

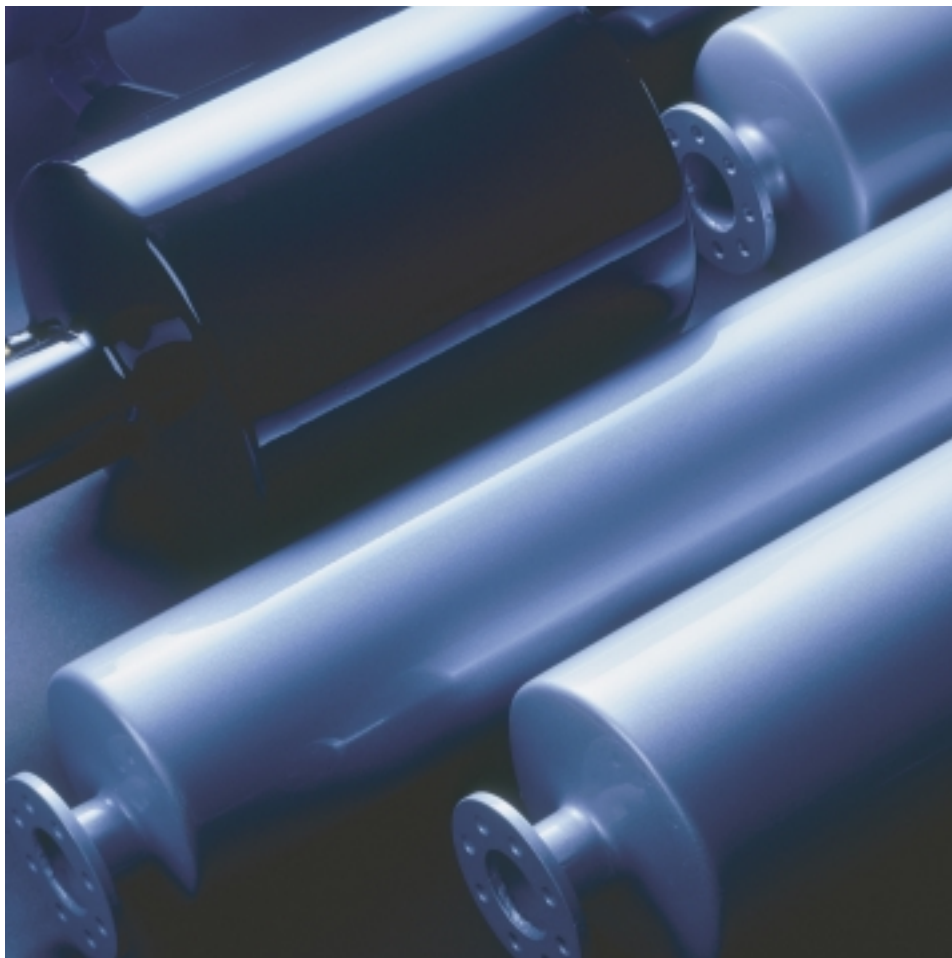
Silencers

For over 50 years, Nelson's family of silencers have quietly out-performed the competition. Not to mention outlast them. That's because Nelson Silencers are fabricated from heavy duty aluminized steel and can operate at a maximum temperature of 1250°F.

What's more, Nelson Silencers are coated with a high heat rust inhibiting primer, then coated with a high heat resistant baked-on silicone aluminum paint that maintains its physical

properties up to 900°F on aluminized steel and 1100°F on mild steel. The result? Nelson Silencers last longer because they resist heat and corrosion that its mild steel counterparts cannot.

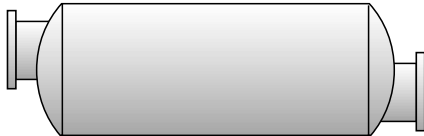
Best of all, Nelson Silencers are easy to install, competitively priced and give you the two things you expect from a premier line of silencers. Sound choices and quiet performance.



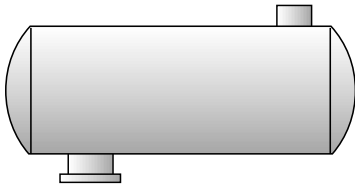
Nelson Standard Exhaust Silencers reduce exhaust noise from all types of internal combustion engines. All silencers are of fully welded design. Aluminized steel is standard material on all silencers through 26" body diameter. Double wrapped body shells are standard on all "300" and "400" level silencers.

Nelson Standard Exhaust Silencers are available in four configuration types shown below. Dual inlet silencers and other configurations are available upon request.

Silencers are generally available from stock with the exception of certain items which do have a leadtime.

