

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-7-63  
Relating to Certification of New Off-Road Compression-Ignition Engines

DETROIT DIESEL CORPORATION

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; and

Pursuant to the December 15, 1998 Settlement Agreement between the Air Resources Board and Detroit Diesel Corporation and any modifications to the Settlement Agreement;

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:

Model Year: 2001

Typical Equipment Usage: Pump and Compressor

Fuel Type: Diesel

	Engine		
	Displacement	Useful Life	Emission Control Systems
<u>Engine Family</u>	<u>(liters)</u>	<u>(hours)</u>	<u>and Special Features</u>
1DDXL31.8XRE (Series 2000)	15.9, 23.9 and 31.8	8000	Direct Diesel Injection Turbocharger Engine Control module Charge Air Cooler

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) (units are expressed in grams per kilowatt-hour (g/kw-hr)), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

Engine Power Rating (kw)	Emission Standard Category		Exhaust Emissions (g/kw-hr)					Smoke Opacity (%)		
			HC	NOx	NMHC+NOx	CO	PM	Accel	Lug	Peak
560<KW	Tier 1	Standard	1.3	9.2	N/A	11.4	0.54	20	15	50
		Certification	0.3	8.9	--	0.8	0.08	10	2	17

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels— 1996 and Later Off-Road Compression-Ignition Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

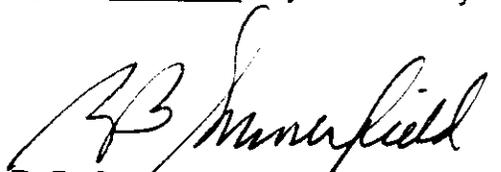
BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 and 2426).

BE IT FURTHER RESOLVED: That the aforementioned engine family has been conditionally certified subject to the following conditions:

1. The Settlement Agreement is in effect.
2. The manufacturer is in compliance with all applicable certification requirements of the Settlement Agreement.

Engines certified under this Executive Order must conform to all applicable California emission regulations and to all applicable terms and conditions of the Settlement Agreement.

Executed at El Monte, California this 14<sup>th</sup> day of February 2001.

  
R. B. Summerfield, Chief  
Mobile Source Operations Division

**ATTACHMENT**

**Engine Model Summary Form**

Manufacturer: **Detroit Diesel Corporation**  
 Engine category: **Nonroad CI**  
 EPA Engine Family: **1DDXL31.8XRE**  
 Mfr Family Name: **SERIES 2000**  
 Process Code: **New Submission**

*U-R-7-63*

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
1A-21	16V-2000 JWCC	1050 @2100	196	365	3415 @ 1350	249	298	EC TAW
1A-18		1050 @ 1800	219	350	3415 @ 1350	249	298	EC TAW
2A-GS	16V-2000 JWCC	1200 @ 1800	254	405	NA - GENSET	NA	NA	EC TAW
2A-GS-TL		1086 @ 1800	225	359	NA - GENSET	NA	NA	EC TAW
1B-21	12V-2000 JWCC	760 @ 2100 <i>564 kW</i>	194	271	2300 @ 1200	227	181	EC TAW
2B-GS	12V-2000 JWCC	910 @ 1800	269	322	NA - GENSET	NA	NA	EC TAW
2B-GS-TL		823 @ 1800	239	286	NA - GENSET	NA	NA	EC TAW

