



# ENGINE SILENCERS

## APPLICATIONS

- Power Generation
- Railway
- Military
- Marine
- Industry



Making the World a Quieter Place

# A WIDE RANGE OF SILENCERS ADAPTED FOR ALL APPLICATIONS

## ABOUT US

IAC America is the world's largest provider of acoustic and noise control products, structures and test facilities. The company designs, manufactures and installs acoustic solutions for industrial applications and the power sector in particular, world-wide. Employing over 650 people, the company has major Research and Development Centers in the USA and France, and manufacturing plants on five separate sites: the USA, UK, France, Denmark and Mexico.

In addition to the facilities directly owned and operated by the company, IAC America works in close partnership with several other manufacturing organizations, notably in Canada and Mexico. It also has a large network of technical sales engineers, agents and distributors, offering advice and assistance to customers around the world. Several of these manufacture IAC products under license.



## WHY CHOOSE IAC AMERICA?

- ▶ IAC America has over 60 years experience and has completed several thousand installations;
- ▶ Continuous investment in research and development drives on-going innovation. We also carry out on-site R&D for specific engine types, if required;
- ▶ IAC America designs, manufactures and installs everything from individual, dedicated noise control solutions to full turnkey packages;
- ▶ Local service is available throughout the United States;
- ▶ Large range of standard exhaust silencers available from stock (15,25,30,40, and 50 dB(A) noise reduction).



## KEY FEATURES

- ▶ Space saving, cost saving solutions - a conventional arrangement of reactive and absorptive silencers can be replaced by a single combination IAC silencer;
- ▶ All products fully factory-tested;
- ▶ Specific ranges for CHP and container applications;
- ▶ Circular or rectangular design;
- ▶ Radial, axial and twin intakes;
- ▶ All types of materials;
- ▶ All types of accessories available on request.



---

## APPLICATION

Our SM silencers are designed to reduce the exhaust noise of internal combustion engines of all types (petrol, diesel or gas).

---

## DESCRIPTION

Our silencers are entirely welded in carbon steel ASTM A36 with internal and external protection provided by a high temperature black prime paint. Heat emission is reduced by internal insulation in all our silencers ensuring low surface temperatures. The normal diameter of the inlet and exhaust (DN) and also the noise reduction rating (15,25,30,40) determines the name of the silencers. e.g. SM 30P DN50.



---

## ACOUSTICS

The acoustic definition of our SM silencers has been optimized by our Research and Development department. Our silencers are based on two noise-reducing principles:

- Absorptive - SM15P and SM25P
- Reactive and wave phase shift plus absorption for SM30P and SM40P

---

## EXPANSION

The silencers form a fixed point. For operation at high temperatures, an expansion system is required to absorb all relative movements.



---

## SELECTION CRITERIA

-Select silencer type (e.g. SM15P; SM25P etc.) based on the acoustic performance requirement.

-Select nominal diameter of silencer from corresponding chart based on:

- For an exhaust gas temperature of 842° F use actual exhaust flow rate  $Q_{v1}$ (IN<sup>3</sup>/hr.)
- For any other exhaust gas temperature( $t^{\circ}$ F) use corrected exhaust flow  $Q_{v1}$ (in<sup>3</sup>/hr.) where

$$Q_{v1} = \frac{36.50.Q_v}{\sqrt{t + 273}}$$

- For an assumed specific exhaust mass flow of 11.34 lbs/hp-hr will use actual engine power P (kW).

---

## SOUND INSULATION

For high attenuation or low residual levels, we would recommend sound insulation of the silencer casing and also the flanges and the pipes upstream of the silencer in order to eliminate radiation of unsilenced noise.

---

## VIBRATION ISOLATION

Where high attenuation or low residual levels are required it is advisable to use a flexible connection from the engine to isolate vibration. Similarly, anti-vibration mounts may be provided between the silencer and its support structure.



---

## OPTIONAL ACCESSORIES

- ▶ Special exterior protection (metal spraying..)
- ▶ Other material (Stainless steel, corten steel..)
- ▶ Integrated spark arrestors or catalysers
- ▶ Flanges, mating flanges, gaskets, bolts
- ▶ Supports

*For any special equipment, please contact IAC*

---

## INSTALLATION

The gas flow direction must be observed. It is marked by an arrow on the body of the device.

Our silencers can be placed horizontally or vertically depending on the space available and the position of the pipes. We can advise you on the most suitable in-line position for the silencer.

Full installation, operation and maintenance instructions are provided.

All our silencers >110 lbs. (50kgs) are equipped with hoisting eyes welded into the casing of the apparatus to facilitate handling.

---

## DOCUMENTATION AND TESTING

This type of equipment is not a pressure vessel and is therefore not subject to specific tests or controls. A dimensional check report and visual inspection will be carried out in our workshops. For special applications we can provide you with welding record, certificate of materials, assembly plan, various notes and calculations; identification and packing list, acceptance report by an official body, etc. A general arrangement drawing of the whole product (CAD format) is automatically provided.

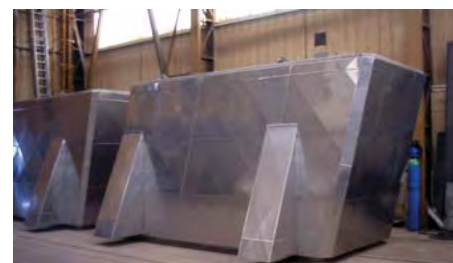
---

## SM SPECIAL PROJECTS

IAC offers adaptable products that take into account special requirements.

