

On-Road Truck and Bus Applications



Sole Source Technology with 33 Issued Patents



Energy and Emission Solutions

Rentar Fuel Catalyst is Independently Verified to:



- Reduce Fuel Consumption And Extend Range 2.0% To 12.0%
- Reduce Oil Fired Furnace Fuel Consumption 7.0% To 30.0%
- Reduce Greenhouse Gases (NO_x, CO and CO₂) Up To 19.2%
- Reduce Particulate Matter (PM) Up To 58.2%
- Reduce Black Smoke (Opacity) Up To 44.8%
- Extend Engine Life Between Engine Rebuilds 20% to 50%
- Reduce Organic And Elemental Carbon Up To 35.0%
- Reduce Volatile Organics up to 63.0%

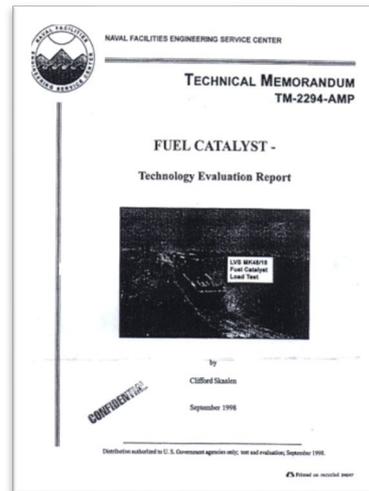
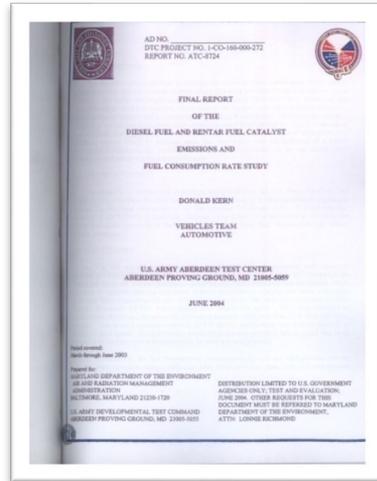
Results vary based on the applications, type of engine and type of fuel utilized

Benefits of the Rentar Fuel Catalyst to the On-Road Truck Application

- Reduces Fuel Consumption
- Increases Payload Per Gallon / Liter
- Reduces Greenhouse Gas Emission
- Extends Engine Life
- Extends Oil Life
- Reduces Engine Maintenance
- 10 Year Warranty
- Easy to Install
- Pays for Itself in Fuel Savings in 3 to 12 Months



Rentar Is Independently Verified By:



- Southwest Research Institute
- EPA & CARB Recognized Laboratories
- Aberdeen Proving Grounds
- Olson Ecological Laboratories
- Virginia Tech University
- SGS, SA
- Toyota Car Carrier Fleet
- DHL
- Federal Express
- C.R. England



Reduce Fuel Consumption and Exhaust Pollution

Improve Payload Per Gallon / Liter Extend Engine and Oil Life



Extend Engine Life 20% Between Rebuilds

Testimonial Letters

Date: 02/05/2012

To whom so ever it may concern

This is to certify that HBL -Rentar Fuel Catalyst having following specifications have been installed at Tata Motors Ltd., Lucknow plant

Sr No.	Model No.	Qty	Mounted on Equipment
1	HBEH 2012	02 Nos.	1010 KVA Cummins DG
2	HBEH 2012	02 Nos.	1010 KVA Cummins DG

Since the installation, Fuel catalysts are performing to our satisfaction at above mentioned DG sets. We are pleased to confirm that we have achieved saving of 15.57% on specific fuel consumption.

For M/s. Tata Motors Ltd.

S. M. Singh
DGM - Plant Services

TATA MOTORS LIMITED
Chinhatal Industrial Area Lucknow 226 019
Tel: 91 522 2816012-2819803/2818832 Fax: 91 522 2818246
Registered Office: Bombay House 24 Homi Modi Street Mumbai 400 001

Mahindra & Mahindra Ltd
Agri Development Centre
Tractor Division
Kichha Road, Lalpur (Rudrapur)
Dist. Uttam Singh Nagar - 203143
Tel : 91-59944-289723 / 25
Fax: 91-59944-289724

DESIGN PRIZE Winner - 2003 JAPAN QUALITY MEDAL Winner - 2007

Ref no: MBM/RDP/HBL/1204/24 Date: 24th April'12

TO WHOM SO EVER IT MAY CONCERN

This is to certify that HBL RENTAR fuel catalyst has been installed on our generators and boiler applications.

