGHT EDGE OF THE RIGHT LANE. TRUCK BEHIND ME HAS TO BRAKE HARD TO AVOID REAR ENDING ME. THERE WAS NO SHOULDER TO PULL OVER TO AT THAT LOCATION IMMEDIATE LOCATION. I PULL OVER A FEW HUNDRED YARDS FURTHER AT A SAFE LOCATION. GRADE WAS PERHAPS 4% TO 6%. WEATHER: HOT 90 DEGREES SPEED: ACCELERATING FROM 35 TO 50 MPH (GUESS). DIAGNOSTIC LIGHTS: SMART CITY BRAKING SYSTEM FAILURE WARNING, PLUS A LOT OF OTHER WARNING LIGHTS LIT INCLUDING CHECK ENGINE LIGHT. AFTERMATH: I PULLED SAFELY OVER, STOPPED THE ENGINE, WAITED A WHILE AND RESTARTED THE ENGINE AND THE CAR RETURNED TO ITS NORMAL DRIVING BEHAVIOR AND COMPLETED MY TRIP. OTHER INFORMATION: THIS IS THE 3RD OCCURRENCE OF THIS BEHAVIOR. EACH TIME I HAVE HAD MAZDA LOOK AT THE PROBLEM. 1ST OCCURRENCE THEY REPLACED THE CYLINDER COIL, 2ND OCCURRENCE THEY REPLACED A SPARK PLUG FOR MISFIRE. 3RD OCCURRENCE, TO BE DETERMINED.[36]

105. On June 12, 2018, the owner of a 2015 Mazda3 filed the following complaint with NHTSA:

> TL* THE CONTACT OWNS A 2015 MAZDA 3. WHILE ACCELERATING FROM A TRAFFIC LIGHT, THE VEHICLE STALLED WITHOUT WARNING. THE CONTACT WAS UNABLE TO RESTART THE VEHICLE. THE VEHICLE WAS TOWED TO GUNTHER MAZDA (1800 S STATE RD 7, FORT LAUDERDALE, FL 33317, (954) 791-1600) WHERE IT WAS DIAGNOSED THAT THE BATTERY NEEDED TO BE REPLACED. THE VEHICLE WAS REPAIRED; HOWEVER, THE FAILURE RECURRED. THE VEHICLE WAS THEN TOWED TO LOU BACHRODT MAZDA COCONUT CREEK (5400 SR 7, COCONUT CREEK, FL 33073, (954) 247-5000) WHERE IT WAS DIAGNOSED THAT THE FUEL PUMP NEEDED TO BE

[36] NHTSA ID 11416469.

> REPLACED. THE VEHICLE WAS REPAIRED, BUT THE FAILURE RECURRED TWICE. THE MANUFACTURER WAS INFORMED OF THE FAILURES. THE APPROXIMATE FAILURE MILEAGE WAS 36,000.[37]

106. On July 15, 2018, the owner of a 2018 Mazda-9 CX filed the following complaint with NHTSA:

> ON FRIDAY (JUNE 29TH, 2018) AROUND 9:29 PM, MY CAR BROKE DOWN WHILE MY FAMILY AND I WERE TRAVELING FROM ROCHESTER NY TO BOSTON MASSACHUSETTS. I WAS DRIVING DOWN THE MASSACHUSETTS TURNPIKE WHEN ALL OF A SUDDEN MY CHECK ENGINE LIGHT TURNED ON AND MY CAR JUST STARTED TO SLOW DOWN IN THE MIDDLE OF THE HIGHWAY. I WAS ABLE TO PULL OVER IN TIME AND CALLED MAZDA ROADSIDE ASSISTANCE BECAUSE AFTER THE CAR STOPPED, IT WOULDN¶T TURN BACK ON. SINCE WE WERE ON A RESTRICTED HIGHWAY, MY CAR HAD TO BE TOWED AND WE WERE TAKEN TO A SAFER LOCATION. WHEN THE CAR WAS PUT DOWN, IT TURNED ON AND THE CHECK ENGINE LIGHT WAS STILL ON AND THE FUEL GAUGE SAID THAT THE CAR STILL HAD 40 MILES LEFT. THE GUY THAT TOWED OUR CAR SAID THAT IT MIGHT HAVE BEEN A FUEL ISSUE, SO WE WENT TO GET GAS. ONCE WE FILLED UP OUR TANK THE CHECK ENGINE LIGHT WAS STILL ON BUT WE WERE ABLE TO REACH OUR DESTINATION. THE NEXT MORNING, I TOOK THE CAR TO THE NEAREST MAZDA DEALERSHIP AND THEY RESTARTED THE CAR AND ACCORDING TO THEIR REPORT NOTHING WAS WRONG WITH THE CAR. THEY SAID THAT IT WAS SAFE TO DRIVE BUT THEY HAD NO CLEAR REASON AS TO WHY THE FUEL GAUGE WASN¶T STATING THE CORRECT INFORMATION. AFTER THE TRIP I, REPORTED THIS ISSUE TO MAZDA AND THEY DIDN¶T ANSWER ME UNTIL TWO WEEKS LATER. THEIR RESPONSE WAS THAT THERE WAS PROBABLY NOTHING WRONG WITH THE VEHICLE AND THAT THIS WAS A ONE TIME ISSUE. I DID RESEARCH ON MY OWN AND DISCOVERIES THAT SOMEONE FROM SAUDI ARABIA HAD A SIMILAR ISSUE. SINCE MAZDA HASN¶T BEEN WILLING TO HELP RESOLVE THE SITUATION I AM FILING THIS COMPLAINT BECAUSE I

