Application for Emissions Certification

Model Year: 2021

Durability Group: MJLXGPGNGTR
Test Group: MJLXT03.0GTR
Summary Sheet No: CSI-MJLXT03.0GTR

Durability Group Description: Four Stroke, Diesel Cycle
Diesel Fuelled
Direct Fuel Injection
Ceramic Monolith Pt/Pd Catalyst

Test Group Description: 3.0 litre TDV6

Applicable Standards: Federal LDT4 – Tier 3 Bin 160
California LDT2 – LEV 3 LEV160

Carline Covered: 210: Range Rover TDV6
220: Range Rover Sport TDV6

<table>
<thead>
<tr>
<th>Vehicles Tested:</th>
<th>EDV</th>
<th>Config</th>
<th>Test</th>
<th>Test Number</th>
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<tbody>
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</tbody>
</table>

EPA Response Requested By: June 1st 2020

For questions, Contact: Vahakn Varjabedian (201) 818 – 8139
Amy Brambill +44 7919 540 683
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<table>
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<th>Contents</th>
<th>Reference, Applicability</th>
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</thead>
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<td>Correspondence and Communications</td>
<td>Common Section, Section 1</td>
</tr>
<tr>
<td>2</td>
<td>Durability Group Description</td>
<td>Common Section, Section 2</td>
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<td>3</td>
<td>Evaporative/Refueling Family Description</td>
<td>Not applicable</td>
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<td>4</td>
<td>Durability Procedure Description</td>
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<td>Test Group Description</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Test Vehicle Description</td>
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<td>7</td>
<td>Test Results</td>
<td></td>
</tr>
<tr>
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<td>Emission Testing Waiver Statement</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>OBD System Description</td>
<td>CBI Version Only</td>
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<td>10</td>
<td>Description of Alternate-Fueled Vehicles</td>
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<td>12</td>
<td>Description of Vehicles Covered by Certificate</td>
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<tr>
<td></td>
<td>and Test Parameters</td>
<td></td>
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<td>13</td>
<td>Projected Sales</td>
<td>Common Section, Section 13</td>
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<tr>
<td>14</td>
<td>Request for Certification</td>
<td>Common Section, Section 14</td>
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<td>18</td>
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</table>
5. Test Group Description

5.1. Test Group name
MJLXT03.0GTR

5.2. Summary Sheet number
CSI- MJLXT03.0GTR

5.3. Engine displacement
2993 cm³, (183 in.³)

5.4. Arrangement and number of cylinders:

5.4.1. Arrangement of cylinders: V-Configuration

5.4.2. Number of cylinders: 6

5.5. Emission standards

5.5.1. Vehicle class covered
Federal – LDT4
California – LDT2

5.5.2. Participation in NLEV
Not applicable

5.5.3. Emission standards class
Federal – Tier 3 Bin 160
California – LEV 3 LEV160

5.5.4. Applicable emission standards
Refer to Enclosure 1 of Section 7.

### 6. Test Vehicle Description

#### 6.1. Test Vehicles

<table>
<thead>
<tr>
<th></th>
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<td>LKFVP020</td>
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<td>2993</td>
<td>DFI/TC/CAC/EGR/WR-HO2S/OC/DPF/SCRC/N OXS(2)/PMS</td>
<td>3.0AJD-16</td>
<td>L8</td>
<td>5500</td>
<td>3.21</td>
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<td>3.0AJD-16</td>
<td>L8</td>
<td>5500</td>
<td>3.21</td>
<td>EDV / FEDV</td>
</tr>
</tbody>
</table>

For complete vehicle descriptions, refer to Vehicle Information submitted to the EPA Central Data Exchange (CDX) EV-CIS System, or to the Summary Sheet enclosed in Section 7 of this application.
6.1.1. Test Vehicle Description

Test Vehicle Information Details
Information Process Code : N
EPA Manufacturer Code : JLX
Vehicle Identification Text : LXFTT208
Vehicle Configuration Number : 0
Vehicle Configuration Details
Vehicle Description Details
Manufacturer Vehicle Configuration Number : 0
Test Group Name : GJLXT03.0GTR
Model Year : 2016
Actual Test Vehicle Make Text : Land Rover
Actual Test Vehicle Model Text : Range Rover Sport

Drive Source Details
Drive Source Identifier : C
Fuel Identifier : D

Fuel Cell Indicator : N
Rechargeable Energy Storage System Indicator : N
Off Board Charge Capability Indicator : N
Test Drive Code : 4
Shift Indicator Light Usage Identifier : 1
Aged Component Usage Identifier : 4
Odometer Correction Details
Correction Initial Value : 0
Correction Factor Value : 1.0
Correction Sign Identifier : -
Correction Units Code : M

