

## MITSUBISHI HEAVY INDUSTRIES, LTD.

EXECUTIVE ORDER U-R-035-0180 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.

ENGINE FAMILY	(liters)	FUEL TYPE	USEFUL LIFE (hours)	
6MVXL01.9BBB	1.9	Diesel	5000	
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS		TYPICAL EQUIPMENT APPLICATION		
ect Diesel Injection, T	urbocharger	Tractor and Industrial Equipment		
	TURES & EMISSION	6MVXL01.9BBB 1.9	6MVXL01.9BBB 1.9 Diesel TURES & EMISSION CONTROL SYSTEMS TYPICAL EQUIPMENT A	

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		EXHAUST (g/kw-hr)					OPACITY (%)			
	STANDARD		нс	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			5.4	0.8	0.25	5	3	7

**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

ZND

day of December 2005.

Allen Lyons, Chief

Mobile Source Operations Division

## **Engine Model Summary Form**

ATTACHMENT 1 OF 1

Mitsubishi Heavy Industries, Ltd. Manufacturer:

Nonroad Cl Engine category:

6MVXL01.9BBB EPA Engine Family.

S3Q-TND

U-18-035-0180

Process Code:

Mfr Family Name:

**New Submission** 

	4		
8.Fuel Rate: 9.Emission Control lbs/hr)@peak torque Device Per SAE J1930	IDI,TC	IDI,TC	IDI,TC
8.Fuel Rate: (lbs/hr)@peak torque	16.3	15.9	15.9
7.Fuel Rate: mm/stroke@peak torque	45	44	44
6.Torque @ RPM (SEA Gross)	91.4ff-lb@2200	89.2ft-lb@2200	89.2ftlb@2200
5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	18.2	17.8	17.8
4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	46	45	45
3.BHP@RPM (SAE Gross)	41.6HP@2400	40.5HP@2400	40.5HP@2400
1.Engine Code 2.Engine Model	S302-T	S302-T	S3Q2-T
1.Engine Code	S3Q2-T 31.0kW-01	S3Q2-T'30.2kW-01	S3Q2-T 30.2kW-02