State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-13-6

Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

DEUTZ CORPORATION GmbH

Pursuant to the authority vested in the Air Resources Board by Sections 43000.5, 43013 and 43018 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 Deutz Corporation GmbH 1997 model-year engine, with rated power between 175 and 750 horsepower, and exhaust emission control systems are certified as described below for use in heavy-duty off-road equipment:

Typical Equipment Usage: Genset, Compressor

Fuel Type: Diesel

Engine Family	Liters	(Cubic Inches)	Exhaust Emission Control Systems and Special Features
VDZ16.RGDARA	15.87	(969)	Turbocharger Smoke Puff Limiter 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 total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM) certification exhaust emission standards, in grams per brake horsepower-hour (g/bhp-hr), and the opacity of smoke emission standards, in percent (%), during acceleration (Accel), lugging (Lug), and peak (Peak) modes, for this engine family are (Title 13, California Code of Regulations, Section 2423):

Exhaust Emissions (g/bhp-hr)				Smoke Opacity (%)		
THC	CO	NOx	PM	Accel	Lug	Peak
1.0	8.5	6.9	0.4	20	15	50

The THC, CO, NOx and PM exhaust emission certification values, in g/bhp-hr, and the opacity of smoke emission certification values, in percent (%), for this engine family are:

Exhaust Emissions (g/bhp-hr)				Smoke Opacity (%)		
THC	CO	NOx	PM	Accel	Lug	Peak
0.3	0.7	6.6	0.1	6	2	17

BE IT FURTHER RESOLVED: That the listed engine models comply with the "Exhaust Emission Standards and Test Procedures--Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with the "Emission Control Labels--1996 and Later Heavy-Duty Off-Road Diesel Cycle 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, Section 2425 et seq.).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 28th day of April 1997.

