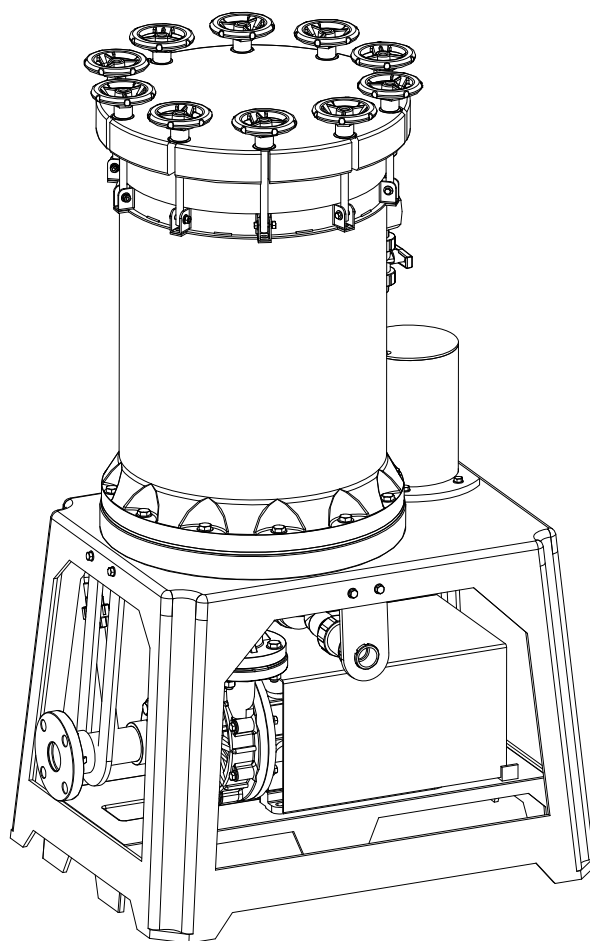




User Manual



Cartridge / Bag Filter Pump

AMF Series

www.assoma.com

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1. Foreword

Thank you for purchasing an ASSOMA AMF/AMF-B filter system. To ensure proper operation and maximum efficiency of your cartridge or bag filter, please read this instruction manual carefully. Failure to follow the recommended operating instructions outlined in this manual may result in serious personal injuries and/or equipment damage.

2. Installation and Piping

2.1 Inspection Prior to Installation

- (1) Check the filter (including the pump if applicable) exterior for any physical damage incurred during transportation.
- (2) If a pump is installed in your filter system, use a small screwdriver or other thin rod to turn the motor's cooling fan. The fan should rotate easily. If the fan is stuck, feels tight or if there are unusual sounds, the pump interior may be damaged.
- (3) If the filter system was damaged during transportation, contact your ASSOMA representative, authorized distributor or agent immediately to arrange for replacement parts and to allow for timely communication with the logistics company to determine liability.
- (4) Check the filter, pump, and motor nameplates (where applicable) to make sure the model, capacity, head, frequency, voltage, and power matches order specifications.

2.2 Installation

- (1) The filter system shall be installed on a level and sturdy surface with the weight of the filter-pump evenly distributed.
- (2) The pump coupled with the filter system is of back pull-out design. Please allow sufficient space behind the pump to facilitate servicing of the pump.
- (3) Do not disassemble the filter chamber from the base plate. If any adjustments needs to be made, please contact your ASSOMA representative, authorized distributor or agent.

Table 2.1 Tightening torque

Model	Cover fastener (N · m)	Position stud (N · m)
AMF-12F/24F/36F/54F AMF-B01/B02/B06	12.5 ± 0.5	16 ± 0.5

2.3 Suction and Discharge Piping

- (1) For best performance, minimize the suction head by using straight, short piping. Suction and discharge piping should be properly supported. The pump should not be used as a means of providing support to the piping. When designing supports, consider the effects of temperature changes on the supports to avoid thermal stress.
- (2) The suction piping should not be allowed to collect air. There should be a 0.01~0.02 upward slope towards the pump.
- (3) Suction piping and connectors should be hermetically sealed to prevent drawing in air during operation.
- (4) There should not be any elbows within 5D (5 times diameter) distance from the pump opening.
- (5) The discharge piping should be properly supported. The filter-pump should not be used for piping support.

