

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 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)
2002	2HZXL.667C81	0.7	Diesel	3000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection			Pump, Compressor, Generator	

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
8≤KW < 19	Tier 1	STD	N/A	N/A	9.5	6.6	0.80	N/A	N/A	N/A
		CERT	--	--	6.1	3.7	0.43	--	--	--

**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 10<sup>th</sup> day of January 2002.



R. B. Summerfield, Chief  
 Mobile Source Operations Division

Model Year: 2002  
Manufacturer: Motorenfabrik Hatz GmbH & Co. KG  
Engine Family: 2HZXL667C81

*Attachment 1 of 2*

Issued:  
Revised: 10/26/2001  
E.O. Number: *DOT U-R-034-0016*

**Small Off-Road Engine Model Summary Form**

Units for Table: kw

Vorst Case?	47. Model Designation	48. Sales Code	49. Displ (cc)	50. Bore/ Stroke	51. Ignition Timing	52. Max Power (kw)	53. Rated Speed (RPM)	54. Rated Torque	55. Torque Speed (RPM)	56. Emiss Control Sys
X	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7 <i>11.1</i>	3600	21.6	3600	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3550	21.9	3550	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3500	22.2	3500	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3450	22.5	3450	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3400	22.9	3400	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3350	23.2	3350	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3300	23.6	3300	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3250	23.9	3250	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3200	24.3	3200	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3150	24.7	3150	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3100	25.1	3100	DDI
	1D81S/Z/T/U	Calif. Only	667	100/85	15	14.7	3050	25.5	3050	DDI

Additional engine model info. please see record 2 !

Unit in [hp]

Model Year:  
Manufacturer:  
Engine Family:

*attachment 2 of 2*

Issued:  
Revised: 3/1/2001  
E.O. Number: *EO # U-R-034-0016*

**Small Off-Road Engine Model Summary Form**

Units for Table:

47. Model Designation	48. Sales Code	49. Displ (cc)	50. Bore/Stroke	51. Ignition Timing	52. Max Power (kw)	53. Rated Speed (RPM)	54. Rated Torque	55. Torque Speed (RPM)	56. Emiss Control Sys
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1 <i>10.5</i>	3600	20.6	3600	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3550	20.9	3550	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3500	21.1	3500	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3450	21.5	3450	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3400	21.8	3400	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3350	22.1	3350	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3300	22.5	3300	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3250	22.8	3250	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3200	23.2	3200	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3150	23.6	3150	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3100	23.9	3100	DDI
1D81S/Z/T/U	Calif. Only	667	100/85	15	14.1	3050	24.3	3050	DDI

52. = [hp]

54. = [lbf]