



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-45-9;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engine 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)
2002	2DDXL31.8XRE	15.9, 23.9 and 31.8	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Engine Control Module, Turbocharger, Charge Air Cooler			Crane, Pump, Compressor, Generator	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons 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 > 560	Tier 1	STD	1.3	9.2	N/A	11.4	0.54	20	15	50
		CERT	0.3	8.9	--	1.2	0.17	16	5	23

**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<sup>th</sup> day of December 2001.

for R. B. Summerfield, Chief  
Mobile Source Operations Division

# Engine Model Summary Form

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## ATTACHMENT

Manufacturer: Detroit Diesel Corporation  
 Engine category: Nonroad CI  
 EPA Engine Family: 2DDXL31.8XRE  
 Mfr Family Name: SERIES 2000  
 Process Code: New Submission

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
1A21	8V-2000 SCCC	760 @ 2100	294	274	2225 @ 1350	324	194	DDI, ECM, TC, CAC (all ratings)
2A23	8V-2000 SCCC	760 @ 2300	276	281	2225 @ 1350	324	194	
3AGS18	8V-2000 SCCC	765 @ 1800	325	259	GENSET - NA	NA	NA	
1B21	12V-2000 SCCC	1250 @ 2100	312	436	3424 @ 1500	318	317	
2BGS18	12V-2000 SCCC	1120 @ 1800	324	388	GENSET - NA	NA	NA	
2BGS15	12V-2000 SCCC	912 @ 1500	298	297	GENSET - NA	NA	NA	
3B21	12V-2000 SCCC	960 @ 2100	204	339	3097 @ 1500	255	304	
4B21	12V-2000 SCCC	860 @ 2100	200	302	2471 @ 1350	181	215	
5B21	12V-2000 SCCC	1110 @ 2100	290	405	3200 @ 1500	304	303	
6B21	12V-2000 SCCC	1005 @ 2100	256	358	3100 @ 1350	296	266	
7B21	12V-2000 SCCC	905 @ 2100	233	325	2890 @ 1350	275	246	
7B18	12V-2000 SCCC	905 @ 1800	252	302	2890 @ 1350	275	246	
8B21	12V-2000 SCCC	850 @ 2100	215	300	2715 @ 1350	260	233	
8B18	12V-2000 SCCC	850 @ 1800	236	283	2715 @ 1350	260	233	
9BGS18	12V-2000 SCCC	1120 @ 1800	317	379	GENSET - NA	NA	NA	
1CGS18	12V-2000 JWCC	910 @ 1800	261	312	GENSET - NA	NA	NA	
1CGS18TL	12V-2000 JWCC	823 @ 1800	236	283	GENSET - NA	NA	NA	
2C21	12V-2000 JWCC	760 @ 2100	198	276	2440 @ 1200	245	196	



# Engine Model Summary Form

Manufacturer: **Detroit Diesel Corporation**  
 Engine category: **Nonroad CI**  
 EPA Engine Family: **2DDXL31.8XRE**  
 Mfr Family Name:  
 Process Code: **Running Change, May 1, 2002**

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ATTACHMENT

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
3C21	12V-2000 JWCC	760 @ 2100	200	276	2300 @ 1200	231	184	UDI, ECM, TC, CA