

**UNITED STATES DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION**

1200 New Jersey Avenue SE  
Washington D.C. 20590

In re:	)
	)
EA15-001	)
Air Bag Inflator Rupture	)
	)
	)

**REMEDY AGREEMENT**

This Remedy Agreement is issued pursuant to the authority of the National Highway Traffic Safety Administration (“NHTSA”), an operating administration of the U.S. Department of Transportation, to mitigate and control risks of harm, promote safety, exercise its inherent powers of enforcement discretion, and compromise civil penalties. It sets forth the requirements and performance obligations in connection with the remedy program proposed by BMW of North America, LLC (“BMW”) for certain driver side air bag inflators manufactured by TK Holdings, Inc. (“Takata”) for which a defect related to motor vehicle safety has been determined to exist.

**I. NATURE OF THE ACTION.**

1. On June 19, 2014, BMW agreed to conduct a Special Technical Campaign in limited regions of the United States, including Florida, Hawaii and Puerto Rico, for certain motor vehicles produced after January 1, 2004 that contain PSDI-4 driver side air bag inflators manufactured by Takata. NHTSA designated this Special Technical Campaign as Recall No. 14V-348.

2. On December 23, 2014, BMW expanded its Special Technical Campaign to include all affected vehicles nationwide.

3. In connection with Recall No. 14V-348, BMW had been replacing older PSDI-4 inflators with newly manufactured PSDI-4 inflators (i.e., the interim “like for like” remedy program).

4. On May 18, 2015, Takata submitted a Defect Information Report (“DIR”) to NHTSA in accordance with section 30118(c) of the National Traffic and Motor Vehicle Safety Act of 1966, as amended and recodified (the “Safety Act”). Therein, Takata notified the agency that a safety-related defect may arise in some of the PSDI-4 inflators installed as original equipment and remedy parts in motor vehicles manufactured by BMW. According to the DIR, “[t]he subject inflators include all years of production, from start of production to end of production.” The description of the defect is further stated as “batwing-shaped propellant wafers in some of the subject inflators may experience an alteration over time,” and “[b]ased upon Takata’s investigation to date, the potential for such ruptures may occur in some of the subject inflators after several years of exposure to persistent conditions of high absolute humidity.” (A copy of Takata’s May 18, 2015 Defect Information Report 15E-040 is attached hereto as Exhibit A and is incorporated herein by reference.)

5. On May 27, 2015, BMW notified NHTSA that it had converted its prior 14V-348 campaign to a nationwide recall for all vehicles equipped with a Takata PSDI-4 inflator, expanding the scope to certain BMW vehicles built since January 2002. NHTSA has designated this recall as Recall No. 15V-318.

6. BMW currently has no alternative to an interim “like for like” remedy program. Given the scope of the DIR submitted by Takata, BMW has raised a concern, and NHTSA does not dispute, that an interim “like for like” remedy program may violate the Safety Act’s prohibition on the sale, offer for sale, lease, introduction or delivery for introduction in interstate

commerce of motor vehicle equipment containing a defect related to motor vehicle safety about which notice has been given under section 30118(c). *See* 49 U.S.C. §§ 30112(a)(3), 30120(i).

7. NHTSA issues this Remedy Agreement pursuant to its authority under the Safety Act, 49 U.S.C. § 30101, *et seq.*, as delegated by the Secretary of Transportation, 49 C.F.R. §§ 1.95, 501.2(a)(1), to inspect and investigate, 49 U.S.C. § 30166(b)(1), to ensure that defective vehicles and equipment are recalled, 49 U.S.C. §§ 30118-30119, to ensure the adequacy of recalls, 49 U.S.C. § 30120(c), and to require any person to file reports or answers to specific questions, 49 U.S.C. § 30166(g), to exercise NHTSA's inherent power of enforcement discretion, and to compromise civil penalty liability, 49 U.S.C. § 30165(b). It is AGREED by BMW and ORDERED by NHTSA as follows:

## **II. TERMS OF REMEDY AGREEMENT.**

8. To mitigate and control the risk of serious injury or death due to an air bag inflator rupture, and in light of Takata's current understanding of the defect, as set forth in its DIR, that "the inflator ruptures appear to have a multi-factor root cause that includes the slow-acting effects of a persistent and long term exposure to climates with high temperatures and high absolute humidity," it is agreed that the interim "like for like" remedy is "safer" than leaving the PSDI-4 inflators in the vehicles while BMW works toward a permanent remedy. NHTSA is issuing this Remedy Agreement because of the unique circumstances presented by the nature of the defect manifestation, the severity of the harm posed, and the present lack of a permanent remedy.

