

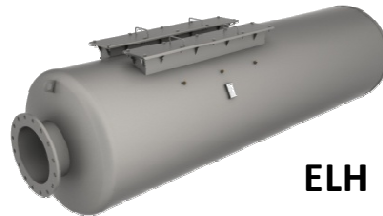
CATALYST HOUSINGS

CONFIGURATION OPTIONS

- **EA Series**
 - Round Elements
 - 2 Element Capacity
 - Horizontal or Vertical Installation
 - 4 Models Offered
 - With or Without Silencing
- **EL Series**
 - Rectangle Elements
 - 2-6 Element Capacity
 - Low Back Pressure Design
 - Horizontal or Vertical Installation
 - 4 Models Offered
 - With or Without Silencing
- **EB Series**
 - Designed for 1,000 – 10,000 HP units
 - Rectangle Elements
 - 3-8 Element Capacity
 - Low Back Pressure Design
 - Vertical Base Mounted Installation
 - 3 Models Offered
 - Combination Catalyst Silencer Only



EA



ELH



EBH



EAS



EAH or
EAX

SILENCING OPTIONS

- **S Series**
 - Reactive Silencing
 - 20-25 dBA Insertion Loss
- **H Series**
 - Reactive Silencing
 - 35-40 dBA Insertion Loss
- **X Series**
 - Absorptive/Reactive Silencing
 - 40-52 dBA Insertion Loss

ELEMENTS

SHAPES

- **RE**
 - Round
 - 3.5" Thick
- **RIQ**
 - Octagonal, Round w/ bonnet
 - 3" Thick
- **RD**
 - Round with V-Band Flange
 - 3.5" Thick
- **RT**
 - Rectangle
 - 3.5" Thick
- **RIT**
 - Rectangle w/ bonnet
 - 3.5" Thick
- **RQ**
 - Octagonal
 - 3, 3.5" Thick



RE

RIQ

RD



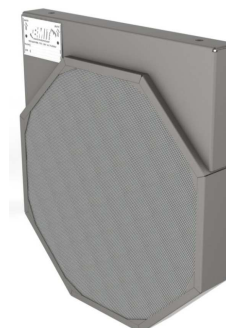
RT



RIT



RQ



RIQ

TARGETED REDUCTION TYPE

- **T**
 - NSCR, Precious Metals
 - Targeted Reductions
 - NOx, CO, VOC, HCHO
- **Z**
 - Oxidation, Precious Metals
 - Targeted Reductions
 - CO, VOC, HCHO
- **V**
 - VOC, Precious Metals
 - Targeted Reductions
 - High Level VOC, CO, HCHO
- **Custom**
 - Customized Precious Metals
 - Targeted Reductions as Required
 - Supported by Slipstream Testing

ENGINE CONTROLS

MODELS

- **EDGE NG**
 - Rich Burn Engines
 - Single Set Point Control
 - Single/Dual Bank Control
- **EDGE LB**
 - Lean Burn Engines
 - Single Set Point Control
 - Single/Dual Bank Control
- **ETS**
 - Rich/Lean Burn Engines
 - Multi-Set Point Control Capabilities
 - Engine Monitoring/Controls
 - Full NESHAP Data Logging Capabilities
 - Catalyst ΔT & ΔP Recording
 - Remote Monitoring/Reporting
 - Work Practices Recording

