California Environmental Protection Agency AIR RESOURCES BOARD	MOTORENFABRIK HATZ GMBH & CO. KG	EXECUTIVE ORDER U-R-034-0064 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)
2005	5HZXL3.43V41	1.716, 2.574	Diesel	5000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection	Pump, Compressor

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	20	15	50
		CERT	--	--	6.5	2.8	0.22	1	2	3

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 9TH day of March 2005.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Su mary Form

Attachment 1 of 14

U-R-034-0064

Manufacturer: **Motorenfabrik Hatz**

Engine category: **Nonroad CI**

EPA Engine Family: **5HZXL3.43V41**

Mfr Family Name: **L/M41**

Process Code: ~~**Running Change**~~ New

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
N/A	2M41	38,6@3000	49,0	8,2	77@1800	48,5	4,9	DOI
N/A	2M41	38,3@2950	49,0	8,1	77@1800	48,5	4,9	
N/A	2M41	38,1@2900	49,0	7,9	77@1800	48,5	4,9	
N/A	2M41	37,8@2850	49,0	7,8	77@1800	48,5	4,9	
N/A	2M41	37,5@2800	49,0	7,6	77@1800	48,5	4,9	
N/A	2M41	37,3@2750	49,5	7,6	77@1800	48,5	4,9	
N/A	2M41	36,9@2700	49,5	7,5	77@1800	48,5	4,9	
N/A	2M41	36,4@2650	49,5	7,3	77@1800	48,5	4,9	
N/A	2M41	36,2@2600	49,5	7,2	77@1800	48,5	4,9	
N/A	2M41	35,8@2550	49,5	7,0	78@1800	49,0	4,9	
N/A	2M41	35,4@2500	50,5	7,0	77@1500	49,5	4,1	
N/A	2M41	35,1@2450	50,5	6,9	77@1500	49,5	4,1	
N/A	2M41	34,7@2400	50,5	6,8	77@1500	49,0	4,1	
N/A	2M41	34,2@2350	50,5	6,6	77@1500	49,0	4,1	
N/A	2M41	37,1@3000	46,5	7,8	75@1800	46,5	4,7	
N/A	2M41	36,9@2950	46,5	7,6	75@1800	46,5	4,7	
N/A	2M41	36,7@2900	46,5	7,5	75@1800	46,5	4,7	
N/A	2M41	36,4@2850	46,5	7,4	75@1800	46,5	4,7	
N/A	2M41	36,3@2800	46,5	7,3	75@1800	46,5	4,7	
N/A	2M41	36,0@2750	47,0	7,2	74@1800	46,0	4,6	
N/A	2M41	35,8@2700	47,0	7,1	74@1800	46,0	4,6	
N/A	2M41	35,6@2650	47,0	6,9	74@1800	46,0	4,6	
N/A	2M41	35,4@2600	47,5	6,9	75@1800	46,5	4,7	
N/A	2M41	34,8@2550	47,5	6,8	75@1800	46,5	4,7	
N/A	2M41	34,3@2500	47,5	6,6	75@1800	46,5	4,7	
N/A	2M41	33,8@2450	47,5	6,5	75@1800	46,5	4,7	
N/A	2M41	33,4@2400	47,5	6,4	74@1500	46,5	3,9	
N/A	2M41	32,6@2350	47,5	6,2	74@1500	46,5	3,9	

