

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-13-59
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. 1992 model diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 8,500 pounds:

Fuel Type: Diesel Fuel

<u>Engine Family</u>	<u>Liters (Cubic Inches)</u>		<u>Exhaust Emission Control Systems and Special Features</u>
NCT0403FZC0	6.6	403	Smoke Puff Limiter Charge Air Cooler Turbocharger
NCT0403FZD1	6.6	403	Smoke Puff Limiter Charge Air Cooler Turbocharger
NCT0403FZE2	6.6	403	Smoke Puff Limiter Charge Air Cooler Turbocharger
NCT0629FZD3	10.3	629	Powertrain Control Module Charge Air Cooler Turbocharger
NCT0893FZD4	14.6	893	Powertrain Control Module Charge Air Cooler Turbocharger
NCT0893FPB9	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 in grams per brake-horsepower-hour:

<u>Total Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Particulates</u>
1.3	15.5	5.0	0.25

The following are the certification emission values for these engine families in grams per brake-horsepower-hour:

<u>Engine Family</u>	<u>Total Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Particulates</u>
NCT0403FZCO	0.6	0.8	4.6	0.19
NCT0403FZD1	0.3	1.2	4.7	0.20
NCT0403FZE2	0.2	1.3	4.4	0.21
NCT0629FZD3	0.2	3.1	4.5	0.20
NCT0893FZD4	0.4	1.6	4.8	0.23
NCT0893FPB9	0.3	1.3	5.0	0.25

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2035 et seq.).

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 ^{21st} day of May, 1991.



R. B. Summerfield
Assistant Division Chief
Mobile Source Division

10-9-92

1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY DIESEL ENGINES

MHDDManufacturer Caterpillar Inc. Engine Family NCT0403FZD1Liter (CID) 6.6 (403) Engine Type I6Emission 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	---
(C)	7E6193*	7E6396	250 @ 2600	110	---
(D)	7E6193*	7E6396	275 @ 2450	125	---
(E)	100-4774** 100-4774**	100-5369 100-5369	200 @ 2600 200 @ 2600	87 87	---

*Basic Fuel Pump 4P2995

**Basic Fuel Pump 1005368

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

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1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY DIESEL ENGINES

MHDDManufacturer Caterpillar Inc. Engine Family NCT0403FZD1Liter (CID) 6.6 (403) Engine Type I6Emission Control Sys. and (Special Features) 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 @ Gated 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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1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY DIESEL ENGINES

MHDDManufacturer Caterpillar Inc. Engine Family NCT0403FZE2Liter (CID) 6.6 (403) Engine Type 16Emission Control Sys. and (Special Features) 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	290 @ 2600	130	---
(B)	7E6193	7E6396	225 @ 2600	98	---

*Basic Fuel Pump 4P2995

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

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1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY DIESEL ENGINES

MHDD

Manufacturer Caterpillar Inc. Engine Family NCT0403FZE2

Liter (CID) 6.6 (403) Engine Type I6

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 /stroke	Part. Trap/ Catalyst MFR. P/N
3116 (A)	7E6193	7E6396	290 @ 2600	127	---
(B)	7E6193	7E6396	225 @ 2600	98	---
(C)	7E6193	7E6396	300 @ 2600	131	---

*Basic Fuel Pump 4P2995

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1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HHDD

HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Inc. Engine Family NCT0629FZD3
 Liter (CID) 10.3 (629) Engine Type 16
 Emission Control Sys. and (Special Features) IC,CAC PCME

(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
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	---
(B)	4P0509*	4P9310	275 @ 2100	125	---
	4P0509*	4P9310	275 @ 2100	125	---
	4P0509*	4P9310	275 @ 2000	129	---
	4P0509*	4P9310	275 @ 1900	135	---
	4P0509*	4P9310	275 @ 1800	141	---
(C)	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	---
(D)	4P0510**	4P9320	325 @ 2100	145	---
	4P0510**	4P9320	325 @ 2000	151	---
	4P0510**	4P9320	325 @ 1900	158	---
	4P0510**	4P9320	325 @ 1800	166	---

