



Airvac

The **world leader** in vacuum wastewater collection technology.

**MAKING A
DIFFERENCE TODAY
FOR A BETTER
TOMORROW.**

PROTECTING THE ENVIRONMENT THROUGH INNOVATIVE VACUUM TECHNOLOGY SYSTEMS

A brand of
Aqseptence Group



ACCESS
TO CLEAN
WATER **IS AN**
ESSENTIAL
NEED.





Airvac

The **world leader** in vacuum wastewater collection technology.

Clean water is a fundamental human right and a cornerstone of public health. At Airvac, we understand that access to clean water and effective wastewater management is crucial for communities around the globe. Our mission is to ensure that every community has access to safe and sustainable wastewater collection solutions, contributing to healthier environments and better living standards.

At Airvac, we firmly believe in the critical importance of access to clean water, not only for the current generation's well-being but also to ensure a sustainable future for generations to come.

Sustainable protection and management of water resources is essential for public health, preventing waterborne diseases and promoting overall hygiene. It is indispensable for agriculture, ensuring food security and nourishing a growing global population.

Additionally, access to clean water is crucial for economic development, supporting industries and creating livelihoods, especially in vulnerable communities.



**Making a Difference
Today, for a Better
Tomorrow.**
(Video)

50+

years in business.



Founded in 1969.

Airvac was an early pioneer of vacuum sewer technology. Our legacy is built on industry-leading innovations and outstanding customer service. Our company culture is “**customer first**”, backed by a staff that is passionate, experienced, and committed.

Our facilities.

Airvac operates its administration, engineering, fabrication, production, and service training facilities on a spacious 40-acre site in Rochester, Indiana, encompassing over 100,000 square feet (9,300m²) of covered space. Our 8,500 square foot (790m²) Customer Solutions Center is situated in Tampa, Florida. Additionally, Airvac has sales and service representatives located in Europe, Latin America, and Australia.



Airvac Customer Solutions Center.



We are
ISO-9001:2015
certified.

ISO-9001:2015 Certification is the international standard for quality management systems (“QMS”). This demonstrates our ability to consistently provide products and services that meet customer and regulatory requirements and demonstrates our commitment to continuous improvement.



Airvac Administrative, Engineering, and Manufacturing Buildings.

20+

patented industry firsts.



Airvac

We build our products to be **durable, safe, effective, and easily maintained.**

Our core of engineers develop and continually improve our products based on ingenuity, adaptability, reliability, and affordability. Every product is designed to work with existing systems, either out of the box or with a minor retrofit, and existing products can be improved by adapting newer components. We stand behind and support every product we make.

Based on customer insights, we have created solutions that have resulted in over twenty patented industry-firsts.

Here are just a few of our patents throughout the years:

1979 - 3in Valve with Condensation Trap

1979 - Sawtooth Profile
(Now an industry standard)

1987 - Sump Vented Valve

1991 - Electric Air Admission Controller

1996 - Sump Breather

2018 - HP Controller

2019 - SMART Wireless Monitoring
for vacuum sewer systems

2022 - Pressure Activated Sump Breather

2024 - Vacuum Pump Modulation





More than seventy one percent of the world is covered by water, yet less than one percent is available for human use.

OUR WASTEWATER COLLECTION TECHNOLOGY IS USED ALL OVER THE WORLD.

Airvac has installed vacuum wastewater systems throughout the world including North America, South America, Europe, Africa, the Middle East, Asia, and Australia.

1,500+

municipalities served

318,000+

connected households
in over 41 Countries

In total, there are approximately

137,000

Airvac valve pits serving

318,000

households worldwide.

With the average water use per household and knowing that a valve cycles every 10 gallons (40L), this equates to approximately

4 million

Airvac valve cycles per day.

Said another way:
every minute of every day
there are about

2,760

Airvac vacuum valves cycling
somewhere in the world.



Water shortages affect more than three billion people worldwide, and the amount of fresh water per person has plunged by a fifth over the past two decades.

**WE ARE COMMITTED
TO OUR CUSTOMERS.**

We are building technology and relationships to last a lifetime.

Customer satisfaction is at the heart of everything we do at Airvac. We are dedicated to providing exceptional service and support to our clients. Our experienced team is always ready to assist with system design, installation, and maintenance, ensuring that our customers receive the highest quality products and services. We believe in building long-term relationships based on trust, reliability, and excellence.

