

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-13-57
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 Order G-45-3;

IT IS ORDERED AND RESOLVED: That the following Caterpillar, Inc. 1991 model-year diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 8,500 pounds:

Engine Family	Displacement		Exhaust Emission Control Systems
	Liters	(Cubic Inches)	
MCT0403FZC1	6.6	(403)	Smoke Puff Limiter Charge Air Cooler Turbocharger
MCT0403FZD2	6.6	(403)	Smoke Puff Limiter Charge Air Cooler Turbocharger
MCT0629FZD4	10.3	(629)	On-Board Diagnostic System /ECM Charge Air Cooler Turbocharger
MCT0893FZD5	14.6	(893)	On-Board Diagnostic System /ECM Charge Air Cooler Turbocharger
MCT0893FPBX	14.6	(893)	Smoke Puff Limiter Charge Air Cooler Turbocharger

Engine models and codes are listed on attachments.

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

Hydrocarbons <u>gm/bhp-hr</u>	Carbon Monoxide <u>gm/bhp-hr</u>	Nitrogen Oxides <u>gm/bhp-hr</u>	Particulates <u>gm/bhp-hr</u>
1.3	15.5	5.0	0.25

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

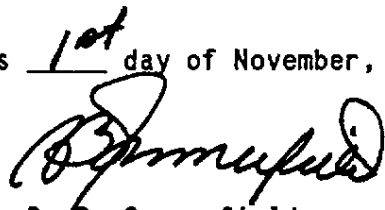
<u>Engine Family</u>	<u>Hydrocarbons gm/bhp-hr</u>	<u>Carbon Monoxide gm/bhp-hr</u>	<u>Nitrogen Oxides gm/bhp-hr</u>	<u>Particulates gm/bhp-hr</u>
MCT0403FZC1	0.9	1.3	4.9	0.21
MCT0403FZD2	0.3	1.2	4.7	0.20
MCT0629FZD4	0.2	3.5	4.4	0.25
MCT0893FZD5	0.4	1.6	4.8	0.23
MCT0893FPBX	0.3	1.3	5.0	0.25

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 (Health and Safety Code Section 43205.5 and Title 13, California Code of Regulations, 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 attachments.

Executed at El Monte, California this 1st day of November, 1990.



R. B. Summerfield
Assistant Division Chief
Mobile Source Division

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1991 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

MHDD

HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Inc. Engine Family MCT0403FZC1

Liter (CID) 6.6 (403) Engine Type 16

Emission Control Sys. and (Special Features) EM, SPL (TC,CAC,DI)

(Use abbreviations per SAE J1930 JUN 88)

Engine Model (Eng. Code)	Fuel Pump* MFR. P/N	Injector MFR. P/N	Rated HP @ RPM	Fuel Rate @ Rated HP mm ³ /stroke	Part. Trap/ Catalyst MFR. P/N
3116 (A)	4P1486	4P1735	185 @ 2600	85	---
(A)	4P1486	4P1735	185 @ 2600	85	---
(B)	4P1486	4P1735	170 @ 2600	78	---

Revisions:
042090

*Basic Fuel Pump 4P1734 (Reference Page No. 16.04-0403FZC-1).

Revision No. 1 - 17 DEC 90

1991 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY DIESEL ENGINES

MHDDManufacturer Caterpillar Inc. Engine Family MCT0403FZD2Liter (CID) 6.6 (403) Engine Type 16Emission Control Sys. and (Special Features) EM, SPL (TC,CAC,DI)

(Use abbreviations per SAE J1930 JUN 88)

Engine Model (Eng. Code)	Fuel Pump* MFR. P/N	Injector MFR. P/N	Rated HP @ RPM	Fuel Rate @ Rated HP mm ³ /stroke	Part. Trap/ Catalyst MFR. P/N
3116 (A)	7E6193	7E6396	250 @ 2600	109	---
(B)	7E6193	7E6396	215 @ 2600	94	---

*Basic Fuel Pump 4P2995

(Reference Page No. 16.04-0403FZD-1).

