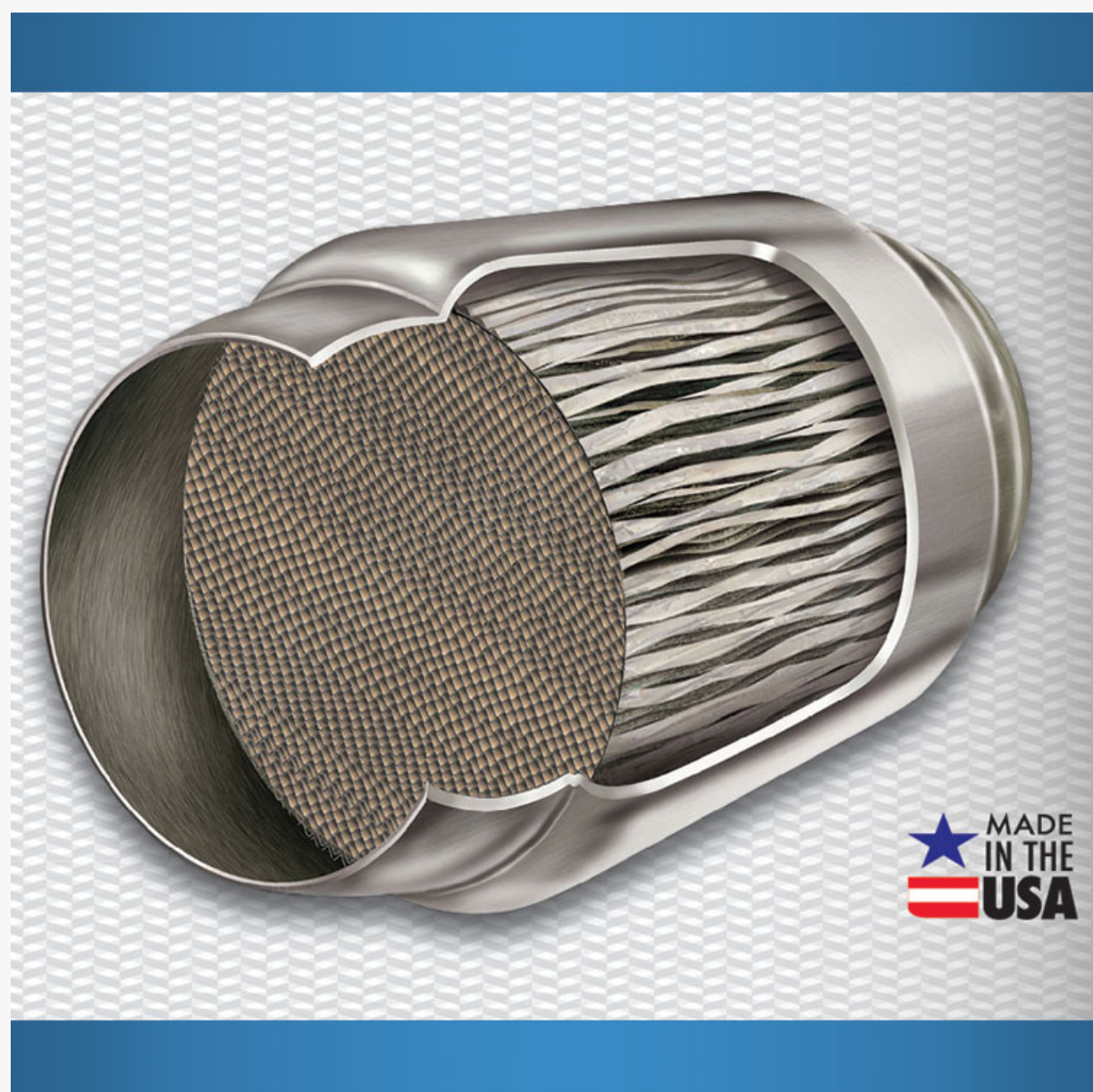
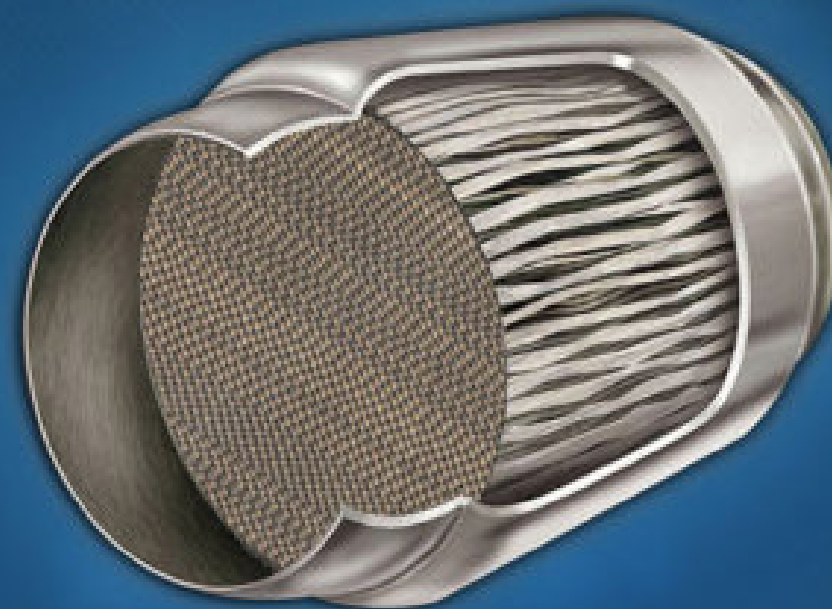


