California Environmental Protection Agency AIR RESOURCES BOARD	DAEWOO HEAVY INDUSTRIES & MACHINERY LTD.	EXECUTIVE ORDER U-R-019-0052 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	2DWXL03.3BMA	3.3	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Smoke Puff Limiter, Charge Air Cooler	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
37≤ KW < 75	Tier 1	STD	N/A	9.2	N/A	N/A	N/A	N/A	N/A	N/A
		CERT	--	7.9	--	--	--	--	--	--

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 7TH day of March 2002.

Allen Lyons, Chief
New Vehicle/Engine Programs Branch

Engine Mod S nmary Form

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

Engine category: **Nonroad CI**

EPA Engine Family: **2DWXL03.3BMA**

Mfr Family Name: **P034TI**

Process Code: **New Submission**

attachment 1 of 1

EOH U-R-019-0052

1.Engine Code	2.Engine Model	(kW)	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
*	P034TI MGA	60	81@ 1800	75	29.8	236@ 1800	75	29.8	DDI TC & CAC S/L
	P034TI MGA	55	74 @ 1800	68	27.0	216@ 1800	68	27.0	TC & CAC
	P034TI MGA	51	68 @ 1800	64	25.4	199@ 1800	64	25.4	TC & CAC
	P034TI MGA	48	64 @ 1500	73	24.2	225@ 1500	73	24.2	TC & CAC
	P034TI MGA	42	56 @ 1500	64	21.2	197@ 1500	64	21.2	TC & CAC
	P034TI MOA	60	81@ 1800	75	29.8	236@ 1800	75	29.8	TC & CAC
	P034TI MOA	55	74 @ 1800	68	27.0	216@ 1800	68	27.0	TC & CAC
	P034TI MOA	51	68 @ 1800	64	25.4	199@ 1800	64	25.4	TC & CAC
	P034TI MOA	48	64 @ 1500	73	24.2	225@ 1500	73	24.2	TC & CAC
	P034TI MOA	42	56 @ 1500	64	21.2	197@ 1500	64	21.2	TC & CAC