The performance of HBL RENTAR Fuel Catalyst has been good and about 6% HSD saving achieved.

We appreciate the green energy efforts of M/S HBL Power System LTD. towards reducing the fuel consumption and carbon emission.

Authorized Signatory
MAHINDRA & MAHINDRA LTD
RUDRAPUR

Registered Office: Gateway Building Apollo Bunder, Mumbai-400001.
Phone:2202 1051 Fax : (022) 2202 8780 / 8990

YAMANAGOLD | **15 ANOS**

March 21st 2019

We at Mineração Maracá Indústria e Comércio, a YAMANAGOLD job site, have successfully piloted the Rentar fuel catalyst model HBEH 2012 on our CAT 785C haul trucks with results that surpassed our objectives for fuel efficiency with a payback of less than a year. As a result, we have purchased the Rentar fuel catalyst for installation on our fleet.

We are pleased with the support from SOTREQ, our Rentar dealer, and from the direct relationship with the manufacturer itself. We are also pleased with the trouble-free performance of the catalysts, to date.

We are looking forward to our continued use of the Rentar fuel catalysts.

Fabio Gonçalves
Maintenance Coordinator
Tel: +55 62 3383-4049

YAMANAGOLD | **15 ANOS**

Mineração Maracá Indústria e Comércio
Rodovia GO 347 s/n - Fazenda Genesepo
Alto Horizonte GO - Brasil
76560-000
<http://www.yamana.com>

FIVE TOYOTA/PENSKE TRUCK TRACTORS

POWERED BY CATERPILLAR C-12 DIESEL ENGINES

ETS, a Division of Olson Engineering For Toyota Motor Company

EPA and CARB Recognized Engine Emission Laboratory

5 Toyota/Penske Truck Tractors Powered by Caterpillar C-12 Diesel Engines

Testing Conducted in Environment Controlled Laboratory Dynamometer

Results: (Average Results of 5 Trucks)



Steady State (“highway driving”)

11.3% Fuel Consumption Improvement

42.2% Particulate Matter (PM) Improvement

9.7% CO2 Improvement

33.5% Carbon Monoxide Improvement

36.8% Total Hydrocarbons

Hot-Start UDDS-HD (“city driving”)

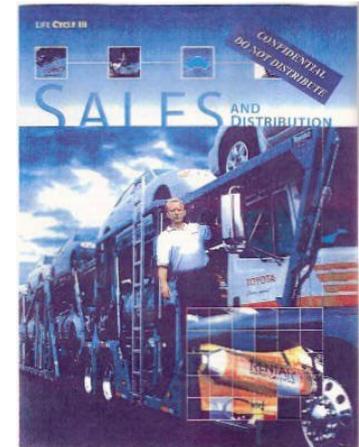
3.2% Fuel Consumption Improvement

6.9% Particulate Matter (PM) Improvement

2.5% CO2 Improvement

9.9% Carbon Monoxide Improvement

10.3% Total Hydrocarbons Improvement



PENSKE TRUCK LEASING FUEL TESTS CONDUCTED FOR DHL

Penske Truck Leasing, at their Terminal in Lubbock Texas, tested fuel consumption reduction on FIVE Exel/DHL trucks.

Penske collected data over 66 days and 123,954 miles.

The independent conclusion was that the Rentar Fuel Catalyst reduced fuel consumption by 5.1%.



JOINT TMC/SAE TYPE IV

EPA Recognized Fuel Test Procedure

10 Class 8 DHL trucks.

5 Test Trucks / 5 Control Vehicles

289,200 miles over 95 days.

Fuel Savings: 4.59%

Annual Savings of \$3646 per year
This created a ROI of less than a year





Cummins ISX (2005)



***The fuel consumption
was reduced by 3.56%***

In Harrison Arkansas and North Carolina, Seven Federal Express class 8 Trucks were tested with the Rentar Fuel Catalyst over 18 months during which a total of approximately 900,000 miles were accumulated on 7 trucks.

Data was collected over four months during which a total of approximately 640,000 miles were accumulated on the 16 trucks.