9. In light of the unique circumstances described in Paragraph 8 above, and in consideration of the performance obligations of BMW set forth herein, the Secretary of Transportation, by and through the Administrator of NHTSA, hereby waives any and all claims

against BMW (including its current and former directors, officers, employees, agents, parents, subsidiaries, affiliates, successors, and assigns) and its dealers for civil penalties pursuant to 49 U.S.C. §§ 30112(a)(3) and 30120(i), solely with respect to BMW's interim "like for like" remedy program set forth in this Remedy Agreement.

10. BMW understands and expressly agrees that its interim "like for like" remedy program is an interim fix only and that it will work with expedition towards finding a permanent remedy.

11. BMW shall submit a plan to NHTSA, no later than 45 days from the execution of this Remedy Agreement, in which it will set forth in detail, the efforts it is taking, or plans to take in the future to find a permanent remedy, including any plans to obtain parts from other suppliers or to modify Takata inflators not covered by Recall No. 15E-040. The plan shall also set forth the anticipated timeline for the development of the permanent remedy; the deadline by which BMW anticipates that it will be able to make the permanent remedy available to consumers, which deadline shall be no later than December 31, 2016; and an explanation as to how BMW intends to transition from the interim "like for like" remedy to the permanent remedy. Because BMW has identified a risk of competitive harm, BMW and NHTSA agree that the plan and timeline shall be confidential until August 30, 2015, after which time it shall be made publicly available. To the extent circumstances later arise that necessitate alteration(s) to the plan or timeline, BMW shall promptly submit a revised plan to NHTSA. NHTSA shall extend the December 31, 2016 deadline for good cause shown.

12. While BMW work towards a permanent remedy, it shall implement a "like for like" remedy program conducted under the auspices of NHTSA Recall No. 15V-318. BMW will prioritize vehicles deemed at the highest risk, e.g. older models in highest absolute humidity

areas first, matched according to “like-for like” parts availability. BMW shall use best efforts to inform the targeted vehicle owners of the interim “like for like” remedy, whether by engaging with vehicle owners through new and traditional media, direct contacts with vehicle owners, and/or other innovative means of bringing consumer attention to the importance of completing the interim “like for like” remedy, as well as the need to return for the permanent remedy.

13. BMW shall maintain a database of vehicle identification numbers (VINs) for all motor vehicles that receive the interim “like for like” remedy under Recall Nos. 14V-348 and 15V-318. It further agrees that it will perform a subsequent remedy of those vehicles under Recall No. 15V-318 once the permanent remedy is available. At that time, BMW shall explain to NHTSA how it will phase out of the interim “like for like” remedy, and phase in the permanent remedy. BMW shall cooperate with NHTSA concerning the appropriate way to document the subsequent remedy, including formal notification to the agency that the permanent remedy is available to consumers, and the submission of VINs covered by Recall No. 15V-318 (which shall include both unremedied vehicles and those that have received the interim “like for like” remedy). At that time, the permanent remedy of Recall No. 15V-318 will be deemed to supersede the interim remedy conducted under Recall Nos. 14V-348 and 15V-318, as it applies to the PSDI-4 inflator.

14. BMW shall employ best efforts to maximize recall completion rates once the permanent remedy is available to consumers. Such a program should include, but should not be limited to, efforts to urge BMW dealers and repair facilities to collect customer contact information at the time the interim “like for like” remedy is performed, to inform customers of the need to return for the permanent remedy and to provide BMW with the customer contact information for use in the owner notification process once the permanent remedy is available.

15. BMW shall submit an amended DIR for Recall No. 15V-318 no later than five days after the execution of this Remedy Agreement. The amended DIR shall revise BMW's "description of the remedy program" consistent with the terms of this Remedy Agreement and Exhibit B, which is attached hereto and incorporated herein by reference.

### **III. MISCELLANEOUS.**

16. This Remedy Agreement shall be effective following its execution. This Remedy Agreement constitutes a final Order. Any breach of the obligations under this Remedy Agreement may, at NHTSA's option, be immediately enforceable in any United States District Court. BMW agrees that it will not raise any objection as to venue.

