
VG Series

Compressors & Gas Treatment Systems
for Dry Gases Applications

VG series

Dry Gases Applications

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

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

HOW IT WORKS

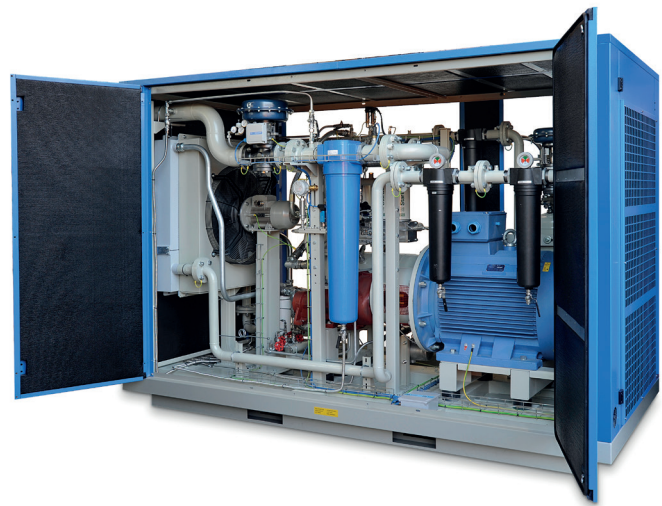
The dry gas is sucked through a coarse type suction filter and then it passes through a suction control valve.

During the gas compression process, oil is injected inside the rotary screw chamber to perform three main functions: lubrication, sealing and heat absorption.

The gas goes through the minimum pressure/non-return valve into an air or water cooler after cooler.

A mechanical by-pass valve is used to recirculate the gas in excess into suction to reduce the capacity from the value achieved at minimum speed of the electric motor, down to 0%. Sometimes it is necessary to install a pneumatic or electric controlled by-pass valve to have a more accurate control.

When the system stops, the gas is depressurized by feeding the gas into a specific expansion buffer or bleeding it out into the atmosphere.

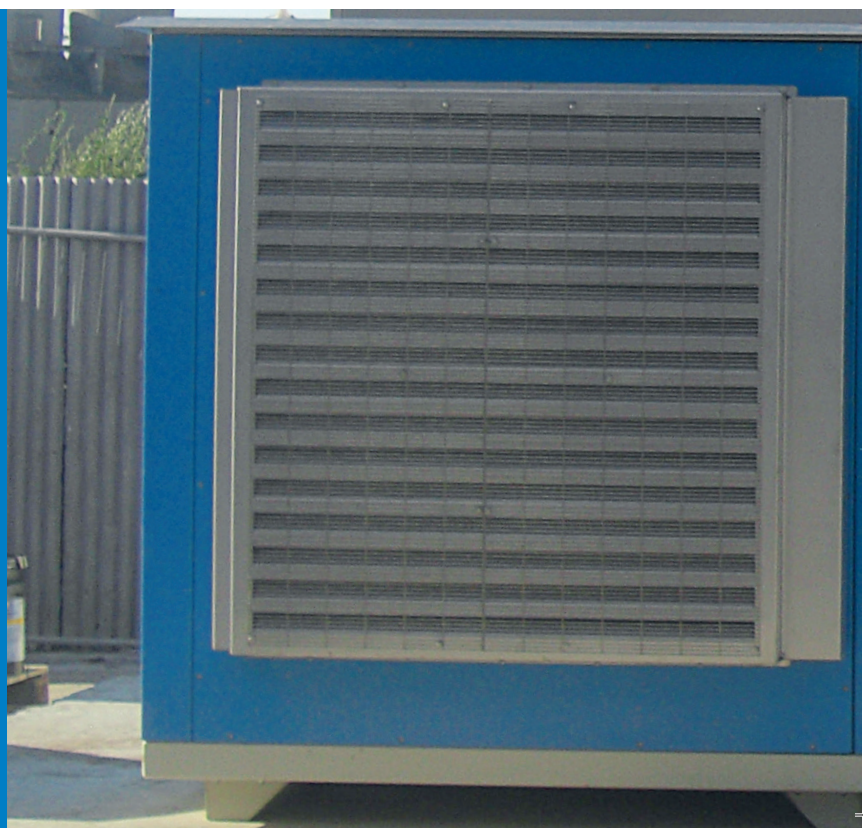


ONE OF THE 8000 SYSTEMS INSTALLED

Compression system
inside container

2x VG160

TOTAL POWER INSTALLED: 400 kW
INLET PRESSURE: 400-800 mbar(g)
WORKING PRESSURE: 5 bar(g)
FLOW RATE: 0<1700 Nm³/h
AMBIENT TEMPERATURE: +20/45°C
LOCATION: ROMANIA





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.



Gas quality.

Adicomp's compressors, designed with its own integrated gas treatment system, always ensures the required gas quality.



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.



