







# The turbomachinery authority for over 40 years

As the demand for natural gas grows, the industry must evolve with it. At Atlas Copco Gas and Process, we lean on our thousands of reference units to design robust, reliable and efficient equipment that meets your process needs today – and in the future.

## Standardized, efficient design lowers CAPEX, OPEX

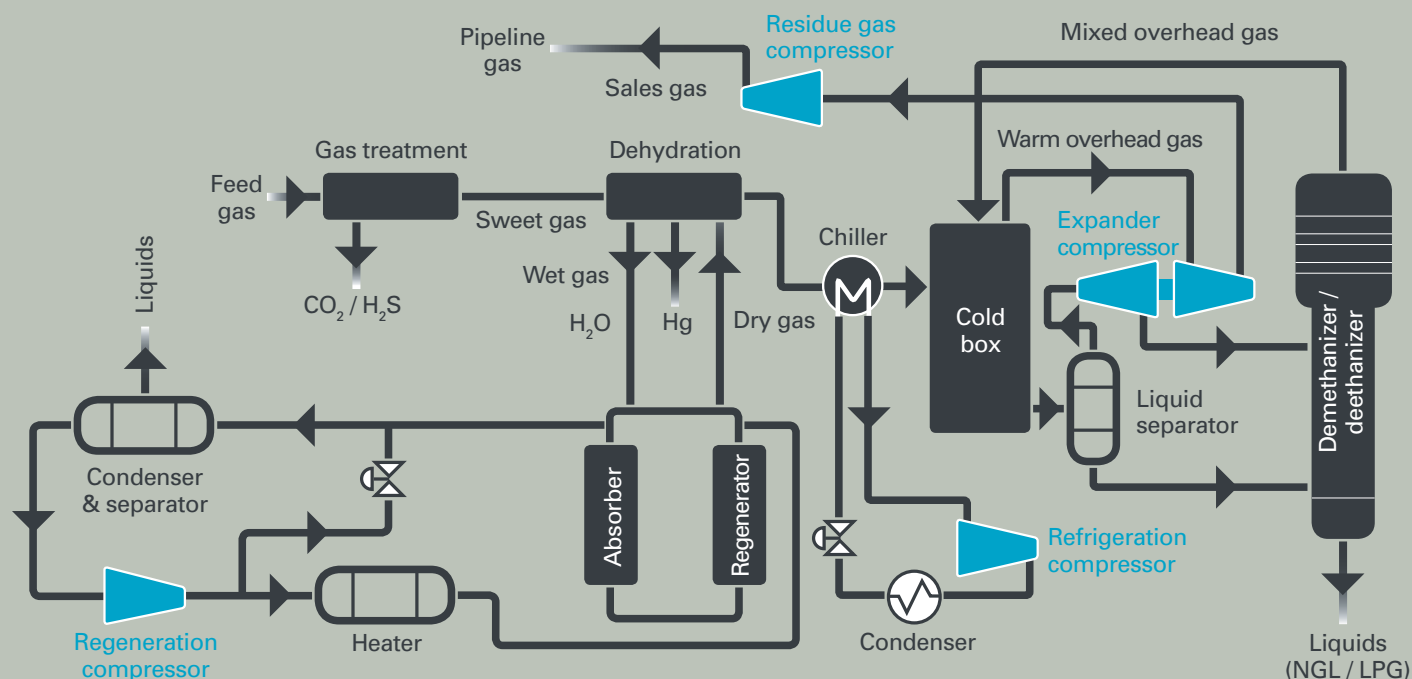
From design, through commissioning and beyond, Atlas Copco Gas and Process works to minimize capital impacts on your facility. We work to lower your CAPEX costs – up to 50 percent of your plant's equipment budget – by providing standardized, single-skid compressors that can be installed in less time, less space, and using lighter foundations than competing screw, reciprocating or inline centrifugal compressors.