17. This Remedy Agreement shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Remedy Agreement.

18. This Remedy Agreement cannot be modified, amended or waived except by an instrument in writing signed by all parties, and no provision may be modified, amended or waived other than by a writing setting forth such modification, amendment or waiver and signed by the party making the modification, amendment or waiver.

19. Nothing in this Remedy Agreement shall be interpreted or construed in a manner inconsistent with, or contravening, any federal law, rule, or regulation at the time of the execution of this Remedy Agreement, or as amended thereafter, except as expressly provided in Paragraph 9, above.

20. Nothing in this Remedy Agreement shall be construed to exempt BMW from any liability at common law.

21. Should any condition or other provision contained herein be held invalid, void or illegal by any court of competent jurisdiction, it shall be deemed severable from the remainder of

this Remedy Agreement and shall in no way affect, impair or invalidate any other provision of this Remedy Agreement.

22. BMW shall provide written notice of each required submission under this Remedy Agreement by electronic mail to NHTSA's Acting Associate Administrator for Enforcement (currently Frank Borris, Frank.Borris@dot.gov), with a copy to NHTSA's Assistant Chief Counsel for Litigation and Enforcement (currently Timothy H. Goodman, Tim.Goodman@dot.gov). NHTSA will provide notice to BMW if the individuals holding these positions or their e-mail addresses change.

23. The parties who are the signatories to this Remedy Agreement have the legal authority to enter into this Remedy Agreement, and each party has authorized its undersigned to execute this Remedy Agreement on its behalf.

24. This Remedy Agreement may be executed in counterparts, each of which shall be considered effective as an original signature.

25. This Remedy Agreement is a fully integrated agreement and shall in all respects be interpreted, enforced and governed under the federal law of the United States. This Remedy Agreement sets forth the entire agreement between the parties with regard to the subject matter hereof. There are no promises, agreements, or conditions, expressed or implied, other than those set forth in this Remedy Agreement.

APPROVED AND SO ORDERED:

NATIONAL HIGHWAY TRAFFIC  
SAFETY ADMINISTRATION,  
U.S. DEPARTMENT OF TRANSPORTATION

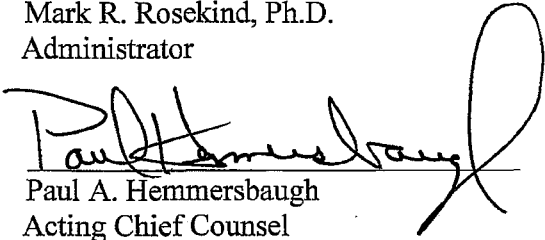
Dated: July 17, 2015

By: // ORIGINAL SIGNED BY //

Mark R. Rosekind, Ph.D.  
Administrator

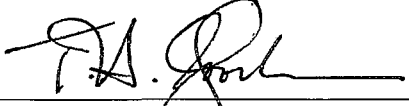
Dated: July 17, 2015

By:

  
Paul A. Hemmersbaugh  
Acting Chief Counsel

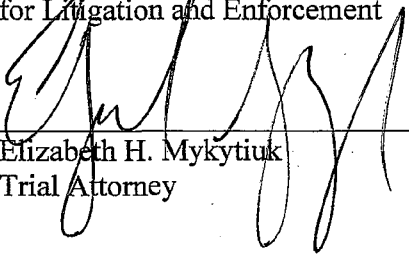
Dated: July 17, 2015

By:

  
Timothy H. Goodman  
Assistant Chief Counsel  
for Litigation and Enforcement

Dated: July 17, 2015

By:

  
Elizabeth H. Mykytiuk  
Trial Attorney



AGREED:

BMW OF NORTH AMERICA, LLC

Dated: July 13, 2015

By



Samira Campochi

Dept. Head of Safety Engineering and ITS

**EXHIBIT A**

**May 18, 2015**

**DEFECT INFORMATION REPORT**

**TK HOLDINGS INC.**

**PSDI, PSDI-4, and PSDI-4K DRIVER AIR BAG INFLATORS**

**1. Manufacturer's name:**

TK Holdings Inc. ("Takata").