Engine Code Text : 3.0AJD-16
Engine Rated Horsepower Value : 258
Engine Displacement Value : 3.0
Air Aspiration Details
Air Aspiration Method Identifier : TC
Air Aspiration Device Count : 1
Air Aspiration Configuration Identifier : N

Charge Air Cooler Identifier : L
Emissions Control Device Comments Text : Direct Fuel Injection, Mono Turbo, Charge Air Cooler,
Downpipe Oxidation Catalyst, Particle filter, SCR catalyst with DEF injection.
Vehicle Specifications Details
Curb Weight Value : 5140
Equivalent Test Weight Value : 5500
Gross Vehicle Weight Rating Value : 6614
NV Ratio Value : 23.9
Axle Ratio Value : 3.21

REVISED:
Transmission Specifications Details
Light Duty Transmission Type Identifier : SA
Transmission Lockup Indicator : Y
Transmission Creeper Gear Indicator : N
Transmission Gear Count : 8

Target Set Coefficient Details
Test Procedure Dynamometer Coefficients Category : Cold-CO
Target CoefficientA Value : 54.96
Target CoefficientB Value : 0.2912
Target CoefficientC Value : 0.02982
Set CoefficientA Value : -0.427
Set CoefficientB Value : -0.04342
Set CoefficientC Value : 0.02678

Target Set Coefficient Details
Test Procedure Dynamometer Coefficients Category : US06
Target CoefficientA Value : 49.47
Target CoefficientB Value : 0.2621
Target CoefficientC Value : 0.02684
Set CoefficientA Value : -0.427
Set CoefficientB Value : -0.04342
Set CoefficientC Value : 0.02678

Target Set Coefficient Details
Test Procedure Dynamometer Coefficients Category : C-H-E
Target CoefficientA Value : 49.47
Target CoefficientB Value : 0.2621
Target CoefficientC Value : 0.02684
Set CoefficientA Value : -0.427
Set CoefficientB Value : -0.04342
Set CoefficientC Value : 0.02678

EPA Generated Test Vehicle Details
Original Receipt Date : 20150629
Hybrid Vehicle Indicator : N
Adjusted Loaded Vehicle Weight Value : 5877
Loaded Vehicle Weight Value : 5440
Total Road Load Horsepower Value : 17.3

Transaction Status Details
Transaction Status Identifier : ACCEPTED
6.2. EDV Selection

All vehicle configurations certified are covered by data from the above EDVs.

6.3. EV-CIS Test Numbers

<table>
<thead>
<tr>
<th>Vehicle-ID</th>
<th>Type of Test</th>
<th>Test Number.</th>
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<tbody>
<tr>
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<td>FTP</td>
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<td>SC03</td>
<td>GJLX10037454</td>
</tr>
<tr>
<td></td>
<td>FTP20°F</td>
<td>GJLX10037453</td>
</tr>
</tbody>
</table>
7. Test Results (Cover page)

Refer to the enclosed Certification Summary Information Report processed by the EPA EV-CIS system.
8. Emission Testing Waiver Statements

High Altitude Testing

Based on an engineering evaluation of appropriate high-altitude emission testing Jaguar Land Rover state that light-duty vehicles included in this application comply with the applicable emission standards at high altitude. According to 40 CFR §86.1829-01(b)(1)(ii)(B) Jaguar Land Rover waive high altitude emissions data submittal on the basis of this statement.

Data submittal waiver for Idle CO Testing

Based on an engineering evaluation of appropriate Idle CO emissions Jaguar Land Rover state that light-duty vehicles included in this application comply with all applicable idle CO emission standards. According to 40 CFR §86.1829-01(b)(5)(ii) Jaguar Land Rover waive Idle CO emissions data submittal on the basis of this statement.

Data submittal waiver for Formaldehyde (HCHO) Measurement

Based on test data from engineering programmes Jaguar Land Rover elect to use a ratio of HCHO = NMHC x 0.04 in order to express HCHO emissions.

Data submittal waiver for Non-Methane Organic Gas (NMOG) Measurement

Based on test data from engineering programmes Jaguar Land Rover use the following NMOG:NMHC ratios in order to express NMOG emissions:

Cold and Hot Start tests NMOG = NMHC x 1.00
Data submittal waiver for Spit-Back testing

All Jaguar Land rover Gasoline fuelled vehicles are certified to the refuelling emissions standards in §86.1811-04(e), and inherently meet the fuel dispensing spitback standards as part of compliance with the refueling emissions requirements.

Compliance with the applicable standards is for the Full Useful life of the vehicle.

Fuel dispensing spitback testing of Jaguar Land rover vehicles is therefore waived in accordance with §86.1810-01(l).

