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# **BVG - UVG Series**

Compressors & Gas Treatment Systems  
for Wet Gases Applications

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# BVG - UVG series

## Wet gases applications

These wet gas compression and treatment stations are designed into an easy handling skid composed of an oil-injected rotary gas screw block, directly coupled to an electric motor through a flexible or magnetic coupling inverter controlled.

Based on the application and on the operating pressure required, our compressors can be classified in:

- **BVG:** available operating pressures from 3.0 bar(g) to 10.0 bar(g).
- **UVG:** available operating pressures from 8.0 bar(g) to 25.0 bar(g).

### HOW IT WORKS

The wet gas is sucked through a suction filter acting also as a water separator with automatic condensate drain system, then the gas passes through a suction valve.

All the components in contact with the gas are made in stainless steel or duly protected, due to the presence of H<sub>2</sub>S, CO<sub>2</sub> and other aggressive contaminants into the gas.

During the gas compression process, the oil is injected inside the rotary screw chamber to perform three main functions: lubrication, sealing and heat absorption. Working in a close circuit with a gas/oil receiver, oil is pressurized to flow through an oil cooler, then filtered before being injected again into the screw compression chamber. The gas flows through the minimum pressure /no-return valve into a cooler and it is treated before leaving the package.



ONE OF THE 8000 SYSTEMS INSTALLED

### Compression system inside container

## UVG160

POWER INSTALLED: 200 kW  
FLOW RATE: 0<865 Nm<sup>3</sup>/h  
OUTLET PRESSURE: 16 bar(g)

## ADI 668

POWER INSTALLED: 11 kW  
FLOW RATE: 0<140 Nm<sup>3</sup>/h  
OUTLET PRESSURE: 22 bar(g)





### High H<sub>2</sub>S values? No problem.

Adicomp's compressors are able to operate efficiently even with gases composed by H<sub>2</sub>S values higher than the ones commonly accepted by other machines on the market.



### The strength of the screw.

The core of Adicomp's compressor package is the screw block unit that like all main components is specifically selected according to the required performance and conditions. Adicomp is one of few companies officially qualified and authorized to integrate the most important rotary screw block brands such as Termomeccanica, Sullair, Gardner-Denver, Leroi, Howden, GHH.



### Plug & Play.

All Adicomp compressors are designed and made to maximize and facilitate the installation. No special operations are required, except of installation on site and electricity and gas supply. Everything is already wired, connected, tested and, thanks to the commissioning service, you can fine-tune the set-up of the package on site.



### Energy savings, flow control, slide valve.

At Adicomp, we keep an eye on energy savings. Our compressors are designed to reduce its power consumption as much as possible by always adapting the capacity to the end user needs. Indeed, Adicomp compressors are fully controlled by VSD, by-pass valve and/or slide valve.



### Air or water cooled.

All Adicomp compressors can be either air cooled or water cooled.



### Heat recovery.

About 80% of the heat generated by the screw compressor can be recovered and used to feed with hot water various utilities and thereby reduce overall energy costs. How? Thanks to the heat recovery through dedicated heat exchangers between hot oil /warm water and/or the hot compressed gas/warm water.



### Experience counts.

Adicomp has been one of the first companies able to compress raw biogas coming from the digester, landfill and waste water plant. In over 20 years we provided 8000 systems worldwide, facing extremely different applications that allowed us to acquire a high level of know-how acknowledged by the market.



### Full control over operation.

Thanks to the use of a state of art PLC programming you can control the operation of all parts of the compression package, thereby ensuring a perfect use, even remotely.



