DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

Petition for Exemption from the

Vehicle Theft Prevention Standard;

JAGUAR LAND ROVER NORTH AMERICA LLC

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT)

ACTION: Grant of petition for exemption.

SUMMARY: This document grants in full the Jaguar Land Rover North America LLC's, (Jaguar Land Rover) petition for an exemption of the F-Pace vehicle line in accordance with 49 CFR Part 543, Exemption from the Theft Prevention Standard. This petition is granted because the agency has determined that the antitheft device to be placed on the line as standard equipment is likely to be as effective in reducing and deterring motor vehicle theft as compliance with the parts-marking requirements of the Theft Prevention Standard (49 CFR Part 541).

DATES: The exemption granted by this notice is effective beginning with model year (MY) 2018.

FOR FURTHER INFORMATION CONTACT: Mr. Hisham Mohamed, Office of International Policy, Fuel Economy and Consumer Programs, NHTSA, W43-437, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590. Mr. Mohamed's phone number is (202) 366-0307. His fax number is (202) 493-2990.

SUPPLEMENTARY INFORMATION: In a petition dated December 15, 2016, Jaguar Land Rover requested an exemption from the parts-marking requirements of the Theft Prevention Standard (49 CFR Part 541) for the MY 2018 Jaguar F-Pace vehicle line. The petition requested an exemption from parts-marking pursuant to 49 CFR Part 543, *Exemption from Vehicle Theft Prevention Standard*, based on the installation of an antitheft device as standard equipment for an entire vehicle line.

Under §543.5(a), a manufacturer may petition NHTSA to grant an exemption for one vehicle line per model year. In its petition, Jaguar Land Rover provided a detailed description and diagram of the identity, design, and location of the components of the antitheft device for the F-Pace vehicle line. Jaguar Land Rover stated that its F-Pace vehicles will be equipped with a passive, transponder-based, electronic engine immobilizer device as standard equipment beginning with the 2018 model year. Key components of its antitheft device will include a power train control module (PCM), instrument cluster, body control module (BCM), remote frequency receiver (RFR), Immobilizer Antenna Unit (IAU), Remote Frequency Actuator (RFA), Perimeter Alarm System, Smart Key and door control units (DCU/s). Jaguar Land Rover stated that its antitheft device will also include an audible and visual perimeter alarm system as standard equipment. Jaguar Land Rover stated that the perimeter alarm can be armed with the Smart Key or programmed to be passively armed. The siren will sound and the vehicle's exterior lights will flash if unauthorized entry is attempted by opening the hood, doors or luggage compartment. Jaguar Land Rover's submission is considered a complete petition as required by 49 CFR 543.7, in that it meets the general requirements contained in §543.5 and the specific content requirements of §543.6.

The immobilizer device is automatically armed when the Smart Key is removed from the vehicle. Jaguar Land Rover stated that the Smart key is programmed and synchronized to the vehicle through the means of an identification key code and a randomly generated secret code that are unique to each vehicle.

Jaguar Land Rover stated that there are three methods of antitheft device operation. Method one consists of automatic detection of the Smart Key via a remote frequency challenge response sequence. Specifically, when the driver approaches the vehicle and pulls the driver's door handle following authentication of the correct Smart Key, the doors will unlock. When the ignition start button is pressed, a search to find and authenticate the Smart Key commences within the vehicle interior. If successful, this information is passed by coded data transfer to the BCM via the Remote Function Actuator. The BCM in turn, will pass the "valid key" status to the instrument cluster, via a coded data transfer. The BCM will then send the key valid message code to the PCM initiating a coded data transfer and authorize the engine to start. Method two consists of unlocking the vehicle with the Smart Key unlock button. As the driver approaches the vehicle, the Smart Key unlock button is pressed and the doors will unlock. Once the driver presses the ignition start button, the operation process is the same as method one. Method three involves using the emergency key blade. If the Smart Key has a discharged battery or is damaged, there is an emergency key blade that can be removed from the Smart Key and used to unlock the doors. On pressing the ignition start button, a search is commenced in order to find and authenticate the Smart Key within the vehicle interior. If successful, the Smart Key needs to be docked. Once the Smart Key is placed in the correct position, and the ignition start button is pressed again, the BCM and Smart key enter a coded data exchange via the Immobilizer Antenna

Unit. The BCM in turn, passes the valid key status to the instrument cluster, via the Immobilizer Antenna Unit. The BCM then sends the key valid message to the PCM which initiates a coded data transfer. If successful, the engine is authorized to start.

