

LIEBHERR MACHINES BULLE SA

EXECUTIVE ORDER U-R-018-0196

New Off-Road Compression-Ignition Engines Page 1 of 1

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	NLHAL12.0SQC	12.0	Diesel	8000				
SPECIAL	. FEATURES & EMISSION C	ONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION					
Electi Injecti	Turbocharger, Charge A ronic Control Module, E on, Selective Catalyst F ia Oxidation Catalyst, D	lectronic Direct Reduction-Urea,	Crane, Loader, Dozer, Har	vester				

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	EMISSION			I	EXHAUST (g/kw-l	OPACITY (%)				
POWER CLASS	STANDARD CATEGORY		NMHC	NOx	NMHC+NOx	СО	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Tier 4 Final	STD	0.19	0.40	N/A	3.5	0.02	N/A	N/A	N/A
		CERT	0.02	0.35		0.5	0.02	1	1	

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 18th day of January 2022.

Allen L∕yons, Chief

Emissions Certification and Compliance Division

Attachment: Engine Models EO #: U-R-018-0196 Family: NLHAL12.0SQC Attachment Last Revised: 12/14/2021

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
D946 A7- 04	RO6KO7	N/A	16	12.0	Liters	536	horsepower	1900	183	lb/hr	1860	lb-ft	1350	154	lb/hr	N/A	N/A	N/A	N/A
D946 A7-	DOCKO7	N/A	16	12.0	Liters	469	horsepower	1900	161	lb/hr	1831	lb-ft	1350	152	lb/hr	N/A	N/A	N/A	N/A
D946 A7- 04	PO6KO7	N/A	16	12.0	Liters	442	horsepower	1900	151	lb/hr	1727	lb-ft	1350	143	lb/hr	N/A	N/A	N/A	N/A
D946 A7- 24	R06KQ7 105	N/A	16	12.0	Liters	442	horsepower	1900	150	lb/hr	1727	lb-ft	1350	144	lb/hr	N/A	N/A	N/A	N/A
D956 A7- 04 TCD 12.0 L6	R06NQ7 105	N/A	16	12.0	Liters	536	horsepower	2100	195	lb/hr	1861	lb-ft	1400	163	lb/hr	N/A	N/A	N/A	N/A
D956 A7- 04 TCD 12.0 L6	R06NQ7 107	N/A	16	12.0	Liters	510	horsepower	2100	181	lb/hr	1861	lb-ft	1400	161	lb/hr	N/A	N/A	N/A	N/A
D956 A7-	R06NQ7 103	N/A	16	12.0	Liters	456	horsepower	2100	167	lb/hr	1710	lb-ft	1400	149	lb/hr	N/A	N/A	N/A	N/A
D956 A7- 04 TCD 12.0 L6	106	N/A	16	12.0	Liters	402	horsepower	2100	144	lb/hr	1509	lb-ft	1400	133	lb/hr	N/A	N/A	N/A	N/A
D956 A7- 04	R06NQ7 104	N/A	16	12.0	Liters	459	horsepower	2100	174	lb/hr	1674	lb-ft	1400	156	lb/hr	N/A	N/A	N/A	N/A
D956 A7- 04	R06NQ7 108	N/A	16	12.0	Liters	355	horsepower	2100	136	lb/hr	1556	lb-ft	1400	136	lb/hr	N/A	N/A	N/A	N/A
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