State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-34-4
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 generator and compressor

Fuel Type: Diesel

Engine Family	Engine Displacement (liters)	Useful Life (hours)	Emission Control Systems and Special Features
1HZXL3.43C19	1.716 and 2.574	5000	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
19≤KW<37	Tier 1	Standard	N/A	N/A	9.5	5.5	0.80	N/A	N/A	N/A
		Certification	--	--	9.1	5.4	0.73	--	--	--

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 5th day of March 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division

Attachment (pg 1 of 3)

Model Year: 2001
Manufacturer: Motorenfabrik Hatz GmbH & Co. KG
Engine Family: 1HZXL3.43C19

Issued:
Revised: 11/30/2000
E.O. Number: U-R-34-4

Small Off-Road Engine Model Summary Form

Units for Table: hp

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
	2M41	Calif. Only	1716	102 / 105	10+1 static	35.2	3000	62	3000	DOC ~~EM~~
	2M41	Calif. Only	1716	102 / 105	10+1 static	31.8	3000	56	3000	~~EM~~
	2M41	Calif. Only	1716	102 / 105	10+1 static	34.0	2300	78	2300	~~EM~~
	2M41	Calif. Only	1716	102 / 105	10+1 static	30.7	2300	70	2300	~~EM~~
	2M41	Calif. Only	1716	102 / 105	10+1 static	27.1	1800	77	1800	~~EM~~
	2M41	Calif. Only	1716	102 / 105	10+1 static	24.4	1800	72	1800	~~EM~~
	2M41	Calif. Only	1716	102 / 105	10+1 static	22.0	1500	75	1500	~~EM~~
	2M41	Calif. Only	1716	102 / 105	10+1 static	19.8	1500	70	1500	~~EM~~
	2M41Z	Calif. Only	1716	102 / 105	10+1 static	34.3	3000	61	3000	~~EM~~
	2M41Z	Calif. Only	1716	102 / 105	10+1 static	30.8	3000	55	3000	~~EM~~
X	2M41Z	Calif. Only	1716	102 / 105	10+1 static	33.2	2300	77	2300	~~EM~~
	2M41Z	Calif. Only	1716	102 / 105	10+1 static	29.9	2300	69	2300	~~EM~~
	2M41Z	Calif. Only	1716	102 / 105	10+1 static	26.5	1800	76	1800	~~EM~~
	2M41Z	Calif. Only	1716	102 / 105	10+1 static	23.9	1800	71	1800	~~EM~~
	2M41Z	Calif. Only	1716	102 / 105	10+1 static	21.6	1500	74	1500	~~EM~~
	2M41Z	Calif. Only	1716	102 / 105	10+1 static	19.4	1500	69	1500	~~EM~~
	2L41C	Calif. Only	1716	102 / 105	10+1 static	32.7	3000	58	3000	~~EM~~
	2L41C	Calif. Only	1716	102 / 105	10+1 static	29.5	3000	52	3000	~~EM~~
	2L41C	Calif. Only	1716	102 / 105	10+1 static	31.5	2300	73	2300	~~EM~~
	2L41C	Calif. Only	1716	102 / 105	10+1 static	28.4	2300	65	2300	~~EM~~

EPA cert NO: HZX-NR3-01-01

Attachment (pg 2 of 3)

Model Year:
Manufacturer:
Engine Family:

Issued:
Revised: 11/29/2000
E.O. Number: U-R-34-4

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
	2L41C	Calif. Only	1716	102 / 105	10+1 static	25.1	1800	74	1800	DDI EM
	2L41C	Calif. Only	1716	102 / 105	10+1 static	22.5	1800	66	1800	EM
	2L41C	Calif. Only	1716	102 / 105	10+1 static	20.1	1500	72	1500	EM
	2L41C	Calif. Only	1716	102 / 105	10+1 static	18.1	1500	64	1500	EM
	3M41	Calif. Only	2574	102 / 105	10+1 static	48.0	3000	84	3000	EM
	3M41	Calif. Only	2574	102 / 105	10+1 static	46.9	2300	107	2300	EM
	3M41	Calif. Only	2574	102 / 105	10+1 static	41.7	1800	118	1800	EM
	3M41	Calif. Only	2574	102 / 105	10+1 static	37.5	1800	110	1800	EM
	3M41	Calif. Only	2574	102 / 105	10+1 static	33.5	1500	115	1500	EM
	3M41	Calif. Only	2574	102 / 105	10+1 static	30.2	1500	106	1500	EM
	3M41Z	Calif. Only	2574	102 / 105	10+1 static	46.9	3000	83	3000	EM
	3M41Z	Calif. Only	2574	102 / 105	10+1 static	46.0	2300	106	2300	EM
	3M41Z	Calif. Only	2574	102 / 105	10+1 static	41.1	1800	117	1800	EM
	3M41Z	Calif. Only	2574	102 / 105	10+1 static	37.0	1800	109	1800	EM
	3M41Z	Calif. Only	2574	102 / 105	10+1 static	33.1	1500	114	1500	EM
	3M41Z	Calif. Only	2574	102 / 105	10+1 static	29.7	1500	105	1500	EM
	3L41C	Calif. Only	2574	102 / 105	10+1 static	49.2	3000	87	3000	EM
	3L41C	Calif. Only	2574	102 / 105	10+1 static	44.2	3000	78	3000	EM
	3L41C	Calif. Only	2574	102 / 105	10+1 static	48.1	2300	110	2300	EM
	3L41C	Calif. Only	2574	102 / 105	10+1 static	43.2	2300	99	2300	EM

Attachment (pg 3 of 3)

Model Year:
Manufacturer:
Engine Family:

Issued:
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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
	3L41C	Calif. Only	2574	102 / 105	10+1 static	37.5	1800	112	1800	DOI ~~EM~~
	3L41C	Calif. Only	2574	102 / 105	10+1 static	33.8	1800	99	1800	EM
	3L41C	Calif. Only	2574	102 / 105	10+1 static	30.7	1500	109	1500	EM
	3L41C	Calif. Only	2574	102 / 105	10+1 static	27.6	1500	92	1500	EM