We understand that choosing an Airvac vacuum wastewater system is a lifetime commitment. Equally important, it demands a lifetime commitment from us. Airvac is dedicated to making superior products and developing long-term customer relationships by providing support and service at every stage of a project.

Our top-quality products and customer focus make Airvac the world leader in vacuum wastewater collection technology.



Comprehensive Overview
(PDF)

We have partnered with some of the best engineering firms.

Here are just a few engineering firms Airvac has partnered with on projects throughout the years:



We have a diverse client base.

Airvac has completed projects for over 1,500 municipalities and well-known companies such as:



L'ORÉAL



And even though we are all aware that contaminated water can transmit any number of deadly diseases, we continue to allow more than eighty percent of the world's wastewater to flow back into our environment.

WHAT IS **VACUUM** WASTEWATER COLLECTION AND WHAT ARE IT'S **ADVANTAGES**?

There are multiple advantages to an Airvac vacuum wastewater collection system.

What is a vacuum wastewater collection system?

A vacuum wastewater collection system uses differential air pressure, rather than gravity or pressure, to transport wastewater. Essentially, it is a vacuum-assisted gravity sewer system requiring a vacuum station where pumps maintain the vacuum on the collection mains.

Each sewage input point has a valve that seals the system and opens automatically when enough sewage collects in a sump. This valve is controlled pneumatically. The differential pressure between local atmospheric and vacuum pressure propels the liquid.

These systems produce high scouring velocities, reducing pipe blockages, and, unlike septic systems, they have no drainage fields, preventing raw sewage from surfacing in yards, backing up into homes, or spilling into the environment.

Vacuum wastewater collection systems are a good fit for:

- Residential connections
- Commercial connections
- Private developments
- Areas where failing septic tanks are causing pollution
- Locations with at least 25 connections – we even have systems that serve more than 10,000 households.
- Areas with flat topography or moderate elevation change
- Areas with subsurface difficulties to overcome (like high groundwater tables, sandy and unstable soils, rock, restricted construction conditions, acid sulfate soils (A.S.S), and sensitive ecosystems)

Cost-effective, efficient, and reliable.

Airvac vacuum wastewater collection systems are clean, efficient, easy to maintain and install, and typically less expensive than other systems. This proven technology has a long history of success and reliability.

Its vertical and horizontal flexibility helps avoid underground utility conflicts, preventing cost overruns. Overall, using an Airvac system can save up to 60% compared to gravity or low-pressure systems.

Less disruptive to communities.

The quick and simple excavation for an Airvac system creates shallower trenches and uses smaller diameter pipes and excavation equipment. Roads can remain fully or partially open, causing much less disruption compared to traditional gravity sewers.

This results in significantly lower restoration, construction, dewatering, and energy costs.

Safer for operators.

With an Airvac system, operators avoid exposure to raw sewage and confined spaces, minimizing the risk of viruses, bacteria, parasites, and harmful gases like methane and hydrogen sulfide. Our latest technologies also reduce noise and heat at vacuum stations.

Unlike low-pressure systems, operators don't need to lift heavy pumps in and out of pits or disconnect power for maintenance.



Vacuum wastewater collection systems prevent infiltration and inflow of groundwater from the valve pit to the vacuum station, protecting the environment from exfiltrating wastewater.

AIRVAC VACUUM WASTEWATER SYSTEMS CONTRIBUTE TO A REDUCED CARBON FOOTPRINT.

Airvac technology can **positively impact the carbon footprint** in several ways:

Energy efficiency.

Vacuum sewer systems generally require less energy compared to traditional gravity sewer systems. The central vacuum station that drives the system consumes power only when sewage is being actively transported. This intermittent and controlled usage reduces overall energy consumption.

Energy efficiency can be further enhanced through Vacuum Pump Modulation, Airvac's patented program logic that improves the functionality of your vacuum system.

The modulation sequence controls the speed of the vacuum pumps to maintain a tighter vacuum range, and speeds up and slows down, depending on the demand of the system. It is unusual for the pumps to ever operate at full speed. And since the pumps are not turning on and off as frequently, overall power consumption is reduced, and less heat and noise are created.

Reduced construction impact.

Installing vacuum sewer systems typically involves less invasive construction than traditional sewer systems. This means fewer disruptions to the soil and reduced use of heavy construction equipment, which in turn lowers emissions related to construction activities. This significantly lowers restoration, construction, dewatering, and energy costs.

