

Alfa Laval MAB 104

Solids-retaining Centrifugal Separator

Introduction

Maintaining clean oil is essential for the safe, efficient, and cost-effective operation of equipment using oil for fuel, lubrication, or hydraulic functions. Clean oil minimizes wear and corrosion, helping to prevent breakdowns and reduce unplanned downtime across systems.

Contaminants such as solid particles can erode metal surfaces, increase friction, and block filters, while water in oil may cause corrosion, degrade additives, create emulsions, and impair overall oil performance. Ensuring oil cleanliness extends equipment life and improves system reliability.

Application

This equipment is designed for the purification and clarification of mineral oils used in marine installations and power generation, such as:

- Distillate fuels
- Lubricating oils
- Biofuels

Clarification is the removal of solids from oil, while purification removes both solids and water. The choice between the two modes depends on the type and condition of the oil, as well as the specific system requirements.

The system is also optimized for cleaning fuels that comply with ISO 8217 specifications and contain FAME or HVO in any blend ratio, provided that:

- FAME meets EN 14214 or ASTM D6751 at the time of blending
- HVO meets EN 15940 at the time of blending

For other fuel types or specialized applications, please contact your local Alfa Laval representative.

Benefits

- Easy to install, operate, and maintain
- Versatile design – the bowl can be configured for either purification or clarification, depending on the application
- High operational reliability – supports extended service life and helps prevent corrosion by effectively removing water from the oil



Design

The separator is of a solids-retaining type, built within a robust frame. The lower section houses a horizontal drive shaft equipped with a friction clutch and brake system, as well as a worm gear immersed in an oil bath for smooth operation. A vertical bowl spindle extends upward from this assembly.

Mounted on top of the spindle is the bowl, located within the upper section of the frame and enclosed by a hinged hood. This hood also supports the feed and discharge systems and can be easily opened to allow convenient access for maintenance and cleaning. The bowl itself features a solid-wall disc design, optimized for reliable separation performance.

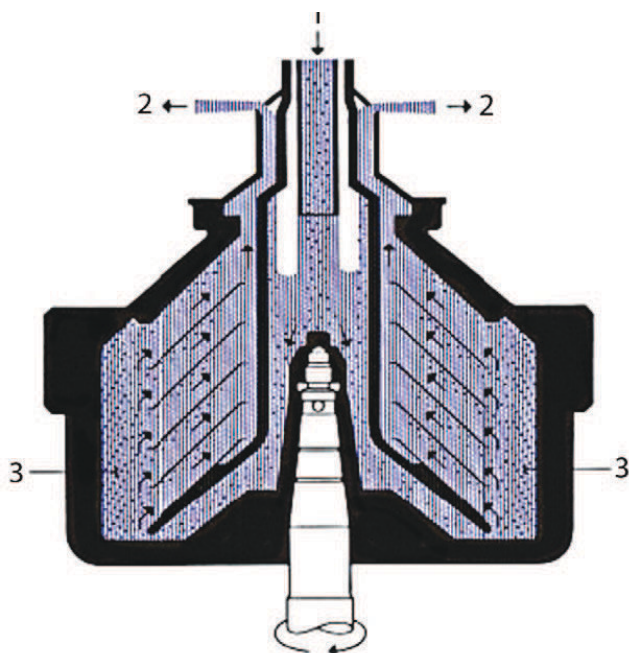
Scope of supply

- Dirty oil inlet device
- Clean oil outlet device with sight glass
- Water outlet spout
- Liquid seal water inlet
- Set of gravity discs
- Clarifier parts comprising discharge collar, top disc without neck, and bottom disc without holes
- Revolution indicator
- Set of resilient mountings
- Set of standard spare parts
- Built-in gear type pump (combined feed/discharge pump)

Options

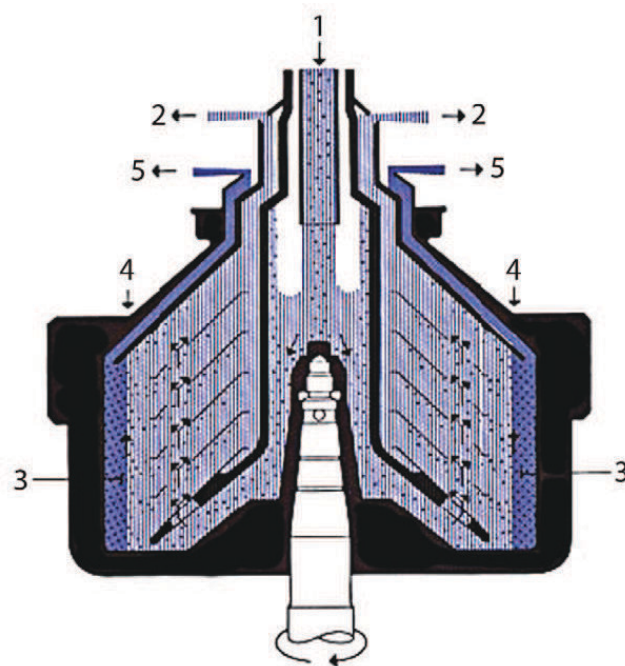
- Electric motor
- Starter
- Set of tools
- Set of recommended additional spares for long-time service
- Flexible connections
- Preheater
- Alarm device for broken liquid seal
- Documentation
- Service

Working principle



MAB bowl arranged as a **clarifier** for separating oils containing sludge and a very small quantity of water

1. Oil inlet
2. Clean oil outlet
3. Sludge



MAB bowl arranged as a **purifier** for separating oils containing sludge and an appreciable quantity of water

1. Oil inlet
2. Clean oil outlet
3. Sludge
4. Oil/water interface
5. Water outlet

Separation takes place in a solids-retaining bowl that can be arranged for either clarification or purification. In both cases, the contaminated oil is fed into the separator through the centre, and it is separated by centrifugal force into its various phases, the heaviest phase (sludge and water) being forced outwards to the periphery of the bowl. The accumulation of sludge is periodically removed from the bowl by hand.

Technical data

Shipping data	
Net weight	149 kg (3284 lbs)
Gross weight	184 kg (406 lbs)
Volume	0.79 m ³

Technical specifications	
Max throughput capacity	2.0 m ³ / h ¹
Sludge and water space	1.26 l
Feed temperature range	0 — 100 min./max. °C
Installed motor power	0.75 kW
Sound pressure	78 dB(A) ²

¹ Actual capacity depends on composition of feed and separation demands.

² According to ISO 53744 or 3746

Utilities consumption	
Electric power	0.5 — 1.8 kW (idling/at max. capacity) ¹

¹ Actual consumption depends on throughput capacity, feed characteristics

Dimensional drawing

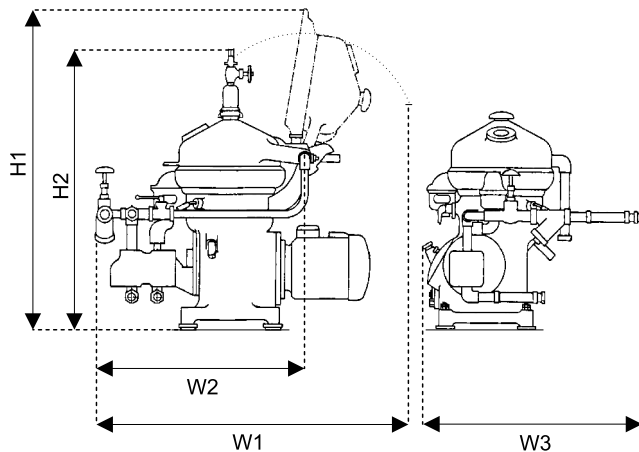


Figure 1. MAB 104 with pump and heater

MAB 104 with pump and heater

Dimensions

H1	1090 mm (3 ft 6.91 inches)
H2	935 mm (3 ft 0.81 inches)
W1	1135 mm (3 ft 8.69 inches)
W2	705 mm (2 ft 3.76 inches)
W3	752 mm (2 ft 5.61 inches)

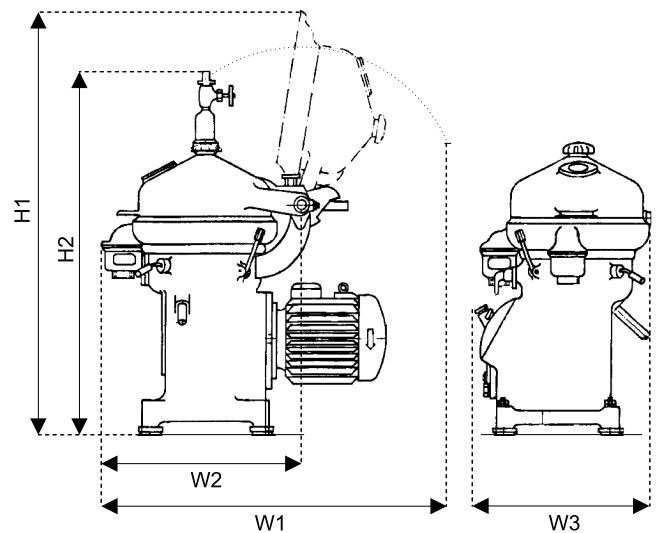


Figure 3. MAB 104 without pump

MAB 104 without pump

Dimensions

H1	1090 mm (3 ft 6.91 inches)
H2	935 mm (3 ft 0.81 inches)
W1	957 mm (3 ft 1.68 inches)
W2	474 mm (1 ft 6.66 inches)
W3	457 mm (1 ft 5.99 inches)

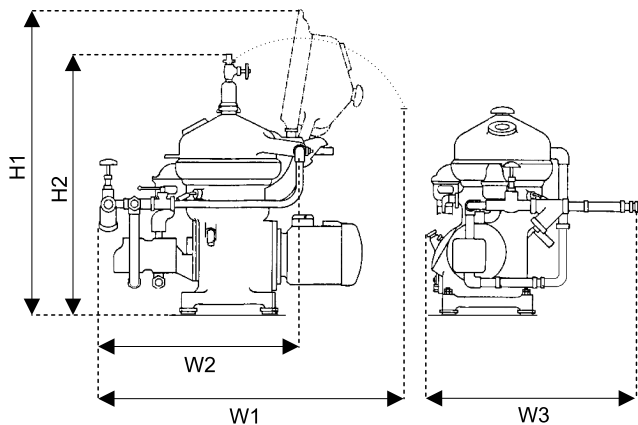


Figure 2. MAB 104 with pump without heater

MAB 104 with pump without heater

Dimensions

H1	1090 mm (3 ft 6.91 inches)
H2	935 mm (3 ft 0.81 inches)
W1	1135 mm (3 ft 8.69 inches)
W2	705 mm (2 ft 3.76 inches)
W3	752 mm (2 ft 5.61 inches)

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