The fuel consumption was reduced a net reduction of 3.66% of the class 8 trucks tested in Kansas.

The fuel consumption was reduced a net reduction of 2.68% of the class 8 trucks tested in Salt Lake City.

***The average fuel consumption
reduction of the two groups
together is 3.17%***



England
DRIVE LIFE

After 12,703,840 miles from 42 trucks, 10 which were installed with Rentar Fuel Catalysts resulted in an average fuel improvement of 4.4%

Summary of Findings

C.R. England conducted fuel economy studies. They solely managed and collected the data. The results are reported below.

In Salt Lake City, Utah at the C.R. England truck facility, C.R. England managed a fuel economy test procedure using ten Class 8 Tractors as test vehicles and thirty-two Class 8 tractors as control vehicles. All were new tractors with no miles on them thus there was no baseline to start with. The premise was to test the ten Rentar installed tractors against the thirty-two control tractors. The results, as documented in the attached report were a **4.4% average improvement in fuel consumption** on the ten tractors with the Rentar Fuel Catalyst installed over the thirty-two control tractors.

See Test Report



The forty-two trucks were driven over similar routes and in similar weather conditions throughout the duration of the fuel economy study. Testing started in 2006 and included ten Rentar-equipped trucks and thirty-two control trucks. Rentar Fuel Catalysts were installed on ten of the new vehicles from factory by C.R. England and supervised by Rentar staff. The test lasted over the entire lifecycle of the 42 trucks in C.R. England's fleet, **covering 12,703,840 miles**

Automotive Research Association of India
is co-operative industrial research association by the automotive industry with the Ministry of
Industries, Government Of India



Testing Conducted on 6SL8800TA 200 KW Kirloskar 250 Genset Engine

Tested with ISO: 8178 D2 - 5 Mode Test Protocol

3.04% Fuel Improvement

58.2% Reduction of Particulate Matter

7.9% NO_x Reduction

35.4% CO Reduction

15.4% Hydrocarbon Reduction

See Test Study



World's Largest Inspection and Technology Verification Company



SGS Verifies a 17% Fuel Reduction*,
a 27.5% Reduction of NO_x
and 32.5% Reduction of CO.



- Over 97,000 employees
- Over 2,600 offices and laboratories worldwide
- Conducted an emissions study on the Rentar fuel catalyst in 2016
- World's largest inspection and technology verification company

* Computed by Carbon Balance



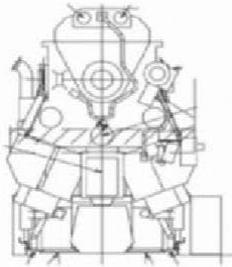
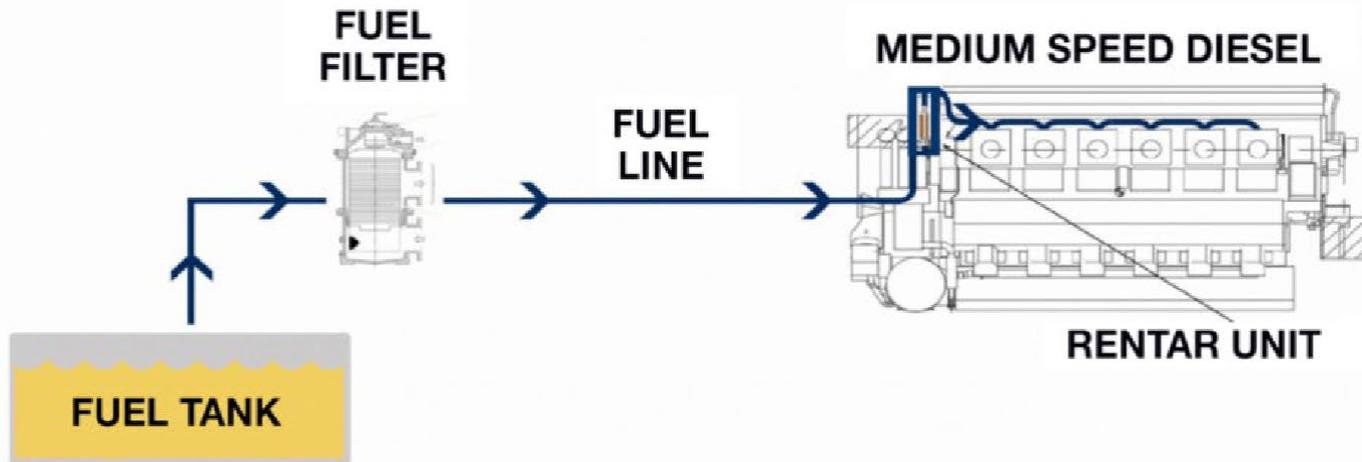