**2. Items of equipment potentially affected:**

All PSDI, PSDI-4, and PSDI-4K air bag inflators installed in frontal driver air bag modules in vehicles in the United States. This Report contemplates a national recall of the subject inflators. The subject inflators include all years of production, from start of production to end of production.

In accordance with the proposed staging of the remedy program described in section 7 below, the scope of the recall contemplated by this Report includes vehicles containing the subject inflators that were previously recalled and remedied by the affected vehicle manufacturers, including under recall numbers 08V-593, 09V-259, 10V-041, 11V-260, 14V-351, 14V-343, 14V-344, 14V-348, 14V-817, 14V-802, and 15V-153.

The inflators covered by this determination have been installed as original equipment or remedy parts in vehicles sold or registered in the United States and manufactured by the following five vehicle manufacturers (listed alphabetically):

American Honda Motor Co.  
1919 Torrance Blvd.  
Torrance, CA 90501-2746  
Phone: 310-783-2000

BMW of North America  
P.O. Box 1227  
Woodcliff Lake, NJ 07677-7731  
Phone: 201-307-4000

Chrysler Group LLC  
800 Chrysler Drive  
Auburn Hills, MI 48326-2757  
Phone: 1-800-853-1403

Ford Motor Company  
330 Town Center Drive  
Dearborn, MI 48126-2738  
Phone: 1-866-436-7332

Mazda North American Operations  
46976 Magellan Drive  
Wixom, MI 48393  
Phone: 248-295-7859

**3. Total number of items of equipment potentially affected:**

Takata estimates that a combined total of approximately 17.6 million subject inflators have been installed in vehicles in the United States as both original equipment and remedy parts. Of that number, Takata estimates that approximately 4.7 million are PSDI inflators and approximately 12.9 million are PSDI-4 and PSDI-4K inflators. Included within these estimates are approximately 9.7 million inflators that were subject to previous recalls or safety campaigns.

**4. Approximate percentage of items of equipment estimated to actually contain the defect:**

The number of field incidents known to Takata involving ruptures of PSDI subject inflators in the United States is fifty-nine (59). Fifty-four (54) of those field incidents occurred in vehicles that were subject to previous recalls. The number of field incidents known to Takata involving ruptures of PSDI-4 and PSDI-4K subject inflators in the United States is four (4). For comparison purposes, Takata estimates that there have been approximately 258,500 total field deployments of PSDI subject inflators and approximately 516,000 total field deployments of PSDI-4 and PSDI-4K subject inflators in the United States. Those estimates are based on the numbers of subject inflators described in section 3, estimates of the average age of the subject inflators in the field (11 years for PSDI and 8 years for PSDI-4 and PSDI-4K), and an estimate (used by NHTSA in its data analyses) that an average of 0.5 percent of frontal air bags deploy in the field each year. In addition, as described below, since September 2014, Takata has conducted ballistic testing of a selected population of subject inflators returned by vehicle manufacturers, including a disproportionate number of subject inflators returned from areas of high absolute humidity; that ballistic testing to date has resulted in no (zero) ruptures of PSDI subject inflators tested and has resulted in nine (9) ruptures (approximately 0.0722 percent) of PSDI-4 and PSDI-4K subject inflators tested, all from high absolute humidity States.

May 18, 2015

**5. Description of the defect:**

As a result of the developments and circumstances described below and in section 4 above, Takata has determined that a defect related to motor vehicle safety may arise in some of the subject inflators.

The batwing-shaped propellant wafers in some of the subject inflators may experience an alteration over time, which could potentially lead to over-aggressive combustion in the event of an air bag deployment. Depending on the circumstances, this potential condition could create excessive internal pressure when the air bag is deployed, which could result in the body of the inflator rupturing upon deployment. Based upon Takata's investigation to date, the potential for such ruptures may occur in some of the subject inflators after several years of exposure to persistent conditions of high absolute humidity. In addition, this potential for rupturing may also depend on other factors, including manufacturing variability.

In the event of an inflator rupture, metal fragments could pass through the air bag cushion material, which may result in injury or death to vehicle occupants.

**6. Chronological summary of events leading to this determination:**

May 2003 – A PSDI-4 inflator ruptured in a BMW vehicle in Switzerland. After Takata was notified, the investigation determined that the 17-month-old inflator ruptured due to an overloading of propellant in the assembly of the inflator at issue. Takata introduced additional quality control measures designed to avoid such overloading.