METALIC HERRINGBONE CATALYST TECHNOLOGY



PROPRIETARY METALLIC HERRINGBONE CATALYST TECHNOLOGY

Our Metallic Herringbone Catalyst;

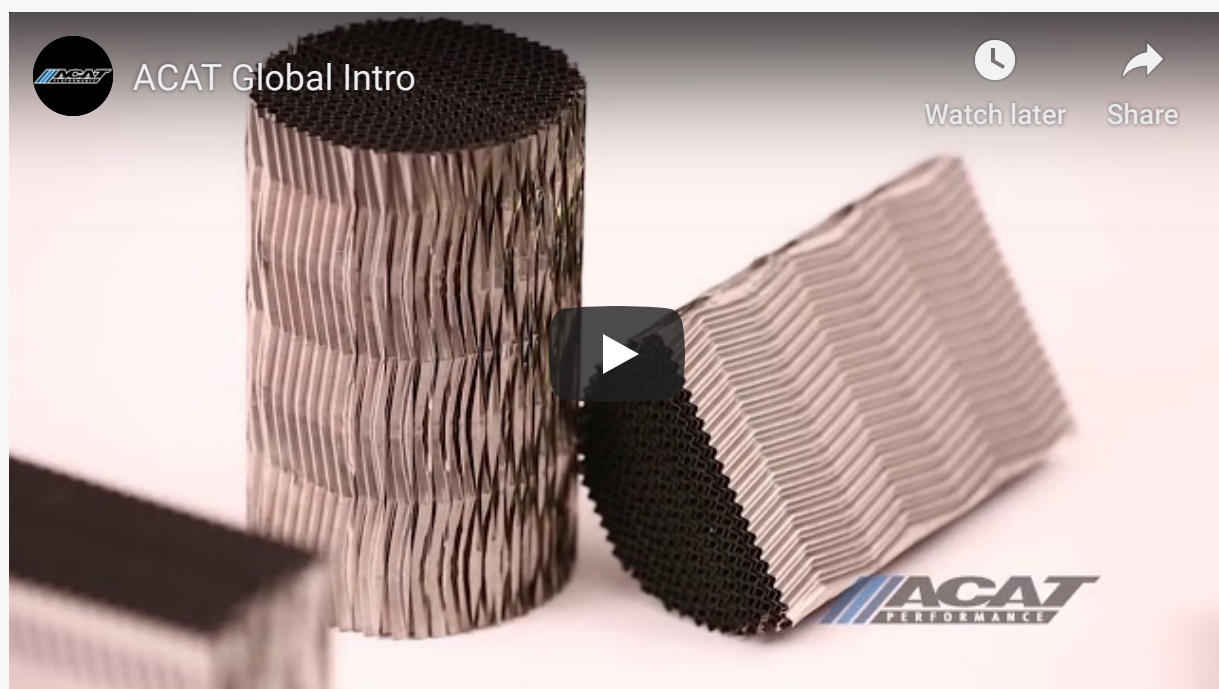