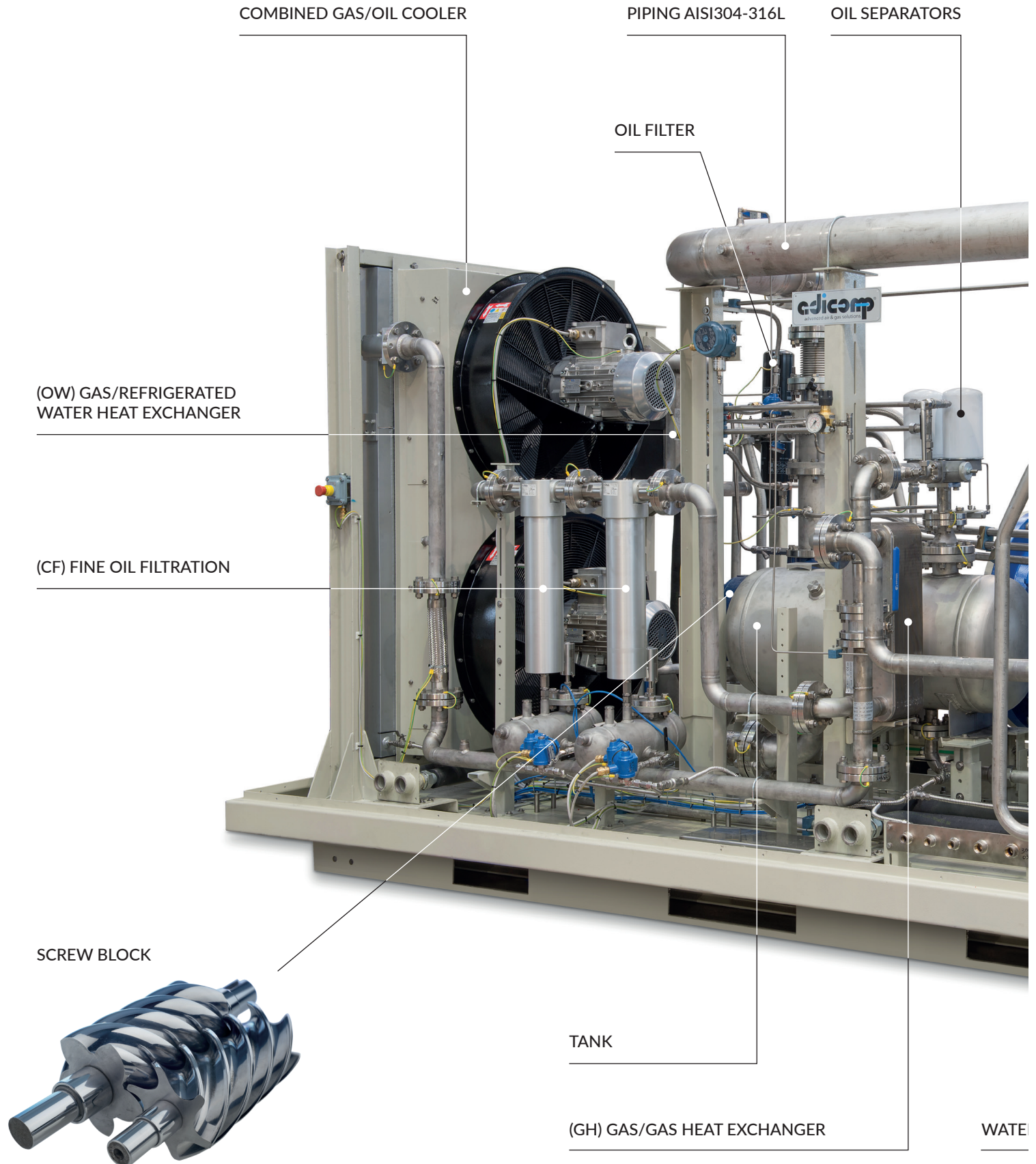
### Tailor-made attitude.

At Adicomp, products are manufactured to meet specific customer requirements. Not vice versa. We listen to customer requirements and then transmit them to the engineering department to provide the best solutions. Flexible, efficient and reliable, always.



