

Industrial Silencer, Heat Recovery and Catalytic Specialists

# Maxim Silencers 2022 Emissions Catalog

Revision: M-EMIS-003



**MAXIM**  
SILENCERS  
a Powertherm company



Prices are subject to change without notice.  
Prices are in U.S. dollars

Minimum order \$50, expedited fees minimum \$50  
Custom orders may require payment in advance.  
Custom items are non-returnable and non-refundable.

Returns must be approved by Maxim Silencers in advance. Upon approval an RMA will be issued.  
Return shipments are prepaid by customer, unless otherwise authorized by Maxim Silencers.  
Restocking charges may be applied.

Maxim Silencers products are warranted for one year from date of purchase by the consumer against defects due to materials and workmanship only. In case of a defective product, Maxim Silencers shall be the sole judge in determining the nature of the defect. Maxim Silencers sole obligation shall be to repair, or at Maxim Silencers option, to replace said products providing the originals are returned to Maxim Silencers. All returned items must be pre-approved by Maxim Silencers. All return shipments must be prepaid by the consumer. Defects or failures due to improper or careless installation, storage, handling, or application shall be excluded from this warranty. Failure to comply or contrary usage to Maxim Silencers directions, specifications or design, of which Maxim Silencers shall be sole judge, voids this warranty and all said products are specifically excluded from this warranty. No liability for damage or loss of any nature arising from or out of the use of this product, whether or not defective, is assumed. No liability is accepted for return transportation charges, following the repair or replacement, as previously mentioned, or for reinstallation costs. No other expressed or implied warranties exist in the absence of special written agreement between the consumer and Maxim Silencers.



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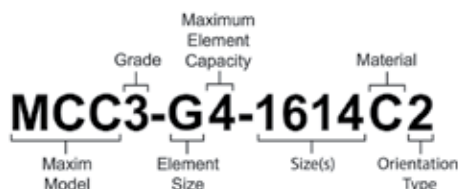
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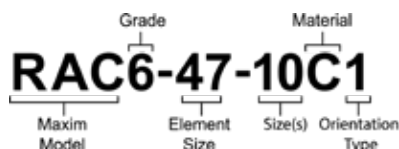
## Guides - MCC, MACC, RAC and MAC Nomenclature



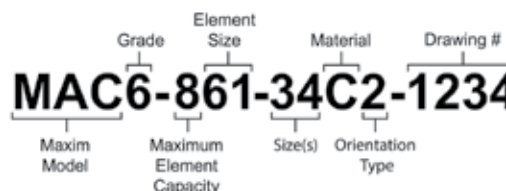
**MCC Series** - MCC is horizontal model, but can be mounted either way, with rectangle elements

**MACC Series** - MACC is vertical base ring tower model with rectangle elements

Model	Grade dBA Noise Reduction	-Element Size	#	-Size(s)	Material	Orientation	-#
MCC	1 No Silencing	F 15 x 36"		Outlet Inlet	C Carbon Steel	1 End in, End out	
MACC	2 Residential 20-25	G 15 x 24" or 15.44 x 24.75"		Outlet size is the nominal silencer size	S Stainless Steel 304	2 Side in, End out	
	3 Critical 25-32				T Stainless Steel 316	3 End in, Side out	
	4 Super Critical 30-40			Only list inlet size if different from outlet		4 Side in, Side out	
	6 Hospital Plus 35-50					5 Dual side in, End out	
	7 Extreme 50-55					6 Dual mitered side in, End out	
	8 Super Extreme 45-60					7 Dual end in, Side out	



RAC element capacity is always 2, therefore it is NOT used in the nomenclature.



**RAC Series** - RAC is quick access model with round elements, element capacity is two (2)

**MAC Series** - MAC is vertical model with round elements

Model	Grade dBA Noise Reduction	-#	Element Size	-Size(s)	Material	Orientation	-#
RAC	1 No Silencing		16 8" dia	Outlet Inlet	C Carbon Steel	1 End in, End out	
MAC	2 Residential 20-25		20 10" dia	Outlet size is the nominal silencer size	S Stainless Steel 304	2 Side in, End out	
	3 Critical 25-32		24 11.5" dia		T Stainless Steel 316	3 End in, Side out	
	4 Super Critical 30-40		25 12" dia			4 Side in, Side out	
	6 Hospital Plus 35-50		29 14.5" dia	Only list inlet size if different from outlet		5 Dual side in, End out	
			34 17" dia			6 Dual mitered side in, End out	
			39 19.5" dia			7 Dual end in, Side out	
			43 21.5" dia				
			47 23.5" dia				
			53 26.5" dia				
			57 28.5" dia				
			61 30.25" dia				
			67 33.5" dia				

**Element Capacity:** Maximum number of elements housing can hold. RAC element capacity is always 2, therefore it is NOT used in the nomenclature

**Size(s):** MCC and MACC outlet size is the nominal silencer size.

**Drawing numbers:** Drawing numbers are reserved for customized products. Not all part numbers will have drawing numbers.

As of July 2016 this nomenclature for the MCC and MACC represents an internal design change which is a holster style catalyst bed. When ordering old style catalyst bed Legacy MCC part number format should be used. This nomenclature is NOT for MCCO, or MCCOS.



## Guides - MCC, MACC, RAC and MAC Nomenclature

### Cylindrical Silencer Orientation Types



Type 1 - EIEO  
End In, End Out



Type 2 - SIEO  
Side In, End Out



Type 3 - EISO  
End In, Side Out



Type 4 - SISO  
Side In, Side Out



Type 5 - Dual SIEO  
Dual Side In, End Out



Type 6 - Dual Mitered SIEO  
Dual Mitered Side In, End Out

### Mounting Supports

#### Horizontal Support Options



ES Type "E"  
Bracket Support (4)



SD Type "F"  
Saddle Support (2)

#### Vertical Support Options



D3 Type "D"  
Leg Support (3)



AS Type "A"  
Trunnion Support



BS Type "B"  
Bracket Support

**Mounting Direction:** Silencers may be mounted vertically or horizontally with the drain located accordingly. Specify prior to ordering if silencer is to be mounted vertically.

### Side Inlet and Outlet Directional Placement



End In, Side Out at 3 o'clock



Side In 3 o'clock, Side Out 12 o'clock



Side In 6 o'clock, Side Out 9 o'clock

**Side Inlet and Outlet Placement:** Side inlet and outlet placements are viewed from the inlet end. Other placement options are available upon request. Mounting placement positions are noted as clock positions.



# RAC SERIES CATALYTIC SILENCERS

## RAC SERIES OVERVIEW

The Maxim RAC Quick-Access series of catalytic silencers is the ultimate solution for natural gas internal combustion engine emission control in any environment. Easy to install and simple to maintain and operate, RAC silencers are designed to work efficiently and economically over a long, trouble-free life span. We offer the flexibility and performance needed to efficiently meet your specific requirements, plus innovative features that are only available from Maxim. Maxim Silencers are proudly made in the USA.

Our RAC silencers combine two solutions in one;

### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

### PROVEN NOISE ATTENUATION

Silencing configurations are available as a housing only or with integrated silencers from industrial grade to hospital plus grade noise attenuation.

## FEATURES

- Single wrench servicing of elements
- Gasket free seal between catalytic core and housing
- Hinged access cover
- Dual element capacity
- Platinum and rhodium metals provide long lasting catalytic activity
- Positive mechanical axial sealing of elements
- Multiple emission sample ports with separate element monitoring
- Low backpressure inlet diffuser for better exhaust distribution
- Minimum pressure drop design for housing and element

## OPTIONS / ACCESSORIES

- Enhanced conversion element(s)
- Stainless steel construction: 304 or 316
- Side inlet and outlet
- Installs up to two NSCR Three-Way, Oxidation or Diesel Oxidation elements
- Attenuation/noise reductions available:
  - Housing only
  - Residential 20 to 25 dBA
  - Critical 25-32 dBA
  - Super Critical 30-40 dBA
  - Hospital Plus 35-50 dBA
- Top or side facing door arrangement
- Special paints and finishes available
- Complete range of exhaust accessories

## ADDED VALUE

- Delivering distinctly-focused, customer specific engineered solutions within budget and on schedule
- Providing silencer sizing based on customer's application and desired emission reduction
- Custom designs available for the following extreme applications:
  - Very high temperature operations (above 1300°F)
  - Very low temperature operations (below 550°F)
- Near 100% NO<sub>x</sub> or CO emission destruction





# HOUSING ONLY CATALYTIC SILENCERS

## Housing Only

### RAC1 OVERVIEW

The RAC1 provides customizable emission reduction. The RAC is designed to require one wrench access cover removal for easy servicing of elements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

