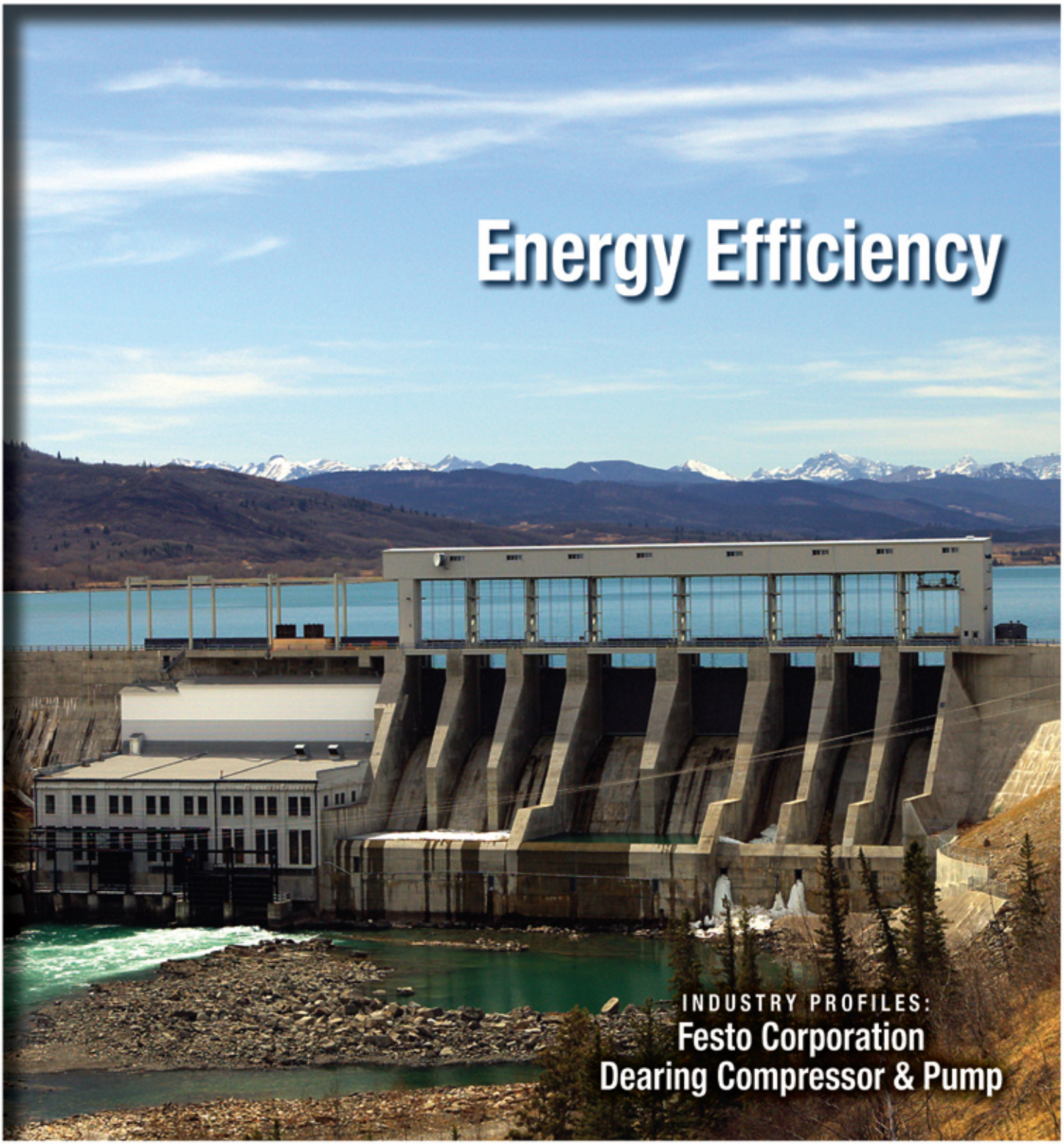
Manitoba Hydro Power Smart® Bonneville Power Administration VSD Compressors

May 2007

COMPRESSED AIR BEST PRACTICES™



DEARING COMPRESSOR

Compressed Air Best Practices spoke with Mr. Robin Wall (Vice President of Sales) of the Dearing Compressor & Pump Company.

Dearing Compressor & Pump in Youngstown, Ohio

How was Dearing Compressor founded?

Dearing Compressor & Pump was founded in 1945. For more than 50 years, we have based our reputation on service, reliability, integrity and innovation and have responsibly served our industrial and energy customers with dependable equipment and systems for compressed air, gas, process gas and hydraulic applications. The Company continues to be owned and operated by the Dearing family.

What is the structure of the Company?

