



Ampliflow T-Boost Seal Gas Booster



Improve dry gas seal reliability

Centrifugal compressors fitted with dry gas seals report impressive reliability statistics — and their secret to success is an uninterrupted supply of clean seal gas.

Under normal operating conditions, compressors can directly provide a constant supply of seal gas. However, during startup, pressurization, recycling, standstill and shutdown periods, compressor pressure is too low to satisfy seal gas flow requirements. This can lead to process gas migration, seal contamination, downtime and unsafe operating conditions.

The Flowserve Ampliflow T-Boost is an electrically driven seal gas booster that improves operational reliability by continuously delivering seal gas during periods of low differential pressure.

The booster combines an innovative drive system with intelligent motor control to achieve higher energy efficiency and run times exceeding 24,000 operating hours. When included in a complete gas conditioning system, the T-Boost seal gas booster ensures dry gas seals are fed the right amount of clean, conditioned seal gas over the total compressor operating window.



Features and benefits

- Provides seal gas during periods of low available differential pressure to allow unlimited pressurized protection of the dry gas seal, improving compressor uptime
- Higher energy efficiency eliminates eddy current losses and reduces operation costs.
- Hermetically safe design assures zero leakage of gas through boundaries.
- High-pressure containment shell around the magnetic coupling withstands all pressure conditions, including MAWP.
- Minimum wearing parts reduces maintenance requirements compared to competitive designs and helps to achieve MTBR of 24,000 operating hours.
- Easy to set up and connect to existing dry gas seal support systems
- Retrofit/upgrade option with pneumatic-driven piston boosters to extend reliability and application range
- Innovative drive system with an intelligent motor controller provides the right flow and pressure over a variable compressor operating window.
- One or two impeller designs possible to meet application requirements



Materials of construction

Metal components: stainless steel

Containment shell: ceramic

Elastomers: FKM, others

Design specifications

Standard area classification:
NEC Class 1, ATEX Zone 1

Gas media: H₂ to CO₂

Maximum allowable working pressure: up to 350 bar (5000 psi)
@ -20°C to 180°C (-4°F to 356°F)

Electric motor: 5.5 to 18 kW variable frequency driven

Dimensions: 544 dia. x 1222 mm length (21 x 48 in)

Connections: threaded, flange

Certifications: NACE, others upon request

Seal gas supply flow rate

This graph illustrates the seal supply gas flow with and without the use of Ampliflow T-Boost. During the startup phases of a gas compressor, the Ampliflow T-Boost delivers sufficient seal gas flow rate to protect dry gas seals from process contamination.

Contact Flowserve for Ampliflow T-Boost performance curves specific to your application.

Ampliflow T-Boost flow and differential pressure

Plan for the reliability that comes with an Ampliflow T-Boost delivering the right amount of clean seal gas and pressure at every point along a compressor's operating path.

Planning example: in a natural gas pipeline, one compressor is exposed to 100 bar line pressure prior to startup, flooding the gas seal with potential contaminants. The engineers calculate contamination can be avoided by injecting a seal gas flow of 6 m³/h (3.5 CFM) with a differential pressure of 3.9 bar (56 psi). Checking the T-Boost performance curve, for natural gas at 100 barg (see graph below), the minimum operating speed is clearly established at 3500 rpm.

T-Boost Flow Performance, Natural Gas at 100 barg (6.9 psig)

