State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER DE-13-002-06

Pursuant to the authority vested in the California Air Resources Board (CARB) by Health and Safety Code, Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by Health and Safety Code section 39515 and 39616 and Executive Order G-14-012;

This action relates to Verification under sections 2700 through 2711 of Title 13 of the California Code of Regulations:

Rypos, Inc.
Active Diesel Particulate Filter (RYPOS ActiveDPF/C3+™)

CARB has reviewed Rypos, Inc.'s request for verification of their active diesel particulate filter and diesel oxidation catalyst system (RYPOS ActiveDPF/C3+™). Based on an evaluation of the data provided, and pursuant to the terms and conditions specified below, the Executive Officer of CARB hereby finds that the RYPOS ActiveDPF/C3+™ reduces emissions of diesel particulate matter (PM) consistent with a Level 3 device (greater than or equal to 85% reductions) (California Code of Regulations (CCR), title 13, sections 2702 (f) and (g) and section 2708) and complies with the CARB January 1, 2009, nitrogen dioxide (NO2) limit (CCR, title 13, section 2702 (f) and section 2706 (a)). Accordingly, the Executive Officer determines that the RYPOS ActiveDPF/C3+™ merits verification as a Level 3 Plus system for diesel engines on rubber tired gantry (RTG) cranes, subject to the terms and conditions specified below.

This verification is subject to the following terms and conditions:

- The engine must be used in a RTG crane application.
- The engine must be an off-road diesel engine:
    - Greater than 50 horsepower (hp) and pre-certification, or;
    - Greater than 50 hp and certified to Tier 1, Tier 2, Tier 3, or Tier 4 Alt 20% oxides of nitrogen (NOx) and PM standards, or;
    - Certified to Tier 4i standards with a rated hp between 50 and 75 or over 750.
- The engine must be in its original certified configuration if it was certified to Tier 1, Tier 2, Tier 3, Tier 4i, or Tier 4 Alt 20% NOx and PM off-road diesel engine emission standards, and has one of the engine family names listed in the Attachment.
- The engine must not employ exhaust gas recirculation (EGR).
- The engine must not have a pre-existing oxidation catalyst.
- The engine must not have a pre-existing diesel particulate filter.
- The engine can be a two or four-stroke.
- The engine can be turbocharged or naturally-aspirated.
- The engine must be:
    - Pre-certification, or;

    - Certified for use in California or certified by the United States Environmental Protection Agency, and in its original certified configuration
- Rypos, Inc. must review actual operating conditions (duty cycle, baseline emissions, and engine backpressure) prior to retrofitting an engine with the RYPOS ActiveDPF/C3+™ to ensure compatibility.
- The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
- The other terms and conditions specified in Table 1 below.

Table 1: Summary of Conditions for the RYPOS ActiveDPF/C3+

Parameter	Value
Verification Level	Level 3 Plus: PM - at least 85% reduction NO2 - meets January 2009 limit
Regeneration System	Active
Applications	Both diesel-electric and diesel-hydraulic RTG crane applications.
Engine Type and Size	Off-road diesel engine: • Greater than 50 hp and pre-certification, or; • Greater than 50 hp and certified to Tier 1, Tier 2, Tier 3, or Tier 4 Alt 20% NOx and PM standards, or; • Certified to Tier 4i standards with a rated hp between 50 and 75 or over 750.
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 D6751, the diesel portion of the blend complies with title 13 (CCR), sections 2281 and 2282, and the blend contains no more than 20% biodiesel by volume.
Minimum Exhaust Temperature for Filter Regeneration	Not Applicable (NA). Active diesel particulate filter (DPF).
Maximum consecutive minutes at idle	NA. Active DPF.
Number of Hours of Operation Before Cleaning of Filter Required	Inspect every 1000 hours and clean if needed. Active DPF.

The RYPOS ActiveDPF/C3+™ consists of a filter housing, electrical control circuit, and filter cartridges made of sintered metal fibers, referred to as an active sintered metal diesel particulate filter, and a downstream diesel oxidation catalyst.

Since there may be significant engine configuration and operation variations from application-to-application, Rypos, Inc. will review operating conditions (duty cycle, baseline emissions, engine backpressure, maintenance history, and lube oil consumption) prior to retrofitting an engine with a RYPOS ActiveDPF/C3+™ to ensure compatibility. The product must not be used with any other systems or engine modifications without CARB and manufacturer approval.