Children's Exposure to Diesel Exhaust on School Buses

John Wargo, Ph.D.
YALE UNIVERSITY

- *In the United States nearly 600,000 school buses transport 24 million students to school daily. Each year buses travel 4.3 billion miles as children take nearly 10 billion school bus rides. In Connecticut, 387,000 students ride to school each day on 6,100 buses. If rides average 30 minutes in each direction, students will spend 180 hours on buses each year. Collectively, U.S. children spend 3 billion hours on school buses each year.*
- *Connecticut children annually spend more than 50 million hours on school buses.¹*
- *Most U.S. school buses are powered by diesel fuel. Diesel exhaust is comprised of very fine particles of carbon and a mixture of toxic gases. Federal agencies have classified diesel exhaust as a probable human carcinogen. Benzene, an important component of the fuel and exhaust, is designated to be a known human carcinogen. Components of diesel exhaust are genotoxic, mutagenic, and can produce symptoms of allergy, including inflammation and irritation of airways. There is no known safe level of exposure to diesel exhaust for children, especially those with respiratory illness.*
- *The Centers for Disease Control and Prevention (CDC) estimates that 4.5 million U.S. children have asthma. This figure includes nearly 44,500 school-aged children in Connecticut diagnosed with the illness. Diesel exhaust can adversely affect children with underlying respiratory illnesses such as asthma, bronchitis, and infections. Diesel emissions may enhance the effects of some allergens among sensitive individuals.*
- *Children's airways are not yet fully developed and have a smaller diameter than those of adults. If airways are inflamed or constricted by asthma, allergies or infections, diesel exhaust may make breathing more difficult.*

Simple Installation



Credentials



World's 4th Largest Caterpillar Dealer
 A Rentar Distributor
 400 Offices - 4300 Employees



\$2 Million International
 Product Liability Insurance



Export-Import Bank of the United States
 Official Export Credit Agency



California Resource Board
 Executive Order (CARB)

Rentar Case Studies

CASE STUDY



COVANTA ENERGY

Covanta Holding Corporation (NYSE: CVA) is an international owner and operator of Energy-from-Waste power generation projects converting municipal solid waste into renewable energy for numerous communities throughout the United States. 2009 consolidated operating revenues were \$1.55 billion with \$397 million in operating cash flow and adjusted EBITDA of \$515 million.



Installed Rentar Fuel Catalyst on entire fleet of heavy-duty diesel vehicles at 28 plants around the United States.

- 5% reduction in fuel consumption.
- 43.6% reduction in CO2 emissions.
- 75.9% reduction in CO.
- 47.7% reduction in NOx
- 52.6% reduction in particulate matter.

CASE STUDY



U.S. ARMY

Located in Hartford County, Maryland on 79,000 acres with research capabilities in Automotive; Environmental Effects & Technologies; Fire Control; Firepower; Support and Survivability/Lethality; Warfighter & Support Equipment.



The Aberdeen Test Center tested Rentar units on a Navistar International 359.9 cu. in., 170 hp. diesel engine and reported the following:

- 3.6% Fuel Consumption improvement.
- 3.6% Extended Range improvement.
- 12% NOx improvement.
- 14% CO₂ improvement.
- 17.4% CO improvement.
- 12.6% HC improvement.
- 10.9% O₂ improvement.

CASE STUDY



TOYOTA

Toyota Motor Company, established in 1937, is today the world's largest automobile manufacturer by sales (7,051,000 units FY 2009), with 320,808 employees building autos under the DAIHATSU, HINO, LEXUS and TOYOTA brands.