Our Integrally Geared centrifugal compressors and expanders do not require annual shutdown for maintenance or replacement of wearing parts. The machines are designed for 5 years of interrupted operation. This minimizes the plant down time and increase the plant through put.

## A single source for all of your compressor and expander needs

Our product offerings cover the entire natural gas processing cycle. From inlet, stabilizer overhead, regeneration and refrigeration compressors, to turboexpanders and residue gas compressors we can engineer the gas handling rotating equipment to handle your process.

You can rely on Atlas Copco Gas and Process to provide complete life cycle support from concept design, detailed engineering, construction and commissioning, to aftermarket service, repair, and maintenance.



Atlas Copco compressors and expanders are employed throughout the natural gas and NGL processing cycle.

## Customer benefits



- Robust and reliable machinery can be operated continuously for longer periods (5-years) between major services versus reciprocating or screw compressors
- Unlike oil-flooded reciprocating or screw compressors, Atlas Copco centrifugal compressors keep your process oil free
- Energy efficient design that can save at least 10% in annual energy costs
- Can be engineered to API or other customer-specified standards
- Single supplier for all gas processing turbomachinery

## Faster delivery, nonstop performance

Our standardized designs allow for faster delivery and installation. Our compressors are available with a grout-free installation option. A foundation pad is the only requirement which can reduce installation times by 66 percent. Our standardized turbomachinery uses a common design that can expedite delivery times by up to 40 percent over a custom-engineered machine. Our on-skid packaging concept means Atlas Copco Gas and Process equipment needs only utilities and process connected before commission.

Once commissioned our robust, reliable machinery can be ran nonstop for extended service intervals before major maintenance is necessary. Because of this longevity no backup systems are necessary as they are

in reciprocating and screw compressors. All of these features allow the customer to take advantage of lower upfront costs followed by reduced operating costs and most importantly higher plant production.

## Designed to your process standards

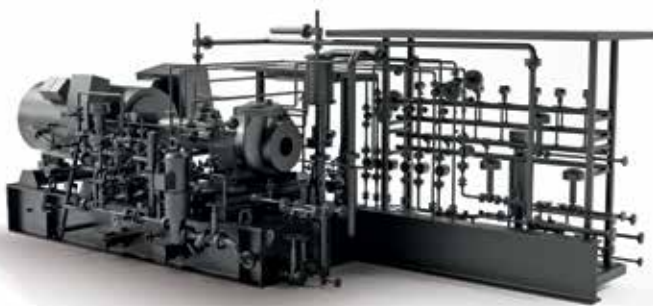
Atlas Copco Gas and Process has designed and delivered thousands of turbomachines over the past 40 plus years. We provide both pre-engineered and fully customized solutions in accordance with industry and customer specifications.

Our engineering and manufacturing sites are certified in accordance with ISO-9001, ISO-14001, and OSHAS-18001, ensuring that procedures and processes are in place to maintain the highest standards for safety, quality, and sustainability.

# Lower CAPEX, Lower OPEX. We'll help you design a solution for your most demanding process.

## Regeneration Gas

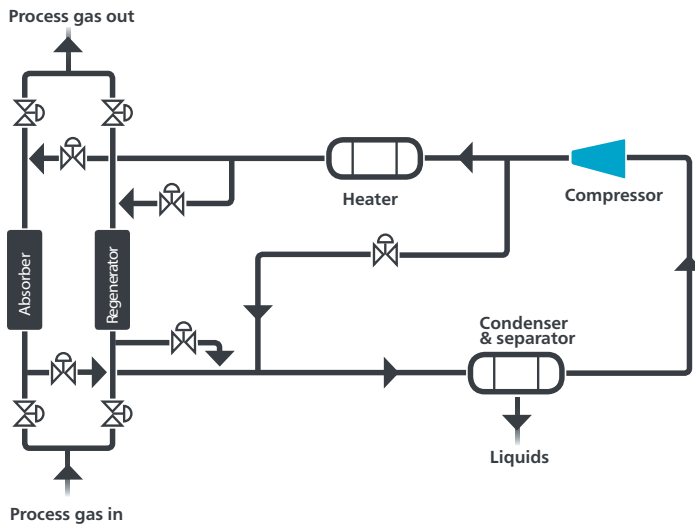
Engineered for various dehydration processes, our regeneration gas compressors give you the flexibility and efficiency you demand for this stage in your gas process.



