California Environmental Protection Agency AIR RESOURCES BOARD	DAEWOO HEAVY INDUSTRIES & MACHINERY LTD.	EXECUTIVE ORDER U-R-019-0074-1 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)
2004	4DWXL2.37ANT	2.37	Diesel	5000, 8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Indirect Diesel Injection, Turbocharger (some engines)	Compressor, Generator Set, 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
19 ≤ kW < 37	Tier 2	STD	N/A	N/A	7.5	5.5	0.60	20	15	50
37 ≤ kW < 75	Tier 2	STD	N/A	N/A	7.5	5.0	0.40	20	15	50
		CERT	--	--	7.4	1.0	0.21	7	5	13

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.

This Executive Order hereby supersedes Executive Order U-R-013-0174 dated July 13, 2004

Executed at El Monte, California on this 24th day of June 2005.

J. Lourenco

for Allen Lyons, Chief
Mobile Source Operations Division

Engine Model S mary Form

Manufacturer: **Daewoo Heavy Industries & Machinery Ltd.**

Engine category: **Nonroad CI**

EPA Engine Family: **4DWXL2.37ANT**

Mfr Family Name: **DC24**

Process Code: **New Submission**

Attachment 1 of 1
U-R-019-0074-1

1.Engine Code	2.Engine Model	3.BHP@RPM (kW) (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
	DC24T NAD	55 @ 2500	45	24.8	127@1800	49	19.5	~~SPL,TC,DDI~~
	DC24T NPA	54 @ 2600	42	24.0	126@1800	44	17.6	~~SPE,TC,DDI~~
	DC24T NAA	55 @ 2500	45	24.8	127@1800	45	19.5	~~SPE,TC,DDI~~
	DC24T NAB	56 @ 2600	45	25.8	127@1800	45	19.5	~~SPE,TC,DDI~~
	DC24T NOA	42 @ 1800	45	17.9	N/A	N/A	N/A	~~SPE,TC,DDI~~
	DC24T NOA	36 @ 1500	45	14.9	N/A	N/A	N/A	~~SPE,TC,DDI~~
	DC24T NOA	38 @ 1800	40	15.8	N/A	N/A	N/A	~~SPE,TC,DDI~~
	DC24T NOA	32 @ 1500	38	12.6	N/A	N/A	N/A	~~SPE,TC,DDI~~
	DC24 FFO	43@2250	36	19.1	105@2000	37	16.3	~~SPE, DDI~~
	DC24 FFN	45@2400	36	17.9	109@1800	38	15.1	~~SPE, DDI~~
	DC24 FFL	45@2400	38	20.1	105@2000	38	16.8	~~SPE, DDI~~