

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-13-50  
Relating to Certification of New Heavy-Duty Motor Vehicle Engines

CATERPILLAR, INC.

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 Orders G-45-3;

IT IS ORDERED AND RESOLVED: That the following Caterpillar Inc. 1988 model-year diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating GVWR over 14,000 pounds.

<u>Engine Family</u>	<u>Displacement Liters (Cubic Inches)</u>	<u>Exhaust Emission Control Systems (Special Features)</u>
JCT0636EPB2	10.4 (636)	Engine Modification Smoke Puff Limiter (Diesel Injection - Direct) (Turbocharger)
JCT0636FPA4	10.4 (636)	Engine Modification Smoke Puff Limiter (Intercooler) (Turbocharger) (Diesel Injector - Direct)

Engine models and codes are listed on attachments.

The following are the emission standards for these engine families:

<u>Hydrocarbons gm/bhp-hr</u>	<u>Carbon Monoxide gm/bhp-hr</u>	<u>Nitrogen Oxides gm/bhp-hr</u>	<u>Particulates gm/bhp-hr</u>
1.3	15.5	6.0	0.60

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

<u>Engine Family</u>	<u>Hydrocarbons gm/bhp-hr</u>	<u>Carbon Monoxide gm/bhp-hr</u>	<u>Nitrogen Oxides gm/bhp-hr</u>	<u>Particulates gm/bhp-hr</u>
JCT0636EPB2	1.2	2.5	5.4	0.60
JCT0636FPA4	1.2	2.7	4.4	0.60

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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.

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

Executed at El Monte, California this 10<sup>th</sup> day of December, 1987.



K. D. Drachand, Chief  
Mobile Source Division

## 1988 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

Manufacturer Caterpillar Inc. Engine Family JCT0636EPB2 Codes A and B  
 Evaporative Family NA Engine Type V8  
 Liters (CID) 10.4 (636)

## ABBREVIATIONS

<u>Ignition System</u>	<u>Exhaust Emissions Control System</u>	<u>Special Features</u>
CA -Centrifugal Advance	AIP -Air Injection-Pump	CCV -Combustion Chamber Valve
ECU -Electronic Control Unit	AIV -Air Injection-Valve	CFI -Central Fuel Injection or Throttle Body Injection
EI -Electronic Ignition	DBC -Dual Bed Catalyst	DID -Diesel Injection-Direct
ESAC-Electronic Spark Advance Control	EGR -Exhaust Gas Recirculation	DIP -Diesel Injection-Prechamber
VA -Vacuum Advance	EIC -Electronic Injection Control	EFI -Electronic Fuel Injection
VR -Vacuum Retard	EM -Engine Modification	IC -Intercooler or Aftercooler
	OC -Oxidation Catalyst	MFI -Mechanical Fuel Injection
	OS -Oxygen Sensor	OBD -On-Board Diagnostics
	HOS -Heated Oxygen Sensor	TC -Turbocharger
	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	

Fuel System

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

VEHICLE MODELS:

Engine: Front \_\_\_\_\_ Mid. \_\_\_\_\_ Rear \_\_\_\_\_  
 Drive: FWD \_\_\_\_\_ RWD \_\_\_\_\_ 4WD Full Time \_\_\_\_\_ 4WD Part Time \_\_\_\_\_

1988 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Inc. Engine Family JCT0636EPB2 Codes A and B  
 Liter (CID) 10.4 (636) Engine Type V8  
 Emission Control Sys. and (Special Features) EM, SPL (DID, TC)