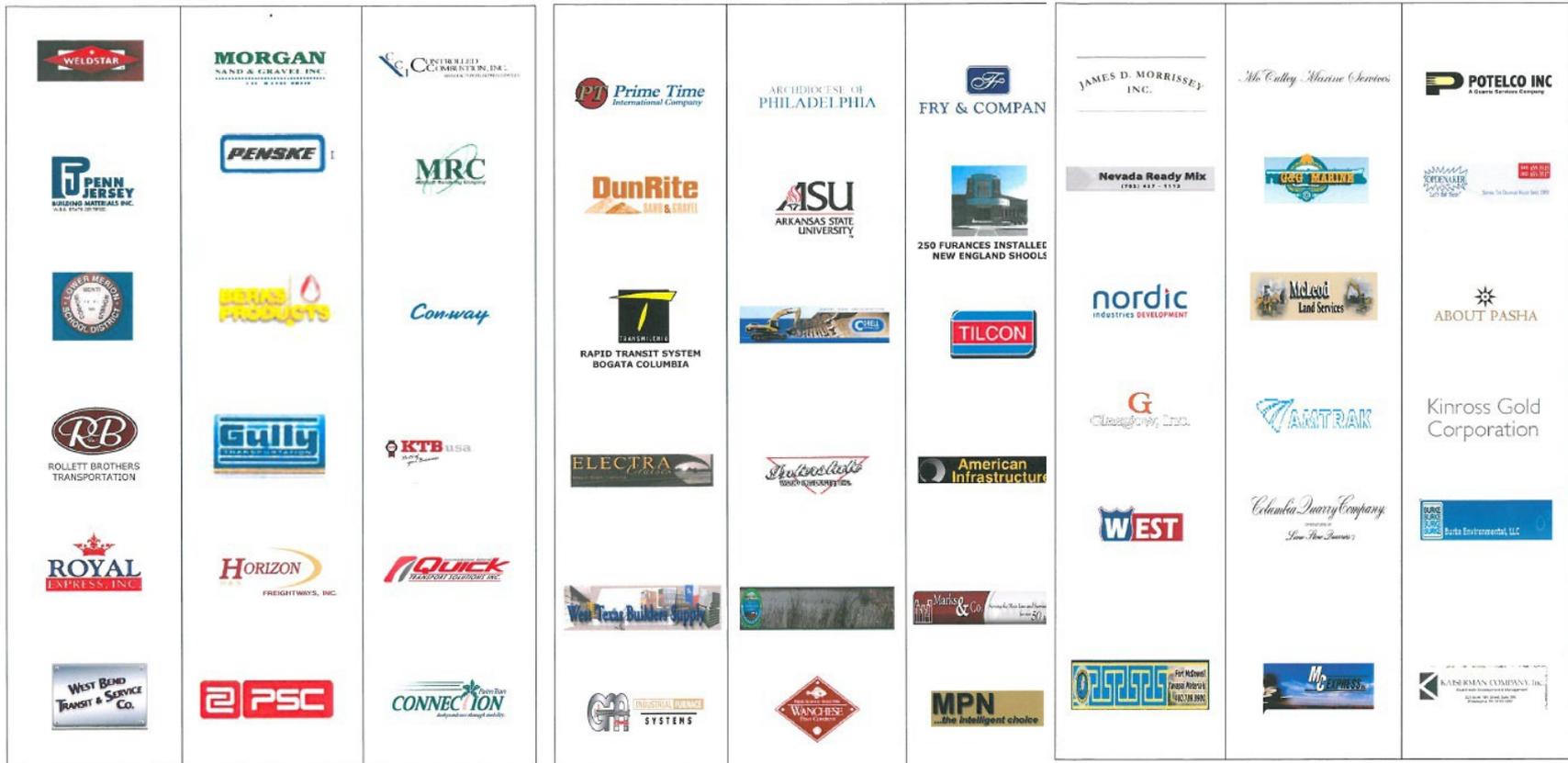
Toyota has installed Rentar Units on all their auto transport trucks operating in the Port(s) of Long Beach & Los Angeles with the following results:

STEADY STATE (Highway Driving)

- 11.3% Fuel Consumption improvement.
- 42.2% Particulate Matter improvement.
- 9.7% CO₂ improvement.
- 33.5% Carbon Monoxide improvement.
- 36.8% Total Hydrocarbon improvement.

Toyota Laboratory Results conducted by EPA & CARB recognized laboratory.

Logos of Rentar Fuel Catalyst Purchasers





THANK YOU



Rentar Environmental Solutions, Inc.

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