



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)
2020	LHZXL1.46M52	1.463	Diesel	3000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Electronic Direct Injection, Electronic Control Module, Turbocharger			Loader, Tractor, Pump, Compressor, Generator Set	

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
8 ≤ kW < 19	Tier 4 Final	STD	N/A	N/A	7.5	6.6	0.40	N/A	N/A	N/A
		CERT	--	--	7.0	2.2	0.11	--	--	--

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 at El Monte, California on this 18th day of December 2019.

Allen Lyons, Chief Emissions Certification and Compliance Division

Detailed engine models summarization of the engine family LHZXL1.46M52



EPA Engine Family Name	Model Year	Engine Model	Engine Code	Rated engine power (kW)	Rated Speed (RPM)	Fuel Rate at Rated Speed (mm ³ /stroke)	Maximum Torque (N ^m)	Speed at Maximum Torque (RPM)	Fuel Rate at Maximum Torque (mm ³ /stroke)	Maximum Test Speed (RPM)	Torque at Maximum Test Speed (N ^m)	Maximum Engine Power (kW)	Intermediate Test Speed (RPM)	Lower Tolerance of Maximum Power (%)	Upper Tolerance of Maximum Power (%)	Emission Control System
LHZXL1.46M52	2020	3H50T	2800-18.4	18,4	2800	25,7	131,0	1300	42,9	2800	62,8	18,4	NA	5,0	5,0	DDI, ECM, TC
LHZXL1.46M52	2020	3H50T	2700-18.4	18,4	2700	26,2	131,0	1300	42,9	2700	65,1	18,4	NA	5,0	5,0	DDI, ECM, TC
LHZXL1.46M52	2020	3H50T	2600-18.4	18,4	2600	26,5	131,0	1300	42,9	2600	67,6	18,4	NA	5,0	5,0	DDI, ECM, TC
LHZXL1.46M52	2020	3H50T	2500-18.4	18,4	2500	26,9	131,0	1300	42,9	2500	70,3	18,4	NA	5,0	5,0	DDI, ECM, TC
LHZXL1.46M52	2020	3H50T	2400-18.4	18,4	2400	27,2	131,0	1300	42,9	2400	73,2	18,4	NA	5,0	5,0	DDI, ECM, TC
LHZXL1.46M52	2020	3H50T	2300-18.4	18,4	2300	27,7	131,0	1300	42,9	2300	76,4	18,4	NA	5,0	5,0	DDI, ECM, TC
LHZXL1.46M52	2020	3H50T	2200-18.4	18,4	2200	28,4	131,0	1300	42,9	2200	79,9	18,4	NA	5,0	5,0	DDI, ECM, TC
LHZXL1.46M52	2020	3H50T	2800-18.4-LT	18,4	2800	25,7	110,0	1300	36,2	2800	62,8	18,4	NA	5,0	5,0	DDI, ECM, TC
LHZXL1.46M52	2020	3H50T	1800-18.4	18,4	1800	32,8	98,0	1800	32,8	1800	97,6	18,4	NA	5,0	5,0	DDI, ECM, TC
LHZXL1.46M52	2020	3H50T	1500-18.4	18,4	1500	37,9	117,0	1500	37,9	1500	117,1	18,4	NA	5,0	5,0	DDI, ECM, TC