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Revisions: No. 1 04 OCT 90
No. 2 17 DEC 90

1991 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HHDD

HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Inc. Engine Family MCT0629FZD4Liter (CID) 10.3 (629) Engine Type I6Emission Control Sys. and (Special Features) EM (TC,CAC,OBD,MPI)

(Use abbreviations per SAE J1930 JUN 88)

Engine Model (Eng. Code)	Fuel Pump MFR. P/N	Injector MFR. P/N	Rated HP @ RPM	Fuel Rate @ Rated HP mm ³ /stroke	Part. Trap/ Catalyst MFR. P/N
3176 (A)	4P0509*	4P9310	250 @ 2100	115	---
	4P0509*	4P9310	250 @ 2100	115	---
	4P0509*	4P9310	250 @ 2000	119	---
	4P0509*	4P9310	250 @ 1900	124	---
	4P0509*	4P9310	250 @ 1800	130	---
	4P0509*	4P9310	250 @ 1800	130	---
(G)	4P0509*	4P9310	275 @ 2100	124	---
	4P0509*	4P9310	275 @ 2100	124	---
	4P0509*	4P9310	275 @ 2000	129	---
	4P0509*	4P9310	275 @ 1900	134	---
	4P0509*	4P9310	275 @ 1800	141	---
(H)	4P0509*	4P9310	300 @ 2100	135	---
	4P0509*	4P9310	300 @ 2100	135	---
	4P0509*	4P9310	300 @ 2000	141	---
	4P0509*	4P9310	300 @ 1900	146	---
	4P0509*	4P9310	300 @ 1800	153	---
	4P0509*	4P9310	285 @ 1800	146	---
(F)	4P0510**	4P9320	325 @ 2100	145	---
	4P0510**	4P9320	325 @ 2000	151	---
	4P0510**	4P9320	325 @ 1900	158	---
	4P0510**	4P9320	325 @ 1800	166	---

Revisions:

042090

*Basic Fuel Pump 4P9510
 **Basic Fuel Pump 4P9520

(Reference Page No. 16.04-0403FZD-1).

Revision No: 1 (04 FEB 91)

2 (13 FEB 91)

3 (18 FEB 91)

4 (01 MAR 91)

5 (05 APR 91)

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1991 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY DIESEL ENGINES

HHDD

Manufacturer Caterpillar Inc. Engine Family MCT0629FZD4
 Liter (CID) 10.3 (629) Engine Type I6
 Emission Control Sys. and (Special Features) EM (TC,CAC,OBD,MPI)

(Use abbreviations per SAE J1930 JUN 88)

Engine Model (Eng. Code)	Fuel Pump MFR. P/M	Injector MFR. P/M	Rated HP @ RPM	Fuel Rate @ Rated HP mm ³ /stroke	Part. Trap/ Catalyst MFR. P/M
3176 (J)	4P0509*	4P9310	250 @ 2100	115	---
	4P0509*	4P9310	250 @ 2100	115	---
	4P0509*	4P9310	250 @ 2000	120	---
	4P0509*	4P9310	250 @ 1900	125	---
	4P0509*	4P9310	250 @ 1800	130	---
	4P0509*	499310	250 @ 1800	130	---
(G)	4P0509*	4P9310	275 @ 2100	124	---
	4P0509*	4P9310	275 @ 2100	124	---
	4P0509*	4P9310	275 @ 2000	129	---
	4P0509*	4P9310	275 @ 1900	134	---
	4P0509*	4P9310	275 @ 1800	141	---
(H)	4P0509*	4P9310	300 @ 2100	135	---
	4P0509*	4P9310	300 @ 2100	135	---
	4P0509*	4P9310	300 @ 2000	141	---
	4P0509*	4P9310	300 @ 1900	146	---
	4P0509*	4P9310	300 @ 1800	153	---
	4P0509*	4P9310	285 @ 1800	146	---
(F)	4P0510**	4P9320	325 @ 2100	145	---
	4P0510**	4P9320	325 @ 2000	151	---
	4P0510**	4P9320	325 @ 1900	158	---
	4P0510**	4P9320	325 @ 1800	166	---
(K)	4P0510**	4P9320	350 @ 1900	172	---

Revisions: 042090

*Basic Fuel Pump 4P9510 (Reference Page No. 16.04-0403FZD-1).
 **Basic Fuel Pump 4P9520 Revision No: 1 (04 FEB 91)
 2 (13 FEB 91)
 3 (18 FEB 91)
 4 (01 MAR 91)
 5 (05 APR 91)
 6 (17 MAY 91)
 7 (15 MAR 94)

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1991 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HHDD

HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Inc. Engine Family MCT0893FZD5

