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	2DZXL01.2023	1.2	Diesel	3000, 5000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Indirect Diesel Injection	Loader, 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 1	STD	N/A	N/A	9.5	6.6	0.80	20	15	50
19≤kW<37	Tier 1	STD	N/A	N/A	9.5	5.5	0.80	20	15	50
		CERT	-	-	6.0	2.2	0.35	2	2	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

EOH U-R-013-0080
attachment 1 of 1

Manufacturer: DEUTZ AG
Engine Category: Nonroad CI
EPA Engine Family: 2DZXL01.2023

Engine Model and Part Number Summary Form

Engine code	Engine Model	BHP	BkW	Rated Power Engine Speed	Injection rate at rated power, ±4mm³	Peak torque ± 5%	Speed at peak torque ± 200 rpm	Injection rate at peak torque ±4mm³	Fuel injection pump	Fuel Injector	Injection timing (±1°)
		HP	kW	rpm	mm³/ stroke	Nm	rpm	mm³/ stroke	description	description	°btdc
D22	F4M1008	30	22.0	3600	19.0	---	---		107.6590.290	107.6531.436	9
CD22,0	F4M1008	30	22.0	3600	19.0	67.2	2300	19.5	107.6590.290	107.6531.436	9
CD20,5	F4M1008	27	20.5	3200	18.5	66.2	2200	19	107.6590.290	107.6531.436	9
CD19,0	F4M1008	25	19.0	3000	18.5	67.2	1850	19	107.6590.290	107.6531.436	9
CD18/1	F4M1008	24	18.00	2500	19.0	66.2	1800	19.2	107.6590.290	107.6531.436	9
D13.0	F4M1008	17.4	13.00	1800	18.0	---	---	---	107.6590.290	107.6531.436	9
D11.6	F4M1008	15.5	11.60	1800	19.0	---	---	---	107.6590.290	107.6531.436	9