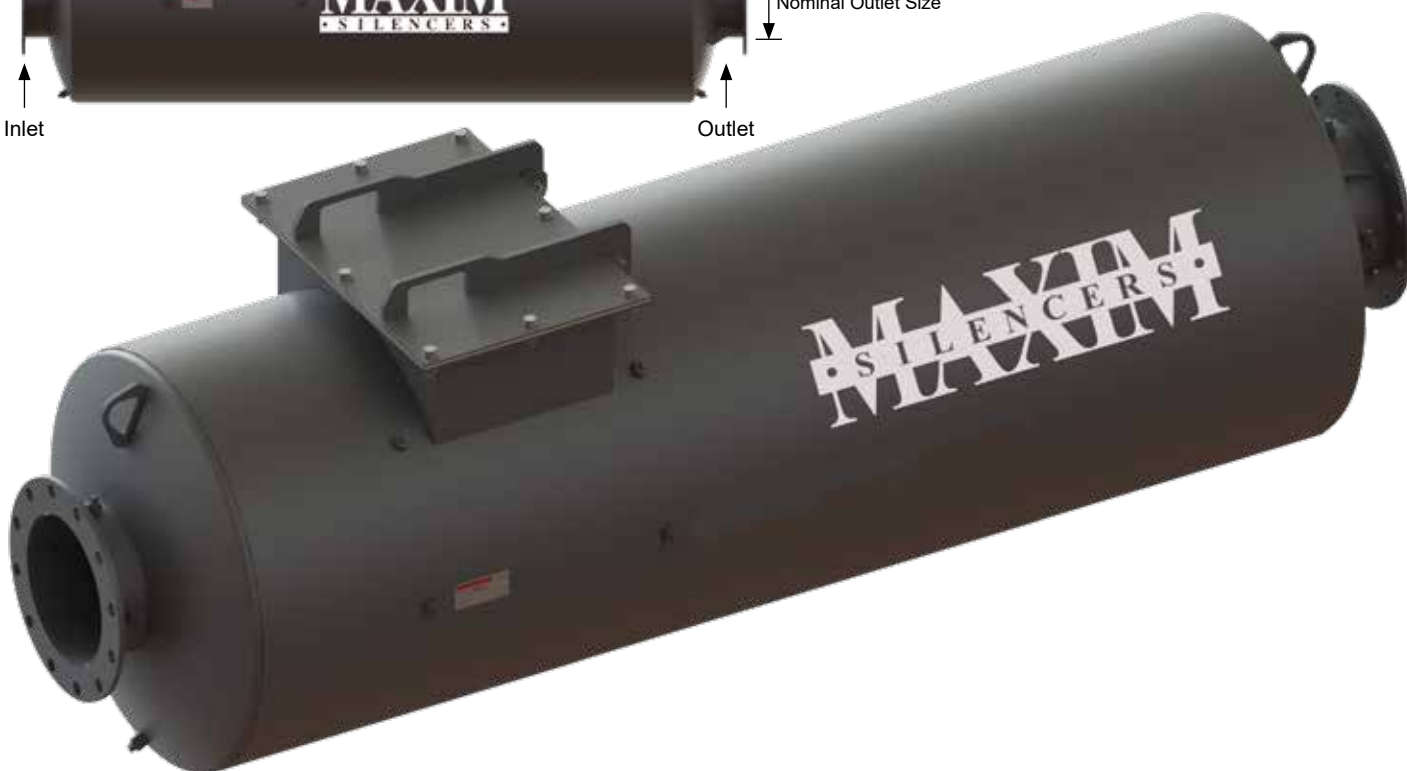
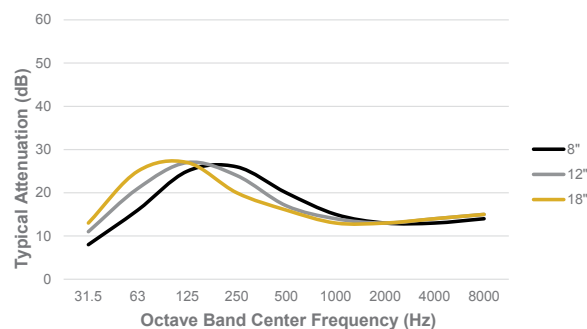
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Hinged access cover
- Gasket free seal between catalytic core and housing
- One wrench to remove access cover
- Heavy duty, all welded construction and long service life
- High temperature prime coated exterior finish
- Multiple sample ports and separate element monitoring
- Test ports per EPA and TCEQ guidelines

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Flexible connectors
- Companion flanges
- Cleanout openings
- Side inlet and outlet
- Horizontal or vertical support arrangements
- Top or side facing door arrangement
- Custom sizing
- Explosion relief cover
- Special paints and finishes available
- Installs up to two NSCR Three-Way, Oxidation or Diesel Oxidation elements
- Complete range of exhaust accessories





# RESIDENTIAL CATALYTIC SILENCERS

## 20 to 25 dBA Noise Reduction

### RAC2 OVERVIEW

The RAC2 provides customizable emission reduction combined with Maxim's best silencing technologies. RAC2 delivers residential grade silencing for noise sensitive applications. The RAC is designed to require one wrench access cover removal for easy servicing of elements. Attenuation rating is with one catalyst element installed. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

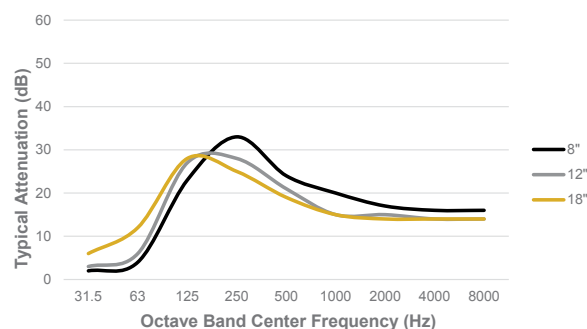
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Hinged access cover
- Gasket free seal between catalytic core and housing
- One wrench to remove access cover
- Advanced acoustical design
- Heavy duty, all welded construction and long service life
- High temperature prime coated exterior finish
- Multiple sample ports and separate element monitoring
- Test ports per EPA and TCEQ guidelines

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Flexible connectors
- Companion flanges
- Cleanout openings
- Side inlet and outlet
- Horizontal or vertical support arrangements
- Top or side facing door arrangement
- Custom sizing
- Explosion relief cover
- Special paints and finishes available
- Installs up to two NSCR Three-Way, Oxidation or Diesel Oxidation elements
- Complete range of exhaust accessories



- Listed sound data is based on typical performance and should not be considered absolute.
- \*See nomenclature guide for additional information on part number creation.



# CRITICAL CATALYTIC SILENCERS

## 25 to 32 dBA Noise Reduction

### RAC3 OVERVIEW

The RAC3 provides customizable emission reduction combined with Maxim's best silencing technologies. RAC3 delivers critical grade silencing for noise sensitive applications. The RAC is designed for single wrench access cover removal for easy servicing of elements. Attenuation rating is with one catalyst element installed. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

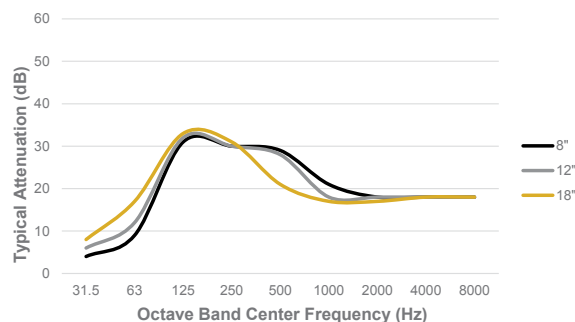
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Hinged access cover
- Gasket free seal between catalytic core and housing
- One wrench to remove access cover
- Advanced acoustical design
- Heavy duty, all welded construction and long service life
- High temperature prime coated exterior finish
- Multiple sample ports and separate element monitoring
- Test ports per EPA and TCEQ guidelines

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Flexible connectors
- Companion flanges
- Cleanout openings
- Side inlet and outlet
- Horizontal or vertical support arrangements
- Top or side facing door arrangement
- Custom sizing
- Explosion relief cover
- Special paints and finishes available
- Installs up to two NSCR Three-Way, Oxidation or Diesel Oxidation elements
- Complete range of exhaust accessories





# SUPER CRITICAL CATALYTIC SILENCERS

## 30 to 40 dBA Noise Reduction

### RAC4 OVERVIEW

The RAC4 provides customizable emission reduction combined with Maxim's best silencing technologies. RAC4 delivers super critical grade silencing for noise sensitive applications. The RAC is designed to require one wrench access cover removal for easy servicing of elements. Attenuation rating is with one catalyst element installed. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

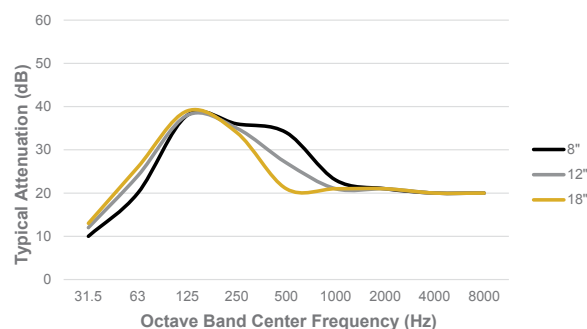
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Hinged access cover
- Gasket free seal between catalytic core and housing
- One wrench to remove access cover
- Advanced acoustical design
- Heavy duty, all welded construction and long service life
- High temperature prime coated exterior finish
- Multiple sample ports and separate element monitoring
- Test ports per EPA and TCEQ guidelines

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Flexible connectors
- Companion flanges
- Cleanout openings
- Side inlet and outlet
- Horizontal or vertical support arrangements
- Top or side facing door arrangement
- Custom sizing
- Explosion relief cover
- Special paints and finishes available
- Installs up to two NSCR Three-Way, Oxidation or Diesel Oxidation elements
- Complete range of exhaust accessories



- Listed sound data is based on typical performance and should not be considered absolute.
- \*See nomenclature guide for additional information on part number creation.



