

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-10-374
Relating to Certification of New Motor Vehicles

FORD MOTOR COMPANY

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 Orders G-45-3 and G-45-4;

IT IS ORDERED AND RESOLVED: That 1989 model-year Ford Motor Company exhaust emission control systems are certified as described below for gasoline-powered passenger cars:

| <u>Engine Family</u> | <u>Displacement</u> | | <u>Exhaust Emission Control Systems</u> |
|----------------------|---------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <u>Liters</u> | <u>(Cubic Inches)</u> | <u>(Special Features)</u> |
| KFM5.0V5HBC1 | 5.0 | (302) | Air Injection-Pump Exhaust Gas Recirculation Oxidation Catalyst Three-Way Catalyst Heated Oxygen Sensor (Sequential Port Fuel Injection) On-Board Diagnostics (Exempted) |

Vehicle models, transmissions, engine codes and evaporative emission control families are listed on attachments.

The following are the emission standards for this engine family:

| <u>Hydrocarbons</u> | <u>Carbon Monoxide</u> | <u>Nitrogen Oxides</u> |
|-------------------------|-------------------------|-------------------------|
| <u>(Grams per Mile)</u> | <u>(Grams per Mile)</u> | <u>(Grams per Mile)</u> |
| 0.39 | 7.0 | 0.7 |

The following are the certification emission values for this engine family:

| <u>Hydrocarbons</u> | <u>Carbon Monoxide</u> | <u>Nitrogen Oxides</u> |
|-------------------------|-------------------------|-------------------------|
| <u>(Grams per Mile)</u> | <u>(Grams per Mile)</u> | <u>(Grams per Mile)</u> |
| 0.21 | 0.3 | 0.4 |

BE IT FURTHER RESOLVED: That the listed models are certified to the optional NOx emission standard thereby making the vehicle manufacturer subject to Section 1960.1.5 of Title 13, California Administrative Code which includes recall liability for emission control components up to 7 years or 75,000 miles if found defective by the Executive Officer.

BE IT FURTHER RESOLVED: That the vehicle manufacturer is certifying to the optional NOx standard by providing evidence that there are sufficient projected sales of vehicles certifying to the primary NOx emission

standard, or is allowed a delay in implementation under small volume manufacturer provisions, or is allowed a delay in implementation under the "In lieu" standards, or is certifying passenger cars weighing more than 5250 lbs. loaded vehicle weight.

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

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the Board's "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" (Title 13, California Administrative Code, Section 2290) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the Board's high altitude requirements and highway emission standards as stipulated in "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles".

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the "California Motor Vehicle Tune-Up Label Specifications" (Title 13, California Administrative Code, Section 1965) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the vehicle models listed have been granted an exemption from compliance with the requirements of the "Malfunction and Diagnostic System for 1988 and Subsequent Model Year[s]..." (Title 13, California Administrative Code, Section 1968) for the aforementioned model year.

BE IT FURTHER RESOLVED: That for the listed vehicles, the manufacturer has submitted and the Executive Officer hereby approves the materials to demonstrate certification compliance with the Board's emission control system warranty regulations (Title 13, California Administrative Code, Section 2035 et seq.) with the 2 year/24,000 mile warranty provisions of Health and Safety Code Section 43204.

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

The Bureau of Automotive Repair will be notified by copy of this order and attachment.

Executed at El Monte, California this 27th day of June, 1988.



K. D. Drachand, Chief
Mobile Source Division

1989 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

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Page 1

Manufacturer Ford Motor Company Engine Family KFM5.OV5HBC1
 Evaporative Family 9HM Engine Type V8
 Liters (CID) 5.0 (302)

ABBREVIATIONS

Ignition System

CA-Centrifugal Advance
 ECU-Electronic Control Unit
 EI-Electronic Ignition
 ESAC-Electronic Spark Advance Control
 VA-Vacuum Advance
 VR-Vacuum Retard

Exhaust Emissions Control System

AIP-Air Injection - Pump
 AIV-Air Injection - Valve
 EGR-Exhaust Gas Recirculation
 EIC-Electronic Injection Control (Diesel Only)
 EM-Engine Modification
 SPL-Smoke Puff Limiter or Throttle Delay
 TOC-Trap Oxidizer, Continual
 TOP-Trap Oxidizer, Periodical
 2DBC-Dual Bed Catalyst
 OC-Oxidation Catalyst
 TWC-Three-Way Catalyst
 WUOC-Warm-Up Oxidation Catalyst
 WUTWC-Warm-Up Three-Way Catalyst
 OS-Oxygen Sensor
 HOS-Heated Oxygen Sensor

