

The Savings Roundup

Small livestock operations use micro-conditioning skids for efficiency

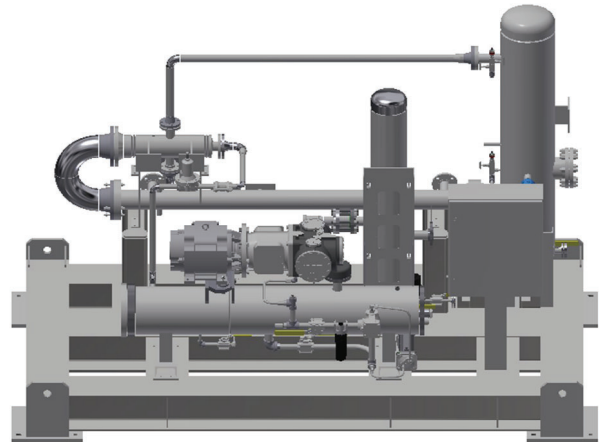


In large livestock operations, managing more than 1,000 head, recovery systems have been routinely used to profitable advantage capturing elements of the manure and turning it into valuable secondary products, such as fertilizer and natural gas. Now smaller operations, even those with less than 500 head, can deploy a conditioning system for similar benefits.

Big operation or small, these biogas recovery systems are considered extremely valuable, as they not only capture energy from the gas, but prevent methane (a major greenhouse gas) from entering the atmosphere and odors from spoiling the countryside. The methane can be used to power the farm, its vehicles, generate electricity sold to the local utility, or be injected into the natural gas pipeline.

Many landfills and large swine and dairy farms have biogas recovery systems, and Vilter has provided key components of these for many years.

Working with engineering firms, developers and livestock operators, the need became clear for modular, right-sized conditioning systems for smaller operations. The micro-conditioning skid was born out of a reputation for quality single-screw compressors, and the confidence builders have in Vilter to provide blowers, scrubbers and dehydration systems, complete with controls.



Lowering Total Cost of Ownership

“When developing the Vilter™ micro-conditioning skid, we focused on three attributes that would make this feasible for the family-type farm: it had to be right-sized, economical and reliable,” said Lee Van Dixhorn, Emerson-Vilter director of engineering. “Maintenance also had to be limited and simple because we want this to be easy to have on the farm.”

For easy transportation and installation, the modularized skid itself is self-contained and quite compact: 136 x 60 x 80 in. for the 30 SCFM configuration and 160 x 60 x 80 in. for the 75 SCFM configuration.

“This is a full system; a big advantage,” said Van Dixhorn. “To any who have designed their own conditioning systems, this is a much more simple, faster way to go.”

The heart of the skid is the trademark Vilter single screw industrial compressor. This is a unique design featuring high part-load efficiency. It offers time-saving maintenance designs and is known for its energy efficiency.

According to our internal analysis, the micro-conditioning skid can save up to \$8,000 in energy costs per year for a 200 CFM site, and up to \$21,000 for a 400 CFM site vs. competitors.

Other key features:

- Vission 20/20 controller, proven reliable in a diversity of rigorous applications around the world. Remote monitoring and control also available.
- Maintainable chiller
- Moisture removal system to ensure clean gas enters the system
- Packaged chiller is separate from the rest of the skid to maintain a non-hazardous rating, keeping maintenance and regulatory costs low
- Insulation package is available for use in colder climates

Reliability

Special focus was made on the balance between uptime and system cost. Some smaller operations can store gas for hours or days before processing, so expensive redundancies required in larger plants were avoided.

Of course, like all Vilter industrial compressors, quality components were used in all the right places.

“We use vibrating fork level switches instead of lower-cost float type switches” explains Van Dixhorn. “Our experience in upgrading plants is that using the more premium switches costs a little more up front, but avoids the downtime and additional labor costs that come from earlier failures. We balanced these decisions everywhere in the skids to deliver an easy-to-use product with really great total cost of ownership.”

