

CUMMINS INC.

EXECUTIVE ORDER U-R-002-0807 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	NCEXL04.5AAH	4.5	Diesel	8000					
SPECIAI	L FEATURES & EMISSION (CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION						
Cooler, Recircul	Direct Injection, Turbo Electronic Control Mod ation, Diesel Oxidation ic Reduction – Urea, Ar Catalyst	dule, Exhaust Gas Catalyst, Selective	Crane, Loader, Tractor, Dozer, Pump, Compressor						

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
75 ≤ kW < 130	Tier 4 Final	STD	0.19	0.40	N/A	5.0	0.02	N/A	N/A	N/A
		FEL	N/A	0.37	N/A	N/A	N/A	N/A	N/A	N/A
		CERT	0.04	0.10		0.04	0.02			

BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

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 2/st day of November 2021.

Allen Vons, Chief

Emissions Certification and Compliance Division\

Attachment: Engine Models EO #: U-R-002-0807 Family: NCEXL04.5AAH Attachment Last Revised: 9/9/2021

					Displacement -		Peak Power -	Peak Power -	Peak Power -	Peak Power - Fuel		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 - Fue	Units	OBD	GHG	Special	Notes
QSB4.5	OB1		14	4.5	Liters	173	horsepower	2500	115	mm3/stroke	520	lb-ft	1500	78	lb/hr				
QSB4.5	OB2		14	4.5	Liters	163	horsepower	2500	109	mm3/stroke	466	lb-ft	1500	70	lb/hr				
QSB4.5	OB3		14	4.5	Liters	130	horsepower	2500	92	mm3/stroke	457	lb-ft	1500	68.6	lb/hr				
QSB4.5	OB4		14	4.5	Liters	160	horsepower	2300	112	mm3/stroke	460	lb-ft	1500	69	lb/hr				
QSB4.5	OB5		14	4.5	Liters	130	horsepower	2300	95	mm3/stroke	378	lb-ft	1500	57	lb/hr				
QSB4.5	OB6		14	4.5	Liters	160	horsepower	2200	117	mm3/stroke	460	lb-ft	1500	69	lb/hr				
QSB4.5	OB7		14	4.5	Liters	140	horsepower	2200	104	mm3/stroke	440	lb-ft	1500	66	lb/hr				
QSB4.5	OB8		14	4.5	Liters	130	horsepower	2200	98	mm3/stroke	430	lb-ft	1500	64.6	lb/hr				
QSB4.5	ОВ9		14	4.5	Liters	121	horsepower	2200	92	mm3/stroke	347	lb-ft	1500	52.5	lb/hr				
QSB4.5	OB10		14	4.5	Liters	173	horsepower	2000	141	mm3/stroke	520	lb-ft	1500	78	lb/hr				
QSB4.5	OB11		14	4.5	Liters	155	horsepower	2000	125	mm3/stroke	460	lb-ft	1500	69	lb/hr				
QSB4.5	OB12		14	4.5	Liters	140	horsepower	2000	113	mm3/stroke	457	lb-ft	1500	68.6	lb/hr				
QSB4.5	OB13		14	4.5	Liters	155	horsepower	2000	125	mm3/stroke	460	lb-ft	1500	69	lb/hr				
QSB4.5	OB14		14	4.5	Liters	160	horsepower	2300	112	mm3/stroke	460	lb-ft	1500	69	lb/hr				
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