Data submittal waiver for refuelling test for diesel-fuelled vehicles

Due to the low vapor pressure of diesel fuel, vehicle fuel tank temperatures, and low hydrocarbon vapour concentrations associated with diesel-fuelled vehicles, Jaguar Land Rover attest that diesel fuelled vehicles will meet the 0.20 grams/gallon refuelling emission standard without a control system.
9. **OBD Compliance Statement**

Jaguar Land Rover states that the OBD system for Test Group MJLXT03.0GTR meets the full intent of the clean air act as amended in 1970 section 202(m), and the applicable federal OBD regulations, contained in 40 CFR §86.005-17 and 40 CFR §86.1806-01. Furthermore, Jaguar Land Rover states that the OBD system complies with all the requirements of Title 13 CCR 1968.2.
11. AECD Descriptions

Refer to Section 16.
### 12. Description of Vehicles Covered by Certificate and Test Parameters

#### 12.1. Description of Vehicle

|---------|------------|----------------------|-------------------------------------|-------------|---------------|------------|-------------------|-----|------------------------|-----------|-----------|----------------------|
12.2. Test Parameters

12.2.1. Engine Starting Procedure

With the Smart key inside the vehicle and the brake pedal pressed, press and release the START/STOP button to start the engine.
12.2.2. Shift Schedules

Shifting

Automatic Transmission Summary

8HP70

<table>
<thead>
<tr>
<th>A/T code</th>
<th>Class</th>
<th>No. of fwd gears</th>
<th>Overdrive</th>
<th>Gear ratios</th>
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<td>automatic</td>
<td>8</td>
<td>yes</td>
<td>4.714</td>
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General Description

The 8HP70 is an electronically controlled, fully automatic, synchronous 8 speed overdrive transmission with input through a three phase, single stage torque converter. The torque converter incorporates an internal friction clutch which transmits engine torque mechanically when applied in either locked or controlled slip phase. The shift points and converter clutch application are functions of throttle pedal position and vehicle speed. Each transmission calibration contains the individual shift points for the corresponding transmission application.

Special Features:
The torque converter lock up clutch does not have a torsional damper but has a controlled slip function; this calibrated amount of slip allows lock up to be applied at lower engine speeds without causing NVH problems.
The automatic transmission fluid is a fill for life oil and does not require service. There is no dipstick tube.
The rotary selector allows the selection of Park, Reverse, Neutral, Drive and Drive (S) ranges. A manual sequential shift option is included. Sequential manual gear selection is selected by moving the transmission gear selector to the "S" (Sequential shift) position. Upshifts and downshifts may then be made by operating steering wheel mounted shift paddles.
Manual Transmission Summary

Manual transmissions are not available.

Shifting/Special Testing

Shifting Instruction

Gear-shift Interlock
A brake pedal/gear-shift interlock is incorporated in the gear selector mechanism. The gear selector lever may only be moved from the Park position if the ignition is "on" and footbrake is pressed.

Single Mode
During normal forward operation of the vehicle the transmission shifts automatically when the transmission selector is positioned in "Drive".

User Selectable Modes
The models covered by this application are fitted with a gear selector which operates through R-N-D modes sequentially by moving the selector forward or backward. Manual shifting is available by operating paddles attached to the rear of the steering wheel. The vehicle is moved out of P by pressing a release lever on the front of the selector lever while simultaneously depressing the brake pedal. P may be reselected from any gear position by pressing the button located on the top of the selector. Manual shifting is available by operating paddles attached to the rear of the steering wheel, or by operating the select lever (rearward for an upchange, forward for a downchange) while the lever is in the manual position. Manual shifting is enabled by moving the selector to the left.

Chassis Dynamometer Operation
If the vehicle is going to be operated on a chassis dynamometer, disable the traction control facility immediately after selecting drive.

Shift Schedules
As defined in EV-CIS

Special Testing Procedures

Cooling Fans
For all emissions/fuel economy test cycles, a single fan, placed in the 'down' position, is required for engine cooling purposes.
12.2.3. EPA Shift Schedule: FTA / HWA

12.2.4. Dynamometer Loading Information (LVW):

<table>
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<th>ETW (lbs.)</th>
<th>Tyre size</th>
<th>Target Coefficients</th>
<th>Set Coefficients*</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A       B     C</td>
<td>a      b     c</td>
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<tr>
<td>Range Rover</td>
<td>5500</td>
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<tr>
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<td>255/55/R20</td>
<td>49.467  0.26206 0.026841</td>
<td>-0.427 -0.0434 0.0267836</td>
</tr>
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* 4WD Dynamometer
12.2.5. Evaporative/Refuelling Data

Not applicable to diesel test groups.
14. Request for Certification

14.1. Statement of Compliance

Refer to Common Section, Section 14.

14.2. Request for Certificate

Based on Jaguar Land Rover’s good engineering judgment, all the vehicles described in this Application for Certification comply with all applicable intermediate and full useful life standards.

Therefore, Jaguar Land Rover herewith applies for a federal Certificate of Conformity and a California ARB Executive Order for Test Group MJLXT03.0GTR.

