California Environmental Protection Agency AIR RESOURCES BOARD	NISSAN MOTOR CO., LTD.	EXECUTIVE ORDER U-L-001-0048 New Off-Road Large Spark-Ignition Engines At & Above 19 Kilowatts

Pursuant to the authority vested in the Air Resources Board by the Health and Safety Code, Division 26, Part 5, Chapters 1 and 2; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following new large spark-ignition engines and emission control systems produced by the manufacturer are certified for use in off-road equipment as described below. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY NAME	ENGINE DISPLACEMENT (liters)	FUEL TYPE
2010	ANSXB04.546D	4.5	Dual Fuel, Gasoline or LPG

DURABILITY HOURS	SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT USAGE
5000	Multiport Fuel Injection (Gas and Dual Fuel), Throttle Body Injection (LPG), Three-Way Catalytic Converter, Heated Oxygen Sensor	Forklift

ENGINE MODELS (rated power in kilowatt, kW)	See Attachment

The following are the hydrocarbon plus oxides of nitrogen (HC+NOx) and carbon monoxide (CO) exhaust certification emission standards (Title 13, California Code of Regulations, (13 CCR) Section 2433(b)(1)) and certification emission levels for this engine family in grams per kilowatt-hour (g/kW-hr). Engines within this engine family shall have closed crankcases in conformance with 13 CCR Section 2433(b)(3) of "California Exhaust and Evaporative Emission Standards and Test Procedures for New 2007 through 2009 Off-Road Large Spark-ignition Engines (2007- 2009 Test Procedure 1048)" amended March 2, 2007.

(g/kW-hr)	HC+NOx	CO
Exhaust Standards	0.8	20.6
Certification Levels	0.5	6.5

The following is the evaporative hydrocarbon emission standard (13 CCR Section 2433(b)(3)) and certification emission level for this engine family in grams per gallon of fuel tank capacity (g/gallon).

Evaporative Certification Method	HC Certification Level (g/gallon)	HC Certification Standard (g/gallon)
Design Based	N/A	0.2

BE IT FURTHER RESOLVED: That for the listed engines for the aforementioned model-year, the manufacturer has submitted, and the Executive Officer hereby approves, the information and materials to demonstrate certification compliance with 13 CCR Section 2433(c) (certification and test procedures), 13 CCR Section 2434 (emission control labels), and 13 CCR Sections 2435 and 2436 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 16 day of September 2009.

Annette Hebert

Annette Hebert, Chief
Mobile Source Operations Division

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Model Year: 2010
Manufacturer Name: NISSAN MOTOR CO., LTD
Engine Family: ANSXB04.546D
OFF-ROAD LSI ENGINE SUPPLEMENTAL INFORMATION

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S12. MODEL SUMMARY (Use an asterisk (*) to identify worst-case engine model used for certification testing.)

S13. Engine Model	S14. Engine Code	S15. Sales Codes (Check ALL appropriate)			S16. Eng. Displ. (Liters)	S17. Rated Power (kW)	S18. Rated Speed (RPM)	S19. Peak Torque (Nm)	S20. Peak Torque Speed (RPM)
		Calif. Only	49-State	50-State					
TB45 N-2				V	4.478	71.7	2450	279.5	1600
*TB45 N-3	(Gasoline)			V	4.478	68.4	2450	276.1	1600
	(LPG)			V	4.478	71.7	2450	279.5	1600
TB45 M-1				V	4.478	63.7	2450	263.4	1600
TB45 M-2				V	4.478	70.2	2450	279.0	1600
TB45 M-3	(Gasoline)			V	4.478	63.7	2450	263.4	1600
	(LPG)			V	4.478	70.2	2450	279.0	1600
TB45 K-1				V	4.478	60.6	2400	273.0	1600
TB45 K-2				V	4.478	61.1	2400	274.5	1440
TB45 K-3	(Gasoline)			V	4.478	60.6	2400	273.0	1600
	(LPG)			V	4.478	61.1	2400	274.5	1440
TB45 T-1				V	4.478	64.8	2450	265.8	1600
TB45 T-2				V	4.478	65.7	2450	268.5	1470
TB45 T-3	(Gasoline)			V	4.478	64.8	2450	265.8	1600
	(LPG)			V	4.478	65.7	2450	268.5	1470