California Environmental Protection Agency AIR RESOURCES BOARD	DEUTZ AG	EXECUTIVE ORDER U-R-013-0070 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	2DZXL02.9012	2.2, 2.9	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Smoke Puff Limiter, Turbocharger	Pump, Compressor, Loader, 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	-	7.3	-	-	-	8	2	25

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 28TH day of February 2002.

Allen Lyons, Chief
New Vehicle/Engine Programs Branch

ED#U-R-013-0070
Attachment 1082

Manufacturer: DEUTZ AG
Engine category: Nonroad CI
EPA Engine Family: 2DZXL02.9012

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
C58/1	BF4M1011F	78	58.0	3000	52.0	245	1800	58.5	PFE1A80S3010	DLLA144P527	5	04272325EY
C61	BF4M1011F	82	61.0	2800	55.0	255	1800	60	PFE1A80S3010	DLLA144P527	5	04272325EY
C58,2	BF4M1011F	78	58.2	2800	53.0	245	1800	58.5	PFE1A80S3010	DLLA144P527	5	04272325EY
C58	BF4M1011F	78	58.0	2750	53.0	245	1800	59	PFE1A80S3010	DLLA144P527	5	04272325EY
C58,4	BF4M1011F	78	58.4	2650	54.5	249	1800	59	PFE1A80S3010	DLLA144P527	5	04272325EY
C55,8	BF4M1011F	75	55.8	2650	52.0	240	1800	57	PFE1A80S3010	DLLA144P527	5	04272325EY
C56,2	BF4M1011F	75	56.2	2500	54.0	244	1800	58.5	PFE1A80S3010	DLLA144P527	5	04272325EY
C53,5	BF4M1011F	72	53.5	2500	51.0	235	1800	55.5	PFE1A80S3010	DLLA144P527	5	04272325EY
C53,6	BF4M1011F	72	53.6	2350	53.5	239	1800	57	PFE1A80S3010	DLLA144P527	5	04272325EY
C52,7	BF4M1011F	71	52.7	2300	53.5	238	1800	56.5	PFE1A80S3010	DLLA144P527	5	04272325EY
C50,1	BF4M1011F	67	50.1	2300	51.5	230	1800	54	PFE1A80S3010	DLLA144P527	5	04272325EY
C48,5	BF4M1011F	67	48.5	2300	48.5	222	1800	51.5	PFE1A80S3010	DLLA144P527	5	04272325EY
C47	BF4M1011F	67	47.0	2000	53.0	232	1800	54.5	PFE1A80S3010	DLLA144P527	5	04272325EY
C44,4	BF4M1011F	67	44.4	2000	50.5	220	1800	51	PFE1A80S3010	DLLA144P527	5	04272325EY
D48	BF4M1011F	64	48.0	1800	50.5	n.a	n.a.	n.a.	PFE1A80S3010	DLLA144P527	5	04272458EY
D45,6	BF4M1011F	61	45.6	1800	48.0	n.a	n.a.	n.a.	PFE1A80S3010	DLLA144P527	5	04272458EY
C45,5	BF3M1011F	61	45.5	2800	54.5	182	1800	58	PFE1A80S3010	DLLA144P527	5	S100S 005
C43,5	BF3M1011F	58	43.5	2800	52.5	174	1800	55	PFE1A80S3010	DLLA144P527	5	S100S 005
C44,2	BF3M1011F	59	44.2	2700	54.0	179	1800	57	PFE1A80S3010	DLLA144P527	5	S100S 005
C43,6	BF3M1011F	58	43.6	2650	53.5	179	1800	57	PFE1A80S3010	DLLA144P527	5	S100S 005
C41,6	BF3M1011F	56	41.6	2650	51.5	172	1800	54	PFE1A80S3010	DLLA144P527	5	S100S 005
C42	BF3M1011F	56	42.0	2500	53.0	179	1800	57	PFE1A80S3010	DLLA144P527	5	S100S 005
C40/1	BF3M1011F	54	40.0	2500	51.0	172	1800	54	PFE1A80S3010	DLLA144P527	5	S100S 005
C39,4	BF3M1011F	53	39.4	2300	52.5	177	1800	56	PFE1A80S3010	DLLA144P527	5	S100S 005
C37,4	BF3M1011F	50	37.4	2300	50.5	169	1800	53	PFE1A80S3010	DLLA144P527	5	S100S 005
C42/1	BF3L1011FL	56	42.0	2800	52.5	164	1800	53	PFE1A80S3010	DLLA144P527	5	S100S 005
C40/2	BF3L1011FL	54	40.0	2800	51.0	156	1800	50	PFE1A80S3010	DLLA144P527	5	S100S 005
C38/1	BF3L1011FL	51	38.0	2800	50.0	150	1800	49	PFE1A80S3010	DLLA144P527	5	S100S 005
C40	BF3L1011FL	54	40.0	2650	51.5	162	1800	53	PFE1A80S3010	DLLA144P527	5	S100S 005
C38	BF3L1011FL	51	38.0	2650	50.0	154	1800	50	PFE1A80S3010	DLLA144P527	5	S100S 005

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		HP	kW	rpm	mm³/ stroke	Nm	rpm	mm³/ stroke	description	description	°btdc	description
C39,5	BF3L1011FL	53	39.5	2600	51.5	162	1800	53	PFE1A80S3010	DLLA144P527	5	S100S 005
C39	BF3L1011FL	52	39.0	2500	49.0	163	1800	53	PFE1A80S3010	DLLA144P527	5	S100S 005
C37	BF3L1011FL	50	37.0	2500	47.5	153	1800	50	PFE1A80S3010	DLLA144P527	5	S100S 005
C37/1	BF3L1011FL	50	37.0	2300	48.0	162	1800	53	PFE1A80S3010	DLLA144P527	5	S100S 005