Engine Model Su mary Form

Attachment 2 of 14

U-R-034-0064

lanufacturer: **Motorenfabrik Hatz**

ngine category: **Nonroad CI**

PA Engine Family: **5HZXL3.43V41**

Afr Family Name: **L/M41**

Process Code: ~~**Running Change**~~ New

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
N/A	2M41	35,2@3000	44,0	7,4	66@1800	42,0	4,2	DDI
N/A	2M41	35,0@2950	44,0	7,2	66@1800	42,0	4,2	
N/A	2M41	34,8@2900	44,0	7,1	69@1800	43,0	4,3	
N/A	2M41	34,6@2850	44,0	7,0	69@1800	43,0	4,3	
N/A	2M41	34,4@2800	44,0	6,9	72@1800	44,5	4,5	
N/A	2M41	34,2@2750	44,5	6,8	71@1800	44,0	4,4	
N/A	2M41	33,9@2700	44,5	6,7	67@1800	42,5	4,3	
N/A	2M41	33,8@2650	44,5	6,6	67@1800	42,5	4,3	
N/A	2M41	33,5@2600	45,0	6,5	70@1500	43,5	3,6	
N/A	2M41	33,1@2550	45,0	6,4	70@1500	43,5	3,6	
N/A	2M41	32,6@2500	46,0	6,4	72@1500	44,5	3,7	
N/A	2M41	32,0@2450	46,0	6,3	72@1500	44,5	3,7	
N/A	2M41	31,6@2400	46,0	6,2	71@1500	44,0	3,7	
N/A	2M41	30,8@2350	46,0	6,0	71@1500	44,0	3,7	
N/A	2M41	34,0@2300	51,0	6,5	77@2300	51,0	6,5	
N/A	2M41	33,4@2250	51,0	6,4	78@2250	51,0	6,4	
N/A	2M41	32,7@2200	51,0	6,3	78@2200	51,0	6,3	
N/A	2M41	32,0@2150	51,0	6,1	78@2150	51,0	6,1	
N/A	2M41	31,4@2100	51,0	6,0	78@2100	51,0	6,0	
N/A	2M41	30,7@2050	51,0	5,8	79@2050	51,0	5,8	
N/A	2M41	30,0@2000	51,0	5,7	79@2000	51,0	5,7	
N/A	2M41	29,3@1950	49,5	5,4	79@1950	49,5	5,4	
N/A	2M41	28,5@1900	49,5	5,2	79@1900	49,5	5,2	
N/A	2M41	27,9@1850	49,5	5,1	79@1850	49,5	5,1	
N/A	2M41	27,1@1800	49,5	5,0	79@1800	49,5	5,0	
N/A	2M41	31,8@3000	40,0	6,7	66@1500	40,5	3,4	
N/A	2M41	31,5@2950	40,0	6,6	66@1500	40,5	3,4	
N/A	2M41	31,4@2900	40,0	6,5	65@1500	40,0	3,3	
N/A	2M41	31,1@2850	40,0	6,4	65@1500	40,0	3,3	
N/A	2M41	31,0@2800	40,0	6,2	71@1800	44,0	4,4	
N/A	2M41	30,8@2750	40,5	6,2	65@1500	40,0	3,3	

N/A	2M41	30,6@2700	40,5	6,	65@1500	40,0	3,3	ΔΔI
N/A	2M41	30,4@2650	40,5	6,0	65@1500	40,0	3,3	
N/A	2M41	30,2@2600	40,5	5,9	65@1500	40,0	3,3	
N/A	2M41	29,7@2550	40,5	5,8	65@1500	40,0	3,3	
N/A	2M41	29,3@2500	41,0	5,7	65@1500	40,0	3,3	
N/A	2M41	28,8@2450	41,0	5,6	65@1500	40,0	3,3	
N/A	2M41	28,4@2400	41,0	5,5	65@1500	40,0	3,3	
N/A	2M41	27,7@2350	41,0	5,4	69@1500	42,5	3,6	
N/A	2M41	30,7@2300	47,0	6,0	74@1500	46,5	3,9	

