State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-13-5

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.RGDARB	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	0.5	4.6	0.2	9	8	20

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

	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	Speed at nom. torque ± 100rpm	Low idle (+300 rpm, dep. on engine applic.)	High idle (+300 rpm, dep. on engine applic.)	Fuel injection pump	Fuel injection nozzle	Fuel lift pump	Injection timing ±1°	Smoke limiter, part of speed governor - 10mm³	Speed governor	Speed governor, optional	Exhaust manifold to turbocharger	Exhaust manifold to turbocharger, optional
			kW	rpm	bar	mm³/stroke	Nm	bar	rpm	rpm	rpm	BOSCH TYPE	BOSCH TYPE	drawing number	°btdc	mm³/stroke-rpm	BOSCH TYPE	WOODWARD / GAC	drawing number	drawing nu
1	BF6M1015C	C420	420	2100.00	15.12	370	2674	21.17	1300	550	2180	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1050PA1325		04223393UA+04223289UA	04222780UA+04
2	BF8M1015C	C400	400	2100.00	14.4	350	2547	20.17	1300	550	2180	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1050PA1325		04223393UA+04223289UA	04222780UA+04
3	BF8M1015C	C381	381	2100.00	13.72	330	2426	19.21	1300	550	2180	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1050PA1325		04223393UA+04223289UA	04222780UA+04
4	BF8M1015C	C364	364	2100.00	13.1	315	2317	18.35	1300	550	2180	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1050PA1325		04223393UA+04223289UA	04222780UA+04
5	BF8M1015C	C348	348	2100.00	12.53	300	2216	17.54	1300	550	2180	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1050PA1325		04223393UA+04223289UA	04222780UA+04
6	BF8M1015C	C420/1	420	2000.00	15.88	370	2700	21.38	1300	550	2080	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1000 PAV		04223393UA+04223289UA	04222780UA+04
7	BF8M1015C	C400/1	400	2000.00	15.12	350	2674	21.17	1300	550	2080	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1000 PAV		04223393UA+04223289UA	04222780UA+04
8	BF8M1015C	C381/1	381	2000.00	14.4	330	2547	20.17	1300	550	2080	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1000 PAV		04223393UA+04223289UA	04222780UA+04
9	BF8M1015C	C370	370	2000.00	13.99	321	2473	19.59	1300	550	2080	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1000 PAV		04223393UA+04223289UA	04222780UA+04
10	BF8M1015C	C364/1	364	2000.00	13.76	315	2433	19.27	1300	550	2080	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1000 PAV		04223393UA+04223289UA	04222780UA+04
11	BF8M1015C	C348/1	348	2000.00	13.15	300	2326	18.42	1300	550	2080	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1000 PAV		04223393UA+04223289UA	04222780UA+04
12	BF8M1015C	C420/2	420	1900.00	16.71	370	2700	21.38	1300	550	1970	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-950 PAV		04223393UA+04223289UA	04222780UA+04
13	BF8M1015C	C400/2	400	1900.00	15.91	350	2700	21.38	1300	550	1970	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-950 PAV		04223393UA+04223289UA	04222780UA+04
14	BF8M1015C	C381/2	381	1900.00	15.16	336	2585	20.47	1300	550	1970	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-950 PAV		04223393UA+04223289UA	04222780UA+04
15	BF8M1015C	C364/2	364	1900.00	14.48	320	2470	19.56	1300	550	1970	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-950 PAV		04223393UA+04223289UA	04222780UA+04
16	BF8M1015C	C348/2	348	1900.00	13.85	303	2361	18.70	1300	550	1970	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-950 PAV		04223393UA+04223289UA	04222780UA+04
17	BF8M1015C	C400/3	400	1800.00	16.8	360	2700	21.38	1300	550	1970	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-900 PAV		04223393UA+04223289UA	04222780UA+04
18	BF8M1015C	C380	380	1800.00	15.96	340	2700	21.38	1300	550	1870	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-900 PAV		04223393UA+04223289UA	04222780UA+04
19	BF8M1015C	C362	362	1800.00	15.2	325	2593	20.53	1300	550	1870	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-900 PAV		04223393UA+04223289UA	04222780UA+04
20	BF8M1015C	C345	345	1800.00	14.49	310	2471	19.57	1300	550	1870	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-900 PAV		04223393UA+04223289UA	04222780UA+04
