

LIEBHERR MACHINES BULLE SA

EXECUTIVE ORDER U-R-018-0219

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)					
2023	PLHAL18.0SQC	18.0	Diesel	8000					
SPECIAL	. FEATURES & EMISSION C	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION						
Modul	rger, Charge Air Cooler le, Electronic Direct Inje st Reduction-Urea, Am Catalyst, DEF Quality	ection, Selective monia Oxidation	Crane, Loader, Dozer, Pump, Generator Set, Harvester, Drilling Rig						

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				EXHAUST (g/kw-l	OPACITY (%)				
	STANDARD CATEGORY		NMHC	NOx	NMHC+NOx	СО	PM	ACCEL	LUG	PEAK
ELSE > 560 kW	Tier 4 Final	STD	0.19	3.5	N/A	3.5	0.04	N/A	N/A	N/A
		CERT	0.01	1.6		0.3	0.01	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 <u>28th</u> day of September 2022.

Golin U. Kang Robin U. Lang, Chief

Emissions Certification and Compliance Division

Attachment: Engine Models EO #: U-R-018-0219 Family: PLHAL18.0SQC Attachment Last Revised: 8/1/2022

					Displacement -		Peak Power -	Peak Power -	Peak Power -	Peak Power - Fuel Peak Torque - Peak Torque -			Peak Torque -	Peak Torque - Fuel					
Model	Code	Trim	Config	Displacement	Units	Peak Power	Units	Speed (rpm)	Fueling	Units	Peak Torque	Units	Speed (rpm)	Peak Torque - Fuel		OBD	GHG	Special	Notes
D976 A7- 04	R06JQ71 05	N/A	L6	17.96	Liters	831	horsepower	1900	462	mm3/stroke	2950	lb-ft	1300	535	mm3/stroke	N/A	N/A	N/A	N/A
D976 A7- 04 TCD 18.0 L6	R06JQ71	N/A	L6	17.96	Liters	831	horsepower	1900	462	mm3/stroke	2699	lb-ft	1300	486	mm3/stroke	N/A	N/A	N/A	N/A
D976 A7- 04 TCD 18.0 L6	R06JQ71	N/A	L6	17.96	Liters	790	horsepower	1900	446	mm3/stroke	2640	lb-ft	1300	476	mm3/stroke	N/A	N/A	N/A	N/A
D976 A7- 04 TCD 18.0 L6	R06JQ71 03	N/A	L6	17.96	Liters	758	horsepower	1900	416	mm3/stroke	2604	lb-ft	1300	468	mm3/stroke	N/A	N/A	N/A	N/A
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