API Configured compressor



Standard compressor



**Inlet Pressure:**  
41.4–75.9 bar(a) / 600–1 100 psia

**Outlet pressure:**  
44–82.7 bar(a) / 640–1 200 psia

**Inlet temperature:**  
37.8–48.9 °C / 100–120 °F

**Flow:**  
170–1 190 m<sup>3</sup>/h / 100–700 ICFM

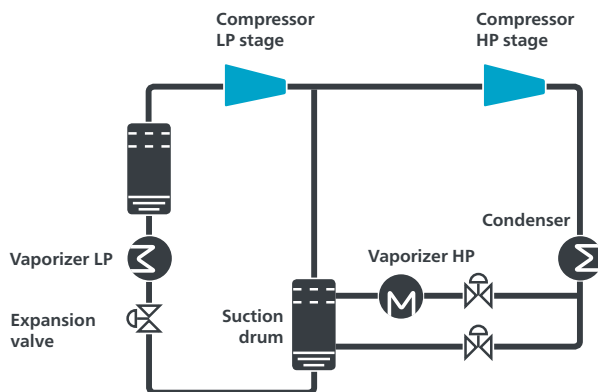
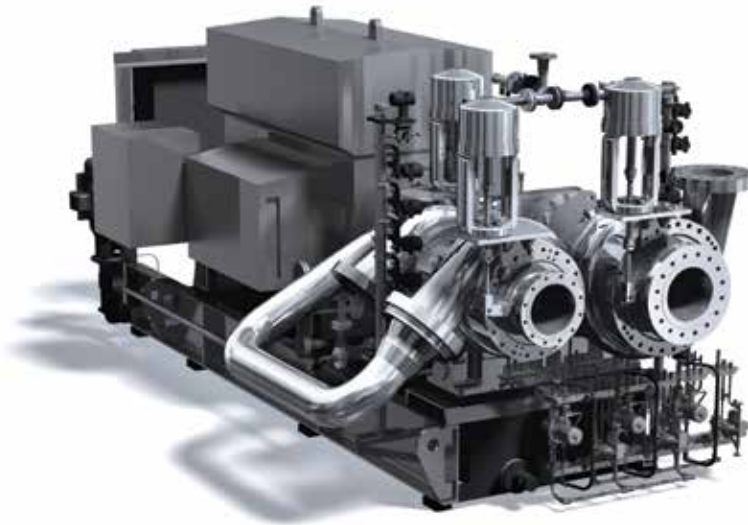
**Power:**  
75–375 kW / 100–500 HP as standard

*Higher flow / power specs available on customized units*

# Up to 10% lower energy costs from the most efficient turbomachinery designs in the industry.

## Refrigeration Gas

High flow levels and efficiency are what you can expect from our compressors engineered for refrigeration gas duty. Our centrifugal stages are inherently oil-free, eliminating the contamination and cycle performance degradation that can occur with screw machines. Our standard compressors can handle loads up to 50 MMBtu, with higher duty specifications offered on our custom-engineered refrigeration units.