May 2004 – A PSDI inflator manufactured in October 2001 ruptured in a Honda vehicle in Alabama. Takata was first notified of the event a year later in May 2005 and received only photographs for analysis. Takata tentatively concluded that the incident may have involved a potentially compromised tape seal on this inflator or possibly an overloading of propellant in the inflator at issue.

2007–2011 – After Takata was notified in late 2007 of a rupture of a PSDI inflator in a Honda vehicle, Takata promptly began an investigation. Following that investigation, in October 2008, Takata recommended that Honda conduct a safety recall to replace certain PSDI inflators, and Honda did so. Based on further investigation and additional information developed by Takata, Honda expanded its initial recall on several occasions to cover all vehicles containing PSDI inflators manufactured prior to December 1, 2001.

2010–Present – Beginning in 2010 and at different periods thereafter, in connection with its investigation into reports of inflator ruptures, Takata has consulted with the Fraunhofer Institute for Chemical Technology (“Fraunhofer ICT”) to provide an independent research investigation of the root cause of the inflator ruptures. Fraunhofer ICT conducts research for government and industry and its core competencies include

energetic materials and energetic systems. Fraunhofer ICT is considered the leading research organization within the pyrotechnic gas generator and airbag system industry.

September 2013 – Takata became aware of a rupture of a PSDI driver inflator in a Honda vehicle in Florida that was not covered by the prior Honda recalls. Takata immediately commenced an additional investigation.

December 2013 – April 2015 – Takata was informed of eight additional incidents in which PSDI and PSDI-4 driver inflators not covered by the prior Honda recalls had ruptured. These eight additional field incidents occurred in the following States: Florida (6), California (1), and North Carolina (1).

June 11, 2014 – Takata sent a letter to NHTSA stating that, consistent with the fact that Takata's highest priority is safety, and in light of the Company's desire to address potential safety concerns promptly and thoroughly, Takata would support NHTSA's request for regional field actions to replace PSDI and PSDI-4 inflators manufactured between January 1, 2004 and June 30, 2007, that were installed in vehicles sold in or registered in Puerto Rico, Florida, Hawaii, and the U.S. Virgin Islands, based on the high levels of absolute humidity in those areas. (Those regional field actions also covered certain passenger inflators.) The five vehicle manufacturers that had installed these driver inflators promptly agreed to conduct the requested regional field actions and to send the replaced inflators to Takata for testing.

June 11, 2014 – Based on six field ruptures of Takata inflators (three driver inflators and three passenger inflators), NHTSA opened a defect investigation, PE14-016. On March 2, 2015, that investigation was upgraded to EA15-001.

September 2014 – May 2015 – As part of its continuing investigation, Takata has conducted extensive testing of inflators returned by the vehicle manufacturers. This testing has included (but has not been limited to) ballistic tests, live dissections, propellant analysis for moisture, chemical analysis, air and helium leak testing, and CT scanning. As of May 1, 2015, Takata has ballistically tested 174 PSDI inflators and 12,464 PSDI-4 and PSDI-4K inflators. None (zero) of the PSDI inflators ruptured during this testing, and nine (9) of the PSDI-4 and PSDI-4K inflators ruptured during this testing, yielding a rupture rate for the PSDI-4 and PSDI-4K inflators of 0.0722 percent. Six (6) of the ruptured inflators were returned from Florida, two (2) from Puerto Rico, and one (1) from non-coastal Georgia.

Although the Company's testing and investigation is ongoing, with the aid of the independent research performed by Fraunhofer ICT, Takata has reached some preliminary conclusions. It appears that the inflator ruptures have a multi-factor root cause that includes the slow-acting effects of a persistent and long term exposure to climates with high temperatures and high absolute humidity. Exposure over a period of several years to persistent levels of high absolute humidity outside the inflator, combined with the effects of thermal cycling, may lead to moisture intrusion in some inflators by

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means of diffusion or permeation. Fraunhofer ICT has identified the possibility in these climates for moisture intrusion into the inflator over time and a process by which the moisture may slowly increase the porosity of the propellant within the inflator.

Fraunhofer ICT's analysis also indicates that the design of the inflator and the grain (shape) of the propellant can affect the likelihood that the porosity change will occur. In addition, the analysis to date suggests that the potential for this long-term phenomenon to occur was not within the scope of the testing specifications prescribed by the vehicle manufacturers to Takata for the validation and production of the subject inflators as original equipment.