Attachment 3 of 14
4-R-034-0064

Engine Model Su mary Form

Attachment 4 of 14

U-R-034-0064

anufacturer: **Motorenfabrik Hatz**

ngine category: **Nonroad CI**

PA Engine Family: **5HZXL3.43V41**

Mfr Family Name: **L/M41**

Process Code: ~~**Running Change**~~ New

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
N/A	2M41	38,6@3000	49,0	8,2	77@1800	48,5	4,9	DDI
N/A	2M41	38,3@2950	49,0	8,1	77@1800	48,5	4,9	
N/A	2M41	38,1@2900	49,0	7,9	77@1800	48,5	4,9	
N/A	2M41	37,8@2850	49,0	7,8	77@1800	48,5	4,9	
N/A	2M41	37,5@2800	49,0	7,6	77@1800	48,5	4,9	
N/A	2M41	37,3@2750	49,5	7,6	77@1800	48,5	4,9	
N/A	2M41	36,9@2700	49,5	7,5	77@1800	48,5	4,9	
N/A	2M41	36,4@2650	49,5	7,3	77@1800	48,5	4,9	
N/A	2M41	36,2@2600	49,5	7,2	77@1800	48,5	4,9	
N/A	2M41	35,8@2550	49,5	7,0	78@1800	49,0	4,9	
N/A	2M41	35,4@2500	50,5	7,0	77@1500	49,5	4,1	
N/A	2M41	35,1@2450	50,5	6,9	77@1500	49,5	4,1	
N/A	2M41	34,7@2400	50,5	6,8	77@1500	49,0	4,1	
N/A	2M41	34,2@2350	50,5	6,6	77@1500	49,0	4,1	
N/A	2M41	37,1@3000	46,5	7,8	75@1800	46,5	4,7	
N/A	2M41	36,9@2950	46,5	7,6	75@1800	46,5	4,7	
N/A	2M41	36,7@2900	46,5	7,5	75@1800	46,5	4,7	
N/A	2M41	36,4@2850	46,5	7,4	75@1800	46,5	4,7	
N/A	2M41	36,3@2800	46,5	7,3	75@1800	46,5	4,7	
N/A	2M41	36,0@2750	47,0	7,2	74@1800	46,0	4,6	
N/A	2M41	35,8@2700	47,0	7,1	74@1800	46,0	4,6	
N/A	2M41	35,6@2650	47,0	6,9	74@1800	46,0	4,6	
N/A	2M41	35,4@2600	47,5	6,9	75@1800	46,5	4,7	
N/A	2M41	34,8@2550	47,5	6,8	75@1800	46,5	4,7	
N/A	2M41	34,3@2500	47,5	6,6	75@1800	46,5	4,7	
N/A	2M41	33,8@2450	47,5	6,5	75@1800	46,5	4,7	
N/A	2M41	33,4@2400	47,5	6,4	74@1500	46,5	3,9	
N/A	2M41	32,6@2350	47,5	6,2	74@1500	46,5	3,9	

Engine Model Su mary Form

Attachment 5 of 14

U-R-034-0064

