State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-6-417
Relating to Certification of New Heavy-Duty Motor Vehicle Engines

GENERAL MOTORS CORPORATION

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102, and 43103 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-45-3;

IT IS ORDERED AND RESOLVED: That the following General Motors Corporation 1988 model-year gasoline engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) of 8,501 to 14,000 pounds for which the sales of engines certified for these engine families for use in motor vehicles of 8,501 to 14,000 pounds GVWR shall not exceed five percent (5%) of the manufacturer's total California sales of engines used in motor vehicles in this GVWR category:

Engine Family	Displacement Liters (Cubic Inches)	Exhaust Emission Control Systems (Special Features)
JGM04.8ABA9	4.8 (292)	Air Injection - Pump
JGM05.7AGAX	5.7 (350)	Air Injection - Pump Exhaust Gas Recirculation
JGM07.4AGAX	7.4/7.0/6.0 (454/427/366)	Air Injection - Pump Exhaust Gas Recirculation

Engine models and codes are listed on attachments.

The manufacturer has elected to certify those engines used in motor vehicles of 8,501 to 14,000 pounds GVWR to emission standards for engines used in motor vehicles over 14,000 pounds GVWR in accordance with 40 CFR 86.088-10(a)(3)(i) and will use Tune-Up Label statements in accordance with California Motor Vehicle Tune-Up Label Specifications last amended, April 25, 1986 Section 3.(b)xii(2) and will submit final California sales figures within 60 days after the end of production.

The following are emission standards for these engine families:

Hydrocarbons gm/bhp-hr	Carbon Monoxide gm/bhp-hr	Nitrogen Oxides gm/bhp-hr
1.9	37.1	6.0

The following are the certification emission values for these engine families:

Engine Family	Hydrocarbons gm/bhp-hr	Carbon Monoxide gm/bhp-hr	Nitrogen Oxides gm/bhp-hr
JGM04.8ABA9	0.8	18.2	5.4
JGM05.7AGAX	0.9	25.3	4.6
JGM07.4AGAX	1.2	28.4	5.3

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 Administrative Code, Section 2036).

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

BE IT FURTHER RESOLVED: That if the manufacture exceeds the 5% limit stipulated in 40 CFR 86.088-10(a)(3)(i), penalties as specified in California Health and Safety Code Section 43154 shall apply.

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

Executed at El Monte, California this 19th day of August, 1987.

K. D. Drachand, Chief
Mobile Source Division

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(1988)

AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

GASOLINE HEAVY DUTY ENGINES

Manufacturer: General Motors Corporation Executive Order No.: A-6-417

Engine Families: JGM04.8ABA9
JGM05.7AGAX
JGM07.4AGAX

Engine CID (Liters) - Type: 292 (4.8), 350 (5.7), 366 (6.0), 427 (7.0), 454 (7.4)

ABBREVIATIONS:

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

Fuel System
CFI, CL, DID, DIP, EFI, MFI
nV-nVenturi Carburetor

GM Abbreviations
A/C-Air Conditioning
FC-Forward Control
HD-Heavy Duty
CID-Cubic Inch Displacement
TBI-Throttle Body Injection
RWD-Rear Wheel Drive
4x2-Two Wheel Drive
4x4-Four Wheel Drive
6x4-Four Wheel Drive

Exhaust Emission Cont System
AIP-Air Injection Pump
AIV-Air Injection Valve
CL-Closed Loop
DBC-Dual Bed Catalyst
EGR-Exhaust Gas Recirculation
EIC-Electronic Injection Control
EM-Engine Modification
OC-Oxidation Catalyst System
OS-Oxygen Sensor
HOS-Heated Oxygen Sensor
SPL-Smoke Puff Limiter or Throttle Delay
TOC-Trap Oxidizer, Continual
TOP-Trap Oxidizer, Periodical
TR-Thermal Reactor
TWC-Three-Way Catalyst System

Special Features
CCV-Combustion Chamber Valve
CFI-Central Fuel Injection
DID-Diesel Injection-Direct
DIP-Diesel Injection-Prechamber
EFI-Electronic Fuel Injection
IC-Intercooler/Aftercooler
MFI-Mechanical Fuel Injection
TC-Turbocharger

Engine: Front (all Vehicles)

Drive: See Chassis Type (Page 2), all 4x2 vehicles are RWD.