The results of the Fraunhofer ICT research and the Takata testing to date are consistent with the location and age of the inflators that have ruptured in the field and in Takata's testing.

May 2015 – Based upon the results of its investigation and the preliminary conclusions identified above, as well as NHTSA's insistence that action be taken to mitigate the risk posed to safety by these inflators, Takata decided to submit this Defect Information Report.

**7. Description of the remedy program:**

Consistent with the Consent Order issued by NHTSA on or about May 18, 2015, Takata shall cooperate with NHTSA in all future regulatory actions and proceedings pursuant to NHTSA's authority under the National Traffic and Motor Vehicle Safety Act, or any regulations thereunder, including 49 U.S.C. § 30120(c)(3), regarding the organization and prioritization of replacement air bag inflators.

At the present time, Takata continues to produce a small number of PSDI-4 inflators for use as remedy parts. Takata intends to cease production of the subject inflators, including for use as remedy parts.

Consistent with the above, including Takata's discussions with NHTSA, Takata's preliminary recommendation for the remedy program for the subject inflators is to use a phased customer notification and remedy approach. Under this approach, Takata plans to work with the manufacturers of the vehicles in which the subject inflators were installed to implement appropriate recalls to replace the subject inflators in four stages over time, as outlined here:

- First, vehicles sold in or ever registered in any part of Florida, Puerto Rico, the U.S. Virgin Islands, Hawaii, the Outlying U.S. Territories, Texas, Louisiana, Georgia, South Carolina, Alabama, Mississippi, California, Oklahoma, North Carolina, Virginia, Arkansas, Kentucky, Tennessee, Illinois, Delaware, Maryland, and Missouri, and containing subject inflators manufactured between the start of production and December 31, 2007;

**TK HOLDINGS INC.**

**May 18, 2015**

- Second, vehicles sold in or ever registered in any part of Florida, Puerto Rico, the U.S. Virgin Islands, Hawaii, the Outlying U.S. Territories, Texas, Louisiana, Georgia, South Carolina, Alabama, Mississippi, California, Oklahoma, North Carolina, Virginia, Arkansas, Kentucky, Tennessee, Illinois, Delaware, Maryland, and Missouri, and containing subject inflators manufactured between the start of production and December 31, 2011;
- Third, vehicles sold in or ever registered in any other States not listed above and containing subject inflators manufactured between the start of production and December 31, 2007; and
- Fourth, any remaining vehicles not listed above that contain the subject inflators, including subject inflators previously installed as remedy parts.

## EXHIBIT B

### REVISED DEFECT INFORMATION REPORT LANGUAGE RECALL NO. 15V-318

As set forth in Paragraph 15 of the Remedy Agreement, BMW shall submit an amended Defect Information Report (“DIR”) for Recall No. 15V-318 no later than five working days after the execution of this Remedy Agreement. The amended DIR shall revise BMW’s “description of the remedy program” to include the following language:

- NHTSA has published a “Notice of Coordinated Remedy Program Proceeding for the Replacement of Certain Takata Air Bag Inflators” (the “Coordinated Remedy Program”). *See* 80 Fed. Reg. 32197 (June 5, 2015). Subject to any orders and/or directives regarding the prioritization, organization, and/or phasing of the remedy, NHTSA and BMW have agreed that BMW will notify certain affected owners in connection with Recall No. 15V-318, and will instruct the BMW dealers to install a new PSDI-4 inflator (the “interim remedy”) in any consumer’s vehicle that is presented for remedy under Recall No. 15V-318, subject to parts availability. There will be no charge for this service.
- BMW will continue to work towards the development of a permanent remedy. BMW will submit a plan to NHTSA that sets forth the anticipated timeline for the development of the permanent remedy and the date by which BMW anticipates that it will be able to make the permanent remedy available to consumers. This plan will be made publicly available to consumers on September 1, 2015.
- Once the permanent remedy is available, and subject to any orders and/or directives in the Coordinated Remedy Program, BMW will notify all affected owners under Recall 15V-318, including those owners whose vehicles previously



received the "interim remedy" under 14V-348 and 15V-318 and instruct them to take their vehicles to a BMW dealer to receive the permanent remedy. There will be no charge for this service.