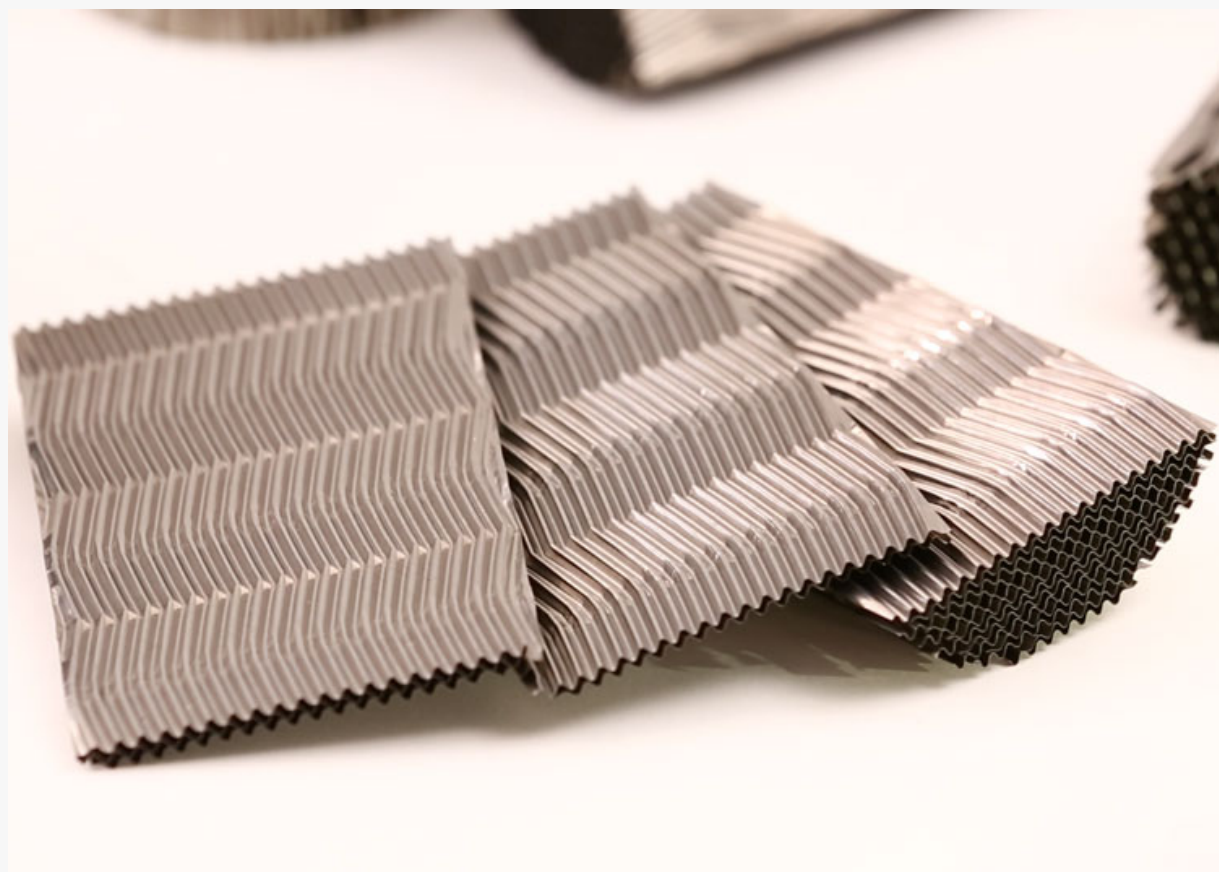
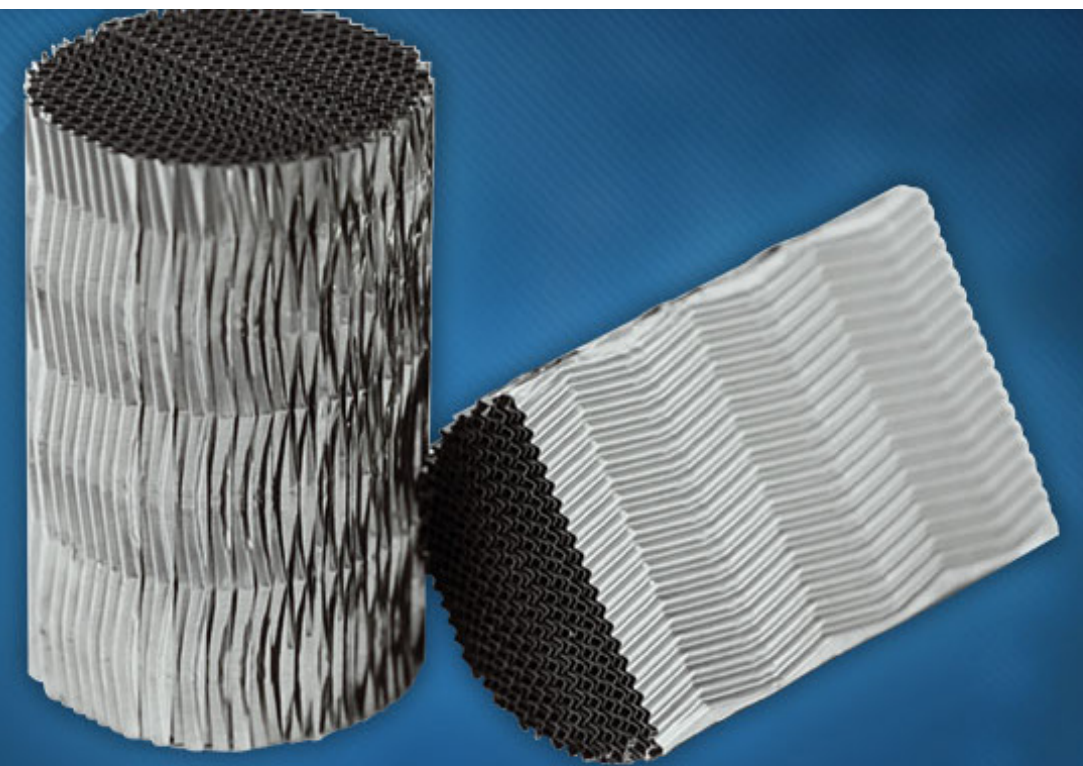
LOWER CELLS PER SQUARE INCH Improves flow by reducing back pressure for increased power and fuel economy.