Table 2.2 Tightening torque

Flange size	Bolt holes (n- ϕ)	Tightening torque (N · m)
25A	4- ϕ 19	10~12
32A	4- ϕ 19	10~12
40A	4- ϕ 19	10~12
50A	4- ϕ 19	10~12
65A	4- ϕ 19	12~17
80A	8- ϕ 19	12~17

2.4 AMF / AMF-B Specification

Table 2.2

(1 kgf/cm² = 1 bar)

Model	Cartridges / Bag	Capacity* (l/hr)	Power** (kW)	Inlet x Outlet*** (mm)	Max. Temp (°C)	Max. Pressure (kgf/cm ²)
AMF-1	10" x 1	450~900	0.065	15 x 15	70	0.8
AMF-2	20" x 1	600~1,200	0.065	15 x 15	70	0.8
AMF-4F	20" x 2	1,800~3,600	0.18	25 x 25	70	1.5
AMF-6F	20" x 3	2,700~5,400	0.25	25 x 25	70	1.5
AMF-12F	20" x 6	5,000~10,000	0.4	40 x 40	70	2
AMF-16F	20" x 8	6,000~12,000	0.75	40 x 40	70	3
AMF-24F	20" x 12	9,600~19,200	1.5	50 x 50	70	4
AMF-36F	20" x 18	12,000~24,000	2.2	50 x 50	70	4
AMF-54F	30" x 18	16,000~32,400	3.75	65 x 50	70	4
AMF-B01	#01 x 1	5,000~12,000	0.4~0.75	40 x 40	70	4
AMF-B02	#02 x 1	9,600~36,000	1.5~3.75	50 x 50	70	4
AMF-B04	#04 x 1	1,800~5,400	0.18~0.25	25 x 25	70	1.5
AMF-B06	#06 x 1	5,000~12,000	0.4~0.75	40 x 40	70	4

Note:

* The filtration capacity listed in Table 2.2 is for reference only. The actual capacity depends on the liquid property, the type of cartridge/bag and the resistance of the piping system.

** Different pump models can be sized to meet capacity requirements.

*** Suction and discharge piping size can be customized to match customer requirements.

3. Priming Instructions and Notes

3.1 Priming Procedure

Activity	Valve Status				
	Suction	Priming	Vent	Discharge	Drain
(1) Make sure piping is properly connected, top and bottom covers are securely	Open	Close	Close	Close	Close

Activity	Valve Status				
	Suction	Priming	Vent	Discharge	Drain
fastened and the motor wiring are connected correctly.					
(2) Use a small screwdriver to rotate the motor cooling fan to make sure it is not too tight or stuck.					
(3) Make sure suction valve(s) are open.					
(4) Open the priming valve and open the vent valve by $\frac{1}{3}$, and prime the pump using the priming cup until liquid level does not fall.	Open	Open	$\frac{1}{3}$ Open	Close	Close
(5) After priming, shut off the priming valve and start the pump (check the direction of rotation if starting for the first time). Keep the vent valve open until priming is complete.	Open	Close	$\frac{1}{3}$ Open	Close	Close
(6) Slowly open the discharge valve till the desired pressure or flow rate is achieved.	Open	Close	Close	Open to required duty	Close

Note: If the suction liquid level is higher than the pump, you may open both the priming valve and vent valve and allow the suction tank liquid to prime the pump until the liquid level reaches the priming cup (refer to Fig. 3.1 and Fig. 3.2).