R. B. Summerfield, Chief
Mobile Source Operations Division

List of emission related component

	Engine type	Engine code	Nominal power ±5%	Nominal speed ±50rpm	Mean effective pressure at nominal power	Injection rate at nominal power ±6mm³	Peak torque ±5%	Mean effective pressure at peak torque	Injection rate at peak torque ±6mm³	Speed at peak torque ± 100rpm	Low idle (+300 rpm, dep. on engine applic.)	High idle (+300 rpm, dep. on engine applic.)	Fuel injection pump	Fuel injection pump, optionally	Fuel injection nozzle	Fuel lift pump	Injection timing ±1°	Smoke limiter, part of speed governor -10mm³	Speed governor	Speed governor, optionally	Exhaust manifold to turbocharger
			kW	rpm	bar	mm³/stroke	Nm	bar	mm³/stroke	rpm	rpm	rpm	BOSCH TYPE	BOSCH TYPE	BOSCH TYPE	drawing number	°btdc	mm³/stroke-rpm	BOSCH TYPE	WOODWARD / GAC	drawing nu
1	BF6M1015	C240/3	240	2100	11.52	285	1530	16.15	344	1200	550	2180	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-1050PA1325		04220692UA+0
2	BF6M1015	C231/3	231	2100	11.09	275	1473	15.55	331	1200	550	2180	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-1050PA1325		04220692UA+0
3	BF6M1015	C223/3	223	2100	10.70	265	1422	15.01	320	1200	550	2180	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-1050PA1325		04220692UA+0
4	BF6M1015	C214/3	214	2100	10.27	255	1364	14.40	307	1200	550	2180	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-1050PA1325		04220692UA+0
5	BF6M1015	C240/4	240	1900	12.73	290	1530	16.15	344	1200	550	1970	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-950 PAV		04220692UA+0
6	BF6M1015	C231/4	231	1900	12.25	281	1473	15.55	331	1200	550	1970	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-950 PAV		04220692UA+0
7	BF6M1015	C223/4	223	1900	11.83	273	1422	15.01	320	1200	550	1970	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-950 PAV		04220692UA+0
8	BF6M1015	C214/4	214	1900	11.35	265	1364	14.40	307	1200	550	1970	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-950 PAV		04220692UA+0
9	BF6M1015	C228/1	228	1800	12.77	285	1468	15.50	330	1200	550	1870	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-950 PAV		04220692UA+0
10	BF6M1015	C220/1	220	1800	12.32	275	1417	14.96	319	1200	550	1870	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-900 PAV		04220692UA+0
11	BF6M1015	C211/1	211	1800	11.81	266	1359	14.35	306	1200	550	1870	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-900 PAV		04220692UA+0
12	BF6M1015	C203/1	203	1800	11.37	257	1307	13.80	294	1200	550	1870	PE 6P 120A 320 LS 7904		DLLA 168 P 426	04221527KY	12	165-800	RQV300-900 PAV		04220692UA+0
13	BF6M1015	D240/1	240	2100	11.52	285	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	PE 6P 120A 320 LS 7904	PE 6P 120A 320 LS 7905	DLLA 168 P 426	04221527KY	12	n.a.	RQV300-1050PA1325		04220692UA+0
14	BF6M1015	D250/1	250	1800	14.00	309	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	PE 6P 120A 320 LS 7904	PE 6P 120A 320 LS 7905	DLLA 168 P 426	04221527KY	12	n.a.	RQV900PAV		04220692UA+0
15	BF6M1015	D228/1	228	1800	12.77	285	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	PE 6P 120A 320 LS 7904	PE 6P 120A 320 LS 7905	DLLA 168 P 426	04221527KY	12	n.a.	RQV900PAV		04220692UA+0
16	BF6M1015	D211/1	211	1800	11.81	266	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	PE 6P 120A 320 LS 7904	PE 6P 120A 320 LS 7905	DLLA 168 P 426	04221527KY	12	n.a.	RQV900PAV		04220692UA+0
17	BF8M1015	C290	290	2100	10.44	290	2040	16.15	355	1200	550	2180	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	13	165-800	RQV300-1050PA1325		04223393UA+0
18	BF8M1015	C280	280	2100	10.08	280	1964	15.55	342	1200	550	2180	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	13	165-800	RQV300-1050PA1325		04223393UA+0
19	BF8M1015	C270	270	2100	9.72	270	1896	15.01	330	1200	550	2180	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	13	165-800	RQV300-1050PA1325		04223393UA+0
20	BF8M1015	C260	260	2100	9.36	260	1819	14.40	317	1200	550	2180	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	13	165-800	RQV300-1050PA1325		04223393UA+0
21	BF8M1015	C290/1	290	1900	11.54	290	2040	16.15	355	1200	550	1970	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	12	165-800	RQV300-950 PAV		04223393UA+0
22	BF8M1015	C280/1	280	1900	11.14	280	1964	15.55	342	1200	550	1970	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	12	165-800	RQV300-950 PAV		04223393UA+0
23	BF8M1015	C270/1	270	1900	10.74	270	1896	15.01	330	1200	550	1970	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	12	165-800	RQV300-950 PAV		04223393UA+0
24	BF8M1015	C260/1	260	1900	10.34	260	1819	14.40	317	1200	550	1970	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	12	165-800	RQV300-950 PAV		04223393UA+0
25	BF8M1015	C276	276	1800	11.59	290	1960	15.52	341	1200	550	1870	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	12	165-800	RQV300-950 PAV		04223393UA+0
26	BF8M1015	C265	265	1800	11.13	280	1890	14.97	329	1200	550	1870	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	12	165-800	RQV300-900 PAV		04223393UA+0
27	BF8M1015	C255	255	1800	10.71	270	1812	14.35	316	1200	550	1870	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	12	165-800	RQV300-900 PAV		04223393UA+0
28	BF8M1015	C246	246	1800	10.33	262	1743	13.80	304	1200	550	1870	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	12	165-800	RQV300-900 PAV		04223393UA+0
29	BF8M1015	D290	290	2100	10.44	290	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	PE 8P 120A 320 LS 7906		DLLA 168 P 426	04221527KY	12	n.a.	RQV300-1050PA1325		04223393UA+0

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