anufacturer: **Motorenfabrik Hatz**

ngine category: **Nonroad CI**

PA Engine Family: **5HZXL3.43V41**

Mfr Family Name: **L/M41**

Process Code: ~~**Running Change**~~ New

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
N/A	2M41Z	34,3@3000	44,0	7,4	65@1800	42,0	4,2	DDI
N/A	2M41Z	34,0@2950	44,0	7,2	65@1800	42,0	4,2	
N/A	2M41Z	33,9@2900	44,0	7,1	67@1800	43,0	4,3	
N/A	2M41Z	33,6@2850	44,0	7,0	67@1800	43,0	4,3	
N/A	2M41Z	33,5@2800	44,0	6,9	69@1800	44,0	4,4	
N/A	2M41Z	33,2@2750	44,5	6,8	69@1800	44,0	4,4	
N/A	2M41Z	33,0@2700	44,5	6,7	66@1800	42,5	4,3	
N/A	2M41Z	32,8@2650	44,5	6,6	66@1800	42,5	4,3	
N/A	2M41Z	32,6@2600	45,0	6,5	69@1500	43,5	3,6	
N/A	2M41Z	32,2@2550	45,0	6,4	69@1500	43,5	3,6	
N/A	2M41Z	31,8@2500	46,0	6,4	70@1500	44,5	3,7	
N/A	2M41Z	31,2@2450	46,0	6,3	70@1500	44,5	3,7	
N/A	2M41Z	30,8@2400	46,0	6,2	69@1500	44,0	3,7	
N/A	2M41Z	30,0@2350	46,0	6,0	69@1500	44,0	3,7	
* N/A	2M41Z	33,2@2300	51,0	6,5	76@2300	51,0	6,5	
N/A	2M41Z	32,6@2250	51,0	6,4	76@2250	51,0	6,4	
N/A	2M41Z	31,9@2200	51,0	6,3	76@2200	51,0	6,3	
N/A	2M41Z	31,2@2150	51,0	6,1	76@2150	51,0	6,1	
N/A	2M41Z	30,6@2100	51,0	6,0	77@2100	51,0	6,0	
N/A	2M41Z	29,9@2050	51,0	5,8	77@2050	51,0	5,8	
N/A	2M41Z	29,2@2000	51,0	5,7	77@2000	51,0	5,7	
N/A	2M41Z	28,5@1950	49,5	5,4	77@1950	49,5	5,4	
N/A	2M41Z	27,9@1900	49,5	5,2	77@1900	49,5	5,2	
N/A	2M41Z	27,1@1850	49,5	5,1	77@1850	49,5	5,1	
N/A	2M41Z	26,3@1800	49,5	5,0	77@1800	49,5	5,0	
N/A	2M41Z	30,8@3000	40,0	6,7	64@1500	40,5	3,4	
N/A	2M41Z	30,6@2950	40,0	6,6	64@1500	40,5	3,4	
N/A	2M41Z	30,4@2900	40,0	6,5	63@1500	40,0	3,3	
N/A	2M41Z	30,2@2850	40,0	6,4	63@1500	40,0	3,3	
N/A	2M41Z	30,0@2800	40,0	6,2	63@1500	40,0	3,3	
N/A	2M41Z	29,9@2750	40,5	6,2	63@1500	40,0	3,3	

