

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-6-432-B  
Relating to Certification of New Motor Vehicles

GENERAL MOTORS CORPORATION

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 General Motors Corporation exhaust emission control systems are certified as described below for gasoline-powered passenger cars:

<u>Engine Family</u>	<u>Displacement Liters (Cubic Inches)</u>	<u>Exhaust Emission Control Systems (Special Features)</u>
K1G3.1W8XGZ9	2.8 (173)	Exhaust Gas Recirculation Three-Way Catalyst Oxygen Sensor (Electronic Port Fuel Injection)

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 (Grams per Mile)</u>	<u>Carbon Monoxide (Grams per Mile)</u>	<u>Nitrogen Oxides (Grams per Mile)</u>
0.39	7.0	0.4

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

<u>Hydrocarbons (Grams per Mile)</u>	<u>Carbon Monoxide (Grams per Mile)</u>	<u>Nitrogen Oxides (Grams per Mile)</u>
0.22	2.4	0.2

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.

17-K1G3.1W8XGZ9-11A

(For CARB Use Only)

(1989)

## AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

Manufacturer: General Motors Corporation      Executive Order No.: A-6-432-B  
 Engine Family: K1G3.1W8XGZ9      Evaporative Family: KBO-1L  
 Engine Displacement Liters (Cubic Inches) - Type: 2.8 (173)  
 Exhaust Emission Control System (Special Features): EGR-TWC-OS (EPFI)

## ABBREVIATIONS:

Ignition System

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

Fuel System

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

Other Abbreviations

A/C-Air Conditioning  
 CID Cubic Inch Displacement  
 ETW-Equivalent Test Weight  
 FC-Forward Control  
 HD-Heavy Duty  
 RI-Rail & Injector  
 RWD-Rear Wheel Drive  
 FWD-Front Wheel Drive  
 4WD-Four Wheel Drive  
 TBI-Throttle Body Injection  
 4x2-Two Wheel Drive  
 4x4-Four Wheel Drive  
 6x4-Four Wheel Drive

Exhaust Emission Control System

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

Special Features

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

ISSUED: 001

REV. NO.:

0190V/11V

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.).

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 4th day of March, 1988.

  
K. D. Drachand, Chief  
Mobile Source Division

## 17-K1G3.1W8XGZ9-Index 1A

(For CARB Use Only)

(1989)

## SECTION 17

## C-P-C SUPPLEMENTAL DATA AND CERTIFICATION REVIEW SHEETS

<u>Section and Page No.</u>	<u>Rev. No. or Date</u>	<u>Item</u>
17-K1G3.1W8XGZ9-Index 1A 17-K1G3.1W8XGZ9-Index 2A	012	Table of Contents
17-K1G3.1W8XGZ9-1A	001	Supplemental Data Sheet
17-K1G3.1W8XGZ9-2A	001	Supplemental Data Sheet
17-K1G3.1W8XGZ9-3A	011	Supplemental Data Sheet
17-K1G3.1W8XGZ9-4A	001	Supplemental Data Sheet
17-K1G3.1W8XGZ9-4.1A	011	Supplemental Data Sheet
17-K1G3.1W8XGZ9-5A	011	Supplemental Data Sheet
17-K1G3.1W8XGZ9-6A	001	Supplemental Data Sheet
17-K1G3.1W8XGZ9-7A	008	Supplemental Data Sheet
17-K1G3.1W8XGZ9-8A	002	Supplemental Data Sheet
17-K1G3.1W8XGZ9-9A	001	Certification Review Sheet
17-K1G3.1W8XGZ9-10A	010	Certification Review Sheet
17-K1G3.1W8XGZ9-11A	001	Supplemental Data Sheet
17-K1G3.1W8XGZ9-12A	001	Supplemental Data Sheet
17-K1G3.1W8XGZ9-13A	011	Supplemental Data Sheet
17-K1G3.1W8XGZ9-13.1A	010	Supplemental Data Sheet
17-K1G3.1W8XGZ9-14A	012	Supplemental Data Sheet
17-K1G3.1W8XGZ9-14.1A	012	Supplemental Data Sheet
17-K1G3.1W8XGZ9-15A	001	Certification Review Sheet
17-K1G3.1W8XGZ9-16A	010	Certification Review Sheet

## NOTES:

- (1) See page one for abbreviations and family information.
- (2) Please refer to manufacturer's HP lists for correct dyno test HP settings based on model and equipment.
- (3) If two test weights are listed, the lower weight will be used for testing.
- (4) Letter derivative codes are the same as corresponding numeric codes except as indicated.