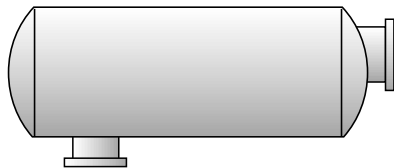


Type 1 Silencer



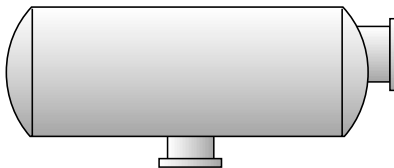
Type 2 Silencer

Type 2 silencer is built only on request and requires a six week lead time.



Type 3 Silencer

Type 3 silencer is designed such that either end can be inlet.



Type 4 Silencer

Type 4 silencer is designed with a middle side inlet. This will solve many mounting problems and give a balanced look to compact applications.



Critical "300" Level Exhaust Silencers

When ambient noise is low, yet you want a high degree of silencing, Nelson Critical "300" Level Silencers are the perfect choice. This line was specifically designed to reduce total engine exhaust noise 25-35 dB. Critical "300" Level Silencers can be mounted in any position and feature all welded construction, a durable double wrapped body and an "F" mounting flange (standard in sizes 4" to 22") and "P" male pipe threads (NPT ends offered in sizes 3/4" through 4"). Companion flanges are also available for 4" to 22".

Special "400" Level Exhaust Silencers

Like the "300" line, our "400" Level Exhaust Silencers are ideal where ambient noise is low and a high degree of silencing is required. This line can effectively reduce total engine exhaust noise 32-42 dB. All "400" Level Exhaust Silencers can be mounted in any position and feature all welded construction, a durable double wrapped body and an "F" mounting flange (standard in sizes 4" to 14"). Companion flanges are also available for 4" to 22".



Spark Arresters and Spark Arresting Silencers

Perfect for logging and construction equipment, agricultural machinery, over-the-road trucks, airport equipment and military vehicles, Nelson's lightweight Spark Arresters/Silencers safely remove nearly all dangerous sparks from exhaust gas. Constructed of durable aluminized steel/mild steel, our line of spark arresters feature a unique vane arrangement designed to resist heat and vibration, while reducing noise.

Fully welded construction provides maximum strength and prolongs service life, while perforated tube and resonator chambers reduce noise without restricting exhaust gas flow. Choose from a variety of models that can be mounted vertically or horizontally. (Also available in stainless steel.)



NTS 20 or NTS 30 Low Pressure Drop Silencers

Choose Nelson NTS 20 or NTS 30 Low Pressure Drop Silencers when ambient noise is low to medium and a high to medium degree of silencing is required. Available in 22 models, this full line of silencers also can be mounted in any position and features all welded construction, a durable double wrapped body and an "F" mounting flange (standard in sizes 4" to 22"). Companion flanges are also available for 4" to 22".



Space Saver Exhaust Silencers

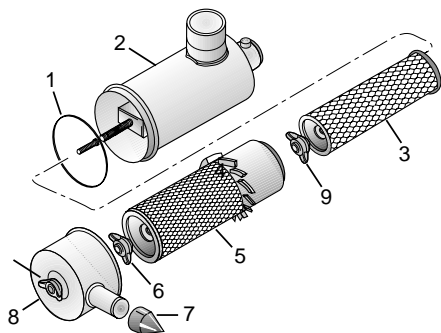
Tight quarters? No problem. Nelson's line of Space Saver Silencers are the answer when space is limited and a medium to high degree of silencing is required. Like our complete line of silencers, our space saver models can be conveniently mounted in any position and feature all welded construction, an "F" mounting flange (standard in sizes 4" to 14") and "S" slotted pipe ends available in sizes 2" through 6". Companion flanges are also available for 4" to 22".



EcoVent Recirculator

The Nelson EcoVent recirculator is your ticket to clean engines—and clean air! Designed to remove oil mist coming from marine or stationary engine crankcase breather vents, the EcoVent recirculator efficiently removes 99% of the oil mist and airborne particles. The result? Healthier engines, low maintenance costs, a cleaner engine room and a safer environment.

Heavy Duty Air Cleaners



Parts:

- 1. O-Ring
- 2. Shell Assembly
- 3. Safety Element
- 4. Wing Nut
- 5. Element
- 6. Wing Nut
- 7. Dust Ejector
- 8. Cover Assembly
- 9. Wing Nut

Finish: Painted

Accessories: Rain Hat, Mounting Bracket, Restriction Gage

- Over 99% air cleaning efficiency
- Horizontal installation
- Wide range of applications
- Long life elements
- Automatic precleaner
- Low operating cost
- Safety element protection
- Air cleaner tested in accordance with SAE J726

Calculated Exhaust Flow Rate for a Silencer With Pressure Drop of 1.0" Hg or Less

If pressure drop requirement is 1" of Hg or less and exhaust flow rate (CFM) is known, the following chart can be used to determine silencer size without calculations. Find the lowest flow rate on the chart that is equal to or greater than the flow rate of your engine under the appropriate silencing level.

