

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-13-98

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-45-9;

IT IS ORDERED AND RESOLVED: That the following 1996 model-year Caterpillar, Inc. diesel-cycle engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds:

Fuel Type: Diesel

| <u>Engine Family</u> | <u>Engine Displacement<br/>Liters (Cubic Inches)</u> | <u>Exhaust Emission Control<br/>Systems and Special Features</u> |
|----------------------|--|--|
| TCP442DZDARK         | 7.1 (442)  | Turbocharger<br>Charge Air Cooler<br>Engine Control Module       |

Engine models and codes are listed on attachments.

The following are the certification exhaust emission standards for this engine family in grams per brake horsepower-hour:

| <u>Hydrocarbons</u> | <u>Carbon<br/>Monoxide</u> | <u>Nitrogen<br/>Oxides</u> | <u>Particulates</u> |
|---------------------|----------------------------|----------------------------|---------------------|
| 1.3                 | 15.5                       | 5.0                        | 0.10                |

The following are the certification exhaust emission values for this engine family in grams per brake horsepower-hour:

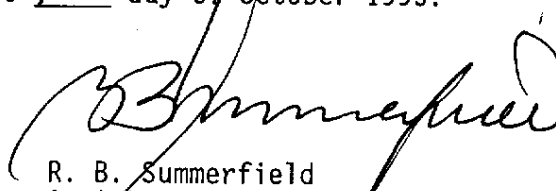
| <u>Engine<br/>Family</u> | <u>Hydrocarbons</u> | <u>Carbon<br/>Monoxide</u> | <u>Nitrogen<br/>Oxides</u> | <u>Particulates</u> |
|--------------------------|---------------------|----------------------------|----------------------------|---------------------|
| TCP442DZDARK             | 0.5                 | 0.8                        | 4.6                        | 0.08                |

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 12<sup>th</sup> day of October 1995.



R. B. Summerfield  
Assistant Division Chief  
Mobile Source Division

E.O. # A-13-98

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1996 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY DIESEL-STANDARD ENGINES

Manufacturer Caterpillar Inc. Engine Family TCP442DZDARK  
 Displacement 7.1 / Liters 442 / Cubic Inches  
 Maximum Rated Power: 300 HP @ 2200 RPM Engine Configuration: I6  
 Ignition: Compression X Compression with Glow Plug \_\_\_\_\_ Spark \_\_\_\_\_  
 Fuel Type (s): Dedicated \_\_\_\_\_ Flex-Fuel \_\_\_\_\_ Dual-Fuel \_\_\_\_\_ Diesel X M100 \_\_\_\_\_ M85 \_\_\_\_\_  
 CNG \_\_\_\_\_ LNG \_\_\_\_\_ LPG \_\_\_\_\_ Other (specify) \_\_\_\_\_  
 Diesel Cert Fuel: 13CCR 2282 40 CFR 86.1313-90 \_\_\_\_\_ 40 CFR 86.1313-94 X  
 Primary Intended Service Class: LHD \_\_\_\_\_ MHD X HHD \_\_\_\_\_ Urban Bus \_\_\_\_\_  
 Exhaust ECS (incl. MFI, TC, CAC) CAC, ECM, TC

(Use abbreviations per SAE J1930 SEP91)

| Engine Model<br>(Eng. Code) | Rated HP<br>@ RPM | Fuel Rate<br>@ Rated HP<br>mm <sup>3</sup> /stroke<br>(lbs/hr) | Fuel Pump<br>& Injector<br>Part No. | ECM/PCM<br>Part No. | EGR<br>Valve<br>Part No. | PTOX/<br>Catalytic<br>Converter<br>Part No. |
|-----------------------------|-------------------|--|-------------------------------------|---------------------|--------------------------|---|
| 3126 - 1                    | 300 @ 2200        | 143 (105.6)  | 116-7150                            | 126-5755            | ----                     | ----  |
| 3126 - 1                    | 300 @ 2200        | 143 (105.6)  | 116-7150                            | 126-5742            |                          |   |
| 3126 - 2                    | 275 @ 2200        | 129 (95.2)   | 116-7150                            | 126-5744            |                          |   |
| 3126 - 2                    | 275 @ 2200        | 129 (95.2)   | 116-7150                            | 126-5746            |                          |   |
| 3126 - 3                    | 250 @ 2200        | 116 (85.7)   | 116-7150                            | 126-5749            |                          |   |
| 3126 - 3                    | 250 @ 2200        | 116 (85.7)   | 116-7150                            | 126-5751            |                          |   |
| 3126 - 4                    | 230 @ 2200        | 106 (78.4)   | 116-7150                            | 126-5753            |                          |   |
| 3126 - 5                    | 210 @ 2200        | 100 (74.2)   | 119-3346                            | 124-8315            |                          |   |
| 3126 - 5                    | 210 @ 2200        | 94 (76.0)  | 119-3346                            | 124-8313            |                          |   |
| 3126 - 6                    | 190 @ 2200        | 100 (74.3)   | 119-3346                            | 124-8311            |                          |   |
| 3126 - 7                    | 175 @ 2200        | 86 (69.6)  | 119-3346                            | 124-8309            |                          |   |

|                 |            |  |  |  |  |  |  |
|-----------------|------------|--|--|--|--|--|--|
| ISSUE DATE      | 08 SEPT 95 |  |  |  |  |  |  |
| REVISION NUMBER |            |  |  |  |  |  |  |
| REVISION DATE   |            |  |  |  |  |  |  |