Their acoustic expertise and competence in project management enable them to propose optimized solutions.

- ▶ Rectangular silencers;
- ▶ Catalytic silencers;
- ▶ Stainless steel;
- ▶ Spark arrestors
- ▶ Design for:
  - Marine
  - Rail
  - Test Bench, etc.
- ▶ Performance guarantee from 40,45,50 dB(A) and more.

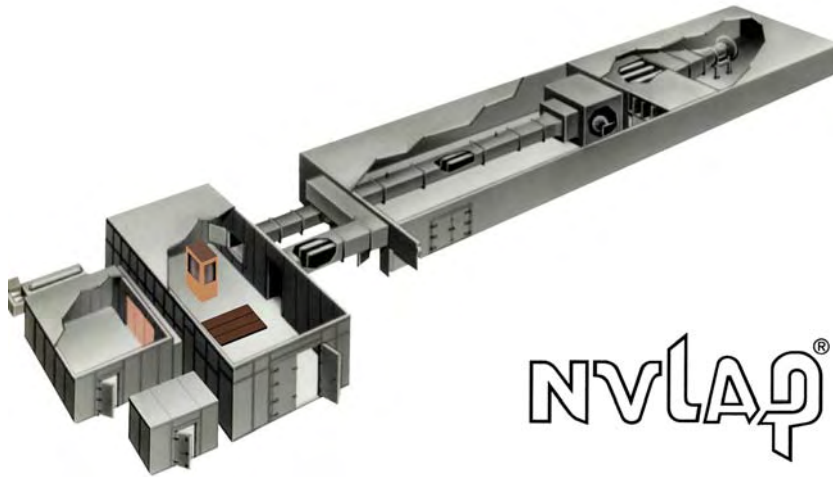


## REPRESENTATIVE IAC CUSTOMERS

Bechtel Power Corporation  
Black & Veatch  
Caterpillar  
CH2M Hill  
Cummins  
FG Wilson  
Fluor Daniel  
Foster Wheeler Ltd.  
General Electric Corporation  
Georgia-Pacific  
Keyspan Energy Management

Kiewit Corporation  
Kohler  
Monsanto Company  
Morse Diesel, Inc.  
MTU Detroit Diesel  
Pacific Gas & Electric Company  
PPG Industries, Inc.  
The Shaw Group  
Wartsila  
Worley Parsons Corporation

## NVLAP ACCREDITED IN-HOUSE TEST FACILITY



## IAC PRODUCT LISTING

### ACCESS SYSTEMS

Noise-Lock® Doors  
Noise-Lock® Windows  
Noise-Lock® Vision Wall  
Trackwall® NIC Series Operable Walls

### ACOUSTIC TREATMENTS

Noise-Lock® Ceilings  
Noise-Foil™ Sound Absorption  
Varitone™ Sound Absorption  
Noishield® Soundwall Systems

### MACHINERY ENCLOSURES

Moduline®  
Noishelter® Room  
Plenums

### PEOPLE ENVIRONMENTS

AccuTone™ 2 Audiology Series  
AccuTone™ 2 Broadcast Series  
AccuTone™ 2 Concert Series  
AccuTone™ 2 Factory Office Series  
AccuTone™ 2 Sentry Series  
APR™ 2 In-Plant Offices  
Mini-Booth™

### PRODUCT TEST AND SPECIAL PRODUCTS

Hush Houses  
Macrodyne™ Reverberation Rooms  
Metadyne™ Anechoic Rooms  
Nanotech Labs

### SILENCER SYSTEMS/HVAC COMMERCIAL

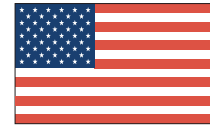
Elbow Silencers  
D-Duct Diffusers  
Clean-Flow™ Silencers  
Conic-Flow™ Silencers  
Noishield® Louvers  
Packless Silencers  
Quiet-Duct® Silencers  
Quiet-Vent® Silencers  
TLS-RFS Silencers

### POWER SYSTEMS

ACFI™ Silencers  
Diesel Engine Exhaust Silencers  
Diesel Engine Enclosures  
Gas Turbine Intake & Exhaust Silencers  
Gas Turbine Enclosures  
Power-Flow® Silencers

### TESTING SERVICES

Field Tests  
Laboratory Tests  
Product Tests



#### United States

**IAC America**  
1160 Commerce Avenue  
Bronx, New York 10462-5599  
Tel: (718) 931-8000  
Fax: (718) 863-1138  
E-mail: [info@industrialacoustics.com](mailto:info@industrialacoustics.com)  
Web: [www.industrialacoustics.com](http://www.industrialacoustics.com)



#### Australia

**IAC Colpro Pty Ltd.**  
Tel: +61 2 9896 0422



#### China

**IAC China Ltd**  
Tel: +86 755 83790191



#### Denmark

**IAC Nordic A/S**  
Tel: +45 36 77 88 00



#### France

**IAC Boet Stopson SA**  
Tel: +33 (0) 3 20 05 88 88



#### German

**IAC GmbH**  
Tel: +49 2163 99910



#### Italy

**IAC Stopson Italiana SpA**  
Tel: +39 02 48 44 22 1



#### Spain

**IAC Stopson Espanola SA**  
Tel: +34 (0) 9 33 21 66 84



#### United Kingdom

**IAC Ltd**  
Tel: +44 (0) 1962 873 000