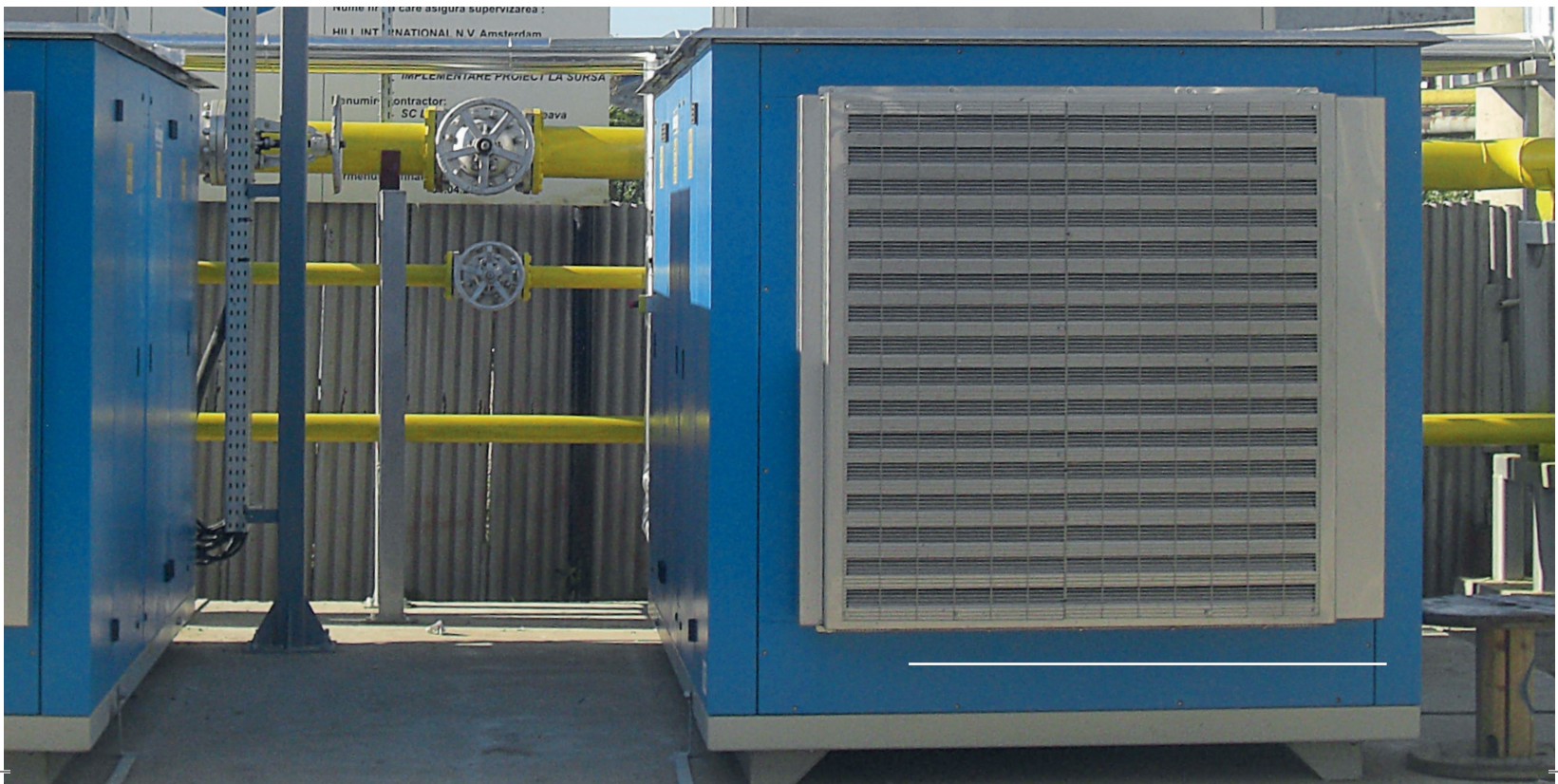
Full control over operation.

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.