ISSUED: 02-02-88

REV. NO.: 001 007 (RC K1-074)  
002 (RC K1-026) 008 (Corr RC K1-074)  
003 (RC K1-023) 009 (RC K1-081)  
004 010 (RC K1-090)  
005 011 (RC K1-097)  
006 012

0190V/11V

17-K1G3.1W8XGZ9-12A

(For CARB Use Only)  
(1989)AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
GASOLINE-FUELED PASSENGER CARS

Executive Order No. A-6-432-B

VEHICLE MODELS:

1 J U 2 7 (EXAMPLE)Digit 1  
Selling Division1-Chevrolet  
2-Pontiac  
3-Oldsmobile  
4-Buick  
6-CadillacDigit 2 - Body DesignationA-Celebrity, 6000, Cutlass Ciera, Cutlass Cruiser, Century  
B-Caprice, Safari Wagon, Custom Cruiser, LeSabre/Electra Wagon  
C-Ninety-Eight Regency, Electra, DeVille, Fleetwood, Limousine  
D-Brougham  
E-Toronado, Riviera, Eldorado, Reatta  
F-Camaro, Firebird, Trans Am, Formula  
G-Monte Carlo, El Camino, Caballero  
H-Bonneville, Delta 88 Royale, LeSabre  
J-Cavalier, Sunbird, Firenza, Skyhawk, Cimarron  
K-Seville  
L-Corsica, Beretta  
N-Grand Am, Calais, Somerset/Skylark  
P-Fiero  
T-Lemans  
V-Allante  
W-Grand Prix, Regal, Cutlass Supreme  
Y-Corvette  
Z-Commercial ChassisDigit 3  
Trim LevelDigits 4 & 5 - Body Style07-2Dr Sport Coupe  
08-2Dr Hatchback Coupe  
11-2Dr Notchback Coupe/Sedan  
19-4Dr Sedan  
23-4Dr Auxiliary Seat Sedan  
27-2Dr (Notchback) Coupe  
33-4Dr Auxiliary Seat Sedan  
35-4Dr Station Wagon  
37-2Dr Hardtop Coupe47-2Dr Hardtop Coupe  
57-2Dr Hardtop Coupe  
67-2Dr Convertible Coupe  
68-4Dr Hatchback Sedan  
69-4Dr (Notchback) Sedan  
77-2Dr Hatchback Coupe  
80-2Dr Sedan Pickup  
87-2Dr Hatchback Coupe  
90-Commercial Chassis  
97-2Dr Hardtop Coupe

Engine: Front

Drive: FWD

ISSUED: 001

REV. NO.:

0190V/11V

17-K1G3.1W8XGZ9-13A

(For CARB Use Only)

(1989)

AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

PASSENGER CARS X LIGHT DUTY TRUCKS\_\_\_ MEDIUM DUTY VEHICLES\_\_\_ GAS X DIESEL\_\_\_

Liters (CID): 2.8 (173) Type: V6 (RPO:LB6) Executive Order No. A-6-432-B

NX Std: 0.4 Exh Emiss Cont Sys: EGR-TWC-OS (EPFI)

ENG CODE	VEH MODELS	TRANS TYPE	ETW	IGN SYSTEM (ECU) PART NO.	FUEL SYSTEM (EPFI) PART NO.	EGR VALVE PART NO.	CATALYST PART NO.	TLC
51	1AW19 1AW27 2AJ69 2AF69 3AJ37 3AM37 3AJ69 3AM69 4AH37 4AL37 4AH69 4AL69	A3	3250	16076661*	17087247	17087106	25104584	DBC
51E				16138031***				
52	1AW19 1AW27 2AF69 3AJ37 3AM37 3AJ69 4AH37 4AL37 4AH69 4AL69 2AE69 3AM69 1AW35 2AJ35	A4		16076741**				
			3375					
			3500					

52E

16138951\*\*\*\*

- \* Optional ECU for B-O-C models is Part No. 16076851.
- \*\* Optional ECU for B-O-C models is Part No. 16076861.
- \*\*\* Optional ECU for B-O-C models is Part No. 16138081.
- \*\*\*\* Optional ECU for B-O-C models is Part No. 16138091.