**Inlet Pressure:**  
0,99–4,48 bar(a) / 14,5–65 psia

**Outlet pressure:**  
Up to 27,57 bar(a) / Up to 400 psia

**Inlet temperature:**  
-41 to -1,1° C / -42 to 30° F

**Refrigeration duty:**  
up to 50 MMBtu/hr(std) / > 50 MMBtu/hr (cstm)

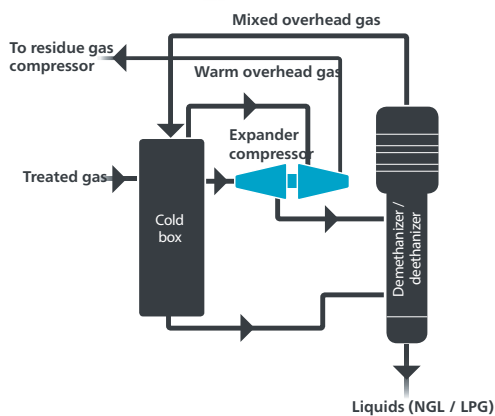
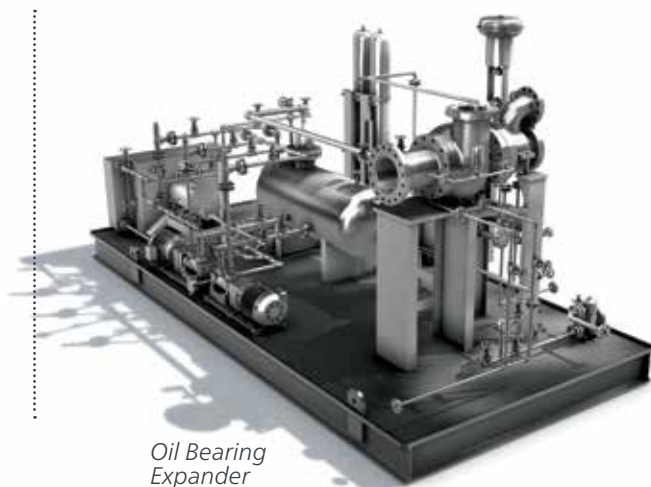
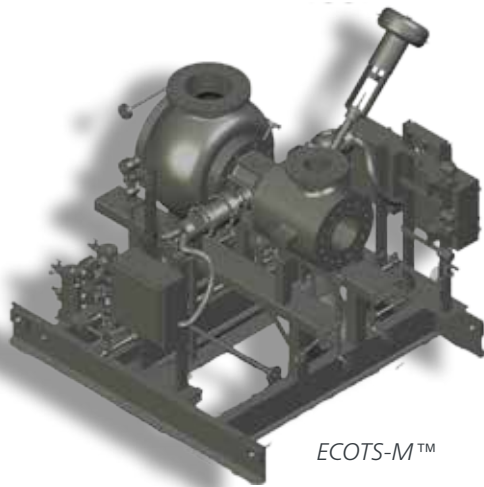
**Power:**  
2 250–6 000 hp (std) / > 6 000 hp (custom)



# Look to Atlas Copco Gas and Process to outfit / retrofit your gas processing plants up to 400 MMSCFD

## Cryogenic Expansion

We have the solution for your cryogenic NGL/LPG recovery, dew point control and LNG cycles. Our expanders can be designed to meet your most demanding process needs, with standardized or custom engineered machines. We offer each product with lube-oil bearings or oil-free magnetic bearings.



- Inlet Pressure:**  
Up to 125 bar(a) / 1800 psia

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- Outlet temperature:**  
Down to -165 °C / -265 °F

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- Shaft power:**  
Up to 18000 kW / 24000 HP