Special Features

CFI-Central Fuel Injection or Throttle Body Injection
 EPFI-Electronic Port Fuel Injection
 MPFI-Mechanical Port Fuel Injection
 SFI-Sequential Fuel Injection
 DID-Diesel Injection-Direct
 DIP-Diesel Injection-Prechamber
 TC-Turbocharger
 SC-Supercharger
 IC-Intercooler or Aftercooler
 CCV-Combustion Chamber Valve
 OBD-On-Board Diagnostics

Fuel System

CFI, DID, DIP, EPFI,
 MPFI, HOS, OS,
 nV-nVenturi Carburetor
 V-Variable Venturi Carburetor

VEHICLE MODELS:

FORD-74K 4 DR WAGON (CROWN VICTORIA)
 FORD-54K 4 DR SEDAN (CROWN VICTORIA)
 LINCOLN-54D 4 DR SEDAN (TOWN CAR)
 MERCURY-74K 4 DR SEDAN (GRAND MARQUIS)
 MERCURY-54K 4 DR SEDAN (GRAND MARQUIS)
 MARK VII-63D 2 DR SEDAN (MARK VII)
 MARK VII-63L 2 DR SEDAN (MARK LSC)
 MUSTANG-66B 2 DR SEDAN
 MUSTANG-61B 3 DR NON-GT HATCHBACK
 MUSTANG-HVB 3 DR GT HATCHBACK
 MUSTANG-B2L 2 DR CONVERTIBLE

Engine: Front XX Mid. _____ Rear _____

Drive: FWD _____ RWD XX 4WD Full Time _____ 4WD Part Time _____

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| Issue Date | 4-19-88 | 17.00.00.00-2 | | | | |
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Page 2

Passenger Cars light-Duty Trucks Medium-Duty Vehicles Gas Diesel

Manufacturer FORD MOTOR COMPANY Engine Family KFM5.OV5HBC1

Displacement (CID) 5.0 (302) Eng. Type V8

Transmission Control Sys. (Special Features) AIP, EGR, OC, TWC, HOS (SFI, OBD)

| Engine Code | Vehicle Models (If Coded see attachment) (Dyno Hp) | Trans. Type | Equiv. Test Weight | Ign. System (ECU) EEC IV Part No. -12A650- | Fuel System (EDFI) Part No. -9F593- | EGR Valve ELECTRONIC Part No. -97483- | Catalyst 2-TWC, 2-OC Part No. -5F250- |
|-------------|--------------------------------------------------------------|-------------|---------------------|-----------------------------------------------------|-----------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------|
| 821PR10A | MUST 3DR GT (9.0) NON-GT (9.9) | M5 | 3500 ^{02/} | E8ZF-DA E8ZF-DB (alt) E9ZF-DA (alt) | E6TE-AB | E6AE-CA E6AE-DA (alt) E7AE-AA (alt) | E6ZC-BA E6ZB-BB (alt) E7ZC-DA (alt) E8ZC-BA (alt) E8ZC-CA (alt) |
| | MUST 2DR (10.1) | | 3500 | | | | |
| | MUST CONV (10.2) | | 3625 | | | | |
| 821PR10N | MUST 3DR GT (8.2) NON-GT (9.0) | | 3500 | | | | |
| | MUST 2DR (9.2) MUST CONV (9.3) | | 3500 3625 | | | | |

Comments: See page one for abbreviations and evaporative emission family identification. Please refer to manufacturer's HP list for correct dyno test HP settings based on model and equipment. If two test weights are listed, the lower weight will be used for testing.
 2/ Actual equivalent test weight (ETW) as shown. However, Ford elects to conduct test in the next higher ETW.

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Page 3

Passenger Cars X light-Duty Trucks _____ Medium-Duty Vehicles _____ Gas X Diesel _____