Furthermore, the engine on which the RYPOS ActiveDPF/C3+™ is installed should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.

Proper engine maintenance is critical for the proper functioning of the diesel emission control strategy. The owner of the vehicle on which the diesel emission control strategy is installed is strongly advised to adhere to all good engine maintenance practices. Failure to document proper engine maintenance, including keeping records of the engine's oil consumption, may be grounds for denial of a warranty claim.

Rypos, Inc., must ensure that its installation recommendations for the RYPOS ActiveDPF/C3+™ conforms to all applicable industrial safety requirements. The RYPOS ActiveDPF/C3+™ must not be located over any occupied space (RTG crane operator compartments), or be installed in a way which would result in any noncompliance with any applicable safety standards, or in any location deemed unacceptable by Rypos, Inc.

The terms and conditions of this verification must be satisfied regardless of where the system is sold in order for the system to be considered verified. Systems sold as verified, or which carry a CARB-approved label, must satisfy all the terms and conditions of this Executive Order.

This Executive Order is valid provided that installation instructions for RYPOS ActiveDPF/C3+™ do not recommend tuning the engine to specifications different from those specified by the engine manufacturer.

No changes are permitted to the device unless approved by CARB. CARB must be notified in writing of any changes to any part of the RYPOS ActiveDPF/C3+™ and these changes must be evaluated and approved by CARB. Failure to report any changes shall invalidate this Executive Order.

Changes made to the design or operating conditions of RYPOS ActiveDPF/C3+™ which adversely affect the performance of the engine’s pollution control system shall invalidate this Executive Order.

No person shall alter, physically disable, disconnect, bypass, or tamper with an installed CARB verified diesel emission control strategy, as outlined in Title 13 CCR section 2711(e). Should CARB become aware that a design feature of a verified device is independently and repeatedly altered, physically disabled, disconnected, bypassed, or tampered, Rypos, Inc. will be responsible to propose a design modification and recall plan to the Executive Officer to minimize existing and potential for future tampering of the verified device.

Marketing of the RYPOS ActiveDPF/C3+™ using identification other than that shown in this Executive Order or for an application other than that listed in this Executive Order shall be prohibited unless prior approval is obtained from CARB.

As specified in the Diesel Emission Control Strategy Verification Procedure (title 13 CCR section 2706 (g)), CARB assigns each Diesel Emission Control Strategy a family name. The designated family name for the verification as outlined above is:

CA/RYP/2013/PM3+/N00/OF/DPF01

This identification number should be used in reference to this verification as part of the system labeling requirement. Labels attached to the RYPOS ActiveDPF/C3+™ and the engine must be identical.

Additionally, as stated in the Diesel Emission Control Strategy Verification Procedure, Rypos, Inc., is responsible for honoring the record keeping requirements (section 2702), their warranty (section 2707) and conducting in-use compliance testing (section 2709).

In addition, Rypos, Inc. must conduct in-use compliance testing (section 2709), which involves the following: in-use compliance field testing after 100 units have been sold or leased in California and in-use compliance emissions testing after 300 units have been sold or leased in California (section 2709 (a)). Both the in-use compliance field and emissions testing proposals have to be submitted within 90 days after selling or leasing in California the 100th unit and 300th unit, respectively (section 2709 (d)). The in-use compliance field and emission testing reports must be submitted no later than 18 months after selling or leasing the 100th and 300th units in the California market, respectively, as outlined in section 2709 (k).

In addition to the foregoing, CARB reserves the right in the future to review this Executive Order and the verification provided herein to assure that the verified system continues to meet the standards and procedures of California Code of Regulations, title 13, section 2222, et seq and California Code of Regulations, title 13, sections 2700 through 2711.

Systems verified under this Executive Order shall conform to all applicable California emissions regulations. This verification does not release Rypos, Inc., from complying with all other applicable regulations.

Rypos, Inc., must comply with all the terms and conditions delineated in the supplemental letter dated September 10, 2013. If Rypos, Inc., fails to fulfill any of these requirements within the specified time, this Executive Order automatically terminates.

Violation of any of the above conditions shall be grounds for revocation of this Executive Order.

Executive Order DE-13-002-05 is hereby superseded and is of no further force and effect.

Executed at Sacramento, California, this 25th day of January 2024.

Richard Boyd
Assistant Chief
Transportation and Toxics Division