

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-34-6  
Relating to Certification of New Off-Road Compression-Ignition Engines

MOTORENFABRIK HATZ GMBH & CO. KG

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 engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment:

Model Year: 2001

Typical Equipment Usage: Constant-speed pump, generator and compressor

Fuel Type: Diesel

<u>Engine Family</u>	<u>Engine Displacement (liters)</u>	<u>Useful Life (hours)</u>	<u>Emission Control Systems and Special Features</u>
1HZXL413C41	0.413	3000	Direct Diesel Injection

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) (units are expressed in grams per kilowatt-hour (g/kw-hr)), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

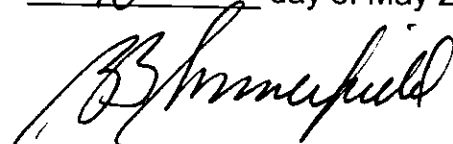
<u>Engine Power Rating (kw)</u>	<u>Emission Standard Category</u>	<u>Standard Certification</u>	<u>Exhaust Emissions (g/kw-hr)</u>					<u>Smoke Opacity (%)</u>		
			<u>HC</u>	<u>NOx</u>	<u>NMHC+NOx</u>	<u>CO</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
KW<8	Tier 1		N/A	N/A	10.5	8.0	1.0	N/A	N/A	N/A
			--	--	8.5	5.2	0.6	--	--	--

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels— 1996 and Later Off-Road Compression-Ignition Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 and 2426).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 10<sup>th</sup> day of May 2001.



R. B. Summerfield, Chief  
Mobile Source Operations Division

Model Year: 2001  
Manufacturer: Motorenfabrik Hatz GmbH & Co. KG  
Engine Family: 1HZXL413C41

Issued:  
Revised: 3/15/2001  
E.O. Number:

U-R-34-6

**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
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.8 (6.6kw)	3600	13.0	3600	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.8	3550	13.1	3550	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.7	3500	13.1	3500	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.7	3450	13.3	3450	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.7	3400	13.5	3400	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.7	3350	13.7	3350	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.7	3300	13.9	3300	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.6	3250	13.9	3250	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.6	3200	14.1	3200	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.6	3150	14.4	3150	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.4	3100	14.4	3100	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.4	3050	14.6	3050	DDI
X	1D41S/Z/T/U	Calif. Only	413	90/65	15.0	8.3	3000	14.6	3000	DDI
	Additional	engine model	info.	please	see	record 2 !				

52. = [hp]

54. = [lbf]

Model Year:  
 Manufacturer:  
 Engine Family:

Issued:  
 Revised: 3/15/2001  
 E.O. Number:

**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
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.0	3600	11.8	3600	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	8.0	3550	11.9	3550	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	7.9	3500	11.9	3500	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	7.9	3450	12.1	3450	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	7.9	3400	12.3	3400	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	7.9	3350	12.4	3350	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	7.8	3300	12.4	3300	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	7.8	3250	12.6	3250	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	7.8	3200	12.8	3200	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	7.8	3150	13.0	3150	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	7.6	3100	13.0	3100	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	17.5	7.6	3050	13.2	3050	DDI
	1D41S/Z/T/U	Calif. Only	413	90/65	15.0	7.5	3000	13.2	3000	DDI
	Additional engine model	info.	please	see	record 3 !					

52. = [hp]

54. = [lbft]

Model Year:  
Manufacturer:  
Engine Family:

Attachment pg 3 of 3

Issued:  
Revised: 3/21/2001  
E.O. Number:

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### 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
	1D41C	Calif. Only	413	90/65	17.5	7.0	3600	10.2	3600	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3550	10.4	3550	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3500	10.5	3500	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3450	10.7	3450	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3400	10.8	3400	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3350	11.0	3350	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3300	11.1	3300	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3250	11.3	3250	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3200	11.5	3200	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3150	11.7	3150	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3100	11.9	3100	DDI
	1D41C	Calif. Only	413	90/65	17.5	7.0	3050	12.0	3050	DDI
	1D41C	Calif. Only	413	90/65	15.0	7.0	3000	12.2	3000	DDI

52. = [hp]

54. = [lbft]