State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER M-3-307
Relating to Certification of New Motorcycles

YAMAHA MOTOR CO., LTD.

Pursuant to the authority vested in the Air Resources Board by the Health and Safety Code, Division 26, Part 5, Chapter 2; 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 2000 model-year Yamaha Motor Co., Ltd. exhaust emission control systems are certified as described below for four-stroke gasoline-powered motorcycles:

Engine Family	Displacement Cubic Centimeters	Class	Exhaust Emission Control Systems & Special Features
YYMXC1.60GEA	1602	III	Pulsed Secondary Air Injection

Vehicle models and transmissions are listed on the attachment. Production motorcycles shall be in all material respects the same as those for which certification is granted.

The following are the exhaust emission standards and exhaust emission certification values for this engine family. The designated hydrocarbons standard shall be listed on the permanent tune-up label:

Hydrocarbon Standards (Corporate Average) Grams per Kilometer	Hydrocarbon Standards (Designated) Grams per Kilometer	Hydrocarbons (Certification) Grams per Kilometer	Carbon Monoxide (Standard) Grams per Kilometer	Carbon Monoxide (Certification) Grams per Kilometer
1.4	0.9	0.5	12	8

BE IT FURTHER RESOLVED: That the above-described certification is subject to the following terms, limitations and conditions:

The above designated hydrocarbons standard shall be the exhaust limit for this engine family during the model year and therefore cannot be redesignated by the manufacturer. It represents the hydrocarbons exhaust emission standard applicable to this engine family that shall be applied when determining compliance of any motorcycle within this engine family pursuant to Section 2101 of Title 13, California Code of Regulations. It will also be used to determine compliance with the above corporate average hydrocarbons standard as required per Section 1958(b), Title 13 of the California Code of Regulations.

BE IT FURTHER RESOLVED: That the Executive Officer has been provided all material required to demonstrate certification compliance with the Board's emission control system warranty regulations (Title 13, California Code of Regulations, Section 2035 et seq.).

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles."

BE IT FURTHER RESOLVED: That these motorcycles are found exempt from compliance with the Air Resources Board's "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" pursuant to Executive Order G-70-16-E.

Vehicles certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 30th day of September 1999.

R. B. Summerfield, Chief
Mobile Source Operations Division

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Issued: Sept. 1, 1999
Revised:

Engine Family: YYMXC1.60GEA

Motorcycle Model Summary Form

65. Model Designation	66. Worst Case	67. Disp. (cc)	68. Bore / Stroke (mm)	69. Basic Ignition Timing (degrees)	70. Power (kW)	71. Rated Speed (RPM)	72. Rated Torque (Nm)	73. Rated Speed (RPM)
XV1600A		1602	95.0 /113.0	10	46.3	4000	134.3	2250
XV1600AC		1602	95.0 /113.0	10	46.3	4000	134.3	2250
XV1600AT		1602	95.0 /113.0	10	46.3	4000	134.3	2250
XV1600ATC	V	1602	95.0 /113.0	10	46.3	4000	134.3	2250
XV1600AL		1602	95.0 /113.0	10	46.3	4000	134.3	2250
XV1600ALC		1602	95.0 /113.0	10	46.3	4000	134.3	2250

65. Model Designation	74. EIM (kg)	75. Loaded Vehicle Weight Range (kg)	76. Road Load (nt)	77. Total Vehicle Mass (kg)	78. Full Weight with All Factory Options (kg)	79. Trans. Type	80. N/V
XV1600A	450	---	164.9	332	355.35	MT-5	23.1
XV1600AC	450	---	164.9	332	355.35	MT-5	23.1
XV1600AT	450	---	164.9	347	362.35	MT-5	23.1
XV1600ATC	450	---	164.9	347	362.35	MT-5	23.1
XV1600AL	450	---	164.9	332	355.35	MT-5	23.1
XV1600ALC	450	---	164.9	332	355.35	MT-5	23.1

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Motorcycle Engine Family Information Form 0.7