This Test Group complies with all applicable regulations contained in Title 40, Code of Federal Regulations, Part 86 and the California Code of Regulations.

Ian Munden
Manager
Emissions Certification & OBD
Jaguar Land Rover
15. **Other Information**

15.1. Label according to 40 CFR § 86.1807-01 and according to California Motor Vehicle Emission Control Label Specifications.

15.1.1.

![Label Image]

15.1.2. Label Location: Under-bonnet.
15.2. Fee Filing Form

See attached page
**General Information**

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<tr>
<td>Process Code</td>
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<tr>
<td>Manufacturer Code</td>
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<td>Manufacturer Name</td>
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**Manufacturer Contact**

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<tbody>
<tr>
<td>Name</td>
<td>Vahakn Varjabedian</td>
</tr>
<tr>
<td>Email Address</td>
<td><a href="mailto:vvarjabe@jaguarlandrover.com">vvarjabe@jaguarlandrover.com</a></td>
</tr>
<tr>
<td>Phone</td>
<td>201-818-8139</td>
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**Calendar Year complete application submitted to EPA:**

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<th>Information</th>
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**Engine Family / Evaporative Family / Test Group:**

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<tr>
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<tbody>
<tr>
<td>MJLXT03.0GTR</td>
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**Certificate Request Type (Industry Sector Code):**

- On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (Federal) (A, B, D, J, T, V)
- On-Highway HDE Dyno Cert (Federal) (E, H)
- On-Highway LD ICI, MDPV ICI, HDV ICI (A, B, D, J, T, V)
- On-Highway Motorcycle (C)
- On-Highway HDV Evap (F)
- On-Highway LDV, LTD, MDVPV, HDV Chassis Cert (California-Only) (A, B, D, J, T, V)
- On-Highway HDE Dyno Cert (California-Only) (E, H)
- Nonroad CI (L)
- Nonroad SI (B, S)
- Locomotive (G, K)
- All Nonroad Recreational, excluding Marine engines (X, Y)
- All Marine (Including IMO) (M, N, W)
- Component Certification for Evaporative Emissions (P)

**IMO Name (Required for dual US/IMO Marine Only):**

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<th>Information</th>
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**ICI VIN Number (Required for ICI Only):**

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**Do you qualify for a Reduced Fee (RF)?**

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**What is the total number of vehicles, engines, or units covered?:**

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**What is the aggregate total retail value of the vehicles, engines or units covered?:**

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**Payment Information**

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**Comments:**

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<tbody>
<tr>
<td>Certification fee for MJLXT03.0GTR</td>
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</tbody>
</table>

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The public reporting and recordkeeping burden for this collection of information is estimated to average 20 minutes per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed forms to this address.
15.3. OBD System Approval Letter

See attached page
May 20, 2020

Mr. Ian Munden, Certification Manager
Jaguar Cars Limited
Emissions & Fuel Economy Legislation
W/4/031
Abbey Road
Whitley
Coventry CV3 4LF
United Kingdom

SUBJECT: Approval of Jaguar’s On-Board Diagnostics II (OBD II) System for the 2021 Model Year Test Group MJLXT03.0GTR

Dear Mr. Munden:

The California Air Resources Board’s (CARB) On-Board Diagnostics Branch has received the OBD II system description submitted by Jaguar for the 2021 model year test group listed above. Representations made in the application indicate that, with the exception of cold start emission reduction strategy (CSERS) monitoring and fuel quality sensing (FQS) monitoring, the system meets the requirements of the OBD II regulation\(^1\). Therefore, CARB approves the 2021 model year system design for the above test group with 2 deficiencies. Although not deficient, staff has concerns regarding exhaust gas recirculation (EGR) cooler bypass monitoring and emissions neutral diagnostic. Details of the CSERS monitoring deficiency, FQS monitoring deficiency, EGR cooler bypass monitoring concern, and emissions neutral diagnostic concern were provided in previous approval letters (Reference Nos. E-15-223, E-17-163, E-18-190, and E-19-190).

\(^1\) Unless otherwise noted, all regulation references are to title 13, California Code of Regulations, section 1968.2.
Should you have questions or comments regarding this letter, please contact Mr. Hay Lo, Air Pollution Specialist, at (626) 575-6748 or Hay.Lo@arb.ca.gov.

Sincerely,

Michael Regenfuss, Chief
On-Board Diagnostics Branch
Emissions Certification and Compliance Division

cc: Hay Lo
Air Pollution Specialist
Emissions Certification and Compliance Division
Other Information

Adjustable Parameters
There are no parameters present on any vehicle covered by this application that can be considered adjustable within the context of 40CFR Part 86.1833-01.

Fuel Specifications

Fuels Recommended to the Owner
Full statements concerning fuel recommendations are contained in the Vehicle Owners Handbooks.

