

 AIR RESOURCES BOARD	MOTORENFABRIK HATZ GMBH & CO. KG	EXECUTIVE ORDER U-R-034-0133
		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 system 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)
2007	7HZXL1.38SV2	0.692, 1.035	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 2	STD	N/A	N/A	7.5	6.6	0.80	20	15	50
		CERT	--	--	7.3	5.3	0.38	6	8	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 26th day of December 2006.


 for Annette Hebert, Chief
 Mobile Source Operations Division

Attachment 1 of 5
 EOT# U-R-034-0133

Engine Model Summary Template

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Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lb/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lb/hr)@peak torque	9.Emission Device Per S
7HZXL1.38SV2	N/A	2W35	14.8@3000	21.0	2.2	30@2800	21.0	2.1	NOI
7HZXL1.38SV2	N/A	2W35	14.6@2950	21.0	2.2	30@2700	21.0	2.0	
7HZXL1.38SV2	N/A	2W35	14.5@2900	21.0	2.2	30@2600	21.0	1.9	
7HZXL1.38SV2	N/A	2W35	14.3@2850	21.0	2.1	30@2500	21.0	1.9	
7HZXL1.38SV2	N/A	2W35	14.2@2800	21.0	2.1	30@2400	21.0	1.8	
7HZXL1.38SV2	N/A	2W35	13.9@2750	21.0	2.0	30@2300	21.0	1.7	
7HZXL1.38SV2	N/A	2W35	13.8@2700	21.0	2.0	30@2200	21.0	1.6	
7HZXL1.38SV2	N/A	2W35	13.7@2650	21.0	2.0	30@2100	21.0	1.6	
7HZXL1.38SV2	N/A	2W35	13.5@2600	21.0	1.9	30@2000	21.0	1.5	
7HZXL1.38SV2	N/A	2W35	12.7@3000	17.0	1.8	25@2400	18.0	1.5	
7HZXL1.38SV2	N/A	2W35	12.6@2950	17.0	1.8	25@2300	18.0	1.5	
7HZXL1.38SV2	N/A	2W35	12.5@2900	17.0	1.7	25@2200	18.0	1.4	
7HZXL1.38SV2	N/A	2W35	12.3@2850	17.0	1.7	25@2100	18.0	1.3	
7HZXL1.38SV2	N/A	2W35	12.2@2800	17.0	1.7	26@2000	18.0	1.3	
7HZXL1.38SV2	N/A	2W35	12.1@2750	17.0	1.7	26@1900	18.0	1.2	
7HZXL1.38SV2	N/A	2W35	11.9@2700	17.0	1.6	26@1800	18.0	1.1	
7HZXL1.38SV2	N/A	2W35	11.8@2650	17.0	1.6	26@1800	18.0	1.1	
7HZXL1.38SV2	N/A	2W35	11.7@2600	17.0	1.6	26@1800	18.0	1.1	
7HZXL1.38SV2	N/A	2W35	11.5@2550	17.0	1.5	26@1800	18.0	1.1	
7HZXL1.38SV2	N/A	2W35	11.4@2500	17.0	1.5	26@1800	18.0	1.1	
7HZXL1.38SV2	N/A	2W35	15.6@3600	19.0	2.4	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	15.4@3550	19.0	2.4	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	15.3@3500	19.0	2.4	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	15.2@3450	19.0	2.3	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	15.1@3400	19.0	2.3	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	15.0@3350	19.0	2.3	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	14.9@3300	19.0	2.2	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	14.8@3250	19.0	2.2	28@1800	20.0	1.3	

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Engine Model Summary Template