N/A	2M41Z	29,6@2700	40,5	6,	63@1500	40,0	3,3	DDI
N/A	2M41Z	29,5@2650	40,5	6,0	63@1500	40,0	3,3	
N/A	2M41Z	29,2@2600	40,5	5,9	63@1500	40,0	3,3	
N/A	2M41Z	28,8@2550	40,5	5,8	63@1500	40,0	3,3	
N/A	2M41Z	28,5@2500	41,0	5,7	63@1500	40,0	3,3	
N/A	2M41Z	28,0@2450	41,0	5,6	63@1500	40,0	3,3	
N/A	2M41Z	27,6@2400	41,0	5,5	63@1500	40,0	3,3	
N/A	2M41Z	26,9@2350	41,0	5,4	67@1500	42,5	3,6	
N/A	2M41Z	29,9@2300	47,0	6,0	72@1500	46,5	3,9	

Engine Model Su nary Form

anufacturer: **Motorenfabrik Hatz**

ngine category: **Nonroad CI**

PA Engine Family: **5HZXL3.43V41**

Mfr Family Name: **L/M41**

Process Code: ~~**Running Change**~~ New

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U-R-034-0064

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
N/A	2L41C	37,1@3000	47,0	7,9	72@1800	47,5	4,8	DOI
N/A	2L41C	36,9@2950	47,0	7,7	72@1800	47,5	4,8	
N/A	2L41C	36,6@2900	47,0	7,6	72@1800	47,5	4,8	
N/A	2L41C	36,3@2850	47,0	7,5	71@1800	47,0	4,7	
N/A	2L41C	36,0@2800	47,0	7,3	70@1800	46,5	4,7	
N/A	2L41C	35,8@2750	47,5	7,3	71@1800	47,0	4,7	
N/A	2L41C	35,5@2700	47,5	7,1	71@1800	47,0	4,7	
N/A	2L41C	35,1@2650	47,5	7,0	71@1800	47,0	4,7	
N/A	2L41C	34,7@2600	47,5	6,9	70@1800	46,5	4,7	
N/A	2L41C	34,4@2550	47,5	6,8	71@1800	47,0	4,7	
N/A	2L41C	34,0@2500	48,0	6,7	72@1500	47,5	4,0	
N/A	2L41C	33,4@2450	48,0	6,6	72@1500	47,5	4,0	
N/A	2L41C	33,5@2400	49,0	6,6	73@2400	49,0	6,6	
N/A	2L41C	31,8@2350	48,0	6,3	71@2350	48,0	6,3	
N/A	2L41C	34,4@3000	45,0	7,5	69@1800	45,5	4,6	
N/A	2L41C	34,3@2950	45,0	7,4	69@1800	45,5	4,6	
N/A	2L41C	34,0@2900	45,0	7,3	69@1800	45,5	4,6	
N/A	2L41C	33,9@2850	45,0	7,1	68@1800	45,0	4,5	
N/A	2L41C	33,6@2800	45,0	7,0	68@1800	45,0	4,5	
N/A	2L41C	33,5@2750	45,5	7,0	68@1800	45,0	4,5	
N/A	2L41C	33,2@2700	45,5	6,8	68@1800	45,0	4,5	
N/A	2L41C	33,1@2650	45,5	6,7	68@1800	45,0	4,5	
N/A	2L41C	32,8@2600	46,0	6,7	68@1800	45,0	4,5	
N/A	2L41C	32,4@2550	46,0	6,5	69@1800	45,5	4,6	
N/A	2L41C	31,9@2500	46,5	6,5	71@1500	47,0	3,9	
N/A	2L41C	31,4@2450	46,5	6,4	69@1500	46,0	3,8	
N/A	2L41C	31,0@2400	46,5	6,2	69@1500	46,0	3,8	
N/A	2L41C	30,2@2350	46,5	6,1	69@1500	46,0	3,8	
N/A	2L41C	29,5@3000	38,5	6,4	63@1800	41,0	4,1	
N/A	2L41C	29,2@2950	38,5	6,3	63@1800	41,0	4,1	
N/A	2L41C	29,1@2900	38,5	6,2	63@1800	41,0	4,1	

								DDI
N/A	2L41C	28,9@2850	38,5	6,	59@1800	38,0	3,8	
N/A	2L41C	28,8@2800	38,5	6,0	59@1800	38,0	3,8	
N/A	2L41C	28,5@2750	38,5	5,9	60@1800	39,0	3,9	
N/A	2L41C	28,4@2700	38,5	5,8	60@1800	39,0	3,9	
N/A	2L41C	28,1@2650	38,5	5,7	60@1800	39,0	3,9	
N/A	2L41C	28,0@2600	39,0	5,7	61@1800	40,0	4,0	
N/A	2L41C	27,6@2550	39,0	5,5	60@1500	40,0	3,3	
N/A	2L41C	27,2@2500	39,0	5,4	60@1500	40,0	3,3	
N/A	2L41C	26,7@2450	39,0	5,3	60@1500	40,0	3,3	
N/A	2L41C	26,3@2400	39,0	5,2	60@1500	40,0	3,3	
N/A	2L41C	25,7@2350	39,0	5,1	60@1500	40,0	3,3	
N/A	2L41C	28,4@2300	44,0	5,6	65@1500	43,5	3,6	

Engine Model Su nary Form

Attachment 9 of 14
U-R-034-0064

Manufacturer: **Motorenfabrik Hatz**
Engine category: **Nonroad CI**
EPA Engine Family: **5HZXL3.43V41**
Mfr Family Name: **L/M41**
Process Code: ~~**Running Change**~~ New