Manufacturer FORD MOTOR COMPANY Engine Family KFM5.OV5HBC1

Displacement (CID) 5.0 (302) Eng. Type V8

Emission Control Sys. (Special Features) AIP, EGR, OC, TWC, HOS (SFI, OBD)

| Engine Code | Vehicle Models (If Coded see attachment) (Dyno Hp) | Trans. Type | Equiv. Test Weight | Ign. System (ECU) EEC IV Part No. -12A650- | Fuel System (EDFI) Part No. -9F593- | EGR Valve ELECTRONIC Part No. -97483- | Catalyst 2-TWC, 2-OC Part No. |
|-------------|---------------------------------------------------------------|-------------|-----------------------------------------|--------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 822LROOA | MARK LSC (8.6) | A-4 | 4000 | EFSF-XD | E6TE-AB | E6AE-CA E6AE-DA (alt) E7AE-AA (alt) E7AE-BA (alt) | E7LC-CA (-5F250- E8LC-AA (alt) E8LC-DA (alt) E8LC-EA (alt) |
| 822MROOA | LINCOLN (13.0) FORD/MERC S/W (12.9) SEDAN (11.4) | | 4250 4250 4000 ^{02/} | E7SF-ADB E7SF-ADC (alt) E8SF-ADA (alt) | E67E-BB E59E-AB (alt) | | E6AC-BB (-5E212- E8AC-DA (alt) E8AC-EA (alt) E6AC-BB (-5E214- E6AC-BC (alt) E8AC-DA (alt) E8AC-EA (alt) |

Comments: See page one for abbreviations and evaporative emission family identification. Please refer to manufactureres HP list for correct dyno test HP settings based on model and equipment. If two test weights are listed, the lower weight will be used for testing. ^{02/} Actual equivalent test weight (ETW) as shown. However, Ford elects to conduct test in the next higher ETW.

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Passenger Cars xx Light-Duty Trucks _____ Medium-Duty Vehicles _____ Gas xx Diesel _____

Manufacturer Ford Motor Company Engine Family KFM5.OV5HBC1

Displacement (CID) 5.0 (302) Eng. Type V8

Emission Control Sys. (Special Features) AIP, EGR, OC, TWC, HOS (SFI, OBD)

| Engine Code | Vehicle Models (If Coded see attachment) (Dyno Hp) | Trans. Type | Equiv. Test Weight | Ign. System (ECU) EEC-IV Part No. -12A650- | Fuel System (EDFI) Part No. -9F593- | EGR Valve ELECTRONIC Part No. -9F483- | Catalyst 2-TWC, 2-OC Part No. |
|-------------|-------------------------------------------------------------------------------------|-------------|------------------------------|-----------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 822MR00N | FORD/MERCURY S/W (11.7) SEDAN (10.4) | A-4 | 4250 4000 | E7SF-ADB E7SF-ADC (alt) E8SF-ADA (alt) | E67E-BB E59E-AB (alt) | E6AE-CA E6AE-DA (alt) E7AE-AA (alt) E7AE-BA (alt) | E6AC-BB (-5E212- E8AC-DA (alt) E8AC-EA (alt) E6AC-BB (-5E214- E6AC-BC (alt) E8AC-DA (alt) E8AC-EA (alt) |
| 822NR00A | MERC S/W (12.9) | | 4250 | E7SF-APB E7SF-APC (alt) E7SF-ZA (alt) | | | |
| 822NR00N | MERC S/W (11.7) | | | | | | |
| 822PR12A | MUST 3DR GT (9.0) NON-GT (9.9) MUST 2DR (10.1) MUST CONV (10.2) | | 3625 3500 3750 | E8ZF-GC E9ZF-EA (alt) | E6TE-AB | E6AE-CA E6AE-DA (alt) E7AE-AA (alt) | E6ZC-BA (-5F250- E6ZC-BB (alt) E7ZC-DA (alt) E8ZC-BA (alt) E8ZC-CA (alt) |

Comments: See page one for abbreviations and evaporative emission family identification. Please refer to manufactureres HP list for correct dyno test HP settings based on model and engine. If two test weights are listed, the lower weight will be used for testing.

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Passenger Cars xx Light-Duty Trucks _____ Medium-Duty Vehicles _____ Gas xx Diesel _____

Manufacturer Ford Motor Company Engine Family KFM5.0V5HBC1

Displacement (CID) 5.0 (302) Eng. Type V8

Emission Control Sys. (Special Features) AIP, EGR, OC, TWC, HOS (SFI, OBD)

| Engine Code | Vehicle Models (If Coded see attachment) (Dyno Hp) | Trans. Type | Equiv. Test Weight | Ign. System (ECU) Part No. -12A650- | Fuel System (EDFI) Part No. -9F593- | EGR Valve ELECTRONIC Part No. -9F483- | Catalyst 2-TWC, 2-OC Part No. -5F250- |
|-------------|------------------------------------------------------------------------------------|-------------|------------------------------|--------------------------------------------|--------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 822PR12N | MUST 3DR GT (8.2) NON-GT (9.0) MUST 2 DR (9.2) MUST CONV (9.3) | A-4 | 3625 3500 3625 | E8ZF-GC E9ZF-EA (alt) | E6TE-AB | E6AE-CA E6AE-DA (alt) E7AE-AA (alt) | E6ZC-BA E6ZC-BB (alt) E7ZC-DA (alt) E8ZC-BA (alt) E8ZC-CA (alt) |
| 822RR00A | MARK VII (10.4) | | 4000 | E7SF-AKD | | E6AE-CA E6AE-DA (alt) E7AE-AA (alt) E7AE-BA (alt) | E7LC-CA E8LC-AA (alt) E8LC-DA (alt) E8LC-EA (alt) |