Small diameter pipes are used which require less excavation and can be laid in shallow trenches, reducing the impact on the environment.

Leak prevention.

The design of vacuum systems creates a negative pressure inside the pipes, which helps to prevent leakage of sewage into the environment. This containment reduces the risk of soil and groundwater contamination, leading to better overall environmental quality.

In case of a leak, monitoring equipment located at the vacuum station immediately detects any issues and alerts operating personnel where the problem is located.

Flexibility and adaptability.

Connecting to wastewater infrastructure, protecting the environment, and using resources wisely are often taken for granted in many parts of the world but pose significant challenges elsewhere. In areas without a natural gradient, where deep excavation isn't feasible, or near natural water resources or protected areas, conventional wastewater technology is impractical. The risk of pollution and the complexity and cost of construction and operation are too high.

Because vacuum sewer systems can be installed in challenging terrains and under various geographical conditions without extensive excavation, they can be adapted to areas where traditional systems might require significantly more resource-intensive infrastructure changes, thereby reducing the environmental disturbance.

Vacuum technology allows wastewater to flow through any terrain, leak-proof and resource-saving, even uphill if necessary.

Only one power source is required for operation.

Traditional gravity systems often require several lift stations, each needing electricity to function. In low-pressure systems, each home has a grinder pump powered by electricity, which is provided by the homeowner. Vacuum sewer systems, however, require only one source of power, can replace multiple lift stations, and do not need power at the homes in order to operate.



It is one of the most environmentally sound solutions available.

HOW A VACUUM WASTEWATER COLLECTION SYSTEM WORKS.



How It Works
(Video)



1 Gravity Carries Wastewater to the Valve Pit

A gravity line carries wastewater from a customer's home to the sump portion of the valve pit package, which is pneumatically operated. In most cases, one valve pit package will service up to four homes and is typically located in a right-of-way.



2 The Vacuum Valve Opens and Empties the Sump

The vacuum valve opens when ten gallons (40 L) of wastewater collects in the sump portion of the valve pit package. Differential pressure then propels the wastewater into the vacuum main.



3 Wastewater Travels to the Vacuum Station

Wastewater travels to the vacuum station through the vacuum main at 15ft (5m) to 18ft (6m) per second, scouring the pipe and preventing blockages. The vacuum main piping is laid in a sawtooth fashion to ensure adequate vacuum levels are maintained at the end of each line and to help maintain a shallow burial depth.



4 Vacuum Pumps Cycle On and Off

Vacuum pumps cycle on and off as needed at the vacuum station to maintain a constant level of vacuum on the entire collection system. Airvac's patented vacuum pump modulation decreases power cost, noise and heat while improving overall system performance.



5 Wastewater Enters the Collection Tank

Wastewater from the vacuum main enters the collection tank and fills until it reaches a predetermined level. The wastewater levels are managed by an interactive eCabinet located in the vacuum station.



6 Sewage Pumps Transfer the Sewage

Finally, sewage pumps transfer the wastewater in the collection tank through a force main to a nearby treatment plant where the water is treated. This process is managed by the interactive eCabinet panel as well.

Environmental, social, and governance (ESG) initiatives are **an important part of what we do.**

At Airvac, our commitment to Environmental, Social, and Governance (ESG) principles is integral to our operations. We've achieved a 35% reduction in energy consumption through strategic upgrades to our facilities, demonstrating our dedication to environmental sustainability. Our Culture Committee spearheaded impactful community initiatives, including food drives, planting trees, and transforming spaces into green areas.

Our comprehensive recycling program encourages employees to recycle a diverse range of materials, including those from their homes, significantly reducing landfill waste. We've phased out all single-use plastics from our operations and promote sustainable transportation options among our staff, including carpooling.

Beyond our doors, Airvac is a proud participant in local community development, volunteering in various capacities and supporting numerous charitable causes. Our interactive suggestion box, contributed to by employees at all levels, fuels continuous improvement and robust engagement, reinforcing our collective commitment to ESG principles.

Looking ahead, we aim to further integrate renewable energy solutions and enhance our community programs, aligning our operations with global sustainability targets. Our ESG journey is driven by a vision to not only lead in vacuum technology but to do so responsibly and ethically.

Discover Better.®
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**We provide FREE cost estimates
& system layouts.**



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