

ADVANCED GAS COMPRESSORS APPLICATIONS

ADVANCED SOLUTIONS FOR A SUSTAINABLE FUTURE

Adicomp and Ingersoll Rand: a story of synergy and innovation.

What began as a collaboration has evolved into a shared vision for a more sustainable future, since Adicomp became part of **Ingersoll Rand Engineered Systems and Services (ESS)**.

Together, we combine the agility and specialized know-how of Adicomp with the global reach and technological strength of a leading industrial group.

A powerful alliance driven by one **common goal**: delivering clean-energy technologies and high-performance engineered solutions shaping the industry of tomorrow.



Adicomp is an Italian company also based in the United States, Brazil, and India, specialized in the compression and treatment of different types of gas. With over 25 years of experience and more than 9,500 skids in operation worldwide, Adicomp has established itself as a global leader in designing and manufacturing compressor packages for biogas, biomethane, natural gas, landfill gas, carbon dioxide, and hydrogen.





Adicomp **APPROACH**

Every product must first and foremost be a solution to a need. It is the natural consequence of an approach that is never coincidental.

Needs assessment, understanding customer's demand, definition of the timeframe, project development. The perfect mix between technical expertise and customer-oriented philosophy, to build a solid relationship with our clients. All key elements to deliver products that have to meet the highest standards. All aspects of know-how work together to create unique products. **Knowledge**, made up of shared notions. **Knowledge of what to do and how to do it**, tied to practical abilities, the knowledge of processes, and the management of critical issues. And, lastly, **knowing how to be**, a typically human aspect, absolutely essential when it comes to making the right choices.

Adicomp **SUSTAIN**

One flower does not make sustainability, but sustainability must be cultivated just like a flower.

A daily effort that starts with what is near, to then look further and further afield. It starts with caring for those around us and continues in the ongoing search for environmentally and human-friendly solutions. For this reason, Adicomp has set itself the ambitious goal of achieving Carbon Neutrality for Scope 1 and 2 (quantified according to ISO 14064-1) by 2026.

As the world continues to grow and evolve, it is especially important to make the most of the resources at hand. Striving to create a greener and more sustainable world, Adicomp is proud to play an active part by developing solutions that make use of renewable gases such as biogas, RNG, natural gas, carbon dioxide and hydrogen.



Biogas upgrading

Biogas plays a key role in reducing greenhouse gas emissions and is a great example of how to implement the circular economy. Adicomp provides a complete 'plug & play' package that compresses and delivers biogas with characteristics and qualities that meet the requirements of upgrading systems and the regulations in force in each country.



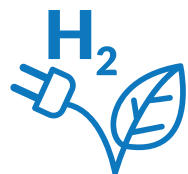
RNG grid injection

RNG generated via the upgrading process is chemically comparable to natural gas. The fact that it can be used in the same applications and can take advantage of existing infrastructures makes it an attractive alternative from an economic and environmental perspective.



CO₂ recovery

In accordance with the latest national and international regulations, carbon dioxide emissions into the atmosphere should be reduced as much as possible. Adicomp provides a complete 'plug & play' package that compresses and delivers carbon dioxide with characteristics and qualities that meet the requirements of various applications.



Hydrogen & Syngas

Hydrogen is increasingly used as a renewable and/or low carbon energy source in applications such as food industry, metal processing and production, power generation, pharmaceuticals and electronics. Adicomp designs and creates a complete 'plug & play' package after studying and selecting suitable materials and technologies to compress this particular type of gas.



**Power generation
(Turbines feeding)**

In the turbine sector, Adicomp offers various solutions that enable gases of various origins to be used to generate electrical and thermal energy. Gas can be both natural and renewable (e.g. biogas/RNG from anaerobic digestion, storage of solid urban waste, wastewater treatment).



**Power generation
(Microturbines feeding)**

As for turbines, natural gas or gas from renewable sources can also be used to feed microturbines for generating electrical or thermal energy or for cogeneration. The Adicomp packages provide microturbines with compressed and treated gas at the right temperature to optimise their operation and therefore maximise productivity.



