

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)
2012	CYDXL1.64M3N	1.642	Diesel	5,000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Mechanical Direct Injection, Electronic Control Unit (Model 3KNDAE only)			Crane, Loader, Tractor, Dozer, Pump, Compressor, Excavator	

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 < 37	Interim Tier 4	OPTIONAL STD	N/A	N/A	7.5	5.5	0.30	20	15	50
		CERT	--	--	6.1	2.2	0.24	3	3	4

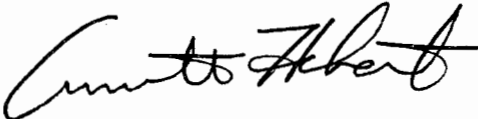
BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has complied with the more stringent set of standards from the various power categories in conformance with Section 1039.230 (e) of the "California Exhaust Emission Standards and Test Procedures for 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C" adopted October 20, 2005.

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 30 day of November 2011.



Annette Hebert, Chief
Mobile Source Operations Division

Engine Model Summary Template

ATTACHMENT

U-R-028-0580

11/18/11

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
CYDXL1.64M3N	N/A	3KNDP	39.6/3000	31.1	15.4	83.5/1200	35.8	7.1	EM DFI
CYDXL1.64M3N	N/A	3KNDA	37.8/3000	29.6	14.7	80.2/1200	34.4	6.8	EM DFI
CYDXL1.64M3N	N/A	3KNKA	35.1/2800	29.1	13.5	78.8/1200	33.3	6.6	EM DFI
CYDXL1.64M3N	N/A	3KNLA	33.9/2700	30.4	13.5	79.6/1200	33.7	6.7	EM DFI
CYDXL1.64M3N	N/A	3KNMA	32.8/2600	29.6	12.7	80.1/1000	35.7	5.9	EM DFI
CYDXL1.64M3N	N/A	3KNNA	31.5/2500	29.2	12.1	79.9/1000	35.7	5.9	EM DFI
CYDXL1.64M3N	N/A	3KNPA	30.1/2400	30.0	11.9	80.0/1100	33.8	6.1	EM DFI
CYDXL1.64M3N	N/A	3KNQA	28.9/2300	28.9	11.0	80.1/1000	35.7	5.9	EM DFI
CYDXL1.64M3N	N/A	3KNSA	27.8/2200	28.6	10.4	80.2/1000	35.7	5.9	EM DFI
CYDXL1.64M3N	N/A	3KNWA	25.1/2000	28.8	9.5	78.5/1000	34.7	5.7	EM DFI
CYDXL1.64M3N	N/A	3KNKC	32.1/2800	27.6	12.8	71.0/1400	29.0	6.7	EM DFI
CYDXL1.64M3N	N/A	3KNMC	29.7/2600	28.3	12.2	72.6/1200	31.5	6.2	EM DFI
CYDXL1.64M3N	N/A	3KNNC	28.6/2500	27.5	11.4	72.8/1000	31.9	5.3	EM DFI
CYDXL1.64M3N	N/A	3KNSC	25.2/2200	26.7	9.7	72.5/1000	31.4	5.2	EM DFI
CYDXL1.64M3N	N/A	3KNNF	31.5/2500	29.6	12.2	79.3/1200	33.7	6.7	EM DFI
CYDXL1.64M3N	N/A	3KNDAE	37.8/3000	29.6	14.7	80.2/1200	34.4	6.8	EM ECU DFI
CYDXL1.64M3N	N/A	3KNDAN	37.8/3000	29.6	14.7	80.2/1200	34.4	6.8	EM DFI
CYDXL1.64M3N	N/A	3KNKAN	35.1/2800	29.1	13.5	78.8/1200	33.3	6.6	EM DFI
CYDXL1.64M3N	N/A	3KNPAN	30.1/2400	30.0	11.9	80.0/1100	33.8	6.1	EM DFI