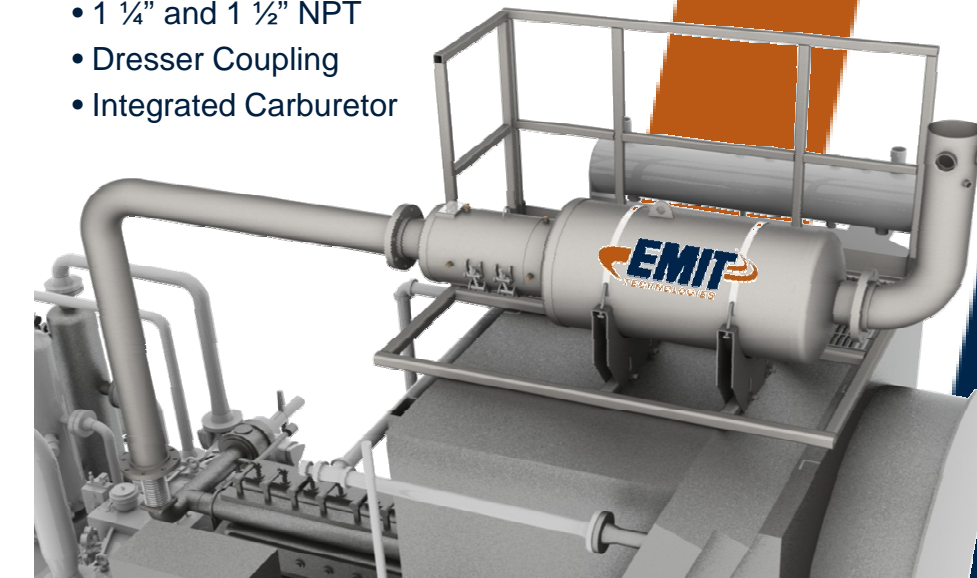


DIGITAL POWER VALVES

- **Designed to Match Engine Carburetor**
 - 9 Valve Body Options
 - 13 Total Configurations
- **Piping Options**
 - 1/2" and 3/4" NPT
 - 1 1/4" and 1 1/2" NPT
 - Dresser Coupling
 - Integrated Carburetor

EXHAUST ACCESSORIES

- Expansion Bellows
- Custom Exhaust Piping
- Regulatory Compliant Tail Piping
- Catalyst Housing Mounting Brackets
- Custom Cooler Catwalk/Platforms
- Custom Access Solutions



CONTACT US TODAY

Sheridan, WY
307-673-0883

Fort Worth, TX
817-546-7456

Houston, TX
713-465-3757

Midland, TX
817-807-8254

Farmington, NM
505-327-4945

Oklahoma City, OK
405-823-0858

ENGINEERING

- Fleet Emissions Compliance
- Custom Designed Solutions
- Equipment Standardization
- 3-D Modeling
- Emissions Training
- FTIR Testing Analysis

FIELD SERVICES

- 24 x 7 x 365 Technical Support
- Catalyst Washing & Recycling
- Turnkey Installations
- System Startup & Testing
- Emissions Troubleshooting
- On-Site Support



- Federal Testing
- State Testing
- Quarterly Testing
- Customized Testing

Final Rule: NESHAP for Stationary Spark Ignited RICE's (40CFR63 subpart ZZZZ)

Signed: August 10, 2010

Compliance Deadline: October 19, 2013

Existing* Stationary SI RICE at Major Sources of HAPS							
Category	Application	Horsepower	Compliance Standard**	Performance Requirements	Operating Limitations	Record-Keeping Requirements	Reporting Requirements
4SLB	Non-Emergency	100 ≤ HP ≤ 500	47 ppmvd CO, Work Practice ¹	Initial Performance Test	None	Record-Keeping ¹	Semi-Annually ¹
4SRB	Non-Emergency	100 ≤ HP ≤ 500	10.3 ppmvd CH ₂ O, Work Practice ¹	Initial Performance Test	None	Record-Keeping ¹	Semi-Annually ¹
2SLB	Non-Emergency	100 ≤ HP ≤ 500	225 ppmvd CO, Work Practice ¹	Initial Performance Test	None	Record-Keeping ¹	Semi-Annually ¹
4SLB,4SRB	Non-Emergency	HP < 100	Work Practice ²	Maintenance Plan ²	None	Record-Keeping ¹	None
2SLB	Non-Emergency	HP < 100	Work Practice ³	Maintenance Plan ²	None	Record-Keeping ¹	None

