

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-6-39  
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, Pump, Generator and Other Industrial Equipment

Fuel Type: Diesel

<u>Engine Family</u>	<u>Engine Displacements (liters)</u>	<u>Durability Period (Hours)</u>	<u>Exhaust Emission Control Systems and Special Features</u>
1SZXL02.2YNA	2.2	5000	Indirect 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 non-methane hydrocarbons plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), 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, Sections 2423(b)(1) and 2423(b)(3)(A), 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>NMHC+NOx</u>	<u>CO</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
19≤KW< 37	Tier 1	Standard	9.5	5.5	0.80	20	15	50
		Certification	6.3	1.3	0.38	8	8	12

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 28<sup>th</sup> day of December 2000.

  
R. B. Summerfield, Chief  
Mobile Source Operations Division

# Engine Model Summary Form

ATTACHMENT

Manufacturer: **Isuzu Motors Limited**  
 Engine category: **Nonroad CI**  
 EPA Engine Family: **1SZXL02.2YNA**  
 Mfr Family Name: **NA**  
 Process Code: **New Submission**

UR-6-39

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
4LE1NABDA-01	4LE1	46.9@3000	30.7@3000	20.5@3000	95.9@1600	32.4@1600	11.5@1600	EM,IDI
4LE1NABDA-02	4LE1	34.4@1750	37.3@1750	14.5@1750	103.4@1750	37.3@1750	14.5@1750	EM,IDI
4LE1NABDA-03	4LE1	42.0@3000	28.0@3000	18.7@3000	81.2@1600	28.8@1600	10.2@1600	EM,IDI
4LE1NABDA-04	4LE1	28.2@1750	29.2@1750	11.4@1750	84.6@1750	29.2@1750	11.4@1750	EM,IDI
4LE1NABDA-05	4LE1	46.9@2700	33.7@2700	20.3@2700	103.3@1800	35.7@1800	14.3@1800	EM,IDI
4LE1NABDB-01	4LE1	45.0@2400	35.6@2400	19.0@2400	104.5@1800	37.2@1800	14.9@1800	EM,IDI
4LE1NABDB-02	4LE1	34.5@1750	38.1@1750	14.8@1750	103.4@1750	38.1@1750	14.8@1750	EM,IDI
4LE1NABDB-03	4LE1	30.9@2400	25.2@2400	13.4@2400	80.2@1750	27.7@1750	10.8@1750	EM,IDI
4LE1NABDB-04	4LE1	26.6@1750	28.0@1750	10.9@1750	79.8@1750	28.0@1750	10.9@1750	EM,IDI
4LE1NABDB-05	4LE1	43.0@2300	34.6@2300	17.7@2300	103.3@1600	36.3@1600	12.9@1600	EM,IDI
4LE1NABDB-06	4LE1	40.7@2300	34.2@2300	17.5@2300	103.3@1600	36.3@1600	12.9@1600	EM,IDI
4LE1NABDB-07	4LE1	41.6@2200	35.2@2200	17.2@2200	103.3@1600	36.3@1600	12.9@1600	EM,IDI
4LE1NABDB-08	4LE1	39.6@2100	35.0@2100	16.4@2100	103.3@1600	36.3@1600	12.9@1600	EM,IDI
4LE1NABDB-09	4LE1	38.0@2000	34.2@2000	15.2@2000	103.3@1600	36.3@1600	12.9@1600	EM,IDI
4LE1NABDB-10	4LE1	36.6@1900	33.9@1900	14.3@1900	103.3@1600	36.3@1600	12.9@1600	EM,IDI