Test and Service Accumulation Fuel
All test and service accumulation fuels relating to this Application for Certification are equivalent to those specified in 40CFR Part 86, Subpart S, and the California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles. Specifications and/or analyses will be supplied on request.

Lubricant specifications

<table>
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<th>Factory fill</th>
<th>Recommended to ultimate purchaser</th>
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<tr>
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<td>Hydrocarbon</td>
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<td>Service designation</td>
<td>V6</td>
<td>STJLR.03.5005</td>
<td>STJLR.03.5005</td>
</tr>
<tr>
<td>Viscosity</td>
<td>V6</td>
<td>SAE 5W30</td>
<td>SAE 5W30</td>
</tr>
<tr>
<td>Friction modifier</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Automatic Transmissions
The transmissions are sealed for life and the factory fill materials are listed below. All lubricants are hydrocarbon based and contain no friction modifiers.

ZF 8HP70 8 Speed Transmission: Shell M12108

Drive Axle and Differential
The differentials are sealed for life and the factory fill materials are listed below. All lubricants are hydrocarbon based and contain no friction modifiers.

All Test Groups: Texaco Multigears 75W140
16. Confidential Information

16.1. OBD Summary Table

See attached pages
16.2. Diesel engine and after treatment system AECD submission.

See attached pages
17. **California ARB Information**

17.1. **Statements**

Vehicles covered by this application are not fitted with defeat devices.

All AECDs used on vehicles covered by this application are declared and described in the application.

Test and production vehicles covered by this application do not use multiple maps in the engine management system. Modes used during on-road operation are identical to those used in testing.

Vehicles covered by this application do not use transmission calibrations which interact with the engine management or emission control systems in order to assist engine or catalyst warm-up.

The transmission calibration does not include different modes for on-road and dynamometer operation. Transmission behavior is identical in both cases.

Also refer to Common Section, Section 17

17.2. **Fill Pipe Specification**

Refer to Common Section, Section 17

17.3. **Projected Sales**

Refer to Common Section, Section 16, Confidential Information

17.4. **Evaporative Emission Deterioration**

17.4.1. **Evaporative Family Identification**

Not applicable to diesel test groups.

17.4.2. **Parameters of Evaporative Family.**

Refer to Common Section, Section 3

REVISED:
17.4.3. Selection of Emission Data Vehicle for Evaporative Emission

Not applicable to diesel test groups.

17.4.4. Selection of Durability Data Vehicle for Evaporative Emissions

Not applicable to diesel test groups.

17.4.5. Bench Test Procedure

Not applicable to diesel test groups.

17.4.6. Test Results for Evaporative Emissions

Not applicable to diesel test groups.
17.5. Supplemental Data Sheets

17.5.1. Common

Manufacturer: Jaguar Land Rover Limited
Vehicle Model(s): Range Rover, Range Rover Sport
Test Group: MJLXT03.0GTR
Evaporative Family: Not applicable
Engine Type(s): 3.0 liter DI V6 turbocharged
Liters (CID): 3.0 (183 in.³)
Drive System: Front engine, four-wheel drive

17.5.2. Abbreviations

17.5.2.1. Ignition System

ECM: Engine Control Module
EI: Electronic Ignition

17.5.2.2. Exhaust Emission Control System

OC: Oxidation Catalyst
DPF: Diesel Particulate Filter
SCRC: Selective Catalytic Reduction
EGR: Exhaust Gas Recirculation
WR-HO2S: Heated Exhaust Gas Oxygen Sensor
NOXS(2): Two Nitrogen Oxide Sensors
PMS: Particle Mass Sensor

17.5.2.3. Special Features

OBD II: On-Board Diagnostics II

17.5.2.4. Fuel System

DFI: Direct Fuel Injection
TC: Turbocharger

REVISED:
17.5.3.  2021 Air Resources Board Supplemental Data Sheet
Passenger Cars, Light Duty Truck and Medium Duty Vehicles

