

## LIEBHERR MACHINES BULLE SA

## **EXECUTIVE ORDER U-R-018-0208**

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	PLHAL13.5SWC	13.5	Diesel	8000				
SPECIAL	FEATURES & EMISSION (	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION					
Module, E Cataly	rger, Charge Air Cooler Electronic Direct Injection yst, Selective Catalyst For a Oxidation Catalyst, Die Periodic Trap Oxice	on, Diesel Oxidation Reduction-Urea, EF Quality Sensor,	Crane, Loader, Dozer, Exc	avator				

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				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	0.003	0.38		0.1	0.004			

**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.

Robin U. Lang, Chief

**Emissions Certification and Compliance Division** 

Jolin U. Lang

**Attachment: Engine Models** 

EO #: U-R-018-0208

Family: PLHAL13.5SWC

Attachment Last Revised: 8/1/2022

					Displacement -		Peak Power -	Peak Power -	Peak Power -	Peak Power - Fuel		Peak Torque -	Peak Torque -		Peak Torque - Fue	1			
Model	Code	Trim	Config	Displacement	Units	Peak Power	Units	Speed (rpm)	Fueling	Units	Peak Torque	Units	Speed (rpm)	Peak Torque - Fuel	Units	OBD	GHG	Special	Notes
D966 A7- 05	R06PW7 101	N/A	L6	13.484	Liters	603	horsepower	2100	305	mm3/stroke	2047	lb-ft	1400	368	mm3/stroke	N/A	N/A	N/A	N/A
D966 A7- 05	R06PW7 102	N/A	L6	13.484	Liters	574	horsepower	2100	292	mm3/stroke	2047	lb-ft	1400	368	mm3/stroke	N/A	N/A	N/A	N/A
D966 A7- 05		N/A	L6	13.484	Liters	514	horsepower	2100	260	mm3/stroke	1924	lb-ft	1400	344	mm3/stroke	N/A	N/A	N/A	N/A
D966 A7- 05		N/A	L6	13.484	Liters	453	horsepower	2100	227	mm3/stroke	1698	lb-ft	1400	304	mm3/stroke	N/A	N/A	N/A	N/A
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