[37] NHTSA ID 11101309.

> AM NOT WILLING TO PUT MY FAMILIES LIFE IN THE SAME RISK AGAIN.[38]

107. On January 2, 2019, the owner of a 2014 Mazda3 filed the following complaint with NHTSA:

> OCCASIONALLY THE ENGINE WILL HESITATE WHEN ACCELERATING, AND THEN THE CHECK ENGINE LIGHT, TPM, AND STABILITY CONTROL LIGHT WILL ILLUMINATE ON THE DASH. LESS FREQUENTLY, THE ENGINE WILL OCCASIONALLY STALL WHILE DRIVING OR WHILE SITTING AT A STOP LIGHT. THE LIGHTS ON THE DASHBOARD WILL REMAIN ILLUMINATED, SO I DO NOT THINK IT IS A TOTAL LOSS OF POWER.[39]

108. On June 2, 2019, the owner a 2019 Mazda3 filed the following complaint with NHTSA:

> REAR VIEW MIRROR FELL OFF WHILE ON THE FREEWAY. HOT DAYS WILL BREAK DOWN THE ADHESIVE AND CAUSE THE REAR VIEW MIRROR TO FALL OFF. - BRAKES VIBRATE HARSHLY WHEN IN SPORT MODE. FASTER THE VEHICLE GOES, THE MORE HARSH THE BRAKES WILL VIBRATE. - ACCELERATION IS JERKY ON LOW END (1ST/2ND) GEAR. IN STOP AND GO TRAFFIC, OR GOING UP HILL ON LOAD, ACCELERATION WILL FEEL JERKY WHEN TRY TO KEEP A STEADY SPEED BETWEEN 15-25MPH. CAR FEELS NORMAL WHEN PUSHING THE ACCELERATION HARDER.[40]

109. On July 23, 2019, the owner of a 2016 Mazda CX-9 filed the following complaint with NHTSA:

> IN 2017, MY CAR SHUT OFF TWO TIMES, WITHOUT WARNING, ONE TIME AT A STOP LIGHT AND AGAIN ON THE HIGHWAY GOING 70MPH. WE WERE ACCELERATING AT THE STOP LIGHT WHEN IT SHUT OFF AND THEN DRIVING ON THE HIGHWAY. TOOK THE CAR TO THE

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38 NHTSA ID 11111474.

39 NHTSA ID 11164555.

40 NHTSA ID 11217419.

> DEALERSHIP AND 72 CODES CAME UP. THEY SAID IT WAS THE DVD PLAYERS (THAT THEY SOLD AND INSTALLED!!!) THAT WERE CAUSING THE ISSUE. THEY SUPPOSEDLY FIXED THE ISSUE. NOW IN JULY 2019, THE CAR SHUT OFF AN ADDITIONAL FIVE TIMES. THREE TIMES WHILE DRIVING AND TWICE IN A PARKING LOT. WE WERE ON A HIGHWAY AGAIN WHEN THE CAR JUST SHUT OFF WITH NO WARNING, LIGHTS ON THE DASH STARTED FLASHING, AND THE POWER STEERING WENT OUT ONE OF THE TIMES. MY HUSBAND HAD TO PUT IT IN NEUTRAL, COAST TO THE SHOULDER, COME TO A COMPLETE STOP AND THEN ATTEMPT TO START IT EACH TIME. CARS WERE DODGING US EVERY TIME AND LUCKILY WE WEREN'T HURT. MY CHILDREN WERE IN THE VEHICLE EVERY SINGLE TIME. WE HAD THE CAR TOWED TO THE DEALERSHIP WHERE 68 CODES CAME UP. THIS TIME THEY'RE SAYING IT'S THE FUEL PUMP AND THAT THEY CAN FIX IT, BUT CAN'T 100% GUARANTEE IT WON'T HAPPEN AGAIN. WE WERE PUT IN A LIFE THREATENING SITUATION EVERY TIME, WITHOUT WARNING, AFTER GIVING THE DEALERSHIP A CHANCE TO FIX IT. THE CAR IS UNDER THREE YEARS OLD AND ONLY HAS 30,400 MILES ON IT.[41]

