HVG SERIES

Compressors for Hydrogen and Syngas

adicomp®
ADVANCED GAS COMPRESSORS

HVG Series

Compressors for Hydrogen and Syngas

These 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 controlled by an inverter. They are designed using suitable materials and technologies for compressing this particular type of gas.

- HVG: available operating pressures from 3.0 bar(g) to 25.0 bar(g).

HOW IT WORKS

The gas is sucked through a suction filter that removes particles and also acts as a water separator (if required) , 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 possible presence of aggressive contaminants in 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 separated from the oil through a cartridge flows through the minimum pressure/no-return valve into a cooler and could be treated before leaving the package in accordance with custumer requirments.

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, 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. Adicomp compressors are fully controlled by VSD, by-pass valve and/or slide valve.

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.

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

Experience counts
Adicomp is one of the first companies able to compress hydrogen and syngas from different sources . Over the last 25 years we have manufactured and installed over 9500 systems worldwide, facing extremely different applications that allowed us to acquire a high level of know-how acknowledged by the market.

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 , thereby always remaining flexible and reliable.

ONE OF THE 9500 SYSTEMS INSTALLED

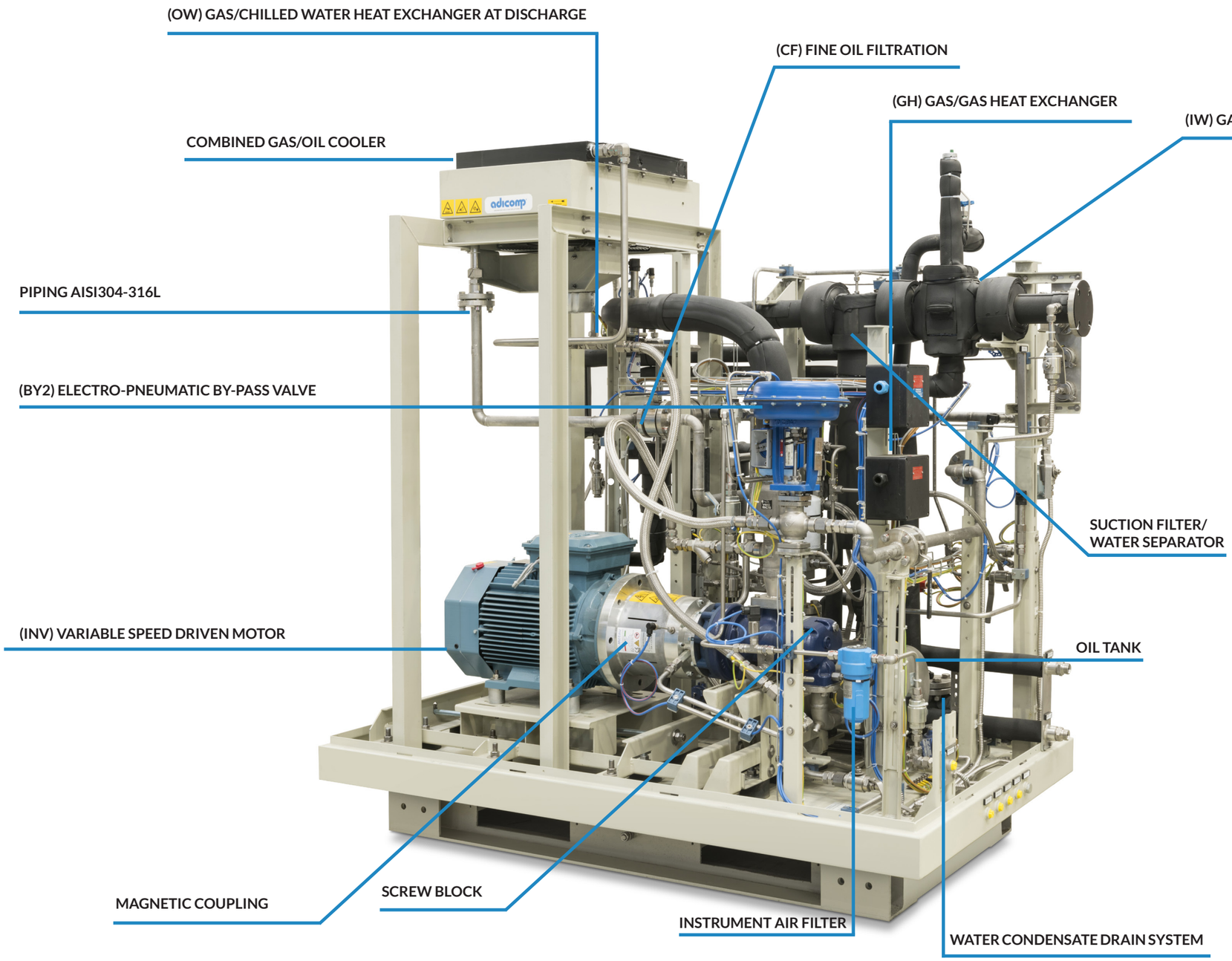
Compression system

HVG-18.5

TOTAL POWER INSTALLED: 22 kW
INLET PRESSURE: 0 bar(g)
WORKING PRESSURE: 10 bar(g)
FLOW RATE: 0<43<85 Nm^3/h
AMBIENT TEMPERATURE: -10/+40°C
LOCATION: THE NETHERLANDS