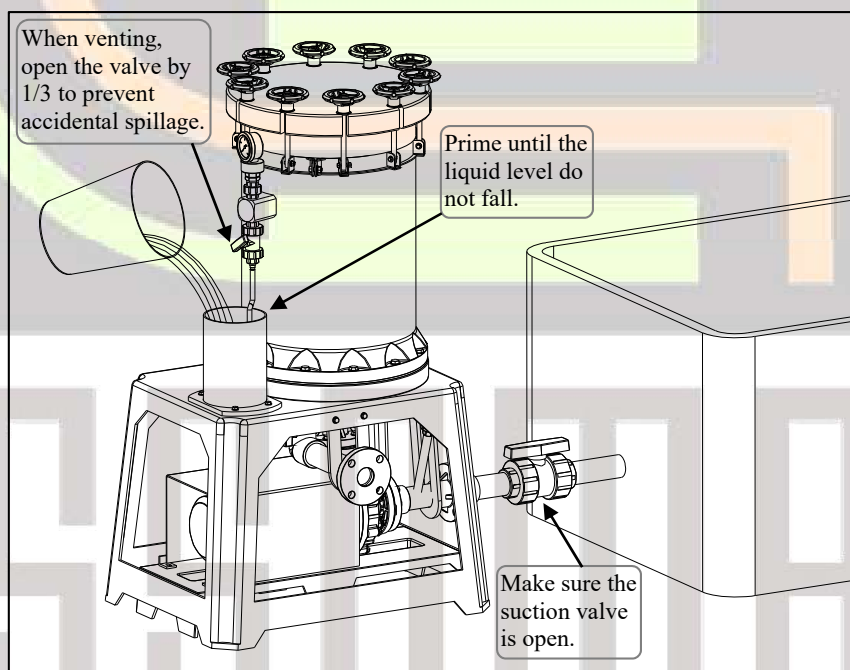


Fig. 3.1 Priming from the priming cup

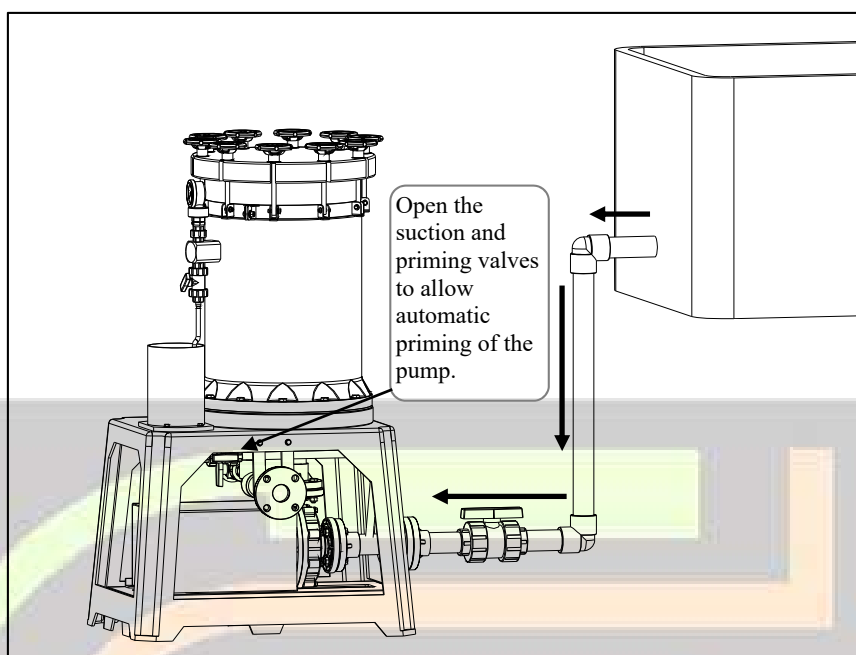


Fig. 3.2 Automatic priming

3.2 Notes During Operation

- (1) The pump is the heart of the filter-pump system and should be protected from dry-running, which is the biggest cause for pump failures.
- (2) If there is a power failure during operation, please cut the power to the filter-pump system.
- (3) For personnel safety, when venting the filter chamber of air, open the vent valve by only 1/3 to prevent the chemical from splashing out when the chamber is fully vented.

4. Inspection, Maintenance and Replacing Filter Media

4.1 Daily Inspection

Table 4.1

Visual	(1) Check all surfaces for signs of corrosion and oxidation. (2) Check the pump, filter, and piping for leaks.
Operation	(1) Make sure the pump is running smoothly, with no abnormal vibration and noise. (2) Make sure the suction tank liquid level is adequate and the pressure gauge and/or flow meter are functioning properly.

4.2 Changing the Filter Media

- (1) The filter media should be replaced before the flow capacity falls below the minimum filtration rate required to ensure production quality.
- (2) If the production quality is not dependent on the filtration rate, then the filter media should be replaced based on pressure drop in the system (refer to Table 4.2).

Table 4.2

(1 kgf/cm² = 1 bar)

Model	Pressure Drop, Δp (kgf/cm ²)
AMF-1/2	0.4
AMF-4F/6F	0.8

AMF-12F	1
AMF-16F	1.2
AMF-24F	1.8
AMF-36F/54F	2
AMF-B01/B02/B06	1.5
AMF-B04	0.8

Notes:

(1) Pressure Drop, Δp (kgf/cm²) = Filter Gauge Pressure – Discharge Pressure
= Filter Pressure Gauge – S.G. * Discharge Head (m)/10

(2) Table 4.2 shows the maximum pressure drop for changing the filter media. If the filter system is to be operated beyond the recommended pressure drop, please note that the flow rate will be very small and the filtration efficiency will drop. Make sure the flow rate must not drop below the minimum flow rate for the pump used.