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
N/A	2L41C	32,7@3150	42,5	7,5	65@1800	43,0	4,3	DDI
N/A	2L41C	32,7@3000	42,5	7,1	65@1800	43,0	4,3	
N/A	2L41C	32,6@2950	42,5	7,0	65@1800	43,0	4,3	
N/A	2L41C	32,3@2900	42,5	6,9	65@1800	43,0	4,3	
N/A	2L41C	32,2@2850	42,5	6,8	63@1800	42,0	4,2	
N/A	2L41C	31,9@2800	42,5	6,6	63@1800	42,0	4,2	
N/A	2L41C	31,8@2750	43,0	6,6	64@1500	43,0	3,6	
N/A	2L41C	31,5@2700	43,0	6,5	65@1800	43,0	4,3	
N/A	2L41C	31,4@2650	43,0	6,4	65@1800	43,0	4,3	
N/A	2L41C	31,1@2600	43,5	6,3	65@1800	43,0	4,3	
N/A	2L41C	30,7@2550	43,5	6,2	65@1500	43,0	3,6	
N/A	2L41C	30,2@2500	43,5	6,1	64@1500	43,0	3,6	
N/A	2L41C	29,7@2450	43,5	5,9	65@1500	43,5	3,6	
N/A	2L41C	29,2@2400	43,5	5,8	64@1500	43,0	3,6	
N/A	2L41C	28,5@2350	43,5	5,7	66@1500	44,0	3,7	
N/A	2L41C	31,5@2300	49,0	6,3	72@2300	49,0	6,3	
N/A	2L41C	31,0@2250	49,0	6,1	72@2250	49,0	6,1	
N/A	2L41C	30,3@2200	49,0	6,0	72@2200	49,0	6,0	
N/A	2L41C	29,7@2150	49,0	5,9	73@2150	49,0	5,9	
N/A	2L41C	29,2@2100	49,0	5,7	73@2100	49,0	5,7	
N/A	2L41C	28,5@2050	49,0	5,6	73@2050	49,0	5,6	
N/A	2L41C	28,0@2000	49,0	5,5	74@2000	49,0	5,5	
N/A	2L41C	27,3@1950	48,0	5,2	74@1950	48,0	5,2	
N/A	2L41C	26,5@1900	48,0	5,1	74@1900	48,0	5,1	
N/A	2L41C	25,9@1850	48,0	5,0	74@1850	48,0	5,0	
N/A	2L41C	25,1@1800	48,0	4,8	73@1800	48,0	4,8	
N/A	3M41	49,4@2500	46,0	6,4	109@1500	44,5	3,7	
N/A	3M41	48,8@2450	46,0	6,3	109@1500	44,5	3,7	
N/A	3M41	48,2@2400	46,0	6,2	108@1500	44,0	3,7	
N/A	3M41	47,2@2350	46,0	6,0	108@1500	44,0	3,7	
N/A	3M41	49,2@2150	51,0	6,1	120@2150	51,0	6,1	

N/A	3M41	48,2@2100	51,0	6,	121@2100	51,0	6,0	DDI
N/A	3M41	47,2@2050	51,0	5,8	121@2050	51,0	5,8	
N/A	3M41	46,2@2000	51,0	5,7	122@2000	51,0	5,7	
N/A	3M41	45,2@1950	49,0	5,3	122@1950	49,0	5,3	
N/A	3M41	44,0@1900	49,0	5,2	122@1900	49,0	5,2	
N/A	3M41	42,9@1850	49,0	5,1	122@1850	49,0	5,1	
N/A	3M41	41,7@1800	49,0	4,9	122@1800	49,0	4,9	

Attachment 10 of 14

UR-034-0064

Engine Model Su nary Form

Attachment 11 of 14
U-R-034-0064

Manufacturer: **Motorenfabrik Hatz**
Engine category: **Nonroad CI**
EPA Engine Family: **5HZXL3.43V41**
Mfr Family Name: **L/M41**
Process Code: ~~**Running Change**~~ New