21	BF8M1015C	C330	330	1800.00	13.86	297	2364	18.72	1300	550	1870	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	165-800	RQV300-900 PAV		04223393UA+04223289UA	04222780UA+04
22	BF8M1015C	D420	420	2100.00	15.12	370	n.a.	n.a.	n.a.	n.a.	n.a.	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	n.a.	RQV300-1050PA1325		04223393UA+04223289UA	04222780UA+04
23	BF8M1015C	D454	454	1800.00	19.07	410	n.a.	n.a.	n.a.	n.a.	n.a.	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	n.a.	RQV300-900 PAV		04223393UA+04223289UA	04222780UA+04
24	BF8M1015C	D413	413	1800.00	17.34	374	n.a.	n.a.	n.a.	n.a.	n.a.	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	n.a.	RQV300-900 PAV		04223393UA+04223289UA	04222780UA+04
25	BF8M1015C	D362	362	1800.00	15.2	325	n.a.	n.a.	n.a.	n.a.	n.a.	PE 8P 120A 320 LS 7906	DLLA 168 P 426	04221527KY	15	n.a.	RQV300-900 PAV		04223393UA+04223289UA	04222780UA+04
26	BF6M1015C	C300	300	2100.00	14.4	335	1910	20.17	1300	550	2180	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1050PA1325		04220692UA+04220755UA	
27	BF6M1015C	C286	286	2100.00	13.73	322	1821	19.22	1300	550	2180	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1050PA1325		04220692UA+04220755UA	
28	BF6M1015C	C273	273	2100.00	13.1	309	1738	18.35	1300	550	2180	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1050PA1325		04220692UA+04220755UA	
29	BF6M1015C	C261	261	2100.00	12.53	298	1662	17.54	1300	550	2180	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1050PA1325		04220692UA+04220755UA	
30	BF6M1015C	C300/1	300	2000.00	15.12	340	2006	21.17	1300	550	2080	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1000 PAV		04220692UA+04220755UA	
31	BF6M1015C	C286/1	286	2000.00	14.41	328	1912	20.19	1300	550	2080	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1000 PAV		04220692UA+04220755UA	
32	BF6M1015C	C273/1	273	2000.00	13.76	314	1825	19.27	1300	550	2080	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1000 PAV		04220692UA+04220755UA	
33	BF6M1015C	C261/1	261	2000.00	13.15	302	1745	18.42	1300	550	2080	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-1000 PAV		04220692UA+04220755UA	
34	BF6M1015C	C300/2	300	1900.00	15.91	350	2025	21.38	1300	550	1970	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-950 PAV		04220692UA+04220755UA	
35	BF6M1015C	C286/2	286	1900.00	15.17	335	1941	20.49	1300	550	1970	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-950 PAV		04220692UA+04220755UA	
36	BF6M1015C	C273/2	273	1900.00	14.48	324	1852	19.56	1300	550	1970	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-950 PAV		04220692UA+04220755UA	
37	BF6M1015C	C261/2	261	1900.00	13.85	312	1771	18.70	1300	550	1970	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-950 PAV		04220692UA+04220755UA	
38	BF6M1015C	C285	285	1800.00	15.96	340	2025	21.38	1300	550	1870	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-900 PAV		04220692UA+04220755UA	
39	BF6M1015C	C271	271	1800.00	15.17	325	1941	20.49	1300	550	1870	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-900 PAV		04220692UA+04220755UA	
40	BF6M1015C	C259	259	1800.00	14.5	315	1855	19.59	1300	550	1870	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-900 PAV		04220692UA+04220755UA	
41	BF6M1015C	C248	248	1800.00	13.89	303	1776	18.75	1300	550	1870	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	165-800	RQV300-900 PAV		04220692UA+04220755UA	
42	BF6M1015C	D300	300	2100.00	14.4	335	n.a.	n.a.	n.a.	n.a.	n.a.	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	n.a.	RQV300-1050 PA1325		04220692UA+04220755UA	
43	BF6M1015C	D341	341	1800.00	19.09	400	n.a.	n.a.	n.a.	n.a.	n.a.	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	n.a.	RQV300-900 PAV		04220692UA+04220755UA	
44	BF6M1015C	D310	310	1800.00	17.36	365	n.a.	n.a.	n.a.	n.a.	n.a.	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	n.a.	RQV300-900 PAV		04220692UA+04220755UA	
45	BF6M1015C	D271	271	1800.00	15.17	325	n.a.	n.a.	n.a.	n.a.	n.a.	PE 6P 120A 320 LS 7904	DLLA 168 P 426	04221527KY	15	n.a.	RQV300-900 PAV		04220692UA+04220755UA	

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