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

(Reference Page No. 16.04-0403FZD-1).
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1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

HEAVY-DUTY DIESEL ENGINES

HHDD

Manufacturer Caterpillar Inc. Engine Family NCT0629FZD3
 Liter (CID) 10.3 (629) Engine Type 16
 Emission Control Sys. and (Special Features) TC,CAC,PCME

(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 @ Gated HP mm ³ /stroke	Part. Trap/ Catalyst MFR. P/N
3176 (E)	4P0509 (1)	4P9310	350 @ 1900	173	---
	4P0509 (1)	4P9310	350 @ 1800	181	---
	4P0509 (1)	4P9310	350 @ 1900	173	---
	4P0509 (1)	4P9310	350 @ 1800	181	---
(F)	612869 (2)	612880	275 @ 2100	128	---
	612869 (2)	612880	275 @ 2100	128	---
	612869 (2)	612880	275 @ 1800	144	---
(G)	612869 (2)	612880	300 @ 2100	140	---
	612869 (2)	612880	300 @ 2100	140	---
	612869 (2)	612880	300 @ 1800	156	---
	612869 (2)	612880	285 @ 1800	148	---
(H)	612750 (3)	613010	325 @ 1800	183	---
(J)	4P9524 (4)	613020	350 @ 1800	185	---
	4P9524 (4)	613020	350 @ 1800	185	---

(1) Basic Fuel Pump 4P9510
 (2) Basic Fuel Pump 612870
 (3) Basic Fuel Pump 610910
 (4) Basic Fuel Pump 610920

(Reference Page No. 16.04-0629FZD-1).

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1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
 HEAVY-DUTY DIESEL ENGINES

H4DD

Manufacturer Caterpillar Inc. Engine Family NCT0893FZD4
 Liter (CID) 14.6 (893) Engine Type 16
 Emission Control Sys. and (Special Features) TC, CAC, PCME

(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
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	RESERVED				
C	4P1406 or 4P1407	7W7043	350 @ 2000	185	---
C	4P1406 or 4P1407	7W7043	350 @ 1800	198	---
C	4P1406 or 4P1407	7W7043	330 @ 1800	187	---
C	4P1406 or 4P1407	7W7043	350 @ 1800	198	---
C	4P1406 or 4P1407	7W7043	350 @ 1800	198	---
D	RESERVED				
E	4P1406 or 4P1407	7W7042	400 @ 2000	197	---
E	4P1406 or 4P1407	7W7042	400 @ 1800	215	---
E	4P1406 or 4P1407	7W7042	375 @ 1800	201	---
F	RESERVED				
G	4P1406 or 4P1407	7W7041	425 @ 2000	216	---
G	4P1406 or 4P1407	7W7041	425 @ 1900	224	---
G	4P1406 or 4P1407	7W7041	425 @ 2000	216	---
G	4P1406 or 4P1407	7W7041	425 @ 1900	224	---
H	4P1406 or 4P1407	7W7041	425 @ 1800	235	---
H	4P1406 or 4P1407	7W7041	425 @ 1800	235	---
I	RESERVED				
J	4P1406 or 4P1407	7W7042	460 @ 1900	243	---
J	4P1406 or 4P1407	7W7042	460 @ 1800	253	---

*Basic Fuel Pump 4P1366

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OR1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

HMDD

Manufacturer Caterpillar Inc. Engine Family NCT0893F2D4
 Liter (CID) 14.6 (893) Engine Type 16
 Emission Control Sys. and (Special Features) TC,CAC,PCME

