



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)
2004	4HZXL722C91	0.722	Diesel	3000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection			Compressor, Pump, Generator Set	

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	N/A	N/A	N/A
		CERT	--	--	8.0	3.8	0.5	--	--	--

**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 16<sup>TH</sup> day of December 2003.

Allen Lyons, Chief  
Mobile Source Operations Division

Model Year: 2004  
 Manufacturer: Motorenfabrik Hatz GmbH & Co. KG  
 Engine Family: 4HZXL722C91

Issued:  
 Revised: 10/27/2003  
 E.O. Number: 4-R-034-0039

**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	1D90S/Z/N/X/Y/C	Calif. Only	722	104/85	8	7.6	1800	29.8	1800	DDI
	1D90S/Z/N/X/Y/C	Calif. Only	722	104/85	8	7.4	1750	29.9	1750	DDI
	1D90S/Z/N/X/Y/C	Calif. Only	722	104/85	8	7.2	1700	29.9	1700	DDI
	1D90S/Z/N/X/Y/C	Calif. Only	722	104/85	8	7.0	1650	30.0	1650	DDI
	1D90S/Z/N/X/Y/C	Calif. Only	722	104/85	8	6.8	1600	30.0	1600	DDI
	1D90S/Z/N/X/Y/C	Calif. Only	722	104/85	8	6.6	1550	30.1	1550	DDI
	1D90S/Z/N/X/Y/C	Calif. Only	722	104/85	8	6.4	1500	30.2	1500	DDI