



MIB 303 Separation System, Module

Installation Instructions

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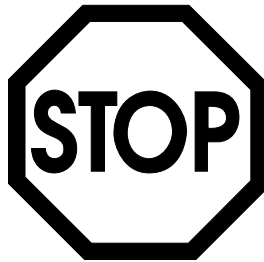
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Study instruction manuals and observe the warnings before installation, operation, service and maintenance.

Not following the instructions can result in serious accidents with fatal injuries.

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In order to make the information clear only foreseeable conditions have been considered. No warnings are given, therefore, for situations arising from unintended usage of the machine and its tools.

A summary of the safety information is found in the Safety chapter under divider 1.

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1 Scope

This book contains installation instructions, valid for the MIB 303 separation system module.

Most of the installation instructions are *specifications*, which are compulsory requirements.

The specifications are sometimes completed with non-compulsory *recommendations*, which, if followed, will improve the installation quality.

Additional installation information, such as drawings and component installation instructions, can be found in the following books of this system manual:

- “System Reference”,
contains drawings and technical data for the system.
- “Separator Manual”,
subsection “Technical Reference”
contains installation instructions and drawings specific for the separator.
- “Component Descriptions”,
contains technical data, installation instructions and drawings for ancillary system equipment.

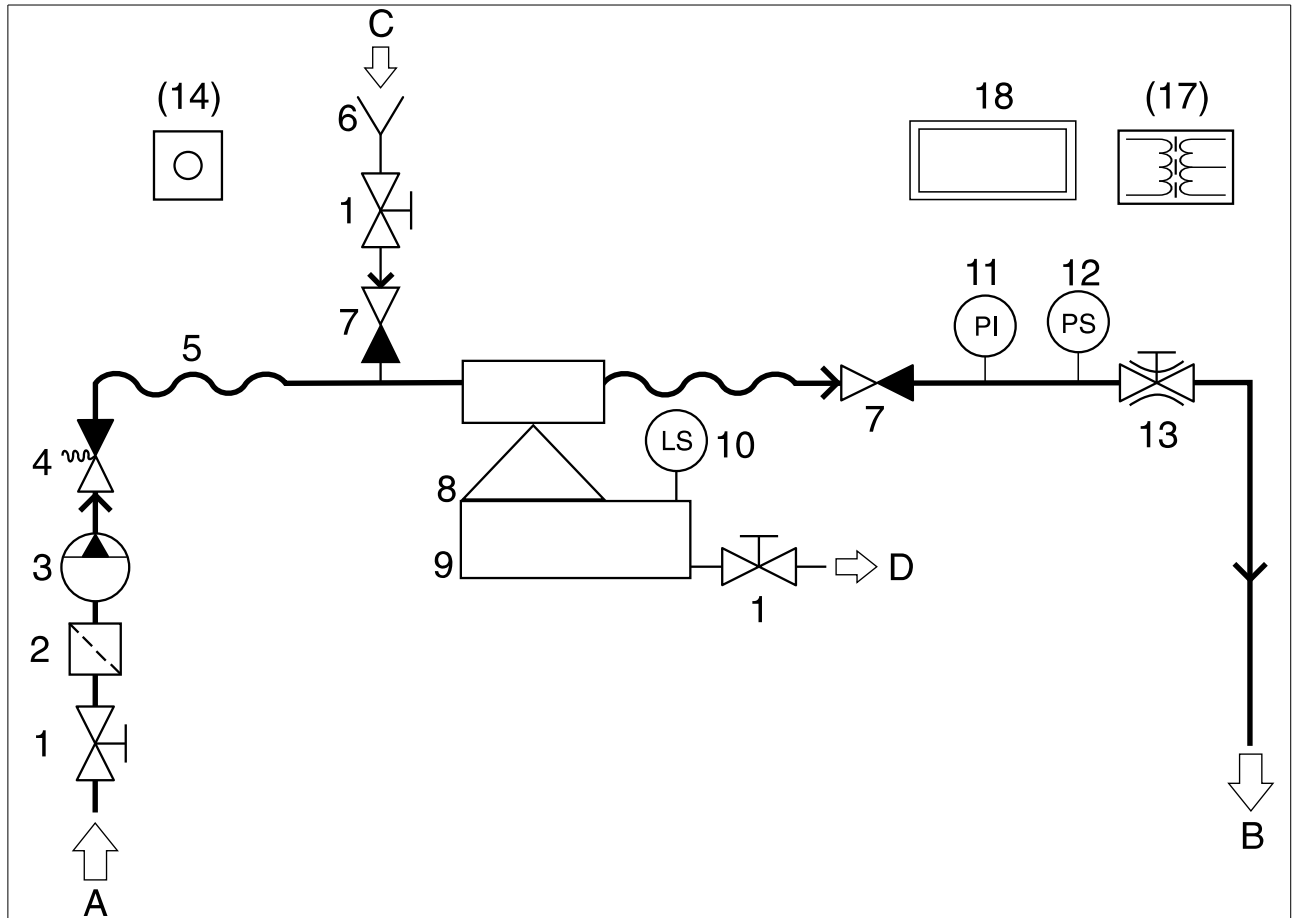
NOTE

Be sure to study all relevant documentation supplied and become familiar with the function and operation of the system and each particular unit.

NOTE

