



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)
2011	BHZXL445C42	0.445	Diesel	3000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Mechanical Direct Injection			Pump, Generator Set, and 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
kW < 8	Tier 4 - Final	STD	N/A	N/A	7.5	8.0	0.60	N/A	N/A	N/A
		CERT	--	--	7.4	4.2	0.29	--	--	--

**BE IT FURTHER RESOLVED:** That certification to the standards in 13 CCR 2423(b)(1)(A) -Table 1b listed above has been permitted pursuant to Endnote 2 of the same table.

**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 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.**

This Executive Order hereby supersedes Executive Order U-R-034-0249 dated February 24, 2011.

Executed at El Monte, California on this 20 day of June 2011.

  
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 <sup>3</sup> /bore @ peak HP (for diesel only)	5.Fuel Rate: (L/h) @ peak HP (for diesel only)	6.Torque @ RPM (SAE Gross)	7.Fuel Rate: mm <sup>3</sup> /bore @ peak torque	8.Fuel Rate: (L/h) @ peak Torque	9.Brake SFC Deutscher Per SAE J
BHZXL445C42	N/A	1D42 S/Z	9,2@3300	24,0	4,4	14,7@3300	24,0	4,4	DI
BHZXL445C42	N/A	1D42 S/Z	9,1@3250	24,0	4,3	14,8@3250	24,0	4,3	
BHZXL445C42	N/A	1D42 S/Z	9,1@3200	24,0	4,3	14,9@3200	24,0	4,3	
BHZXL445C42	N/A	1D42 S/Z	9,0@3150	24,0	4,2	15,1@3150	24,0	4,2	
BHZXL445C42	N/A	1D42 S/Z	9,0@3100	24,0	4,1	15,2@3100	24,0	4,1	
BHZXL445C42	N/A	1D42 S/Z	8,9@3050	24,0	4,1	15,4@3050	24,0	4,1	
BHZXL445C42	N/A	1D42 S/Z	8,8@3000	25,0	4,2	15,5@3000	25,0	3,4	
BHZXL445C42	N/A	1D42 S/Z	8,8@2950	25,0	4,1	15,7@2950	25,0	4,2	
BHZXL445C42	N/A	1D42 S/Z	8,7@2900	25,0	4,0	15,8@2900	25,0	4,0	
BHZXL445C42	N/A	1D42 S/Z	8,6@2850	25,0	4,0	16,0@2850	25,0	4,0	
BHZXL445C42	N/A	1D42 S/Z	8,5@2800	25,0	3,9	16,1@2800	25,0	3,9	
BHZXL445C42	N/A	1D42 S/Z	8,5@2750	25,0	3,8	16,2@2750	25,0	3,8	
BHZXL445C42	N/A	1D42 S/Z	8,4@2700	25,0	3,8	16,4@2700	25,0	3,8	
BHZXL445C42	N/A	1D42 S/Z	8,3@2650	25,0	3,7	16,5@2650	25,0	3,7	
BHZXL445C42	N/A	1D42 S/Z	8,1@2600	25,0	3,6	16,5@2600	25,0	3,6	
BHZXL445C42	N/A	1D42 S/Z	8,0@2550	25,0	3,6	16,6@2550	25,0	3,6	
BHZXL445C42	N/A	1D42 S/Z	7,9@2500	25,0	3,5	16,6@2500	25,0	3,5	
BHZXL445C42	N/A	1D42 S/Z	7,7@2450	25,0	3,4	16,6@2450	25,0	3,4	
BHZXL445C42	N/A	1D42 S/Z	7,6@2400	25,0	3,3	16,7@2400	25,0	3,3	
BHZXL445C42	N/A	1D42 S/Z	7,5@2350	25,0	3,3	16,7@2350	25,0	3,3	
BHZXL445C42	N/A	1D42 S/Z	7,3@2300	25,0	3,2	16,7@2300	25,0	3,2	
BHZXL445C42	N/A	1D42 S/Z	7,1@2250	25,0	3,1	16,7@2250	25,0	3,1	
BHZXL445C42	N/A	1D42 S/Z	7,0@2200	25,0	3,1	16,7@2200	25,0	3,1	
BHZXL445C42	N/A	1D42 S/Z	6,8@2150	25,0	3,0	16,6@2150	25,0	3,0	
BHZXL445C42	N/A	1D42 S/Z	6,6@2100	25,0	2,9	16,6@2100	25,0	2,9	
BHZXL445C42	N/A	1D42 S/Z	6,4@2050	25,0	2,9	16,6@2050	25,0	2,9	
BHZXL445C42	N/A	1D42 S/Z	6,3@2000	25,0	2,8	16,5@2000	25,0	2,8	

