California Environmental Protection Agency AIR RESOURCES BOARD	MOTORENFABRIK HATZ GMBH & CO. KG	EXECUTIVE ORDER U-R-034-0033 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-02-003;

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)
2003	3HZXL.347C30	0.4	Diesel	3000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection	Compressor, Generator Set, Other 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
kW < 8	Tier 1	STD	N/A	N/A	10.5	8.0	1.0	20	15	50
		CERT	--	--	7.4	5.7	0.77	0	0	0

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 2ND day of December 2002.

Allen Lyons, Chief
Mobile Source Operations Division

Attachment 1 of 3

Model Year: 2003
Manufacturer: Motorenfabrik Hatz GmbH & Co. KG
Engine Family: 3HZXL.347C30

Issued:
Revised: 10/16/2002
E.O. Number: U-R-034-0033

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
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.6	3600	11.5	3600	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.6	3550	11.1	3550	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.6	3500	11.3	3500	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.6	3450	11.5	3450	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.5	3400	11.4	3400	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.5	3350	11.6	3350	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.4	3300	11.6	3300	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.4	3250	11.7	3250	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.3	3200	11.7	3200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.3	3150	11.9	3150	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.3	3100	12.1	3100	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.3	3050	12.3	3050	DDI
X	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.3	3000	12.5	3000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.2	2900	12.7	2900	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	2800	12.6	2800	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.8	2700	12.6	2700	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.7	2600	12.8	2600	DDI

FOR MORE MODEL INFO PLEASE LOOK AT RECORD 2!

Model Year: 2 of 3
Manufacturer:
Engine Family:

Issued:
Revised: 10/16/2002
E.O. Number: U-92-034-0033

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
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	3600	9.8	3600	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	3550	10.0	3550	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	3500	10.1	3500	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	3450	10.2	3450	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.9	3400	10.2	3400	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.9	3350	10.3	3350	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.9	3300	10.5	3300	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.9	3250	10.7	3250	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.8	3200	10.6	3200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.8	3150	10.8	3150	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.7	3100	10.7	3100	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.7	3050	10.9	3050	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.6	3000	10.8	3000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.4	2800	11.1	2800	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.2	2600	11.4	2600	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.1	2500	11.6	2500	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	3.9	2300	12.0	2300	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	3.4	2000	12.0	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	3.0	1800	11.8	1800	DDI
	FOR MORE	MODEL	INFO	PLEASE	LOOK	AT	RECORD	3 !		

Model Year: 3 of 3
Manufacturer:
Engine Family:

Issued:
Revised: 10/16/2002
E.O. Number: U-R-034-0033

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
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.1	3000	9.7	3000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.1	2900	10.0	2900	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.1	2800	10.1	2800	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	3.9	2700	10.2	2700	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	3.9	2600	10.3	2600	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	3.7	2500	10.5	2500	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	3.6	2400	10.6	2400	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	3.5	2300	10.8	2300	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	3.4	2200	10.9	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	3.3	2100	11.1	2100	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	3.1	2000	11.0	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	2.9	1900	10.8	1900	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	2.7	1800	10.6	1800	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	2.5	1700	10.4	1700	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	2.3	1600	10.2	1600	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	2.1	1500	9.9	1500	DDI