California Environmental Protection Agency AIR RESOURCES BOARD	DEUTZ AG	EXECUTIVE ORDER U-R-013-0073 New Off-Road Compression-Ignition Engines

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 engines 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	2DZXL02.7014	2.7	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Smoke Puff LImiter	Generator Set, Pump, Industrial Equipment

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
37≤kW<75	Tier 1	STD	N/A	9.2	N/A	N/A	N/A	20	15	50
		CERT	-	8.0	-	-	-	3	3	9

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 4TH day of March 2002.

Allen Lyons, Chief
New Vehicle/Engine Programs Branch

EO# 4-R-013-0073

Attachment 1 of 2

Manufacturer: DEUTZ AG
Engine category: Nonroad CI
EPA Engine Family: 2DZXL02.7014

Engine Model and Part Number Summary Form

Engine code	Engine Model	BHP	BkW	Rated Power Engine Speed	Injection rate at rated power ±6mm³	Peak torque ± 5%	Speed at peak torque ± 200 rpm	Injection rate at peak torque ±4mm³	Fuel injection pump	Fuel injector	Injection timing (±1°)	Turbocharger
		HP	kW	rpm	mm³/ stroke	Nm	rpm	mm³/ stroke	description	description	°btdc	description
C53/3	BF4L1011F	71	53.0	3000	46.5	207	1800	48.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C55,5/2	BF4L1011F	74	55.5	2800	49.5	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C53/2	BF4L1011F	71	53.0	2800	47.5	207	1800	48.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C51,5/4	BF4L1011F	69	51.5	2800	46.5	207	1800	48.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C55	BF4L1011F	74	55.0	2750	49.5	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C54/1	BF4L1011F	72	54.0	2700	47.5	207	1800	48.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C53,5/1	BF4L1011F	72	53.5	2650	49	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C48	BF4L1011F	64	48.0	2650	44.0	207	1800	48.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C43	BF4L1011F	58	43.0	2650	39.5	189	1800	44	PFE1A80S3010	DLLA144P527	5	04272458EY
C51,5/5	BF4L1011F	69	51.5	2650	47	207	1800	48.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C51/1	BF4L1011F	68	51.0	2650	47	189	1800	44	PFE1A80S3010	DLLA144P527	5	04272458EY
C51,5/3	BF4L1011F	69	51.5	2550	49	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C51,5/2	BF4L1011F	69	51.5	2500	49	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C51/2	BF4L1011F	68	51.0	2500	48.5	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C49/1	BF4L1011F	66	49.0	2500	46.5	207	1800	48.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C44/6	BF4L1011F	59	44.0	2500	42	189	1800	44	PFE1A80S3010	DLLA144P527	5	04272458EY
C50,5	BF4L1011F	68	50.5	2350	49.0	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C48,5/1	BF4L1011F	65	48.5	2300	48.5	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C46/4	BF4L1011F	62	46.0	2300	46	207	1800	48.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C46,5	BF4L1011F	62	46.5	2200	48	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY
D53	BF4L1011F	71	53.0	3000	46.5	n.a.	n.a.	n.a.	PFE1A80S3010	DLLA144P527	5	04272458EY
D40	BF4L1011F	54	40.0	1800	50	n.a.	n.a.	n.a.	PFE1A80S3010	DLLA144P527	5	04272458EY
D38	BF4L1011F	51	38.0	1800	48	n.a.	n.a.	n.a.	PFE1A80S3010	DLLA144P527	5	04272458EY
C44/6	BF4L1011FT	59	44.0	3000	40.0	189	1800	44	PFE1A80S3010	DLLA144P527	5	04272458EY
C46/2	BF4L1011FT	62	46.0	2600	42.5	199	1800	46.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C44/3	BF4L1011FT	59	44.0	2600	41	189	1800	44	PFE1A80S3010	DLLA144P527	5	04272458EY
C46/3	BF4L1011FT	62	46.0	2500	43.5	199	1800	46.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C44/4	BF4L1011FT	59	44.0	2500	42	189	1800	44	PFE1A80S3010	DLLA144P527	5	04272458EY
C43,5/1	BF4L1011FT	58	43.5	2500	41	189	1800	44	PFE1A80S3010	DLLA144P527	5	04272458EY

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		HP	kW	rpm	mm³/ stroke	Nm	rpm	mm³/ stroke	description	description	°btdc	description
C44/5	BF4L1011FT	59	44.0	2300	44	199	1800	46.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C43,5	BF4L1011FT	58	43.5	2300	41	189	1800	44	PFE1A80S3010	DLLA144P527	5	04272458EY
C42,5	BF4L1011FT	57	42.5	2300	42.5	189	1800	44	PFE1A80S3010	DLLA144P527	5	04272458EY
C42/1	BF4L1011FT	56	42.0	2300	42	189	1800	44	PFE1A80S3010	DLLA144P527	5	04272458EY
C42,3	BF4L1011FT	57	42.3	2200	43	199	1800	46.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C54	BF4M1011	72	54.0	2600	45.0	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY
C55,5/3	BF4M1011	74	55.5	2800	45.0	218	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272458EY