

Pursuant to the authority vested in the 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-14-012;

**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)
2015	FHZXL3.43V43	3.432	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Mechanical Direct Injection, Electronic Control Module, Exhaust Gas Recirculation, Diesel Oxidation Catalyst, Periodic Trap Oxidizer			Crane, Loader, Tractor, Dozer, Pump, Compressor, Generator	

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, 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
19 ≤ kW < 56	Tier 4 Final	OPTIONAL STD	N/A	N/A	4.7	5.0	0.03	N/A	N/A	N/A
		CERT	--	--	4.7	0.3	0.01	--	--	--

**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).

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has complied with the more stringent set of standards from the various power categories in conformance with Section 1039.230 (e) of the "California Exhaust Emission Standards and Test Procedures for 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C" adopted October 20, 2005 and last amended October 25, 2012.

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 12<sup>th</sup> day of January 2015.

  
 Annette Hebert, Chief  
 Emissions Compliance, Automotive Regulations and Science Division

Detailed engine models summarization of the engine family FHZXL3.43V43

Attachment 1 of 3

U-R-034-0300  
1/7/15



EPA Engine Family Name	Engine Model	Engine Code	Rated power (kW)	Rated Speed (RPM)	Maximum Torque (N*m)	Speed at Maximum Torque	Fuel Rate at Maximum Torque	Fuel Rate at Rated Speed (mm3/stroke)	Emission Control System
FHZXL3.43V43	4M43	vs-4M43-3150	49,9	3150	196	1600	46,5	44,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-3000	49,9	3000	196	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2950	49,3	2950	196	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2900	48,6	2900	196	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2850	48,4	2850	196	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2800	48,0	2800	196	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2750	47,5	2750	196	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2700	46,9	2700	196	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2650	46,6	2650	196	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2600	46,1	2600	196	1600	46,5	45,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2550	45,6	2550	196	1600	46,5	45,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2500	45,2	2500	196	1600	46,5	46,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2450	44,7	2450	196	1600	46,5	46,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2400	44,1	2400	196	1600	46,5	46,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2350	43,6	2350	196	1600	46,5	46,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2300	45,7	2300	197	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2250	45,2	2250	197	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2200	44,4	2200	197	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2150	43,4	2150	197	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2100	42,6	2100	197	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2050	41,9	2050	197	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-2000	41,2	2000	197	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-1950	40,0	1950	197	1800	49,0	49,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-1900	39,2	1900	197	1800	49,0	49,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-1850	38,2	1850	197	1800	49,0	49,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43	vs-4M43-1800	37,2	1800	197	1650	48,0	49,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-3150	48,4	3150	193	1600	46,5	44,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-3000	48,4	3000	193	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2950	47,8	2950	193	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2900	47,2	2900	193	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2850	47,0	2850	193	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2800	46,7	2800	193	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2750	46,1	2750	193	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2700	45,6	2700	193	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2650	45,3	2650	193	1600	46,5	44,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2600	44,9	2600	193	1600	46,5	45,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2550	44,4	2550	193	1600	46,5	45,0	DDI/ECM/EGR/DOC/DPF

Detailed engine models summarization of the engine family FHZXL3.43V43

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EPA Engine Family Name	Engine Model	Engine Code	Rated power (kW)	Rated Speed (RPM)	Maximum Torque (N*m)	Speed at Maximum Torque	Fuel Rate at Maximum Torque	Fuel Rate at Rated Speed (mm3/stroke)	Emission Control System
FHZXL3.43V43	4M43Z	vs-4M43Z-2500	44,0	2500	193	1600	46,5	46,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2450	43,6	2450	193	1600	46,5	46,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2400	43,0	2400	193	1600	46,5	46,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2350	42,5	2350	193	1600	46,5	46,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2300	44,7	2300	194	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2250	44,2	2250	194	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2200	43,4	2200	194	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2150	42,5	2150	194	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2100	41,7	2100	194	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2050	41,0	2050	194	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-2000	40,4	2000	194	1800	49,0	49,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-1950	39,2	1950	194	1800	49,0	49,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-1900	38,4	1900	194	1800	49,0	49,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-1850	37,5	1850	194	1800	49,0	49,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4M43Z	vs-4M43Z-1800	36,5	1800	194	1800	49,0	49,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-3150	44,2	3150	174	1700	44,0	42,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-3000	44,2	3000	174	1700	44,0	42,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2950	44,0	2950	174	1700	44,0	42,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2900	43,7	2900	174	1700	44,0	42,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2850	43,6	2850	174	1700	44,0	42,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2800	43,2	2800	174	1700	44,0	42,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2750	43,0	2750	174	1700	44,0	43,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2700	42,3	2700	174	1700	44,0	43,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2650	42,1	2650	174	1700	44,0	43,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2600	42,0	2600	174	1700	44,0	43,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2550	41,7	2550	174	1700	44,0	43,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2500	41,2	2500	174	1700	44,0	43,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2450	40,7	2450	174	1700	44,0	43,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2400	40,3	2400	174	1700	44,0	43,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2350	39,6	2350	174	1700	44,0	43,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2300	42,8	2300	186	1800	48,0	48,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2250	42,4	2250	186	1800	48,0	48,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2200	41,7	2200	186	1800	48,0	48,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2150	40,8	2150	186	1800	48,0	48,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2100	40,0	2100	186	1800	48,0	48,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2050	39,1	2050	186	1800	48,0	48,5	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-2000	38,2	2000	186	1800	48,0	48,5	DDI/ECM/EGR/DOC/DPF

Detailed engine models summarization of the engine family FHZXL3.43V43

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EPA Engine Family Name	Engine Model	Engine Code	Rated power (kW)	Rated Speed (RPM)	Maximum Torque (N*m)	Speed at Maximum Torque	Fuel Rate at Maximum Torque	Fuel Rate at Rated Speed (mm <sup>3</sup> /stroke)	Emission Control System
FHZXL3.43V43	4L43C	vs-4L43C-1950	37,6	1950	186	1800	48,0	48,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-1900	36,9	1900	186	1800	48,0	48,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-1850	36,1	1850	186	1800	48,0	48,0	DDI/ECM/EGR/DOC/DPF
FHZXL3.43V43	4L43C	vs-4L43C-1800	35,3	1800	186	1800	48,0	48,0	DDI/ECM/EGR/DOC/DPF