

# OIL



## MAINTENANCE



### Purifiner maintains top oil quality

- remove solid particles larger than 1µm
- evaporate off all water, including emulsified water in oil down to 0.01%
- extend the oil quality
- clean oil will increase reliability by approximately 75%
- reduce waste and save the environment

**waagene** Purifiner  
TECHNOLOGY

[www.waagene.no](http://www.waagene.no)

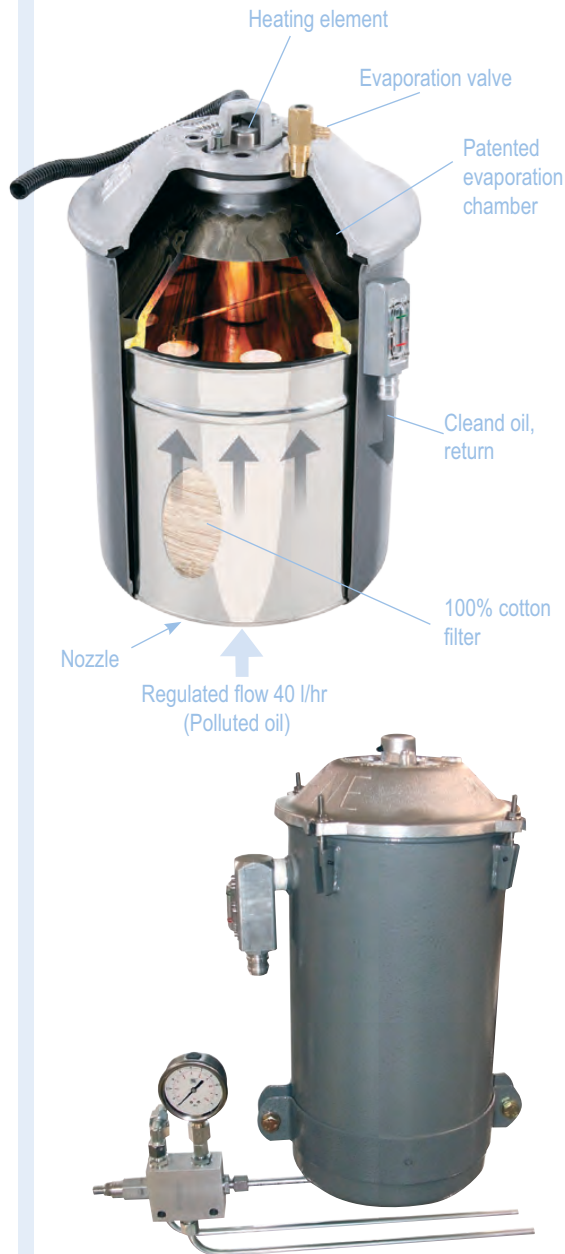
As authorized agents for  
India, Middle East & Singapore



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# Purifiner technology & design

## – Simple, but incredibly effective



### Single filter in a hydraulic system

For continuous maintenance of hydraulic oil to the industry, building machinery, mining machinery, power station etc. Deliver single filter supplied with reducing valve. Pressure from 200 down to 3 bar on the filter. Easy to install, efficient oil maintenance and small investment to keep the oil clean.

Weight: 16 kg.

Dimensions: height 410 mm / diameter 255 mm

Purifiner is a by-pass filter system. It is connected to a hydraulic or lubricating system for continuous particle, water and acid removal. Purifiner utilizes 100% pure cotton filters. These remove particles larger than 1  $\mu$ m. Thin film evaporation reduces water content down to 100 / 200 ppm (0.01-0.02%). The cellulose fibres attract and retain excess acids. New hydraulic oil is typically standard NAS6-8, while continuous use of Purifiner provides a much better oil quality at standards NAS3-4 or ISO 13/10.

### Purifiner Oil Filtration Technology

Research by Norske Shell, Universities and many others concluded that 70 to 80% of all mechanical break-downs are caused by oil contamination. Initial contamination can be slow. However, once oil contamination has started, it rapidly accelerates unless continuous maintenance is applied.

In order to keep the oil clean and at optimum operating performance two filtration processes are needed;

- Removal of particle contamination like iron (Fe), copper (Cu), selenium (Si) and other metals
- Removal of chemical contamination in the oil, of which 80% typically is water.

Particle contamination is a result of wear and tear during machine operations, contamination during maintenance, ingress through leaky seals, clogged filters, etc. Note that new oil usually contains large amounts of particles > than 5  $\mu$ m. Water contamination can come from condensation, leaks into the machine or just from the operation of a machine as occurs in air compressors or engines. Water can also enter from air vents. Water in oil can lead to acid creation.

### Cleans most types of oil

Purifiner cleans almost all types of oil including those with viscosities of 320 cSt. Purifiner maintains oil quality on land and marine applications. These include: Azipod drives, compressors, gearboxes, hydraulic systems, thrusters, turbines, etc.



# Purifiner oil purification units



## 1. TF5060PMH for non-pressurized systems

Typical applications: non-pressurized hydraulic oil tanks, lift cranes, gearboxes or cleaning new oil before installation to a system. Designed for systems with oil volume up to 2000-3000 liters.

Weight: 35 kg. Dimensions L x B x H: 450 x 470 x 580 mm



Unit TF5060PMH  
TF-non-pressurised  
with pre-heater

## 2. TS5060PMH for pressurized systems

The system is delivered with twin pumps and typical maritime applications would be thrusters, azipods, hydraulic systems, CP propeller systems, steering gear, etc. TS5060 is patented. Designed for systems with oil volume up to 2000-3000 liters.

Weight: 45 kg. Dimensions L x B x H: 450 x 470 x 580 mm



Unit TS5060PMH  
TS-pressurised system  
with pre-heater

## 3. TS5060PMH-Twin for pressurized systems

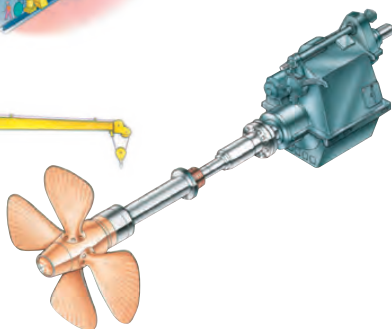
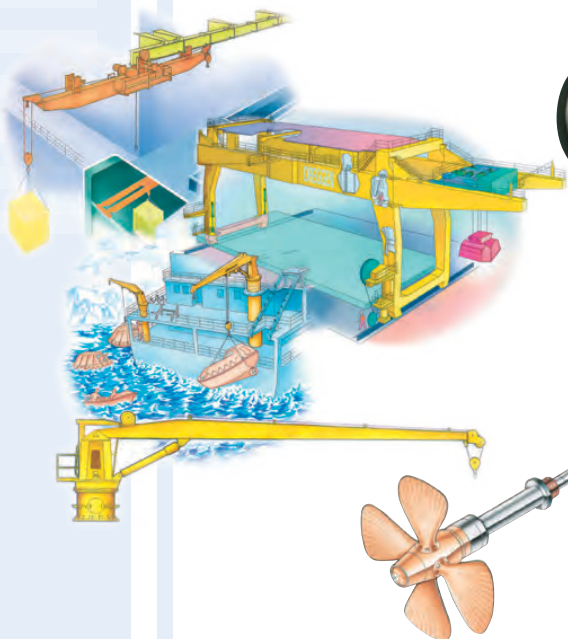
The system is delivered with twin pumps and typical maritime applications would be thrusters, azipods, hydraulic systems, CP propeller systems, steering gear, etc. TS5060-Twin is patented. Designed for systems with oil volume up to 4000-6000 liters.

Weight: 60 kg. Dimensions L x B x H: 760 x 480 x 640 mm



Unit TS5060PMH-Twin  
TS-pressurised system  
with pre-heater

# Oil Maintenance vs. Machinery Maintenance & Repairs



Preventative oil maintenance has become an important focus for most companies operating expensive machinery. Fewer breakdowns, significant maintenance savings and short pay back times makes owning the Purifiner an attractive proposition.

- Improved operational performance and up-time
- Reduced costs for maintenance and repairs
- Reduced oil consumption and costs of oil changes
- Environmental benefits from reduced oil consumption

The feedback from our customers in the maritime industry; Purifiner provides pay back on investment within 3-6 months in most applications and hence, is the most cost-efficient preventive maintenance investment on the market.

## Oil Analysis is important

At Wågene Purifiner Technology, we like to be continuously involved with the systems we provide. We highly recommend monitoring Purifiner performance. We always suggest that oil analysis be performed before the Purifiner is installed and again each week for the first few weeks. Our customers are always satisfied and amazed with the oil quality improvement they witness.

## References:



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