We operate two distinct divisions: the Industrial and the Energy divisions. Our Industrial Division focuses on selling and servicing systems for industrial air compressors and pumps in Ohio and Pennsylvania. We cover the Akron, Canton, Cleveland and Erie markets. We have a full-service shop in Cleveland as well as our headquarters here in Youngstown, Ohio. The Industrial division has grown significantly over the past five years. We are adding products like blowers for low pressure applications. This has helped us get into new applications like wastewater aeration, blow-offs and conveying.

& PUMP COMPANY

What product lines are sold by the Industrial Division?

Dearing is Gardner Denver's second oldest distributor in the U.S. We began selling and servicing GD compressors from the very beginning in 1945. To this day, we continue to provide Gardner Denver industrial air compressors to plants in Ohio and Pennsylvania. Gardner Denver's acquisitions of other technologies has been positive for Dearing as we are now engaged with blowers as we mentioned before.

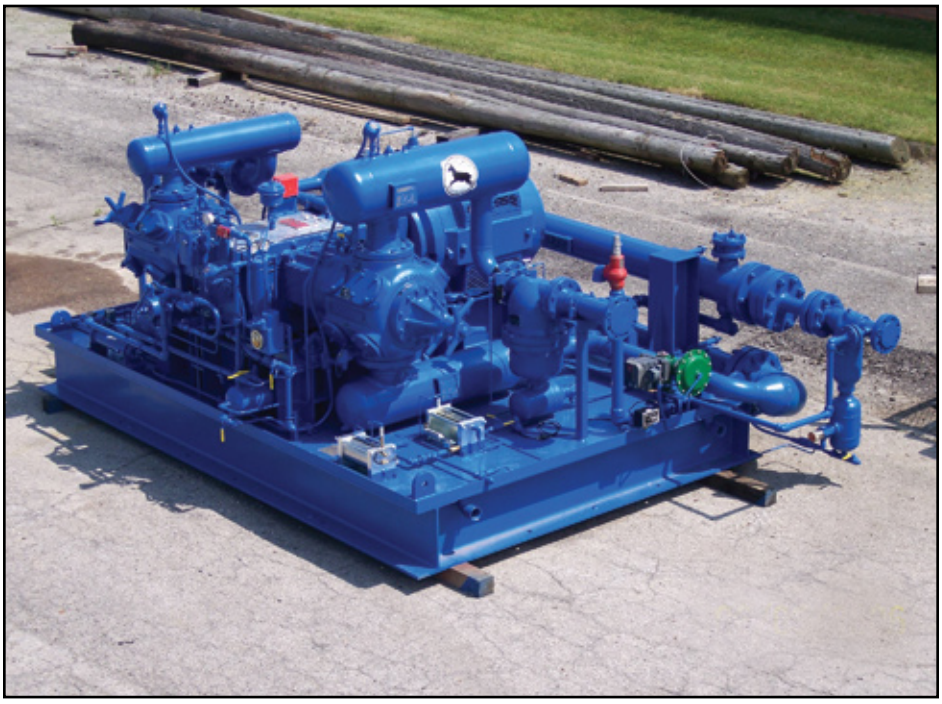
Two Gardner Denver VS135 single-stage, air-cooled, variable speed drive compressors rated at 802 CFM @ 125 PSIG. These units are being operated in a three-shift plant, 7 days per week. Estimated annual energy savings are more than $50,000.

Please describe your Energy Division.

The Energy Division has been working, since 1960 with customers in 10 to 12 states. We build customized packaged systems up through 3,000 horsepower with both electric and natural gas engine drives. Our primary application is for oil and gas pipelines. This has been a strong market as energy prices have gone up. Natural gas prices, for example, have tripled over the past few years. The systems we design and package can be very large systems and there is never any margin for error. We work closely with the design firms and the utility companies on the jobs.

For this reason, Dearing Compressor & Pump has invested significant resources into this Division. The Company has recently finished a 12,000 square foot addition to the fabrication area, with cranes for the heavy lifting. We have a full-time engineering staff working on auto-cad drawings and 25–30 fabricators in our shop working full-time on these packages.

Our main product lines in the Energy Division are Gardner Denver rotary screws up to 600–700 horsepower and reciprocating gas compressors built by Ariel. Ariel is the premier gas compressor manufacturer in the world and is based not far from us here in Ohio. We work extensively with motor manufacturers as well as Caterpillar, Reliance and Toshiba.



Ariel 300 horsepower water-cooled air booster compressor packaged by Dearing Compressor. This package boosts 100 psi air at suction to 700 psi at discharge.

What markets does your Industrial Division serve?