# BVG - UVG series

## Main features



(INV) VARIABLE SPEED  
DRIVEN MOTOR

(SF) SUCTION FILTER



ATER CIRCUIT

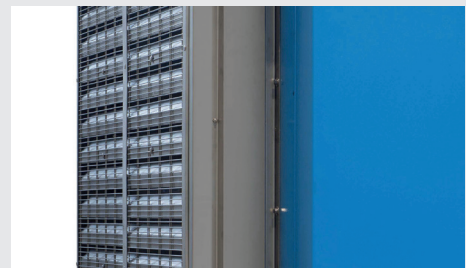
(HR) WATER/OIL HEAT EXCHANGER

## Extra features

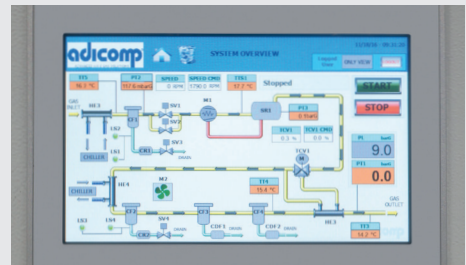
WEATHER PROOF CANOPY



LOUVRES  
For internal temperature control



PLC



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# BVG - UVG series

## Options available

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### **(OF) OPEN FRAME (BASE EXECUTION)**

Open frame version suitable for indoor installation.

### **(S) SILENCED & (SS) SUPER SILENCED**

Sound proof enclosure, suitable for indoor installation (no weather proof) with a noise level from 65dB(A) to 80dB(A) at 1m.

### **(WS) WEATHER PROOF**

Compressor is designed and built for ambient temperature from -10°C to +40°C, with a special roof and outdoor painting treatment of the canopy that makes the station suitable for outdoor operations. In case of ambient temperature down to -20°C stainless steel pipes are used.

### **(WP) WEATHER PROOF**

The compressor station is designed and built for an ambient temperature from -20°C to 40°C. Electric oil heaters thermostatically controlled keep the internal temperature above 5°C in presence of cold climate.

While the compressor is working the temperature inside the canopy is kept, with automatic louvres, above 0°C by recycling warm air flow generated from the air cooler.

### **SILENCERS**

Special sound-proof damper designed to reduce the noise within the required noise limitation.

### **(EV) EXPANSION VESSEL**

Expansion vessel for depressurization is normally used for smaller capacity models and indoor installation.

### **(BV) BLEED VALVE**

Normally for bigger capacity models and outdoor installations, it is used to pressurize the system by blowing the gas into atmosphere through the vent line.

### **(GOH) GAS/WATER AND OIL/WATER HEAT EXCHANGERS**

Compressor water cooled. This optional consists of plate-plate or shell tube heat exchanger water cooled to cool down the temperature of both gas and oil.

### **(IW) SUCTION GAS/WATER HEAT EXCHANGER**

This optional consists of a dedicated low pressure heat exchanger fitted at compressor suction suitable to reduce the percentage of RH.

### **(OW) DISCHARGE GAS/WATER HEAT EXCHANGER**

At outlet side this option consists in a further cooling of the gas, downstream of the after-cooler, by a stainless-steel compressed gas/refrigerated water heat exchanger, a water separator and an automatic drainer.

This option brings the compressed gas dew-point temperature in pressure down to about 5°C such as eliminating most of the water content and allowing the coalescent filter to work at the best.

### **(GH) GAS/GAS HEAT EXCHANGER**

When it is necessary to increase the temperature of the gas exiting from the compressor, a gas/gas heat exchanger is installed for delivering the gas with a stabilized temperature.

### **(HR) HEAT RECOVERY**

Almost all the heat generated by a rotary screw compressor can be recovered and used to reduce energy general costs. Our recovering system consists in a water/oil heat exchanger capable to transfer the heat from the lubricating oil to sanitary, central heating or industrial process water, recovering up to 80% of the compressor's heat energy.

### **(TC) CONTROLLED OUTLET GAS TEMPERATURE**

When outlet temperature needs to be controlled with automatic system (either electronically or mechanically), a dedicated valve is integrated into the package. Additional heat exchanger must be installed at compressor outlet.

### **(SR) SILOXANE REMOVAL SYSTEM**

If the content of siloxane (SiO) exceeds the required limits, those can be removed upstream or downstream the compressor package. Adicomp uses to install twin stainless-steel columns that contain active carbons suitable for removing siloxanes, both complete with pressure gauges and conveyed type gas safety valves. Four valves are also present to switch manually the duty of the columns and for the depressurization of the system.