110. On September 6, 2019, the owner of a 2018 Mazda CX-5 filed the following complaint with NHTSA:

> TL* THE CONTACT OWNS A 2018 MAZDA CX-5. WHILE DRIVING 20 MPH AND BELOW, THE VEHICLE FAILED TO ACCELERATE. THE CONTACT HAD TO DEPRESS THE ACCELERATOR PEDAL WITH FORCE TO INCREASE THE SPEED. THE CONTACT TOOK THE VEHICLE TO FINDLAY MAZDA (7760 EASTGATE ROAD, HENDERSON, NV 89011, (702) 955-5555) TO BE REPAIRED PER NHTSA CAMPAIGN NUMBER: 19V497000 (ENGINE, POWER TRAIN); HOWEVER, THE REPAIR DID NOT CORRECT THE FAILURE. THE CONTACT TOOK THE VEHICLE BACK TO THE DEALER, BUT THEY WERE UNABLE TO LOCATE ANY FAILURE CODES. THE MANUFACTURER WAS CONTACTED AND PROVIDED

[41] NHTSA ID 11234063.

CASE NUMBER: 12318934006. THE VEHICLE WAS NOT REPAIRED. THE FAILURE MILEAGE WAS 24,800.[42]

111. On September 27, 2019, the owner of a 2014 Mazda6 filed the following complaint with NHTSA:

> ENGINE WILL STALL OUT WHILE DRIVING VEHICLE LOSES ALL POWER CHECK ENGINE LIGHT COMES ON BATTERY LIGHT COMES ON TRACTION CONTROL LIGHT COMES ON. WHEN ENGINE STALLS OUT AND THEN I LOSE POWER STEERING AND BRAKE CONTROL AND WILL HAVE TO PULL OVER TO THE SIDE TO RESTART THE VEHICLE. ENGINE WILL SPUTTER ON START UP WHICH SOUNDS LIKE A FAULTY MASS AIRFLOW SENSOR THIS IS A 2014 MAZDA MAZDA 6 WITH 57000 MILES[43]

112. On November 12, 2019, the owner of a 2018 Mazda CX-5 filed the following complaint with NHTSA:

> MAZDA CX-5. CONSUMER WRITES IN REGARDS TO VEHICLE BEING TOTALED AS A RESULT OF LOSS OF ENGINE POWER. *LD *JS[44]

113. On February 6, 2020, the owner of a 2019 Mazda CX-5 filed the following complaint with NHTSA:

> I WAS DRIVING ON THE FREEWAY ABOUT 65 MILES PER HOUR AND THE THE CAR STARTED TO RUN ROUGH AND THE DASH LIGHTS WENT OUT. IT FELT LIKE IT WANTED TO STALL SO I KEPT MY FOOT ON THE GAS AND BRAKE AND EXITED THE FREEWAY AND DROVE THE SIDE STREETS HOME. THE PROBLEM DID NOT HAPPEN AGAIN SO FAR.[45]

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42 NHTSA ID 11253636.

43 NHTSA ID 11258590.

44 NHTSA ID 11278994.

45 NHTSA ID 11307591.

114. On May 9, 2020, the owner of a 2018 Mazda CX-5 filed the following complaint with NHTSA:

> ON MAY 9, 2020, OUR MAZDA CX5 LOST THRUST, STALLED AND CAME TO A COMPLETE STOP WHILE DRIVING ON A HIGHWAY GOING 55 MPH ON A STRAIGHT 3 LANE ROAD. THIS OCCURRED DESPITE THE PCM PROGRAMMING WAS RE-CALIBRATED DUE TO A MANUFACTURER RECALL IN SEPTEMBER 2019 (NHTSA RECALL NO. 19V497000). THE CAR IS TOWED TO A MAZDA SERVICE CENTRE AND IS AWAITING DIAGNOSIS. *TR[46]