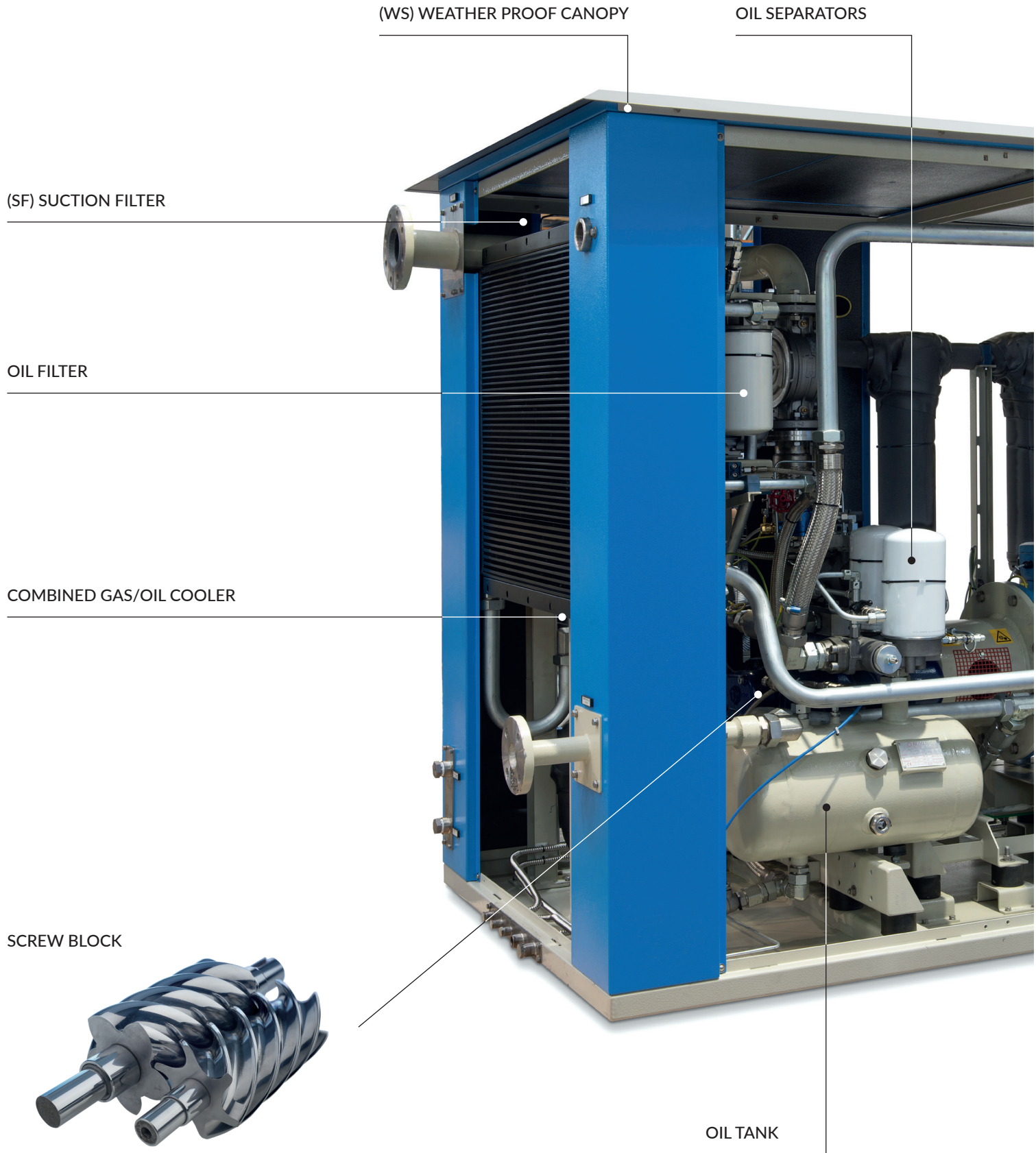
Tailor-made attitude.

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.



VG series

Main features



(INV) VARIABLE SPEED DRIVEN MOTOR



Extra features

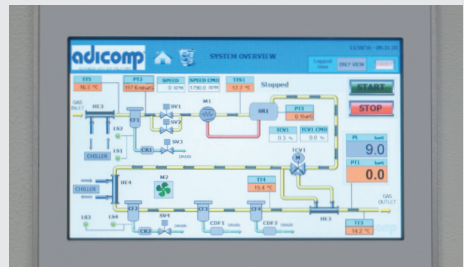
(WSS) WEATHER PROOF
SUPER SILENCED CANOPY



(OF) OPEN FRAME



PLC



(CF) FINE OIL FILTRATION

(GH) GAS/GAS
HEAT EXCHANGER

VG series

Options available

(OF) OPEN FRAME (BASE EXECUTION)

Open frame version suitable for indoor installation.

(S) SILENCED

Sound proof enclosure, suitable for indoor installation (no weather proof).

(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.

(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

Automatic system (either electronically or mechanically) used to control outlet gas or oil temperature. A dedicated valve is integrated into the package. 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/m³ (medium filtration (CM)) or 0.01 mg/m³ (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, Adicom 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

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

VG Series

Suction pressure: 25 < 1000 mbar(g)

Operating pressure: 3.0 < 25.0 bar(g)

Free Gas Delivery: 0 < 6000 Nm³/h

Adsorbed power: 2.2 < 710 kW

Applications

- Microturbines
- Turbines
- Boiler feeding
- Gas grid injection
- Gas engine feeding

MODELS

VG2.2	VG18.5	VG110	VG450
VG3	VG22	VG132	VG500
VG4	VG30	VG160	VG560
VG5.5	VG37	VG200	VG630
VG7.5	VG45	VG250	VG710
VG9	VG55	VG315	
VG11	VG75	VG355	
VG15	VG90	VG400	

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ADVANCED AIR & GAS SOLUTIONS



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