(3) Above pressure drop recommendations is based on Meltblown filter cartridge of PP material for a chemical with a viscosity of 1 cP.

4.3 Procedure for Changing the Filter Media (Refer to Table 4.3, Fig. 4.1)

Table 4.3

Activity	Valve Status				
	Suction	Priming	Vent	Discharge	Drain
(1) Shut off the power					
(2) Open the vent and drain valves to drain the chemical from the filter chamber.					
(3) Loosed the swivel studs and remove the top cover.					
(4) Cartridge: Remove the cartridge fasteners to remove the filter cartridges. Bag: Press down the retainer and rotate quarter turn until the cut edge lines up with the alignment plates. Remove the retainer and the filter bag.	Close	Close	1/3 Open	Close ^{Note}	Open
(5) Rinse the filter chamber interior.					
(6) Replace with new filter media Cartridge: Replace and secure the cartridge fasteners Bag: Replace the retainer and lock it into place.	Close	Close	1/3 Open	Close ^{Note}	Open
(7) Replace the top cover and fasten the swivel studs. Close the drain and vent valves.	Open	Close	Close	Close	Close

Activity	Valve Status				
	Suction	Priming	Vent	Discharge	Drain
(8) Rinse the filter exterior to remove chemicals from the metallic parts. Take special care not to wet the electrical parts.					

Note: When draining the system, the discharge valve should be closed to prevent siphoning effect.

