

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	2DZXL01.4029	1.0, 1.4	Diesel	3000, 5000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Indirect Diesel Injection			Loader, Compressor, Dozer, 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 (NO<sub>x</sub>), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NO<sub>x</sub>), 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	NO <sub>x</sub>	NMHC+NO <sub>x</sub>	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	-	-	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 28<sup>th</sup> day of February 2002.



Allen Lyons, Chief  
 New Vehicle/Engine Programs Branch

Manufacturer: DEUTZ AG  
 Engine Category: Nonroad CI  
 EPA Engine Family: 2DZXL01.4029

Engine Model and Part Number Summary Form

*28# 4-K-013-0082*  
*attachment 1881*

Engine code	Engine Model	BHP	BKW	Rated Power Engine Speed	Injection rate at rated power, $\pm 4\text{mm}^3/\text{stroke}$	Peak torque $\pm 5\%$	Speed at peak torque $\pm 200\text{rpm}$	Injection rate at peak torque $\pm 4\text{mm}^3/\text{stroke}$	Fuel injection pump	Fuel Injector description	Injection timing ( $\pm 1^\circ$ )
CD19.5	F3M1008F	26.1	19.50	rpm 3600	mm <sup>3</sup> /stroke 21.2	Nm 64.2	rpm 2100	mm <sup>3</sup> /stroke 22	description 107.6590.290	description 107.6531.436	%btdc 9
CD17.5	F3M1008F	24	17.5	rpm 3000	mm <sup>3</sup> /stroke 21.1	Nm 63.2	rpm 2100	mm <sup>3</sup> /stroke 21.4	description 107.6590.290	description 107.6531.436	9
D10.0	F3M1008F	13	10.0	rpm 1800	mm <sup>3</sup> /stroke 18.4	---	---	---	description 107.6590.290	description 107.6531.436	9
CD25.5	F4M1008F	34	25.5	rpm 3600	mm <sup>3</sup> /stroke 20.9	Nm 78.0	rpm 2200	mm <sup>3</sup> /stroke 20	description 107.6590.290	description 107.6531.436	9
CD22.5	F4M1008F	30	22.5	rpm 3000	mm <sup>3</sup> /stroke 20.8	Nm 81	rpm 2100	mm <sup>3</sup> /stroke 21	description 107.6590.290	description 107.6531.436	9