SPECIAL
For delegates at the Marine Propulsion & Auxiliary Machinery Conference 23-24 April 2014

With the courtesy of Viking Line

Parker Filter Solutions for Dual Fuel and Gas Engines

PLUS GAS EMISSIONS AND COLD CORROSION SOLUTIONS

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker

ENGINEERING YOUR SUCCESS.

Taking ownership of sustainable cost-effective gas filtration solutions

When planning investments, environmental and economic aspects must be balanced carefully. Gas engines and Dual Fuel engines, which enable a choice of fuel, are the choices of the future. Parker is a pioneer in filtration technology and can already provide an expansive selection of solutions for the filtration systems of gas and DF engines.

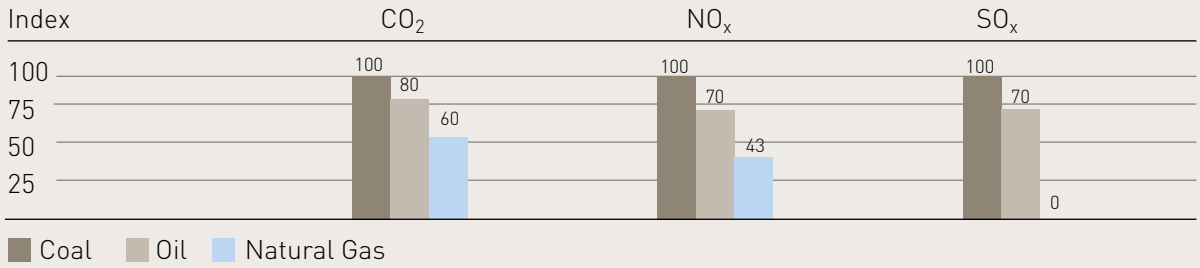
Balancing environmental requirements and competitiveness

The advantages of gas engines for the environment are indisputable – compared to other fuels, the use of gas makes it possible to achieve significant reductions in carbon, nitrogen and sulfuric emissions.

As a fuel, gas is able to meet ever-increasing international emissions regulations. Cost-effectiveness and competitiveness are influenced by the availability of fuels and the development of global market prices, as well as national taxes and subsidy schemes directed at the use of fuels.

Parker has engaged in collaboration with several major engine manufacturers, which has boosted our technological expertise and accelerated our product development. We can offer a varied selection of reliable filtration solutions for gas and DF engines.

CO_2, NO_x and SO_x emissions of different fules



Cover: Viking Grace, the first passenger ferry to be powered by liquified natural gas in the Baltic Sea, started scheduled passenger traffic in January 2013.

Expertise in several areas.

Parker has a wide range of products for particulate gas filter solutions in medium speed, Lean Burn gas and Dual Fuel engines.

Marine

- Ferries and luxury liners
- LNG-carriers

Power generation

- Backup power
- Base load and peaking power

Oil and gas

- Offshore platform power
- Onshore field power

Quality filtration improves the efficiency of gas engines

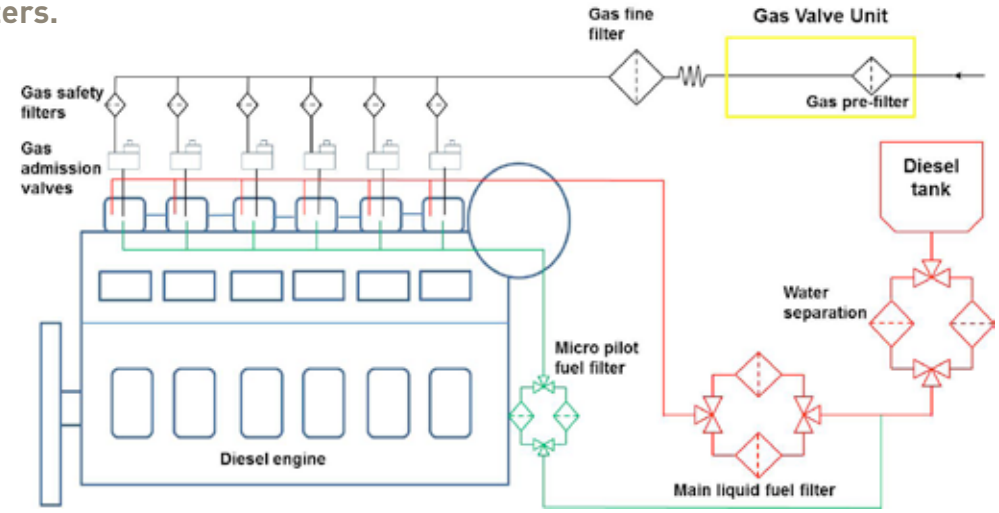
Reliability and innovative functionality.

Parker's outstanding experience and world leading technology in filtration solutions have convinced our customers of the system reliability.

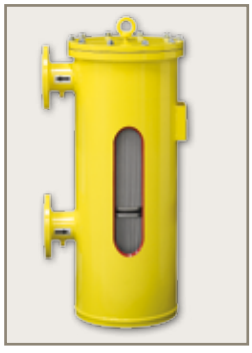
- customised solutions
- efficient filtration
- fulfilling industrial standards
- systems are designed for easy installation and maintenance
- effective removal of moisture from gas
- removal of solid debris to keep the injectors clean.

Typical gas supply unit in powerplant installation.

Typical gas engine fuel systems and related filters.



Examples of Parker products

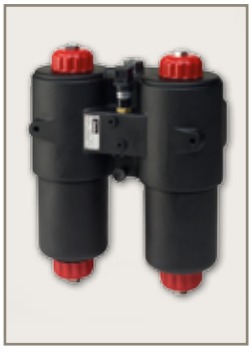


DF1040
Natural gas fine filter

Gas safety filter

DF65
Main liquid fuel filter

DFBO
Water separator / fuel filter



DF40
Micro-pilot fuel filter

Effective solutions for the Marine Industry from Parker

Parker Procal

2000 IR Emissions Analyser

- In-situ, multi-component IR emissions duct or stack-mounted analyser.
- Low cost of through-life ownership.
- Proven success in applications worldwide.

Marine & Shipping Emissions Monitoring and Analysis - Ship Air Pollution Monitoring.

Procal 2000's emissions monitoring system is approved for the analysis of exhaust gases from the engines and boilers of ships and offshore rigs. Robust and with proven reliability, up to six gases can be measured including SO2, CO2 and NOx.

The system comprises up to 6 exhaust mounted analysers, each with automatic verification facilities. Emissions data from the entire system is securely managed and displayed at a dedicated panel PC, with outputs to networks, control systems, and reporting facilities.

The advanced Procal 2000 analyser uses an in-situ (inside the exhaust) sample cell, thus avoiding the need to extract gas. Importantly, this avoids the use of costly, high maintenance sample handling systems and enables analysis of an unmodified, truly representative gas sample.

Exhaust gases from the combustion of residual and distillate fuels can be analysed so that compliance can be confirmed in port, in Emissions Control Areas and in international waters. The Procal 2000 design includes highly effective sintered filters that prevent the ingress of particulate matter into the sample cell and a heater to prevent condensation and deposits where the exhaust is below its dew point. Construction materials are ideally suited to the marine environment.

For more information eMail: procalinfo@parker.com

Parker Kittiwake

Cold Corrosion Test Kit

- Excellent correlation between field measurements and lab Inductively Coupled Plasma (ICP) results.
- Monitors products of corrosion that cannot be detected magnetically.
- Provides early warning that cold corrosion is under-way with a simple, quick test.
- Gives a running commentary on internal corrosion as the operator adjusts the cylinder liner jacket temperature or oil feed rate.
- Provides early warning that cold corrosion is under-way with a simple, quick test.

Early Stage Fault Detection & Reliability Through Condition Monitoring of Plant and Equipment.

The Cold Corrosion Test Kit from Parker Kittiwake allows ship owners and operators to obtain an accurate picture of the level of corrosive elements present in cylinder oil, potentially preventing critical damage before it occurs. The kit provides accurate results on-board in less than five minutes, negating the need to send samples to a laboratory to be analysed.

The test kit goes beyond other cold corrosion tests, which only give a total iron figure, providing users with an accurate measure of the parts per million (PPM) value of Fe2+ and Fe3+ compounds in used scrape down oil. Using a colour-matching test the Parker Kittiwake Cold Corrosion Test Kit alters the colour of an oil sample, indicating the concentration of non-ferrous iron compounds. The resulting colour is matched to a reference colour wheel that provides a measurement of the corrosive wear present in the sample.

When used in conjunction with ferro-magnetic analysers, such as Parker Kittiwake's LinerSCAN or the Shell Analex Alert, the exact wear conditions within the cylinder chamber can be monitored.

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