California Environmental Protection Agency AIR RESOURCES BOARD	MOTORENFABRIK HATZ	EXECUTIVE ORDER U-R-034-0207 New Off-Road Compression-Ignition Engines

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)
2009	9HZXL1.38SV2	1.384	Diesel	3000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection	Pump, Compressor, Other Industrial Equipment

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
8 ≤ kW < 19	Tier 4	STD	N/A	N/A	7.5	6.6	0.40	20	15	50
		CERT	--	--	7.3	4.6	0.28	4	3	5

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 12th day of December 2008.

J. Lourenco for

Annette Hebert, Chief
Mobile Source Operations Division

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Attachment

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Engine Model Summary Template

Engine Family	1.Engine Code	2.Engine Model	3.kW@ RPM (SAE Gross)	4.Fuel Rate: mass/time @ peak kW (for diesel only)	5.Fuel Rate: (mass) @ peak kW (for diesel only)	6.Torque @ RPM (SAE Gross)	7.Fuel Rate: mass/time@peak torque	8.Fuel Rate: (mass)@peak torque	9.Emission Control Device Per SAE J1930
9HZXL1.98SV2	N/A	3W35	22,3@3000	19,0	3,0	44@1800	20,0	1,9	DDI
9HZXL1.98SV2	N/A	3W35	22,0@2950	19,0	3,0	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	21,9@2900	19,0	2,9	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	21,7@2850	19,0	2,9	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	21,5@2800	19,0	2,8	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	21,2@2750	19,0	2,8	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	21,1@2700	19,0	2,7	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	20,8@2650	19,0	2,7	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	20,5@2600	19,0	2,6	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	20,2@2550	19,0	2,6	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	19,8@2500	19,0	2,5	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	19,5@2450	19,0	2,5	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	19,2@2400	19,0	2,4	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	18,9@2350	19,0	2,4	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	18,5@2300	19,0	2,3	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	18,1@2250	19,0	2,3	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	17,7@2200	19,0	2,2	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	17,4@2150	19,0	2,2	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	17,0@2100	19,0	2,1	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	16,5@2050	19,0	2,1	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	16,2@2000	19,0	2,0	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	15,8@1950	19,0	2,0	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	15,4@1900	19,0	1,9	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	15,0@1950	19,0	1,9	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	14,6@1800	19,0	1,8	44@1800	20,0	1,9	
9HZXL1.98SV2	N/A	3W35	20,2@3000	17,0	2,7	38@1800	18,0	1,7	
9HZXL1.98SV2	N/A	3W35	20,0@2950	17,0	2,7	38@1800	18,0	1,7	

kW

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Engine Model Summary Template

Engine Family	1.Engine Code	2.Engine Model	3.BHP@ RPM (SAE Gross)	4.Fuel Rate: mm3/stroke @ peak HP (for certification)	5.Fuel Rate: (lbs/Hr) @ peak HP (for others only)	6.Torque @ RPM (SAE Gross)	7.Fuel Rate: mm3/stroke@peak torque	8.Fuel Rate: (lbs/Hr)@peak torque	9.Electronic Control Device Per SAE J1939
9HZXL1.36SV2	N/A	3W35	19,8@2600	17,0	2,5	38@1600	18,0	1,7	DDI
9HZXL1.35SV2	N/A	3W35	19,7@2850	17,0	2,5	38@1600	18,0	1,7	
9HZXL1.35SV2	N/A	3W35	19,4@2800	17,0	2,5	38@1600	18,0	1,7	
9HZXL1.35SV2	N/A	3W35	19,3@2750	17,0	2,5	38@1600	18,0	1,7	
9HZXL1.35SV2	N/A	3W35	19,0@2700	17,0	2,4	38@1600	18,0	1,7	
9HZXL1.35SV2	N/A	3W35	18,9@2650	17,0	2,4	38@1600	18,0	1,7	
9HZXL1.35SV2	N/A	3W35	18,6@2600	17,0	2,4	38@1600	18,0	1,7	
9HZXL1.35SV2	N/A	3W35	18,4@2550	17,0	2,3	38@1600	18,0	1,7	
9HZXL1.35SV2	N/A	3W35	18,1@2500	17,0	2,3	38@1600	18,0	1,7	
9HZXL1.38SV2	N/A	4W35	25,2@2350 (18.8 KW)	19,0	3,2	60@1600	20,0	2,6	
9HZXL1.38SV2	N/A	4W35	24,6@2300	19,0	3,1	60@1600	20,0	2,6	
9HZXL1.38SV2	N/A	4W35	24,3@2250	19,0	3,0	60@1600	20,0	2,6	
9HZXL1.38SV2	N/A	4W35	23,9@2200	19,0	3,0	60@1600	20,0	2,6	
9HZXL1.38SV2	N/A	4W35	23,3@2150	19,0	2,9	60@1600	20,0	2,6	
9HZXL1.38SV2	N/A	4W35	22,8@2100	19,0	2,8	60@1600	20,0	2,6	
9HZXL1.38SV2	N/A	4W35	22,3@2050	19,0	2,8	60@1600	20,0	2,6	
9HZXL1.55SV2	N/A	4W35	21,7@2000	19,0	2,7	60@1600	20,0	2,6	
9HZXL1.33SV2	N/A	4W35	21,2@1950	19,0	2,6	57@1600	19,0	2,4	
9HZXL1.33SV2	N/A	4W35	20,7@1900	19,0	2,5	57@1600	19,0	2,4	
9HZXL1.33SV2	N/A	4W35	20,1@1850	19,0	2,5	57@1600	19,0	2,4	
9HZXL1.33SV2	N/A	4W35	19,6@1800	19,0	2,4	57@1600	19,0	2,4	
9HZXL1.29SV2	N/A	4W35	25,3@2550	17,0	3,2	53@1600	18,0	2,3	
9HZXL1.30SV2	N/A	4W35	24,9@2500	17,0	3,1	53@1600	18,0	2,3	
9HZXL1.30SV2	N/A	4W35	24,5@2550	17,0	3,1	53@1600	18,0	2,3	
9HZXL1.28SV2	N/A	4W35	24,1@2500	17,0	3,0	53@1600	18,0	2,3	