115. On June 16, 2020, the owner of a 2019 Mazda CX-5 filed the following complaint with NHTSA:

> IN JULY 2019 (APPROXIMATELY 2 MONTHS AFTER DELIVERY) MY 2019 MAZDA CX-5 BEGAN TO DRIVE ROUGHLY AT SLOW SPEEDS- SPECIFICALLY SPEEDS 15 MPH OR BELOW. THEVEHICLE WOULD NOT COAST (EVEN DOWNHILL) AND WOULD SEEM TO SLIP OUT OF GEAR (THIS VEHICLE HAS AN AUTOMATIC TRANSMISSION). MORE SPECIFICALLY, THE VEHICLE WOULD BUCK AND LURCH ON IT'S OWN WITHOUT ENGAGING THE ACCELERATOR OR BRAKE. THIS WAS HAPPENING GOING UPHILL, DOWNHILL AND ON FLAT GRADE. I BROUGHT THE VEHICLE TO THE DEALER AND AT THEIR REQUEST TOOK AN EMPLOYEE FOR A DRIVE SO THEY COULD FEEL IT. THE EMPLOYEE DID FEEL IT, TOLD THE SERVICE MANAGER, WHO THEN TOLD ME THAT, "THEY ARE SUPPOSED TO DRIVE LIKE THAT."HE SAID HE DROVE AROUND ANOTHER VEHICLE ON THE LOT THAT IS THE SAME MODEL AND YEAR, AND THAT IT PERFORMED THE SAME. PLEASE NOTE THAT THIS IS NOT THE SAME PERSON WHO WAS IN THE CAR TO EXPERIENCE HOW MY CAR WAS DRIVING. I PERSONALLY KNOW TWO OTHER PEOPLE WHO HAVE THE SAME EXACT YEAR AND MODEL CX-5. I SHARED MY EXPERIENCE WITH BOTH OWNERS- THEY BOTH TOLD ME THAT THEIR CARS DO NOT PERFORM IN THAT WAY. ADDITIONALLY, I DROVE ONE OF THOSE VEHICLE AND THAT ONE DID NOT PERFORM IN THE SAME WAY THAT MINE DOES. I AM CONCERNED THAT THIS

[46] NHTSA ID 11324001.

> ISSUE IS BEING BRUSHED OFF. THERE IS NO WAY THAT MAZDA WOULD PURPOSELY DESIGN A CAR SO THAT IT JERKS, LURCHES, AND BUCKS AT SLOW SPEEDS. I HAVE READ REVIEWS ON ONLINE MESSAGE BOARDS WHERE OTHERS DO COMPLAIN OF SIMILAR EXPERIENCES, WHICH IS EVEN MORE CONCERNING. THIS POSES A SAFETY ISSUE FOR THE DRIVER, PASSENGERS, AND OTHERS ON THE ROAD WHO MAY BE DRIVING NEARBY. I HAVE AN APPOINTMENT AND WILL BE TAKING THE CAR BACK THIS COMING MONDAY TO TRY AND FURTHER ADDRESS THIS ISSUE, BUT FELT IT NECESSARY TO FILE HERE IN THE CASE THAT FURTHER ACTION NEEDS TO BE TAKEN AT A LARGER SCALE SINCE IT APPEARS AS IF OTHERS, THOUGH NOT ALL, 2019 MAZDA CX-5 OWNERS ARE EXPERIENCING THE SAME. *TR[47]

116. On June 30, 2020, the owner of a 2020 Mazda CX-30 filed the following complaint with NHTSA:

> I WAS DRIVING CAR ON THE HIGHWAY AND AS I PREPARED TO EXIT I BRAKED AND THE CAR HESITATED FOR 2 SECONDS BEFORE BRAKES ENGAGED. CAR HAS ALSO HAD HESITATION UPON ACCELERATION PERIODICALLY .THIS HAS BEEN AN ISSUE UPON JUST A FEW WEEKS OF OWNERSHIP. THE BREAK ISSUE WAS JUST RECENTLY-7-29-20 I HAVE TAKEN THE CAR TO THE LOCAL DEALERSHIP ABOUT THE DRIVING/ACCELARATION ISSUE TWICE WITHOUT RESOLUTION .[48]

117. On September 4, 2020, the owner of a 2016 Mazda CX-5 filed the following complaint with NHTSA:

> TL* THE CONTACT OWNS A 2018 MAZDA CX-5. THE CONTACT STATED WHILE DRIVING AT LOW SPEEDS, THE VEHICLE STALLED AND WAS RESTARTED. WHILE THE PUSH-TO-START WAS ENGAGED, THE VEHICLE REVVED UP HIGH, STALLED, AND RESTARTED. ADDITIONALLY, THE AIR CONDITIONER FAILED TO OPERATE AS DESIGNED. THE RADIO WAS ALSO INOPERABLE. THE

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47 NHTSA ID 11329175.

