California Environmental Protection Agency AIR RESOURCES BOARD	DEUTZ AG	EXECUTIVE ORDER U-R-013-0163 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-02-003;

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)
2005	5DZXL01.4029	1.37, 1.03	Diesel	3000, 5000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Indirect Diesel Injection	Loader, Tractor, Dozer, Pump, Compressor, 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
8 ≤ kW < 19	Tier 2	STD	N/A	N/A	7.5	6.6	0.80	20	15	50
19 ≤ kW < 37	Tier 2	STD	N/A	N/A	7.5	5.5	0.60	20	15	50
		CERT	-	-	4.8	2.4	0.26	2	2	4

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 20TH day of September 2004.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

Attachment 1 of 1

U-R-013-0163

Manufacturer: **Deutz AG**

Engine category: **Nonroad CI**

EPA Engine Family: **5DZXL01.4029**

Mfr Family Name: **FM1008F**

Process Code: **New Submission**

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
CE19,5	F3M1008F	26,1@3600	21,2	12,7	34,8@2100	21,7	7,5	IDI
CE17,5	F3M1008F	23,4@3000	21,2	10,5	34,2@2100	21,5	7,5	IDI
CD19,2	F3M1008F	25,7@3400	21	11,8	33,7@2100	21	7,3	IDI
CD18,5	F3M1008F	24,8@3300	21	11,5	33,7@2100	21	7,3	IDI
DE10	F3M1008F	13,4@1800	18,7	5,6	FIXED	0	0	IDI
DE19,5	F3M1008F	26,1@3600	21,2	12,7	FIXED	0	0	IDI
CD25,5	F4M1008F	34,1@3600	20,7	16,5	42,4@2200	21	10,2	IDI
CD25,3	F4M1008F	33,9@3400	21	15,8	43,5@2000	21	9,3	IDI
CD24,5	F4M1008F	32,8@3300	21	15,3	43,5@2000	21	9,3	IDI
CD22,5	F4M1008F	30,1@3000	20	13,3	43,5@2000	21	9,3	IDI
CD21,7	F4M1008F	29@2800	20,2	12,5	42,4@2000	20,8	9,2	IDI
CD19,0	F4M1008F	25,4@2500	20,2	11,2	40,2@1800	21	8,3	IDI
CD18,5	F4M1008F	24,8@2400	20,2	10,7	41@2000	20,7	9,1	IDI
DE13,6	F4M1008F	18,2@1800	19,5	7,7	FIXED	0	0	IDI
DE22	F4M1008F	29,5@3000	19,5	12,9	FIXED	0	0	IDI