

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-02-003;

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)
2008	8HZXL243V20	0.243	Diesel	3000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection			Pump, Generator Set	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), 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 (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
0 ≤kW < 8	Tier 4	STD	N/A	N/A	7.5	8.0	0.80*	N/A	N/A	N/A
		CERT	--	--	7.1	4.9	0.31	--	--	--

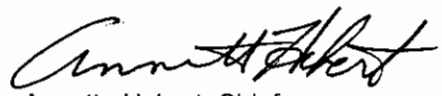
*hand-start, air cooled, direct injection engine

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 13 day of February 2008.


 Annette Hebert, Chief
 Mobile Source Operations Division

Motorenfabrik Hatz
Nonroad CI

U-2-034-0171

Engine Model Summary Template

Attachment p. 1 of 2

Engine Family	1 Engine Code	2 Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm ³ /stroke @ peak HP (for diesel only)	5.Fuel Rate: mm ³ /stroke @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm ³ /stroke@peak torque	8.Fuel Rate: (lb/hr)/@peak torque Device	9 Emission Control Per SAE J1930
SHZXL 243V20	N/A	1B20/1B20R	4.6@3600	10.5	2.1	7.8@2500	10.5	1.5	DDI
SHZXL 243V20	N/A	1B20/1B20R	4.6@3550	10.5	2.1	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.6@3500	10.5	2.0	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.6@3450	10.5	2.0	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.4@3400	10.5	2.0	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.4@3350	10.5	2.0	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.4@3300	10.5	1.9	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.3@3250	10.5	1.9	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.3@3200	10.5	1.9	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.3@3150	10.5	1.8	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.3@3100	10.5	1.8	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.3@3050	10.5	1.8	7.8@2500	10.5	1.5	
SHZXL 243V20	N/A	1B20/1B20R	4.2@3000	11	1.8	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	4.2@2950	11	1.8	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	4.0@2900	11	1.8	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.9@2850	11	1.7	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.9@2800	11	1.7	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.9@2750	11	1.7	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.9@2700	11	1.7	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.8@2650	11	1.6	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.8@2600	11	1.6	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.8@2550	11	1.6	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.6@2500	11	1.5	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.6@2450	11	1.5	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.6@2400	11	1.5	7.8@2250	11	1.4	
SHZXL 243V20	N/A	1B20/1B20R	3.5@2350	11	1.4	7.8@2250	11	1.4	

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Engine Model Summary Template

Attachment P. 2 of 2

Engine Family	1. Engine Code	2. Engine Model	3. BHP@RPM (SAE Gross)	4. Fuel Rate: mm ³ /stroke @ peak HP (for diesel only)	5. Fuel Rate: @ peak HP (lbs/hr) (for diesels only)	6. Torque @ RPM (SEA Gross)	7. Fuel Rate: mm ³ /stroke@peak torque	8. Fuel Rate: (lbs/hr)@peak torque	9. Emission Control Device Per SAE J1930
3FZXL 243V20	N/A	1B20/1B20R	3.4@2300	11	1.4	7.8@2000	11	1.2	DDI
8HZXL 243V20	N/A	1B20/1B20R	3.4@2250	11	1.4	7.8@2000	11	1.2	
8HZXL 243V20	N/A	1B20/1B20R	3.2@2200	11	1.3	7.8@2000	11	1.2	
8HZXL 243V20	N/A	1B20/1B20R	3.1@2150	11	1.3	7.8@2000	11	1.2	
3HZXL 243V20	N/A	1B20/1B20R	2.9@2100	11	1.3	7.8@2000	11	1.2	
9HZXL 243V20	N/A	1B20/1B20R	2.8@2050	11	1.3	7.8@2000	11	1.2	
8HZXL 243V20	N/A	1B20/1B20R	2.8@2000	11	1.2	7.8@2000	11	1.2	