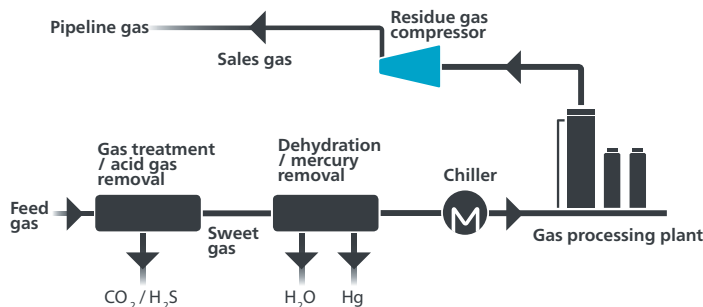
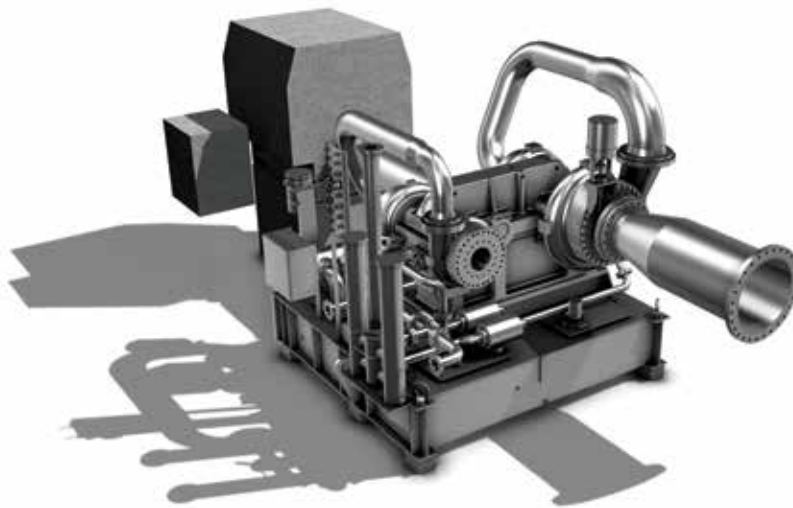
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- Single train capacity:**  
Up to 1 000 MMSCFD (27 million Nm<sup>3</sup>/day)

# Reduce your maintenance and downtime as well as your equipment footprint with our compact, integrally geared compressors.

## Residue Gas

Our efficient, integrally geared residue gas compressors feature multiple stage options running off a single gearbox. This can not only replace multiple reciprocating compressors but also provide uninterrupted oil and pulsation-free gas supply preferred by pipeline operators.



**Approx. Flow:**  
up to 400 MMSCFD / 446,000 Nm<sup>3</sup>/h

**Compression Stages:**  
up to 4

**Power:**  
7000 – 12000 HP (std) / >12,000 HP (custom)

**Inlet Pressure:**  
250 – 450 psia\*

**Outlet Pressure:**  
up to 1500 psia\*

**Molecular Weight:**  
16 – 19, per recovery or rejection mode

\*Per recovery or rejection mode

# The technical edge

The hallmarks of Atlas Copco gas processing equipment – Efficiency, reliability, flexibility – are achieved by utilizing several industry-leading technologies. By packaging these features into our gas processing machines, we ensure your process needs are met – no matter how demanding.

## Integral gear technology

Atlas Copco Gas and Process has heavily invested in integral gear technology. We've spent decades continually engineering and evolving the IGC gearbox to make it one of the most efficient compressor technologies available. This design allows us to engineer a robust, reliable equipment that offers a smaller footprint than competing technologies.