(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 @ ³ gated HP mm /stroke	Part. Trap/ Catalyst MFR. P/N
3406B PEEC					
A	4P1406 or 4P1407	7W7040	310 @ 1900	165	---
A	4P1406 or 4P1407	7W7040	310 @ 1800	169	---
A	4P1406 or 4P1407	7W7040	320 @ 1800	175	---
A	4P1406 or 4P1407	7W7040	310 @ 1800	169	---
B	4P1406 or 4P1407	7W7040	310 @ 1800	169	---
B	4P1406 or 4P1407	7W7040	310 @ 1800	169	---
C	4P1406 or 4P1407	7W7043	350 @ 2000	185	---
C	4P1406 or 4P1407	7W7043	330 @ 1800	187	---
C	4P1406 or 4P1407	7W7043	350 @ 1800	198	---
D	4P1406 or 4P1407	7W7043	350 @ 1800	185	---
D	4P1406 or 4P1407	7W7043	350 @ 1800	185	---
E	4P1406 or 4P1407	7W7042	400 @ 2000	196	---
E	4P1406 or 4P1407	7W7042	400 @ 1800	212	---
E	4P1406 or 4P1407	7W7042	400 @ 1800	212	---
E	4P1406 or 4P1407	7W7042	375 @ 1800	197	---
E	4P1406 or 4P1407	7W7042	365 @ 1800	191	---
E	4P1406 or 4P1407	7W7042	365 @ 1800	191	---
F	4P1406 or 4P1407	7W7043	350 @ 2000	174	---
G	4P1406 or 4P1407	7W7041	425 @ 2000	204	---
G	4P1406 or 4P1407	7W7041	425 @ 2000	204	---
H	4P1406 or 4P1407	7W7041	425 @ 1800	222	---
H	4P1406 or 4P1407	7W7041	425 @ 1800	222	---
I	RESERVED				
J	4P1406 or 4P1407	7W7042	460 @ 1900	248	---
J	4P1406 or 4P1407	7W7042	460 @ 1800	253	---
K	4P1406 or 4P1407	7W7042	400 @ 1800	211	---
K	4P1406 or 4P1407	7W7042	365 @ 1800	191	---

*Basic Fuel Pump 4P1366

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1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINESLHDD

Manufacturer Caterpillar Inc. Engine Family NCT0893FZD4
 Liter (CID) 14.6 (893) Engine Type I6
 Emission Control Sys. and (Special Features) TC,CAC,PCME

(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 @ Gated HP mm ³ /stroke	Part. Trap/ Catalyst MFR. P/N
3406B PEEC					
A	4P1406 or 4P1407	7W7040	310 @ 1900	165	---
A	4P1406 or 4P1407	7W7040	310 @ 1800	169	---
A	4P1406 or 4P1407	7W7040	320 @ 1800	175	---
A	4P1406 or 4P1407	7W7040	310 @ 1800	169	---
B	4P1406 or 4P1407	7W7040	310 @ 1800	169	---
B	4P1406 or 4P1407	7W7040	310 @ 1800	169	---
C	4P1406 or 4P1407	7W7043	350 @ 2000	185	---
C	4P1406 or 4P1407	7W7043	330 @ 1800	187	---
C	4P1406 or 4P1407	7W7043	350 @ 1800	198	---
D	4P1406 or 4P1407	7W7043	350 @ 1800	185	---
D	4P1406 or 4P1407	7W7043	350 @ 1800	185	---
E	4P1406 or 4P1407	7W7042	400 @ 2000	196	---
E	4P1406 or 4P1407	7W7042	400 @ 1800	212	---
E	4P1406 or 4P1407	7W7042	400 @ 1800	212	---
E	4P1406 or 4P1407	7W7042	375 @ 1800	197	---
E	4P1406 or 4P1407	7W7042	365 @ 1800	191	---
E	4P1406 or 4P1407	7W7042	365 @ 1800	191	---
F	4P1406 or 4P1407	7W7043	350 @ 2000	174	---
G	4P1406 or 4P1407	7W7041	425 @ 2000	204	---
G	4P1406 or 4P1407	7W7041	425 @ 1900	211	---
G	4P1406 or 4P1407	7W7041	425 @ 2000	204	---
G	4P1406 or 4P1407	7W7041	425 @ 1900	211	---
H	4P1406 or 4P1407	7W7041	425 @ 1800	222	---
H	4P1406 or 4P1407	7W7041	425 @ 1800	222	---
I	RESERVED				
J	4P1406 or 4P1407	7W7042	460 @ 1900	248	---
J	4P1406 or 4P1407	7W7042	460 @ 1800	253	---
K	4P1406 or 4P1407	7W7042	400 @ 1800	211	---
K	4P1406 or 4P1407	7W7042	365 @ 1800	191	---

