State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER M-1-298
Relating to Certification of New Motorcycles

KAWASAKI HEAVY INDUSTRIES, 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 Kawasaki Heavy Industries, 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
YKAXC1.47AAD	1470	III	Sequential Multiport Fuel Injection Pulsed Secondary Air Injection Oxidation Catalytic Converter

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	0.8	0.6	12	6

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 21st day of June 1999.

R. B. Summerfield, Chief
Mobile Source Operations Division

Issued: JAN 1 4 2000
Revised:

Engine Family: YKAXC1.47AAD
E.O. # : M-1-298

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)
VN1500-J2	Yes	1470	102X90	5°/950 rpm	48.5	5000	115	2500
VN1500-L1	–	1470	102X90	5°/950 rpm	48.5	5000	115	2500
VN1500-N1	–	1470	102X90	5°/950 rpm	48.5	5000	115	2500

New model added

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
VN1500-J2	460	456~465	166.0	322	385	M-5	26.49
VN1500-L1	460	456~465	166.0	359	385	M-5	26.49
VN1500-N1	460	456~465	166.0	325	385	M-5	26.49

Engine Family: YKAXC1.47AAD

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)
VN1500-J2	Yes	1470	102X90	5°/950 rpm	48.5	5000	115	2500
VN1500-L1	–	1470	102X90	5°/950 rpm	48.5	5000	115	2500

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
VN1500-J2	460	460	166.0	322	385	M-5	26.49
VN1500-L1	460	460	166.0	342	385	M-5	26.49

(*Model Year*) / (*Manufacturer*) **Motorcycle**

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Issued: APR 3 0 1999
Revised:

Motorcycle Engine Family Information Form

1.0

1. Manufacturer: KAWASAKI HEAVY INDUSTRIES, LTD.

2. Certification Contact Person, address, phone, and fax:

Jeffrey D.Shetler / Scott Patten
Kawasaki Motors Corp., USA.
9950 Jeronimo Road, Irvine. CA 92618-2084
Tel : 949-770-0400 Fax : 949-460-5602

3. Model Year: 2000
4. Process Code: New
(new, correction, revision, r/c, f/f. etc.)
5. Engine Family: YKAXC1.47AAD
50s Engine Code: —
49s Engine Code: —
Calif. Engine Code: VNT50J-AC1
6. Emission Control System: SFI+PAIR+OC
7. Calif. Designated Standard: 0.8 gm/km
8. Projected Annual Sales: 600

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9. New Technology ___ Yes X No
If yes, cite the correspondence or reference the submittal document: ____
10. Displacement: 1470cm³
11. Number of Cylinders: 2
12. Cylinder Arrangement: Vee-Twin
13. Cylinder Head Configuration: SOHC
14. Type of Cooling: Liquid
15. Combustion Cycle: 4
16. Method of Aspiration: Natural
17. Fuel System: Fuel Injected
18. Number of Catalytic Converters: 1

19. Adjustable Parameters:

Parameter(s)	Adjustable Range (or NA)	Tamper Resistance Method (or NA)	Method Approved
Air adjuster on throttle body (Air/Fuel Ratio)	NA	an aluminum cap is placed over the adjusting screw.	Carry over

20. AECDs In the Emission Control Systems:

Exhaust System		Evaporative System	
AECDs In System:	SFI, PAIR and OC	AECDs In System:	Sealed loop with Canister

Application Processed by: Joseph Jegede Date: 6/18/99 Reviewed by: Stan Hu Date: 6/21/99

Engine Family: YKAXC1.47AAD

Motorcycle Test Information Form

27. Are you carrying over test results from a previously certified family? X Yes ___ No
    a) If yes, indicate family name: XKAXC1.47AAD
    b) Is the family being certified identical to the family from which the data is being carried over? No