# HOSPITAL PLUS CATALYTIC SILENCERS

## 35 to 50 dBA Noise Reduction

### RAC6 OVERVIEW

The RAC6 provides customizable emission reduction combined with Maxim's best silencing technologies. RAC6 delivers hospital plus grade silencing for noise sensitive applications. The RAC is designed for single wrench access cover removal for easy servicing of elements. Attenuation rating is with one catalyst element installed. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

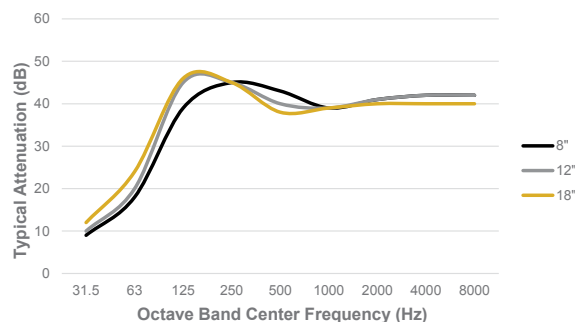
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Hinged access cover
- Gasket free seal between catalytic core and housing
- One wrench to remove access cover
- Advanced acoustical design
- Heavy duty, all welded construction and long service life
- High temperature prime coated exterior finish
- Multiple sample ports and separate element monitoring
- Test ports per EPA and TCEQ guidelines

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Flexible connectors
- Companion flanges
- Cleanout openings
- Side inlet and outlet
- Horizontal or vertical support arrangements
- Top or side facing door arrangement
- Custom sizing
- Explosion relief cover
- Special paints and finishes available
- Installs up to two NSCR Three-Way, Oxidation or Diesel Oxidation elements
- Complete range of exhaust accessories





# MCC SERIES CATALYTIC SILENCERS

## MCC SERIES OVERVIEW

With more than 100 years experience in silencing design and manufacturing, Maxim has developed the Maxim MCC Catalytic Silencers Series. Maxim MCC Catalytic Silencers are engineered for larger horsepower engines. The MCC series silencers maximizes your emissions and noise compliance. Constructed of carbon steel or stainless steel with multiple orientation and attenuation/noise reduction options available. The MCC series can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

### PROVEN NOISE ATTENUATION

Silencing configurations from industrial grade to super extreme grade noise attenuation.

Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

## FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

Multiple attenuation/noise reductions available

Multiple inlet/outlet orientation types available

Easy access to catalysts, one person can service unit

Sampling ports per EPA and TCEQ guidelines

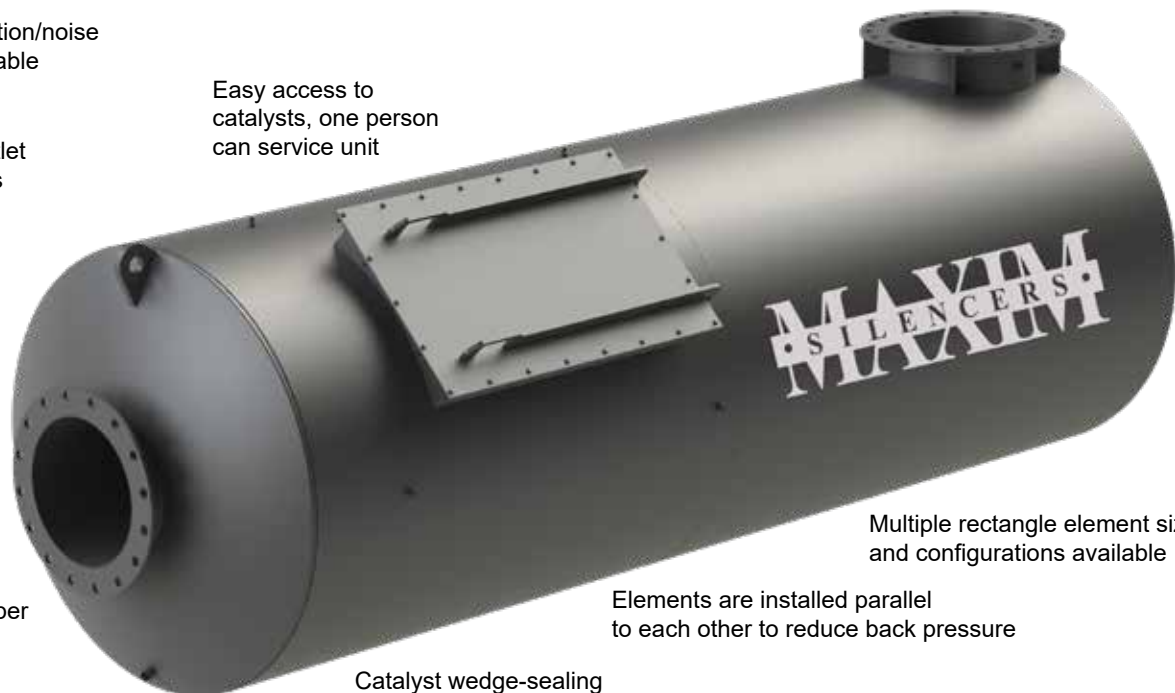
Catalyst wedge-sealing design

Elements are installed parallel to each other to reduce back pressure

Multiple rectangle element sizes and configurations available

## OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Multiple attenuation/noise reductions available
- Attenuation/noise reductions available:
  - Housing only
  - Residential 20 to 25 dBA
  - Critical 25-32 dBA
  - Super Critical 30-40 dBA
  - Hospital Plus 35-50 dBA
  - Extreme 40-55 dBA
  - Super Extreme 45-60 dBA
- Orientation types available:
  1. End in-End out
  2. Side in-End out
  3. End in-Side out
  4. Side in-Side out
- Horizontal or vertical support arrangements
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories





# RESIDENTIAL CATALYTIC SILENCERS

## 20 to 25 dBA Noise Reduction

### MCC2 OVERVIEW

The MCC2 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a residential grade attenuation. Maxim MCC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel or stainless steel with multiple orientation options available, the MCC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

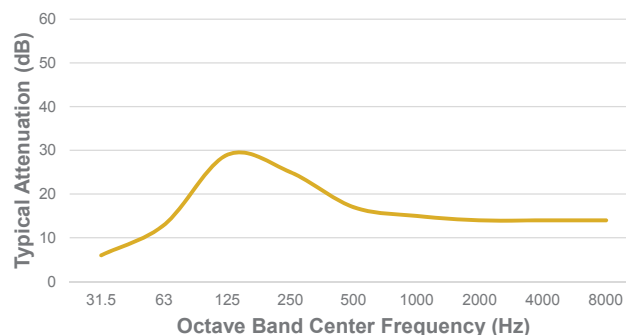
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Orientation types available:
  1. End in-End out
  2. Side in-End out
  3. End in-Side out
  4. Side in-Side out
- Horizontal or vertical support arrangements
- Multiple rectangle element sizes and configurations available
- Three-way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Multiple inlet/outlet orientation types available

Easy access to catalysts, one person can service unit

Sampling ports per EPA and TCEQ guidelines

Catalyst wedge-sealing design

Multiple rectangle element sizes and configurations available

Elements are installed parallel to each other to reduce back pressure



- Listed sound data is based on typical performance and should not be considered absolute.
- See nomenclature guide for additional information on part number creation.



