



Alfa Laval OCM-Ex

Oil Cleaning Module for mineral oils

Clean oil is crucial for the safe, reliable and economical operation of virtually all kinds of equipment that uses oils for either lubrication or hydraulic systems. Clean oil reduces wear and corrosion on all equipment installed downstream, thus helping avoid breakdowns and cutting back on downtime throughout a plant or installation.

The Alfa Laval Oil Cleaning Module Ex (OCM-Ex) provides rapid, effective separation of the oil, water and sludge components in contaminated mineral lubricating and hydraulic oils – all at the same time.

The benefits include lower operating costs due to reduced oil consumption, lower disposal costs and improvements in both product quality and the working environment.

The ex-proof module is designed for operation in ATEX II 3 G (Zone 2) II B T3.

Easy to operate oil purification

The Alfa Laval Oil Cleaning Module Ex is a modularized system with all the component systems fully integrated, ensuring easy operation while engaged in oil cleaning duties. At the heart of this compact, easy-to-use equipment is an Alfa Laval disc stack centrifuge of supreme efficiency.

Alfa Laval Oil Cleaning Modules are available with all components and systems pre-configured on a skid, for easy, rapid installation and ready for immediate use. They ensure the effective removal of particles and water in the oil. If an emergency arises, even a high level of water contaminants can be removed.

An OCM-Ex provides continuous purification of lubricating and hydraulic oils while the equipment in which they are used is in operation. If required, the OCM-Ex can continue operating while the primary equipment is at a standstill.

The impact of contaminants in oil

Contaminants in lubricating and hydraulic oils have serious effects on system performance, operating costs and durability. For example, the presence of solid particles:

- abrades metal surfaces
- increases friction
- clogs filters



Complete Alfa Laval OCM 103-Ex mobile (without hoses and without heater)

If water is present in the oil:

- causes corrosion
- reacts with additives
- forms oil/water emulsions
- causes significant deterioration in the performance of the oil

Cleanliness counts

OCM-Ex oil cleaning modules are specifically designed to remove contaminant particles, solid impurities and free water from mineral lubricating and hydraulic oils.

This is important because clean, uncontaminated oil:

- extends the service life of all kinds of equipment by as much as 50%
- eliminates or reduces corrosion by removing free water present in the oil
- ensures longer uptime operation, thus boosting productivity
- results in significant reductions in machinery wear and breakdowns
- cuts operating costs by reducing oil consumption
- extends oil service life and therefore reduces replacement and disposal costs
- improves both product quality and the working environment

Features and benefits

- Simple skid-mounted design that is compact and robust
- Removes both solids and water at the same time, and on a continuous basis
- Easy, rapid start-up procedure
- Low operating costs
- Low maintenance requirements, with easy access
- Eliminates need to dispose of filter cartridges, ensuring that sludge disposal has minimal environmental impact
- Extremely reliable, ensuring long service life
- Suitable for ex-proof operation in ATEX II 3 G (Zone 2) II B T3.

Standard OCM-Ex equipment

Each unit comprises:

1. Disc stack centrifuge to separate out solids and water
2. Electric motor to drive separator
3. Electric heater (option)
4. Oil feed pump
5. Starter and control unit
6. Base plate and frame (mobile or stationary)

Operating principle

Separation takes place in a disc stack centrifuge. The feed is pumped into the centrifuge where centrifugal force separates the feed liquid into its different phases.

The heaviest of these phases – sludge and water – are forced to the periphery of the bowl. The sludge component is deposited in the sludge space and must be removed manually at regular intervals. The clean oil and the separated water are discharged on a continuous basis.

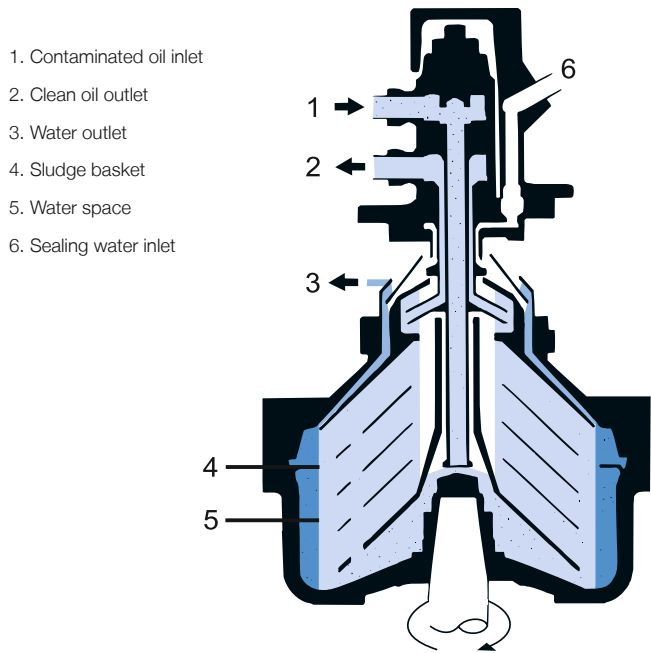


Fig. 3 Purifier-clarifier unit

Oil cleaning capacities

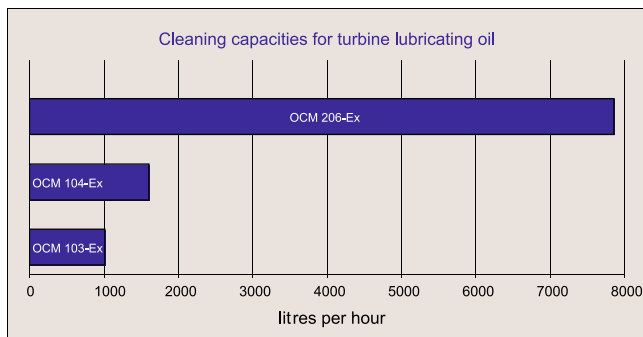


Fig. 1 OCM-Ex capacity table – ISO VG 46 lubricating oil separation temperature of 70°C. For steam turbines, the cleaning capacity should be based on 10% of the total charge of lubricating oil, unless stated otherwise by the turbine manufacturer.

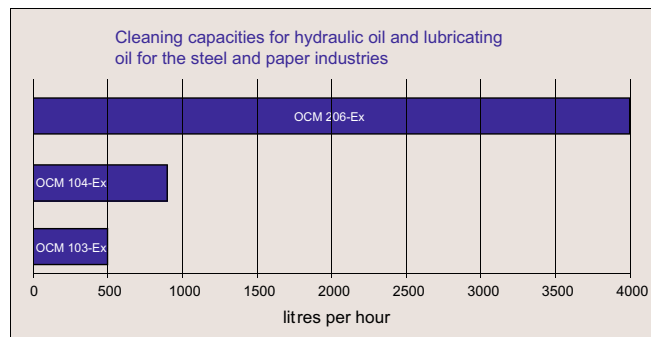


Fig. 2 OCM-Ex capacity table – Maximum flow at viscosity 20 cSt at separation temperature.