A TURBULENT MAZE Exhaust gas pathway increases catalyst surface area, more efficiently controlling emissions.

HEIGHTENED EFFICIENCY With smaller converter designs, combined with improved noise vibration and harshness, allow for lighter total exhaust systems.

METALLIC HERRINGBONE SUBSTRATE

Metallic Substrate Technology
Exhaust Flow Rate
Space Velocity Rate
EPA Emissions Testing



ACAT Metallic focuses on our proprietary metallic herringbone catalytic converter substrate technology – applying the substrate in the automotive, light/heavy-duty truck, power sports, marine and power generation (off-and on-highway) markets.

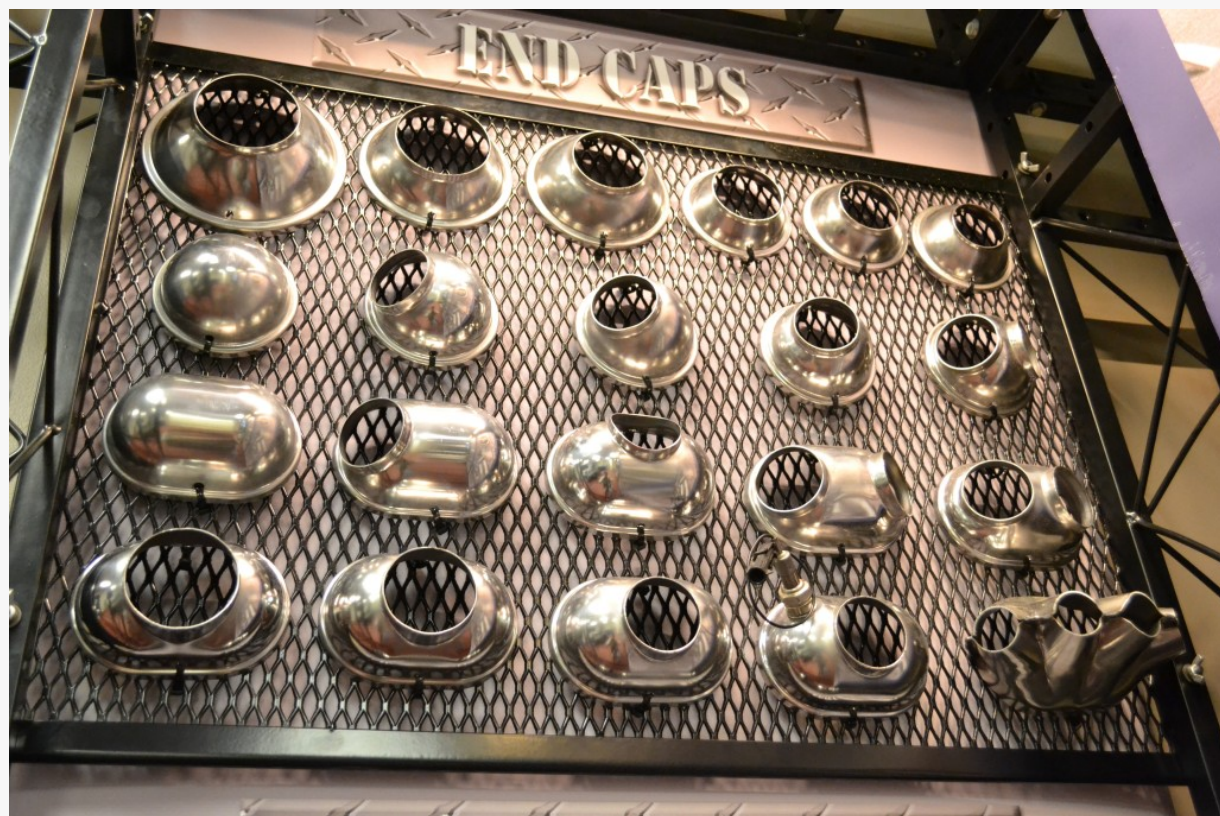
Products include our three-way catalyst (TWC) plus diesel oxidation catalyst (DOC) substrates and converters, as well as emission reduction elements (REs).

This focus on metallic herringbone converter technology is driven by the many advantages documented in our designs and materials:

- Exhaust gasses must pass through a “turbulent maze,” thereby increasing contact with the catalyst’s surface and more efficiently controlling emissions. Particulate removal improvements as high as 44% have been documented in diesel tests compared to ceramic units.