# CRITICAL CATALYTIC SILENCERS

## 25 to 32 dBA Noise Reduction

### MCC3 OVERVIEW

The MCC3 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a critical grade attenuation. Maxim MCC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel or stainless steel with multiple orientation options available, the MCC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

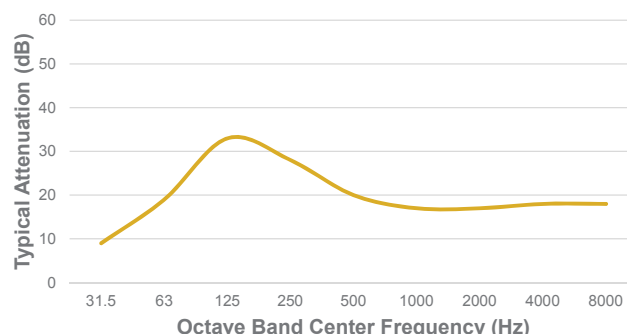
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Orientation types available:
  1. End in-End out
  2. Side in-End out
  3. End in-Side out
  4. Side in-Side out
- Horizontal or vertical support arrangements
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Multiple inlet/outlet orientation types available

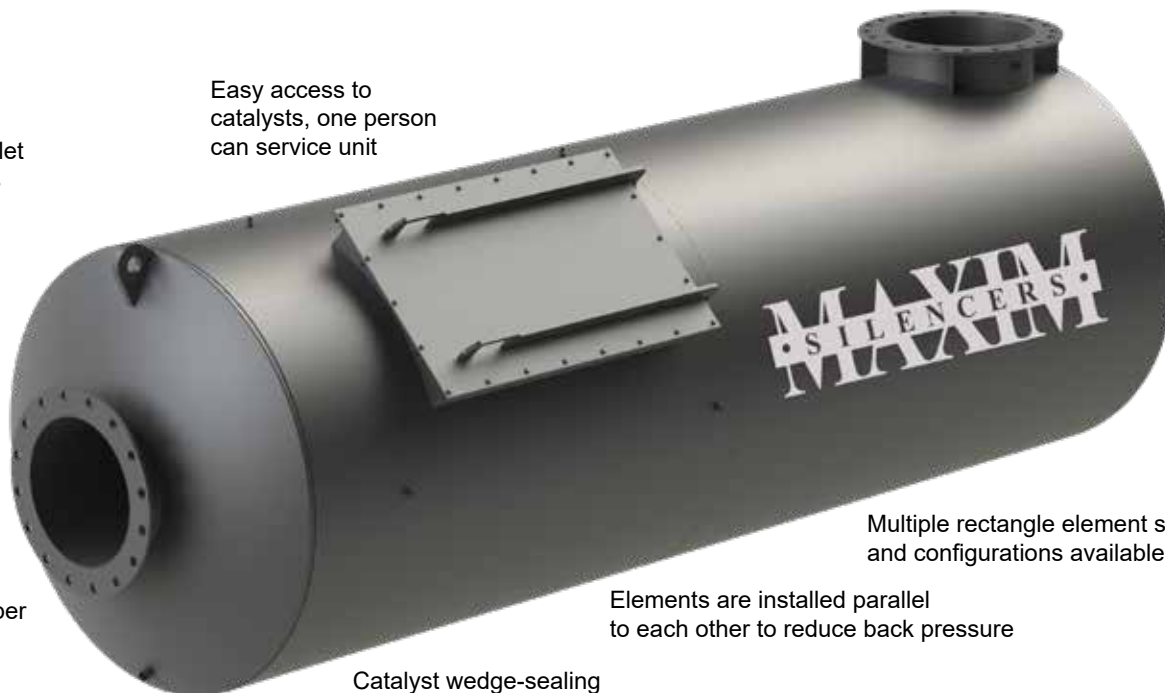
Easy access to catalysts, one person can service unit

Sampling ports per EPA and TCEQ guidelines

Catalyst wedge-sealing design

Multiple rectangle element sizes and configurations available

Elements are installed parallel to each other to reduce back pressure





# SUPER CRITICAL CATALYTIC SILENCERS

## 30 to 40 dBA Noise Reduction

### MCC4 OVERVIEW

The MCC4 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a super critical grade attenuation. Maxim MCC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel or stainless steel with multiple orientation options available, the MCC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

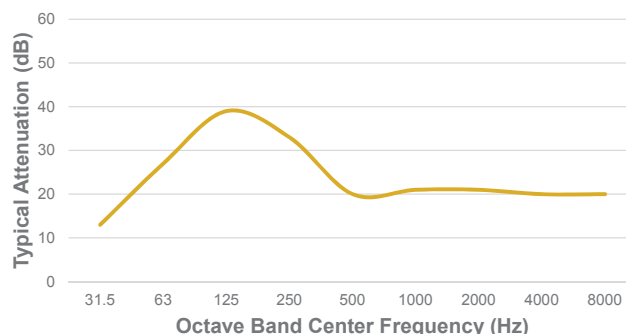
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Orientation types available:
  1. End in-End out
  2. Side in-End out
  3. End in-Side out
  4. Side in-Side out
- Horizontal or vertical support arrangements
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Multiple inlet/outlet orientation types available

Easy access to catalysts, one person can service unit

Sampling ports per EPA and TCEQ guidelines

Catalyst wedge-sealing design

Elements are installed parallel to each other to reduce back pressure

Multiple rectangle element sizes and configurations available



- Listed sound data is based on typical performance and should not be considered absolute.
- See nomenclature guide for additional information on part number creation.



# HOSPITAL PLUS CATALYTIC SILENCERS

## 35 to 50 dBA Noise Reduction

### MCC6 OVERVIEW

The MCC6 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a hospital plus grade attenuation. Maxim MCC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel or stainless steel with multiple orientation options available, the MCC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

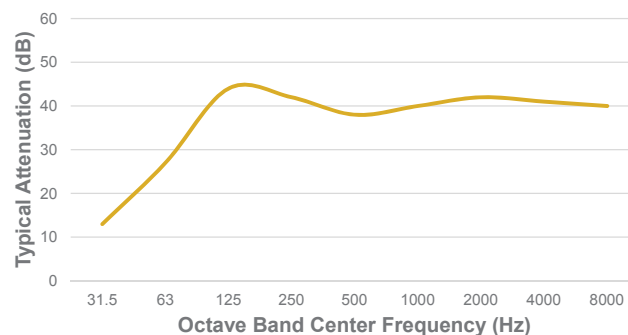
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Orientation types available:
  1. End in-End out
  2. Side in-End out
  3. End in-Side out
  4. Side in-Side out
- Horizontal or vertical support arrangements
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Multiple inlet/outlet orientation types available

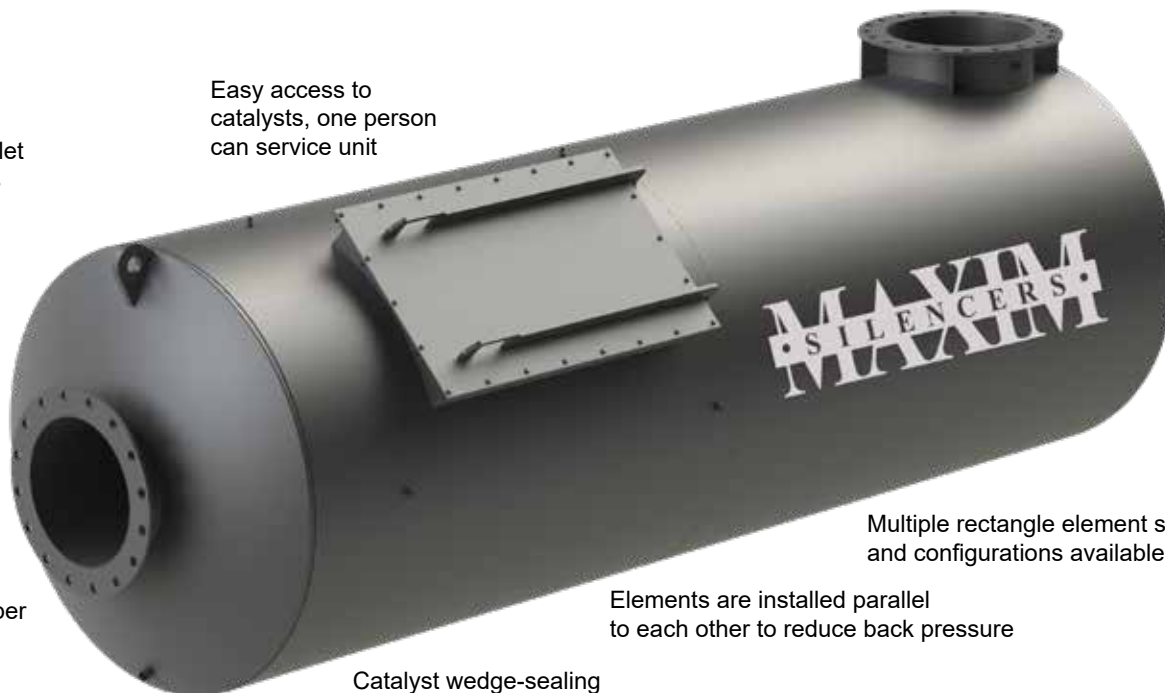
Easy access to catalysts, one person can service unit

Sampling ports per EPA and TCEQ guidelines

Catalyst wedge-sealing design

Multiple rectangle element sizes and configurations available

Elements are installed parallel to each other to reduce back pressure





# EXTREME CATALYTIC SILENCERS

## 40 to 55 dBA Noise Reduction

### MCC7 OVERVIEW

The MCC7 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a extreme grade attenuation. Maxim MCC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel or stainless steel with multiple orientation options available, the MCC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

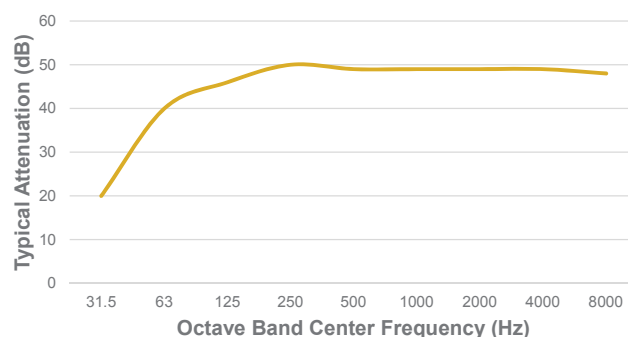
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Orientation types available:
  1. End in-End out
  2. Side in-End out
  3. End in-Side out
  4. Side in-Side out
- Horizontal or vertical support arrangements
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Multiple inlet/outlet orientation types available

Easy access to catalysts, one person can service unit

Sampling ports per EPA and TCEQ guidelines

Catalyst wedge-sealing design

Elements are installed parallel to each other to reduce back pressure

Multiple rectangle element sizes and configurations available



- Listed sound data is based on typical performance and should not be considered absolute.
- See nomenclature guide for additional information on part number creation.



