State of California AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-19-38 Relating to Certification of New Off-Road Compression-Ignition Engines

DAEWOO HEAVY INDUSTRIES CO., LTD.

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 engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment:

Model Year: 2001

5

Typical Equipment Usage: Constant-Speed Compressor and Generator Set

Fuel Type: Diesel

<u>Engine Family</u> 1DWXL03.3BMA (P034TI)	Engine Displacement <u>(liters)</u> 3.3	Useful Life <u>(hours)</u> 8000	Emission Control Systems <u>and Special Features</u> Direct Diesel Injection Turbocharger Charge Air Cooler
--	--	---------------------------------------	---

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) (units are expressed in grams per kilowatt-hour (g/kw-hr)), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

Engine Power) <u>Category</u>		Exhaust Emissions (g/kw-hr)						Smoke Opacity (%)		
<u>Rating (kw)</u> 37 <u><</u> KW<130		Standard Certification		<u>NOx</u> 9.2 7.9	<u>NMHC+NOx</u> N/A 	<u>CO</u> N/A	<u>PM</u> N/A	<u>Accel</u> N/A	<u>Luq</u> N/A	<u>Peak</u> N/A	

DAEWOO HEAVY INDUSTRIES CO., LTD.

5

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels— 1996 and Later Off-Road Compression-Ignition Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned modelyear.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 and 2426).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this $30^{7/4}$ day of April 2001.

alentren -FOR

R. B. Summerfield, Chief Mobile Source Operations Division

Engine Model Sur nary Form

Attachment

Daewoo Heavy Industries & Machinery Ltd. Manufacturer:

Engine category: Nonroad CI

EPA Engine Family: 1DWXL03.3BMA

Mfr Family Name: P034TI

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 torq	9.Emission Control ue Device Per SAE J1930
	·	P034TI MGA P034TI MGA P034TI MGA P034TI MGA P034TI MGA P034TI MOA P034TI MOA P034TI MOA P034TI MOA P034TI MOA	81@ 1800 74@ 1800 68@ 1800 64@ 1500 56@ 1500 81@ 1800 74@ 1800 68@ 1800 64@ 1500	75 68 64 73 64 75 68 64 73	29.8 27.0 25.4 24.2 21.2 29.8 27.0 25.4 24.2	236@ 1800 216@ 1800 199@ 1800 225@ 1500 197@ 1500 236@ 1800 216@ 1800 199@ 1800 225@ 1500	75 68 64 73 64 75 68 68 64 73	29.8 27.0 25.4 24.2 21.2 29.8 27.0 25.4 24.2	QDI, TC & CAC DDI, TC & CAC
	1 UUT MOA	56 @ 1500	64	21.2	197@ 1500	64		DOI TC & CAC	

EPARCENT NO: DWX-NR4-01-02