

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-6-17  
Relating to Certification of New Off-Road Compression-Ignition Equipment Engines

ISUZU MOTORS LIMITED

Pursuant to the authority vested in the Air Resources Board (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 exhaust emission control system produced by the manufacturer are certified as described below for use in off-road equipment:

Model Year: 2001

Typical Equipment Usage: Loader and Tractor

Fuel Type: Diesel

<u>Engine Family</u>	<u>Engine Displacement (liters)</u>	<u>Useful Life (hours)</u>	<u>Exhaust Emission Control Systems and Special Features</u>
1SZXL04.3CNA	4.3	8000	Direct Diesel Injection

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values for total hydrocarbons (THC), carbon monoxide (CO), oxides of nitrogen (NOx), and particulate matter (PM) (units are expressed in grams per kilowatt-hour (g/kw-hr)), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423, as amended by Board approval on January 28, 2000):

<u>Engine Power Rating (kw)</u>	<u>Emission Standard Category</u>		<u>Exhaust Emissions (g/kw-hr)</u>				<u>Smoke Opacity (%)</u>		
			<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
37≤KW<75	Tier 1	Standard	N/A	N/A	9.2	N/A	20	15	50
		Certification	--	--	7.0	--	8	6	13

BE IT FURTHER RESOLVED: That the listed engine models with rated power equal to or greater than 19 KW but less than 130 KW are **conditionally certified** to, and shall be required to comply with, all amendments to Title 13, California Code of Regulations, Sections 2420 through 2427 adopted by the Board on January 28, 2000 at its hearing "TO CONSIDER AMENDMENTS TO OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS: 2000 AND LATER EMISSION STANDARDS, COMPLIANCE REQUIREMENTS AND TEST PROCEDURES." The listed engine models comply with all such amendments, including, but not limited to:

- the amended "Emission Control Labels—1996 and Later Off-Road Compression-Ignition Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year;
- the Board's amended emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 and 2426) for the listed engine models, as demonstrated by materials submitted by the manufacturer; and
- new California requirements for the Selective Enforcement Audit (SEA) for the listed engine models, as demonstrated by the manufacturer's submission of materials.

BE IT FURTHER RESOLVED: That the conditional certification described in the paragraph above is conditioned on the amendments being approved by the California Office of Administrative Law (OAL) pursuant to Government Code Section 11349.3, and where necessary, authorized by the Administrator of the U.S. Environmental Protection Agency (U.S. EPA) pursuant to Section 209(e)(2) of the Federal Clean Air Act. In the event that the OAL disapproves the amendments or the U.S. EPA decides not to authorize them, the conditional certification herein of the listed engine models with rated power equal to or greater than 19 KW but less than 130 KW shall be deemed null and void.

The conditional certification described herein is not conditioned on further U.S. EPA action on amendments determined by the Board to be within the scope of an existing U.S. EPA authorization.

Engines certified under this Executive Order must conform to the above requirements under Title 13, California Code of Regulations, Chapter 9, Article 4, and all other applicable California emission laws and regulations.

Executed at El Monte, California this 27<sup>th</sup> day of December 2000.



R. B. Summerfield, Chief  
Mobile Source Operations Division

Engine Model Summary Form

Manufacturer: **Isuzu Motors Limited**  
 Engine category: **Nonroad CI**  
 EPA Engine Family: **1SZXL04.3CNA.**  
 Mfr Family Name: **NA**  
 Process Code: **New Submission**

U-12-6-17

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
4BG1NAACA-01	A-4BG1	86.8@2500	66.8@2500	37.1@2500	227.2@1600	75.7@1600	26.9@1600	EM,DFI
4BG1NAACA-02	A-4BG1	78.9@2000	70.5@2000	31.4@2000	227.2@1600	75.7@1600	26.9@1600	EM,DFI
4BG1NAACA-03	A-4BG1	77.0@2500	56.2@2500	31.2@2500	205.0@1600	63.4@1600	22.5@1600	EM,DFI
4BG1NAACA-04	A-4BG1	70.0@2000	60.6@2000	27.0@2000	205.0@1600	63.4@1600	22.5@1600	EM,DFI
4BG1NAACA-05	A-4BG1	78.8@2300	68.7@2300	35.1@2300	211.1@1600	74.3@1600	26.4@1600	EM,DFI
4BG1NAACA-06	A-4BG1	74.6@2000	67.4@2000	30.0@2000	212.9@1400	73.0@1400	22.7@1400	EM,DFI
4BG1NAACA-07	A-4BG1	81.7@2200	65.2@2200	31.9@2200	210.0@1600	70.4@1600	25.1@1600	EM,DFI
4BG1NAACA-08	A-4BG1	75.6@2300	65.2@2300	32.9@2300	293.2@1600	69.5@1600	24.7@1600	EM,DFI
4BG1NAACA-09	A-4BG1	86.4@2400	67.8@2400	36.2@2400	226.4@1500	75.7@1500	25.3@1500	EM,DFI
4BG1NAACA-10	A-4BG1	64.4@2000	61.3@2000	27.3@2000	198.3@1400	69.5@1400	21.6@1400	EM,DFI
4BG1NAACA-11	A-4BG1	80.1@2500	63.0@2500	35.0@2500	219.6@1600	72.2@1600	25.7@1600	EM,DFI
4BG1NAACB-01	B-4BG1	62.1@1750	61.4@1750	24.0@1750	194.8@1500	63.6@1500	21.2@1500	EM,DFI
4BG1NAACB-02	B-4BG1	50.6@1750	48.8@1750	19.0@1750	160.8@1500	50.5@1500	16.8@1500	EM,DFI