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9 Emission Control Device Per SAE J1930
N/A	3M41	48,0@3000	40,0	6,7	98@1500	40,5	3,4	DDI
N/A	3M41	47,7@2950	40,0	6,6	98@1500	40,5	3,4	
N/A	3M41	47,4@2900	40,0	6,5	97@1500	40,0	3,3	
N/A	3M41	47,2@2850	40,0	6,4	97@1500	40,0	3,3	
N/A	3M41	46,9@2800	40,0	6,2	97@1500	40,0	3,3	
N/A	3M41	46,5@2750	40,5	6,2	97@1500	40,0	3,3	
N/A	3M41	46,2@2700	40,5	6,1	97@1500	40,0	3,3	
N/A	3M41	46,0@2650	40,5	6,0	97@1500	40,0	3,3	
N/A	3M41	45,6@2600	40,5	5,9	97@1500	40,0	3,3	
N/A	3M41	45,0@2550	40,5	5,8	97@1500	40,0	3,3	
N/A	3M41	44,5@2500	41,0	5,7	97@1500	40,0	3,3	
N/A	3M41	44,0@2450	41,0	5,6	97@1500	40,0	3,3	
N/A	3M41	43,4@2400	41,0	5,5	97@1500	40,0	3,3	
N/A	3M41	42,5@2350	41,0	5,4	103@1500	42,5	3,6	
N/A	3M41	46,9@2300	47,0	6,0	113@1500	46,5	3,9	
N/A	3M41Z	48,9@2350	48,0	6,3	114@1800	47,5	4,8	
N/A	3M41Z	48,8@2550	45,0	6,4	105@1500	43,5	3,6	
N/A	3M41Z	48,5@2500	46,0	6,4	108@1500	44,5	3,7	
N/A	3M41Z	47,8@2450	46,0	6,3	108@1500	44,5	3,7	
N/A	3M41Z	47,3@2400	46,0	6,2	107@1500	44,0	3,7	
N/A	3M41Z	46,2@2350	46,0	6,0	107@1500	44,0	3,7	
N/A	3M41Z	49,2@2200	51,0	6,3	117@2200	51,0	6,3	
N/A	3M41Z	48,2@2150	51,0	6,1	118@2150	51,0	6,1	
N/A	3M41Z	47,3@2100	51,0	6,0	119@2100	51,0	6,0	
N/A	3M41Z	46,2@2050	51,0	5,8	119@2050	51,0	5,8	
N/A	3M41Z	45,3@2000	51,0	5,7	119@2000	51,0	5,7	
N/A	3M41Z	44,2@1950	49,0	5,3	119@1950	49,0	5,3	
N/A	3M41Z	43,0@1900	49,0	5,2	119@1900	49,0	5,2	
N/A	3M41Z	42,5@1850	49,0	5,1	121@1850	49,0	5,1	
N/A	3M41Z	41,1@1800	49,0	4,9	120@1800	49,0	4,9	
N/A	3M41Z	46,9@3000	40,0	6,7	97@1500	40,5	3,4	

N/A	3M41Z	46,6@2950	40,0	6,	97@1500	40.5	3,4	DDI
N/A	3M41Z	46,4@2900	40,0	6,5	96@1500	40,0	3,3	
N/A	3M41Z	46,1@2850	40,0	6,4	96@1500	40,0	3,3	
N/A	3M41Z	45,8@2800	40,0	6,2	96@1500	40,0	3,3	
N/A	3M41Z	45,4@2750	40,5	6,2	96@1500	40,0	3,3	
N/A	3M41Z	45,2@2700	40,5	6,1	96@1500	40,0	3,3	
N/A	3M41Z	44,9@2650	40,5	6,0	96@1500	40,0	3,3	
N/A	3M41Z	44,5@2600	40,5	5,9	96@1500	40,0	3,3	
N/A	3M41Z	44,0@2550	40,5	5,8	96@1500	40,0	3,3	
N/A	3M41Z	43,6@2500	41,0	5,7	96@1500	40,0	3,3	
N/A	3M41Z	43,0@2450	41,0	5,6	96@1500	40,0	3,3	
N/A	3M41Z	42,5@2400	41,0	5,5	96@1500	40,0	3,3	
N/A	3M41Z	41,5@2350	41,0	5,4	101@1500	42,5	3,6	
N/A	3M41Z	46,0@2300	47,0	6,0	111@1500	46,5	3,9	

