



California Environmental Protection Agency
AIR RESOURCES BOARD

MOTORENFABRIK HATZ GMBH & CO. KG

EXECUTIVE ORDER U-R-034-0057
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)
2004	4HZXL1.38SC3	1.38	Diesel	5000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection			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
19 ≤ kW < 37	Tier 2	STD	N/A	N/A	7.5	5.5	0.60	N/A	N/A	N/A
		CERT	--	--	7.1	4.9	0.39	--	--	--

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 September 2004.

Allen Lyons, Chief
Mobile Source Operations Division

Attachment 1 of 2
 U-R-074-0057
 TV/Printz - I

4W35

4W35

4HZXL1.38SC3

F
 ECS
 DDT
 F
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 F
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ENGINE MODEL	RATED POWER		TORQUE [Nm]	RATED SPEED [rpm]	FUEL RATE		TORQUE		TORQUE SPEED [rpm]	FUEL RATE AT MAX. TORQUE		TORQUE [kgi/h]	
	[kW]	[hp]			[mm ³ /h]	[lbs/hr]	[Nm]	[lbf]		[mm ³ /h]	[lbs/hr]		[kgi/h]
4W35	23.6	31.6	75	3000	21.0	4.5	6.4	75	56	3000	21.0	4.6	6.4
4W35	23.3	31.2	75	2950	21.0	4.4	6.3	75	56	2950	21.0	4.4	6.3
4W35	23.1	31.0	76	2900	21.0	4.3	6.2	76	56	2900	21.0	4.3	6.2
4W35	22.9	30.7	77	2850	21.0	4.2	6.1	77	57	2850	21.0	4.2	6.1
4W35	22.6	30.3	77	2800	21.0	4.2	6.0	77	57	2800	21.0	4.2	6.0
4W35	22.3	29.9	77	2750	21.0	4.1	5.8	77	57	2750	21.0	4.1	5.8
4W35	22.0	29.5	78	2700	21.0	4.0	5.7	78	58	2700	21.0	4.0	5.7
4W35	21.7	29.1	78	2650	21.0	3.9	5.6	78	58	2650	21.0	3.9	5.6
4W35	21.5	28.8	79	2600	21.0	3.9	5.5	79	58	2600	21.0	3.9	5.5

4HZXL1.38SC3

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ENGINE MODEL	RATED POWER		TORQUE [Nm]	RATED SPEED [rpm]	FUEL RATE		TORQUE		TORQUE SPEED [rpm]	FUEL RATE AT MAX. TORQUE		TORQUE [kgi/h]	
	[kW]	[hp]			[mm ³ /h]	[lbs/hr]	[Nm]	[lbf]		[mm ³ /h]	[lbs/hr]		[kgi/h]
4W35	23.0	30.8	73	3000	20.0	4.3	6.1	73	54	3000	20.0	4.3	6.1
4W35	22.8	30.6	74	2950	20.0	4.2	6.0	74	55	2950	20.0	4.2	6.0
4W35	22.5	30.2	74	2900	20.0	4.1	5.9	74	55	2900	20.0	4.1	5.9
4W35	22.3	29.9	75	2850	20.0	4.0	5.8	75	55	2850	20.0	4.0	5.8
4W35	22.1	29.6	75	2800	20.0	4.0	5.7	75	56	2800	20.0	4.0	5.7
4W35	21.8	29.2	76	2750	20.0	3.9	5.6	76	56	2750	20.0	3.9	5.6
4W35	21.5	28.8	76	2700	20.0	3.8	5.5	76	56	2700	20.0	3.8	5.5
4W35	21.2	28.4	76	2650	20.0	3.8	5.4	76	57	2650	20.0	3.8	5.4
4W35	21.0	28.2	77	2600	20.0	3.7	5.3	77	57	2600	20.0	3.7	5.3

