



**VOLVO CONSTRUCTION EQUIPMENT AB**

**EXECUTIVE ORDER U-R-003-0103**  
New Off-Road  
Compression-Ignition Engines

Pursuant to the authority vested in California Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-19-095;

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

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2022	NVSXL16.1HPE	16.1	Diesel	8,000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Electronic Control Module, Turbocharger, Charge Air Cooler, Exhaust Gas Recirculation, Electronic Direct Injection, Periodic Trap Oxidizer, Selective Catalytic Reduction – Urea, Diesel Oxidation Catalyst, Ammonia Oxidation Catalyst			Loader, Hauler, Excavator, Wheel Loader	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Tier 4 Final	<b>STD</b>	0.19	0.40	N/A	3.5	0.02	N/A	N/A	N/A
		<b>CERT</b>	0.02	0.17	--	0.02	0.01	--	--	--

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (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 on this 1st day of February 2022.

Allen Lyons, Chief  
Emissions Certification and Compliance Division

**Attachment 1 of 1: Engine Models**

**EO #:** U-R-003-0103

**Family:** NVSL16.1HPE

**Attachment Revised:** 1/3/2021

Model	Code	Trim	Config	Displacement	Displacement - Units	Peak Power	Peak Power - Units	Peak Power - Speed (rpm)	Peak Power - Fueling	Peak Power - Fuel Units	Peak Torque	Peak Torque - Units	Peak Torque - Speed (rpm)	Peak Torque - Fuel	Peak Torque - Fuel Units	OBD	GHG	Special	Notes
D16J	16-33	N/A	I6	16.1	Liters	495	kilowatt	1900	105	kg/hr	3200	N-m	1140	452	mm3/stroke	N/A	N/A	None	Tested Engine
D16J	16-61	N/A	I6	16.1	Liters	470	kilowatt	1900	98	kg/hr	2525	N-m	1350	413	mm3/stroke	N/A	N/A	None	None
D16J	16-31	N/A	I6	16.1	Liters	397	kilowatt	1800	83	kg/hr	2550	N-m	1400	348	mm3/stroke	N/A	N/A	None	None
D16J	16-37	N/A	I6	16.1	Liters	450	kilowatt	1650	94	kg/hr	2701	N-m	1400	382	mm3/stroke	N/A	N/A	None	None