Liter (CID) 14.6 (893) Engine Type 16

Emission Control Sys. and (Special Features) EM (DI,TC,CAC,OB)

(Use abbreviations per SAE J1930 JUN 88)

Engine Model (Eng. Code)	Fuel Pump* MFR. P/N	Injector MFR. P/N	Rated HP @ RPM	Fuel Rate @ Rated HP mm /stroke	Part. Trap/ Catalyst MFR. P/N
3406B PEEC					
A	4P1406 or 4P1407	7W7040	310 @ 1900	169	---
A	4P1406 or 4P1407	7W7040	310 @ 1800	174	---
A	4P1406 or 4P1407	7W7040	320 @ 1800	180	---
A	4P1406 or 4P1407	7W7040	310 @ 1800	174	---
B	4P1406 or 4P1407	7W7043	350 @ 2000	185	---
B	4P1406 or 4P1407	7W7043	350 @ 1800	198	---
B	4P1406 or 4P1407	7W7043	330 @ 1800	187	---
B	4P1406 or 4P1407	7W7043	350 @ 1800	198	---
B	4P1406 or 4P1407	7W7043	350 @ 1800	198	---
C	4P1406 or 4P1407	7W7042	400 @ 2000	197	---
C	4P1406 or 4P1407	7W7042	400 @ 1800	215	---
C	4P1406 or 4P1407	7W7042	375 @ 1800	201	---
D	4P1406 or 4P1407	7W7041	425 @ 2000	216	---
D	4P1406 or 4P1407	7W7041	425 @ 1900	224	---
D	4P1406 or 4P1407	7W7041	425 @ 2000	216	---
D	4P1406 or 4P1407	7W7041	425 @ 1900	224	---
E	4P1406 or 4P1407	7W7041	425 @ 1800	235	---
E	4P1406 or 4P1407	7W7041	425 @ 1800	235	---
H	4P1406 or 4P1407	7W7042	460 @ 1900	243	---
H	4P1406 or 4P1407	7W7042	460 @ 1800	253	---

Revisions:
042090

*Basic Fuel Pump 4P1366

(Reference Page No. 16.04-0893FZD-1).

Revision No. 1 20 DEC 90

1991 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

H1400

Manufacturer Caterpillar Inc. Engine Family MCT0893FPBX

Liter (CID) 14.6 (893) Engine Type 16

Emission Control Sys. and (Special features) EM,SPL (DI,TC,CAC)

(Use abbreviations per SAE J1930 JUN 88)

Engine Model (Eng. Code)	Fuel Pump MFR. P/N	Injector MFR. P/N	Rated HP @ RPM	Fuel Rate @ Rated HP mm ³ /stroke	Part. Trap/ Catalyst MFR. P/N
3406B ATAAC (A)	4P1387(1)	7W7040	320 @ 1800	179	---
	4P1387(1)	7W7040	310 @ 1800	173	---
	4P1387(1)	7W7040	300 @ 1800	168	---
	4P1388 or 4P2044(1)	7W7040	285 @ 1675	168	---
	4P1388 or 4P2044(1)	7W7040	280 @ 1600	173	---
(B)	4P2046 (5)	7W7043	350 @ 1950	184	---
(C)	4P2045(2)	7W7047	350 @ 1800	198	---
(D)	4P2045(2)	7W7043	330 @ 1800	186	---
(E)	4P1370 or 4P1371(2)	7W7043	330 @ 1600	204	---
(F)	4P1391(3)	7W7042	400 @ 2000	196	---
	4P1402(3)	7W7042	375 @ 1800	202	---
(G)	4P1398(3)	7W7041	425 @ 2000	209	---
	4P1402(3)	7W7041	415 @ 1800	222	---
(H)	4P1390(4)	7W7041	425 @ 2000	213	---
	4P1389(4)	7W7041	425 @ 1900	222	---
	4P1397(4)	7W7041	425 @ 1800	231	---

- (1) Basic Fuel Pump 4P1355
- (2) Basic Fuel Pump 4P1378
- (3) Basic Fuel Pump 4P4697
- (4) Basic Fuel Pump 4P1356
- (5) Basic Fuel Pump 4P1357

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(Reference Page No. 16.04-0893FPB-1).

Revision : No. 1 OCT 4, 1990
No. 2 JAN 11, 1991
No. 3 FEB 1, 1991
No. 4 MAR 11, 1991