In addressing the specific content requirements of 543.6, Jaguar Land Rover provided information on the reliability and durability of its proposed device. To ensure reliability and durability of the device, Jaguar Land Rover conducted tests based on its own specified standards. Jaguar Land Rover provided a detailed list of the tests conducted (i.e., temperature and humidity cycling, high and low temperature cycling, mechanical shock, random vibration, thermal stress/shock tests, material resistance tests, dry heat, dust and fluid ingress tests). Jaguar Land Rover stated that it believes that its device is reliable and durable because it complied with specified requirements for each test. Additionally, Jaguar Land Rover stated that the key recognition sequence includes in excess of a billion code combinations which include encrypted data that are secure against copying. Jaguar Land Rover also stated that the coded data transfer between the BCM and the PCM modules use a unique secure identifier, a random number and a secure public algorithm. Furthermore, Jaguar Land Rover stated that since the F-Pace vehicle line will utilize push button vehicle ignition, it does not have a conventional mechanical key barrel. Therefore, there will be no means of forcibly bypassing the key-locking system.

Jaguar Land Rover also stated that no theft data is available for the F-Pace because it is a new vehicle line. Jaguar Land Rover further stated that its immobilizer is substantially similar to the antitheft device installed on the Jaguar XK, Jaguar F-Type, Jaguar XJ, Land Rover Discovery Sport and Land Rover Range Rover Evoque. Jaguar Land Rover stated that based on MY 2014 theft information published by NHTSA, the Jaguar Land Rover vehicles equipped with

immobilizers had a combined theft rate of 0.31 per thousand vehicles, which is below NHTSA's overall theft rate of 1.15 thefts per thousand. The agency notes the average theft rate for the XK, XJ and Land Rover LR2 vehicle lines using an average of three model years' data (2012 – preliminary 2014) are 0.5039, 0.6811 and 0.1141, respectively and the theft rate for the Jaguar F-type is 0.7416 (preliminary 2014). Jaguar Land Rover believes these low theft rates demonstrate the effectiveness of the immobilizer device.

Based on the supporting evidence submitted by Jaguar Land Rover on the device, the agency believes that the antitheft device for the F-Pace vehicle line is likely to be as effective in reducing and deterring motor vehicle theft as compliance with the parts-marking requirements of the Theft Prevention Standard (49 CFR 541). The agency concludes that the device will provide the five types of performance listed in §543.6(a)(3): promoting activation; attract attention to the efforts of an unauthorized person to enter or move a vehicle by means other than a key; preventing defeat or circumvention of the device by unauthorized persons; preventing operation of the vehicle by unauthorized entrants; and ensuring the reliability and durability of the device.

Pursuant to 49 U.S.C. 33106 and 49 CFR 543.7 (b), the agency grants a petition for exemption from the parts-marking requirements of Part 541 either in whole or in part, if it determines that, based upon substantial evidence, the standard equipment antitheft device is likely to be as effective in reducing and deterring motor vehicle theft as compliance with the parts-marking requirements of Part 541. The agency finds that Jaguar Land Rover has provided adequate reasons for its belief that the antitheft device for the Jaguar Land Rover F-Pace vehicle line is likely to be as effective in reducing and deterring motor vehicle theft as compliance with the parts-marking requirements of the Theft Prevention Standard (49 CFR Part 541). This

conclusion is based on the information Jaguar Land Rover provided about its device.

For the foregoing reasons, the agency hereby grants in full Jaguar Land Rover's petition for exemption for the F-Pace vehicle line from the parts-marking requirements of 49 CFR Part 541. The agency notes that 49 CFR Part 541, Appendix A-1, identifies those lines that are exempted from the Theft Prevention Standard for a given model year. 49 CFR Part 543.7(f) contains publication requirements incident to the disposition of all Part 543 petitions. Advanced listing, including the release of future product nameplates, the beginning model year for which the petition is granted and a general description of the antitheft device is necessary in order to notify law enforcement agencies of new vehicle lines exempted from the parts-marking requirements of the Theft Prevention Standard.

If Jaguar Land Rover decides not to use the exemption for this line, it must formally notify the agency. If such a decision is made, the line must be fully marked according to the requirements under 49 CFR Parts 541.5 and 541.6 (marking of major component parts and replacement parts).

NHTSA notes that if Jaguar Land Rover wishes in the future to modify the device on which this exemption is based, the company may have to submit a petition to modify the exemption. Part 543.7(d) states that a Part 543 exemption applies only to vehicles that belong to a line exempted under this part and equipped with the antitheft device on which the line's exemption is based. Further, Part 543.9(c)(2) provides for the submission of petitions "to modify an exemption to permit the use of an antitheft device similar to but differing from the one specified in that exemption."

The agency wishes to minimize the administrative burden that Part 543.9(c)(2) could

place on exempted vehicle manufacturers and itself. The agency did not intend in drafting Part 543 to require the submission of a modification petition for every change to the components or design of an antitheft device. The significance of many such changes could be *de minimis*. Therefore, NHTSA suggests that if the manufacturer contemplates making any changes, the effects of which might be characterized as *de minimis*, it should consult the agency before preparing and submitting a petition to modify.

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Raymond R. Posten
Associate Administrator for Rulemaking

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