### **(CM)-(CF) MEDIUM AND FINE FILTRATION**

When the quality of the standard compressed gas is not acceptable in terms of residual oil content, a set of coalescent filters is installed in order to ensure a maximum concentration of 0.1 mg/m<sup>3</sup> (medium filtration (CM)) or 0.01 mg/m<sup>3</sup> (fine filtration (CF)).

### **(CC) ACTIVE CARBON COLUMN (OIL REMOVAL)**

If the filtration is still not acceptable to give sufficient assurance about the purity of the gas from oil contamination, Adicomp can propose an adequately sized active carbon column to be placed downstream the gas/gas heat exchanger that also absorbs the oil aerosol. It also becomes a safety device.

### **(BY1) MECHANICAL BYPASS VALVE**

Mechanical bypass valve is used to recirculate compressor capacity. This option, normally used for small size compressors, when in combination with inverter system, will be activated only at compressor minimum speed. Mechanical bypass valve can be used only when compressor speed is controlled based on outlet pressure.

### **(BY2) PROPORTIONAL BYPASS VALVE**

Proportional bypass valve is used to recirculate compressor capacity. It is available either electro pneumatic or fully electrical. This option, when in combination with inverter system, will be activated only at compressor minimum speed.

Bypass valve can be either controlled based on inlet or outlet pressure and can be normally open or normally closed based on the client needs.

#### (PL) PLC

Control panel is equipped PLC. Controller manage start and stop and also emergency system. When PLC is installed 7" touch screen is also available and synoptic diagram is available to easily monitor compressor parameters.

#### (MB) MODBUS, (PB) PROFIBUS & (PN) PROFINET REMOTE CONTROL SYSTEMS

Every Adicomp compressor can be connected through a Modbus, Profibus or Profinet gateway for data transmission

either if it is equipped with S1-20 or PLC controller. Modbus and Profibus added to the main controller can perform following operations:

- Read any parameter inside the controller (Pressure, Temperature, alarms, etc)
- Write on any settable parameter inside the table. Usually, it is used to modify the target pressure and start/stop compressor.

#### (LM) 8000 h MAINTENANCE INTERVAL

This kit allows compressor to extend maintenance intervals to 8000 h allowing client to save operational costs. It consists in additional instruments to monitor compressor parameters and it works in combination with PLC system (PL option).

## Main technical data

**BVG - UVG** Specifically designed in compliance with ATEX or NEC/Nema/UL standards for electrical apparatus and PED or ASME for pressure equipments.

### BVG Series

Suction pressure: 25 < 1000 mbar(g)

Operating pressure: 3.0 < 10.0 bar(g)

Free Gas Delivery: 0 < 6000 Nm<sup>3</sup>/h

Adsorbed power: 2.2 < 710 kW

#### Applications

- Pressure Swing Adsorption
- Microturbines
- Boiler feeding
- Water washing scrubbing
- Digester gas recirculation
- CHP feeding

#### MODELS

BVG2.2	BVG18.5	BVG110	BVG450
BVG3	BVG22	BVG132	BVG500
BVG4	BVG30	BVG160	BVG560
BVG5.5	BVG37	BVG200	BVG630
BVG7.5	BVG45	BVG250	BVG710
BVG9	BVG55	BVG315	
BVG11	BVG75	BVG355	
BVG15	BVG90	BVG400	

### UVG Series

Suction pressure: 25 < 1000 mbar(g)

Operating pressure: 8.0 < 25.0 bar(g)

Free Gas Delivery: 0 < 6000 Nm<sup>3</sup>/h

Adsorbed power: 2.2 < 710 kW

#### Applications

- Membranes technology
- Gas Engine Feeding
- Boiler feeding
- CHP feeding

#### MODELS

UVG2.2	UVG18.5	UVG110	UVG450
UVG3	UVG22	UVG132	UVG500
UVG4	UVG30	UVG160	UVG560
UVG5.5	UVG37	UVG200	UVG630
UVG7.5	UVG45	UVG250	UVG710
UVG9	UVG55	UVG315	
UVG11	UVG75	UVG355	
UVG15	UVG90	UVG400	

# adicom<sup>®</sup>

ADVANCED AIR & GAS SOLUTIONS



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