<table>
<thead>
<tr>
<th>Manufacturer:</th>
<th>Jaguar Land Rover Limited</th>
<th>Test Group:</th>
<th>MJLXT03.0GTR</th>
<th>Evap. Fam:</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Eng. Codes in Test Group:</td>
<td>CA ☒ 49S ☒ 50S ☒ AB965 ☒ ORVR ☒ YES ☒ NO ☒ X ☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veh. Class:</td>
<td>PC ☒ LDT1 ☒ LDT2 ☒ MDV1 ☒ MDV2 ☒ MDV3 ☒ MDV4 ☒ MDV5 ☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Cert. Std. for Multi-Class Test Group:</td>
<td>N/A ☒ Exhaust Std.:</td>
<td>USEPA T286 (LEV160) ☒ X ☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Type(s):</td>
<td>Dedicated ☒ Flex-Fuel ☒ Dual Fuel ☒ Bi-Fuel ☒ Gasoline ☒ Diesel ☒ CNG ☒ LNG ☒ LPG ☒ M85 ☒ Other (specify) ☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emission Test Fuel(s):</td>
<td>Diesel: 13 CCR 2282 ☒ 40 CFR 86.113-90 ☒ 40 CFR 86.113-94 ☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Evaporative Test Procedure:</td>
<td>California ☒ Federal ☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Accum.:</td>
<td>Std. AMA ☒ Mod AMA ☒ Mfr ADP ☒ Other (specify) ☒ EPA SRC ☒</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMOG Test Procedure:</td>
<td>N/A ☒ Std ☒ X ☒ Equiv. ☒ R/L Test Proc:</td>
<td>SHED ☒ Pt Source ☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine Configuration:</td>
<td>V-6 ☒ Displacement:</td>
<td>3.0 ☒ Liters ☒ 183 ☒ Cubic Inches</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valves per Cylinder:</td>
<td>4 ☒ Rated HP 3.0AJD-16:</td>
<td>258 @ 3750 RPM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine:</td>
<td>Front ☒ Mid ☒ Rear ☒ Drive:</td>
<td>FWD ☒ RWD ☒ 4WD-FT ☒ 4WD-PT ☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhaust ECS 2 (3.0AJD-16):</td>
<td>DFI, TC, CAC, EGR, WR-H02S, OC, DPF, SCRC, NOXS(2), PMS ☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0AJD-16</td>
<td>Range Rover</td>
<td>S8</td>
<td>5500</td>
<td>KK83-12B684-P*</td>
<td>FPLA-5H240-A*</td>
</tr>
<tr>
<td>3.0AJD-16</td>
<td>Range Rover Sport</td>
<td>S8</td>
<td>5500</td>
<td>KK83-12B684-P*</td>
<td>FPLA-5H240-A*</td>
</tr>
</tbody>
</table>

REVISED:
17.5.4.  2021 Model Year Air Resources Board Certification Review Sheet
Passenger Cars, Light Duty Truck and Medium Duty Vehicles

Manufacturer:  Jaguar Land Rover Limited
Test Group:  MJLXT03.0GTR
Evap. Fam.:  Not Applicable

All Eng. Codes in Test Group:  CA  49S  50S  X  AB965  ORVR

Exhaust Std.:  USEPA T2B6 (LEV 3 LEV160)

Veh. Class:  PC  LDT1  LDT2  X  MDV1  MDV2  MDV3  MDV4  MDV5

Single Cert. Std. for Multi-Class Test Group:  N/A

Fuel Type(s):  Dedicated  X  Flex-Fuel  Dual Fuel  Bi-Fuel  Gasoline  Diesel  X

Emission Test Fuel(s):  Tier 2  CBG  CNG  LPG  M85  Other (specify)  X

Evaporative Test Procedure:  California  X  Federal

Service Accum.:  Std. AMA  Mod AMA  Mfr ADP  Other (specify)  EPA SRC

NMOG Test Procedure:  N/A  Std  X  Equiv.

R/L Test Proc.:  SHED  Pt Source

Engine Configuration:  V-6  Displacement  3.0 Liters  183 Cubic Inches

Valves per Cylinder 4  Rated HP 3.0AJD-16  258 @ 3750 RPM

Engine:  Front  X  Mid  Rear  Drive:  FWD  RWD  4WD-FT  X  4WD-PT

Exhaust ECS 2 (3.0AJD-16):  DPF, TC, CAC, EGR, WR-H02S, OC, DPF, SCRC, NOXS(2), PMS

---

1. Authorized Representative
2. Fuel Specifications
3. Test Equipment
4. Test Procedure
5. Mileage Accumulation Route
6. Emis. Warranty Statement
7. Maint: Cert/Req'd/Rec'md
9. Evap. Control System
10. Engine Parameters
11. Fuel System
12. Ignition System
13. Emission Control Systems
14. Projected Sales (LDT/MDV Split)
15. Vehicle Description
16. Evap. Bench Test Procedure
17. R/L Temp & Press Profiles
18. EDV Selection

---

Chapter
1 Authorized Representative  Common Section, Sec 1
2 Fuel Specifications  Common Section, Sec 17
3 Test Equipment  Common Section, Sec 17
4 Test Procedure  Common Section, Sec 16
5 Mileage Accumulation Route  Not applicable
6 Emis. Warranty Statement  Common Section, Sec 17
7 Maint: Cert/Req'd/Rec'md  Common Section, Sec 17
8 Emiss. Label/Vac. Hose Diag.  Part 1, Section 15
9 Evap. Control System  Common Section, Sec 3
10 Engine Parameters  Part 1, Section 7
11 Fuel System  Common Section, Sec 3
12 Ignition System  N/A
13 Emission Control Systems  Part 1, Section 6
14 Projected Sales (LDT/MDV Split)  Common Section, Sec 16
15 Vehicle Description  Part 1, Section 6
16 Evap. Bench Test Procedure  Common Section, Sec 16
17 R/L Temp & Press Profiles  Part 1, Section 12
18 EDV Selection  Common Section, Sec 2
19 Prod.Veh.same as Test Veh.St.  Part 1, Section 17