48 NHTSA ID 11331647.

> CHECK ENGINE WARNING LIGHT WAS ILLUMINATED. THE VEHICLE WAS TAKEN TO GUNTHER MAZDA (1800 S STATE RD 7, FORT LAUDERDALE, FL 33317, (954) 426-6565) WHERE IT WAS DIAGNOSED THAT THE BATTERY, A/C MOTOR AND AN UNKNOWN CONTROLLER NEEDED TO BE REPLACED. THE VEHICLE WAS REPAIRED SEVERAL TIMES HOWEVER, THE FAILURE RECURRED. THE MANUFACTURER WAS CONTACTED HOWEVER, NO FURTHER ASSISTANCE WAS PROVIDED. THE FAILURE MILEAGE WAS 2,000.[49]

118. On February 8, 2021, the owner of a 2017 Mazda CX-5 filed the following complaint with NHTSA:

> LOSS OF POWER TO A COMPLETE SHUTDOWN WHILE AT HIGHWAY SPEEDS OF 60-70MPH WITH FUEL TANK READING 30 MILES TO EMPTY. TOW WAS NECESSARY TO DEALERSHIP. REPLACED FUEL PUMP. 2ND OCCURRENCE WITH 60 MILES TO EMPTY. BROKE DOWN AGAIN WHILE AT HIGHWAY SPEEDS. TOWED A SECOND TIME TO DEALERSHIP. REPLACE HIGH/LOW FUEL PUMP. WAS INSTRUCTED NOT TO OPERATE VEHICLE BELOW 1/4 TANK OF FUEL. MAJOR SAFETY ISSUE WHILE AT HIGHWAY SPEEDS WITH DIFFICULTY MOVING TO A SAFE AREA. SEEMS TO BE A DESIGN OR FUEL PUMP ISSUE.[50]

119. On February 14, 2021, the owner of a 2017 Mazda6 filed the following complaint with NHTSA:

> I BOUGHT MY 2017 MAZDA 6 BRAND NEW. WHILE THE CAR WAS IN WARRANTY IN JANUARY 2020 WHILE I WAS DRIVING WITH 50 MILES IN HOUR, THE ENGINE WAS RUNNING ROUGH, THE ENGINE LIGHT WAS ON AND THE ENGINE STALL. THE CAR WAS TOWED BY MAZDA AT DEALER. THEY REPLACED THE FUEL PUMP AT THAT TIME. FEW DAYS AGO WHILE I WAS DRIVING WITH 35 MILES IN HOUR THE CAR DID THE SAME THING. MAZDA TOWED THE CAR TO ANOTHER DEALER. AFTER DIAGNOSIS THEY TOLD ME THAT IS NOTHING WRONG WITH THE CAR AND THE CAR IS NOT UNDER THE WARRANTY ANYMOORE . I TOLD THEM THAT THE ENGINE LIGHT WAS ON AND

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[49] NHTSA ID 11353214.

[50] NHTSA ID 11395226.

> SOMETHING MUST BE WRONG. THEY DIDN'T RESPOND. THE CAR HAS 24,000 MILES AND I AM AFRAID TO DRIVE IT ANYMORE.[51]

120. On April 13, 2021, the owner of a 2017 Mazda CX-5 filed the following complaint with NHTSA:

> DRIVING ON EXPRESSWAY 65MPH WITH JUST UNDER A QUARTER TANK OF GAS AND ENGINE CUT OFF ON ITS OWN. MY SON WAS ABLE TO PULL OFF TO THE SIDE OF THE ROAD, BUT WAS VERY DANGEROUS AS IT WAS A VERY BUSY HIGHWAY. I FEEL THAT THE FUEL PUMP IS DEFECTIVE AT HIGHWAY SPEEDS. HAD VEHICLE IMMEDIATELY TOWED TO CLOSEST DEALER. I WAS CHARGED A DIAGNOSTIC FEE. AGAIN, I FEEL IT IS A WEAK DESIGN OF THE FUEL PUMP AND DANGEROUS TO DRIVE AT HIGHWAY SPEEDS.[52]

