

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)
2005	5DZXL03.1041	1.555, 2.332, 3.109	Diesel	5000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection			Loader, Pump	

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):

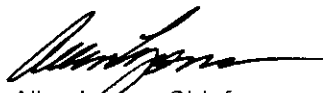
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
8 ≤ kW < 19	Tier 2	STD	N/A	N/A	7.5	6.6	.80	20	15	50
19 ≤ kW < 37	Tier 2	STD	N/A	N/A	7.5	5.5	0.60	20	15	50
		CERT	-	-	6.4	2.7	.21	2	3	3

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 28th day of October 2004.



Allen Lyons, Chief
 Mobile Source Operations Division

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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: (lb/hr) @ peak HP (for diesel only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke @ peak torque	8.Fuel Rate: (lb/hr) @ peak torque	9.Emission Control Device Per SAE J1930
5DZXLO3.1041	DE15.1	F2L2011	20.4@1800	39	7.7	FIXED	0	0	EM DDT
5DZXLO3.1041	DE20.9	F3L2011	28.1@1800	37	11	FIXED	0	0	EM
5DZXLO3.1041	DE23.8	F3L2011	32@1800	43	12.8	FIXED	0	0	EM
5DZXLO3.1041	DE26.5/1	F3L2011	35.6@1800	47.5	14.2	FIXED	0	0	EM
5DZXLO3.1041	DE28.7	F4L2011	38.9@1800	36	14.3	FIXED	0	0	EM
5DZXLO3.1041	DE34.5	F4L2011	46.6@1800	44.5	17.7	FIXED	0	0	EM
5DZXLO3.1041	DE15.8	F2M2011	21.1@1800	40	7.9	FIXED	0	0	EM
5DZXLO3.1041	DE21.5	F3M2011	28.8@1800	37	11	FIXED	0	0	EM
5DZXLO3.1041	DE24.5	F3M2011	32.8@1800	43	12.8	FIXED	0	0	EM
5DZXLO3.1041	DE29.4	F4M2011	39.4@1800	36.5	14.5	FIXED	0	0	EM
5DZXLO3.1041	DE35.2	F4M2011	47.2@1800	45	17.9	FIXED	0	0	EM
5DZXLO3.1041	CE19.1A	F2L2011	25.9@2300	40.5	10.3	63.4@1700	42	7.9	EM
5DZXLO3.1041	CE20.1A	F2L2011	27.3@2300	43	10.9	66.3@1700	44	8.3	EM
5DZXLO3.1041	CE20.2A	F2L2011	27.5@2500	40.5	11.2	63.4@1700	42	7.9	EM
5DZXLO3.1041	CE20.9A	F2L2011	28.5@2600	41	11.8	63.4@1700	42	7.9	EM
5DZXLO3.1041	CE21.3A	F2L2011	29@2500	43	11.9	66.3@1700	44	8.3	EM
5DZXLO3.1041	CE21.8A	F2L2011	29.9@2800	41	12.7	63.4@1700	42	7.9	EM
5DZXLO3.1041	CE22.2/A	F2L2011	30@2600	44	12.7	66.3@1700	44	8.3	EM
5DZXLO3.1041	CE20A	F2M2011	26.8@2300	43	10.9	64.9@1700	43	8.1	EM
5DZXLO3.1041	CE21A	F2M2011	28.1@2500	42	11.6	64.9@1700	43	8.1	EM
5DZXLO3.1041	CE21.7A	F2M2011	29@2600	43	12.4	64.9@1700	43	8.1	EM
5DZXLO3.1041	CE21/A	F2M2011	28.1@2300	45	11.4	68.5@1700	46	8.6	EM
5DZXLO3.1041	CE22.2A	F2M2011	29.7@2500	46	12.7	68.5@1700	46	8.6	EM
5DZXLO3.1041	CE23A	F2M2011	30.8@2800	43	13.3	64.9@1700	43	8.1	EM
5DZXLO3.1041	CE23/A	F2M2011	30.8@2600	46.5	13.4	68.5@1700	46	8.6	EM
5DZXLO3.1041	CE29.3A	F3L2011	39.6@2300	42	16	95.8@1700	43.5	12.3	EM
5DZXLO3.1041	CE30.9A	F3L2011	41.8@2300	43	16.4	101@1700	46	13	EM
5DZXLO3.1041	CE31.1A	F3L2011	42.1@2500	42	17.4	95.8@1700	43.5	12.3	EM

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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: (lb/hr)@ peak HP (for diesel only)	6 Torque @ RPM (SEA Gross)	7 Fuel Rate: mm/stroke@peak torque	8 Fuel Rate: (lb/hr)@peak torque	9 Emission Control Device Per SAE J1930
5DZXL03.1041	CE32.2A	F3L2011	43.7@2600	42	18.1	95.8@1700	43.5	12.3	EM DDI
5DZXL03.1041	CE32.8A	F3L2011	44.4@2500	44	18.3	101@1700	46	13	EM
5DZXL03.1041	CE33.9A	F3L2011	45.9@2600	44	19	101@1700	46	13	EM
5DZXL03.1041	CE34A	F3L2011	46.2@2800	42	19.5	95.8@1700	43.5	12.3	EM
5DZXL03.1041	CE35.8A	F3L2011	48.6@2800	44	20.5	101@1700	45.5	12.8	EM
5DZXL03.1041	CE29.9A	F3M2011	40@2300	43	16.4	98@1700	44.5	12.6	EM
5DZXL03.1041	CE31.5A	F3M2011	42.2@2300	45	17.2	101@1700	45.5	12.8	EM
5DZXL03.1041	CE31.8A	F3M2011	42.6@2500	43	17.9	98@1700	44.5	12.6	EM
5DZXL03.1041	CE32.5A	F3M2011	43.5@2400	44	17.5	103.2@1700	46	13	EM
5DZXL03.1041	CE32.8A	F3M2011	43.9@2600	43	18.6	98@1700	44.5	12.6	EM
5DZXL03.1041	CE33.5A	F3M2011	44.9@2500	45	18.7	103.2@1700	46	13	EM
5DZXL03.1041	CE34.5A	F3M2011	46.2@2600	45	19.4	103.2@1700	46	13	EM
5DZXL03.1041	CE34.7A	F3M2011	46.5@2800	43	20	98@1700	44.5	12.6	EM
5DZXL03.1041	CE36.5A	F3M2011	48.9@2800	45	20.9	103.2@1700	46	13	EM
5DZXL03.1041	CE35.5A	F3M2011	47.6@2700	44	19.7	103.2@1700	46	13	EM
5DZXL03.1041	CE23.5A	F2M2011	31.5@2800	48	14.9	68.5@1700	46.5	8.7	EM
5DZXL03.1041	CE23.3A	F2M2011	31.2@2750	46	14	68.5@1700	46	8.6	EM
5DZXL03.1041	CE21.6A	F2M2011	28.9@2400	44	11.7	68.5@1700	46	8.6	EM
5DZXL03.1041	CE22.5A	F2L2011	30.8@2800	43	13.3	64.9@1700	43	8.1	EM
5DZXL03.1041	DE36	F4L2011	48.7@1800	47.5	18.9	FIXED	0	0	EM
5DZXL03.1041	CE29.9A	F3L2011	40.5@2500	41	17	88.5@1700	40	11.3	EM
5DZXL03.1041	CE26A	F3L2011	35.3@2500	36	14.9	81.1@1700	37	10.4	EM