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# Engine Model Summary Form

Manufacturer: **DETROIT DIESEL CORPORATION**

Engine category: **Nonroad CI**

EPA Engine Family: **1DDXL31.8XRE**

Mfr Family Name: **SERIES 2000**

Process Code: **Running Change**

*Revised 1/10/01*

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
1AA-21	16V-2000 JWCC	1050 @ 2100	205	382	3415 @ 1350	258	309	EC TAW
1AA-18		1050 @ 1800	226	360	3415 @ 1350	258	309	EC TAW
1BB-GS	16V-2000 JWCC	1200 @ 1800	252	403	NA - Genset	NA	NA	EC TAW
1BB-GS-TL		1086 @ 1800	225	359	NA - Genset	NA	NA	EC TAW
1CC-21	16V-2000 SCCC	1205 @ 2100	225	419	3918 @ 1350	283	339	EC TAW
1CC-18		1205 @ 1800	256	408	3918 @ 1350	283	339	EC TAW
1DD-21	16V-2000 SCCC	1340 @ 2100	244	454	4204 @ 1500	301	400	EC TAW
1EE-GS-1	16V-2000 SCCC	1495 @ 1800	328	523	NA - Genset	NA	NA	EC TAW
1EE-GS-2		1495 @ 1800	319	509	NA - Genset	NA	NA	EC TAW
1FF-GS	16V-2000 SCCC	1350 @ 1800	284	453	NA - Genset	NA	NA	EC TAW
1GG-GS-15	16V-2000 SCCC	1200 @ 1500	298	397	NA - Genset	NA	NA	EC TAW
1GG-GS-18	16V-2000 SCCC	1350 @ 1800	284	453	NA - Genset	NA	NA	EC TAW

# Engine Model Summary Form

Manufacturer: **Detroit Diesel Corporation**

Engine category: **Nonroad CI**

EPA Engine Family: **1DDXL31.8XRE**

Mfr Family Name:

Process Code: **Running Change**

3/13/01

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
1NN21	12V-2000 SCCC	1110 @ 2100	289.8	404.8	3200 @ 1500	304.1	303.4	EC TAW
2NN21	12V-2000 SCCC	1005 @ 2100	256.2	357.8	3100 @ 1350	295.8	265.6	
3NN21	12V-2000 SCCC	905 @ 2100	232.6	324.9	2890 @ 1350	274.5	246.4	
3NN18		905 @ 1800	252.0	301.7	2890 @ 1350	274.5	246.4	
4NN21	12V-2000 SCCC	850 @ 2100	214.5	299.6	2715 @ 1350	259.8	233.2	
4NN18		850 @ 1800	236.2	282.8	2715 @ 1350	259.8	233.2	
5NNGS	12V-2000 SCCC	1120 @ 1800	389.2	325.1	NA	NA	NA	
7NN21	12V-2000 JWCC	760 @ 2100	197.7	276.1	2440 @ 1200	244.9	195.5	
7NN18		760 @ 1800	215.1	257.5	2440 @ 1200	244.9	195.5	

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Manufacturer: **Detroit Diesel Corpertation**  
 Engine category: **Nonroad CI**  
 EPA Engine Family: **1DDXL31.8XRE**  
 Mfr Family Name: **SERIES 2000**  
 Process Code: **New Submission**

V-R-7-63

Revised: 10-9-01

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
1M-21	16V-2000 SCCC	1205 @ 2100	227	423	3918 @ 1350	277	332	EC TAW
1A18		1205 @ 1800	254	405	3918 @ 1350	277	332	EC TAW
2M-21	16V-2000 SCCC	1340 @ 2100	252	469	4204 @ 1500	297	395	EC TAW
3M-GS-1	16V-2000 SCCC	1495 @ 1800	315	503	GENSET - NA	NA	NA	EC TAW
3M-GS-2		1495 @ 1800	323	516	GENSET - NA	NA	NA	EC TAW
4M-GS	16V-2000 SCCC	1350 @ 1800	279	445	GENSET - NA	NA	NA	EC TAW
1N-21	12V-2000 SCCC	1110 @ 2100	282	394	3200 @ 1500	303	302	EC TAW
2N-21	12V-2000 SCCC	1005 @ 2100	251	351	3100 @ 1350	297	267	EC TAW
3N-21	12V-2000 SCCC	905 @ 2100	226	316	2890 @ 1350	274	246	EC TAW
3N-18		905 @ 1800	250	299	2890 @ 1350	274	246	EC TAW
4N-21	12V-2000 SCCC	850 @ 2100	210	293	2715 @ 1350	260	233	EC TAW
4N-18		850 @ 1800	233	279	2715 @ 1350	260	233	EC TAW
5N-GS	12V-2000 SCCC	1120 @ 1800	318	381	GENSET - NA	NA	NA	EC TAW
6N-21	12V-S2000 SCCC	1250 @ 2100	312	436	3424 @ 1500	318	317	EC, TAW
1P-GS	8V-2000 SCCC	765 @ 1800	325	259	GENSET - NA	NA	NA	EC TAW
5M-GS-15	16V-2000 SCCC	1200 @ 1500	301	401	GEN SET	NA	NA	EC TAW
5M-GS-18		1350 @ 1800	284	453	GEN SET	NA	NA	EC TAW