State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-34-8
Relating to Certification of New Off-Road Compression-Ignition Engines

MOTORENFABRIK HATZ GMBH & CO. KG

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 pump, generator and compressor

Fuel Type: Diesel

Engine Family	Engine Displacement (liters)	Useful Life (hours)	Emission Control Systems and Special Features
1HZXL.667C81	0.667	3000	Direct Diesel Injection

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 Rating (kw)	Emission Standard Category		Exhaust Emissions (g/kw-hr)					Smoke Opacity (%)		
			HC	NOx	NMHC+NOx	CO	PM	Accel	Lug	Peak
8≤KW<19	Tier 1	Standard	N/A	N/A	9.5	6.6	0.80	N/A	N/A	N/A
		Certification	--	--	6.1	3.7	0.43	--	--	--

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 10th day of May 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division

Attachment

Model Year:
Manufacturer:
Engine Family: 1H2XL.667C81 pg 1 of 2

Issued:
Revised: 3/1/2001
E.O. Number: U-R-34-8

Small Off-Road Engine Model Summary Form

Units for Table:

Worst Case?	47. Model Designation	48. Sales Code	49. Displ (cc)	50. Bore/ Stroke	51. Ignition Timing	52. Max Power	53. Rated Speed (RPM)	54. Rated Torque	55. Torque Speed (RPM)	56. Emiss Control Sys
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3600	20.6	3600	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3550	20.9	3550	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3500	21.1	3500	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3450	21.5	3450	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3400	21.8	3400	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3350	22.1	3350	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3300	22.5	3300	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3250	22.8	3250	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3200	23.2	3200	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3150	23.6	3150	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3100	23.9	3100	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3050	24.3	3050	DDI

(10.5kw)

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Model Year: 2001
Manufacturer: Motorenfabrik Hatz GmbH & Co. KG
Engine Family: 1HZXL.667C81

Issued:
Revised: 3/15/2001
E.O. Number: U-R-34-8

Small Off-Road Engine Model Summary Form

Units for Table: kw

Worst Case?	47. Model Designation	48. Sales Code	49. Displ (cc)	50. Bore/ Stroke	51. Ignition Timing	52. Max Power	53. Rated Speed (RPM)	54. Rated Torque	55. Torque Speed (RPM)	56. Emiss Control Sys
X	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3600	21.6	3600	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3550	21.9	3550	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3500	22.2	3500	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3450	22.5	3450	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3400	22.9	3400	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3350	23.2	3350	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3300	23.6	3300	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3250	23.9	3250	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3200	24.3	3200	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3150	24.7	3150	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3100	25.1	3100	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3050	25.5	3050	DDI

(11.0 kw)

Additional engine model info. please see record 2 !

52. = [hp] 54.= [lbft]