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: (lb _m /hr) @ peak HP (for diesels only)	6 Torque @ RPM (SEA Gross)	7 Fuel Rate: mm ³ /stroke@peak torque	8 Fuel Rate: (lb _m /hr)@peak torque	9 Emission Device Per S
7HZXL1.38SV2	N/A	2W35	14.6@3200	19.0	2.2	28@1800	20.0	1.3	DDI
7HZXL1.38SV2	N/A	2W35	14.5@3150	19.0	2.1	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	14.3@3100	19.0	2.1	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	14.2@3050	19.0	2.1	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	14.1@3000	19.0	2.0	27@2400	20.0	1.7	
7HZXL1.38SV2	N/A	2W35	13.8@2950	19.0	2.0	27@2300	20.0	1.6	
7HZXL1.38SV2	N/A	2W35	13.7@2900	19.0	2.0	27@2200	20.0	1.6	
7HZXL1.38SV2	N/A	2W35	13.5@2850	19.0	1.9	27@2100	20.0	1.5	
7HZXL1.38SV2	N/A	2W35	13.5@2800	19.0	1.9	28@2000	20.0	1.4	
7HZXL1.38SV2	N/A	2W35	13.4@2750	19.0	1.9	28@1900	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	13.3@2700	19.0	1.8	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	13.0@2650	19.0	1.8	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	12.9@2600	19.0	1.8	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	12.7@2550	19.0	1.7	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	12.5@2500	19.0	1.7	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	12.3@2450	19.0	1.7	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	12.1@2400	19.0	1.6	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	11.8@2350	19.0	1.6	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	11.7@2300	19.0	1.5	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	11.4@2250	19.0	1.5	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	11.1@2200	19.0	1.5	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	10.9@2150	19.0	1.4	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	2W35	10.7@2100	19.0	1.4	28@1800	20.0	1.3	
7HZXL1.38SV2	N/A	3W35	23.3@3000	21.0	3.3	45@2800	21.0	3.1	
7HZXL1.38SV2	N/A	3W35	23.1@2950	21.0	3.3	45@2700	21.0	3.0	
7HZXL1.38SV2	N/A	3W35	22.8@2900	21.0	3.2	45@2600	21.0	2.9	
7HZXL1.38SV2	N/A	3W35	22.7@2850	21.0	3.2	45@2500	21.0	2.8	
7HZXL1.38SV2	N/A	3W35	22.4@2800	21.0	3.1	45@2400	21.0	2.7	

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Engine Model Summary Template

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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: (bs/hr) @ peak HP (for diesels only)	6 Torque @ RPM (SEA Gross)	7 Fuel Rate: mm ³ /stroke@peak torque	8 Fuel Rate: (bs/hr)@peak torque	9 Emission Device Per S
7HZXL1.38SV2	N/A	3W35	22.1@2750	21.0	3.1	45@2300	21.0	2.6	PDI
7HZXL1.38SV2	N/A	3W35	22.0@2700	21.0	3.0	45@2200	21.0	2.5	
7HZXL1.38SV2	N/A	3W35	21.7@2650	21.0	3.0	45@2100	21.0	2.3	
7HZXL1.38SV2	N/A	3W35	21.5@2600	21.0	2.9	45@2000	21.0	2.2	
7HZXL1.38SV2	N/A	3W35	22.8@3000	20.0	3.2	44@2800	20.5	3.1	
7HZXL1.38SV2	N/A	3W35	22.5@2950	20.0	3.1	44@2700	20.5	2.9	
7HZXL1.38SV2	N/A	3W35	22.3@2900	20.0	3.1	44@2600	20.5	2.8	
7HZXL1.38SV2	N/A	3W35	22.1@2850	20.0	3.0	44@2500	20.5	2.7	
7HZXL1.38SV2	N/A	3W35	21.9@2800	20.0	3.0	44@2400	20.5	2.6	
7HZXL1.38SV2	N/A	3W35	21.7@2750	20.0	2.9	44@2300	20.5	2.5	
7HZXL1.38SV2	N/A	3W35	21.5@2700	20.0	2.9	44@2200	20.5	2.4	
7HZXL1.38SV2	N/A	3W35	21.2@2650	20.0	2.8	44@2100	20.5	2.3	
7HZXL1.38SV2	N/A	3W35	20.9@2600	20.0	2.8	44@2000	20.5	2.2	
7HZXL1.38SV2	N/A	3W35	24.7@3600	19.0	3.6	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	24.4@3550	19.0	3.6	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	24.3@3500	19.0	3.5	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	24.0@3450	19.0	3.5	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	23.9@3400	19.0	3.4	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	23.7@3350	19.0	3.4	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	23.5@3300	19.0	3.3	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	23.3@3250	19.0	3.3	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	23.1@3200	19.0	3.2	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	22.9@3150	19.0	3.2	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	22.7@3100	19.0	3.1	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	22.4@3050	19.0	3.1	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	22.3@3000	19.0	3.0	43@2400	20.0	2.6	
7HZXL1.38SV2	N/A	3W35	22.0@2950	19.0	3.0	43@2300	20.0	2.4	
7HZXL1.38SV2	N/A	3W35	21.9@2900	19.0	2.9	43@2200	20.0	2.3	

