California Environmental Protection Agency AIR RESOURCES BOARD	MOTORENFABRIK HATZ	EXECUTIVE ORDER U-R-034-0181 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)
2008	8HZXL3.43C42	3.432	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Exhaust Gas Recirculation	Pump, Generation Set, 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
37 ≤ kW < 56	Tier 4 interim	STD	N/A	N/A	4.7	5.0	0.30	N/A	N/A	N/A
		CERT	--	--	4.5	1.5	0.13	--	--	--

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 27 day of March 2008.

Annette Hebert, Chief
Mobile Source Operations Division

Motorenfabrik Hatz
Nonroad CI

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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: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
8HZXL3.43C42	N/A	4M42 47.6	63,8@2300	49,5	6,3	146@2300	49,5	6,3	DDI, EGR
8HZXL3.43C42	N/A	4M42	62,4@2250	49,5	6,2	146@2250	49,5	6,2	
8HZXL3.43C42	N/A	4M42	61,2@2200	49,5	6,1	146@2200	49,5	6,1	
8HZXL3.43C42	N/A	4M42	60,0@2150	49,5	5,9	147@2150	49,5	5,9	
8HZXL3.43C42	N/A	4M42	59,0@2100	49,5	5,8	148@2100	49,5	5,8	
8HZXL3.43C42	N/A	4M42	57,8@2050	49,5	5,7	148@2050	49,5	5,7	
8HZXL3.43C42	N/A	4M42	56,8@2000	49,5	5,5	149@2000	49,5	5,5	
8HZXL3.43C42	N/A	4M42	55,3@1950	49,0	5,3	149@1950	49,0	5,3	
8HZXL3.43C42	N/A	4M42	54,1@1900	49,0	5,2	150@1900	49,0	5,2	
8HZXL3.43C42	N/A	4M42	52,9@1850	49,0	5,1	150@1850	49,0	5,1	
8HZXL3.43C42	N/A	4M42	51,7@1800	49,0	4,9	151@1800	49,0	4,9	
8HZXL3.43C42	N/A	4M42	58,0@2300	45,0	5,8	133@2300	45,0	5,8	
* 8HZXL3.43C42	N/A	4M42Z	62,4@2300	49,5	6,3	143@2300	49,5	6,3	
8HZXL3.43C42	N/A	4M42Z	61,1@2250	49,5	6,2	143@2250	49,5	6,2	
8HZXL3.43C42	N/A	4M42Z	59,9@2200	49,5	6,1	143@2200	49,5	6,1	
8HZXL3.43C42	N/A	4M42Z	58,7@2150	49,5	5,9	143@2150	49,5	5,9	
8HZXL3.43C42	N/A	4M42Z	57,6@2100	49,5	5,8	144@2100	49,5	5,8	
8HZXL3.43C42	N/A	4M42Z	56,4@2050	49,5	5,7	145@2050	49,5	5,7	
8HZXL3.43C42	N/A	4M42Z	55,5@2000	49,5	5,5	146@2000	49,5	5,5	
8HZXL3.43C42	N/A	4M42Z	54,0@1950	49,0	5,3	146@1950	49,0	5,3	
8HZXL3.43C42	N/A	4M42Z	52,8@1900	49,0	5,2	147@1900	49,0	5,2	
8HZXL3.43C42	N/A	4M42Z	51,6@1850	49,0	5,1	147@1850	49,0	5,1	
8HZXL3.43C42	N/A	4M42Z	50,4@1800	49,0	4,9	147@1800	49,0	4,9	
8HZXL3.43C42	N/A	4M42Z	56,7@2300	45,0	5,8	130@2300	45,0	5,8	
[illegible]	N/A	4L42C	60,4@2300	49,0	6,3	138@2300	49,0	6,3	
[illegible]	N/A	4L42C	59,2@2250	49,0	6,1	138@2250	49,0	6,1	

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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/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
8HZXL3.43C42	N/A	4L42C	58,2@2200	49,0	6,0	139@2200	49,0	6,0	DDI, EGR
8HZXL3.43C42	N/A	4L42C	57,0@2150	49,0	5,9	139@2150	49,0	5,9	
8HZXL3.43C42	N/A	4L42C	55,9@2100	49,0	5,7	140@2100	49,0	5,7	
8HZXL3.43C42	N/A	4L42C	54,8@2050	49,0	5,6	141@2050	49,0	5,6	
8HZXL3.43C42	N/A	4L42C	53,6@2000	49,0	5,5	141@2000	49,0	5,5	
8HZXL3.43C42	N/A	4L42C	52,5@1950	48,0	5,2	142@1950	48,0	5,2	
8HZXL3.43C42	N/A	4L42C	51,3@1900	48,0	5,1	142@1900	48,0	5,1	
8HZXL3.43C42	N/A	4L42C	50,3@1850	48,0	5,0	143@1850	48,0	5,0	
8HZXL3.43C42	N/A	4L42C	54,5@2300	43,5	5,6	125@2300	43,5	5,6	