California Environmental Protection Agency AIR RESOURCES BOARD	MOTORENFABRIK HATZ GMBH & CO. KG	EXECUTIVE ORDER U-R-034-0036 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.462V40	0.5	Diesel	3000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection	Walk-Behind Lawnmower, Compressor, 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	--	--	7.7	6.0	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.462V40

Issued:
Revised: 10/17/2002
E.O. Number: U-R-034-0036

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
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.7	3600	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.6	3550	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.6	3500	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.5	3450	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.5	3400	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.4	3350	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.4	3300	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.3	3250	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.3	3200	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.2	3150	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.2	3100	19.6	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.1	3050	19.6	2000	DDI
X	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	7.1	3000	20.0	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	7.0	2900	20.0	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.9	2800	20.0	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.8	2700	20.0	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.6	2600	20.0	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.9	3600	20.0	2000	DDI

FOR MORE MODEL INFO PLEASE LOOK AT RECORD 21

2 of 3

Model Year:
Manufacturer:
Engine Family:

Issued:
Revised: 10/17/2002
E.O. Number: U-R-034-0036

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
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.3	3600	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.3	3550	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.3	3500	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.2	3450	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.2	3400	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.1	3350	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.1	3300	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.0	3250	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	7.0	3200	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	9.2	3150	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	6.9	3100	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	18+1	6.8	3050	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.8	3000	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.7	2900	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.6	2800	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.5	2700	18.5	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.3	2600	18.1	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	14+1	6.1	2500	18.1	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	14+1	5.8	2350	18.1	2000	DDI
	FOR MORE	**MODEL**	**INFO**	**PLEASE**	**LOOK**	**AT**	**RECORD**	**3 !**		

Model Year:
Manufacturer:
Engine Family:

Issued:
Revised: 10/17/2002
E.O. Number: U-R-034-0036

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
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.2	3000	15.2	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.1	2900	15.2	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	6.0	2800	15.2	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	5.9	2700	15.2	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	16+1	5.8	2600	15.2	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	14+1	5.6	2500	15.2	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	14+1	5.4	2400	15.2	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	14+1	5.2	2300	15.2	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	14+1	5.0	2200	15.2	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	14+1	4.8	2100	15.2	2000	DDI
	1B40T/U//V/W	Calif. Only	462	88 / 76	14+1	4.5	2000	15.2	2000	DDI