



Air Resources Board



Mary D. Nichols, Chairman

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Sacramento, California 95812 • www.arb.ca.gov

Matthew Rodriguez

Secretary for

Environmental Protection

Edmund G. Brown Jr.

Governor

April 29, 2015

Mr. Peter Reba
Senior Technology Engineer
HUG Engineering USA
123 Holmes Drive
Liberty, Texas 78642

Dear Mr. Reba:

The California Air Resources Board (ARB) has reviewed the HUG Engineering USA (HUG) application for the verification of the combiKat[®] CBS Particulate Trap strategy and determined that the combiKat[®] CBS Particulate Trap is the same product as the Miratech Corporation combiKat[®] CBS Particulate Trap, an ARB verified Level 3 Plus system. HUG has satisfied the verification regulation requirements regarding verification transfers (California Code of Regulations (CCR), title 13, section 2702(k)). ARB hereby verifies the HUG combiKat[®] CBS Particulate Trap as a Level 3 Plus system for the designated engine control group.

The HUG combiKat[®] CBS Particulate Trap reduces emissions of diesel particulate matter (PM) by 85 percent or greater and does not increase nitrogen dioxide (NO₂) emissions beyond the 2009 limit of 20 percent of the baseline oxides of nitrogen (NO_x) emissions (Level 3 Plus) when in use in stationary prime and emergency standby (E/S) generators and pumps powered by 1996 or later certified off-road engines meeting 0.2 grams per brake horsepower hour (g/bhp-hr) diesel PM or less based on certification or in-use emissions testing. The engine control group includes engines that meet the U.S. EPA Tier 1, Tier 2, and Tier 3, in addition to Tier 4i with a rated horse power between 50 and 75 or over 750, or Tier 4 Alt 20% NO_x and PM, off-road diesel engine certification standards. The Executive Order for the HUG combiKat[®] CBS Particulate Trap, including a list of the applicable engine families, is attached.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

The verification is valid provided the following operating criteria are met:

Parameter	Value
Application	Stationary Emergency Standby and Prime Power Generation and Pumping
Engine Type	Diesel, with or without turbocharger, without EGR, certified off-road engines meeting 0.2 g/bhp-hr diesel PM or less based on certification or in-use emission testing.
Minimum Exhaust Temperature for Filter Regeneration	The engine must operate at the load level required to achieve sufficient exhaust temperature for regeneration at the rated PM level of the engine, per Figure 1. Operation at lower temperatures is allowed, but only for a limited duration. Per Figure 1, operate in the "Passive Regeneration Okay" side of the graph for at least 30 Minutes.
Maximum Consecutive Minutes Operating Below Passive Regeneration Temperature	720 Minutes
Number of Cold Start and 30 Minute Idle Sessions before Regeneration Required	24
Number of Hours of Operation Before Cleaning of Filter Required	Application Specific per calculations regarding 'Filter Sizing'. 2000 hours typical when using diesel with <15 ppm sulfur.
Fuel	California diesel fuel with less than or equal to 15 ppm sulfur or a biodiesel blend provided that the biodiesel portion of the blend complies with ASTM International D6751, the diesel portion of the blend complies with CCR, title 13, sections 2281 and 2282 and the blend contains no more than 20 percent biodiesel by volume.
PM Verification Level	Level 3 Plus Verification: <ul style="list-style-type: none"> • PM – at least 85% reduction • NO₂ – meets January 2009 limit

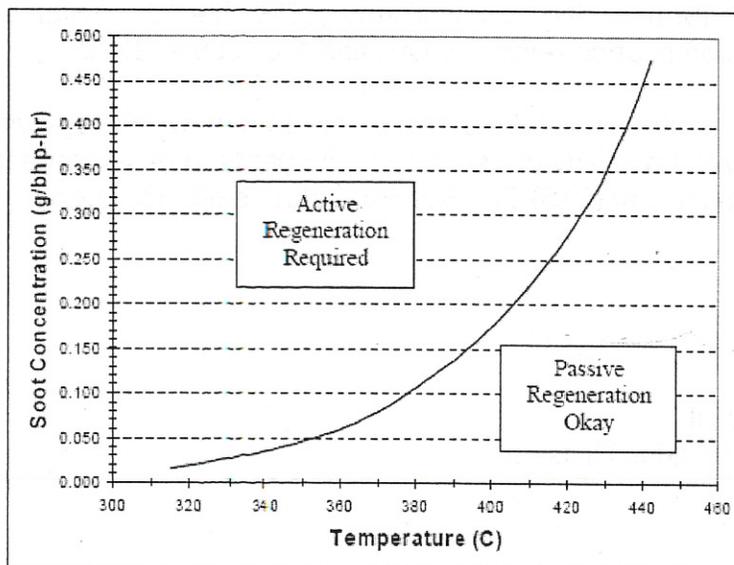


Figure 1: Passive Regeneration Temperature Requirements

No changes are permitted to the system as described in the attached Executive Order DE-15-001. Any changes to the system, system components, applicable models, model years, etc. must be evaluated and approved by ARB.

Since there may be significant variations from application to application, HUG must review actual operating conditions (duty cycle, baseline emissions, exhaust temperature profiles, and engine backpressure) prior to retrofitting an engine with a HUG combiKat[®] CBS Particulate Trap to ensure compatibility.

Furthermore, the engine on which the HUG combiKat[®] CBS Particulate Trap is installed should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.

ARB hereby assigns the HUG combiKat[®] CBS Particulate Trap the designated family name of:

CA/HUG/2015/PM3+/N00/ST/DPF01

This identification number should be used in reference to this verification as part of the system labeling requirement.

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure,

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HUG is responsible for honoring their warranty (CCR, title 13, section 2707) and conducting in-use compliance testing (CCR, title 13, section 2709).

Thank you for participating in ARB's diesel emission control strategy verification program. Should you have any questions or comments, please contact Mr. John Lee, Air Resources Engineer, at (916) 327-5975 or John.Lee@arb.ca.gov.

Sincerely,



Cynthia Marvin, Chief
Transportation and Toxics Division

Attachments

cc: Mr. John Lee
Air Resources Engineer
Control Strategies Section
Transportation and Toxics Division