California Environmental Protection Agency AIR RESOURCES BOARD	DEUTZ AG	EXECUTIVE ORDER U-R-013-0077 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	2DZXL03.1025	3.1	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Smoke Puff Limiter	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	-	8.6	-	-	-	3	5	6

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

EDTU-R-013-0077
Attachment 1 of 1

Manufacturer: DEUTZ AG
Engine category: Nonroad CI
EPA Engine Family: 2DZXL03.1025

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 (±0,5°)	Smoke limiter, part of speed governor, -5mm³	Turbocharger
		HP	kW	rpm	mm³/ stroke	Nm	rpm	mm³/ stroke	description	description	°btdc	mm³/ stroke - rpm	description
C48,5	F4M2011	65	48.50	2800	43.0	187	1700	44	04271701KZ	04179469KZ	6	n.a.	n.a.
C46,1	F4M2011	62	46.10	2800	40.5	178	1700	41.5	04271701KZ	04179469KZ	6	n.a.	n.a.
C46,5	F4M2011	62	46.50	2600	43.5	187	1700	44	04271701KZ	04179469KZ	6	n.a.	n.a.
C44,6	F4M2011	60	44.60	2600	42.0	178	1700	41.5	04271701KZ	04179469KZ	6	n.a.	n.a.
C45	F4M2011	60	45.00	2500	43.0	187	1700	44	04271701KZ	04179469KZ	6	n.a.	n.a.
C42,7	F4M2011	57	42.70	2500	41.0	178	1700	41.5	04271701KZ	04179469KZ	6	n.a.	n.a.
C44/1	F4M2011	59	44.00	2400	41.0	187	1700	44	04271701KZ	04179469KZ	6	n.a.	n.a.
C42,5	F4M2011	57	42.50	2300	43.5	187	1700	44	04271701KZ	04179469KZ	6	n.a.	n.a.
C40,4	F4M2011	54	40.40	2300	41.5	178	1700	41.5	04271701KZ	04179469KZ	6	n.a.	n.a.
C37	F4M2011	50	37.00	2300	38.0	165	1700	38.5	04271701KZ	04179469KZ	6	n.a.	n.a.
C47,8	F4L2011	64	47.80	2800	43.0	184	1700	43	04271701KZ	04179469KZ	6	n.a.	n.a.
C45,4	F4L2011	61	45.40	2800	41.0	175	1700	41	04271701KZ	04179469KZ	6	n.a.	n.a.
C45,8	F4L2011	61	45.80	2650	43.0	184	1700	43	04271701KZ	04179469KZ	6	n.a.	n.a.
C45,2	F4L2011	61	45.20	2600	43.0	184	1700	43	04271701KZ	04179469KZ	6	n.a.	n.a.
C42,9	F4L2011	57	42.90	2600	41.0	175	1700	41	04271701KZ	04179469KZ	6	n.a.	n.a.
C44	F4L2011	59	44.00	2500	43.0	184	1700	43	04271701KZ	04179469KZ	6	n.a.	n.a.
C41,8	F4L2011	56	41.80	2500	41.0	175	1700	41	04271701KZ	04179469KZ	6	n.a.	n.a.
C43,5	F4L2011	58	43.50	2300	45.0	190	1700	44.5	04271701KZ	04179469KZ	6	n.a.	n.a.
C42	F4L2011	56	42.00	2300	43.5	184	1700	43	04271701KZ	04179469KZ	6	n.a.	n.a.
C39,9	F4L2011	53	39.90	2300	41.5	175	1700	41	04271701KZ	04179469KZ	6	n.a.	n.a.
C39	F4L2011	52	39.00	2300	40.5	175	1700	41	04271701KZ	04179469KZ	6	n.a.	n.a.