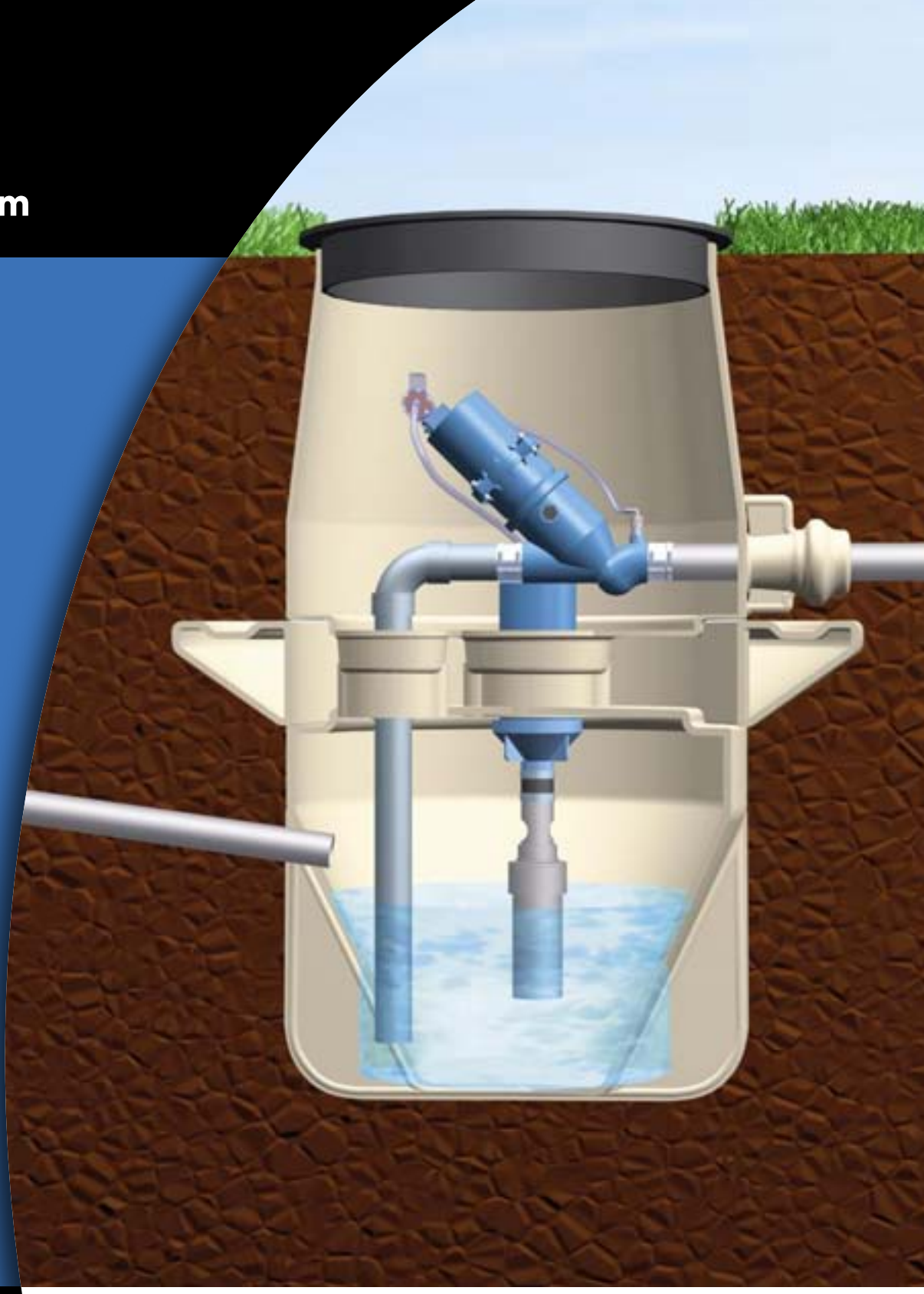
www.airvac.com



AIRVAC®

The World Leader in Vacuum Sewer Technology

AIRVAC sewer systems are reliable, dependable, and will save you money.

