



Building big. Engineering precision. Powering progress.

Highlights:

- Broadwind Heavy Fabrications has grown into a full-scope fabrication partner, leading OEMs and their customers by providing the precision components, specialized equipment, and technical expertise required to produce, operate, and upgrade critical power generation and infrastructure systems
- Broadwind's Pressure Reduction System (PRS) exemplifies the company's innovation-driven approach
- Broadwind selected Phoenix Contact automation solutions to support SCADA integration, remote monitoring, and data logging via Proficloud

"The reliability of these components has resulted in negligible power-related downtime."

– Keith Plantier, Engineering Manager

Customer profile: Broadwind Heavy Fabrications

In Abilene, Texas, Broadwind Heavy Fabrications is redefining what's possible in large-scale manufacturing. "We think big, and we build big," said Erik Jensen, Vice President and General Manager.

Broadwind Heavy Fabrications has grown into a full-scope fabrication partner serving the power generation markets (Figure 1). The company delivers some of the world's largest and most complex structures—without compromising precision. "Every step of our process—from metal forming and surface preparation to coating and final assembly—must meet extremely tight welded fabrication tolerances," Jensen explained.

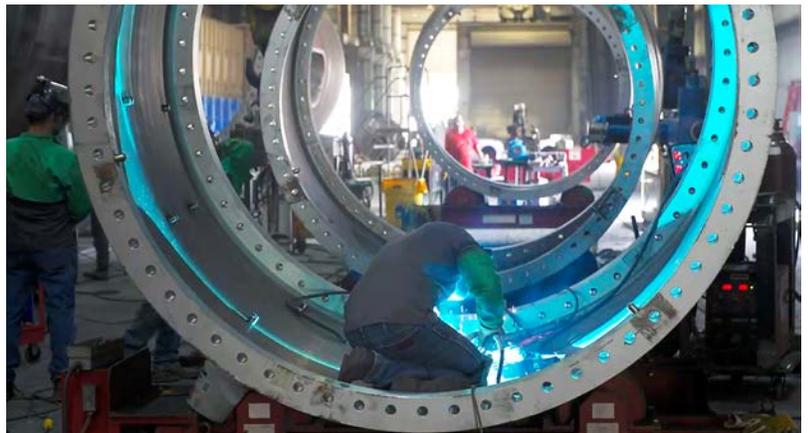


Figure 1: Broadwind Heavy Fabrications offers full-scope manufacturing to customers building some of the largest and most complex structures and components in the world.

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Challenge: Turning a challenge into an opportunity

One area of expansion is Broadwind’s Pressure Reduction System (PRS), which exemplifies the company’s innovation-driven approach. “We identified a need in the market and designed a better solution,” said Jensen.

Better methods for utilizing and transporting natural gas remains a common practice across oil and gas operations, ultimately reducing the release of usable energy into the atmosphere. Broadwind’s PRS repurposes high-pressure natural gas, converting waste into a usable energy source while helping operators reduce emissions and improve efficiency and reduce costs (Figure 2).



Figure 2: Broadwind’s PRS repurposes high-pressure natural gas, converting waste into a usable energy source while helping operators reduce emissions and improve efficiency.

“The PRS compresses and redirects high-pressure gas to where it’s needed,” said Keith Plantier, Engineering Manager. “It’s not renewable energy, but it enables a more carbon-conscious operation by maximizing the value of existing resources.”

Solution: Designed for autonomous operation, operator confidence, safety, and extreme environments

Ease of use was central to the PRS design. The system features advanced automation, an integrated generator, and PLC controls, enabling autonomous operation with minimal operator intervention. Broadwind selected Phoenix Contact automation solutions to support SCADA integration, remote monitoring, and data logging via Proficloud (Figure 4).

Operating in hazardous environments demands uncompromising safety. All PRS systems are built to Class I, Division 2 standards and comply with NFPA 52



Figure 3: All PRS systems are built to Class I, Division 2 standards and comply with NFPA 52 and API 521 requirements.

and API 521 requirements (Figure 3). “Safety is engineered into every component—from enclosure design to control logic,” said Carlos Kernz, Jr., Automation and Controls Engineering Manager. “The system enforces strict startup and shutdown criteria to protect both personnel and equipment.”

Results: Control, monitoring, and data acquisition

“Real-time data access allows us to monitor system health and analyze fault conditions remotely,” Kernz said. “This significantly reduces response time and service costs.”

Future systems will expand the use of remote I/O over industrial Ethernet networks such as PROFINET and EtherCAT to reduce wiring complexity and improve maintainability. “The reliability of these components has resulted in negligible power-related downtime,” Plantier noted.



Figure 4: Broadwind selected Phoenix Contact automation solutions to support SCADA integration, remote monitoring, and data logging via Proficloud.