ISSUED: 02-02-88

REV. NO.: 001 011  
005

0190V/11V

17-K1G3.1W8XGZ9-13.1A

(For CARB Use Only)

(1989)

AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

PASSENGER CARS X LIGHT DUTY TRUCKS\_\_\_ MEDIUM DUTY VEHICLES\_\_\_ GAS X DIESEL\_\_\_

Liters (CID): 2.8 (173) Type: V6 (RPO:LB6) Executive Order No. A-6-432-B

NX Std: 0.4 Exh Emiss Cont Sys: EGR-TWC-OS (EPFI)

ENG CODE	VEH MODELS	TRANS TYPE	ETW	IGN SYSTEM (ECU) PART NO.	FUEL SYSTEM (EPFI) PART NO.	EGR VALVE PART NO.	CATALYST PART NO.	TLC
51A	1AW19 1AW27 2AJ69 2AF69 3AJ37 3AM37 3AJ69 3AM69 4AH37 4AL37 4AH69 4AL69	A3	3250	16125591*, 16132281*	17087247	17087106	25104584	DBC
51D				16134521***				
52A	1AW19 1AW27 2AF69 3AJ37 3AM37 3AJ69 4AH37 4AL37 4AH69 4AL69 2AJ69 3AM69 1AW35 2AJ35	A4	3375  3500	16125611**, 16132301**				
52D				16134541****				

\* Optional ECU for B-O-C models is Part No. 16125641 or 16132331.

\*\* Optional ECU for B-O-C models is Part No. 16125651 or 16132341.

\*\*\* Optional ECU for B-O-C models is Part No. 16134571.

\*\*\*\* Optional ECU for B-O-C models is Part No. 16134581.

ISSUED: 003

REV. NO.: 005, 006, 009, 010

0190V/11V

17-K1G3.1W8XGZ9-14A

(For CARB Use Only)

(1989)

AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

PASSENGER CARS X LIGHT DUTY TRUCKS\_\_\_ MEDIUM DUTY VEHICLES\_\_\_ GAS X DIESEL\_\_\_

Liters (CID): 2.8 (173) Type: V6 (RPO:LB6) Executive Order No. A-6-432-B

NX Std: 0.4 Exh Emiss cont Sys: EGR-TWC-OS (EPFI)

ENG CODE	VEH MODELS	TRANS TYPE	ETW	IGN SYSTEM (ECU) PART NO.	FUEL SYSTEM (EPFI) PART NO.	EGR VALVE PART NO.	CATALYST PART NO.	TLC
52	2AF35 3AJ35 3AM35 4AH35	A3	3500	16076741**	17087247	17087106	25104584	DBC
52E				16138051***				
64	2WJ37 2WK37 3WH47 3WS47 4WB57 4WD57 2WP37 3WR47		3625	16070101			25104596	DBH
72	1LV37 1LW37 1LT68 1LT69 1LZ69		3125	16076931			25104588	DBD
81	1JC35 6JG69		3000 3125	16077031			25104590	DDC
82	1JF37 1JF67		3000 3125				25104592	DDC

\*\* Optional ECU for B-O-C models is Part No. 16076861.

\*\*\* Optional ECU for B-O-C models is Part No. 16138091.

ISSUED: 02-02-88

REV. NO.: 001  
011  
012

0190V/11V



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(1989)

## AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

PASSENGER CARS X LIGHT DUTY TRUCKS\_\_\_ MEDIUM DUTY VEHICLES\_\_\_ GAS X DIESEL\_\_\_

Liters (CID): 2.8 (173)

Type: V6 (RPO:LB6)

Executive Order No. A-6-432-B

NX Std: 0.4

Exh Emiss Cont Sys: EGR-TWC-OS (EPFI)

ENG CODE	VEH MODELS	TRANS TYPE	ETW	IGN SYSTEM (ECU) PART NO.	FUEL SYSTEM (EPFI) PART NO.	EGR VALVE PART NO.	CATALYST PART NO.	TLC
52A	2AF35 3AJ35 3AM35 4AH35	A3	3500	16125611**, 16132301**	17087247	17087106	25104584	DBC
52D				16134541***				
64A	2WJ37 2WK37 3WH47 3WS47 4WB57 4WD57 2WP37 3WR47		3625	16125771, 16132561			25104596	DBH
64D				16134701				
64E				16138141				
72A	1LV37 1LW37 1LT68 1LT69 1LZ69		3125	16125671, 16132501			25104588	DBD
72D				16134641				
72E				16139581				
81A	1JC35 6JG69		3000 3125	16125711, 16132441 16134601			25104590	DDC
81D				16138131				
81E				16138131				
82A	1JF37 1JF67		3000 3125	16125711 16132441 16134601			25104592	DDC
82D				16138131				
82E				16138131				

\*\* Optional ECU for B-O-C models is Part No. 16125651 or 16132341.

\*\* Optional ECU for B-O-C models is Part No. 16134581.