| California Environmental Protection Agency AIR RESOURCES BOARD | MOTORENFABRIK HATZ | EXECUTIVE ORDER U-R-034-0251 New Off-Road Compression-Ignition Engines |
|---|---|---|

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 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-02-003;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

| MODEL YEAR | ENGINE FAMILY | DISPLACEMENT (liters) | FUEL TYPE | USEFUL LIFE (hours) |
|---|---|---|---|---|
| 2011 | BHZXL.517C50 | 0.517 | Diesel | 3000 |

| SPECIAL FEATURES & EMISSION CONTROL SYSTEMS | TYPICAL EQUIPMENT APPLICATION |
|---|---|
| Mechanical Direct Injection | Pump, Generator Set, Other Industrial Equipment |

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

| RATED POWER CLASS | EMISSION STANDARD CATEGORY | | EXHAUST (g/kw-hr) | | | | | OPACITY (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | HC | NOx | NMHC+NOx | CO | PM | ACCEL | LUG | PEAK |
| kW < 8 | Tier 4 - Final | STD | N/A | N/A | 7.5 | 8.0 | 0.60 | N/A | N/A | N/A |
| | | CERT | -- | -- | 7.2 | 2.7 | 0.21 | -- | -- | -- |

**BE IT FURTHER RESOLVED:** That certification to the standards in 13 CCR 2423(b)(1)(A) -Table 1b listed above has been permitted pursuant to Endnote 2 of the same table.

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Sections 2425 and 2426 (emission control system warranty).

**BE IT FURTHER RESOLVED:** The listed engine models are conditionally certified pending submission of new emission control labels to comply with 13 CCR Section 2424 (emission control labels). The manufacturer has until May 16, 2011 to replace all existing MY2011 emission control labels to remove this conditional certification. Failure to resolve concerns by the specified date, shall be cause for the Executive Officer to rescind this conditional certification, in which case all engines covered under this conditional certification would be deemed uncertified and subject to civil penalties pursuant to Health and Safety Code Section 43154.

Engines certified under this Executive Order must conform to all applicable California emission regulations.

**This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.**

Executed at El Monte, California on this 24th day of February 2011.

Annette Hebert, Chief
Mobile Source Operations Division

Motorenfabrik Hatz
Nonroad CI

Attachment

EO # U-R-034-0251



1/31/2011

Return to Template

## Engine Model Summary Template

| Engine Family | 1.Engine Code | 2.Engine Model | 3.BHP@RPM (SAE Gross) | 4.Fuel Rate: mm3/stroke @ peak HP (for diesel only) | 5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only) | 6.Torque @ RPM (SAE Gross) | 7.Fuel Rate: mm3/stroke@peak torque | 8.Fuel Rate: (lbs/hr)@peak torque | 9.Emission Cont Device Per SAE J |
|---|---|---|---|---|---|---|---|---|---|
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 10,1@3300 | 26 | 4,8 | 16,1@3300 | 26 | 4,8 | Mechanical DI |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 10,1@3250 | 26 | 4,7 | 16,3@3250 | 26 | 4,7 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 10,1@3200 | 26 | 4,6 | 16,6@3200 | 26 | 4,6 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 10,1@3150 | 26 | 4,6 | 16,8@3150 | 26 | 4,6 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 10,1@3100 | 26 | 4,5 | 17,1@3100 | 26 | 4,5 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 10,1@3050 | 26 | 4,4 | 17,4@3050 | 26 | 4,4 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 10,0@3000 | 27 | 4,5 | 17,6@3000 | 27 | 4,5 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 10,0@2950 | 27 | 4,4 | 17,8@2950 | 27 | 4,4 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 9,9@2900 | 27 | 4,4 | 18,0@2900 | 27 | 4,4 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 9,8@2850 | 27 | 4,3 | 18,1@2850 | 27 | 4,3 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 9,7@2800 | 27 | 4,2 | 18,2@2800 | 27 | 4,2 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 9,5@2750 | 27 | 4,1 | 18,2@2750 | 27 | 4,1 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 9,4@2700 | 27 | 4,1 | 18,4@2700 | 27 | 4,1 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 9,3@2650 | 27 | 4,0 | 18,4@2650 | 27 | 4,0 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 9,1@2600 | 26 | 3,8 | 18,5@2600 | 26 | 3,8 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 8,9@2550 | 26 | 3,7 | 18,5@2550 | 26 | 3,7 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 8,8@2500 | 26 | 3,6 | 18,6@2500 | 26 | 3,6 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 8,6@2450 | 26 | 3,6 | 18,5@2450 | 26 | 3,6 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 8,4@2400 | 26 | 3,5 | 18,5@2400 | 26 | 3,5 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 8,3@2350 | 26 | 3,4 | 18,4@2350 | 26 | 3,4 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 8,1@2300 | 26 | 3,3 | 18,5@2300 | 26 | 3,3 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 7,9@2250 | 26 | 3,3 | 18,4@2250 | 26 | 3,3 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 7,7@2200 | 26 | 3,2 | 18,5@2200 | 26 | 3,2 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 7,5@2150 | 26 | 3,1 | 18,4@2150 | 26 | 3,1 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 7,4@2100 | 26 | 3,0 | 18,5@2100 | 26 | 3,0 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 7,1@2050 | 26 | 3,0 | 18,4@2050 | 26 | 3,0 | |
| BHZXL.517C50 | N/A | 1D50 S/Z/T/U | 7,0@2000 | 24 | 2,7 | 18,4@2000 | 24 | 2,7 | |