If safety instructions, installation specifications and additional installation information in this manual are not strictly followed, Alfa Laval can not be held responsible for any malfunction or injuries resulting.







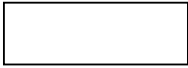





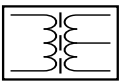
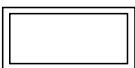
2 System Layout



- A Unprocessed oil inlet C Sealing water inlet (for purifier only)
 B Cleaned oil outlet D Water and bowl drain outlet – purifier
 Bowl drain outlet – clarifier

Numbers in brackets refer to units not included in the standard delivery.

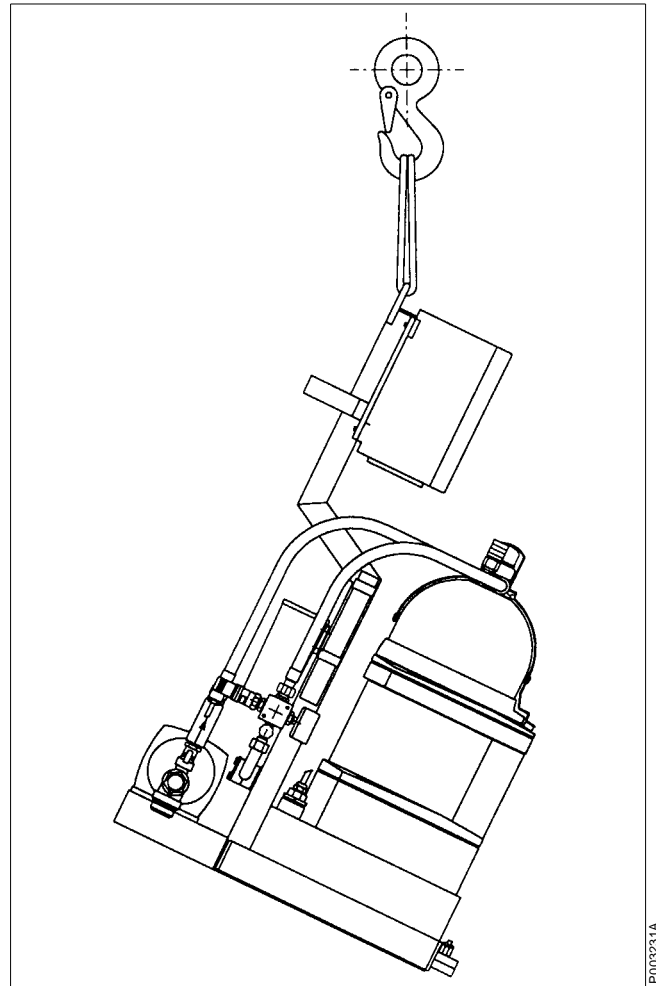
Item	Symbol	Designation	Function
		Process line, flow direction	
1		Manual shut-off valve	Opens/closes water/oil inlet/outlet.
2		Strainer	Protects the feed pump from solid particles.

Item	Symbol	Designation	Function
3		Pump	Feeds unprocessed oil to the separator.
4		Spring-loaded non-return valve	Ensures that the feed line is closed if pump stops
5		Flexible hose	Leads the oil and isolates for vibration between the separator and pipe lines.
6		Funnel	For manual addition of sealing water. (For purifier only.)
7		Non return valve	Prevents oil or water from flowing in the wrong direction.
8		Separator	Cleans the oil by removing water and solid particles.
9		Collecting tank	Collects water separated from the oil. Collects oil spill from broken water-seals and bowl drainage. Serves as a foundation for the separator.
10		Level switch	Gives signal which results in stop of oil feed and in alarm for high level in the tank.
11		Pressure gauge	Displays the pressure in the oil outlet.
12		Low pressure switch	Senses low pressure in the oil outlet.
13		Manual regulating valve	Regulates the back pressure in the oil outlet.
14		Emergency stop	Stops the separator and pump.
17		Insulation transformer	Protects the system from electrical peaks (For AC only).
18		Combined starter/control unit	Starts the separator and administrates alarms. Starts the oil feed to the separator.

3 Installation

3.1 Lifting instructions

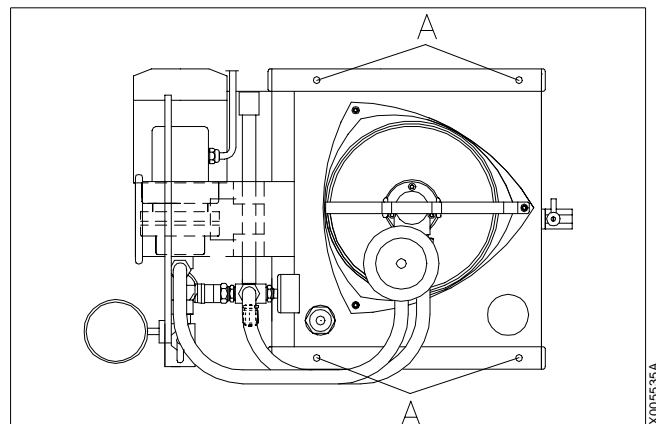
Lift the module as shown. Module weight, 65 kg.



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When the module is in place, secure to foundation using the four holes (A).

N.B. If installing with the optional drip tray, use the holes in the tray to secure the module.



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4 Oil System

4.1 Oil Feed Line

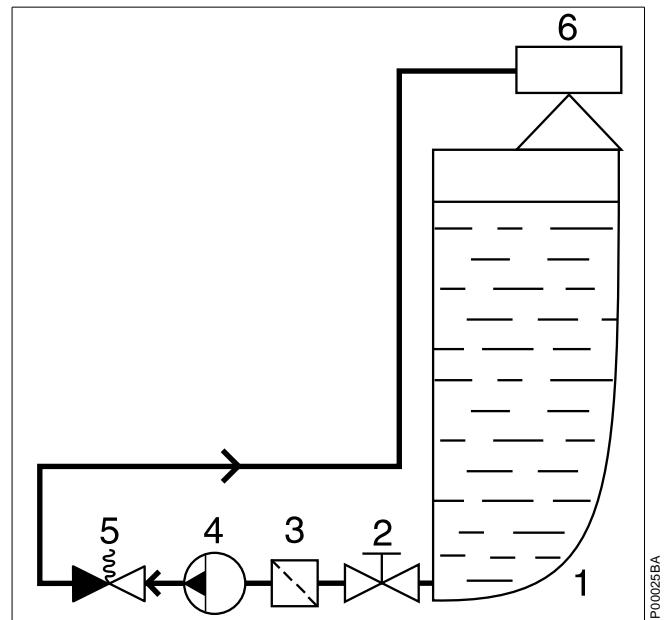
Specification

To ensure optimum performance, when placing the module consider the following rules:

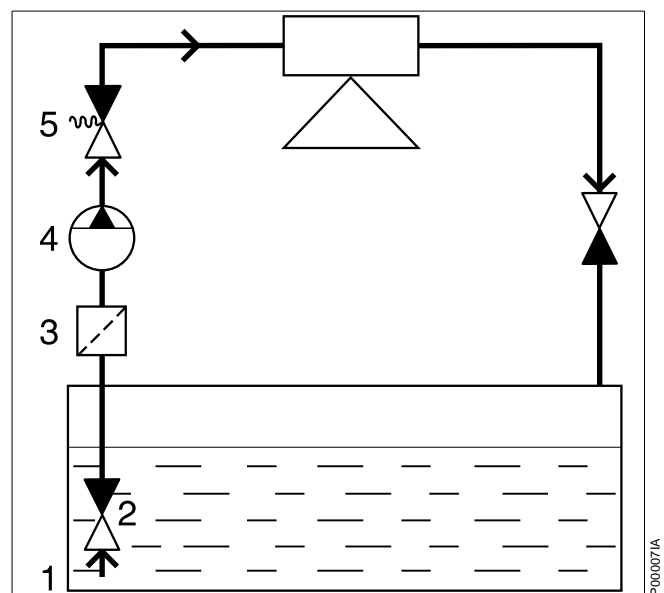
- The suction height must be as low as possible.
- Unnecessary pipe bends must be avoided to minimize suction losses.

Recommendation

- For purifying lube oil with viscosity over 40 cSt, a heater should be installed in the feed line.
- If the module is positioned above the oil tank, a foot valve must be installed at the suction end, close to the tank floor. If there is no pump suction, remove the non-return valve (5).



1 Settling tank 4 Pump
2 Shut-off valve 5 Spring loaded non-return valve
3 Strainer 6 Separator

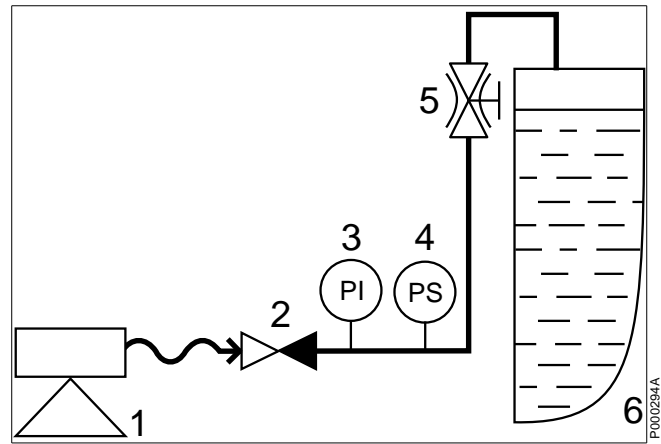


1 Tank floor 4 Oil feed pump
2 Foot valve 5 Spring loaded non-return valve
3 Strainer

4.2 Oil Outlet Line

Specification

The oil outlet line from the module must be connected to the service tank for fuel oil, or to the sump for lube oil.



- | | |
|--------------------|--------------------|
| 1 Separator | 4 Pressure switch |
| 2 Non-return valve | 5 Regulating valve |
| 3 Pressure gauge | 6 Service tank |

5 Electrical System

The following units are described in the “Component Descriptions”:

- Starter/Control Unit
- Outlet Piece with Pressure Switch
- Level Switch
- Pump

5.1 Ambient Temperature Limitation

Specification

Leading classification societies state in their regulations for engine-room equipment that the maximum ambient temperature permissible is +55 °C.

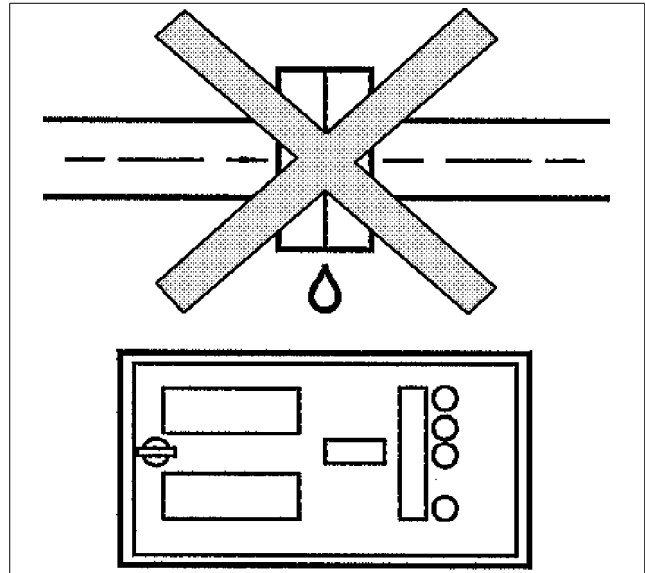
Do not locate electric and electronic components close to heat-generating equipment.

It is essential that electrical and electronic components have good ventilation to keep the temperature below +55 °C.

5.2 Mounting

Recommendation

- Do not install electrical or electronic equipment where it can be damaged by leaking liquids.

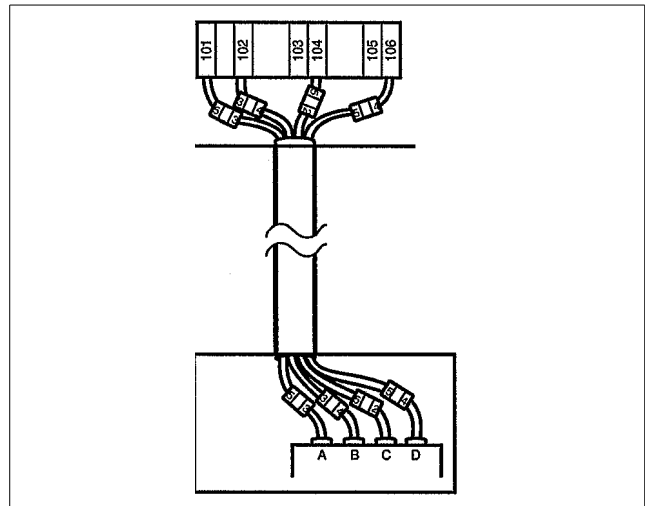


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5.3 Identification

Recommendation

Mark all cables clearly to simplify identification and fault finding.

