

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-19-44
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

Typical Equipment Usage: Constant-Speed Generator Set

Fuel Type: Diesel

<u>Engine Family</u> 1DWXL08.1BPA (P086TI)	<u>Engine Displacement (liters)</u> 8.1	<u>Useful Life (hours)</u> 8000	<u>Emission Control Systems and Special Features</u> Direct Diesel Injection Turbocharger Charge Air Cooler
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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):

<u>Engine Power Rating (kw)</u>	<u>Emission Standard Category</u>	<u>Exhaust Emissions (g/kw-hr)</u>					<u>Smoke Opacity (%)</u>			
		<u>HC</u>	<u>NOx</u>	<u>NMHC+NOx</u>	<u>CO</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>	
130≤KW<225	Tier 1	Standard	1.3	9.2	N/A	11.4	0.54	N/A	N/A	N/A
		Certification	0.1	8.4	--	0.8	0.42	--	--	--

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 model-year.

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 30TH day of April 2001.



R. B. Summerfield, Chief
Mobile Source Operations Division

Engine Model Summary Form

ED# U-2-12-44

Attachment

Manufacturer: **Daewoo Heavy Industries & Machinery Ltd.**
 Engine category: **Nonroad CI**
 EPA Engine Family: **1DWXL08.1BPA**
 Mfr Family Name: **P086TI**
 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 torque	9.Emission Control Device Per SAE J1930
	P086TI POA	266@1500	179	88.9	934@1500	179	88.9	DOE TC & CAC
	P086TI POA	237@1500	160	79.5	830@1500	160	79.5	DOE TC & CAC
	P086TI POA	202@1500	137	68.0	709@1500	137	68.0	DOE TC & CAC
	P086TI POA	299@1800	172	102.5	874@1800	172	102.5	DOE TC & CAC
	P086TI POA	275@1800	157	93.6	804@1800	157	93.6	DOE TC & CAC
	P086TI POA	250@1800	136	81.0	730@1800	136	81.0	DOE TC & CAC
	P086TI POB	220@1500	148	73.5	772@1500	148	73.5	DOE TC & CAC
	P086TI POB	200@1500	135	67.0	702@1500	135	67.0	DOE TC & CAC
	P086TI POB	257@1800	146	87.0	750@1800	146	87.0	DOE TC & CAC
	P086TI POB	234@1800	134	79.9	683@1800	134	79.9	DOE TC & CAC
	P086TI PGA	266@1500	179	88.9	934@1500	179	88.9	DOE TC & CAC
	P086TI PGA	237@1500	160	79.5	830@1500	160	79.5	DOE TC & CAC
	P086TI PGA	202@1500	137	68.0	709@1500	137	68.0	DOE TC & CAC
	P086TI PGA	299@1800	172	102.5	874@1800	172	102.5	DOE TC & CAC
	P086TI PGA	275@1800	157	93.6	804@1800	157	93.6	DOE TC & CAC
	P086TI PGA	250@1800	136	81.0	730@1800	136	81.0	DOE TC & CAC
	P086TI PGB	220@1500	148	73.5	772@1500	148	73.5	DOE TC & CAC
	P086TI PGB	200@1500	134	67.0	702@1500	134	67.0	DOE TC & CAC
	P086TI PGB	257@1800	179	87.0	750@1800	179	87.0	DOE TC & CAC
	P086TI PGB	234@1800	160	79.9	683@1800	160	79.9	DOE TC & CAC

EPA cert No: DWX-NR6-01-09