*Basic Fuel Pump 4P1366

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

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HEAVY-DUTY DIESEL ENGINESHHDDManufacturer Caterpillar Inc. Engine Family NCT0893FPB9Liter (CID) 14.6 (893) Engine Type 16Emission 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	181	---
	4P1387(1)	7W7040	310 @ 1800	175	---
	4P1387(1)	7W7040	300 @ 1800	170	---
	4P1388 or 4P2044(1)	7W7040	285 @ 1675	172	---
	4P1388 or 4P2044(1)	7W7040	280 @ 1600	177	---
(B)	4P2044(1)	7W7040	330 @ 1600	201	---
	4P2044(1)	7W7040	285 @ 1600	173	---
(C)	4P2046 (5)	7W7043	350 @ 1950	184	---
(D)	4P2045(2)	7W7047	350 @ 1800	199	---
(E)	4P2045(2)	7W7043	330 @ 1800	185	---
(F)	RESERVED				
(G)	4P1370 or 4P1371(2)	7W7043	330 @ 1600	208	---
(H)	4P1391(3)	7W7042	400 @ 2000	197	---
	4P1391(3)	7W7042	400 @ 1800	216	---
	4P1402(3)	7W7042	375 @ 1800	202	---
(I)	RESERVED				
(J)	4P1398(3)	7W7041	425 @ 2000	210	---
	4P1402(3)	7W7041	415 @ 1800	224	---
(K)	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

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

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1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

10-9-92

HHDD

Manufacturer Caterpillar Inc. Engine Family NCT0893FPB9Liter (CID) 14.6 (893) Engine Type 16Emission 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 (L)	4P1387(1) 4P1387(1) 4P1387(1) 4P1388 or 4P2044(1) 4P1388 or 4P2044(1)	7W7040	350 @ 1950	181	---
(M)	4P1387(1) 4P1387(1) 4P1387(1) 4P1388 or 4P2044(1) 4P1388 or 4P2044(1)	7W7040	350 @ 1800	196	---
(N)	4P1387(1) 4P1387(1) 4P1387(1) 4P1388 or 4P2044(1) 4P1388 or 4P2044(1)	7W7040	330 @ 1800	181	---
(O)	RESERVED	---	---	---	---
(P)	4P1387(1) 4P1387(1) 4P1387(1) 4P1388 or 4P2044(1) 4P1388 or 4P2044(1)	7W7040	330 @ 1600	202	---
(R)	1022896(1)	1007550	425 @ 2000 415 @ 1800	213 222	--- ---
(S)	1022896(1)	1007550	425 @ 2000 425 @ 1800	213 227	--- ---

(1) Basic Fuel Pump 4P1355

(Reference Page No. 16.04-0893FPB-3).

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1992 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Inc. Engine Family NCT0893FPB9

Liter (CID) 14.6 (893) Engine Type 16

Emission Control Sys. and (Special Features) EH,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 @ Gated HP mm ³ /stroke	Part. Trap/ Catalyst MFR. P/N
3406 ATAAC (T)	4P1387(1)	1007551	350 @ 1800	189	---
			330 @ 1800	176	---
			330 @ 1600	201	---

(1) Basic Fuel Pump 4P1355

(Reference Page No. 16.04-0893FPB-3).

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