Full

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-W-4-5
Relating to Certification of
New Spark-Ignition Marine Engines

TOHATSU CORPORATION

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, and 43104 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following new spark-ignition marine engine and exhaust emission control system produced by the manufacturer are certified as described below.

Model Year: 2001

Fuel Type: Gasoline Engine Type: 2-Stroke

Level of Cleanliness: Very Low Emission ("Two Stars")

Equipment Application: Outboard

Engine Family: 11TXM1.2722B

Displacement: 1267 cc

Exhaust Emission Control Systems and Special Features:

Direct Gasoline Injection

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

BE IT FURTHER RESOLVED: That the manufacturer has opted to certify, and has certified the listed engines to the hydrocarbons plus oxides of nitrogen (HC+NOx) exhaust emission standard described below, expressed in grams per kilowatt-hour (g/kW-hr) under Section 2442(b) of Title 13, California Code of Regulations (13 CCR).

HC + NOx (estimated) Standard	Certification Level
37.56	31.21

Compliance with the standard under 13 CCR Section 2442(b) shall be determined based on the sales-weighted average power of the engine family based on engines produced in this family for sale in California. This engine family shall not be used to determine compliance through corporate averaging.

BE IT FURTHER RESOLVED: That for the listed engines, the manufacturer has submitted, and the Executive Officer hereby approves, the information and materials to demonstrate certification compliance with the following California emission regulations and requirements. Engines certified under this Executive Order shall conform to all applicable California emission regulations and requirements:

- All applicable requirements in the "California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines"

- Emission Control Labeling and Consumer/Environmental Labeling (13 CCR Sections 2443.1, 2443.2 and 2443.3)

- Emission Control System Warranty (13 CCR Sections 2445.1 and 2445.2)

- Closed Crankcases (Part 1, Section 18.(h) of the "California Exhaust Emission Standards and Test Procedures for 2001 Model Year and Later Spark-Ignition Marine Engines")

- Quarterly reports of engines produced in this family for sale in California shall be submitted to the Executive Officer no later than 45 days after the end of each calendar quarter.

Executed at El Monte, California this 14th day of February 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division

Model Year: 2001
Manufacturer Name: TOHATSU CORPORATION
Engine Family: 1TTXM1.2722B

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SI Marine Engine Model Summary Form

44. Engine Family Sales-Weighted Power: kW

45. Model Designation	46. Sales Codes (Check all appropriate codes)			47. Disp. (cc)	48. Bore/Stroke (mm)	49. Basic Ignition Timing (deg. @ idle)	50. Power (kW)	51. Rated Speed (RPM)	52. Rated Torque (N-m)	53. Torque Speed (RPM)	54. ECS
	Calif. Only	49-State	50-State								
MD90A				1267	86 x 72.7	BTDC 32	66.20	5,500	120.54	4,000	N/A
NSD90A				1267	86 x 72.7	BTDC 32	66.20	5,500	120.54	4,000	N/A

ATTACHMENT