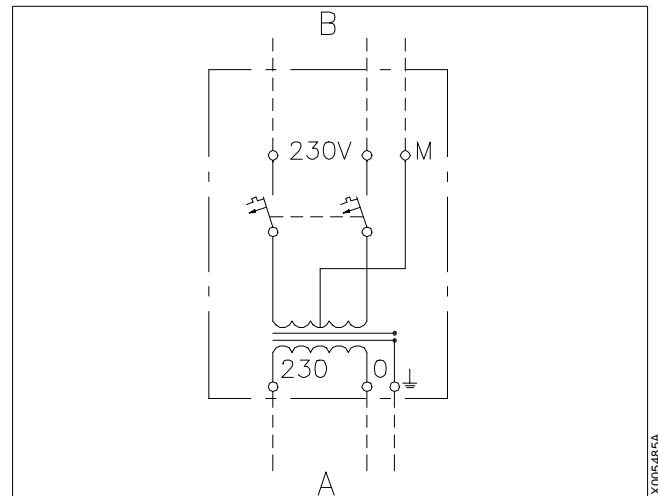


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5.4 Power Supply

Recommendation

In the case of particularly unstable current supply, the electronics integrated in the separator will switch off the supply. This can be avoided by using the specially selected optional insulation transformer.



Insulation transformer, explanatory diagram

A Primary phase

B Secondary phase

M Centre-tapped earth

6 Completion and Initial Start

6.1 Completion Check List

It is essential *before* starting up the separator system that all units are in good operating condition and that all pipelines and control equipment are properly connected to assure correct operation.

Use this check list as a guide for completing the system installation:

1. Check that transport seals, if any, are removed from all pipes.
2. Check that all pipes are flushed clean and pressure tested.
3. Start the motor. Let the separator run for about 15 seconds and then stop the motor.
Check for unusual sounds, obstructions, and misalignment by listening very carefully to the bowl rotation until it comes to a complete standstill.
4. Check the pump function and direction.

6.2 Initial Start up

Use this check list for initial system start up:

1. Check that there is oil in the feed oil tank.
2. Check power supply to the starter/control unit and check that the voltage is in accordance with data in “Component Descriptions”.
3. Start the separator system as described in “Operating Instructions”.

Do not forget to add sealing water (purifying only).

Start up step by step, checking that the machine and units function properly.

7 Protection and Storage

If the module is to be stored before installation, or to be shut down for a period of time exceeding 1 month, it must be protected from dust, dirt, water etc.

The module must be stored indoors at 5 – 55°C, if not delivered in water-resistant box for outdoor storage.

If there is a risk for condensation of water, the module must be protected by ventilation and heating above dew point.

The following protection products are recommended:

- Anti-rust oil with long lasting effective treatment for external surfaces. The oil should prevent corrosion attacks and give a waxy surface.
- Anti-rust oil which is thin and lubricating for inside protection. It should give a lubricating transparent oil film.
- Solvent, e.g. white spirit, to remove the anti-rust oil after the shut-down.

If the storage time exceeds 12 months, the equipment must be inspected every 6 months and, if necessary, the protection be renewed.

Valves, Pipes and Similar Equipment

- Components like valves need to be cleaned with solvent and treated with anti-rust oil.
- Water pipes should be drained and treated with anti-rust oil.
- Articles made of rubber or plastics (e.g. seals) must not be treated with anti-rust oil.

Pump

- Clean the pump housing outside from oil and grease with solvent.
- Protect the pump by filling it with non-corrosive lubricating oil.
- Apply anti-rust oil on the pump housing outside.

Module

- Clean unpainted steel parts with solvent and treat with anti-rust oil.
- If necessary, clean other equipment on the module with solvent.
- Treat the equipment with anti-rust oil by following the description above accordingly.
- Bolts, nuts and other steel components should be treated with anti-rust oil.

Rubber Parts

- Gaskets, O-rings and other rubber parts should not be stored for more than two years. After this time, they should be replaced.

Reassembly and Start up

- Clean away the anti-rust oil with white spirit.
- Remove any silica gel bags from all units.
- Follow all relevant instructions in the “Separator Manual”, the “Installation Instructions” and the “Component Descriptions” respectively.

