



# 3-Way CATALYSTS



## EMISSIONS: CONTROLLED.

*Cost-Effective, Ongoing Compliance For Rich-Burn Industrial Engines.*

If you run rich-burn stationary natural gas- or propane-fueled industrial engines, you face tough compliance rules – and stiff non-compliance fines – covering three types of exhaust emissions: carbon monoxide (CO), oxides of nitrogen (NOx), and hydrocarbons (HCs) including volatile organic compounds (VOCs) and a long list of EPA-classified hazardous air pollutants (HAPs).



▶MIRATECH Catalyst Manufacturing  
*Better Designed, Better Built*

*The good news?* One cost-effective, high-performance, easy-maintenance catalyst element brings your operation within compliance – and removes the risk of non-compliance fines – on all three fronts: **The MIRATECH 3-Way Catalyst.**

Available in a wide range of sizes and shapes, the 3-Way Catalyst can be custom-tailored to fit virtually any space requirements, any brand of catalytic converter, and any budget.

For operators in gas compression, air compression, water, petroleum or liquids pumping, chillers and power generation, and a variety of other applications, it can be a breath of fresh air: an affordable, effective, no-hassle answer to industrial emissions rules.

## CONTACT MIRATECH.

Ask any of the thousands of MIRATECH customers who know first-hand: the 3-Way Catalyst is the most advanced and cost-effective all-in-one Non-Selective Catalytic Reduction solution you can buy. To put the 3-Way Catalyst to work in your operation or to find out more about other MIRATECH Emissions Solutions, simply give us a call. Better yet, visit our website: [www.miratechcorp.com](http://www.miratechcorp.com)

## WHY MIRATECH?

- ▶▶ Advanced Technology
- ▶▶ Cost-Effective, Comprehensive Solutions
- ▶▶ Unsurpassed Experience & Expertise
- ▶▶ Fast, Responsive, Customer-Focused Service & Support
  - Prevent Non-Compliance Fines
  - Improve Engine & Catalyst Performance
  - Cut Maintenance Costs
  - Maximize Catalyst Life

## EMISSIONS SOLUTIONS

- ▶▶ Non-Selective Catalytic Reduction
  - 3-Way Catalyst Systems
  - Oxidation Catalysts
  - HAPs Catalysts
  - Diesel Oxidation Catalysts
- ▶▶ Catalyst Housings
  - MN/MBA
  - IQ
- ▶▶ Catalyst-Silencer Combos
  - QCC/QCH
  - RCS/RHS
- ▶▶ Active Regeneration Soot Traps
- ▶▶ SCR Catalyst Systems
- ▶▶ NX Analyzers
- ▶▶ Analysis-Controlled Injection Systems
- ▶▶ Air-Fuel Ratio Control Systems
- ▶▶ Service Contracts
- ▶▶ Technical Support & Training
- ▶▶ MIRATECH Catalyst Services
- ▶▶ Replacement Parts

# 3-Way CATALYSTS



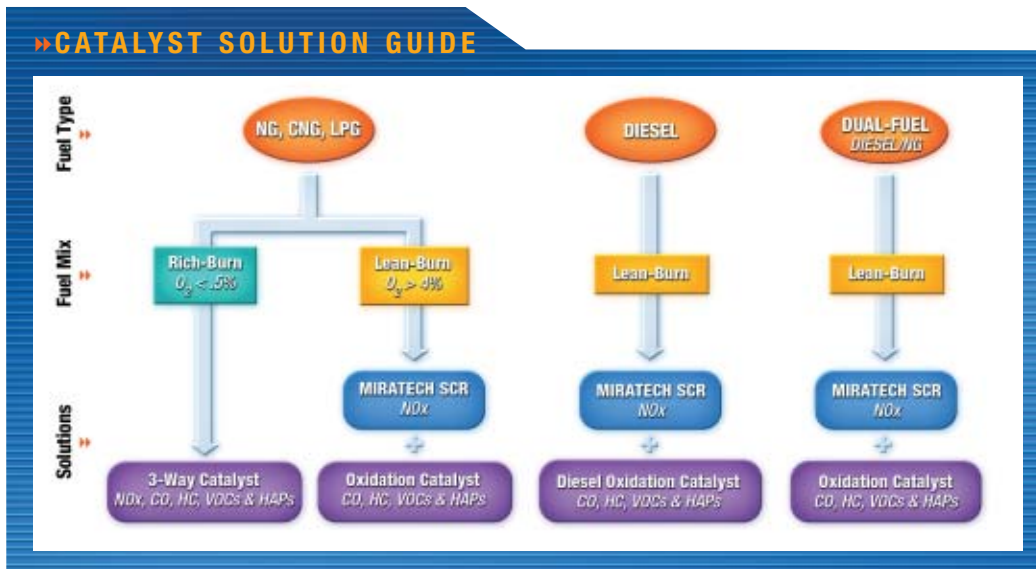
## THE 3-WAY ADVANTAGE.