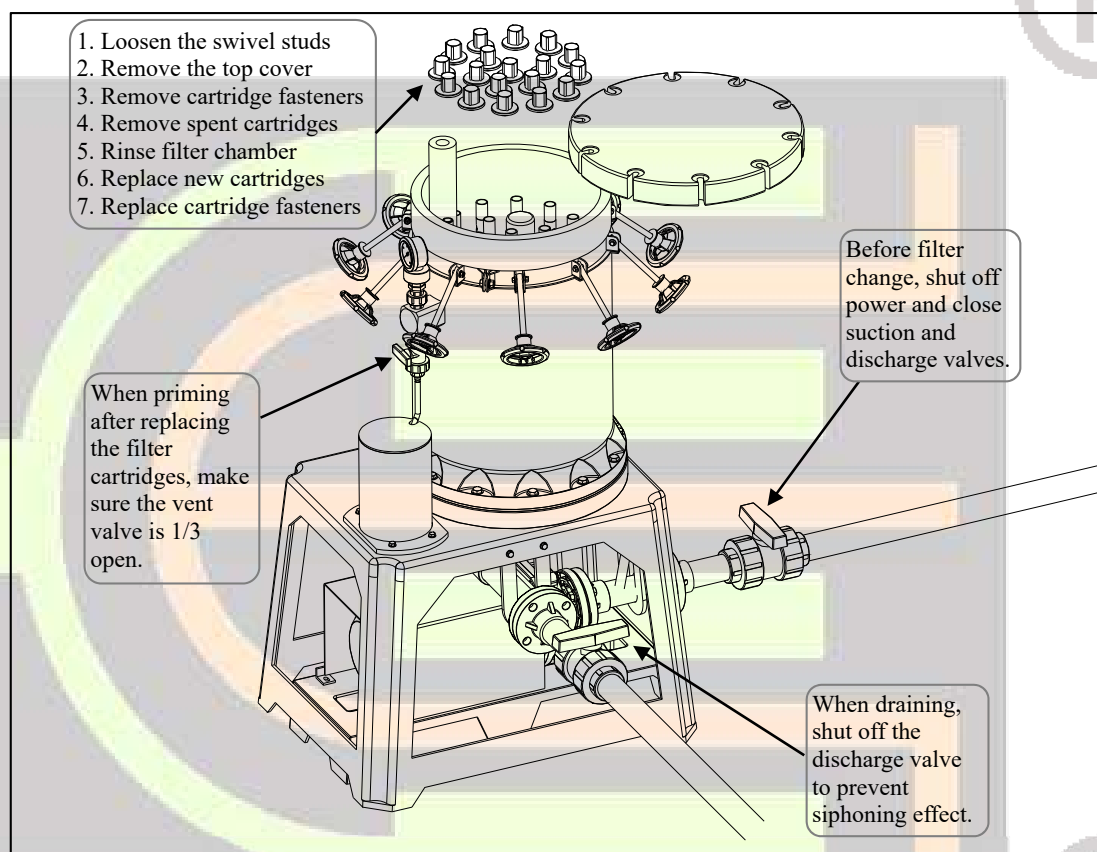


Fig. 4.1

5. Troubleshooting

Symptom	Possible Reasons	Remedy
No pressure readings but flow seems normal	(1) Pressure gauge is damaged (2) Improper sealing between pressure gauge and gauge seat	(1) Replace pressure gauge (2) Remove pressure gauge and reapply sealing tape
High pressure with little or no flow	(1) Discharge valve is closed or opened insufficiently (2) Filter media clogged	(1) Open discharge valve to desired flow rate (2) Replace filter media
Low pressure and low flow rate	(1) Wrong direction of rotation of the motor (2) Incorrect RPM or pole (3) Suction pipe blocked or air in suction piping	(1) Check and correct motor direction (2) Replace motor (3) Check and clear suction piping
No flow and no pressure	Damaged pump	Refer to pump user manual

Particles present after filtration	(1)Cartridge: Loose cartridge fastener (2)Cartridge: Deformed cartridge (3)Bag: Retainer not secured	(1)Retighten cartridge fasteners (2)Replace filter cartridges (3)Reposition retainer
Filter chamber is leaking	(1)Top or bottom cover not securely fastened (2)Top or bottom packing seal not installed properly (3)Packing seal corroded	(1)Retighten top and bottom covers (2)Check packing seal (3)Replace packing seal
Leaking pump	Refer to pump user manual	Refer to pump user manual
Pump abnormal vibration	Refer to pump user manual	Refer to pump user manual
Motor overload	Refer to pump user manual	Refer to pump user manual

6. Repair and Warranty

When a problem arises, please use this manual for initial troubleshooting. If the issue cannot be found or if the filter system is suspected to be damaged, contact your ASSOMA representative, authorized distributor or agent for further instructions. Have the following information ready when you make the call:

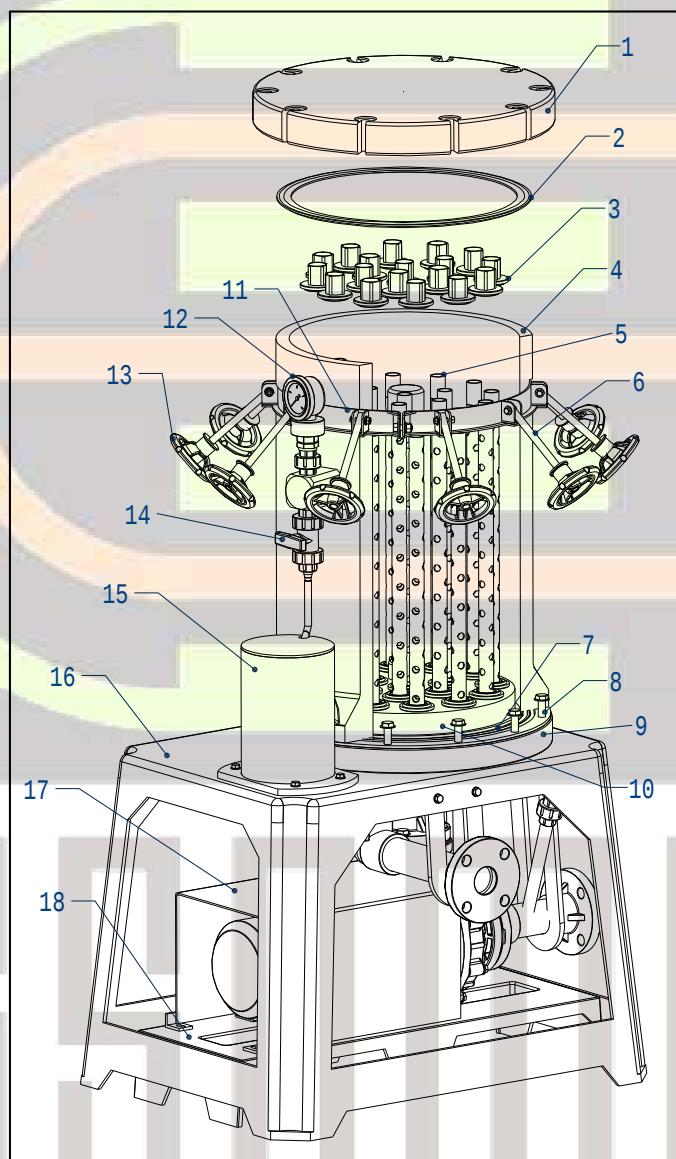
- (1)Filter-pump model and serial number
- (2)Normal operation condition
- (3)Operating condition prior to issue

