

MITSUBISHI HEAVY INDUSTRIES, LTD.

EXECUTIVE ORDER U-R-035-0304 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 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 (fiters)	FUEL TYPE	USEFUL LIFE (hours)		
2010	AMVXL49.0BBA	49.0	Diesel	8000		
SPECIAL	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION			
Mechanical Direct Injection, Turbocharger, Charge Air Cooler			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	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)				OPACITY (%)			
POWER CLASS			НС	NOx	NMHC+NOx	СО	PM	ACCEL	LUG	PEAK
KW > 560	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	N/A	N/A	N/A
		CERT			5.6	0.6	0.15			

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 ______ day of March 2010.

Annette Hebert, Chief

Mobile Source Operations Division

ATTACHMENT 1 OF 1

Engine Model Summary Template

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			3.BHP@RPM	4.Fuel Rate: mm/stroke @ peak HP	5.Fuel Rate: (lbs/hr) @ peak HP	6.Torque @ RPM	7.Fuel Rate: mm/stroke@peak		9.Emission Control
Engine Family	1.Engine Code	2.Engine Model	(SAE Gross)	(for diesel only)	(for diesels only)	(SEA Gross)	torque	(lbs/hr)@peak torqu	eDevice Per SAE J1930
AMVXL49.0BBA	S12R-Y2PTAW-1	S12R-PTAW	1881@1800	593	717	NA	<u>NA</u>	NA	DITC, AC
· AMVXL49.0BBA	S12R-Y2PTAW-A	S12R-PTAW	1881@1800	592	716	NA	NA	NA	DITC, CAC