



Engineered Solutions & Aftermarket Services

Ethanol & Biofuels





Air Emissions Treatment Systems

- ✓ Regenerative Thermal Oxidizers (RTO) ✓ Thermal Oxidizers
- ✓ Catalytic Oxidizers ✓ Rotary Concentrator Systems ✓ Scrubbers

Our custom-engineered air emissions treatment systems exceed all clean air regulations by destroying up to 99%+ of the air pollutants present in manufacturing exhaust air streams. We manage projects ranging from small installations utilizing a standard designed unit to complex, multi-technology custom-designed solutions for new or existing operations. Sizes range from 1,000 scfm units to 100,000+ scfm of manufacturing exhaust air streams.



Industrial Wastewater Treatment Systems

- ✓ Vacuum Evaporators ✓ Crystallizers
- ✓ Zero and Near-Zero Liquid Discharge Systems

Through our partnership with Condorchem Envitech, The CMM Group offers solutions for the treatment of wastewater emissions for a variety of industrial processes. We design and install treatment plants with the aim of obtaining the best possible results, both environmental and economic, for our clients in applications such as:

- Brine treatment • Oily water treatment • Washing water treatment
- Treatment of other liquid waste

Air Pollution Control Solutions for Ethanol & Biofuel Production

One way that the Ethanol and Biofuel industry controls pollution and VOC emissions is by using advanced pollution control technologies, such as regenerative thermal oxidizers (RTOs) and thermal oxidizers (TOs), which are used to control emissions from ethanol production processes. Both of these technologies are designed to destroy VOCs and other air pollutants by using high temperatures to break down the pollutants into less harmful compounds before they are released into the atmosphere.

The ethanol industry is subject to several environmental regulations aimed at controlling pollution and reducing emissions of volatile organic compounds (VOCs). VOCs are a group of chemicals that can have harmful effects on human health and the environment, and they are emitted during the production and use of ethanol. During ethanol production, various gases containing VOCs are produced, such as methanol, ethanol, acetaldehyde, and acetic acid. These gases are harmful to the environment and human health if released into the atmosphere.

Aftermarket Services for Ethanol & Biofuel Production

Ethanol and Biofuel producers place a premium on up-time and production with little to no interruptions. As a result, oxidizer maintenance is critical. Ethanol and Biofuel production can be considered a harsh environment for pollution control equipment, and regularly scheduled service visits help to ensure reliable operation of both TOs and RTOs.

The CMM Group has experience working with ethanol producers and understands the criticality of their air pollution control equipment. We offer on-site engineering and service support, with flexible scheduling at competitive rates. We work on all RTOs, whether they were sold by CMM or by another OEM. Examples of typical aftermarket services that The CMM Group provides to the ethanol industry include:

- ✓ RTO Valve Rebuilds ✓ RTO Media Supply, Washout, and Replacement
- ✓ RTO Coldface Repairs ✓ Refractory Insulation Replacement
- ✓ Burner Cone/Block Replacement

The CMM Group offers reliable equipment and services that are designed to give ethanol producers peace of mind that their air pollution control equipment will be operational and meet the regulatory requirements that ethanol producers are required to maintain. Learn more about our capabilities by contacting us.



Ceramic Media Cleaning & Replacement

- ✓ Extend media life
- ✓ Improve operating efficiency and air flow capacity
- ✓ Improve destruction efficiency
- ✓ Reduce the increased fuel usage caused by plugging
- ✓ Increase equipment life by reducing stress on system components

The efficiency of the unit is crucial in meeting EPA regulations and manufacturing objectives. Built-up residue can decrease airflow and lead to higher fuel requirements. In addition, valve seals and other intricate components can become damaged by excessive layers of unwanted particulates. Therefore, maintenance of the equipment must be done on a regular basis.

Often, cleaning or washing the RTO media can extend the life of the media. In conjunction with bakeouts, a media wash-out is designed to remove build-up in the media beds that restricts airflow through the RTO and reduces thermal efficiency and overall performance of the equipment. CMM has experience performing media bed washouts in an efficient manner to reduce downtime and increase effectiveness of the wash-out.