Reliable and Economical

Thirty years ago, vacuum sewers were regarded as new and only to be used as a system of last resort. Improvements in the technology later led to acceptance as "alternative" sewers, but still only to be used when significant savings would result.

Now regarded as the system of choice, AIRVAC systems are providing efficient and reliable sewer service to communities all around the world. And, as a bonus, the cost-saving potential is as great as ever.

Save Money

Hundreds of communities have enjoyed cost savings as high as 60% by using an AIRVAC vacuum system as compared to traditional gravity systems and low-pressure systems. And, there is no extra burden on the homeowner as the AIRVAC valve is pneumatically operated and requires no power from the house.

Reduce Construction Costs

Vacuum sewers use small diameter pipes and shallow burial depths. The resulting narrow, shallow trenches greatly reduce the excavation, dewatering effort, surface disruption and the danger associated with larger, deeper trenches.

Field changes can be easily made as unforeseen underground obstacles can be avoided by going over, under, or around them.

Further cost savings result when multiple lift stations are replaced by a single vacuum station. It is not unusual for 1 vacuum station to replace 6 or 7 lift stations.

Save on Operation & Maintenance Costs

The continuing improvement in vacuum technology has resulted in significantly decreased Operation & Maintenance costs compared to the earliest vacuum systems. O&M costs are now in line with, or even lower than traditional gravity systems.

Because vacuum is a sealed system, infiltration and inflow are eliminated, reducing maintenance costs as well as treatment costs.

Simple Design

Even though AIRVAC systems are very simple, we work closely with client engineers during the design phase of each installation. We offer assistance with piping profiles, vacuum station design, standard details, and sample specifications. We will also review all plans and specifications.

Simple Installation

Local contractors who have pipe laying and plumbing experience have no problem learning to install the AIRVAC system. AIRVAC field supervisors are available to oversee the installation. Through daily vacuum checks of all installed pipe and other techniques, you can be assured of a properly installed and leak-free system.

Operator Friendly

Since vacuum sewer systems are completely sealed, operating personnel are not exposed to raw sewage. Additionally, with no manholes, entry into a confined space is not an issue.

While extremely rare, leaks would not result in sewage spills, but rather air would enter the pipe and would be immediately detected. An auto-dialer, standard equipment in a vacuum station, would automatically notify operating personnel.

Backup Safety

The vacuum station has a standby generator to provide uninterrupted service during power outages. An alarm system will alert the operating personnel that this condition has occurred.

Longevity and Applicability

Over 700 AIRVAC systems and 80,000 vacuum valves have been installed since 1972. AIRVAC has operating systems in more than half the states in the U.S. and in nearly 30 countries around the world.

Typically, the more difficult the sub-surface conditions, the more likely vacuum sewers are the answer. Having completed projects in every imaginable environment, AIRVAC has been able to customize its product to fit virtually any customer need.

Municipalities

- Dependable and economical service for your customers
- Minimal surface disruption to existing community
- Low O&M costs and long life of components
- 24/7 system troubleshooting hotline
- Annual system check-up
- Operator friendly

Design-Build Teams

- Educational services designed to ease owner and customer concerns
- Master planning and system layout assistance
- Design assistance
- Construction inspection services
- System start-up support
- System operation (interim or full time)

Developers

- Service may be easily extended into future construction phases
- Sealed system protects environmentally sensitive areas
- Eliminate multiple lift stations- fewer lots needed for lift stations mean additional lots are available for sale
- Shallow main lines mean easier installation and expansion and less surface disruption

AIRVAC and vacuum sewers can help you with your project.

Lightweight valve pits, capable of bearing traffic loads, are easily installed and typically serve two or more homes.

To ensure system integrity, vacuum tightness tests are conducted daily during the construction period.

AIRVAC assembles and tests the mechanical and electrical equipment of the vacuum station at its factory. The skid-mounted equipment is delivered to the job site and placed into the vacuum station building.

The vacuum station building that houses the mechanical and electrical equipment is designed to fit the characteristics of the neighborhood.

Vacuum mains use small diameter pipes installed in shallow, narrow trenches. Because of these factors, the mains are typically installed adjacent to the pavement, minimizing road restoration.