- Increased efficiency allows for platinum group metals (PGM) cost savings and a reduction in catalyst substrate size.
- Lower cells per square inch (CPSI) over competitive technology improves flow by reducing back pressure for better performance and fuel economy.
- ACAT’s proprietary bonding technology does not require a flat layer to separate corrugated layers. This further reduces back pressure as it enables cross-channel flow for improved performance and fuel economy.
- With no straight channel path, noise vibration and harshness (NVH) is improved. This may allow downsizing of mufflers to reduce cost and weight while increasing emission control performance.
- The metallic substrate can be formed into an endless variety of shapes, sizes and cell densities – enabling smaller and/or lighter-weight converters.
- Heightened efficiency from smaller and lighter designs which contribute to improved NVH may allow total exhaust systems to be 4 to 8 pounds lighter in V8 applications.

ACAT END CAPS

Available in 4" and 5" round and narrow body type with ID openings from 2" to 3". Different configuration with single or double inlets with angles of 15-30 and 45 degrees.

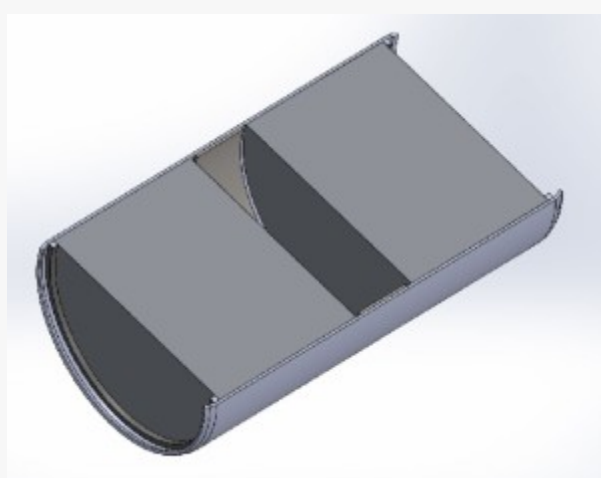
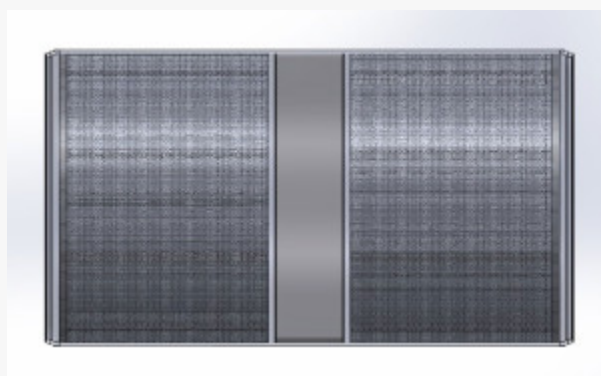


