A complete ventilation system for successful tunneling and mining operations, including system design, fan station, ducting and installation.
CONTROL THE AIR.
CONTROL YOUR BUSINESS.

THE SERPENT VENTILATION SYSTEM CONTROLS AIR FLOW WITH UNRIVALLED EFFICIENCY TO PROVIDE ADEQUATE VENTILATION WHERE AND WHEN YOU NEED IT MOST. RELIABLE HIGH-PRESSURE FANS AND DURABLE PVC-COATED DUCTS CONTRIBUTE TO OPTIMAL AIR FLOW DAY IN AND DAY OUT. THE SMART, EFFICIENT SERPENT VENTILATION SYSTEM CAN CUT YOUR ENERGY EXPENDITURES BY UP TO 50%.

For optimal energy-saving performance, fans can be fitted with a frequency-control switch.

**MAIN BENEFITS**

- **High efficiency** and lower energy costs
- **Durable design** and low noise levels
- **A single supplier** to meet all your needs

Serpent fans are available in nine different sizes and several system combinations to perfectly suit your unique operational conditions and requirements.
Serpent fans are available with standard or super silencers to eliminate high-frequency sounds and reduce noise levels to a minimum.

The Serpent system is more economical. Fans can move more air per unit of energy than other simpler systems.

To maintain extra high system pressure, up to five fan units of any diameters and motor sizes can be connected in series at a single fan station.

Fans are built to cope with the stresses of continuous operation, day after day, year after year.

Serpent fans are available with standard or super silencers to eliminate high-frequency sounds and reduce noise levels to a minimum.
FEW PEOPLE THINK ABOUT VENTILATION AS THEY GO ABOUT THEIR DAILY LIVES. WE TAKE FOR GRANTED THAT OUR OFFICES, STORES AND CINEMAS ARE WELL VENTILATED. BELOW GROUND, HOWEVER, THE STORY CHANGES.

Here, ventilation is critical and can never be taken for granted. Without proper ventilation, excavation work of any kind is simply impossible. Ventilation systems used in tunneling and mining face a range of complex challenges. Poor ventilation lowers productivity and raises energy costs.

Ventilation needs vary during the work cycle depending on the type of operation being performed. Drilling normally requires only 30–40% of total ventilation capacity, while mucking and haulage require a significantly greater capacity. In general, maximum ventilation capacity is required only after blasting and during intensive haulage.

In most older ventilation systems, capacity cannot be adjusted. They simply run at 100% capacity all the time, driving more fresh air into the mine than necessary and extracting air when there are no gases or fumes to remove. They also normally leak substantial amounts of air, thereby reducing pressure, increasing energy consumption, and driving up total operational costs. Since ventilation is a major long-term cost in tunnel and mine excavation – often accounting for some 35–45% of total energy consumption – ventilation is an area that represents huge potential gains.

To save energy and considerable sums of money, the Serpent ventilation system has the power to give you the exact rate of air flow you need to suit the operation at hand. For example, you can increase air flow to rapidly evacuate fumes after blasting and then quickly revert to normal operational mode. You can save as much as 50% by relying on the Serpent instead of on traditional single-speed ventilation systems.
MAIN BENEFITS

Heavy-duty and anti-corrosion treated to work and last even in the most aggressive environments

Easy maintenance with all service points easily accessible

Designed for longevity with automatic lubrication that keeps bearings in good condition
A COMPLETE VENTILATION SYSTEM

THE SERPENT SYSTEM, WITH ITS CUSTOM DESIGN, FEATURES FLEXIBLE DUCTING, SOUND ABSORBERS, AND EFFICIENT HIGH-PRESSURE FANS MANAGED BY AN ENERGY-SAVING CONTROL SYSTEM. MORE THAN A THOUSAND DIFFERENT FANS, DUCT LENGTHS AND DUCT SIZES ARE AVAILABLE TO COMPRISE SERPENT VENTILATION SYSTEMS THAT HAVE PROVEN THEIR EXCELLENCE IN HUNDREDS OF INSTALLATIONS.