Note: These precalculated exhaust flow rates are based on an end in end out silencer. Please refer to specific specification sheet when determining back pressure for a side inlet or middle side inlet silencer.

Inlet Pipe Area (Ft. ²)	Pipe Dimension in. - mm	100 Level Silencer	200 Level Silencer	300 Level Silencer	400 Level Silencer
.0031	.75 - 19.1	41	35	29	-
.0055	1.0 - 25.4	73	63	52	-
.0085	1.25 - 31.8	113	98	80	-
.0123	1.5 - 38.1	163	142	117	-
.0218	2.0 - 50.8	288	250	206	-
.0341	2.5 - 63.5	450	380	325	-
.0491	3.0 - 76.2	650	565	470	-
.0668	3.5 - 88.9	880	770	640	-
.0873	4.0 - 101.6	1160	1000	830	790
.1363	5.0 - 127.0	1810	1580	1290	1240
.1963	6.0 - 152.4	2600	2250	1870	1770
.3491	8.0 - 203.2	4600	3900	3340	3150
.5454	10.0 - 254.0	7200	6200	5200	4950
.7854	12.0 - 304.8	10200	8800	7500	7100
1.069	14.0 - 355.6	14000	12000	10200	9700
1.438	16.0 - 406.4	18000	15500	13700	13000
1.760	18.0 - 457.2	23000	19800	16800	16000
2.180	20.0 - 508.0	28400	24300	20900	19700
2.640	22.0 - 558.8	34400	29500	25300	24000

(See individual specification sheets for further details.)

Determination of Silencer Pressure Drop

Information Required:

- Exhaust Flow Rate
- Silencer Inlet Size
- Level of Silencing

Procedure:

Calculate Exhaust Gas Velocity

Exhaust Gas Velocity =

$$\frac{\text{Exhaust Flow Rate (CFM)}}{\text{Silencer Inlet Pipe Area (Ft}^2\text{)}}$$

Refer to industry specification sheet to determine the silencer pressure drop corresponding to exhaust gas velocity and silencing level.

Silencer recommendations are based on 1" Hg restriction and are estimated only. As we have no control over piping systems and other variables (i.e. tail pipe loss, flex, sudden expansion-contraction etc.), we make the following recommendation:

Use a size larger silencer or a low back pressure unit* if the back pressure

calculations exceed 1" Hg across the silencer or if the silencer back pressure is more than 50% of the allowable back pressure for the exhaust system (be sure to use the smaller of these two criteria in your determination). If components of the exhaust system (without silencer included) exceed 50% of allowable back pressure for the engine, adjust silencer size accordingly.

***Note:** When determining back pressure, velocity should not exceed 15,000 ft/min regardless of the allowable back pressure (10,000 ft/min for spark arresting silencers).

Attenuation Data

Nelson Silencers offer four attenuation ranges to provide the optimum performance for your application. Because of the particular characteristics of your application, performance levels are shown as bands of expected attenuation over a broad range. These curves are based upon

“typical” conditions. They will not necessarily define the exact insertion loss for a specific application since the insertion loss achieved is influenced by many factors, including engine size, type, speed and unsilenced noise levels and frequency distribution.

(See individual specification sheet for attenuation detail, back pressure information and design detail.)

***Note:** Attenuation and back pressure curves are estimates only. Many variables exist that can affect actual performance for a specific application. Our liability is limited to replacement of product or to original price of product. We assume no liability for any costs associated with replacement or use of our product.

Silencers are not designed to support other components of the exhaust system (i.e. stacks, etc.) nor are they designed to support their own weight from the inlet or outlet tube (use proper mounting attachments on silencer body).

If the exhaust flow rate is not available, it can be approximated by the following equation:

$$\text{CFM} = \frac{\text{Engine Displ (cu in)} \times \text{Full Load RPM} \times \text{Eff} \times (\text{Exh Temp } ^\circ\text{F} + 460)}{\text{C} \times 941760}$$

CFM = exhaust flow rate in cubic feet per minute

Efficiency = .85 for naturally aspirated engines

Efficiency = 1.4 for turbo-charged engines

Efficiency = 1.2 for engines with scavenging blower

C = 1 for two-cycle engine

C = 2 for four-cycle engine

If exhaust temperature is not available, use:

T = 1200° F for gasoline engine

T = 900° F for diesel engine

***Note:** Use the equation above only when the exhaust flow rate is not available.

Note: All dimensions are in inches.

At Nelson, we believe silence is golden. That's why we're proud to introduce you to our family of fine exhaust silencers. And no matter which Nelson Silencer you choose, it'll get the job done—quietly!



For more information, call your Customer Assistance Representative at 1-800-22FILTER (1-800-223-4583) fax 1-800-999-8664 or visit us at www.fleetguard.com 24 hours a day

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