

RELY ON EXCELLENCE

Dry gas seal failures permanently eliminated

RoTechBooster helps to guarantee uninterrupted gas transportation.

A major natural gas provider in North America was experiencing frequent dry gas seal failures on one of their pipeline compressors. This interrupted gas transportation, causing challenges to meet customer demands, along with unplanned and costly maintenance.



As centrifugal process gas compressors are vital components in the energy supply chain, they must fulfill very high availability, reliability, and safety standards. Unexpected compressor downtime severely impacts the ability to meet customer's needs.

The pipeline company builds and operates, safe and reliable energy infrastructure, which includes a 93,300 km (57,900 miles) natural gas pipeline network. This network provides more than 25% of the clean-burning natural gas consumed daily across North America for heating homes, fueling industries, and generating power.

One compressor in the network was having challenges to meet the required uptime. Several seal failures had occurred which led to a gas supply interruption. On top of this the seal failures were costly due to seal repairs, manpower and consequential compressor damages.

Two concerns identified

Assessing the situation there were two concerns identified by the user: One was the seal gas supply loss during pressurization and standby operation. The second concern was the high contamination content in the seal gas, which was overburdening the existing seal gas filters.

Sound expertise required

In search of a solution, the pipeline company's technicians turned to EagleBurgmann's compressor sealing experts. After jointly researching and investigating the causes, it was decided to implement the RoTechBooster, an electrically driven seal gas booster to remedy the situation. A proven seal gas booster that keeps dry gas seals reliably clean not only during standby conditions, but any time insufficient seal gas flow occurs. The rotating design includes the ability to maintain an unlimited pressurized hold.

A suitable RoTechBooster model was selected according to the prevailing operating conditions. The high seal gas contaminant content was managed with a coalescer filter with the additional of a cyclone to remove most of the debris and liquids. This allowed the coalescing filter to manage the remaining fine debris and aerosols more effectively.

CASE STUDY

- **Reference:**
Pipeline compressor station, Canada
- **Client:**
Gas Transmission System Operator
- **Industry:** Oil & Gas
- **Challenge:**
Process gas contamination frequently caused dry gas seal failures with unplanned, costly compressor shutdowns.
- **EagleBurgmann services:**
Consulting engineering, and implementation of a reliable seal gas supply during all conditions.
- **Technical solution:**
RoTechBooster skid with a coalescer/cyclone filter package



RoTechBooster skid for the highest reliability and safety

A skid was designed with these requirements in mind for delivering the most effective solution. As the seal gas system incorporated fixed orifices for controlling seal gas flow during normal operation, they produced too much restriction for the RoTechBooster to deliver sufficient seal gas flow when operating. The RoTechBooster system was designed to bypass these orifices to ensure sufficient seal gas supply (6 AM³/H) to the seals. The system was designed for the required conditions and manufactured by EagleBurgmann.

In June of 2019 the RoTechBooster with the additional filtration was installed at the site. As there was no major restriction in the seal flow path (fixed orifices bypassed) when the RoTechBooster was operating, the flow produced was 10 Am³/h. The flow was manageable by the filters and the additional consistent flow provided increased assurance the dry gas seals weren't exposed to dirty process gas.

» Over the past year the booster pump at this site has been functioning as well as I could have hoped. The pump has just over 2,500 hours runtime with zero issues. Best thing of all, no issues with the dry gas seals. «

Station operator - June 2020

Advantages of RoTechBoosters

The RoTechBooster ensures abundant, reliable, and consistent seal gas flow, through fluctuating operating conditions; thus, clean and dry gas is supplied to the gas seal in every situation.

- Simple to set-up, easy to operate
- High reliability and availability
- Unlimited continuous operation
- Avoid seal failures
- Low maintenance costs
- Energy efficient
- Eliminates the concern of unreliable external seal gas source



Result

After 2 years of compressor operation, numerous stops and starts and over 5,000 RoTechBooster operating hours no change in seal leakage has occurred, indicating the dry gas seals are contamination free.

The seal gas filter inspection verified they were in excellent condition, which is a big difference from inspections previous to the RoTech-Booster skid installation. All pipeline contaminants were effectively being removed with the cyclone added to the filtration system.



Further information
on RoTechBooster

EagleBurgmann – at the leading edge of industrial sealing technology

Our products are used wherever safety and reliability count: in the industries of oil & gas, refineries, petrochemicals, chemicals, pharmaceuticals, food, energy, water and many more. About 6,000 employees contribute their ideas, solutions and dedication every day to ensure that customers around the globe can rely on our seals. With our modular TotalSealCare Service, we emphasize our strong customer orientation and offer custom-tailored services for every need. [Rely on excellence.](#)

eagleburgmann.com
info@eagleburgmann.com