ISSUED: 07-10-87 REV. NO.: 001

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1988 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

Manufacturer General Motors Corporation Executive Order No. A-6-417

Heavy Duty Gasoline Powered Vehicles

Vehicle Models (Series)	Engine Families JGM04.8ABA9	JGM05.7AGAX	JGM07.4AGAX
	Engine CID Values Appear Below		
Forward Control - G Models			
Hi-Cube Van/Magnavan - G30		350	
Cutaway Van/Vandura Spl - G30		350	
Van/Vandura - G30		350	
Sportvan/Rally Wagon - G30		350	
Forward Control - P Models			
Forward Control Chassis - P20		350	
Step-Van/Value Van - P20		350	
Forward Control Chassis - P30		350	
Motor Home Chassis - P30			454
Step-Van/Value Van - P30		350	
Conventional Cab & Chassis			
C5D042		350	
C6D042		350	366
C7D042, C7D064			366, 427
School Bus			
B6P042		350	366
S7T042			366
Forward Control Chassis			
P4T042	292		
P6T042		350	366, 427

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HEAVY-DUTY GASOLINE ENGINES

Manufacturer: General Motors Corporation Executive Order No.: A-6-417

Engine Family: JGM05.7AGAX Exhaust Emission Control System: AIP/EGR

Liter (CID): 5.7 (350)

ENG MODEL (ENG CODE)	MAXIMUM RATED HP AT RPM	RATED TORQUE AT RPM	IGNITION SYS (DISTRIBUTOR) MFR PART NO.	FUEL SYSTEM (CARBURETOR) MFR PART NO.	EGR VALVE MFR PART NO.	CATALYST MFR PART NO.
LT9 (1)	185 @ 3600	285 @ 2400	Delco Remy 1103606	Rochester 17088040, 17088041	17084724, 17085920	NA
LF5 (2)	170 @ 3800	280 @ 2400	Delco Remy 1103606	Rochester 17088079	17088093	NA
LF5 (3)	170 @ 3800	280 @ 2400	Delco Remy 1103606	Rochester 17088080	17088093	NA

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HEAVY-DUTY GASOLINE ENGINES

Manufacturer: General Motors Corporation Executive Order No.: A-6-417

Engine Family: JGM07.4AGAX Exhaust Emission Control System: AIP/EGR

Liter (CID): 7.4L (454), 7.0L (427), 6.0L (366)

ENG MODEL (ENG CODE)	MAXIMUM RATED HP AT RPM	RATED TORQUE AT RPM	IGNITION SYS (DISTRIBUTOR) MFR PART NO.	FUEL SYSTEM (CARBURETOR) MFR PART NO.	EGR VALVE MFR PART NO.	CATALYST MFR PART NO.
L86 (1) 366 CID	208 @ 3800	320 @ 2800	Delco Remy 1103751	Rochester 15572680	17088094	NA
L43 (2) 427 CID	225 @ 3800	355 @ 2400	Delco Remy 1103752	Rochester 15572681	17088094	NA
LE8 (1) 454 CID	230 @ 3800	370 @ 2800	Delco Remy 1103717	Rochester 17085212, 17085004	17085919	NA

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HEAVY-DUTY GASOLINE ENGINES

Manufacturer: General Motors Corporation Executive Order No.: A-6-417

Engine Family: JGM04.8ABA9 Exhaust Emission Control System: AIP/EGR

Liter (CID): 4.8L (292)

ENG MODEL (ENG CODE)	MAXIMUM RATED HP AT RPM	RATED TORQUE AT RPM	IGNITION SYS (DISTRIBUTOR) MFR PART NO.	FUEL SYSTEM (CARBURETOR) MFR PART NO.	EGR VALVE MFR PART NO.	CATALYST MFR PART NO.
L25 (1)	125 @ 4000	215 @ 800	Delco Remy 1103719	Rochester 17086096, 17086101	NA	NA