

 <b>CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY</b> <b>AIR RESOURCES BOARD</b>	<b>mitsubishi heavy industries,</b> <b>LTD.</b>	<b>EXECUTIVE ORDER U-R-035-0028</b> New Off-Road Compression-Ignition Engines
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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. 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	2MVXL05.0AAB	3.3 and 5.0	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection and Turbocharger			Tractor, Dozer, Pump and 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):

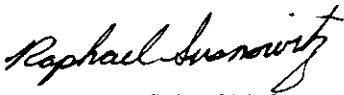
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
37≤KW<130	Tier 1	STD	N/A	9.2	N/A	N/A	N/A	20	15	50
		CERT	--	7.4	--	--	--	8	5	21

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

  
R. B. Summerfield, Chief  
Mobile Source Operations Division

# Engine Model Summary Form

ATTACHMENT 1 OF 1

U-R-035-0028

Manufacturer: Mitsubishi Heavy Industries, Ltd.  
 Engine category: Nonroad CI  
 EPA Engine Family: 2MVXL05.0AAB  
 Mfr Family Name:  
 Process Code: New Submission

1. Engine Code	2. Engine Model	3. BHP@RPM (SAE Gross)	4. Fuel Rate: mm/stroke @ peak HP (for dieset 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
3046	3046	103hp@2100	53	37	298ftlb@1500	60	30	DI TC
S6S-DT D5C	S6S-DT (Cat)	99.0hp@2400	48	37	257ftlb@2400	54	26	DI TC
S6S-DT D5C	S6S-DT (Cat)	99.0hp@2400	48	37	257ftlb@2400	54	26	DI TC
S6S-DT 939	S6S-DT (Cat)	96.0hp@2400	47	36	262ftlb@1400	55	26	DI TC
S4S-DT-61TG	S4S-DT	77.0hp@2500	50	27	173ftlb@2500	57	20	DI TC
S6S-DT 317B	S6S-DT (Cat)	112hp@2100	59	41	305ft-lb@1500	65	32	DI TC
S4S-DT-Y161D	S4S-DT	66hp@1800	58	23	205ftlb@1350	65	19	DI TC
S4S-DT-Y161D	S4S-DT	81.0hp@2500	54	30	194ftlb@1500	60	20	DI TC
S4S-DT61HS	S4S-DT	77hp@2200	56	27	195ftlb@1500	62	20	DI TC
S6S-Y1DT61DG	S6S-DT	97hp@1800	59	35	293ftlb@1400	62	29	DI TC
S6S-Y1DT61DP	S6S-DT	123hp@2500	55	45	300ftlb@1500	64	32	DI TC
S6S-DT318	S6S-DT	120hp@2200	61	44	325ftlb@1500	66	32	DI TC
S6S-DT315HC	S6S-DT	103hp@2100	53	37	298ftlb@1500	60	30	DI TC
S6S-DT318HC	S6S-DT	120hp@2200	59	43	325ftlb@1500	67	33	DI TC
S6S-DT315C	S6S-DT	115@2150	59	42	322ft-lb@1500	65	32	DI TC
S4S-Y1DT65DG	S4S-DT	66@1800	58	23	205ftlb@1350	65	19	DI TC