# SUPER EXTREME CATALYTIC SILENCERS

## 45 to 60 dBA Noise Reduction

### MCC8 OVERVIEW

The MCC8 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a super extreme grade attenuation. Maxim MCC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel or stainless steel with multiple orientation options available, the MCC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

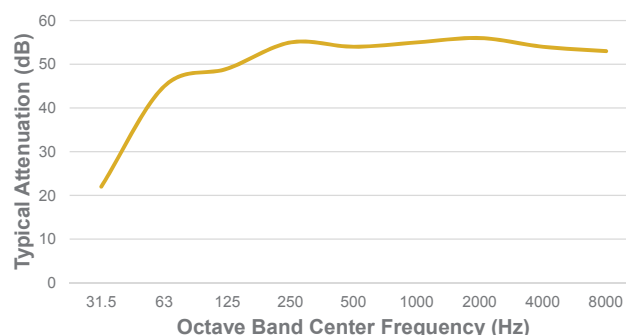
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- Orientation types available:
  1. End in-End out
  2. Side in-End out
  3. End in-Side out
  4. Side in-Side out
- Horizontal or vertical support arrangements
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Multiple inlet/outlet orientation types available

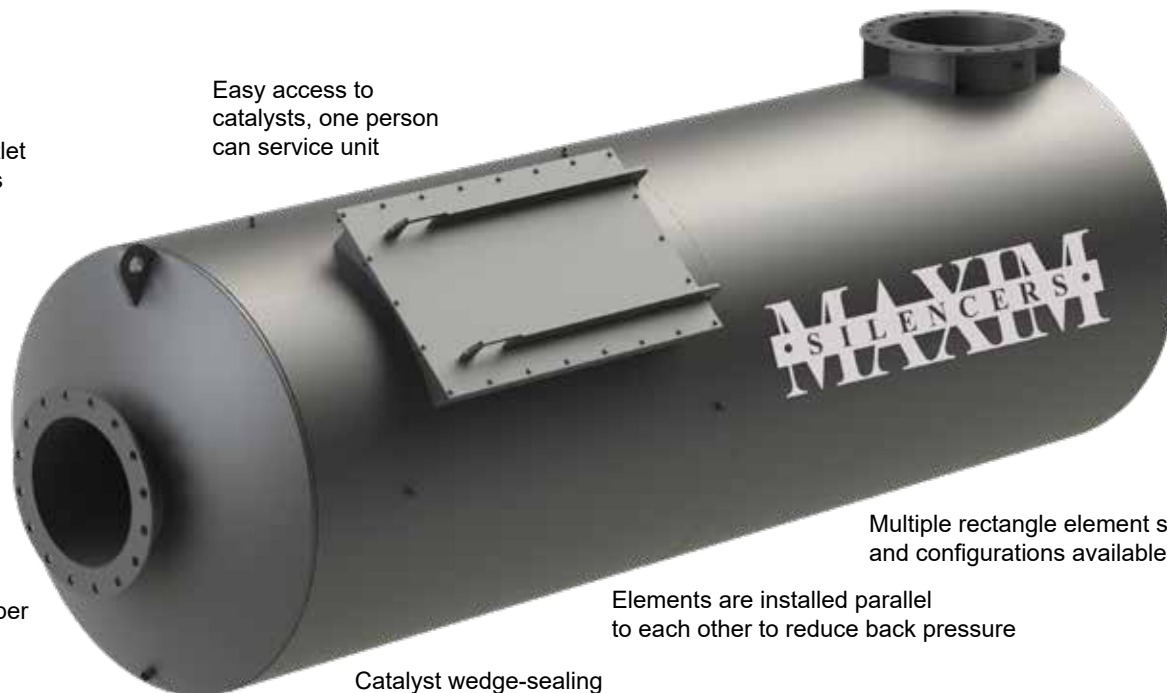
Easy access to catalysts, one person can service unit

Sampling ports per EPA and TCEQ guidelines

Catalyst wedge-sealing design

Multiple rectangle element sizes and configurations available

Elements are installed parallel to each other to reduce back pressure





# MACC SERIES CATALYTIC SILENCERS

## MACC SERIES OVERVIEW

With more than 100 years experience in silencing design and manufacturing, Maxim has developed the Maxim MACC Catalytic Silencers Series utilizing rectangle elements. Maxim MACC Catalytic Silencers are engineered and for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel with multiple attenuation/noise reduction options available, the MACC series can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

### PROVEN NOISE ATTENUATION

Silencing configurations from industrial grade to super extreme grade noise attenuation.

Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

## FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

## OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- External insulation available
- Attenuation/noise reductions available:
  - Housing only
  - Residential 20 to 25 dBA
  - Critical 25-32 dBA
  - Super Critical 30-40 dBA
  - Hospital Plus 35-50 dBA
  - Extreme 40-55 dBA
  - Super Extreme 45-60 dBA
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories

Multiple attenuation/  
noise reductions  
available

Easy access to  
catalysts, one person  
can service unit

Multiple rectangle  
element  
sizes and  
configurations  
available

Sampling ports per  
EPA and TCEQ  
guidelines





# RESIDENTIAL CATALYTIC SILENCERS

## 20 to 25 dBA Noise Reduction

### MACC2 OVERVIEW

The MACC2 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a residential grade attenuation. Maxim MACC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel with multiple orientation options available, the MACC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

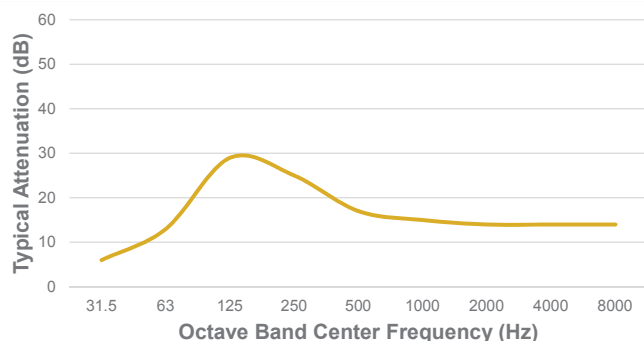
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- External insulation available
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Easy access to catalysts, one person can service unit

Multiple rectangle element sizes and configurations available

Sampling ports per EPA and TCEQ guidelines



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# CRITICAL CATALYTIC SILENCERS

## 25 to 32 dBA Noise Reduction

### MACC3 OVERVIEW

The MACC3 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a critical grade attenuation. Maxim MACC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel with multiple orientation options available, the MACC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

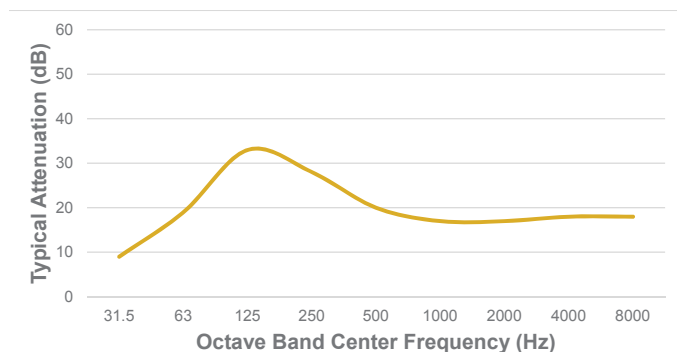
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- External insulation available
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Easy access to catalysts, one person can service unit

Multiple rectangle element sizes and configurations available

Sampling ports per EPA and TCEQ guidelines





# SUPER CRITICAL CATALYTIC SILENCERS

## 30 to 40 dBA Noise Reduction

### MACC4 OVERVIEW

The MACC4 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a super critical grade attenuation. Maxim MACC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel with multiple orientation options available, the MACC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

**THREE-WAY** (NO<sub>x</sub>, CO, NMHC, HcHo)

**OXIDATION** (CO, NMHC, HcHo)

**DIESEL OXIDATION** (CO, NMHC, PM)

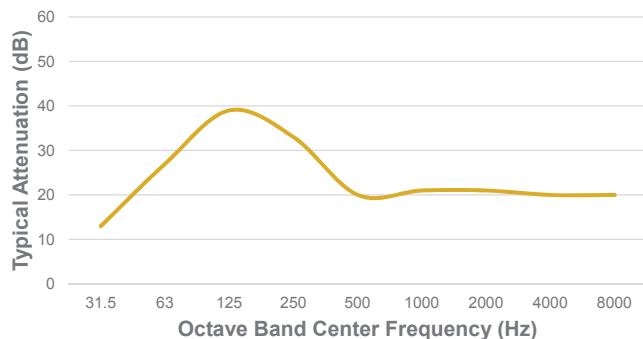
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- External insulation available
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Easy access to catalysts, one person can service unit