Steel mills use a lot of compressed air. Their financial health, however, is a roller coaster. The steel industry is in good shape right now and we have a lot of experience working with it. Who knows how it will be in a year? We do a lot of projects with steel mills with rotary screw compressors and desiccant air dryers.

We also work with some power plants. The majority use centrifugal compressors and desiccant air dryers. We do a lot of controls work on their centrifugal compressors. We will usually upgrade the control systems. We normally partner with CASE Controls on these projects. The controllers have remote monitoring and control capabilities. This permits Dearing to offer the power plant 24-7 remote monitoring, troubleshooting and service capabilities. If they have a problem, they call us and we tap into the lines to see what is going on. This enables the power plant to focus on what their strength is. We have done these remote monitoring contracts with steel mills as well.

Although we do work with Tier 1 suppliers, the automotive industry has been downsized in northeast Ohio and is not in a growth mode. We are now looking more at the plastics and rubber industries, which are growing pretty well. Plastics materials are sometimes replacing steel and continue to find more and more applications. Akron, of course, is the "rubber capital" with Goodyear headquartered there. This has spawned some offshoot businesses, which are also rubber-related.

What's your take on compressed air auditing?

We are strong believers in helping customers understand their compressed air systems. From our standpoint, there are a lot of auditors out there and every one has their own way of doing things. We feel that to audit properly you need a thermal mass flow meter to measure flow, pressure and power. We use Sierra flow meters. It is critical to truly measure air flow.

Too many auditors estimate air flow by using an amperage clamp on the motor and then extract those readings to estimate air flow. This doesn't work well with many air compressor controllers like with modulating machines. The difference in amperage measured between full load and 60% load is insignificant. This can, therefore, provide a flawed understanding of flow. For this reason we use flow meters.

It is obviously in the best interest of compressed air users to reduce their energy consumption. In Ohio, power rates are expected to go up 30–50% in 2008. Rates have been stable, for the past 10 years, and that is about to change. The energy prices depend upon the type of operation. Single shift operations are at 12 cents, two-shift operations are at 8–9 cents, and three-shift operations can be at 5½ cents (the big steel mills). The parent company of our utility supplier, First Energy, does not offer energy rebate programs in our region. A lot of customers are still quite unsure of how to evaluate their electric bill and we work to help them with that.

DEARING COMPRESSOR & PUMP COMPANY

A Gardner Denver VST-90 two-stage, air-cooled, variable speed drive compressor rated at 677 CFM @ 100 psig. This unit is installed at a manufacturer of building supplies and operates a two-shift plant, 5 days per week. Estimated annual energy savings are more than $25,000.

What areas should end users look at to improve their systems?

They should look for opportunities to improve their piping systems and understand the points of use of compressed air. They should try to uncover inappropriate uses — for example, using compressed air instead of blowers. They should use energy-efficient air nozzles instead of smashed pipe. Variable speed drive motors also present opportunities.

What is your experience with Variable Speed Drive (VSD) Compressors?

Dearing Compressor & Pumps' Energy Division started working with VSD gas engine drives in the early 1990s. Now with the growing awareness of energy costs related to compressed air, manufacturers like Gardner Denver have brought to market good VSD air compressors. We are a strong supporter of the technology and have years of positive experience with VSD.

As with any technology, VSDs need to be matched up with the right situation. All situations are different. Probably the best application is between 400 and 1,200 scfm. You want to use the VSD air compressor to trim the peaks of air demand and use another air compressor for your base-load flow. These are the best applications. Audit work and VSD technology have created a lot of demand and some customers will specify VSD no matter what. Some compressor vendors will quote a thermal mass dryer, a VSD and a mist eliminator no matter what. This is not a good idea. We try to really keep an open mind and do what is best for the customer by gathering data, evaluating it and listening to the customer.

What are the "next technologies" for compressed air systems?

We believe we will see advancements on the controls side of the business. We think that remote monitoring and remote control will become more commonplace as these technologies become more affordable for smaller installations. Advancements in wireless technologies should also make data points easier to access and therefore manage.

Why has there been a consolidation of the compressor sales and service distribution channel?

A lot of companies don't treat service as important as selling. You have to support the customers well. The difference is in the people at Dearing Compressor & Pump and in how we take care of our customers. We focus hard on maintaining the customers we have — first and foremost. Many firms are so busy looking for the next new account that they don't realize that they have an unstable foundation. Some distributors have also not kept up with the ever-changing advancements in technology and expertise. If your firm hasn't learned how to do compressed air audits, with expertise, your company is in trouble.

Thank you Dearing Compressor & Pump for your insights.

For more information please contact
Mr. Robin Wall, Dearing Compressor,
tel: 330-783-2258,
email: robin_wall@dearingcomp.com

Dearing Compressor & Pump Co.