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## **Two Stage - SSG Series**

Compressors & gas treatment systems for wet  
and dry gases applications

**Pressure up to 25 bar(g)**

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# SSG Series

## Wet and dry gases applications

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

Adicomp is pleased to announce that it has developed and produced, together with its parent company Termomeccanica, a two-stage oil-injected screw compressor package that utilises the HTS23 screw block and which, when operating between 15 and 25 bar(g) discharge pressure, has 10-12% higher efficiency than the equivalent single-stage model.

These features result in two important advantages:

- An incredible energy saving resulting on much less running costs (savings of 50,000-60,000 euro/year for a 200 kW model).
- When biomethane injection into a grid operating at pressures of 23-24 bar(g) is required, there is no need to install a final gas booster, resulting in large savings in capital costs

### 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  $H_2S$ ,  $CO_2$  and other aggressive contaminants into the gas.

During the gas compression process, the oil is injected inside the **two stage** rotary screw chamber to perform three main functions: lubrication, sealing and heat absorption, cooler and it is treated before leaving the package.

Working in a close circuit with a gas/oil receiver, oil is pressurized to flow trough 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.



#### High $H_2S$ values? No problem

Adicomp's compressors are able to operate efficiently even with gases containing  $H_2S$  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 TM.I.C (Termomeccanica Industrial Compressors) and Howden.



#### 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 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.



#### 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.

ONE OF THE 9500 SYSTEMS INSTALLED

### Compression system

## SSG160-16.5 IPTG

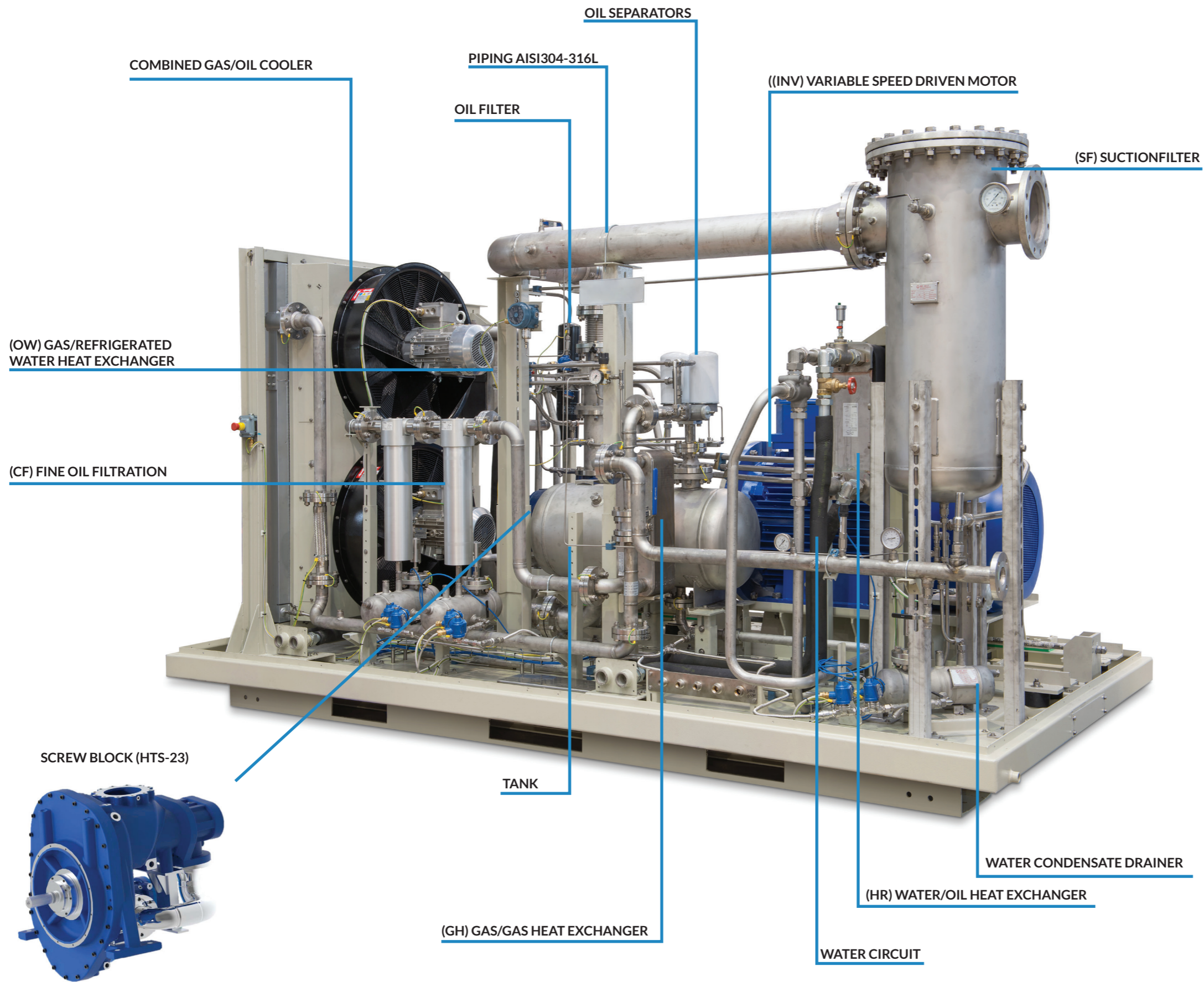
TOTAL POWER INSTALLED: 200 kW  
INLET PRESSURE: 100 mbar(g)  
WORKING PRESSURE: 16.5 bar(g)  
FLOW RATE: 1050 Nm<sup>3</sup>/h  
AMBIENT TEMPERATURE: -10/+40°C





# SSG Series

## Main features

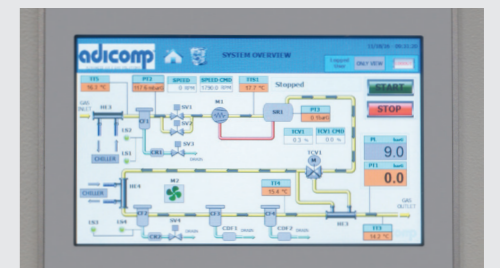


## Extra features

### WEATHER PROOF CANOPY



### PLC



### LOUVRES FOR INTERNAL TEMPERATURE CONTROL



# SSG Series

## Options available

### (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.

### (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.

### (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.

### (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

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

### SSG Series

**Suction pressure:** 25 < 1000 mbar(g)

**Operating pressure:** 15 < 25 bar(g)

**Free Gas Delivery:** 850 < 1500 Nm<sup>3</sup>/h

**Adsorbed power:** 132 < 250 kW

### APPLICATIONS

- Pressure Swing Adsorption (P.S.A)
- Membranes
- Turbines
- Boiler feeding
- CHP feeding



# adcomp<sup>®</sup>

ADVANCED GAS COMPRESSORS



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