Multiple rectangle element sizes and configurations available

Sampling ports per EPA and TCEQ guidelines



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# HOSPITAL PLUS CATALYTIC SILENCERS

## 35 to 50 dBA Noise Reduction

### MACC6 OVERVIEW

The MACC6 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a hospital plus grade attenuation. Maxim MACC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel with multiple orientation options available, the MACC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

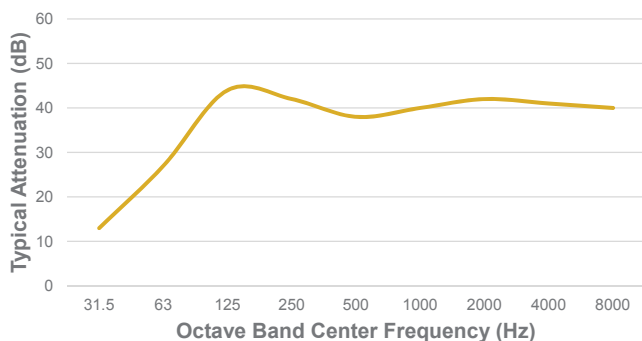
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- External insulation available
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Easy access to catalysts, one person can service unit

Multiple rectangle element sizes and configurations available

Sampling ports per EPA and TCEQ guidelines





# EXTREME CATALYTIC SILENCERS

## 40 to 55 dBA Noise Reduction

### MACC7 OVERVIEW

The MACC7 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a extreme grade attenuation. Maxim MACC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel with multiple orientation options available, the MACC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

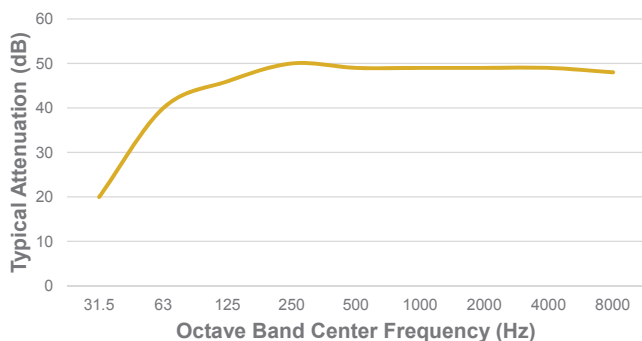
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- External insulation available
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Easy access to catalysts, one person can service unit

Multiple rectangle element sizes and configurations available

Sampling ports per EPA and TCEQ guidelines



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# SUPER EXTREME CATALYTIC SILENCERS

## 45 to 60 dBA Noise Reduction

### MACC8 OVERVIEW

The MACC8 provides customizable emission reduction combined with Maxim's best silencing technologies and is engineered to provide a super extreme grade attenuation. Maxim MACC Catalytic Silencers are engineered for larger horsepower engines while maximizing your emissions and noise compliance. Constructed of carbon steel with multiple orientation options available, the MACC Catalytic Silencer can be engineered and designed to your specific requirements. Maxim Silencers are proudly made in the USA.

#### HIGHLY EFFICIENT EMISSION REDUCTION

- NSCR Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo)
- Oxidation (CO, NMHC, HcHo)
- Diesel Oxidation (CO, NMHC, PM)

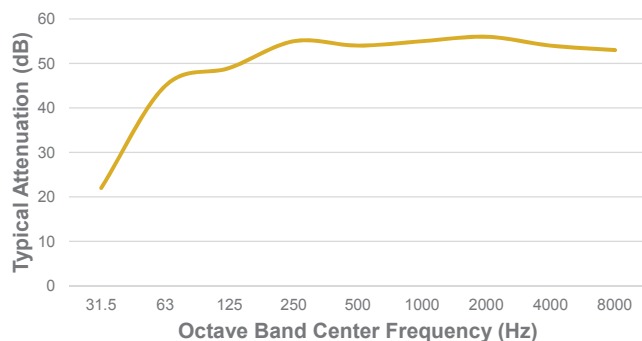
Typical applications: Gas reciprocating internal combustion engines, natural gas compression packages, electrical power generation, and engine driven pumps

### FEATURES

- Easy access to rectangle catalysts, one person can service unit
- Guaranteed emission reductions
- Catalyst wedge-sealing design
- Heavy duty, welded construction
- ANSI drilled flanges on inlet and outlet
- Sampling ports per EPA and TCEQ guidelines.
- Elements are installed parallel to each other to reduce back pressure

### OPTIONS / ACCESSORIES

- Stainless steel construction: 304 or 316
- External insulation available
- Multiple rectangle element sizes and configurations available
- Three-Way (NO<sub>x</sub>, CO, NMHC, HcHo), Oxidation (CO, NMHC, HcHo) or Diesel Oxidation (CO, NMHC, PM) rectangle elements
- Special paints and finishes available
- Complete range of exhaust accessories



Easy access to catalysts, one person can service unit

Multiple rectangle element sizes and configurations available

Sampling ports per EPA and TCEQ guidelines





# EZH CATALYTIC HOUSING SERIES

## EZH SERIES OVERVIEW

With more than 100 years experience in silencing design and manufacturing, Maxim has developed the Maxim EZH Catalytic Housing Series. Maxim EZH catalytic housings are engineered for small horsepower engines. The EZH housing maximizes catalyst life with EZ to change out replacement elements. Designed and constructed of stainless steel to provide years of service. The EZH provides multiple preflow and postflow sample ports and can accommodate one or two elements in a single unit. Our catalytic housings operate with non-dithering or dithering AFR control schemes. Maxim Silencers are proudly made in the USA.

## FEATURES

- EZ access to catalysts, one person can service unit
- Element capacity: one or two, in a single unit
- Heavy duty, welded stainless steel construction
- ANSI drilled flanges on inlet and outlet
- Preflow and postflow sampling ports
- Made in the USA

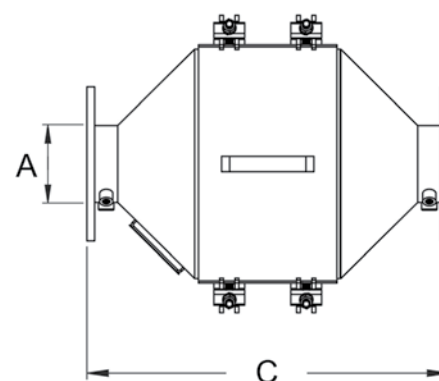
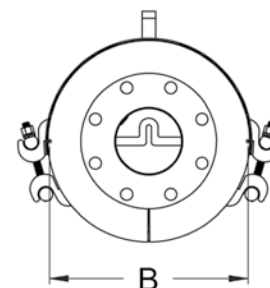


## ENGINE APPLICATIONS

- CAT G3300 Series
- CAT G3400 Series
- Cummins
- Arrow
- Waukesha

## OPTIONS / ACCESSORIES

- Sizes available 12 in. or 14.5 in.
- Complete range of exhaust accessories



## EZH

Part Number	Size	A	B	C	Est Wt
PTEZH-1200	12	5	12	23.5	52
PTEZH-1450	14.5	5	14.5	23.5	56

Dimensions are in inches. Weights are in pounds.



# MAXIM CATALYSTS ELEMENTS

## CATALYSTS OVERVIEW

Maxim Silencers catalysts are developed and manufactured under the strict direction and supervision of the most competent catalyst experts in the world. Our catalyst experts pioneered the very first exhaust catalysts in the 1970's. Our experts have over 35 years of developing and improving catalysts, 28 catalyst related patents and over 30 years of manufacturing quality catalyst products. Maxim Silencers are proudly made in the USA.

## IN-HOUSE EVERY STEP OF THE WAY

In-House Design and Development

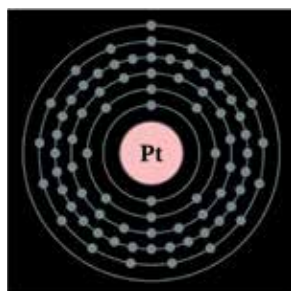
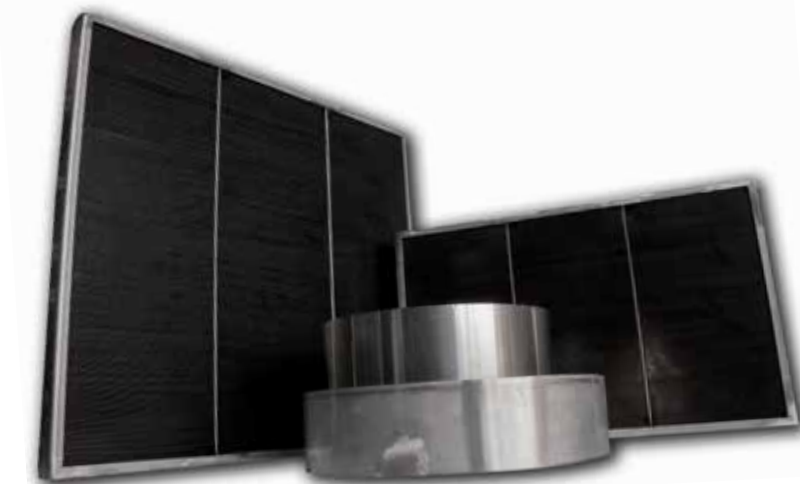
- CAD design and evaluation
- Complete laboratory with prototype development and testing
- Customizable catalyst formulations tailored to individual applications