+ OPTIMAL DESIGN
We use reliable computational methods to optimize your system, providing you equipment ideally suited to your unique operation. An impeccable system design ensures that pressure loss is kept to a minimum at all times to reduce operational costs. The quality of the installation also has a huge impact on system performance and the cost of moving air as desired. An accurate installation and the ability to easily maintain your ventilation system can considerably lower your long-term expenditures.

+ FLEXIBLE DUCTING
Serpent system ducting can be highly customized. The Serpent’s heavy-duty, PVC-coated ducts can be delivered in a variety of lengths and diameters to fit your pressure needs. Ducting materials – lightweight, yet durable – can also be chosen based on pressure and anti-static requirements. Ducting is delivered with installation hooks and is easy to mount and remove. Vulcanized seams and two types of airtight connectors – zip-joints and steel rings – ensure minimal air loss throughout the system.

+ ONE SUPPLIER WITH GLOBAL PRESENCE
We design, manufacture and test all components of the Serpent ventilation system ourselves to certify their quality. Through years of experience, we have developed the knowhow to craft custom systems tailored to each customer’s distinctive requirements. We also provide you with a single contact to turn to with all your support and system extension needs. Our global service network gladly offers you expert advice and assistance whenever and wherever you need it to prevent your operation from stagnating.

SAFETY FIRST!
The Serpent system embodies safety to guarantee a healthy underground working environment. Product reliability is essential from a safety perspective, and we pride ourselves on providing you with premium components. Fan stations in particular have been designed and developed with safety as a primary concern. All units are tested before delivery and are equipped with lubrication modules to extend life.
Technical Specifications

Main Components
- Fan station
- Silencers
- Flexible ducting
- Starters
- Installation accessories

FANS

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<thead>
<tr>
<th>Model</th>
<th>AVH63</th>
<th>AVH71</th>
<th>AVH90</th>
<th>AVH100</th>
<th>AVH125</th>
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<td>Approximate flow rate (m³/s)</td>
<td>3 – 9</td>
<td>4 – 13</td>
<td>8 – 22</td>
<td>10 – 24</td>
<td>14 – 42</td>
<td>20 – 48</td>
<td>22 – 70</td>
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<td>8476 – 27547</td>
<td>16952 – 46618</td>
<td>21190 – 50886</td>
<td>29668 – 89998</td>
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<td>84760 – 254280</td>
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<td>1.3–2.2 / 5.2-8.8</td>
<td>1.3–2.3 / 5.2-9.2</td>
<td>3.5–4.3 / 14.0-17.3</td>
<td>3.8–4.4 / 15.3-17.7</td>
<td>1.5–2.6 / 6.0-10.4</td>
<td>1.2–2.2 / 4.8-8.8</td>
<td>1.3–2.2 / 5.2-8.8</td>
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<td>2.6–4.6 / 10.4-18.5</td>
<td>7.0–8.6 / 28.1-34.5</td>
<td>7.3–8.7 / 29.3-34.9</td>
<td>2.9–5.1 / 11.6-20.5</td>
<td>2.3–4.3 / 9.2-17.3</td>
<td>2.5–4.3 / 10.0-17.3</td>
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<td>10.3–12.6 / 41.4-50.6</td>
<td>4.5–7.7 / 18.1-30.9</td>
<td>3.5–6.4 / 14.1-25.7</td>
<td>3.8–6.4 / 15.3-25.7</td>
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FLEXIBLE DUCTING

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<tr>
<td>Duct adapter, duct diameter range (mm)</td>
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COMMITTED TO SUSTAINABLE PRODUCTIVITY

We stand by our responsibilities towards our customers, towards the environment and the people around us. We make performance stand the test of time. This is what we call – Sustainable Productivity.

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