ACAT END CAPS

- Available in 4" and 5" round and narrow body type with ID openings from 2" to 3".
- Different configuration with single or double inlets with angles of 15-30 and 45 degrees.
- Used with our 4" round or narrow body stuffed tube converters, gives different inlet and outlet configurations for universal converters.

DIESEL MIXERS

For diesel "mixer" applications, ACAT's herringbone (HB) pattern, diameter size and flow length can be adjusted and tailored to meet urea conversion requirements.

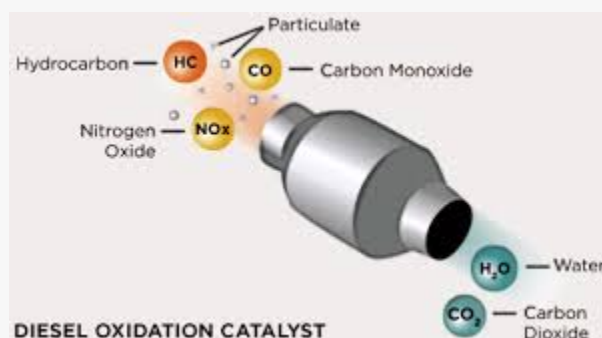


DIESEL MIXERS

- For diesel "mixer" applications, ACAT's herringbone (HB) pattern, diameter size and flow length can be adjusted and tailored to meet urea conversion requirements.
- ACAT HB Technology enables flexibility of designing a mixer to meet challenging packaging (volume, size and shape) requirements by allowing a choice of numerous HB patterns, different flow lengths and various diameter sizes.
- Standard HB patterns range from 70 HB to 450 HB.
 - An increase in HB pattern size will increase mixing as well as back pressure. A decrease in HB pattern will reduce mixing and back pressure.
- Standard flow lengths range from 57mm to 156mm.
 - Increasing flow length will increase mixing as well as back pressure. Decreasing flow length will reduce mixing and back pressure.
- Diameter of HB substrate can range from 1" to 36".
 - Increasing diameter will reduce back pressure.
- Urea and exhaust gases flowing from one chevron through the next creates full reversal within HB pattern. Gases passing through more chevrons will result in greater mixing.

DOCS – DIESEL OXIDATION CATALYSTS

Patented new technology from ACAT...



DOCS – DIESEL OXIDATION CATALYSTS

Patented new technology from ACAT significantly reduces the use of platinum group metals (PGMs) in DOCS.

As a result, OEMs, aftermarket and retrofit system manufacturers will benefit with lower costs on PGMs for vehicle catalysts on diesel engines while complying with stringent EPA emissions regulations.