Engine Model	Fuel Injection Pump Manufacturer Part Number	Injector Manufacturer Part Number	Maximum Rated hp at rpm	Fuel Rate mm <sup>3</sup> /stroke (lbs/hr)	Maximum Rated Torque at RPM	Fuel Rate mm <sup>3</sup> /stroke (lbs/hr)
3208 DIT Code A	*Caterpillar 7C8970 or 9Y4547	Caterpillar 4W7016	225 @ 2600	75 (87.5)	600 @ 1400	87 (54.6)
			210 @ 2600	68 (79.3)	560 @ 1400	80 (50.2)
Code B	*Caterpillar 9Y0592	Caterpillar 4W7016	240 @ 2200	90 (88.8)	680 @ 1500	105 (70.7)
			225 @ 2200	84 (82.6)	635 @ 1500	94 (63.2)
			215 @ 2200	79 (78.4)	600 @ 1400	88 (55.3)
			175 @ 2200	65 (64.2)	500 @ 1400	72 (45.2)
			240 @ 2100	93 (87.6)	700 @ 1500	108 (72.8)
			230 @ 2100	90 (84.5)	664 @ 1500	99 (66.5)
			200 @ 2000	79 (70.9)	620 @ 1400	92 (57.6)

\*Basic Fuel Pump 7C8930 (Reference Page No. 16.05.01-0636EPB-1).

Date of Issue 09 NOV 87 Revisions:

## 1988 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

Manufacturer Caterpillar Inc. Engine Family JCT0636FPA4 Codes A and B  
 Evaporative Family NA Engine Type V8  
 Liters (CID) 10.4 (636)

## ABBREVIATIONS

<u>Ignition System</u>	<u>Exhaust Emissions Control System</u>	<u>Special Features</u>
CA -Centrifugal Advance	AIP -Air Injection-Pump	CCV -Combustion Chamber Valve
ECU -Electronic Control Unit	AIV -Air Injection-Valve	CFI -Central Fuel Injection or Throttle Body Injection
EI -Electronic Ignition	DBC -Dual Bed Catalyst	DID -Diesel Injection-Direct
ESAC-Electronic Spark Advance Control	EGR -Exhaust Gas Recirculation	DIP -Diesel Injection-Prechamber
VA -Vacuum Advance	EIC -Electronic Injection Control	EFI -Electronic Fuel Injection
VR -Vacuum Retard	EM -Engine Modification	IC -Intercooler or Aftercooler
	OC -Oxidation Catalyst	MFI -Mechanical Fuel Injection
	OS -Oxygen Sensor	OBD -On-Board Diagnostics
	HOS -Heated Oxygen Sensor	TC -Turbocharger
	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	

Fuel System

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

VEHICLE MODELS:

Engine: Front \_\_\_\_\_ Mid. \_\_\_\_\_ Rear \_\_\_\_\_  
 Drive: FWD \_\_\_\_\_ RWD \_\_\_\_\_ 4WD Full Time \_\_\_\_\_ 4WD Part Time \_\_\_\_\_

1988 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Inc. Engine Family JCT0636FPA4 Codes A and B  
 Liter (CID) 10.4 (636) Engine Type V8  
 Emission Control Sys. and (Special Features) EM, SPL (IC, TC, DID)

Engine Model	Fuel Injection Pump Manufacturer Part Number	Injector Manufacturer Part Number	Maximum Rated hp at rpm	Fuel Rate mm <sup>3</sup> /stroke (lbs/hr)	Maximum Rated Torque at RPM	Fuel Rate mm <sup>3</sup> /stroke (lbs/hr)
3208T ATAAC Code A	*Caterpillar 7C8970	Caterpillar 4W7016	300 @ 2800	95 (120.0)	743 @ 1600	110 (79.1)
			275 @ 2600	87 (101.6)	700 @ 1400	106 (66.4)
Code B	*Caterpillar 7C8968	Caterpillar 4W7016	250 @ 2200	90 ( 88.7)	715 @ 1500	108 (72.4)
			225 @ 2200	80 ( 79.0)	680 @ 1400	103 (64.4)
			225 @ 2200	80 ( 79.0)	630 @ 1400	93 (58.5)

\*Basic Fuel Pump 7C8930 (Reference Page No. 16.05.01-0636FPA-1).

Date of Issue 09 NOV 87 Revisions: