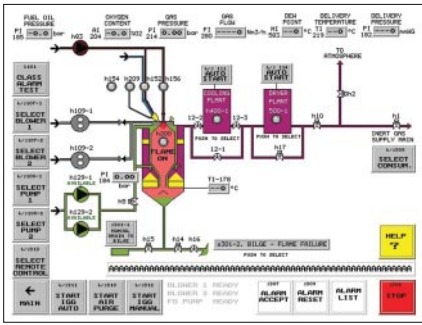


Moss Inert Gas Generator System

for Gas Carriers

Inert Gas Systems



Typical picture of the touch screen user interface



The Moss designed cooling unit

Moss inert gas generator system

for gas carriers

The unique design is based on experience from thousands of installations, the first one in the 1960's. High efficiency, low maintenance costs, safe and easy operation combined with minimum space requirements are important features of the Moss design. This is reflected in the overall layout, the choice of materials/corrosion protection and the control system.

Special features

Moss Burner/Scrubber Unit

The Moss Burner/Scrubber Unit requires less deck space than any other known design. This is due to the location of the combustion chamber concentrically inside the scrubber unit. Further benefit of this design is high quality inert gas independent of the ships rolling and pitching. Consequently, a high degree of freedom to position the units inside the vessel. High inert gas purity with a very low content of crystalline salts is the measurable outcome of this design.

The unique Moss high turbulent burner ensures an almost complete combustion with a rugged simple design and no moving parts. For systems requiring inert gas with less than 1% O₂, fresh water may be injected into the combustion air. This will reduce the Nox and CO level in the inert gas. Heat corrosion resistant steel is used for all surfaces exposed to heat and/or sea water. As further protection against corrosion, fresh water rinsing is adopted.

Blower Units

The blower units supplying combustion air are of the roots type with electric motors, arranged on a rigid steel base frame equipped with resilient mountings. For larger systems centrifugal fans can be supplied offering cost and operational benefits.

Inert Gas Drying

The inert gas drying is done in two stages. In stage one the inert gas is cooled down to 5°C or less removing most of the water by condensation. In stage two the gas passes through



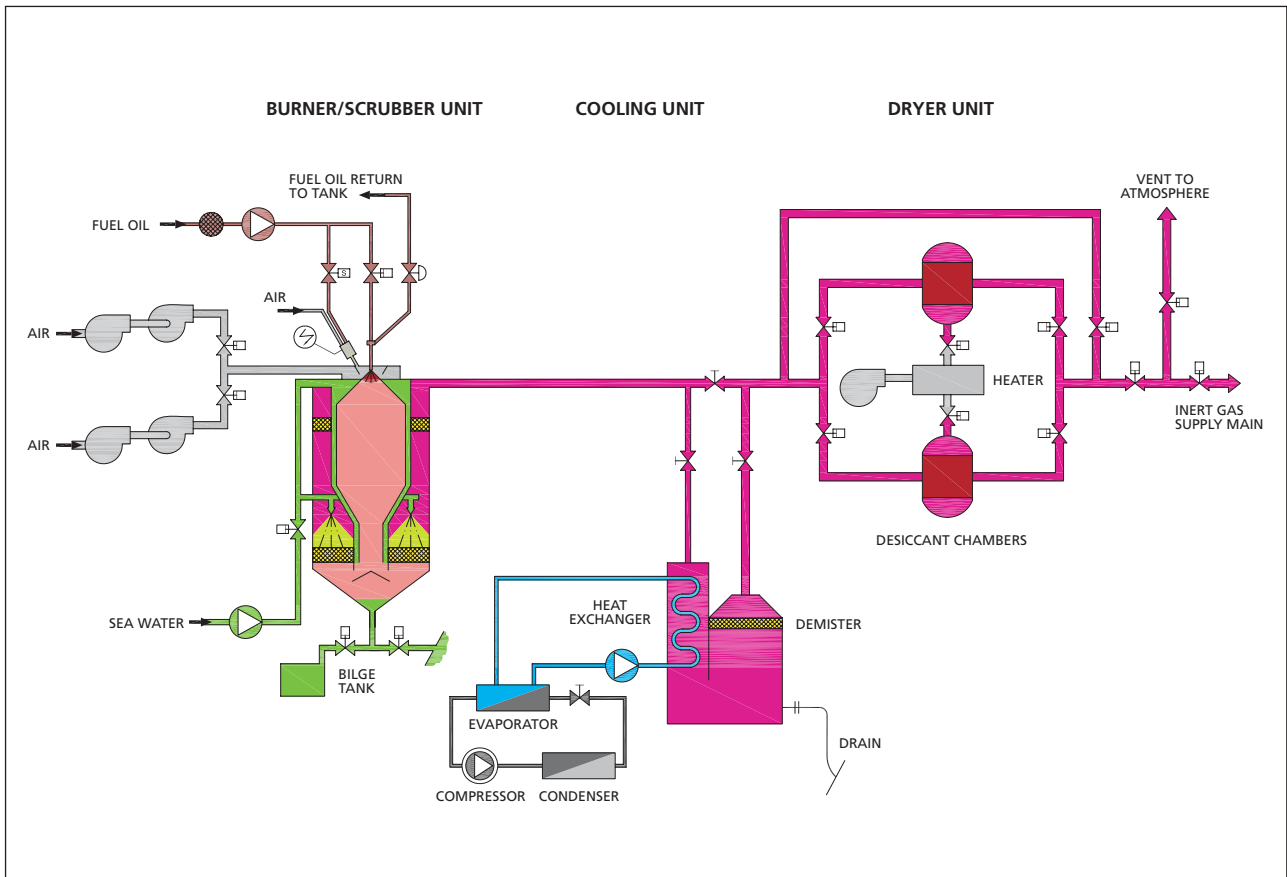
Typical view of the versatile Moss Inert Gas Generator. This example is from an offshore installation.

an adsorption dryer with two chambers filled with desiccants (Al-oxides). This process brings the dew point down to the required level, usually -45°C. The two chambers are active one at a time. While one chamber is adsorbing the other is being re-generated through heating. Electric and/or steam heating is available. For smaller systems the drying may be of the heatless type. In this case pressure swing adsorption technology is utilized.

Control System

The control system is based on a Programmable Logical Control (PLC). The control panel is of the touch screen type. Several mimic flow diagrams are implemented as well as controls required for safe and easy operation with a minimum of operator supervision. Additional functions like user manuals and condition monitoring can also be included.

The **Moss Inert Gas Generator System** is designed based on compact modules, offering important savings in space and installation cost both for newbuildings and for retrofit on existing vessels.



Performance data

Capacity: Up to 25.000 Nm³/h

Normal outlet dryer pressure:
0,25 bar g. (Other pressures upon request).

Inert gas composition at 1-2% by volume of oxygen:
(Based on marine distillate fuel).

CO	= Max. 100 ppm	NO _x	= Max. 100 ppm
SO ₂	= Max. 1 ppm	CO ₂	= Approx. 14%
N ₂ + Ar	= Balance		

Oxygen content adjustable down to 0.5% O₂.

Gas outlet temperature:
Typical 10-20°C.

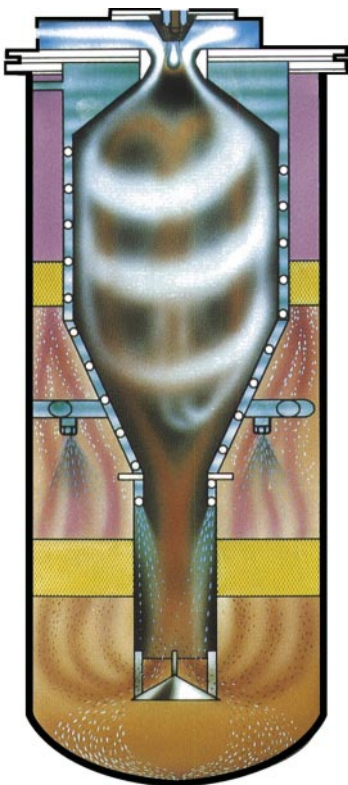
Dewpoint after dryer normally down to -45°C or below
(Average at atm. press)

Fuel:
Marine distillate according to ISO 8217.

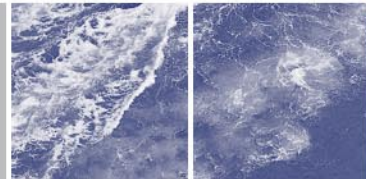
Nominal fuel consumption:
0,084 kg/Nm³ gas.

Nominal sea water consumption:
0,065 m³/Nm³ gas (sea water temp. max. 32°C).

Nominal el. power consumption excluding seawater pumps:
0,04 kW/Nm³/h gas.
(0,06 kW/Nm³/h gas if el. heater in operation).



High inert gas quality is made possible by a purposely designed combustion chamber



Worldwide sales and service network

Our global network of sales and service centres ensures that we can provide first class technical, spares and service support to our customers wherever they are around the world. In addition to our sales and service locations, we are supported by agent representatives in all major shipping areas.

Main Office:
Hamworthy Moss AS
PO Box 1053
NO-1510 Moss
Norway

Hamworthy Shanghai
Room 8B, Yi Dian Plaza,
No. 746 ZhaoJiaBang Road,
Shanghai 20030

Hamworthy Marine Korea Ltd
Room 1224, Ocean Tower Bldg.
#760-3, Woo 1-Dong, Haeundae-Gu,
Busan, South Korea 612-021

tel: +47 69 27 99 00
fax: +47 69 25 45 78
e-mail: moss@hamworthy.com

tel: +86 21 644 55665
fax: +86 21 644 59875
e-mail: china@hamworthy.com

tel: +82 51 740 5544
fax: +82 51 740 5547
email: koreamarine@hamworthy.com

subsidiaries of Hamworthy plc



The manufacturers reserve the right to alter the specification and data to incorporate improvements in design. Certified drawings will be issued on request.

© All details copyright Hamworthy plc.

www.hamworthy.com