**Power generation
(Gas engines feeding)**

Engines used to generate electrical and thermal energy can be powered by both natural gas and gas from renewable sources, such as biogas. Adicomp is able to provide the best solution according to the pressures and quality required.



Wellhead gas

Mature gas wells can be found all over the world, and many of them are closed down and abandoned because the pressure at the wellhead is too poor for an efficient gas recovery. The use of a wellhead gas compressor allows mature wells to continue production while significantly extending their working life.

BIOGAS UPGRADING



References



RNG plays a key role in reducing greenhouse gas emissions and is a great example of how to implement the circular economy.

With its range of compressors designed and developed for upgrading, Adicomp is a key partner of leading plant engineers in the RNG sector developing systems such as:

- Upgrading with membranes
- Upgrading by washing with water and/or chemical agents
- Upgrading with adsorption systems (PSA)

Adicomp provides a complete 'plug & play' rotary screw package that compresses and delivers biogas with characteristics and qualities that meet the requirements of upgrading systems and the regulations in force in each country. Adicomp is able to implement a series of processes using filters and exchangers to purify and dehumidify biogas so as to remove any hydrocarbons and other contaminants. Designed according to the needs of its customers, Adicomp packages allow energy to be recovered in the form of heat and are both reliable and flexible in terms of maintenance.

PRODUCT INFORMATION			
Wide compression range: BVG UVG		Heat recovery for increased efficiency	
Inlet and/or outlet gas treatment system		Complete management and control of the system with PLC and HMI interface	

RNG GRID INJECTION



References



RNG generated via the upgrading process is chemically comparable to natural gas. The fact that it can be used in the same applications and can take advantage of existing infrastructures makes it an attractive alternative from an economic and environmental perspective. For this purpose, Adicomp offers two product ranges, a screw type and a piston type, capable of reaching pressures up to 100 bar in order to comply with the pressure regulations of each country. The heart of the skid is a piston compressor designed for continuous operation and is equipped with various cylinders according to the desired performance.

PRODUCT INFORMATION			
Wide compression range: ADI 70/115 VG		Complete management and control of the system with PLC and HMI interface	
Inlet and/or outlet gas treatment system			

CO₂ RECOVERY



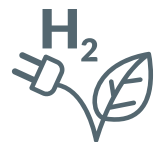
References



In Earth's atmosphere, carbon dioxide is found at an average concentration of 370 ppm. Due to the increasing consumption of fossil fuels over the past two centuries, this concentration has steadily increased, aggravating the greenhouse effect. In accordance with the latest national and international regulations, carbon dioxide emissions into the atmosphere should be reduced as much as possible. It can be stored and/or reused for other applications such as agriculture, food, chemical industries, materials and laser cutting, combustion, and dry ice.

PRODUCT INFORMATION			
Wide compression range: VG BVG UVG		Heat recovery for increased efficiency	
Inlet and/or outlet gas treatment system		Complete management and control of the system with PLC and HMI interface	

HYDROGEN & SYNGAS



References



Recently, it is being more discussed how hydrogen can be used as a renewable and/or low-carbon energy source in applications like food industry, metal processing and production, power generation, pharmaceuticals and electronics. Since there are several ways to produce it, such as conversion from natural gas, gasification, electrolysis and other new technologies, it is available and, depending on the application, must be compressed and processed to achieve a certain pressure and quality. Adicomp designs and creates a complete 'plug & play' package after studying and selecting suitable materials and technologies to compress this particular type of gas. Adicomp can implement a number of processes using filters and exchangers to remove the presence of contaminants. Designed according to the needs of its customers, Adicomp packages allow energy to be recovered in the form of heat and are both reliable and flexible in terms of maintenance.