**1996 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY DIESEL-STANDARD ENGINES**

|                                  |                  |   |                            |              |   |                   |                          |
|----------------------------------|------------------|---|----------------------------|--------------|---|-------------------|--------------------------|
| Manufacturer                     | Caterpillar Inc. |   | Engine Family              | TCP442DZDARK |   |                   |                          |
| Displacement                     | 7.1              | / | Liters                     | 442          | / | Cubic Inches      |                          |
| Maximum Rated Power:             | 300              |   | HP @                       | 2200         |   | RPM               | Engine Configuration: I6 |
| Ignition: Compression            | X                |   | Compression with Glow Plug |              |   |                   | Spark                    |
| Fuel Type (s):                   | Dedicated        |   | Flex-Fuel                  |              |   | Dual-Fuel         |                          |
|                                  |                  |   | CNG                        |              |   | LNG               |                          |
|                                  |                  |   | LPG                        |              |   | Other (specify)   |                          |
| Diesel Cert Fuel:                | 13CCR 2282       |   | 40 CFR 86.1313-90          |              |   | 40 CFR 86.1313-94 | X                        |
| Primary Intended Service Class:  |                  |   | LHD                        |              |   | MHD               | X                        |
|                                  |                  |   | HHD                        |              |   | Urban Bus         |                          |
| Exhaust ECS (incl. MFI, TC, CAC) | CAC, ECM, TC     |   |                            |              |   |                   |                          |

(Use abbreviations per SAE J1930 SEP91)

| Engine Model<br>(Eng. Code) | Rated HP<br>@ RPM | Fuel Rate<br>@ Rated HP<br>mm <sup>3</sup> /stroke<br>(lbs/hr) | Fuel Pump<br>& Injector<br>Part No. | ECM/PCM<br>Part No. | EGR<br>Valve<br>Part No. | PTOX /<br>Catalytic<br>Converter<br>Part No. |
|-----------------------------|-------------------|--|-------------------------------------|---------------------|--------------------------|--|
| 3126 - 1                    | 300 @ 2200        | 143 (105.6)  | 116-7150                            | 120-8916            | ----                     | ----   |
| 3126 - 1                    | 300 @ 2200        | 143 (105.6)  | 116-7150                            | 126-6938            |                          |  |
| 3126 - 1                    | 300 @ 2200        | 143 (105.6)  | 116-7150                            | 119-0906            |                          |  |
| 3126 - 1                    | 300 @ 2200        | 143 (105.6)  | 116-7150                            | 126-6941            |                          |  |
| 3126 - 2                    | 275 @ 2200        | 129 (95.2)   | 116-7150                            | 126-6935            |                          |  |
| 3126 - 2                    | 275 @ 2200        | 129 (95.2)   | 116-7150                            | 118-0004            |                          |  |
| 3126 - 2                    | 275 @ 2200        | 129 (95.2)   | 116-7150                            | 126-6931            |                          |  |
| 3126 - 2                    | 275 @ 2200        | 129 (95.2)   | 116-7150                            | 120-8923            |                          |  |
| 3126 - 3                    | 250 @ 2200        | 119 (87.7)   | 116-6706                            | 133-5551            |                          |  |
| 3126 - 3                    | 250 @ 2200        | 116 (85.7)   | 116-7150                            | 112-7637            |                          |  |
| 3126 - 3                    | 250 @ 2200        | 116 (85.7)   | 116-7150                            | 120-5895            |                          |  |
| 3126 - 4                    | 230 @ 2200        | 106 (78.4)   | 116-7150                            | 118-0007            |                          |  |
| 3126 - 5                    | 210 @ 2200        | 100 (74.2)   | 119-3346                            | 119-0909            |                          |  |
| 3126 - 5                    | 210 @ 2200        | 94 (76.0)  | 119-3346                            | 120-5892            |                          |  |
| 3126 - 6                    | 190 @ 2200        | 100 (74.3)   | 119-3346                            | 120-8942            |                          |  |
| 3126 - 7                    | 175 @ 2400        | 86 (69.6)  | 119-3346                            | 117-7637            |                          |  |

|               |            |         |         |         |  |  |  |  |
|---------------|------------|---------|---------|---------|--|--|--|--|
| ISSUE DATE    | 08 SEPT 95 |         |         |         |  |  |  |  |
| REVISION NO.  | 1          | 2       | 3       | 4       |  |  |  |  |
| REVISION DATE | 08DEC95    | 11MAR96 | 26APR96 | 08OCT96 |  |  |  |  |