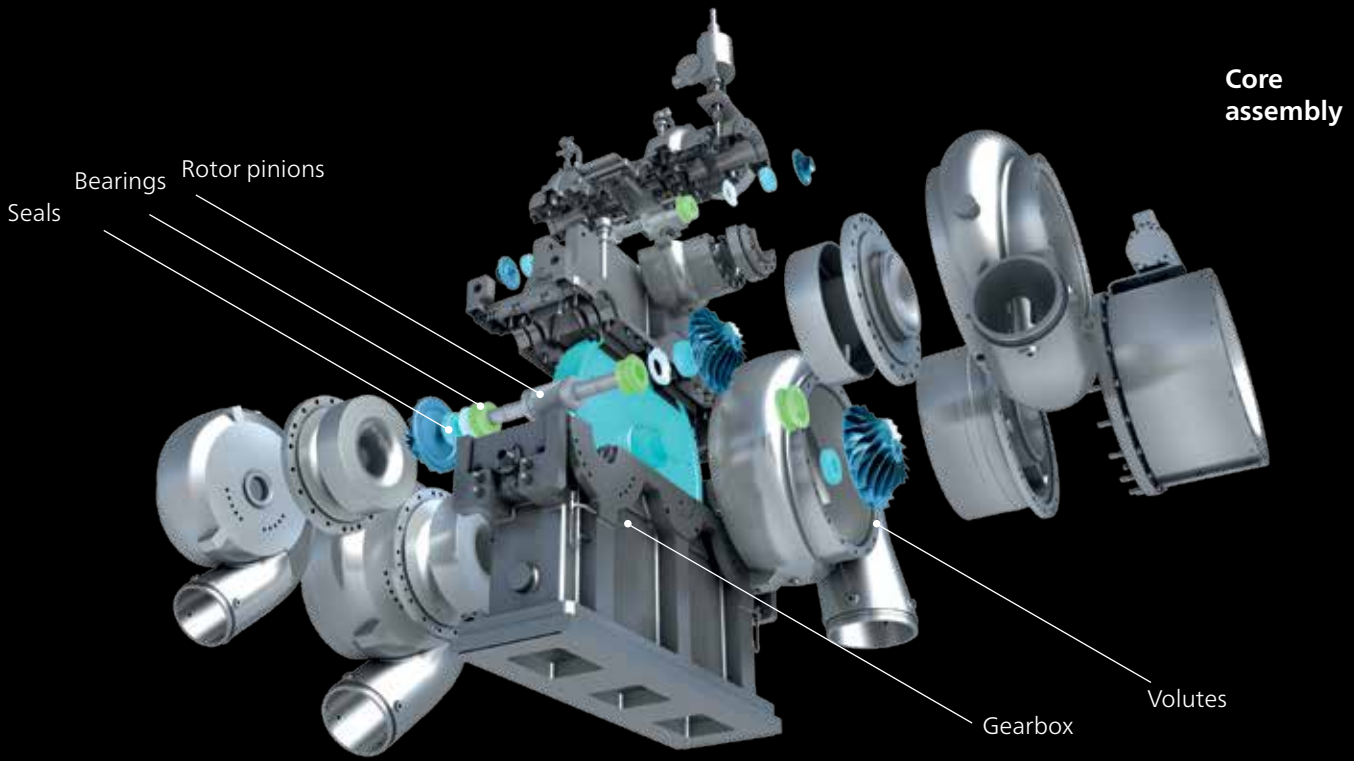
Up to eight stages can be engineered to run on a single gearbox. Each stage is designed to run at optimum speed on separate pinions to consume the least amount of energy possible. Compression efficiency can be further enhanced by interstage cooling and custom-engineered impeller design.

## Single skid package

All Atlas Copco Gas and Process compressors and expanders can be designed on a single skid that accommodates the core unit as well as all necessary drivers, lube oil, seal gas and control systems. Packing efficiency, availability and superior process control onto a small, modular footprint gives our customers the performance they demand without the complexities of longer installation times and compromised free space in their plant.







## Rotor and seal design

Our rotor designs take into account the high speeds that process demands require. Rotors are supported by radial tilting pad bearings that eliminate virtually all vibration while providing superior stability and smooth rotation.

The impellers attached to the rotor shafts are custom-engineered to your process. Available in open or closed configurations, we use the latest computational-fluid dynamic (CFD) and finite element analysis (FEA) technologies to engineer the most efficient design possible. Computer aided five axis milling ensures the finished impellers perfectly meet the design specifications.

Compressors and expanders can be engineered with dry gas, floating carbon ring or labyrinth seals in various combinations. When process gas leakage is an issue, we can offer dynamic dry gas seals – A technology that Atlas Copco Gas and Process pioneered in integrally geared compressors.