121. On April 23, 2021, the owner of a 2013 Mazda CX-5 filed the following complaint with NHTSA:

> WHILE DRIVING MY VEHICLE ON THE INTERSTATE THE CAR LOST THE ABILITY TO ACCELERATE. ALL OF THE DASHBOARD LIGHTS CAME ON AND I HAD TO COAST TO THE SIDE OF THE INTERSTATE. AFTER RESTARTING THE VEHICLE I WAS ABLE TO DRIVE IT BUT I CANNOT TAKE THE VEHICLE OVER 30 MPH NOW WITHOUT IT SHUTTERING AND HAVING ACCELERATION ISSUES. THIS IS A SERIOUS AND LIFE THREATENING ISSUE THAT NEEDS TO BE FIXED FREE OF CHARGE. I HAVE FOUND OTHER REPORTS OF THIS HAPPENING BUT I SEE NO RECALL INFORMATION. THIS NEEDS TO BE FIXED BEFORE MAZDA HAS LAWSUITS FILED AGAINST THEM. THIS IS A MANUFACTURING ERROR AND NOT A USAGE ERROR. PLEASE LOOK INTO THIS.[53]

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51 NHTSA ID 11396179.

52 NHTSA ID 11407948.

53 NHTSA ID 11413591.

122. On September 12, 2021, the owner of a 2018 Mazda CX-5 filed the following complaint with NHTSA:

> WILL NOT ACCELERATE AT TIMES NO MATTER HOW FAR YOU PRESS DOWN ON GAS PEDAL AND WILL STALL RIGHT AFTER. I WILL PULL OVER SHUT OFF VEHICLE AND RESTART. THIS SOMETIMES CORRECTS THE PROBLEM RIGHT AWAY. OTHER TIMES IT LASTS LONGER. SYSTEM MALFUNCTION LIGHT RANDOMLY COMES ON.[54]

123. As demonstrated above, Class Vehicles suffer from a uniform defect that causes the Fuel Pump to malfunction and fail prematurely. Compounding the issue, drivers often are not protected from these safety risks by a warning prior to Fuel Pump failure. The above complaints are mere examples of the ones lodged with NHTSA regarding the Fuel Pump Defect. All the complaints above experienced symptoms associated with the Fuel Pump Defect.[55]

124. Mazda knew that the Fuel Pump Defect was present in all Class Vehicles equipped with the defective Denso Fuel Pump, as demonstrated above, but it failed to include them in the Recall. Mazda's unconscionable act deprives those Class Members not included in the Recall a free and adequate repair, if one is devised and implemented.

125. As demonstrated, the Fuel Pump Defect affects all Class Vehicles, and not just the vehicles that were part of Mazda's Recall. Additionally, the Fuel Pump Defect creates an unreasonable risk of injury or death to Plaintiffs, Class Members, and others.

126. The Fuel Pump Defect causes Class Vehicles to become dangerous and inoperable while on the road and therefore they are not fit for their ordinary purpose.

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54 NHTSA ID 11432642.

55 See, e.g., Exhibits A and C.

D. DEFENDANTS KNEW ABOUT THE FUEL PUMP DEFECT, BUT CONTINUED TO MANUFACTURE, MARKET, AND SELL CLASS VEHICLES

127. Mazda knew, should have known, or were reckless in not knowing about the Fuel Pump Defect, but concealed or failed to disclose the defect and continued to manufacture, market, and sell its popular Class Vehicles, including the Recalled Vehicles, equipped with the defective Denso Fuel Pump. Specifically, Mazda knew, should have known, or was reckless in not knowing the defective Fuel Pumps in the Class Vehicles exposed Class Members to extreme danger and, in order to render them safe, the Class Vehicles needed new or enhanced Fuel Pumps that functioned safely and as intended. Nonetheless, Mazda failed to take corrective action.

