California Environmental Protection Agency AIR RESOURCES BOARD	MOTORENFABRIK HATZ GMBH & CO. KG	EXECUTIVE ORDER U-R-034-0034 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.347V30	0.4	Diesel	3000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection	Walk-Behind Lawnmower, Riding Mower, Pump, 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	6.0	0.85	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.347V30

Issued:
Revised: 10/16/2002
E.O. Number: U-R-034-0034

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	14.1	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.6	3550	14.1	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.6	3500	14.1	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.6	3450	14.1	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.5	3400	13.7	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.5	3350	13.7	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.4	3300	13.7	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.4	3250	13.7	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.3	3200	14.4	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.3	3150	14.4	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.3	3100	14.4	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.3	3050	14.4	2000	DDI
X	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.3	3000	14.4	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.2	2900	14.4	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	2800	14.1	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.8	2700	14.1	2000	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.7	2600	14.1	2000	DDI

FOR MORE MODEL INFO PLEASE LOOK AT RECORD 21

2063

Model Year:
Manufacturer:
Engine Family:

Issued:
Revised: 10/16/2002
E.O. Number: U-R-034-0034

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	11.8	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	3550	11.8	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	3500	11.8	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	3450	11.8	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	3400	11.8	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	5.0	3350	11.8	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.9	3300	11.8	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.9	3250	11.8	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.9	3200	12.6	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.9	3150	12.6	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.7	3100	12.6	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.7	3050	12.6	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.6	3000	13.0	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.5	2900	13.0	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.4	2800	13.0	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.3	2700	13.0	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.2	2600	12.2	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.1	2500	12.2	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	4.0	2350	12.6	2200	DDI
	FOR MORE	**MODEL**	**INFO**	**PLEASE**	**LOOK**	**AT**	**RECORD**	**31**		

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Model Year:
Manufacturer:
Engine Family:

Issued:
Revised: 10/16/2002
E.O. Number: U-R-039-0034

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	11.5	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.1	2950	11.5	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.1	2900	11.5	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.1	2850	11.5	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.0	2800	11.1	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	4.0	2750	11.1	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	3.9	2700	11.1	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	3.8	2650	11.1	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	3.8	2600	11.1	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	3.8	2550	11.1	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	3.7	2500	11.1	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	13+1	3.7	2450	11.1	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	3.6	2400	11.1	2200	DDI
	1B30/Z/V	Calif. Only	347	80 / 69	10+1	3.6	2350	11.1	2200	DDI