HVG Series

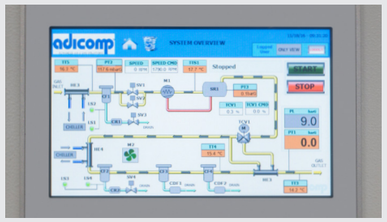
Main features



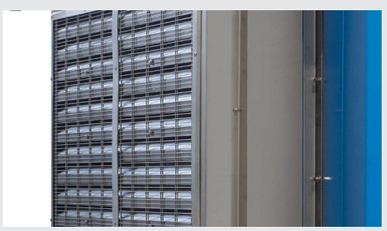
Extra features

WEATHER PROOF CANOPY

PLC



LOUVRES FOR INTERNAL TEMPERATURE CONTROL



HVG Series
Options available

(OF) OPEN FRAME (STANDARD VERSION)
Open frame version suitable for indoor installation.

(S) SILENCED
Sound proof enclosure, suitable for indoor installation (not weather proof).

(WS) - WEATHER PROOF
Compressor is designed and built for ambient temperatures from -10°C to +40°C, with a special roof and outdoor paint treatment of the canopy that make the station suitable for outdoor operations. In case of ambient temperatures 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. 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. When the compressor stops, electric heaters thermostatically controlled keep the internal temperature above 5°C.

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 larger capacity models and outdoor installations, it is used to depressurize the system by blowing the gas to atmosphere through the vent line.

(GOH) – GAS/WATER HEAT EXCHANGER
Water cooled compressor. This option consists of a plate-plate or shell and tube heat exchanger, water cooled to cool down the temperature of the gas.

(IW) SUCTION GAS/WATER HEAT EXCHANGER
This option consists of a dedicated low-pressure heat exchanger fitted at compressor suction suitable to reduce the quantity of water vapor contained in the gas.

(OW) DISCHARGE GAS/WATER HEAT EXCHANGER
At outlet side this option offers 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 best.

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

(GH) GAS/GAS HEAT EXCHANGER
When the need to control the temperature of the gas exiting from the compressor is necessary, a gas/gas heat exchanger is installed for delivering the gas with a stabilized temperature.

(HR) HEAT RECOVERY
The heat generated by a rotary screw compressor can be recovered and used to reduce energy general costs. Our recovery system consists of a water/oil heat exchanger capable of transferring the heat from the lubricating oil to sanitary, central heating or industrial process water, recovering up to 60/70% of the compressor's heat energy.

(TC) – AUTOMATICALLY CONTROLLED OUTLET GAS TEMPERATURE
Automatic system (either electronically or mechanically) used to control outlet gas temperature. Additional heat exchanger must be installed at compressor outlet.

(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^3 (medium filtration (CM)) or 0.01 mg/m^3 (fine filtration (CF)).

(CC) ACTIVE CARBON COLUMN (OIL REMOVAL)
If the filtration is still not acceptable of giving sufficient purity of the gas from oil contamination, Adicomp can propose an adequately sized active carbon column to be placed downstream of the gas/gas heat exchanger that also absorbs the oil vapours. 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 in 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 clients needs.

(PL) - PLC
Control panel is equipped with PLC, and manages the start and stop and 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 if it is equipped with an adequate electornic panel or PLC controller. Modbus and Profibus added to the main controller can perform the 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.

Main technical data

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

Suction pressure: 0 < 8.0 bar(g)
Operating pressure: 3 < 45 bar(g)
Free Gas Delivery: 0 < 3000 Nm^3/h
Adsorbed power: 2.2 < 400 kW

MODELS		
HVG2.2	HVG30	HVG250
HVG3	HVG37	HVG315
HVG4	HVG45	HVG355
HVG5.5	HVG55	HVG400
HVG7.5	HVG75	
HVG9	HVG90	
HVG11	HVG110	
HVG15	HVG132	
HVG18.5	HVG160	
HVG22	HVG200	

adicomp®

ADVANCED GAS COMPRESSORS

LRQA CERTIFIED
ISO 9001 · ISO 14001
ISO 45001

UKAS MANAGEMENT SYSTEMS
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