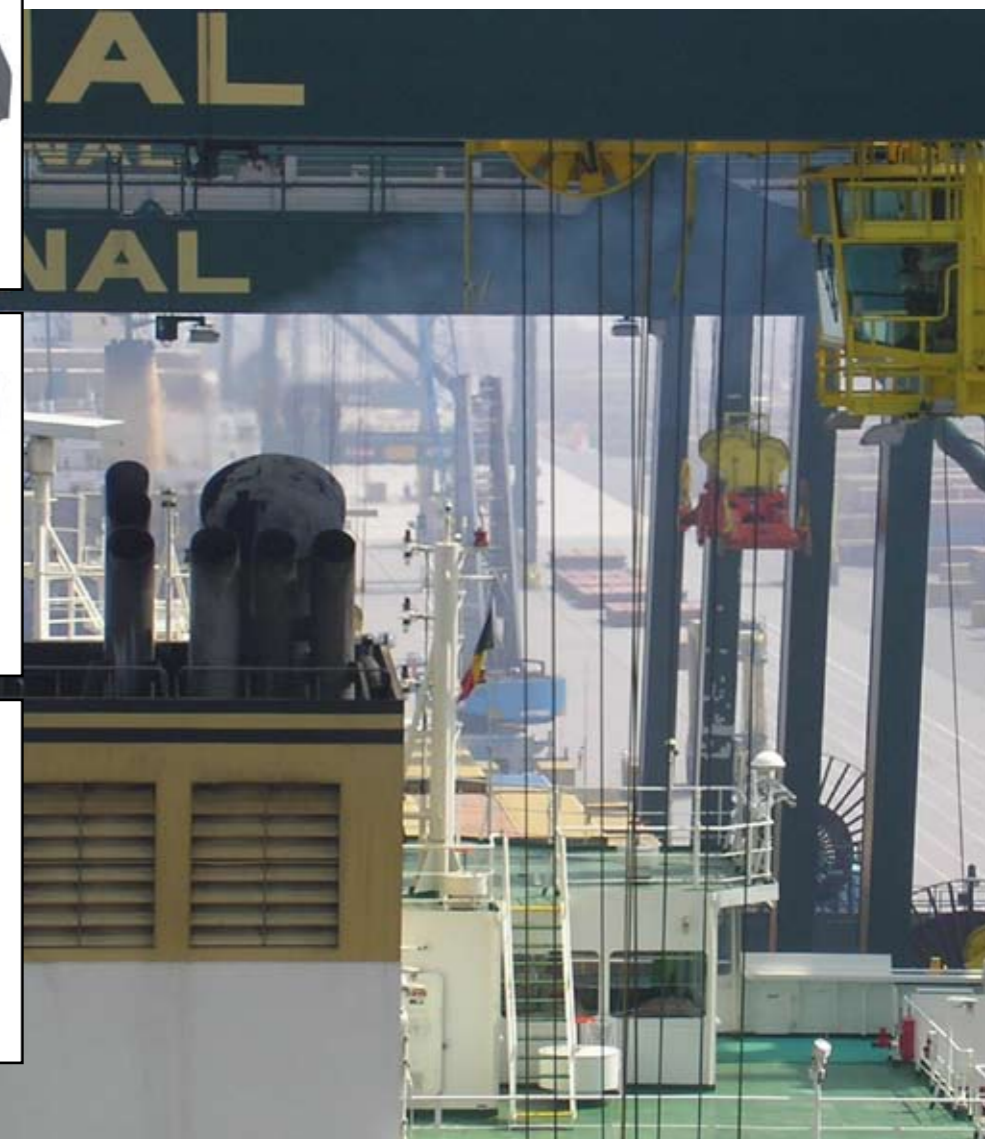




MERFORD

Merford Filter Unit



Merford Cabins BV

Web address: www.ergocab.com
E-mail: ergocab@merford.nl
Phone: +31 184 606000
Fax: +31 184 602794
Country: The Netherlands

INNOVATION
HEALTH AND SAFETY
EFFICIENCY

Cabin Overpressure / Filter Unit

Pollution can harm the health and performance of your crane drivers. So, it is very important to protect them against the vessel's exhaust emissions. At the same time, ventilation is needed in the cabin to provide the crane driver with the oxygen he requires.

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Harmful exhaust emission

Ships at berth often have the generators running, creating harmful exhaust emissions. There is a considerable risk of this polluted air entering the operator's cabin.

These exhaust emissions contain nitrogen oxides (NOx), sulphur dioxide (SO₂), carbon monoxide (CO), carbon dioxide (CO₂) and, in lesser fractions, hydrocarbons (HC), particulate matter (PM) and poly-aromatic hydrocarbons (PAH), among other substances.

Gases of this nature may have the following negative effect on your crane driver:

- The restraint of oxygen by carbon monoxide, carbon dioxide or hydrocarbons
- can cause unconsciousness or even result in death.
- Nitrogen oxides and sulphur dioxide irritate the respiratory tract.
- Poly-aromatic hydrocarbons and particulate matter may have negative effects in the long term and may cause cancer.

A minimum ventilation rate of 30m³ per hour per person is required to guarantee enough oxygen. This air needs to be free of pollution. The use of a carbon chemical filter and dust filters limits the concentration of harmful gases.

The gases absorbed by the carbon chemical filter are:

- sulphur dioxide (SO₂), nitrogen oxides (NOx), hydrocarbons (HC),
- poly-aromatic hydrocarbons (PAH) and volatile organic compounds.
- The use of special dust filters stops dust entering the cabin.
- Both types of filter have to be replaced at the end of their service life.
- Various sensors can be used to indicate the lifespan of the filters (optional).
- These sensors help to optimise the filter's lifespan.



Cabin above vessel



Required environment



Overpressure inside the cabin

There is always some leakage of polluted outside air into the cabin. This can be avoided by creating overpressure inside the cabin using the above-mentioned ventilation system.

From an energy-saving point of view (heating / cooling), but also to extend the lifespan of the filter, it is important to keep the flow of air into the cabin as low as possible. Merford has discovered a way to optimally combine minimal airflow and guaranteed overpressure, bearing in mind cabin leakage in conjunction not only with clean filters, but also with dirty ones.

This separate unit has been developed for installation on both new and, in particular, existing cabins.

Specifications

- Easy to mount on existing and new cabins
- Flexible placement on cabin wall
- Two dust filters and a carbon chemical filter in one filter box
- Filters easy to replace (approx. 30 seconds)
- Control sensor for the filter's lifespan, overpressure, temperature and air quality
- LED and buzzer signal
- Dimensions: 700x500x400mm (WxHxD)
- Heating included: 1200 W
- Power supply: 208-230V 50/60Hz

Options

- External monitoring of signals
- Gas detection (CO₂ and NOx) sensor; sensor has to be replaced every six months. (available by the end of 2011)

“The Merford Filter Unit is flexible and easy to install on any type of cabin.”