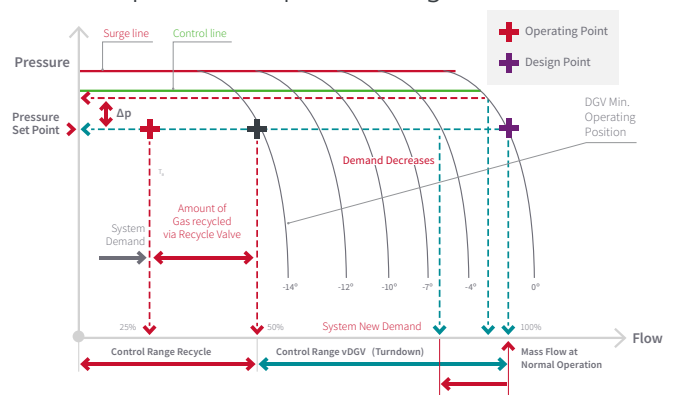
## Variable inlet and diffuser guide vanes

In order to maximize efficiency and give you total process control, Atlas Copco Gas and Process offers variable inlet guide vanes (IGV) and variable diffuser guide vanes (DGV). Utilizing IGVs can increase efficiency up to nine percent over other inlet assemblies.

We are one of the few manufacturers that offer DGV assemblies in our turbomachinery. The DGVs enable larger turndown and process control without impairing efficiency.

Both technologies provide stable compressor / expander operation over a wide range of conditions at a constant discharge pressure..

Compressor Adaptation Diagram



# Project references

## Regeneration Gas

A regeneration gas compressor for a gas processing plant in Canada meets extreme temperature requirements for outdoor installation.

<b>Type:</b> Centrifugal
<b>Inlet Pressure:</b> 51 bar(a) / 740 psia
<b>Inlet Temperature:</b> 41.6 °C / 106 °F
<b>Flow:</b> 697 m <sup>3</sup> /h / 410 acfm
<b>Discharge Pressure:</b> 56.1 bar(a) / 814 psia
<b>Power Consumption:</b> 224 kW / 300 hp
<b>Driver Type:</b> E-motor (60 Hz) asynchronous
<b>Gas:</b> Natural gas



## Refrigeration Gas

A refrigeration compressor for an NGL / LPG processing plant in the USA is designed for a plant turndown up to 50%.

<b>Type:</b> Centrifugal
<b>Inlet Pressure (Section1):</b> 20.98 psia (1.447 Bara)
<b>Inlet Temperature (section1):</b> -26.5 °F (-32.5 °C)
<b>Economizer Pressure :</b> 58 psia (4 Bara)
<b>Inlet Flow (Section1):</b> 8316 Acfm ( 14129 m3/hr)
<b>Inlet Flow (Section2):</b> 5251 Acfm ( 8921.5 m3/hr)
<b>Discharge Pressure:</b> 226.9 psia (15.64 Bara)
<b>Motor Power:</b> 4000 HP (2983 KW)
<b>Driver Type:</b> E-Motor (60 Hz) asynchronous
<b>Refrigerant:</b> Propane



## Expander Compressor

An expander compressor for a gas processing plant in Thailand implements “seal-less” design for zero emissions and elimination of vented seal gases.

**Type:** Radial Inflow

**Inlet Pressure:** 38 bar(a) / 550 psia

**Outlet Temperature:** -91 °C / -132 °F

**Flow:** 108 kg/s / 237 lb/s

**Speed:** 9700 rpm

**Gas Power:** 7700 kW / 10300 hp

**Gas:** Natural gas



## Residue Gas

A residue gas compressor for a gas plant in Nigeria provides unmanned operation and handles extreme temperatures.

**Type:** Centrifugal

**Inlet Pressure:** 18.4 bar(a) / 267 psia

**Inlet Temperature:** 43.2 °C / 110 °F

**Flow:** 100620 m<sup>3</sup>/h / 59200 acfm

**Discharge Pressure:** 53.4 bar(a) / 774 psia

**Power Consumption:** 7505 kW / 10060 hp

**Driver Type:** E-motor (50 Hz) asynchronous

**Gas:** Natural gas





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