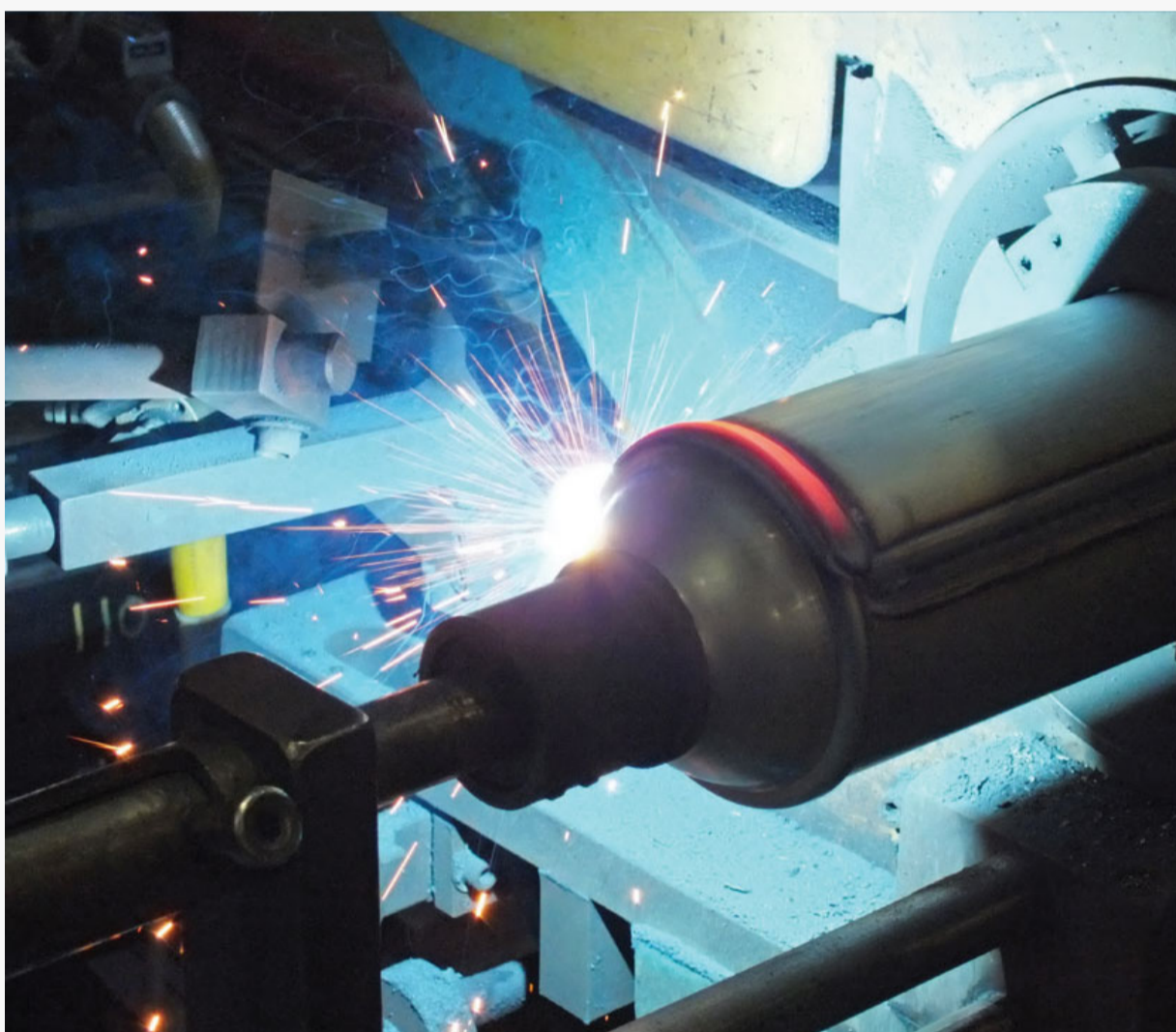
ACAT's unique and proprietary mixed-metal oxide chemical structure takes advantage of low-cost metals to synergize the activity of a small amount of PGM.

As a result, it enables the diesel oxidation catalysts to perform at a level equal to – or better than – conventional DOCS that employ much higher loads of PGMs.

Initial tests confirm this ACAT breakthrough. They prove our new synergized-platinum group metals display a significant reduction in the amount of PGM need to manufacture DOCS for both light- and heavy-duty diesel engines in comparison to a competitor's OEM catalyst product.

TUBE BENDING

Tube Bending is the arm of our company that provides total system support for our Exhaust and Metallic divisions and their clients.



TUBE BENDING

Areas of Expertise

Our Tube Bending expertise is available to those who are planning to bring certain fabrication tasks in-house, or assign them to other supply chain partners.

Look to us for capabilities and services that include:

Tooling

- Automated welding cells
- Plasma cutting systems
- Tooling, fixtures and dies
- Tube-bending work cells
- High speed/tight tolerance machining

Tube Bending

- 1/2" to 3" diameter tubing
- 2" to 17" CLR bending
- Full range of finishing operations

Welding

- Robotic
- MIG
- TIG
- Plasma

WELDING ASSEMBLIES

You can rely on ACAT Global.



ACAT GLOBAL WELDING ASSEMBLIES

You can rely on ACAT Global for products including:

- Adapter pipes
- Brush guards
- End caps
- Fasteners
- Flex pipes/tubes
- Frames & chasses
- Grab handles
- Headrest tubes
- Heatshields
- Mufflers
- Operator protection systems
- Resonators