## MITSUBISHI HEAVY INDUSTRIES, LTD.

**EXECUTIVE ORDER U-R-035-0285**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 (liters)	FUEL TYPE	USEFUL LIFE (hours)		
2010	AMVXL01.8DDD	1.1, 1.3,1.5, 1.8	Diesel	5000		
SPECIAL	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION			
	Indirect Diesel Inje	ction	Tractor, Dozer, 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	co	PM	ACCEL	LUG	PEAK
19 <u>&lt;</u> KW < 37	Tier 4 Interim	STD	N/A	N/A	7.5	5.5	0.30	20	15	50
		CERT			5.4	1.5	0.25	7	4	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 January 2010.

Annette Hebert, Chief

Mobile Source Operations Division

## Engine Model Summary Template

1701TACHMENTIOFTA

0102/11/1 -2850-285-A-N

the state of the s	Idi	4.21		0022@8.17		Physics Code is the plant of th	0006@3.86	24F2	and the state of t	AMVXL01.8DDD
The state of the s	IDI IDI	4.21 6.11	7.3 <u>2</u> 4.62	71.6@2200 0081@0.28	7.71 8.81	8.8 <u>5</u>	000E@3.8E 000E@3.14	24F5 24F5	24Г5-С3000 24Г5-А301DbH	AMVXL01.8DDD
F. Tradition Contractoristics of Hillshifts and P.	IOI	12.4	7.32	0022@9.17	7.71	8.82	38.6@3000	2462	S4L2-Y361DPA	AMVXL01.8DDD
at a resolution of the second constitution of th	IOI	3.01	2.6.5	0081 <u>@</u> 7.87	9.91	0.82	37.9@2700	2452	S4L2-Y361GT	AMVXL01.8DDD
Committee and the committee of the commi	IOI	2.01	7.32	0081@7.67	₽.2l	26.0	35.5@2700	2462	S4L2-Y361TM	AMVXL01.8DDD
and have seen to be suffer to the many of the first of th	IOI	かけ	7.42	0012@6.78	7.91	25.3	000€@6.4€	2462	S4L2-Y3N3ST	AMVXL01.8DDD
William Committee on the Committee of Com	Idl	3.01	26.5	0081@7.97	12.0	26.0	29.5@2100	2462	24Г5-4363КГ	AMVXL01.8DDD
<ul> <li>Act Math. Schillegenichter der Steller und der Stellenger Wilderfelt und</li> </ul>	IDI	<b>3.8</b>	9,12	0081@8.09	3.51	8.22	29.4@2700	775	84L-Y361™	AMVXL01.8DDD
** ************************************	IDI	<b>č</b> .8	21.6	0081@8.09	12.0	21.0	28.2@2600	775	S4L-Y362GT	AMVXL01.8DDD
	IOI	<b>2.8</b>	21.6	0081@8.09	12.0	21.0	28.2@2600	775	24L-Y361GT	AMVXL01.8DDD
estimate produces great principle and appropriate	IOI	8.8	22.3	0081@0.29	9.01	22.5	25.9@2200	775	24F-A395KF	AMVXL01.8DDD
The second symmetric symmetry and a second second	IOI	6.8	7.42	53.9@2200	13.3	27.0	28.4@3000	2352	S3L2-Y361DPA	AMVXL01.8DDD
ale) i ultima melleri missi e melleri yangan salam ti ibi ya ya yani ti ibi di ibi.	IDI	6.8	7.42	53.9@2200	13.3	27.0	28.4@3000	2352	S3L2-Y361DPH	AMVXL01.8DDD
The second car for agreement with the control of the second care	IDI	9.8	0.62	0081@0.82	12.0	0.72	26.7@2700	2352	S3L2-Y361TM	AMVXL01.8DDD
	IDI	3.01	0.62	60.5@2200	3.11	29.0	26.7@2400	23Г5	S3LZ-Y331NK	AMVXL01.8DDD
	IOI	3.01	0.62	60.5@2200	3.11	29.0	26.7@2400	23Г5	S3L2-Y331NSB	AMVXL01.8DDD
Assumption to be a second of the second of t	IDI	3.01	0.62	60.5@2200	3.11	29.0	26.7@2400	23Г5	23L2-Y362CUK	AMVXL01.8DDD
to a compensation of the first stage of the first stage and the property of the stage of the sta	IDI	10.5	0.62	0022@3:09	3.11	29.0	26.7@2400	23Г5	23L2-Y361CUK	AMVXL01.8DDD
	IDI	9.8	29.0	0081@9.83	9.11	0.72	26.3@2600	2352	23L2-Y314RH	AMVXL01.8DDD
THE REST OF THE PROPERTY OF TH	Iai	9.8	29.0	0081@8.82	9.11	0.72	26.3@2600	2352	S3L2-Y314R	AMVXL01.8DDD
	9.Emission Control JeDevice Per SAE 11930	8,Fuel Rate: (lbs/hr)@peak torqu	7.Fuel Rate: mm/stroke@peak forque	M역A @ AproT.ê (sso1원 A크운)	5.Fuel Rate: (Ibs/hr) @ peak HP (for diesels only)	4,Fuel Rate: mm/stroke @ peak HP (for diesel only)	3.BHP@RPM (SAE Gross)	leboM enign∃.S	f.Engine Code	Engine Family