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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: (lb./hr) @ peak HP (for diesel only)	6.Torque @ RPM (SAE Gross)	7.Fuel Rate: mm <sup>3</sup> /stroke@peak torque	8.Fuel Rate: (lb./hr)@peak torque	9.Emissions Cost Dollars Per SAEJ Device
BHZXL445C42	N/A	1D42C	7,0@3300	19,5	3,6	11,1@3300	19,5	3,6	DI
BHZXL445C42	N/A	1D42C	7,0@3250	19,5	3,5	11,3@3250	19,5	3,5	
BHZXL445C42	N/A	1D42C	7,0@3200	19,5	3,5	11,5@3200	19,5	3,5	
BHZXL445C42	N/A	1D42C	7,0@3150	19,5	3,4	11,7@3150	19,5	3,4	
BHZXL445C42	N/A	1D42C	7,0@3100	19,5	3,4	11,9@3100	19,5	3,4	
BHZXL445C42	N/A	1D42C	7,0@3050	19,5	3,3	12,0@3050	19,5	3,3	
BHZXL445C42	N/A	1D42C	7,0@3000	20,0	3,3	12,2@3000	20,0	3,3	
BHZXL445C42	N/A	1D42C	6,8@2950	20,0	3,3	12,2@2950	20,0	3,3	
BHZXL445C42	N/A	1D42C	6,8@2900	20,0	3,2	12,4@2900	20,0	3,2	
BHZXL445C42	N/A	1D42C	6,7@2850	20,0	3,2	12,4@2850	20,0	3,2	
BHZXL445C42	N/A	1D42C	6,7@2800	20,0	3,1	12,6@2800	20,0	3,1	
BHZXL445C42	N/A	1D42C	6,6@2750	20,0	3,1	12,6@2750	20,0	3,1	
BHZXL445C42	N/A	1D42C	6,4@2700	20,0	3,0	12,6@2700	20,0	3,0	
BHZXL445C42	N/A	1D42C	6,4@2650	20,0	3,0	12,8@2650	20,0	3,0	
BHZXL445C42	N/A	1D42C	6,3@2600	20,0	2,9	12,8@2600	20,0	2,9	
BHZXL445C42	N/A	1D42C	6,2@2550	20,0	2,8	12,7@2550	20,0	2,8	
BHZXL445C42	N/A	1D42C	6,2@2500	20,0	2,8	13,0@2500	20,0	2,8	
BHZXL445C42	N/A	1D41C	5,4@2000	20,5	2,3	14,1@2000	20,5	2,3	
BHZXL445C42	N/A	1D42C	6,0@2450	20,0	2,7	13,0@2450	20,0	2,7	
BHZXL445C42	N/A	1D42C	5,9@2400	20,0	2,7	13,0@2400	20,0	2,7	
BHZXL445C42	N/A	1D42C	5,8@2350	20,0	2,6	12,9@2350	20,0	2,6	
BHZXL445C42	N/A	1D42C	5,6@2300	20,0	2,6	12,9@2300	20,0	2,6	
BHZXL445C42	N/A	1D42C	5,5@2250	20,0	2,5	12,9@2250	20,0	2,5	
BHZXL445C42	N/A	1D42C	5,5@2200	20,0	2,5	13,2@2200	20,0	2,5	
BHZXL445C42	N/A	1D42C	5,4@2150	20,0	2,4	13,1@2150	20,0	2,4	
BHZXL445C42	N/A	1D42C	5,2@2100	20,0	2,3	13,1@2100	20,0	2,3	
BHZXL445C42	N/A	1D42C	5,1@2050	20,0	2,3	13,1@2050	20,0	2,3	V

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**Engine Model Summary Template**

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: min/stroke @ peak HP (diesel only)	5.Fuel Rate: (L/A/h) @ peak HP (diesel & oil)	6.Torque @ RPM (SAE Gross)	7.Fuel Rate: min/stroke@peak torque	8.Fuel Rate: (L/A/h)@peak torque	9.Briskiss Cost Device Per CAEJ
BHZXL445C42	N/A	1D42C	5,0@2000	20,0	2,2	13,1@2000	20,0	2,2	DI