Standard warranty period for the filter-pump is 12 months from the delivery date as stated on the warranty card. Replacement of parts designed for wear, such as packing seals are not covered under the warranty. Warranty covers failure due to manufacturing or part defects under normal operation and under the intended operating condition as stated on the order/design specification.

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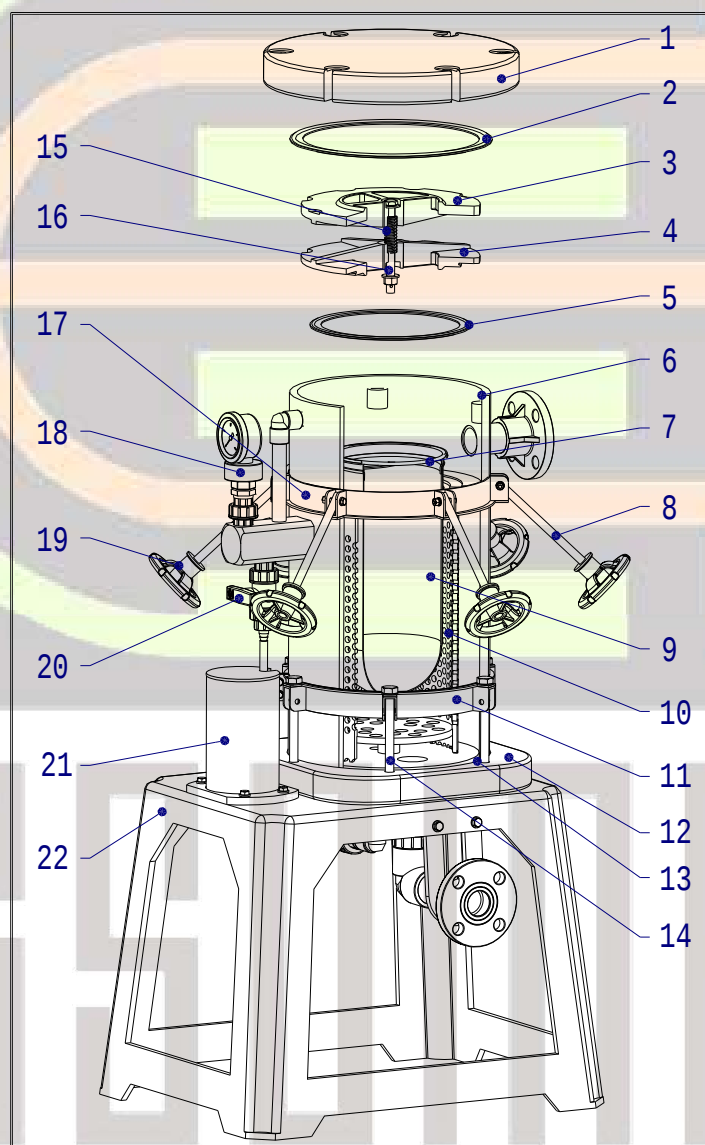
Annex A. AMF Exploded View and Parts List

No.	Part Name	No.	Part Name
1	Top cover	10	Manifold
2	Cover packing	11	Upper bracket
3	Cartridge fastener	12	Pressure gauge ass'y
4	Filter chamber	13	Cover fastener
5	Cartridge core pipe	14	Vent valve
6	Swivel stud	15	Priming cup
7	O-Ring	16	Main frame
8	Position stud	17	Motor guard
9	Base plate	18	Pump skid



Annex B. AMF-B Exploded View and Parts List

No.	Part Name	No.	Part Name
1	Top cover	12	Base plate
2	Cover packing	13	Base plate packing
3	Retainer	14	Position stud
4	Retainer	15	Spring
5	Packing	16	Bolt
6	Filter chamber	17	Upper bracket
7	O-Ring	18	Pressure gauge ass'y
8	Swivel stud	19	Cover fastener
9	Filter bag	20	Vent valve
10	Basket	21	Priming cup
11	Lower bracket	22	Main frame



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