In-House Manufacturer of Components

- Substrates - Honeycombs
- Sheet metal housings and frames
- 100% Quality inspection ensures product conformance

## PLATINUM ONLY

Precious metals do the catalyzing, platinum is the most powerful and efficient. We DO NOT substitute platinum with inferior cheaper catalysts such as palladium. (palladium should only be used in special unique super high temperature situations, not as a substitute for standard products and applications)



## EFFICIENCY & REDUCED COSTS

Catalyst Banding: Create, cut and bend our own metal with modern efficient equipment

- Dedicated CAD design team with all the right tools
- Abrasive Water Jet: Cuts metal with a 0.005" tolerance
- Press Brake and Shear: Complete metal forming capabilities

Catalyst Substrates: Metal crimper to form metal honeycombs

- Automated precision corrugator:
- Foil width from 3/4" up to 6" and cell densities up to 700 cpsi
- Fabrication options: Anti-telescoping bars and housing reinforcements

Welding: Automated 100% in-house welding

- 6-axis OTC FD-V6L Robot
- Fusion Arc 300-L

Capabilities:

- Two 60" x 28" welding tables
- 96" synchronized head/tail stock for larger items
- 0.003" positional reproducibility
- MIG welds at up to 45 inches per minute

Anti-Telescoping Bars: NO BRAZING! We do not use brazing to counteract the effects of backfires. R&D and field reports indicate brazing leads to brittle areas around the weld-bead. We use anti-telescoping bars, these bars grow and shrink with the rest of catalyst during thermal cycles, proving to be more reliable and less susceptible to failure.

Heat Treat and Coating: Substrates are heat treated in a large kiln and prepared for catalyst coating

- Catalyst coating applied between kiln firing stages
- Finished honeycomb catalysts can then be welded into larger arrays

Crystal Size: Common mis-belief: "More surface loading is better." The Truth: Crystal size is KEY to catalyst capabilities and efficiency. The patented crystallization process produces smaller crystals. Smaller crystals create more surface area for catalysis to occur. This results in greater and more efficient catalytic effect, on a smaller load area.



# CO OXIDATION

## Catalysts Elements

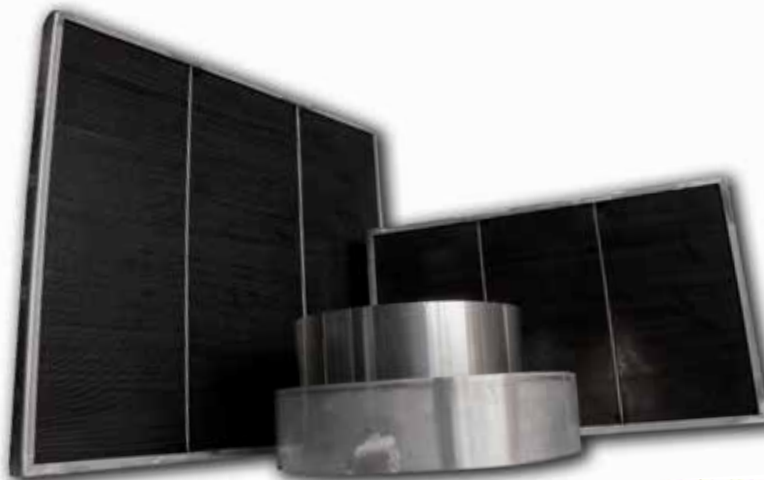
### CO OXIDATION CATALYSTS OVERVIEW

Maxim Silencers CO Oxidation Catalysts oxidizes Carbon Monoxide (CO), Hydrocarbons (HCs), Volatile Organic Compounds (VOCs), and Hazardous Air Pollutants (HAPs) from lean burn internal combustion engines. The technique of maximizing surface exposure of the precious metals on the substrate results in a high activity catalyst that is both durable and efficient.

Maxim Silencers can provide standard catalysts; Available in round, rectangular, oblong and octagonal configuration. No engine is too big or too small. Let us design and build a catalyst for your IC engines and run with the confidence of guaranteed compliance. Replacement elements can be made to fit any existing housing in all shapes & sizes including brand name replacements. Maxim Silencer catalysts are proudly made in the USA.

### PRODUCT DATA

- Destructive Efficiencies: up to 99%
- Pressure Drop: Variable; quoted per specifications
- Working Range: from 550° F up to 1250° F
- Catalyst Substrate:
  - Metal honeycombs up to 48" square, round or oblong
  - Cell densities from 20 cpsi to 700 cpsi
  - Catalyst module depth from 3/4" up to 6"
  - Foil thickness of 0.002"



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### FEATURES & BENEFITS

- Low pressure drop
- Wide operating temperature range
- Easily cleaned and reactivated
- No nesting or telescoping design
- Variety of cell densities
- Parallel flow reduces plugging
- Custom designed based on application
- Test cores for aging assessment

### EMISSION SOURCES

- IC Engines
- Boilers
- Gas Turbine
- Chemical Processes

### FUELS

- Natural Gas
- Diesel
- LPG
- Propane
- Biodiesel
- Dual Fuel

### EMISSION COMPLIANCE

- CO
- HCs
- VOCs
- HAPs

Plus

- Platinum Only
- Crystal Size
- Telescopic Bars
- No Brazing
- In-House Laboratory
- In-House Production
- Quality Control



# NSCR THREE-WAY

## Catalysts Elements

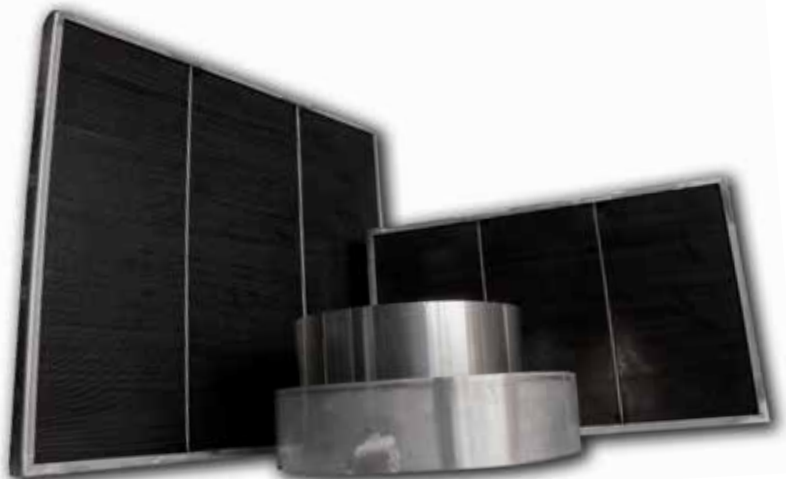
### NSCR THREE-WAY CATALYSTS OVERVIEW

Maxim Silencers Non-Selective Catalytic Reduction (NSCR) or Three-Way catalysts control emissions of Nitrogen Oxides (NOx), Carbon Monoxide (CO), Unburned Hydrocarbons (HCs), Volatile Organic Compounds (VOCs), and Hazardous Air Pollutants (HAPs) from rich burn internal combustion engines. The technique of maximizing surface exposure of the precious metals on the substrate results in a high activity catalyst that is both durable and efficient.

Maxim Silencers can provide standard catalysts; Available in round, rectangular, oblong and octagonal configuration. No engine is too big or too small. Let us design and build a catalyst for your IC engines and run with the confidence of guaranteed compliance. Replacement elements can be made to fit any existing housing in all shapes & sizes including brand name replacements. Maxim Silencers catalyst are proudly made in the USA.

### PRODUCT DATA

- Destructive Efficiencies: up to 99%
- Pressure Drop: Variable; quoted per specifications
- Working Range: from 550° F up to 1250° F
- Catalyst Substrate:
  - Metal honeycombs up to 48" square, round or oblong
  - Cell densities from 20 cpsi to 700 cpsi
  - Catalyst module depth from 3/4" up to 6"
  - Foil thickness of 0.002"



### FEATURES & BENEFITS

- Low pressure drop
- Wide operating temperature range
- Easily cleaned and reactivated
- No nesting or telescoping design
- Variety of cell densities
- Parallel flow reduces plugging
- Custom designed based on application
- Test cores for aging assessment

### EMISSION SOURCES

- IC Engines
- Boilers
- Gas Turbine
- Chemical Processes

### FUELS

- Natural Gas
- Diesel
- LPG
- Propane
- Biodiesel
- Dual Fuel

### EMISSION COMPLIANCE

- NOx
- CO
- HCs
- VOCs
- HAPs

Plus

- Platinum Only
- Crystal Size
- Telescopic Bars
- No Brazing
- In-House Laboratory
- In-House Production
- Quality Control



# MAXIM CATALYST ELEMENT SERVICES



## CATALYST SERVICES Washing and Testing

### WASHING

Maxim Silencers proprietary chemical cleaning with four stage wash procedure optimized to dislodge contamination in the pores of the washcoat at the molecular level.