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4HZXL1.38SC3

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DPT

ENGINE MODEL	RATED POWER		TORQUE [Nm]	RATED SPEED [rpm]	FUEL RATE		TORQUE [Nm]	TORQUE [lbf-ft]	TORQUE SPEED [rpm]	FUEL RATE AT MAX. TORQUE	
	[kW]	[hp]			[mm ³ /3H]	[lbs/hr]				[mm ³ /3H]	[lbs/hr]
4W35	24,7	33,1	66	3600	19,0	4,8	66	48	3600	19,0	4,8
4W35	24,5	32,9	66	3550	19,0	4,8	66	49	3550	19,0	4,8
4W35	24,3	32,6	66	3500	19,0	4,7	66	49	3500	19,0	4,7
4W35	24,2	32,5	67	3450	19,0	4,6	67	50	3450	19,0	4,6
4W35	24,0	32,2	67	3400	19,0	4,6	67	50	3400	19,0	4,6
4W35	23,8	31,9	68	3350	19,0	4,5	68	50	3350	19,0	4,5
4W35	23,6	31,6	68	3300	19,0	4,4	68	51	3300	19,0	4,4
4W35	23,5	31,5	69	3250	19,0	4,4	69	51	3250	19,0	4,4
4W35	23,3	31,2	70	3200	19,0	4,3	70	51	3200	19,0	4,3
4W35	23,1	31,0	70	3150	19,0	4,2	70	52	3150	19,0	4,2
4W35	22,9	30,7	71	3100	19,0	4,2	71	52	3100	19,0	4,2
4W35	22,7	30,4	71	3050	19,0	4,1	71	53	3050	19,0	4,1
4W35	22,5	30,2	72	3000	19,0	4,0	72	53	3000	19,0	4,0
4W35	22,2	29,8	72	2950	19,0	4,0	72	53	2950	19,0	4,0
4W35	22,0	29,5	72	2900	19,0	3,9	72	54	2900	19,0	3,9
4W35	21,8	29,2	73	2850	19,0	3,8	73	54	2850	19,0	3,8
4W35	21,5	28,8	73	2800	19,0	3,8	73	54	2800	19,0	3,8
4W35	21,3	28,6	74	2750	19,0	3,7	74	55	2750	19,0	3,7
4W35	21,0	28,2	74	2700	19,0	3,6	74	55	2700	19,0	3,6
4W35	20,8	27,9	75	2650	19,0	3,6	75	55	2650	19,0	3,6
4W35	20,5	27,5	75	2600	19,0	3,5	75	56	2600	19,0	3,5
4W35	20,1	27,0	75	2550	19,0	3,4	75	56	2550	19,0	3,4
4W35	19,9	26,7	76	2500	19,0	3,4	76	56	2500	19,0	3,4
4W35	19,6	26,3	76	2450	19,0	3,3	76	57	2450	19,0	3,3
4W35	19,3	25,9	77	2400	19,0	3,2	77	57	2400	19,0	3,2

4HZXL1.38SC3

ICFN
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ENGINE MODEL	RATED POWER		TORQUE [Nm]	RATED SPEED [rpm]	FUEL RATE		TORQUE [Nm]	TORQUE [lbf-ft]	TORQUE SPEED [rpm]	FUEL RATE AT MAX. TORQUE	
	[kW]	[hp]			[mm ³ /3H]	[lbs/hr]				[mm ³ /3H]	[lbs/hr]
4W35	20,5	27,5	65	3000	17,0	3,6	65	48	3000	17,0	3,6
4W35	20,2	27,1	65	2950	17,0	3,6	65	48	2950	17,0	3,6
4W35	20,0	26,8	66	2900	17,0	3,5	66	49	2900	17,0	3,5
4W35	19,8	26,6	66	2850	17,0	3,4	66	49	2850	17,0	3,4
4W35	19,5	26,1	67	2800	17,0	3,4	66	49	2800	17,0	3,4
4W35	19,3	25,9	67	2750	17,0	3,3	67	49	2750	17,0	3,3
4W36	19,1	25,6	68	2700	17,0	3,3	67	50	2700	17,0	3,3