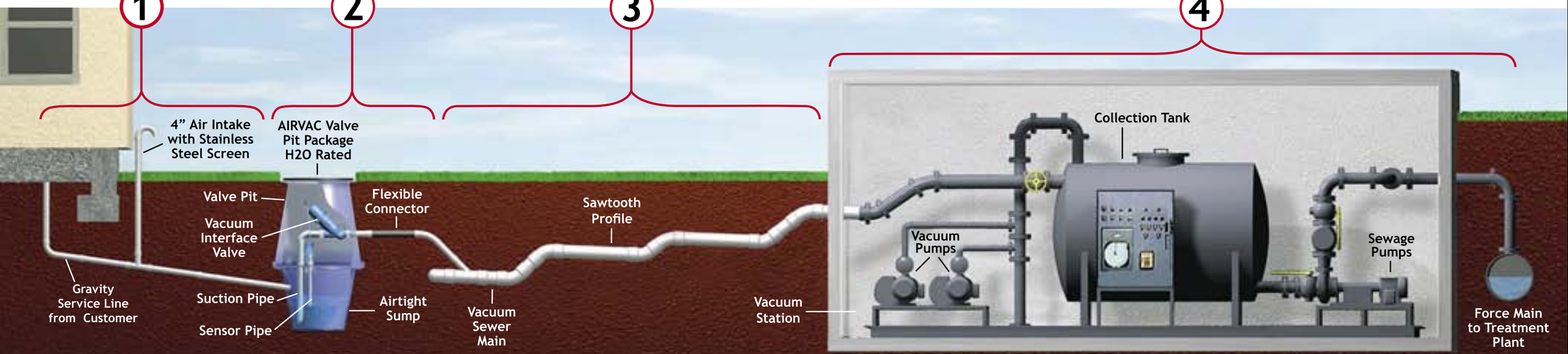
Disruption to the community during the construction period is kept to a minimum with vacuum sewers resulting in less surface restoration being required.

Vacuum stations provide a clean, safe environment for maintenance personnel as all sewage is completely contained within the collection tank.

AIRVAC technicians work hand in hand with the Owner to ensure optimum system operation.

How it Works:

1. A traditional gravity line carries wastewater from the customer to an AIRVAC valve pit package.
2. When 10 gallons of wastewater collects in the sump, the AIRVAC valve opens and differential pressure propels the contents into the vacuum main.
3. Wastewater travels at 15 to 18 fps in the vacuum main, which is laid in a sawtooth fashion to insure adequate vacuum levels at the end of each line.
4. Wastewater enters the collection tank. When the tank fills to a predetermined level, sewage pumps transfer the contents to the treatment plant via a force main. Vacuum pumps cycle on and off as needed to maintain a constant level of vacuum on the entire collection system.



AIRVAC provides excellent customer support and service.

What our clients say about AIRVAC Vacuum Sewer Systems and support:

Richard Foster
President
Baymark Construction
Cape Charles, VA

"I recommend developers take a look at the AIRVAC system. It can save you time and money and improve quality."

Phil Hubbard, P.E.
Engineer V
Public Utilities Operations
Virginia Beach, VA

"AIRVAC reviews all of our construction plans during design to make sure guidelines are being followed and to look out for our best interest. I would recommend this to everyone installing a vacuum system."

Donald Eckler, P.E.
President
Eckler Engineering, Inc.
Coral Springs, FL

"AIRVAC's involvement from preliminary design through system start-up was integral in making this 'difficult to sewer' area a success."

Joe Musgrave
Superintendent Field Operations
Kirk Brothers Company, Inc.
Alvada, Ohio

"Field conditions constantly change and AIRVAC's experience and advice allows my crews to make field adjustments in a matter of minutes."

Robert J. Paulette, P.E.
Environmental Engineering Dept. Head
Wilson & Company Inc.
Albuquerque, NM

"AIRVAC engineers and service technicians provide excellent assistance to both my clients and my staff for our vacuum systems."

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Let us help you with a free system layout & budget estimate.

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