- Automated chemical solution dosing and monitoring
- pH monitoring
- Each stage utilizes aerated tanks for agitating contaminants embedded in catalyst pores
- Effluent neutralization tank for safe, environmentally-friendly disposal of chemical solutions CAD design and evaluation



### TESTING

Maxim Silencers Catscan testing facility can test your catalyst at your specific operating conditions ensuring compliance with regulatory permits before reinstallation. We provide you with the data you need to make an informed decision about where to install your regenerated catalyst with confidence.

- Catalyst activity characterized “as-received” from the field non-destructively.
- Catalyst activity measured under site specific operating parameters.
- Test catalyst prior to shipping back to location/customer
- Receive emission report back with element for assurance

### RECLAMATION

In the event that catalyst cannot be regenerated, Maxim Silencers can facilitate the reclamation of the precious metal from your spent catalyst and issue credit towards a new replacement catalyst in the amount of the value of the reclaimed precious metal. Let us prolong your catalyst’s useful life and recycle your spent catalyst to save you money.



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# Maxim Silencers

## Standard Terms and Conditions

**QUOTATIONS:** All quotations are made subject to the following Standard Terms and Conditions, unless otherwise specified within the body of the formal quotation, in which case that section or paragraph only would be superseded. (In the case of a catalytic silencer, all Standard Terms and Conditions apply except that the LIMITED WARRANTY provision is superseded by the provisions contained in the document entitled "LIMITED WARRANTY AS APPLIED TO CATALYTIC SILENCER.") No deviations from or changes to these Terms and Conditions will be honored or recognized without prior negotiation and written agreement between the Seller and Purchaser.

**PRICING:** All quotations are made for immediate acceptance and are subject to change without notice, unless otherwise noted. Prices quoted are based on the current costs of material and labor and are subject to escalation. Said escalation shall be determined by the cost of material to Seller on the date of shipment of said material from Supplier, and the costs of labor during the fabrication cycle. Prices do not include handling charges, transportation or related costs. Buyer agrees to pay the prices quoted by Seller, and is responsible for freight and handling charges, special packaging beyond the Sellers' standard packaging, taxes and duties. Handling, prepaid freight and special packing costs will be added to the purchase price and invoiced separately.

**ORDER ACCEPTANCE, DELIVERY:** No order is binding on Seller until accepted and acknowledged in writing by Seller by mail or electronic communication. All delivery dates are approximate and is the date goods leave Sellers dock. The time period for delivery begins when all documentation and release required to fill the order are present, and not before clarification of all details. All delivery promises are subject to prior commitment of shop capacity before the receipt of a firm purchase order by Seller. If shipment is delayed by Purchaser, payment shall become due when Purchaser is notified that equipment is ready for shipment and equipment will henceforth be held at Purchaser's risk and expense.

**SHIPMENT, RISK OF LOSS:** Buyer's purchase order must specify preferred carrier or goods will ship best way, prepaid and added to the invoice. Shipment is Free Carrier, FCA Sellers facility or origin of shipment, Incoterms 2010, unless otherwise agreed in writing. Risk of loss and title to goods shall pass to the Purchaser as soon as goods are deposited with the carrier for shipment. Buyer assumes both risk of loss and damage to the goods as well as title to the goods on Sellers dock; and Buyer is responsible for all freight, sales and other taxes, customs duties, insurance costs and other expenses relating to the shipment of goods. Buyer is responsible for all costs, reporting, and compliance with export control laws related to the goods' export.

**CREDIT and PAYMENT:** Credit accounts will be opened only with firms or individuals approved by the Seller's Credit Department. Purchaser with approved payment terms agrees to pay invoiced amount to Seller on or before thirty (30) days from date of invoice unless otherwise specified and/or agreed upon in writing. All past due accounts are subject to interest at the rate of one percent (1 %) per month on the unpaid balance. Seller reserves the right at any time upon notice to purchaser, to alter or suspend credit, when in its sole opinion the financial condition of the Purchaser so warrants. In such cases, cash payment or satisfactory security from the Purchaser may be required by the Seller before credit is restored or Seller continues performance.

**CANCELLATION:** Cancellation shall be affected only by a written agreement and Purchaser will assume full liability for payment of any and all cancellation charges.

**RETURNED GOODS:** A RMA packing slip must be received and included with any returns. No material will be accepted for replacement or credit without Seller's written consent and then only under the terms of such consent. Returns for credit will include a restocking fee, unless otherwise specified and/or agreed upon in writing.

**LIMITED WARRANTY:** Seller warrants only goods of its own manufacture and then only to the extent that they are free from defects in material and workmanship under normal use and service for the purpose for which they were manufactured and when correctly installed and maintained within one (1) year from the date of shipment. This warranty is limited to repair or replacement of the goods FCA point of manufacture at the Seller's option. Seller does not warrant secondhand material. THESE WARRANTIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Purchaser waives any warranties of any kind whatsoever including but not limited to a waiver of any warranties of fitness, any warranties as to the suitability of the product for its intended use, and any warranties as to the return of the purchase price. It is further understood and agreed that this is Purchaser's only remedy for all claims arising or relating to the goods purchased hereunder for breach of contract and tort including negligence and strict liability and any other legal theory. Seller shall not be responsible for deterioration of any part or parts of the equipment due to corrosion, erosion or any other causes, regardless of when such deterioration occurs, after leaving the manufacturer's premises. No allowance will be granted for repairs or alterations made by Purchaser or at Purchaser's direction without Seller's written consent. Seller shall not be liable for consequential, incidental or any damages other than repair or replacement of defective goods at Seller's option. It is understood that Seller makes no warranty except as expressly stipulated herein and Seller's liability is limited as above set forth. **NOT WARRANTED:** Maxim Silencers offers no paint guarantees other than preparation and application in accordance with manufacturer's instructions. The primary purpose of "factory black" standard coating is not aesthetic but for corrosion resistance and shipping protection. No heat curing is available. If required, curing must be done in service at the direction of others.

No representative has the authority to make any representation, promise or agreement except as stated herein.

**TAXES:** The Purchaser shall pay to the Seller in addition to the purchase price, the amount of any excise, sales, privilege, or use tax, local, state or federal, which is payable by the Seller because of the execution of this contract or sale or delivery of the apparatus covered hereby. Seller shall collect applicable taxes in states where Seller has nexus, unless Buyer submits a valid tax exemption certificate.

**PATENTS:** Notwithstanding any language to the contrary in specifications, purchase orders or elsewhere, Seller shall not be responsible for any patent infringement, or claim of patent infringement with respect to products furnished in accordance with the Purchaser's specifications or design requirements, and Purchaser shall indemnify and save Seller harmless from all claims, demands or suits growing out of or based on any patent infringement or claim thereof, arising there from.

**FORCE MAJEURE:** Seller shall not be liable for any delay in delivery or for non-delivery, in whole or in part caused by the occurrence of any contingency beyond the control either of Seller or suppliers to the Seller, including but not limited to war (whether an actual declaration thereof is made or not), sabotage, insurrection, rebellion, riot or other act of civil disobedience, act of a public enemy, failure or delay in transportation, act of any government or any agency or subdivision thereof, judicial action, labor dispute, fire, accident explosion, epidemic, quarantine, restrictions, storm, flood, earthquake, or other act of God, shortage of labor, fuel, raw material or machinery or technical failure, where Seller has exercised ordinary care in the prevention thereof. If any contingency occurs, Seller may allocate production and deliveries among Seller's customers.

**CONFIDENTIAL INFORMATION:** All drawings, diagrams, specifications and other materials furnished by Seller and identified as confidential relating to the use and service of articles furnished hereunder and the information therein are proprietary to Seller. Such materials have been developed at great expense and they contain trade secrets of the Seller. Buyer may not reproduce or distribute such materials except to Buyer's employees who may use the articles as part of their duties. All such materials relating to the article supplied directly by Seller (except information as may be established to be in the public domain or disclosed pursuant to judicial government action) shall be received in confidence and Buyer shall exercise reasonable care to hold such information in confidence.

**TECHNICAL ASSISTANCE:** Seller's warranty shall not be enlarged and no obligation or liability shall arise out of Seller's rendering of technical advice, facilities or services in connection with Buyer's order for the goods furnished.

**DISPUTES:** This agreement is deemed to be entered into in Texas and to be a Texas contract and shall be governed and construed in accordance with the laws of the State of Texas. Except as otherwise specifically provided for herein Seller and Buyer specifically agree that any legal action brought relating to goods purchased or relating to this contract will be brought and tried in Texas. All objections to venue are hereby waived by the Buyer, and the Buyer consents to service of process by certified mail addressed to the same address as that address designated for delivery of the goods purchased hereunder. In the event of any suit for the collection of funds instituted by the Seller, the prevailing party with respect to such collection matter shall be entitled to reasonable attorney's fees as determined by the court to prevail in Texas.



## Industrial Silencer, Heat Recovery and Catalytic Specialists



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