Oxidizer Insulation Repair

- ✓ Combustion chamber hot spot repair
- ✓ Eliminate unplanned downtime caused by failure
- ✓ Increase safety near the RTO
- ✓ Reduce radiant heat losses
- ✓ Assess damage to shell behind insulation caused by process constituents

Whether in a TO or RTO, the internal insulation of the combustion chamber is an important part of the long-term health of the equipment. An insulation failure can result in a “hot spot” forming on the exterior shell of the equipment, which can lead to metal failure and expensive and time-consuming repairs.

CMM inspects RTOs and TOs internally as well as externally to find signs of insulation failures. By taking a proactive approach, insulation replacement will typically remedy and stop potential issues before they arise. On occasion some hot spots can be repaired externally so the equipment can stay up and running, so no lost production.

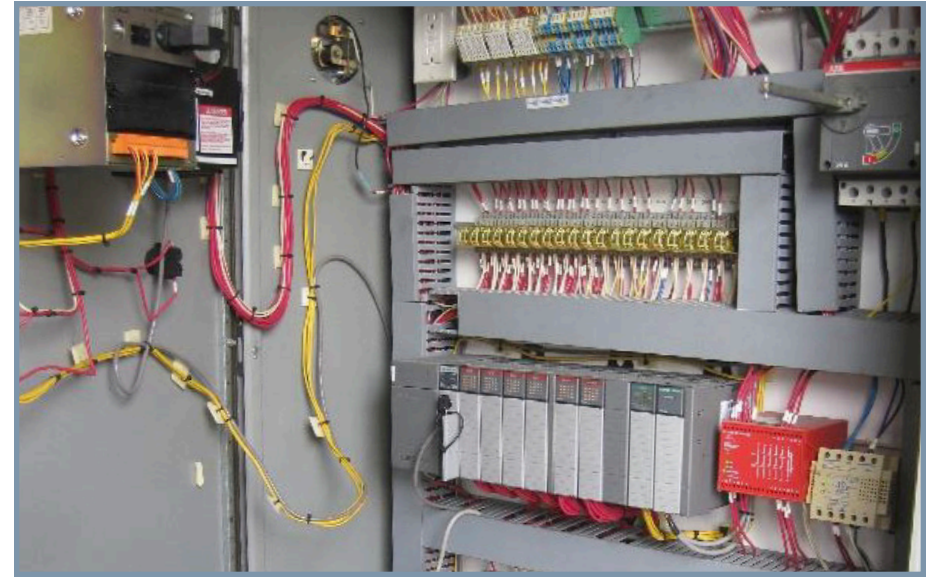


RTO Valve Rebuilds / Damper Rebuilds

- ✓ Butterfly dampers
- ✓ Rotary valves
- ✓ Poppet valves
- ✓ Diverter dampers

Whether poppet, butterfly, or rotary valves, The CMM Group can provide maintenance services to help ensure this critical component to all RTOs is functioning properly.

The CMM Group has experience with all damper types and is able to give an evaluation on how well the damper is sealing. CMM will put together a plan for the best repair approach, from simply gasket or bearing replacement to a complete new rotary valve replacement. We have the means to remove dampers and repair off site or do all repairs in the field still connected to the RTO.



Controls Upgrade

- ✓ Upgrade outdated or obsolete PLC (Programmable Logic Controller)
- ✓ Upgrade to a new PLC, control panel or programming (in part or in whole)
- ✓ Prevent equipment downtime while sourcing hard-to-find components
- ✓ Increase equipment reliability
- ✓ Enhance operator interface functions

Equipment downtime costs your company money. A PLC upgrade is one of the most important improvements you can make to keep your equipment maintained and running efficiently. The risk of incurring lost production time becomes higher with older PLC systems. With parts becoming obsolete, and lost time looking for replacement parts just to get you by, equipment downtime is inevitable. A failed PLC could cost you several days or even weeks of lost production time. By proactively upgrading to a new PLC system, you can minimize or eliminate the unplanned downtime caused by an unsupported or obsolete platform.

The CMM Group can provide a replacement PLC, new preassembled and programmed racks, HMI and control modifications, or programming.



VFD (Variable Frequency Drive) Upgrade

- ✓ Upgrade your outdated or obsolete VFD
- ✓ Improve process control
- ✓ Reduce energy consumption
- ✓ Increase motor life
- ✓ Reduce downtime

A Variable Frequency Drive (VFD) is an industry standard device that is used to control the speed and torque of a motor by varying the voltage and frequency supplied to a motor. VFDs are used on a wide range of motors regardless of size. This technology not only offers improved process control, VFDs can result in significant energy savings. Avoid unplanned interruptions to production. Don't ignore the signs of trouble when it comes to your VFD—improper sizing or application, power surges or interruptions, drive faults, poor environmental operating conditions, and obsolete components.