Comments: See page one for abbreviations and evaporative emission family identification. Please refer to manufactureres HP list for correct dyno test HP settings based on model and equipment. If two test weights are listed, the lower weight will be used for testing.

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Passenger Cars xx Light-Duty Trucks Medium-Duty Vehicles Gas xx Diesel

Manufacturer Ford Motor Company Engine Family KFM5.0V5HBC1

Displacement (CID) 5.0 (302) Eng. Type V8

Transmission Control Sys. (Special Features) AIP, EGR, OC, TWC, HOS (SFI, OBD)

| Engine Code | Vehicle Models (If Coded see attachment) (Dyno Hp) | Trans. Type | Equiv. Test Weight | Ign. System (ECU) Part No. -12A650- | Fuel System (EDFI) Part No. -9F593- | EGR Valve ELECTRONIC Part No. -9F483- | Catalyst 2-TWC, 2-OC Part No. |
|-------------|-----------------------------------------------------------------------------------------|-------------|--------------------------------------------------|----------------------------------------------|--------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 822QR00A | LINCOLN (13.0) FORD/MERCURY S/W (12.9) MERC SEDAN (11.4) FORD SEDAN (11.4) | A-4 | 4250 4250 4000 ⁰² / 4000 | E7SF-ABA E7SF-ABB (alt) E8SF-ABA (alt) | E67E-BB E59E-AB (alt) | E6AE-CA E6AE-DA (alt) E7AE-AA (alt) E7AE-BA (alt) | E6AC-BB (-5E212-) E8AC-DA (alt) E8AC-EA (alt) E6AC-BB (-5E214-) E6AC-BC (alt) E8AC-DA (alt) E8AC-EA (alt) |
| 822QR00N | FORD/MERCURY S/W (11,7) SEDAN (10.4) | | 4250 4000 | | | | |

Comments: See page one for abbreviations and evaporative emission family identification. Please refer to manufacturer's HP list for correct dyno test HP settings based on model and equipment. If two test weights are listed, the lower weight will be used for testing.
 2/ Actual equivalent test weight (ETW) as shown. However, Ford elects to conduct test in the next higher ETW.

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Passenger Cars xx Light-Duty Trucks _____ Medium-Duty Vehicles _____ Gas xx Diesel _____

Manufacturer Ford Motor Company Engine Family KFM5.0V5HBC1

Displacement (CID) 5.0 (302) Eng. Type V8

Optional Equipment (Special Features) AIP, EGR, OC, TWC, HOS (SFI, OBD)

| Engine Code | Vehicle Models (If Coded see attachment) (Dyno Hp) | Trans. Type | Equiv. Test Weight | Ign. System (ECU) Part No. -12A650- | Fuel System (EDFI) Part No. -9F593- | EGR Valve ELECTRONIC Part No. -9F483- | Catalyst 2-TWC, 2-OC Part No. |
|-------------|--------------------------------------------------------------|-------------|-----------------------------|----------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 822SR00A | FORD SEDAN (11.4) MERC SEDAN (11.4) | A-4 | 4000 4000 ^{02/} | E7SF-AFA E7SF-AFB (alt) E8SF-AFA (alt) | E67E-BB E59E-AB | E6AE-CA E6AE-DA (alt) E7AE-AA (alt) E7AE-BA (alt) | E6AC-BB (-5E212- E8AC-DA (alt) E8AC-EA (alt) E6AC-BB (-5E214- E6AC-BC (alt) E8AC-DA (alt) E8AC-EA (alt) |
| 822SR00N | FORD/MERCURY SEDAN | | 4000 | | | | |

Comments: See page one for abbreviations and evaporative emission family identification. Please refer to manufacturer's HP list for correct dyno test HP settings based on model and equipment. If two test weights are listed, the lower weight will be used for testing. ^{2/} Actual equivalent test (ETW) as shown. However, Ford elects to conduct test in the higher ETW.

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