The MIRATECH 3-Way Catalyst gives you a reliable, cost-effective total solution in rich-burn industrial engine emissions control – simultaneously cutting NO<sub>x</sub>, CO, hydrocarbons, VOCs and HAPs to compliance levels. And that keeps your operation on the right side of the non-compliance fine-line, with easy installation and maintenance, less impact on engine performance, and fewer headaches and hassles for you and your people.

## BETTER DESIGNED, BETTER BUILT.

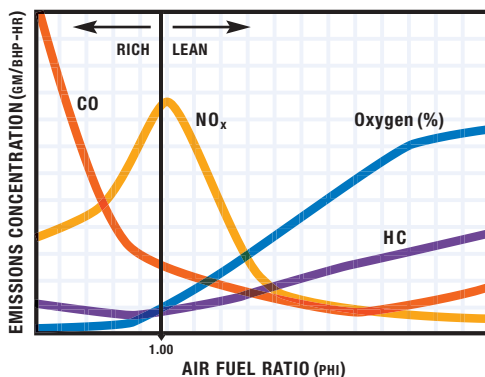
Nothing prevents nesting or resists vibration and shock better than the 3-Way Catalyst's corrugated metal foil construction – with the multi-layered honeycomb design adding durability. Chemisorption catalyst impregnation produces a cost-effective, long-lasting element that resists masking and catalyst "poisoning." And the patented MIRATECH banding and pinning process is your assurance of superior mechanical strength and high-temperature tolerance.

### » CATALYST SOLUTION GUIDE



O<sub>2</sub>: Oxygen / CO: Carbon Monoxide / NO<sub>x</sub>: Oxides of Nitrogen / HC: Hydrocarbons / VOCs: Volatile Organic Compounds / HAPs: Hazardous Air Pollutants

## » UNCONTROLLED EMISSIONS: RICH-BURN & LEAN-BURN ENGINES



Each element is wrapped in tough 304 stainless steel for virtual indestructibility, as well as personnel safety. The hard outer band and "Easy-Grab" lift protects workers from injury and makes element insertion and removal quick and easy.

## MIRATECH REPLACEMENTS.

MIRATECH manufactures replacement elements for our MBA, EQ and IQ catalytic converters, as well as our RCS/RHS Catalyst-Silencer combos. Custom designs to replace elements from other manufacturers – with the hallmark quality, performance and value of MIRATECH 3-Way, Oxidation and Diesel Oxidation Catalysts – are also available.

## EMISSIONS SOLUTIONS: CONTACT MIRATECH.

Whatever your emission control needs may be, count on MIRATECH for solutions that pay off in benefits you can literally take to the bank. Contact us by phone, e-mail, or FAX – or simply visit our website: [www.miratechcorp.com](http://www.miratechcorp.com). Ask for your FREE subscription to our useful, fact-filled electronic newsletter, *THE EMISSIONS MONITOR*.

## WHY MIRATECH 3-WAY CATALYSTS? Cost-Effective, No-Hassle Total Emissions Compliance:

- » NO<sub>x</sub>, CO, HC, VOCs, HAPs
- » Better Designed, Better Built, Better Value

## APPLICATIONS

- » Rich-Burn Stationary Engines, Natural Gas, LPG
  - Gas Compression
  - Air Compression
  - Water Pumps & Irrigation
  - Power Generation
  - Chillers

## FEATURES & BENEFITS

- » Minimizes Catalyst Cost & Space Requirements
  - Simultaneously Cuts NO<sub>x</sub>, CO, VOCs, Aldehydes & Other HAPs,
  - Prevents Non-Compliance Fines
- » Quick & Easy Element Insertion & Removal
- » Flat-Top Bonnet™ Design Eliminates Blow-By & Enhances Catalyst Efficiency
- » Resists Vibration & Shock
- » Low Pressure-Drop
- » Minimizes Impact On Engine Performance
- » 304 Stainless Steel Metal Monolith: Virtually Indestructible & Safer For Workers
- » Patented Banded & Pinned Construction:
  - Superior Mechanical Strength & Thermal Durability
- » Independent Corrugated & Flat-Foil Construction Honeycomb Design:
  - Prevents Nesting, Masking & "Poisoning"
- » One-Year Warranty