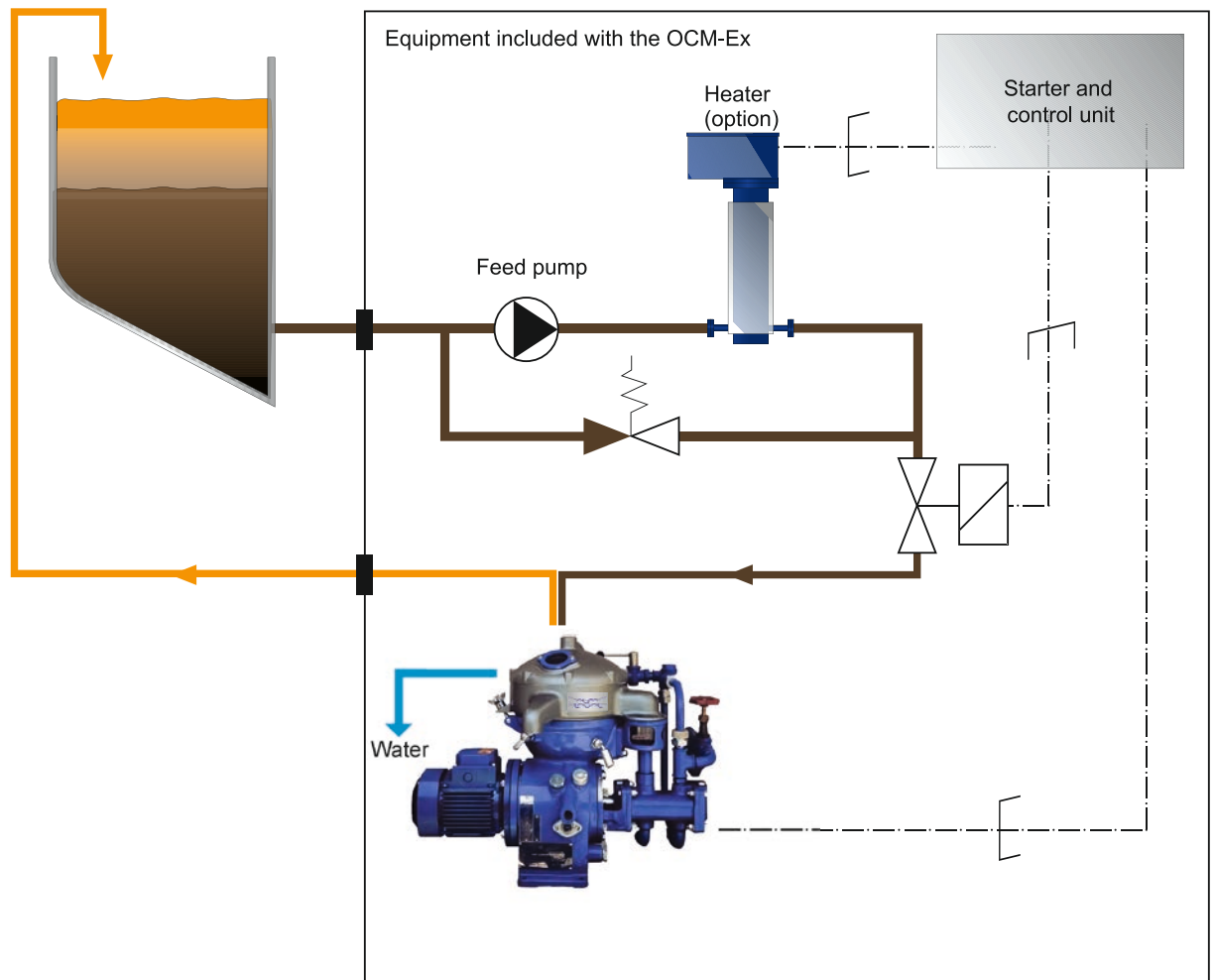


Fig. 4 System diagram

Installation

The oil cleaning module is normally installed in a by-pass system, treating a specified percentage of the full flow of contaminated oil. Tank-to-tank installation is also possible. The suction line from the lubricating or hydraulic oil tank/sump is installed in the lowest end of the tank, typically 1/3 from the bottom. This ensures that any dirty oil present is treated promptly. The suction height should be as low as possible in order to reduce or eliminate any pump cavitation effect. The oil return line is connected to the top of the oil tank opposite to the oil suction in order to ensure proper oil circulation during cleaning also when the turbine is out of operation.

Technical specifications

Power supply: 400/415/440 VAC (50/60 Hz)
 Oil grades: All lubricating and hydraulic oils in normal use, as well as marine diesel oil and distillates
 Fresh water inlet for liquid seal at startup: Up to 5,8 litres (depending on centrifuge type)

Separation performance

Particles: ≥ 5 micron 90% removal
 Particles: ≥ 3 micron 70% removal
 Free water: Removal is typically in the range of 90%

After-sales support

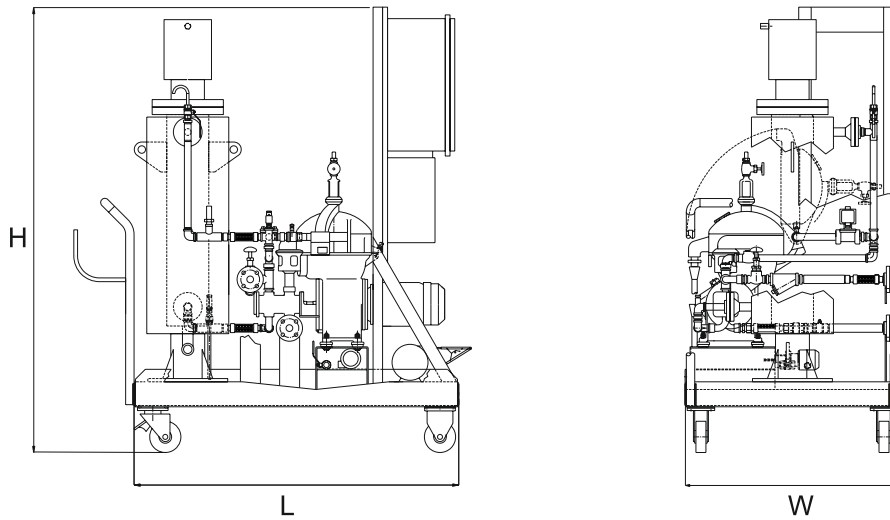
The Alfa Laval preventive maintenance programme is available for the OCM-Ex series. Alfa Laval service engineers are available to assist you with all types of maintenance and repair, as well as to help you train your personnel in operating and maintaining these units.

Using genuine Alfa Laval spare parts reduces downtime and repair costs. Spare parts kits can be ordered from Alfa Laval Service Centres.

Intermediate service kits for routine bowl maintenance and major service kits for separator overhaul are also available.

Module type	OCM 103	OCM 104	OCM 206
Separator motor, kW (50/60 Hz)	0,75/0,9	1,5/1,8	7,5/7,5
Feed pump, kW	Integral	Integral	2,2/2,2
Heater, kW	14	22	65

Dimensions



Model		Net dimensions, mm (inch)			Gross dimensions, mm (inch)			Net weight, kg (lbs)	Gross weight kg (lbs)	Gross weight kg (lbs)
		L	W	H	L	W	H	-	crate truck	box sea
OCM 103 without heater	Stationary	1150 (45,3)	850 (33,5)	1600 (63,0)	1500 (59,1)	1000 (39,4)	1900 (74,8)	290 (639)	380 (838)	430 (948)
	Mobile	1285 (50,6)	760 (29,9)	1783 (70,2)	1600 (63,0)	900 (35,4)	2050 (80,7)	320 (705)	410 (904)	460 (1014)
OCM 103 with heater	Stationary	1300 (51,2)	950 (37,4)	1600 (63,0)	1600 (63,0)	1100 (43,3)	1900 (74,8)	450 (992)	620 (1367)	680 (1499)
	Mobile	1435 (56,5)	860 (33,9)	1783 (70,2)	1700 (66,9)	1000 (39,4)	2050 (80,7)	480 (1058)	650 (1433)	710 (1565)
OCM 104 without heater	Stationary	1450 (57,1)	850 (33,5)	1600 (63,0)	1900 (74,8)	1000 (39,4)	1900 (74,8)	450 (992)	600 (1323)	670 (1477)
	Mobile	1585 (62,4)	760 (29,9)	1783 (70,2)	2000 (78,7)	900 (35,4)	2050 (80,7)	480 (1058)	630 (1389)	700 (1543)
OCM 104 with heater	Stationary	1850 (72,8)	950 (37,4)	1770 (69,7)	2265 (89,2)	1100 (43,3)	2075 (81,7)	630 (1389)	860 (1896)	910 (2006)
	Mobile	1985 (78,1)	860 (33,9)	1955 (77,0)	2400 (94,5)	1000 (39,4)	2225 (87,6)	660 (1455)	900 (1984)	940 (2072)
OCM 206 without heater	Stationary	1950 (76,8)	1250 (49,2)	1695 (66,73)	2250 (88,6)	1350 (53,1)	2040 (80,3)	950 (37,4)	1350 (53,1)	1360 (53,5)
	Mobile	tba	-	-	-	-	-	-	-	-
OCM 206 with heater	Stationary	2250 (88,6)	1800 (70,9)	2300 (90,1)	2500 (98,4)	1900 (74,8)	2590 (102,0)	1650 (65,0)	2100 (82,7)	2120 (83,5)
	Mobile	tba	-	-	-	-	-	-	-	-

Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com