28. Model Designation of Test Vehicle: VN1500-J1
29. Test Information Number: 99-1
30. Vehicle ID: JKBVNAJ13XA000007
31. Service Accumulation Duration: 15000 (km)
32. Maximum Rated Power: 48.5 kW @ 5000 RPM
33. Displacement: 1470 cc
34. Certification Fuel: Indolene: 95~99 RON
35. Test Data Set: Test 1
36. Road Load: 166.0 nt at 65 kph
37. Inertia Mass: 460 kg
38. N/V: 26.49
39. EVAP. Bench Test Method Approved:
    Date: 2/17/87
    Reference: EO M-1-82
40. Unscheduled Maintenance: ___ Yes X No
41. If yes, Vehicle Log provided: NA

42. Exhaust Emission Deterioration Factors:

		Emission Values		
Test Number	System Kilometers	HC	CO	
1	3514	054	5.4	
2	6012	0.49	5.4	
3	6102	0.51	4.8	
4	12013	0.49	5.4	
5	12103	0.32	4.8	
6	15028	0.57	5.7	
7	15058	0.64	5.4	*1
8	15088	0.61	5.5	*2
9	15117	0.37	4.9	*3
Interpolated Values at 15000 km:		**HC = 0.4652**	**CO = 5.3533**	
Extrapolated Values at 30000 km:		**HC = 0.4102**	**CO = 5.6172**	

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

*1. This emission test was performed in order to confirm the previous EPA's approval test data which was submitted in 1999 model year certification.
*2. This emission test was performed in order to confirm the unit aged Punched Metal Catalyst.
*3. This emission test was performed in order to confirm the aged Honeycomb Catalyst.
4. These emission test was performed by the letter 99ARB-11 dated of February 18, 1999.

43. Emission Test Results:

Official Test Results		Test 1	Test 2	Test 3	Test 4		Deterioration Factors
g/km	CO	5.7				(X)	1.049
g/km	CO_2	157.1					----------
g/km	HC	0.57				(X)	1.000
g/test	Evap.	1.104				(+)	0.000

44. Certification Levels:

g/km	CO	6			
g/km	HC	0.6			
g/test	Evap.	1.104			

Engine Family: YKAXC1.47AAD

Evaporative Emission Information

45. Evaporative Family: YKAXC17.0A01
46. Number of Evap. Canisters: 1
47. Design Working Capacity: 17.0 g
48. Configuration: Sealed loop
49. Number of Storage Areas: 1
50. Fuel Reservoir Volume: 8 liters
51. Vent System Configuration: Sealed loop
52. Nominal Tank Capacity: 16 liters
53. Engine Displacement Class: III
54. Storage Medium Composition: Activated carbon
55. Evap. Canister Medium Volume: 400cm³
56. Evap. Family Sales: 1600
57. Engine Code: VNT50J-AC1
58. Evap. Emission Family Code: YKAXC17.0A01
59. Evap. Emission Family Group: CVK36-001
60. **Overall Evap D.F. =** 0.000
    •Evap certification level = 1.104 g/test

Bench DF

61. Test Vehicle ID: JKBVNAA14HA000003
62. Test Results:

Test Number	System Kilometers	Evap. Emission Values (g/test)
1	3500	0.843
2	15000	0.752
3		
4		
5		
6		
7		
Interpolated Values at 15000 km: = 0.7520		
Extrapolated Values at 30000 km: = 0.6333		
Bench Test D.F. = 0.000		

Check One:	
Regular DF:	X
Modified DF:	
If different vehicle specify the vehicle ID	

Vehicle DF

63. Test Vehicle ID: JKBVNAA14HA000003
64. Test Results.

Test Number	System Kilometers	Evap. Emission Values (g/test)
1	3514	1.012
2	5124	1.163
3	5154	1.070
4	10019	0.711
5	10049	0.821
6	15013	1.104
7		
Interpolated Values at 15000 km: = 0.9308		
Extrapolated Values at 30000 km: = 0.8008		
Vehicle Test D.F. = 0.000		