128. In fact, Mazda knew, should have known, or was reckless in not knowing about the Fuel Pump Defect since the pre-release process of designing, manufacturing, engineering, and testing the Class Vehicles. Specifically, Mazda conducts rigorous pre-production testing and validation.[56] Mazda and Denso conduct various pre-release testing, such as production part approval process (3333$3´ WHVWLQJ DQG IDLOXUH PRGH DQG (IIHFWV DQDO\VLV). During these phases, Mazda would have gained comprehensive and exclusive knowledge about the Fuel Pumps, particularly the basic engineering principles behind the construction and function of the Fuel Pumps such as their impellers' susceptibility to fuel absorption and deformation. However, Mazda failed to act on that knowledge and instead installed the defective Fuel Pumps in the Class Vehicles,

[56] http://suppliers.mazdausa.com/Library/Quality_Control_Standard_For_Suppliers.pdf?bcs-agent-scanner=a38b7f25-5b0-3443-829f-9a9ba5195bd0 (last visited November 16, 2021).

and Mazda subsequently marketed and sold the vehicles to unsuspecting consumers without disclosing the safety risk arising to Class Members.

129. Further, as set forth above, the TREAD Act requires automakers like Mazda to be in close contact with NHTSA regarding potential defects, and therefore Mazda should (and does) monitor NHTSA databases for consumer complaints regarding their automobiles. From its monitoring of the NHTSA databases, Mazda knew or should have known of the many Fuel Pump Defect complaints lodged as early as 2017, such as those quoted above. However, Mazda failed to act on that knowledge by taking action, including recalling the vehicles with the Fuel Pump Defect.

130. Despite Mazda's extensive knowledge, Mazda failed to act on that knowledge by warning Class Members. Sacrificing consumer safety for profits, Mazda instead chose to enrich itself by using false and misleading marketing to sell the Class Vehicles as safe and durable at inflated prices.

131. Like Mazda, Denso knew of the Fuel Pump Defect since long before it recalled its defective Fuel Pumps on April 27, 2020. Denso tells customers [illegible] manufacturing and testing process produces each [illegible] As part of its rigorous testing of fuel pumps and its ongoing relationships with manufacturer customers, Denso knew or should have known about the Fuel Pump Defect months, if not years, before it initiated a recall on April 27, 2020.

132. Evidencing its extensive knowledge, Denso knew as early as 2016 about the Fuel Pump Defect. In 2016, Denso filed a patent application with the United States Patent and Trademark Office to change the chemical composition of its impeller for greater resistance to swelling. As Denso stated in the application:

> The housing includes an inner wall defining a pump chamber into which a fuel flows. The impeller is made of resin and housed in the housing. The impeller is positioned such that a clearance having a specified dimension is secured between the inner wall and the

> impeller. The impeller may be swelled due to the fuel and water contained in the fuel, therefore a rotation of the impeller may be stopped when the impeller is swelled and comes into contact with the housing. Thus, the dimension of the clearance is set to prevent the impeller from coming in contact with the housing. However, when the dimension of the clearance is too large, an abnormality, e.g., an increase of an output loss of the fuel pump or an increase of a power consumption of the fuel pump, may occur because the fuel leaks through the clearance. Therefore, it is required to find a resin material to suppress a dimensional change of the impeller, which is mounted to the fuel pump, due to the fuel and the water contained in the fuel. The dimensional change will be referred to as a swelling amount hereinafter.[57]

133. Denso's knowledge of the Fuel Pump Defect reasonably predates the filing of the patent because Denso must have discovered the need for improved impeller material well before it filed the patent. Specifically, Denso must have learned of the Fuel Pump Defect since the original design, engineering, testing, and validation of the Fuel Pump and impeller, but at the very least from continued product improvement, testing, and validation of the Fuel Pump and impeller.

134. Thus, between 2016, when Denso first learned of the Fuel Pump Defect, and April 27, 2020, when Denso issued the recall to Mazda and other automobile manufacturers, Denso had exclusive knowledge of the Fuel Pump Defect, and yet Denso failed to disclose the Defect to Plaintiff and other Class Members.

135. Alternatively, Denso actively concealed, and continues to conceal, the Fuel Pump Defect. Denso long knew of the Fuel Pump Defect, but in order to capitalize its economic gains, it intentionally failed to disclose it to Mazda or the Class Members. The Fuel Pump Defect is a serious safety defect that places

[57] U.S. Patent Application No. 15767375, Impeller for Fuel Pump, (application date Oct. 26, 2016) (Denso Corporation, et al. applicants), available at https://patentscope.wipo.int/search/en/detail.jsf?docId=US231859133 (last visited November 16, 2021).

Plaintiffs and Class Members at an increased risk for injury or death, as Denso admitted.[58] Mazda and Class Members did not know of the Fuel Pump Defect, and they couldn't have discovered it through reasonable diligence. Plaintiff and other Class Members were damaged by Denso's failure to disclose the Fuel Pump Defect, and had Denso disclosed it, they would not have purchased their Class Vehicles equipped with the Fuel Pump, or certainly would have paid less to do so.