Chapter
22 Gen. Std. Increase in Emissions  Part 1, Section 17
23 Driveability Statement  Common Section, Sec 17
24 Adjustable Parameters  None
25 Tamper Resistance Method(s)  N/A
26 Fill Pipe Specifications  Common Section, Sec 17
27 High Altitude Compliance  Common Section, Sec 17
28 OBD Sys.incl. Marked Revisions  Common Section, Sec 9
29 I&M Test Procedure & Data  Common Section, Sec 17
30 50 Degree F Compliance  Common Section, Sec 17
31 Manufacturer's RAF  N/A
32 Phase In Sched:  N/A
33 AB965 Credits/Withdrawals  Common Section, Sec 16
34 EPA Certificate  CAP2000 EAP Applied
35 Equiv. NMOG Proc--ARB Approval  Not applicable

REVISED:
### Test Vehicle Information

<table>
<thead>
<tr>
<th>Data Vehicle</th>
<th>C/O or C/A C/O</th>
<th>MY &amp; ID</th>
<th>Vehicle Log Page(s)</th>
<th>On request</th>
<th>Zero Mile Book Page(s)</th>
<th>On request</th>
<th>Maint. Logs &amp; Engr. Eval.</th>
<th>On request</th>
</tr>
</thead>
</table>

### Emission Data

<table>
<thead>
<tr>
<th>Vehicle ID</th>
<th>Engine Code &amp; Displ.</th>
<th>Test Loc.</th>
<th>Trans</th>
<th>ETW [ lb. ]</th>
<th>TRLHP&lt;sub&gt;10&lt;/sub&gt; [ hp ]</th>
<th>CITY MPG</th>
<th>CO₂ [g/m]</th>
<th>HWY MPG</th>
<th>CO₂ [g/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>LXFTT208</td>
<td>3.0AJD-16, 3.0 litre</td>
<td>MAN L8</td>
<td>5500</td>
<td>17.3</td>
<td>28.39</td>
<td>358.18</td>
<td>41.36</td>
<td>246.18</td>
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EPA Test No. & Date: GJLX10037450 (04/23/15) GJLX10037451 (04/23/15)
### Projected Emissions (grams/mile)

<table>
<thead>
<tr>
<th>Emission Data Vehicle ID (3)</th>
<th>Engine Code &amp; Displ</th>
<th>Test Loc</th>
<th>Trans</th>
<th>TW</th>
<th>MPG</th>
<th>NMOG* +NOx</th>
<th>CO</th>
<th>HCHO</th>
<th>PM</th>
<th>City CO2</th>
<th>Hwy CO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>LXFTT208 3.0AJD-16 Man. L8 5500 26.3 27.9/40.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(150k) 0.082 0.3 0.002 0.000 0.034 359.2 248.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

1. The above EDV(s) comply with standards at 50K of:
   and with standards at 120k of:
   and with standards at 150k of: 0.160 4.2 0.004 0.003 0.160

   The NMOG values include RAF(s) of: Not Applicable X NMOG Methane (CNG or LNG only)
   * NMOG calculated using NMHC x 1.0 multiplicative factor.

2. Emissions include additive DFs (with applicable RAF) at 50k of:
   and additive DFs at 120k of:
   and DFs at 150k of: 0.0257 0.09 0.0009 0.000 0.0257

---

REVISED: 03/16/20
### SFTP Test Results:

<table>
<thead>
<tr>
<th>Useful Life</th>
<th>Emissions</th>
<th>Certification level</th>
<th>Emission Standard</th>
<th>Tier</th>
<th>Test</th>
<th>EPA Test #</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>4k</td>
<td>NM0G+NOx-US06</td>
<td>0.028</td>
<td>0.140</td>
<td>LEV III</td>
<td>FTP</td>
<td>GJLX91002795</td>
<td>18-Sept-15</td>
</tr>
<tr>
<td>4k</td>
<td>CO-US06</td>
<td>0.0</td>
<td>9.6</td>
<td>LEV III</td>
<td>Hwy</td>
<td>GJLX91002796</td>
<td>18-Sept-15</td>
</tr>
<tr>
<td>4k</td>
<td>CO2-US06</td>
<td>388.59</td>
<td></td>
<td></td>
<td>US06</td>
<td>GJLX91002794</td>
<td>18-Sept-15</td>
</tr>
<tr>
<td>4k</td>
<td>NM0G+NOx-SC03</td>
<td>0.058</td>
<td>0.100</td>
<td>LEV III</td>
<td>SC03</td>
<td>GJLX10037454</td>
<td>05-June-15</td>
</tr>
<tr>
<td>4k</td>
<td>CO-SC03</td>
<td>0.0</td>
<td>3.2</td>
<td>LEV III</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4k</td>
<td>CO2-SC03</td>
<td>443.6</td>
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### CO2 data sources:

