

 <b>AIR RESOURCES BOARD</b>	<b>MOTORENFABRIK HATZ GMBH &amp; CO. KG</b>	<b>EXECUTIVE ORDER U-R-034-0125</b> 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	7HZXL.232V20	0.232	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
kW < 8	Tier 2	STD	N/A	N/A	7.5	8.0	0.80	N/A	N/A	N/A
		CERT	--	--	6.2	7.2	0.49	--	--	--

**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 26<sup>TH</sup> day of December 2006.

  
 for Annette Hebert, Chief  
 Mobile Source Operations Division

Attachment 1 of 2  
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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 <sup>3</sup> /stroke @ peak HP (for diesel only)	5.Fuel Rate: @ peak HP (for diesels only)	6.Torque @ RPM (SAE Gross)	7.Fuel Rate: mm <sup>3</sup> /stroke@peak torque	8.Fuel Rate: (lb/hr)@peak torque
7HZXL 232V20	N/A	1B20	4.6@3600	11	2.2	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.6@3550	11	2.2	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.6@3500	11	2.1	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.6@3450	11	2.1	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.4@3400	11	2.1	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.4@3350	11	2.1	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.4@3300	11	2.0	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.3@3250	11	2.0	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.3@3200	11	2.0	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.3@3150	11	1.9	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.3@3100	11	1.9	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.3@3050	11	1.9	7.8@2500	11	1.5
7HZXL 232V20	N/A	1B20	4.2@3000	11.5	1.9	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	4.2@2950	11.5	1.9	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	4.0@2900	11.5	1.9	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.9@2850	11.5	1.8	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.9@2800	11.5	1.8	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.9@2750	11.5	1.8	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.9@2700	11.5	1.7	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.8@2650	11.5	1.7	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.8@2600	11.5	1.7	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.8@2550	11.5	1.6	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.6@2500	11.5	1.6	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.6@2450	11.5	1.6	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.5@2400	11.5	1.5	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.5@2350	11.5	1.5	8.1@2250	11.5	1.4
7HZXL 232V20	N/A	1B20	3.4@2300	11.5	1.5	8.1@2000	11.5	1.3
7HZXL 232V20	N/A	1B20	3.4@2250	11.5	1.4	8.1@2000	11.5	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/stroke @ peak HP (for diesel only)	5.Fuel Rate: mm/stroke @ peak HP (for diesel only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lb/hr)@peak torque
7HZXL 232V20	N/A	1B20	3,2@2200	11,5	1,4	8,1@2000	11,5	1,3
7HZXL 232V20	N/A	1B20	3,1@2150	11,5	1,4	8,1@2000	11,5	1,3
7HZXL 232V20	N/A	1B20	2,9@2100	11,5	1,3	8,1@2000	11,5	1,3
7HZXL 232V20	N/A	1B20	2,8@2050	11,5	1,3	8,1@2000	11,5	1,3
7HZXL 232V20	N/A	1B20	2,8@2000	11,5	1,3	8,1@2000	11,5	1,3
7HZXL 232V20	N/A	1B20	4,8@3600	12	2,4	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,8@3550	12	2,4	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,7@3500	12	2,3	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,7@3450	12	2,3	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,7@3400	12	2,3	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,7@3350	12	2,2	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,7@3300	12	2,2	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,7@3250	12	2,2	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,6@3200	12	2,1	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,6@3150	12	2,1	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,6@3100	12	2,1	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,6@3050	12	2,0	8,5@2500	12	1,7
7HZXL 232V20	N/A	1B20	4,6@3000	12,5	2,1	8,5@2250	12,5	1,6
7HZXL 232V20	N/A	1B20	4,4@2950	12,5	2,1	8,5@2250	12,5	1,6
7HZXL 232V20	N/A	1B20	4,4@2900	12,5	2,0	8,5@2250	12,5	1,6
7HZXL 232V20	N/A	1B20	4,4@2850	12,5	2,0	8,5@2250	12,5	1,6
7HZXL 232V20	N/A	1B20	4,3@2800	12,5	2,0	8,5@2250	12,5	1,6
7HZXL 232V20	N/A	1B20	4,3@2750	12,5	1,9	8,5@2250	12,5	1,6
7HZXL 232V20	N/A	1B20	4,3@2700	12,5	1,9	8,5@2250	12,5	1,6
7HZXL 232V20	N/A	1B20	4,2@2650	12,5	1,8	8,5@2250	12,5	1,6
7HZXL 232V20	N/A	1B20	4,2@2600	12,5	1,8	8,5@2250	12,5	1,6

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