1. Manufacturer: YAMAHA MOTOR CO., LTD.
2. Certification Contact Person, address, phone and fax:

Name:	Michael J. Schmitt Division Manager Government Relations Yamaha Motor Corporation, U.S.A.	Izumi Yamamoto Engineer Engineering Administration Division Motorcycle Operations Group Yamaha Motor Co., Ltd.
Address:	6555 Katella Avenue Cypress, California 90630	2500 Shingai, Iwata-shi Shizuoka Pref. 438-8501, Japan
Phone No:	(714) 761-7710	(0538) 37-4148
Fax. No:	(714) 229-7940	(0538) 37-4095

3. Model Year: 2000
4. Process Code: R/C
5. Engine Family: YYMXC1.60GEA
   - 50s Engine Code: V
   - 49s Engine Code: ___
   - Calif. Engine Code: ___
6. Emission Control System: PAIR
7. Calif. Designated Standard: 0.9g/km
8. Projected Annual Sales:
9. New Technology ___ Yes V No
   If yes, cite the correspondence or reference the submittal document:
10. Displacement: 1602cc
11. Number of Cylinders: 2
12. Cylinder Arrangement: V-2 (48°)
13. Cylinder Head Configuration: OHV
14. Type of Cooling: Air
15. Combustion Cycle: 4
16. Method of Aspiration: Natural
17. Fuel System: Carburetor
18. Number of Catalytic Converters: N/A

19. Adjustable Parameters: N/A

Parameter(s)	Adjustable Range (or NA)	Tamper Resistance Method (or NA)	Method Approved

20. AECDs In the Emission Control Systems: N/A

Exhaust System	Evaporative System
AECDs In System:	AECDs In System:

PROCESSED BY: _____ DATE: 9/29/99

REVIEWED BY: _____ DATE: 9/29/99

Engine Family: YYMXC1.60GEA

Motorcycle Test Information Form

27. Are you carrying over test results from a previously certified family? V Yes ___ No
    a) If yes, indicate family name: XYMXC1.60GEA
    b) Is the family being certified identical to the family from which the data is being carried over? Yes

28. Model Designation of Test Vehicle: XV1600ATC
29. Test Information Number: 4WM
30. Vehicle ID: JYAVP02Y7XA000002
31. Service Accumulation Duration: 3 months
32. Maximum Rated Power: 46.3 kW @ 4000 RPM
33. Displacement: 1602 cc
34. Certification Fuel: Unleaded Gasoline
35. Test Data Set: 6
36. Road Load: 164.9 NT at 65km/h
37. Inertia Mass: 450 kg
38. N/V: 23.1
39. EVAP. Bench Test Method Approved:
    Date: January 12, 1982
    Reference:
40. Unscheduled Maintenance: ___ Yes V No
41. If yes, Vehicle Log provided: _____

42. Exhaust Emission Deterioration Factors:

		Emission Values	
Test Number	System Kilometers	HC	CO
1	3637	0.66	6.3
2	7163	0.51	6.7
3	7193	0.50	6.8
4	13165	0.81	7.9
5	13196	0.54	6.8
6	15036	0.47	6.8
※ 7	15064	0.47	8.6
※ 8	15094	0.43	8.2
Interpolated Values at 15000 km:		HC= 0.5797	CO= 7.2335
Extrapolated Values at 30000 km:		HC= 0.5740	CO= 8.2631

Check one:	
Regular DF	V
Modified DF	
If different vehicle specify vehicle ID	

※: Back-to-back test was conducted for the application for Engine Family YYMXC1.60GEA.

43. Emission Test Results:

Official Test Results		Test 1	Test 2	Test 3	Test 4
g/km	CO	6.8			
g/km	CO2	114.0			
g/km	HC	0.47			
g/km	Evap.	0.88			

Deterioration Factors	
(×) 1.1423	

(×) 0.9902	(1.000)
(+) 0.1396	

44. Certification Levels:

g/km	CO	8			
g/km	HC	0.5			
g/km	Evap.	1.0			