136. Denso could have, but failed to, disclose the Fuel Pump Defect to Mazda. Additionally, Denso could have, but failed to, disclose the Fuel Pump Defect to Plaintiffs and the Class Members by publishing it on its website, issuing a press release, or issuing an equipment recall, like it ultimately did.

137. Defendants, at all material times, regularly met and collaborated, and continue to meet and collaborate, regarding product quality and trends. Through these regular discussions, each Defendant knew, should have known, or were reckless in not knowing what the other knew about the Fuel Pump Defect or the Fuel Pump in general.

138. Despite Defendants' extensive knowledge, they failed to act on that knowledge by warning Class Members. Sacrificing consumer safety for profits, Defendants instead chose to enrich themselves by using false and misleading marketing to sell the Fuel Pumps and Class Vehicles as safe and durable at inflated prices.

E. MAZDA CONTINUOUSLY TOUTED CLASS VEHICLES AS SAFE AND DEPENDABLE, CONCEALING THE FUEL PUMP DEFECT

139. Mazda's overarching marketing message for the Class Vehicles was and is that the vehicles are safe and dependable and that their engines can be relied on to perform well. This marketing message is false and misleading given the

[58] Exhibits A and B.

propensity of the Fuel Pumps in the Class Vehicles to fail, causing the vehicles engines to run rough, stall and become inoperable which, as Mazda admits, creates an unreasonable risk of a crash.

140. For example, Mazda dedicates a page on its website entitled ³VDIHW\´ ZKHUH 0D]GD WRXWV WKH VDIHW\ RI L indicate:[59]

141. In addition to its general marketing message of safety, Mazda made representations specifically about the safety of the Class Vehicles. For example, below is a screen shot from a 2013 Mazda 3 sales brochure:[60]

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[59] https://www.mazda.com/en/innovation/safety/ (last visited November 16, 2021).

[60] https://www.auto-brochures.com/makes/Mazda/3/Mazda_US%203_2013-2.pdf?bcs-agent-scanner=d776a7e9-516f-ac4e9b98-1cdb82e50896 (last visited November 16. 2021).

142. Below is a screenshot of a 2013 Mazda CX-5 sales brochure.[61]

[61] https://www.autobrochures.com/makes/Mazda/CX-5/Mazda_US%20CX-5_2013.pdf?bcs-agent-scanner=5d482460-0068-8a4d-ae2a7c36321cf6b9 (last visited November 16, 2021).

143. Below is a screenshot of a 2013 Mazda CX-9 sales brochure[62]:

144. Mazda made similar representations throughout the class period. For example, below is a screenshot from a 2015 Mazda 6:[63]

[62] https://www.autobrochures.com/makes/Mazda/CX-9/Mazda_US%20CX-9_2013.pdf?bcsagentscanner=f45dcc28-8f67-5f4d-818f-a9316754d14a (last visited November 16, 2021).

[63] https://www.autobrochures.com/makes/Mazda/6/Mazda_US%206_2015.pdf?bcsagentscanner=af7882ecd08-f847-8011-a373a291750f (last visited November 16, 2021).

145. Below is a screenshot from a 2015 Mazda CX-5 sales brochure.[64]

[64] https://www.autobrochures.com/makes/Mazda/CX-5/Mazda_US%20CX-5_2015.pdf?bcsagentscanner=f2c54917-7075-3140-8589-65c0f62d7123 (last visited November 16, 2021).

146. Below is a screenshot from a 2016 Mazda CX-9 sales brochure.[65]

[65] https://www.autobrochures.com/makes/Mazda/CX-9/Mazda_US%20CX-9_2016.pdf?bcsagentscanner=4185c790-75a6-134a-aa57-b1048b28445f3 (last visited November 16, 2021).

147. Below is a screenshot from a 2017 Mazda CX-3 sales brochure.[66]

[66] https://www.autobrochures.com/makes/Mazda/CX-3/Mazda_US%20CX-3_2017.pdf?bcsagentscanner=07e1093f-5237-6d4c-ab41-8806bd8b948d (last visited November 16, 2021).

148. Below is a screenshot from a 2018 Mazda CX-5 sales brochure[67]:

[67] https://www.autobrochures.com/makes/Mazda/CX-5/Mazda_US%20CX-5_2018.pdf?bcsagentscanner=3da3f5e2-ab32-b459-9099-17790e192b94 (last visited November 16, 2021).