Existing* Stationary SI RICE at Area Sources							
Category	Application	Horsepower	Compliance Standard**	Performance Requirements	Operating Limitations	Record-Keeping Requirements	Reporting Requirements
4SLB	Non-emergency, operating > 24 hours per calendar year	HP > 500	47 ppmvd CO or 93% CO reduction	Initial Performance Test + Subsequent Performance Test	Yes	Record-Keeping ¹	Semi-Annually ¹
4SLB	Non-emergency, operating ≤ 24 hours per calendar year	HP > 500	Work Practice ¹	Maintenance Plan ²	None	Record-Keeping ¹	None
4SLB	Non-emergency	HP ≤ 500	Work Practice ²	Maintenance Plan ²	None	Record-Keeping ¹	None
4SRB	Non-emergency, operating > 24 hours per calendar year	HP > 500	2.7 ppmvd CH ₂ O or 76% CH ₂ O reduction	Initial Performance Test + Subsequent Performance Test every 8760 hrs or 3 years, whichever comes first	Yes	Record-Keeping ¹	Semi-Annually ¹
4SRB	Non-emergency, operating ≤ 24 hours per calendar year	HP > 500	Work Practice ¹	Maintenance Plan ²	None	Record-Keeping ¹	None
4SRB	Non-emergency	HP ≤ 500	Work Practice ²	Maintenance Plan ²	None	Record-Keeping ¹	None
2SLB	Non-emergency	ALL	Work Practice ³	Maintenance Plan ²	None	Record-Keeping ¹	None

Startup Requirements:

Limit the engine's time at idle and minimize the engine's startup to a period needed for safe loading of the engine, not to exceed 30 minutes. After this period, the engine must meet the applicable emissions standard.

Work Practices:

1: Change oil every 500 hrs or annually, whichever comes first***; inspect sparkplugs every 1000 hrs or annually, whichever comes first, and replace as necessary; inspect all hoses and belts every 500 hrs or annually, whichever comes first, and replace as necessary.

2: Change oil every 1440 hrs or annually, whichever comes first***; inspect sparkplugs every 1440 hrs or annually, whichever comes first, and replace as necessary; inspect all belts and hoses every 500 hrs or annually, whichever comes first, and replace as necessary.

3: Change oil every 4320 hrs or annually, whichever comes first***; inspect sparkplugs every 4320 hrs or annually, whichever comes first, and replace as necessary; inspect all belts and hoses every 500 hrs or annually, whichever comes first, and replace as necessary.

Maintenance Plans:

1: Operate and maintain the engine and aftertreatment device (if any) according to the manufacturer's emission-related written instructions. Alternatively, the owner/operator may create their own maintenance plan, provided it specifies how the work practices will be met and describes to the extent practicable for maintenance and operation of the engine in a manner consistent with good air pollution control for minimizing emissions.

2: Owners/operators must develop a maintenance plan that specifies how the work practices will be met and describes to the extent practicable for maintenance and operation of the engine in a manner consistent with good air pollution control for minimizing emissions.

Operating Limitations:

1: For engines equipped with an Oxidation or NSCR catalyst, operators must maintain the catalyst such that the pressure drop across the catalyst does not change by more than 2" of water from where it was first measured during the initial performance test. In addition, for engines equipped with an Oxidation catalyst, the exhaust temperature must be maintained so that the catalyst inlet temperature is between 450F and 1350F. For engines operating with an NSCR catalyst, the exhaust temperature is between 750F and 1250F. In addition to these requirements, owners / operators must also: (i) continuously monitor and record catalyst inlet temperature; (ii) conduct a temperature measurement device calibration check at least every 3 months; and (iii) take monthly measurements of the pressure drop across the catalyst.

Recordkeeping Requirements:

1: Owners / operators must keep records showing that the required work practices are being met and maintenance plans have been implemented. These records must include, at a minimum: oil and filter change dates and corresponding hours of engine operation (using an hour meter, fuel consumption data or other appropriate method); inspection and replacement dates for spark plugs, hoses and belts; and records of other emission-related repairs

Reporting Requirements:

1: Initial notification, notification of performance test, and semi-annual compliance reports.

Additional Notes:

* Units that are area source or major source engines ≤ 500 hp, existing engines are those who's construction or reconstruction commenced before 06/12/2006.

For major source engines > 500 hp, existing engines are those who's construction or reconstruction commenced before 12/19/2002

** ppmvd @ 15% O₂

*** Extended oil change intervals may be possible for those participating in an oil analysis program.