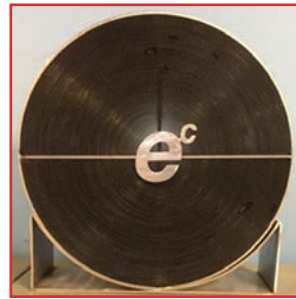


CATALYST ASSET MANAGEMENT PROGRAM



Manage your
catalyst life cycle
with Cypress Engine's
revolutionary program



Cypress Engine Accessories

TESTING & TRACKING

Cypress Engine Accessories Provides Complete Catalyst Life-Cycle Management

Cypress Engine Accessories has developed a revolutionary program that will manage your catalyst life cycle, maximizing value and minimizing cost.

When we receive your used catalyst, we apply a catalyst management tracking number and perform a pre-wash test with the Multi-Lambda Catalyst Test System. Evaluation of the test results will determine if the catalyst has active life available.

If it does, we wash the catalyst and perform a post-wash test. Both the pre-wash and post-wash test reports will be recorded in Cypress Engine's Data Management Program.

Each catalyst will be returned with documentation including Cypress Engine's catalyst management tracking number and full test results.

The installer is responsible to report the installation date, unit number and location on the Cypress Engine Data System link at cypressengine.com, and to provide Cypress Engine with emission test results after installation.

Post installation results will be recorded in Cypress Engine's Data Management Program.

It's that easy to track your catalyst's performance records and installation dates throughout the catalyst's life cycle.

5 Easy Steps to Maximize Value & Minimize Cost for catalyst life-cycle emission compliance

STEP 1: Register Your New Catalyst with Tracking Number at Cypress Engine Accessories

- Log and track catalyst tracking number



End User

- Install on engine and operate



STEP 2: End-of-Year-One Maintenance at Cypress Engine Accessories

- Performance test and report by tracking number
- Catalyst wash, retest and report by tracking number



End User

- Install on engine and operate



STEP 3: Dealer Field Support

- Emission checkups and engine health checks



STEP 4: End-of-Year-Two Maintenance at Cypress Engine Accessories

- Performance test and report by tracking number
- Catalyst wash, retest and report by tracking number



End User

- Install on engine and operate



STEP 5: End of Catalyst Life

- Return to Cypress Engine Accessories for precious-metal reclamation

The Benefits of the Multi-Lambda Catalyst Test System®



Catalyst Testing

Catalyst testing is designed to accurately determine your catalyst's future life.

We simulate actual exhaust gases that your catalyst will be exposed to when installed on the engine. Testing gases contain CO, NO_x, Nitrogen, Propylene, O₂ and water vapor.

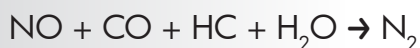
We heat the element to actual operating temperature, flow a balanced mix of exhaust gases, adjust the O₂ to achieve the appropriate Lambda set point and perform pre- and post-catalyst emission tests.

“Will it Work?” No guessing!

Properly tested catalysts eliminate unnecessary down time.

Cypress Engine provides a report with test readings and conversion efficiency.

We evaluate NSCR catalyst by measuring NO_x reduction in a **rich** gas environment.



NO_x reduction is the main purpose of a NSCR catalyst and the function we test.

We evaluate oxidation catalyst by measuring CO oxidation in a **lean** gas environment.



CO oxidation is the main purpose of an oxidation catalyst and the function we test.

Chemical Washing & Regeneration



Catalyst Washing

A combustion exhaust stream is not a pristine environment. Normal and abnormal engine operation exposes the catalyst to chemical compounds that affect the catalyst's surface and its active ingredients. These contaminants hinder catalyst performance through a number of mechanisms and cause catalyst performance to degrade over time. Rather than replacing the catalyst prematurely, chemical washing is used to remove these contaminants, regenerate the catalyst surface and restore catalytic activity and performance.

- All catalyst washing systems are NOT alike!
- Cypress Engine's Catalyst Washing System is a proven-effective performance regeneration process.
- Cypress Engine's personnel are factory trained by EmeraChem who has know-how from operating a catalyst chemical manufacturing plant for over 20 years.
- Cypress Engine utilizes modern chemical processing equipment, methods and procedures specified by EmeraChem's chemical engineers.
- EmeraChem's chemists specified the chemical solutions as the most compatible with the catalyst formulations and the most effective at removing a variety of chemical contaminants and ash.
- The most effective catalyst element cleaning method involves four steps, in a specific sequence, for specific periods of time. Each step is designed to remove specific contaminants and the sequence is critical.
- A key advantage to Cypress Engine's catalyst washing process, is the use of fresh chemical solutions for each batch of catalysts. Our customers are assured their catalyst won't become contaminated by the masking and poisoning agents from someone else's catalyst.

Cypress Engine uses chemical recirculation pumps and a special manifold to continuously flush the solutions through the cells of the element for deep cleaning. This is an effective way to release contaminants from the catalyst, particularly from within the interior surfaces and catalyst pores.

Superior Catalyst Testing Service

▼ Multi-Lambda Catalyst Test System



Full-Service Catalyst Management Program

▼ Catalyst Wash Station



Get Started Today!



Cypress Engine Accessories

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