Attachment 12 of 14

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Engine Model Su .nary Form

Attachment 13 of 14

U-R-034-0064

Manufacturer: **Motorenfabrik Hatz**

Engine category: **Nonroad CI**

EPA Engine Family: **5HZXL3.43V41**

Mfr Family Name: **L/M41**

Process Code: ~~**Running Change**~~ New

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
N/A	3L41C	48,5@2350	48,0	6,3	117@1800	48,5	4,9	DDI
N/A	3L41C	49,0@2550	46,0	6,5	103@1800	45,5	4,6	
N/A	3L41C	48,4@2500	46,5	6,5	108@1500	47,0	3,9	
N/A	3L41C	47,7@2450	46,5	6,4	105@1500	46,0	3,8	
N/A	3L41C	47,0@2400	46,5	6,2	105@1500	46,0	3,8	
N/A	3L41C	46,1@2350	46,5	6,1	108@1800	47,0	4,7	
N/A	3L41C	49,2@3150	42,5	7,5	97@1800	43,0	4,3	
N/A	3L41C	49,2@3000	42,5	7,1	97@1800	43,0	4,3	
N/A	3L41C	48,9@2950	42,5	7,0	97@1800	43,0	4,3	
N/A	3L41C	48,6@2900	42,5	6,9	97@1800	43,0	4,3	
N/A	3L41C	48,5@2850	42,5	6,8	95@1800	42,0	4,2	
N/A	3L41C	48,2@2800	42,5	6,6	95@1800	42,0	4,2	
N/A	3L41C	48,0@2750	43,0	6,6	98@1500	43,0	3,6	
N/A	3L41C	47,7@2700	43,0	6,5	97@1800	43,0	4,3	
N/A	3L41C	47,4@2650	43,0	6,4	97@1800	43,0	4,3	
N/A	3L41C	47,2@2600	43,5	6,3	97@1800	43,0	4,3	
N/A	3L41C	46,5@2550	43,5	6,2	98@1500	43,0	3,6	
N/A	3L41C	45,8@2500	43,5	6,1	98@1500	43,0	3,6	
N/A	3L41C	45,2@2450	43,5	5,9	98@1500	43,0	3,6	
N/A	3L41C	44,6@2400	43,5	5,8	100@1500	43,5	3,6	
N/A	3L41C	43,6@2350	43,5	5,7	111@1500	47,0	3,9	
N/A	3L41C	48,1@2300	49,0	6,3	110@2300	49,0	6,3	
N/A	3L41C	47,0@2250	49,0	6,1	110@2250	49,0	6,1	
N/A	3L41C	46,0@2200	49,0	6,0	110@2200	49,0	6,0	
N/A	3L41C	45,0@2150	49,0	5,9	110@2150	49,0	5,9	
N/A	3L41C	44,0@2100	49,0	5,7	110@2100	49,0	5,7	
N/A	3L41C	42,9@2050	49,0	5,6	110@2050	49,0	5,6	
N/A	3L41C	41,8@2000	49,0	5,5	110@2000	49,0	5,5	
N/A	3L41C	40,7@1950	48,0	5,2	110@1950	48,0	5,2	
N/A	3L41C	39,7@1900	48,0	5,1	110@1900	48,0	5,1	
N/A	3L41C	38,6@1850	48,0	5,0	110@1850	48,0	5,0	

								DDI
N/A	3L41C	37,5@1800	48,0	4,	110@1800	48,0	4,8	
N/A	3L41C	44,2@3000	38,5	6,4	94@1800	41,0	4,1	
N/A	3L41C	44,1@2950	38,5	6,3	94@1800	41,0	4,1	
N/A	3L41C	43,8@2900	38,5	6,2	94@1800	41,0	4,1	
N/A	3L41C	43,6@2850	38,5	6,1	88@1800	38,0	3,8	
N/A	3L41C	43,4@2800	38,5	6,0	88@1800	38,0	3,8	
N/A	3L41C	43,1@2750	38,5	5,9	90@1800	39,0	3,9	
N/A	3L41C	42,9@2700	38,5	5,8	90@1800	39,0	3,9	
N/A	3L41C	42,7@2650	38,5	5,7	90@1800	39,0	3,9	
N/A	3L41C	42,5@2600	39,0	5,7	91@1800	40,0	4,0	
N/A	3L41C	41,8@2550	39,0	5,5	91@1500	40,0	3,3	
N/A	3L41C	41,3@2500	39,0	5,4	91@1500	40,0	3,3	
N/A	3L41C	40,7@2450	39,0	5,3	91@1500	40,0	3,3	
N/A	3L41C	40,1@2400	39,0	5,2	91@1500	40,0	3,3	
N/A	3L41C	39,3@2350	39,0	5,1	88@1500	37,5	3,1	
N/A	3L41C	43,3@2300	44,0	5,6	99@1500	44,0	5,6	