Don't have a VFD, but considering one? Many of our customers have realized energy savings from using VFDs through reduced electrical consumption and improved reliability. Motor speeds are automatically adjusted using instrumentation to maintain specific parameters—as the process changes so does the motor speed.

Whether you are using a volumetric damper, manual damper, or have an older existing VFD to control your motors, a VFD upgrade offers exceptional energy efficiency, reduced physical size, improved connectivity, and simplified maintenance.



Installation & Relocation Services

- ✓ Equipment relocation, rebuild and re-start
- ✓ Hot-side by-pass damper additions
- ✓ Ductwork evaluation
- ✓ Fan upgrade or pressure increase

The experts at The CMM Group have years of experience when handling installation and relocation projects, small or large and complex. Our internal CMM team of experts as well as our reliable, qualified, licensed partner contractors can complete turnkey installations or provide relocation services. Our CMM team of professionals work with our customers from start of the project through commissioning of our dryers and ovens, as well as for our Regenerative Thermal Oxidizers, Thermal and Direct Oxidizers, and Catalytic Oxidizers. And, we will ensure the project stays within budget.

When process changes occur, CMM has proven experience designing, manufacturing, and installing process ductwork. The design of process ductwork is critical to the operation of the entire pollution control system. CMM takes into consideration the flowrate, temperature, and other characteristics of process exhaust to ensure the ductwork is properly sized, and condensation concerns have been addressed.

If process changes result in higher VOC loadings to the pollution control device, CMM has a proven record of oxidizer modifications to address this issue. Whether that means a new media bed design or the addition of a hot-side bypass damper, CMM can provide all materials and install them in the field.



RTO Coldface Repairs

- ✓ Replace media baskets
- ✓ Upgrade materials
- ✓ Emergency repairs

The coldface of the media is a critical component for reliable operation of the RTO. The coldface is responsible for supporting the ceramic media heat exchangers. Due to the corrosive environment and organic particulate that is present in ethanol production, the coldface should be inspected and repaired as needed. Replacement media baskets or coldface structure is typically addressed in conjunction with a media bed replacement. Partial coldface repairs may be possible to reduce downtime and save money compared to a costly complete replacement. No matter what, CMM provides repairs and retrofits using robust designs and materials for improved operation.



Custom Engineered Solutions

Air Emissions Control

- Regenerative Thermal Oxidizers (RTO)
- Thermal Oxidizers (TO)
- Catalytic Oxidizers
- Rotary Concentrator Systems
- Scrubbers

Industrial Wastewater Treatment Systems

- Vacuum Evaporators
- Crystallizers
- Zero & Near-Zero Liquid Discharge Systems

Aftermarket Services

PTE Enclosures & Firewalls

Ceramic Media Cleaning & Replacement

Oxidizer Insulation Repair

Damper/Valve Repair

- Butterfly Dampers
- Rotary Valves
- Poppet Valves
- Diverter Valves

PLC Upgrade, HMI & Controls Modifications

Burner Control Upgrades

Heat Exchange Media Maintenance

Gas Train Components Upgrades

Catalyst Replacement

VFD (Variable Frequency Drive) Upgrades

Installation & Relocation Services

Waste Heat Recovery Systems

Hotside Bypass Additions

Engineering Studies

- Air Flow Analysis
- DRE Tests
- Burner Tuning & Upgrades
- Energy Analysis
- HAZOP Review

Service Programs

- Troubleshooting & Repair Services

Preventive Maintenance Programs

Spare & Replacement Parts

About The CMM Group

The CMM Group provides custom-designed air pollution control systems, industrial wastewater treatment systems, industrial ovens and aftermarket services to a wide variety of industries. Our mission is to support our customers with end-to-end, lifetime support of their equipment.

Our strengths show our commitment to our customers:

- Customer Responsive
 - Broad Process Knowledge
 - Attention to Detail
 - Quality Name-Brand Components
 - Custom Design and Fabrication
 - Strong Project Management
 - Complete Turnkey Installation Services
 - On-time Completion of Projects
 - Parts and Service Support for any OEM Brand
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The CMM Group

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