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Engine Model Summary Template

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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: (lb/hr) @ 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	9.Emission Device Per S
7HZXL1.38SV2	N/A	3W35	21.7@2850	19.0	2.9	43@2100	20.0	2.2	DDI
7HZXL1.38SV2	N/A	3W35	21.5@2800	19.0	2.8	44@2000	20.0	2.1	
7HZXL1.38SV2	N/A	3W35	21.2@2750	19.0	2.8	44@1900	20.0	2.0	
7HZXL1.38SV2	N/A	3W35	21.1@2700	19.0	2.7	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	20.8@2650	19.0	2.7	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	20.5@2600	19.0	2.6	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	20.2@2550	19.0	2.6	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	19.8@2500	19.0	2.5	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	19.6@2450	19.0	2.5	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	19.2@2400	19.0	2.4	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	18.9@2350	19.0	2.4	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	18.5@2300	19.0	2.3	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	18.1@2250	19.0	2.3	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	17.7@2200	19.0	2.2	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	17.4@2150	19.0	2.2	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	17.0@2100	19.0	2.1	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	16.5@2050	19.0	2.1	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	16.2@2000	19.0	2.0	44@1800	20.0	1.9	
7HZXL1.38SV2	N/A	3W35	20.2@3000	17.0	2.7	40@2400	18.0	2.3	
7HZXL1.38SV2	N/A	3W35	20.0@2950	17.0	2.7	40@2300	18.0	2.2	
7HZXL1.38SV2	N/A	3W35	19.8@2900	17.0	2.6	40@2200	18.0	2.1	
7HZXL1.38SV2	N/A	3W35	19.7@2850	17.0	2.6	40@2100	18.0	2.0	
7HZXL1.38SV2	N/A	3W35	19.4@2800	17.0	2.5	41@2000	18.0	1.9	
7HZXL1.38SV2	N/A	3W35	19.3@2750	17.0	2.5	41@1900	18.0	1.8	
7HZXL1.38SV2	N/A	3W35	19.0@2700	17.0	2.4	41@1800	18.0	1.7	
7HZXL1.38SV2	N/A	3W35	18.9@2650	17.0	2.4	41@1800	18.0	1.7	
7HZXL1.38SV2	N/A	3W35	18.6@2600	17.0	2.4	41@1800	18.0	1.7	
7HZXL1.38SV2	N/A	3W35	18.4@2550	17.0	2.3	41@1800	18.0	1.7	

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Engine Model Summary Template

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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: (bahr) @ peak HP (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 Device Per S
7HZXL1.38SV2	N/A	3W35	18.1@2500	17.0	2.3	41@1800	18.0	1.7	DDI
7HZXL1.38SV2	N/A	3W35	25.2@2350	19.0	3.2	61@1800	20.0	2.6	
7HZXL1.38SV2	N/A	3W35	24.8@2300	19.0	3.1	61@1800	20.0	2.6	
7HZXL1.38SV2	N/A	3W35	24.3@2250	19.0	3.0	61@1800	20.0	2.6	
7HZXL1.38SV2	N/A	3W35	23.9@2200	19.0	3.0	61@1800	20.0	2.6	
7HZXL1.38SV2	N/A	3W35	23.3@2150	19.0	2.9	61@1800	20.0	2.6	
7HZXL1.38SV2	N/A	3W35	22.8@2100	19.0	2.8	61@1800	20.0	2.6	
7HZXL1.38SV2	N/A	3W35	22.3@2050	19.0	2.8	61@1800	20.0	2.6	
7HZXL1.38SV2	N/A	3W35	21.7@2000	19.0	2.7	61@1800	20.0	2.6	
7HZXL1.38SV2	N/A	3W35	25.3@2650	17.0	3.2	56@1800	18.0	2.3	
7HZXL1.38SV2	N/A	3W35	24.9@2600	17.0	3.1	56@1800	18.0	2.3	
7HZXL1.38SV2	N/A	3W35	24.5@2550	17.0	3.1	56@1800	18.0	2.3	
7HZXL1.38SV2	N/A	3W35	24.1@2500	17.0	3.0	56@1800	18.0	2.3	