PRODUCT INFORMATION			
Wide compression range: HVG		Heat recovery for increased efficiency	
Inlet and/or outlet gas treatment system		Complete management and control of the system with PLC and HMI interface	

POWER GENERATION

(TURBINES FEEDING)



References



In the turbine sector, Adicomp offers various solutions that enable gases of various origins to be used to generate electrical and thermal energy. Gas can be both natural and renewable (e.g. biogas/biomethane from anaerobic digestion, storage of solid urban waste, wastewater treatment). Adicomp stands out for its ability to satisfy customer requests, providing gas of the quality and pressure required for most turbines on the market. If required, gas can be subjected to various treatments to remove contaminants by using filters and exchangers. The properties of this gas are excellent, ensuring increased efficiency and much lower costs when it comes to maintenance and/or combustion faults.

PRODUCT INFORMATION			
Wide compression range: VG ADI 115		Heat recovery for increased efficiency	
Inlet and/or outlet gas treatment system			

POWER GENERATION

(MICROTURBINES FEEDING)



References



As for turbines, natural gas or gas from renewable sources can also be used to feed microturbines for generating electrical or thermal energy or for cogeneration. The Adicomp packages provide microturbines with compressed and treated gas at the right temperature to optimise their operation and therefore maximise productivity. Moreover, the gas can also undergo further treatments to eliminate certain contaminants, including hydrogen sulphide (H₂S) and siloxanes. Namely, if not eliminated before entering the combustion chamber, the latter may pose a hazard inside the microturbines. Adicomp avoids this problem by using special filters and other accessories. Furthermore, Adicomp compressors allow energy to be recovered in the form of heat and are both reliable and flexible in terms of maintenance.

PRODUCT INFORMATION			
Wide compression range: VG VGE BVG		Heat recovery for increased efficiency	
Inlet and/or outlet gas treatment system			

POWER GENERATION

(GAS ENGINES FEEDING)



References



Engines used to generate electrical and thermal energy can be powered by both natural gas and gas from renewable sources, such as biogas. Adicomp is able to provide the best solution according to the pressures and quality required. If required, gas can be subjected to various treatments to remove contaminants by using filters and exchangers. The properties of this gas are excellent, ensuring increased efficiency and much lower costs when it comes to maintenance and/or engine faults. Adicomp has extensive experience in the sector, especially in the design of compressors for gas preheating chambers, with pressures up to 5-6 bar.

PRODUCT INFORMATION			
Wide compression range: VG VGE BVG		Heat recovery for increased efficiency	
Inlet and/or outlet gas treatment system		Complete management and control of the system with PLC and HMI interface	

WELLHEAD GAS



References



Mature gas wells can be found all over the world, and many of them are closed down and abandoned because the pressure at the wellhead is too poor for an efficient gas recovery. The use of a wellhead gas compressor allows mature wells to continue production while significantly extending their working life. Wellhead compressors consist of electric or gas motors coupled (through flexible coupling or V-belts) with reciprocating or screw compressors. The compressors can be skidded with or without with or without sound proof/wheather proof enclosure.

PRODUCT INFORMATION			
Wide compression range: BVG UVG		Complete management and control of the system with PLC and HMI interface	
Inlet and/or outlet gas treatment system			



P = production plant
O = office
TC = training center

Adicomp RELIABILITY

Adicomp focuses on customer satisfaction and the service begins upstream: using high quality and certified components, offering scheduled maintenance packages with a warranty extension up to 5 years and with servicing up to 8000 hours, providing a responsible and committed technical and sales team.

Adicomp takes care of details and supports its customers wherever they are thanks to partners and service centres located throughout the world.

Company certifications

Adicomp has always been committed to adopting an integrated Quality, Health & Safety, and Environmental management system. These three separate areas work in synergy, ensuring a strategic approach and an efficient process. This holistic approach allows Adicomp to ensure a high standard of design, manufacture and assistance, in the pursuit of continuous improvement.

List of company certifications:

Quality management systems **ISO 9001: 2015**

Occupational health and safety management systems **ISO 14001: 2015**

Environmental management systems
ISO 45001:2018

Product certifications

Adicomp supplies its customers with compression systems that comply not only with European directives but also with the leading international standards, such as North American and Eurasian regulations. With its longstanding experience and through continuous refresher training, Adicomp has developed the skills required to successfully operate in all key markets.

List of product certifications