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<tr>
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<th>EPA Test #</th>
<th>Date</th>
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<tbody>
<tr>
<td>FTP</td>
<td>GJLX91002795</td>
<td>18-Sept-15</td>
</tr>
<tr>
<td>Hwy</td>
<td>GJLX91002796</td>
<td>18-Sept-15</td>
</tr>
<tr>
<td>US06</td>
<td>GJLX91002794</td>
<td>18-Sept-15</td>
</tr>
<tr>
<td>SC03</td>
<td>GJLX10037454</td>
<td>05-June-15</td>
</tr>
</tbody>
</table>

**Remarks**
17.5.5. Environmental Performance Label for Test Group MJLXT03.0GTR

Greenhouse gas values are generated in accordance with the EPA Greenhouse gas rules.
Method for Calculation of CO₂ Equivalent Value & GHG score:

CO₂ Equivalent Value =

\[ \text{CO}_2 + (296 \times \text{N}_2\text{O}) + (23 \times \text{CH}_4) - \text{A/C Direct Emissions Allowance} - \text{A/C Indirect Emissions Allowance} \]

Where:
- A/C-direct is credit for "Low leak" A/C system
- A/C-indirect is credit for "Improved system"

Fuel Adjustment Factor = 1.0 (gasoline)

CO₂ equivalent emissions values calculated according to 3(a)(1)(A) of the CALIFORNIA ENVIRONMENTAL PERFORMANCE LABEL SPECIFICATIONS FOR 2009 AND SUBSEQUENT MODEL YEAR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY PASSENGER VEHICLES Adopted: May 2, 2008 and Title 13, California Code of Regulations, Section § 1961.1(a)(1)(B)

Global Warming Scores are selected from the table in 3(c) in the same section.

Smog score for Test Group MJLXT03.0GTR = 1 (LEV3 LEV160)

Environmental Performance Label

Jaguar Land Rover products for the 2021 Model Year will be fitted with labels which indicate the results obtained from the Federal Fuel Economy and Greenhouse Gas Emissions testing program in lieu of separate California labels.

Jaguar Land Rover Ltd hereby states that labels fitted to vehicles covered by this application comply with all relevant Federal specifications for Material, Color, and Label Format Requirements described in 40CFR Parts 85, 86 and 600, 49CFR Part 575, and related Manufacturer Guidance issued by the US Environmental Protection Agency and the National Highway Traffic Safety Administration.

REVISED:
17.6.    Vehicle weights

17.6.1.  Curb weight:

   - 5332 lb Range Rover
   - 5093 lb Range Rover Sport 5 seat
   - 5153 lb Range Rover Sport 7 seat

17.6.2.  Gross vehicle weight rating:

   - 6724 lb Range Rover
   - 6503 lb Range Rover Sport
   - 6944 lb Range Rover Sport 7 seat

17.6.3.  Equivalent test weight (LVW basis):

   - 5500 lb Range Rover
   - 5500 lb Range Rover Sport
   - 5500 lb Range Rover Sport 7 seat
17.7. Exhaust standards to which this test group is certified
Applicable Standards: LEV3 LEV160 Light Duty Truck 6000 - 8500 lb.
(GVWR)

150k

<table>
<thead>
<tr>
<th>Standard</th>
<th>Limit</th>
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<tbody>
<tr>
<td>NMOG+NOx</td>
<td>160 mg/mi.</td>
</tr>
<tr>
<td>CO</td>
<td>4.2 g/mi.</td>
</tr>
<tr>
<td>HCHO</td>
<td>4 mg/mi.</td>
</tr>
<tr>
<td>Hwy-NMOG+NOx</td>
<td>160 mg/mi.</td>
</tr>
<tr>
<td>Particulates</td>
<td>0.003 g/mi.</td>
</tr>
<tr>
<td>Cold CO</td>
<td>- g/mi.</td>
</tr>
</tbody>
</table>

17.8. NMHC to NMOG Ratio and NMHC to HCHO Ratio

The following ratios were used during the certification process

NMHC : NMOG 1 : 1.00
NMHC : HCHO 1 : 0.04
## 18. REVISION LOG

<table>
<thead>
<tr>
<th>Revision No.</th>
<th>Revision Date</th>
<th>Pages Affected</th>
<th>Description of Revision</th>
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</thead>
</table>

REVISED: