



MTC HC-300 Instruction, Operating, & Maintenance Manual

HIGH CAPACITY MOBILE FUEL POLISHING SYSTEM

REV0303HC300010320

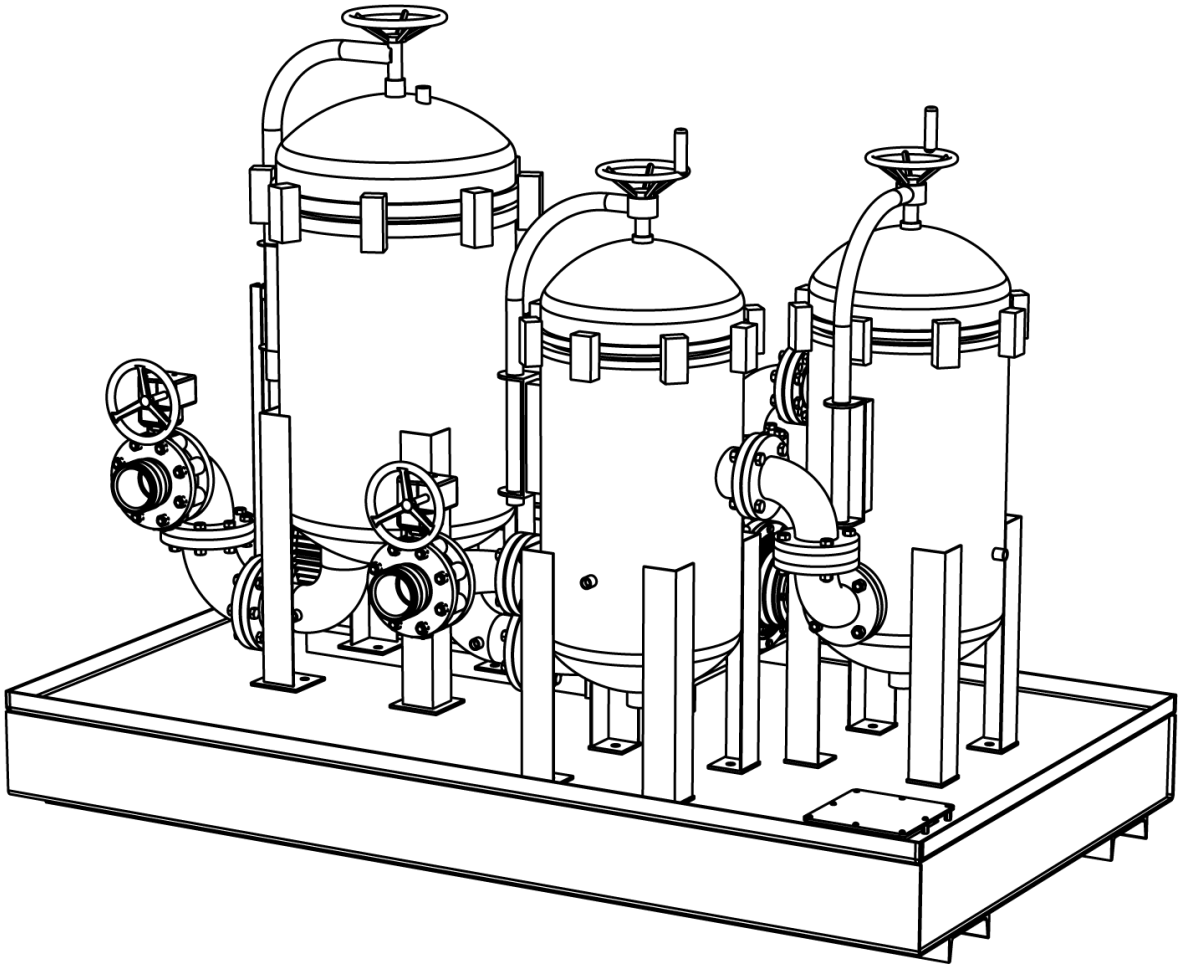


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General Overview

MTC HC-300 Specifications

| | |
|----------------------------------|--|
| Nominal Flow Rate..... | 10 - 300 GPM/18,000 GPH (1,135.6 LPM/68,137.4 LPH) |
| Primary Filter..... | 4-Bag Filter Vessel, Liner Baskets for use with 1-800µ Water Block |
| Secondary Filters..... | Dual Cartridge Filter Vessels, 2-30µ Particulate, 5, 10, 15µ Water Block, or 10, 30µ Micro-glass |
| Fuel Conditioner..... | Inline 3" Magnetic Fuel Conditioner |
| Plumbing..... | Black Iron |
| Inlet Port..... | 4" Cam & Groove In |
| Outlet Port..... | 4" Cam & Groove Out |
| Operating Temperature..... | 41 - 104°F (5 - 40°C) |
| Controller..... | UL508A System Controller |
| Electrical..... | 480V/60Hz/30A/3Ph or 480V/50Hz/30A/3Ph* |
| Pump/Motor..... | 15 HP Sliding Vane Pump |
| Suction Capability (Primed)..... | 15ft. vertical lift or 100ft. horizontal run (4" line, primed) |
| Maximum Fluid Viscosity..... | 5 cSt |
| Hoses..... | 4" Flexible Hydraulic Hoses |
| Skid..... | Powder Coated Carbon Steel, 200 Spill Containment |
| Outline Dimensions..... | ≈ 82" x 54" x 96" (208 x 137 x 244 cm) (H x W x L) |
| Weight..... | ≈ 5,500 lbs. (2495 kg) |

*50 Hz configuration decreases nominal flow rate from 300 GPM (1135.6 LPM) to 240 GPM (908.5 LPM)

!WARNING! This system is not meant for use with gasoline or any other flammable liquids having a flash point less than 100°F (37.8° C). Use with gasoline or any flammable liquids at a temperature exceeding their flash point presents an immediate explosion and fire hazard.

System Components

Control and Safety Devices

- System Controller
 - UL 508A Industrial Control Panel (Electrical sub enclosure)
 - Pump Control Selector Switch (On/Remote/Off)
 - System Power Indicator Light
 - Pump Running Indicator Light
 - Alarm Indicator Lights
 - Alarm Reset Push Button
 - Emergency Stop Push Button
- Vacuum & Pressure Gauges
- Vacuum & Pressure Switches
- Filter Differential Vacuum & Pressure Gauges
- Filter Differential Pressure Switches
- Inlet and Outlet Shutoff Butterfly Valves
- Remote Pendant Switch
- VFD Motor Control Device

Pump/Motor

- 15 HP Sliding Vane Pump
- Internal Pressure Relief

Primary Filter

- Single, Multi-Round Bag Filter Vessel
- Bag filter elements (purchased separately)
- Drain Valve

Fuel Conditioner

- Inline Magnetic Fuel Conditioner

Secondary Filters

- Dual, Fine Filtration Vessels
- Cartridge filter elements (purchased separately)
- Drain Valve

Plumbing

- Carbon Steel

System Operation

!WARNING! The whole system must be properly grounded for operator safety.

Note: It is recommended that only qualified, experienced personnel, familiar with this equipment, who have read and understood all the instructions in this manual should operate and maintain the system.

Setup Procedures

To prepare for fuel polishing, the user must attach both system hoses to the system. The Intake/Suction and Discharge Hoses are both black and opaque in appearance and are equipped with quick disconnect cam & groove couplings.

1. Attach the Cam & Groove coupling socket of the intake/suction hose to the Cam & Groove coupling plug of the Primary Filter Inlet Port.
2. We highly recommend attaching a straight wand or pipe (cut at an angle) to the end of the Suction Hose in order to reach the lowest part of the tank bottom.
3. The straight wand or pipe should be no less than the inner diameter of the Suction Hose.

Note: Avoid restricting the flow on the suction side of the system. If it is necessary to use a smaller ID suction hose, a smaller ID “stinger”, or if the length of the suction hose is increased, reduce pump speed with the Variable Frequency Drive so that the vacuum gauge remains in the green color band. The system’s PLC controller will halt system operation automatically if the suction vacuum exceeds safe limits.

Note: To adjust vacuum settings of MTC HC-300, please contact AXI International.

4. Attach the Cam & Groove coupling socket of the return hose to the Cam & Groove coupling plug of the Skid Discharge Port.
5. Check all connections for integrity.

Pump Operation

To startup the system, you must first apply control power to unit. Place the control breakers for the System Controller in the “ON” position.

Remote Mode:

Place the Selector Switch in the “REMOTE” position. To activate the pump simply press the Remote Pendant Switch. The pump will now run until either the Remote Pendant Switch is pressed again, the Selector Switch is placed in the “OFF” position, or a system alarm has been tripped.

Local Run Mode:

Place the Selector Switch in the “ON” position. The pump will now run until either the Select Switch is placed in the “OFF” position or a system alarm has been tripped.

Note: See the Controller – Variable Frequency Controller (VFD) section for information on adjusting the system’s flow rate with the VFD Controller.

Phase 1

AXI recommends 3 phases to successfully polish a fuel tank. This will ensure all contaminants are removed and the fuel is in optimal condition.

The goal of Phase One is to remove any free water and sludge from the bottom of the tank without mixing the water into an emulsified state within the fuel. The Pump will start pumping as long as the system is primed (See Priming the System section) and the suction lift is not excessive. The flow of the fuel can be observed in the see-through suction hose. Watch for a steady flow of fuel into the container.

1. Verify that drain valves are closed and the system is set up in a stable and safe position.
2. Install a large micron (200 μ or larger) bag filter in the Bag Filter Vessel and close vessel securely.

Note: Primary filter should always have some type of primary filter bag in place during operation to extend life of the pump vanes.

3. Ensure no fine filters are in either of the last two filter vessels.
4. Open the Inlet Ball Valve.
5. Open the Discharge Ball Valve.
6. Insert Suction Hose into the tank and secure.
7. Insert Discharge Hose into separate discharge waster container and ensure that the hose is secured and will not vibrate out of the container when the system is operating.
8. Verify that the "MANUAL/OFF" switch is in the "OFF" position.
9. Connect the system to an appropriate power source.
10. Verify that the Variable Frequency Drive is set at 6-20 hertz (30-100 GPM), so that the pump motor will start at lower initial speed.
 - a. On the VFD Control pad, press Enter. The Screen will begin to Blink.
 - b. Use the UP and DOWN arrows to adjust the output frequency.
11. Switch the Smart Filtration Controller circuit breakers to on - the "System Power" light illuminates.
12. Place the Selector Switch into the "ON" position to begin pumping.
13. Observe System Priming.
14. Check for leaks or other abnormalities.
15. Immediately switch off the pump once the fluid begins to fill the discharge container.
16. Inspect the discharged fluid and resume pumping until the bulk water and sludge have been removed from the tank bottom and only fuel is primarily discharged from the return hose.
17. Switch off the Pump and drain all water and debris from the hose and the Primary Filter (via the drain valve) into an appropriate waste bucket or container.
18. If at any time, an operation fails to perform as expected, contact AXI International immediately.

Phase 2

The goal of Phase Two is to remove any additional free water, sludge, and large contaminants within the tank. This phase will further clean the fuel and should be a precursor to using the more expensive fine filters. It should be noted that meeting required cleanliness codes is typically not possible with Phase One and Two alone. Phase Two is simply used to extend the life of the Secondary Filter's fine filter cartridges by removing the worst of the contaminants first.

1. Remove the Discharge Hose from the waste container and place it into the tank.
2. If possible, ensure the discharge hose is as far away from the suction hose as possible. In some cases, it is recommended to remove the sending unit cover to gain sufficient access to the tank.

Note: In many cases, both hoses may have to be inserted through the same tank opening.

1. While polishing, it is good practice to monitor the Vacuum Gauges to know when to service a clogged Primary Filter element in order to avoid flow restriction (see Maintenance – Servicing the Primary Filter). Should the Vacuum Switch detect a reading above the pre-established set point, a High Vacuum alarm will be triggered indicating that the Primary Filter bag needs to be changed.
3. The system should be kept running until clean fuel samples can be drained from the Primary Filter. Once this is achieved, switch off the pump to prepare for the final polishing phase.

Phase 3

Phase Three is the most important phase in meeting specific cleanliness codes. Unlike the Primary Filter and Water Separator, the Secondary Filter's fine filter cartridges typically uses an absolute rated media. Absolute filters have a very high efficiency and will ensure that fuel leaving the system is clean to specification.

1. Ensure to install cartridge filters in both Secondary Filter Vessels.

2. After verifying that both hoses are properly placed in the fuel tank and that the ball valves on the system are in the correct position, start the pump and monitor the Pressure Gauges in addition to the Vacuum Gauges to also know when the Secondary Filters need servicing (see Maintenance – Servicing the Secondary Filter). Should the Pressure Switches detect a reading above the pre-established set point, a High Pressure alarm will be triggered indicating that the Secondary Filter cartridge needs to be changed.

Draining and Storing the System

1. Set pump motor to operate at a low speed (6-15 Hz).
2. Remove Suction Hose from tank allowing air to be drawn into the system.
3. Continue at low pump speed until the system is purged of fuel as indicated by an audible change in the pump's operation.
4. Close the manual butterfly valve on the outlet side of the system to around 40-50% to ensure significant back pressure on the vane pump for 60 seconds.

!WARNING! DO NOT operate the vane pump dry for longer than 60 seconds to avoid significant mechanical damage.

5. Terminate pump operation.
6. Close both the inlet and outlet butterfly valves on the MTC HC-300 to prevent any lingering fuel from the hydraulic hose from entering the system.
7. Disconnect all hoses and contain any fuel remaining in hoses
8. Cap hoses and inlet/outlet Cam & Groove coupling plugs as appropriate

Alarms

Alarms featured on the system include:

- High Vacuum (system shutdown, alarm indication)
 - Activated when the Vacuum Switch, placed on the suction side of the pump, detects a reading above the pre-established set point. The system will go into an alarm state and the pump will not be allowed to run until the Primary Filter has been serviced (see Maintenance – Servicing the Primary Filter) and the alarm has been cleared via the Alarm Reset Button on the system controller.
- High Pressure (system shutdown, alarm indication)
 - Activated when the Pressure Switch, placed on the discharge side of the pump, detects a reading above the pre-established set point. The system will go into an alarm state and the pump will not be allowed to run until the Secondary Filters have been serviced (see Maintenance – Servicing the Secondary Filters) and the alarm has been cleared via the Alarm Reset Button on the system controller.
- High Pressure Differential (system shutdown, alarm indication)
 - Activated when the Differential Switches placed across each Secondary Filters to detect a differential vacuum detects a reading above the pre-established set point. The system will go into an alarm state and the pump will not be allowed to run until the Secondary Filters have been serviced (see Maintenance – Servicing the Secondary Filters) and the alarm has been cleared via the Alarm Reset Button on the system controller.
- VFD Fault (system shutdown, alarm indication)
 - Activated during an internal drive fault. The system will go into an alarm state and the pump will not be allowed to be run until the alarm is addressed and cleared via the Alarm Reset Button on the system controller.
- VFD Low Frequency Setpoint (system shutdown, alarm indication)
 - Activated when the VFD Output frequency is set under 6Hz. The system will go into an alarm state and the pump will not be allowed to be run until the alarm is addressed and cleared via the Alarm Reset Button on the system controller.



Emergency Stop

Note: In case of an emergency, the connection to the pumps can be broken by pressing the red “EMERGENCY STOP” button on the System Controller

To release “EMERGENCY STOP” button, turn the red knob in the direction indicated by the arrows on the mushroom button, and push the “Alarm Reset” Push Button on the System Controller



Primary Inspection

Upon arrival, the system and accessories must be visually inspected before installation. Improper handling during shipping may cause physical or electrical problems. Immediately report or note any damages (also concealed ones) to the shipper.

Checklist

- Check the entire system for damage that could indicate internal mechanical or electrical problems.
- Check pump/motor hardware and all plumbing connections for tightness.
- Check all electrical terminals and connections for tightness.

Controller

System Controller

The System Controller is used to both operate the system and indicate/reset system alarms should they be triggered.

Pump Control Selector Switch (On/Remote/Off)

Turns the system from “ON” operation, “Remote”, or “Off”

Pump Running Indicator Light

Indicated the system pump is running

System Power Indicator Light

Indicates the system has power

Alarm Indicator Lights

Indicates the labeled alarm has been tripped

Alarm Reset Push Button

Resets the system alarm(s) once the alarm state(s) have been cleared

Emergency Stop Push Button

Instantly breaks connect to the pump and shuts down the system

Variable Frequency Controller (VFD)

In normal operation the Variable Frequency Controller is used ONLY to change the speed of the pump. When the Smart Filtration Controller is set to run the pump will turn on and accelerate to the set VFD speed.

Output Frequency

The MTC HC-300 system has a Sliding Vane Pump that operates at 300 GPM when connected to a 480 VAC/60 Hz circuit. Manipulating the VFD to the following ratio can yield a range of desired flow rates.

Flow Rate as a function of Frequency:

$$\text{Flow Rate (GPM)} = 5 \times \text{Frequency (Hz)}$$

$$\text{Example: } 30 \text{ (GPM)} = 5 \times 6 \text{ (Hz)}$$

Speed Indication LCD Screen

The number shown on the Variable Frequency Controller display is the frequency of the current that is being sent to the pump motor. 60 Hz for example is the rated speed of the motor. If the Variable Frequency Controller display indicates 30, this means that the pump is turning at ½ of the rated speed.

ENTER Button

Upon Startup, and if no alarms are present, the LCD Screen will show a “Read Only” type of indicator. By pressing ENTER, the system allows for output frequency modification.

UP and DOWN Arrows

Toggles the pump speed between 6 Hz to 60 Hz

Note: All other VFD Control Pad Functions (Run, Stop, Forward, Reverse) are disabled.

Priming the System

Note: The system is equipped with a positive displacement vane pump. Dry run time should be kept to a minimum to avoid premature vane wear and unnecessary replacement. The system should never be started without the hoses attached or with valves in the closed position. Failure to do so may damage the bypass valve and/or pump.

Priming Procedure

The pump is capable of pulling a prime under moderate vacuum conditions, less than 10" HG, without first priming the equipment. If the pump has difficulty priming and runs for more than 60 seconds without starting to prime it is advised to wet the pump head by pouring fluid into the primary filter vessel to flood the pump inlet.

The system is equipped with a vacuum gauge on the input side of the pump as well as the inlet of the MTC HC-300. Both gauges should read 0 to 15" HG vacuum maximum under normal conditions. Vacuum gauge readings reaching 16" HG vacuum indicate excessive debris in the primary filter/water separator (or a flow restriction or too high suction height and therefore a pressure drop in the suction line) and will result in pump shutdown and activate the high vacuum alarm.

Note: 16" HG vacuum differential across System Inlet and Pump Vacuum = Clogged primary filter

The System's Outlet pressure gauge should show less than 22 PSI under normal conditions (.433 PSI = 1' vertical head pressure). Pressure gauge readings in excess of 22 PSI pressure indicate the need for fuel line restrictions and/or friction.

The pump pressure relief valve has a 51-75 PSI set point. System pressure in excess of 35-40 PSI will cause the pressure relief valve to open and vent fuel back to the fuel transfer pump inlet side.

Commissioning/Initial Start-Up

Initial Test Procedures

With breakers and power turned on, and pump running, check all alarms for proper operation:

- **High Vacuum Alarm** - Slowly, partially close inlet butterfly valve. At 16" HG, the pump should turn off and the "High Vacuum" alarm should be indicated on the System Controller. Open the inlet butterfly valve again. Reset the alarm by pushing the "Alarm Reset" on the System Controller.
- **High Pressure Alarm** - Slowly, partially close outlet butterfly valve. At 22 PSI, the pump should turn off (after a delay of about 1 second) and the "High Pressure" alarm should be indicated on the System Controller. Open the butterfly ball valve again. Reset the alarm by pushing the "Alarm Reset" on the System Controller.
- **High Pressure Differential Alarm** – Detach the wiring of one of the Pressure Switches on outlet side of either Secondary Filter, the pump should turn off and the "High Pressure Differential" alarm should be indicated on the System Controller. Reattach the Pressure Switch and reset the alarm by pushing the "Alarm Reset" on the System Controller.
- **VFD Fault** – Open system controller. With a flat head screwdriver, remove the yellow wire connected to terminal 11. The pump should turn off and the "VFD Fault" alarm should be indicated on the System Controller. Reattach the wire to terminal 11 and reset the alarm by pushing the "Alarm Reset" on the System Controller.
- **VFD Low Frequency Setpoint** – On the VFD Control pad, press Enter. The Screen will begin to Blink. Use the UP and DOWN arrows to adjust the output frequency to below 6 Hz. The pump should turn off and the "VFD Fault" alarm should be indicated on the System Controller. Readjust the frequency to be above 6 Hz and reset the alarm by pushing the "Alarm Reset" on the System Controller.

Note: If any of the above described alarm test procedures fail or if any alarm trip value deviates, immediately contact AXI International.

Testing the VFD:

While the pump is running, incrementally toggle the VFD speeds from 6Hz to 60Hz via the Variable Frequency Controller's UP and DOWN arrows to ensure proper functionality of the VFD and system pump/motor assembly.

Maintenance

The system should be visually inspected and tested a minimum of every six (6) months according to the procedure below during light duty cycles. Monthly inspections are recommended for systems that are being used in excess of an average of eight (8) hours a day and five (5) days a week.

Preventative Maintenance

Prior to performing the maintenance procedure ensure that:

1. All sources of power are isolated from the unit

Note: Proceed only after this has been verified and properly tagged.

2. Drain visible water and sediment from the primary filter (see Servicing the Water Separator).
3. Check system and all parts for corrosion and rust.
4. Check bolts on the pump/motor hardware for tightness, as pump/motor hardware can loosen after normal operation for extended durations of time, due to vibration.
5. Check all plumbing joints for leaks, tighten fittings and joints as necessary.
6. Check pump for leaks and worn vanes. Keep the pump lubricated and pour oil into pump head for storage.
7. Inspect all filter vessel and elements.

Note: We recommend replacing both the suction and discharge hoses every two years. Heavy use, visual deterioration, damage or poor condition and excessive wear can require an even earlier change.

Servicing the Primary Filter

A vacuum differential of 15" HG shown across the System Inlet Gauge and the Pump Vacuum Gauge indicates that the primary bag filter elements should be replaced. (i.e. $Vacuum\ Diff. ("HG) = Pump\ Vacuum ("HG) - System\ Inlet ("HG)$)

Changing the Bag Filters:

1. For a "no mess" bag filter change, the primary filter vessel should be pumped empty (see *Draining and Storing the System* above).
2. When the primary filter vent is empty, replace bag filter elements and make sure it seals tight within the perforated basket. For best results, bags should be fully extended into the basket.
3. Check inner housing and basket for debris and sludge and remove if necessary. Also, ensure that the basket is seated correctly and tight on the S.S basket within the bag filter vessel.
4. Apply a film of lubricating oil to the lid gasket. Replace O-Ring if worn or damaged.
5. Tighten lid screws evenly (alternating the screws) to ensure no air can enter the system and that the lid is fully seated onto O-Ring gasket.
6. Close the vent valve.
7. Open the inflow and outflow valves of the system with the new bag filters to resume operation of the system. Check for leaks and air intrusion.
8. The material collected inside the filter bag can be inspected to better understand the types of contaminants that have been removed from the tank.

Note: Disposal of fuel, associated waste, and filters must be in accordance with all applicable Federal, State, and Local rules, laws, standards, and regulations.

Servicing the Secondary Filters

A differential pressure drop of 22 PSI, as shown by the differential pressure gauges on the final filters, indicates that the final filter elements of that vessel need to be changed.

Changing the Fine Filter Cartridges:

1. It will be necessary to purge as much fuel as possible from the final filter vessels (see *Draining and Storing the System* above). Hose connection removal is not necessary for the filter servicing steps.
2. Fuel level in final filters should be sufficiently low to change the elements.
3. Open the vent valves on the final filter vessels to release any remaining pressure. Open Lids.
4. Remove dirty elements and replace with correct elements for the application.
5. Apply a film of lubricating oil to the lid gasket. Replace O-Ring if worn or damaged.
6. Tighten lid screws evenly (alternating the screws) to ensure lid is fully seated onto O-Ring gasket.
7. Close primary and final filter vent valves.
8. Open inlet valves on system skid.
9. Resume pump operation and check for leaks.

Note: All filters within each filter vessel should be identical.

The material trapped inside the filter can be inspected to better understand the types of contaminants that have been removed from the tank.

Note: Disposal of fuel, associated waste, and filters must be in accordance with all applicable Federal, State, and Local rules, laws, standards, and regulations.

!WARNING!: Some fuels may have been treated with biocides. Biocides are extremely toxic and may enter the body through the skin. It is recommended to use adequate protection and proper precautions if the fuel at-hand contains biocide type products.

Replacement Filter Chart

MTC HC SERIES FILTERS

ALL FILTERS ARE ABSOLUTE, UNLESS OTHERWISE NOTED | WB: WATERBLOCK | SS: STAINLESS STEEL SCREEN

| CARTRIDGE FILTERS | | | | | | | | |
|-------------------|---------|----------|-------------|----------|-------------|---------------------|---------------------|----------------------|
| | 2 μ | 10 μ | 10 μ WB | 30 μ | 30 μ WB | 3 μ MICRO-GLASS | 7 μ MICRO-GLASS | 10 μ MICRO-GLASS |
| MTC HC-50 | 618-2-W | 618-10-W | WA618-30-W | 618-30-W | WA618-30-W | G618-3-SR | G618-7-SR | G618-10-SR |
| MTC HC-90 | 618-2-W | 618-10-W | WA618-30-W | 618-30-W | WA618-30-W | G618-3-SR | G618-7-SR | G618-10-SR |
| MTC HC-150 | 618-2-W | 618-10-W | WA618-30-W | 618-30-W | WA618-30-W | G618-3-SR | G618-7-SR | G618-10-SR |
| MTC HC-300 | 618-2-W | 618-10-W | WA618-30-W | 618-30-W | WA618-30-W | G618-3-SR | G618-7-SR | G618-10-SR |

| BAG FILTERS | | | | | | | |
|-------------|-----------|-----------|------------|------------|------------|-------------|-------------|
| | 1 μ | 5 μ | 10 μ | 25 μ | 75 μ | 250 μ | 800 μ |
| MTC HC-50 | PFB-30-1 | PFB-30-5 | PFB-30-10 | PFB-30-25 | PFB-30-75 | PFB-30-250 | PFB-30-800 |
| MTC HC-90 | PFB-30-1 | PFB-30-5 | PFB-30-10 | PFB-30-25 | PFB-30-75 | PFB-30-250 | PFB-30-800 |
| MTC HC-150 | PFB-150-1 | PFB-150-5 | PFB-150-10 | PFB-150-25 | PFB-150-75 | PFB-150-250 | PFB-150-800 |
| MTC HC-300 | PFB-150-1 | PFB-150-5 | PFB-150-10 | PFB-150-25 | PFB-150-75 | PFB-150-250 | PFB-150-800 |

Troubleshooting

No fuel delivery

1. Pump does not run
2. Pump is not primed
3. Fuel supply line blocked
4. Excessive lift
5. Air leak in fuel supply to pump
6. Pump rotation direction incorrect
7. Intake or outlet valve closed

Insufficient fuel delivered

1. Air leak at inlet
2. Defective pressure relief valve
3. Excessive lift
4. Pump worn
5. Piping improperly installed or dimensioned
6. Primary filter/water separator plugged

Rapid pump wear

1. Pipe strain on pump causing bind
2. Worn pump/motor coupler
3. Pump has been run dry or with insufficient fuel
4. Plumbing on inlet side not appropriately dimensioned

Alarm “HIGH VACUUM ALARM” comes on with clean or new filter element installed

1. Heavily contaminated fuel/excessive water in tank
2. Restriction in plumbing on inlet side too high
3. Excessive lift
4. plugged stinger
5. Excessive hose length
6. Inlet ball valve not fully open
7. Suction line clogged

Alarm “HIGH PRESSURE ALARM” comes on with clean or new filter element installed

1. Heavily contaminated fuel/excessive water in tank
2. Restriction in plumbing on discharge side too high
3. Head (lift) on discharge side too high
4. Outlet ball valve not fully open
5. Discharge line clogged

Pump requires too much power

1. Air in plumbing lines
2. Liquid too viscous
3. Bent pump shaft, binding rotor
4. Misalignment of pump/motor coupler

Pump Requires frequent re-priming

1. Pump cavitation
2. Plumbing air leaks
3. Lift too high
4. Leaking pump seal

Motor does not turn or turns intermittently

1. Control power not available
2. Motor thermal overload condition
3. Pump failed and seized
4. Motor failure

Pump leaks fuel

1. Loose pump plumbing fittings
2. Worn pump shaft seal
3. Pump pressure relief valve failure
4. Fuel leak elsewhere and fuel dripping or running towards the pump
5. Excessive head from overhead storage tank
6. Worn pump O-rings or seals

AXI International Limited Warranty

AXI International makes every effort to assure that its products meet high quality and durability standards and expressly warrants the products described herein against defects in material and workmanship for a period of one (1) year from the date of purchase. This warranty is not intended to supplant normal inspection, care and service of the products covered by the user, and shall not obligate AXI International to provide free service during the warranty period to correct breakage, maladjustment, or other difficulties arising out of abuse, misuse, or improper care and maintenance of such products. Our express warranty is subject to the following terms and conditions:

This warranty shall only extend to and is only for the benefit of original purchaser(s), or end customer(s) who use the products covered hereby and subject to the terms and conditions herein. This warranty is not an on-site warranty. Travel requests will be at the discretion of AXI International. Defective systems and ancillary products will require a return authorization number and shipping to AXI International's factory in Fort Myers, FL. Any warranty claim received by AXI International after one (1) year from the date of purchase will not be honored even if it is claimed that the defect occurred prior to one (1) year from the date of purchase. Claims outside of this one (1) year period, and for claims not listed within, payment, repair, or service will be awarded at the sole and exclusive discretion of AXI International.


This Warranty shall NOT apply to the following:

1. Damage or deterioration caused by normal wear and tear.
2. Failures caused by any external cause or act of God, such as accident, collision, theft, vandalism, riots, wars, re, freezing, lightning, earthquakes, windstorms, hail, volcanic eruptions, floods, tornados or hurricanes.
3. Failures due to alterations, adjustments, unauthorized changes to the product(s), neglect or improper storage, repair and/or maintenance.
4. Failures due to abuse or application of the product(s) for uses other than for which it/they are designed or intended by AXI International, including but not limited to, improper installation or location in a harsh, corrosive or saltwater environment.
5. Failures resulting from attachments, accessory items, and parts not sold by AXI International.
6. Repairs by any party other than those authorized by AXI International.
7. Failures resulting from user's delay in making the product available for inspection by AXI International after notifying AXI International of a potential product problem.
8. Cosmetic damage, discoloration, rusting, corrosion or scratches from applied paint.
9. Replacement of consumables such as, but not limited to, fuses, lamps, filters, etc.
10. Additional expenses for repair after normal business hours, i.e., overtime or holiday labor rates.
11. Expenses for rental of equipment during downtime and/or performance of warranty repairs.
12. Expenses related to investigating performance complaints and/or troubleshooting where no manufacturing defect is found.

In addition to the limitations above, this warranty shall not apply to products (1) which have been tampered with, altered or repaired by anyone other than AXI International without the express prior written consent of AXI International (2) which have been installed improperly or subject to misuse, abuse, accident, negligence of others, improper operation or maintenance, neglect or modification, or (3) which have had the serial number altered, defaced or removed.

The liability of AXI International under this warranty is limited to the repair or replacement of the defective product. AXI International assumes NO LIABILITY for labor charges or other costs incurred by any purchaser incidental to the service, adjustment, repair, return, removal or replacement of products. AXI INTERNATIONAL ASSUMES NO LIABILITY FOR ANY GENERAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL, CONTINGENT OR OTHER DAMAGES UNDER ANY WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WITH THE RESPECT TO THE PRODUCTS COVERED BY THIS WARRANTY POLICY, EXCEPT AS EXPRESSLY PROVIDED FOR HEREIN. AXI INTERNATIONAL ASSUMES NO LIABILITY FOR ANY GENERAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL, CONTINGENT OR OTHER DAMAGES EVEN IF SUCH DAMAGES ARE A DIRECT RESULT OF AXI INTERNATIONAL'S NEGLIGENCE. NO EMPLOYEE, AGENT, REPRESENTATIVE OR DISTRIBUTOR IS AUTHORIZED TO MAKE ANY WARRANTY ON BEHALF OF AXI INTERNATIONAL OTHER THAN THE EXPRESS WARRANTY PROVIDED FOR HEREIN.

AXI International reserves the right at any time to make changes in the design, material, function and specifications of its products. Any such changes shall not obligate AXI International to make similar changes in such products that were previously manufactured.



To the fullest extent permitted by law, any claims against AXI International are limited to the remedies as expressly set forth in this warranty and any other further claims, such as but not limited to, compensation for any damage incurred other than to the AXI International product, are hereby excluded.

Warranty Claim Procedure

To make a claim under this warranty, please call AXI International at +1-239-690-9589 or 1-877-425-4239, and provide: Name and location where unit was purchased, the date and receipt of purchase, model number, serial number, and a detailed explanation of the problem you are experiencing. The Customer Service Representative may, at the discretion of AXI International, arrange for a Field Engineer to inspect your system. If the inspection reveals a defect covered by its limited warranty, AXI International will either repair or replace the defective parts or products. AXI International assumes no liability, if upon inspection, AXI International or its representative determines that there is no defect or that the damage to the system resulted from causes not within the scope of this limited warranty and customer shall be responsible standard rates incurred by AXI International, as established from time to time by AXI International.

For service and sales, please contact AXI International:

AXI International | 5400 Division Drive Fort Myers, FL 33905
Tel: +1-239-690-9589 | Toll Free: +1-877-425-4239 | Fax: +1-239-690-1195
Email: info@axi-international.com | Internet: www.axi-international.com

Technical Assistance and Ordering

Please write, fax, email or call:

AXI International
5400 Division Drive
Fort Myers, FL 33905
Tel: +1-239-690-9589
Fax: +1-239-690-1195
Email: info@axi-international.com Internet: www.axi-international.com

Please provide the following information:

Serial Number of your system, the required part numbers and quantity. The drawings/parts list included in this manual are the most accurate source of part numbers.

Replacement Filter Elements

Primary Filter:

PFB-150-1 - 1 μ Bag Filter
PFB-150-5 - 5 μ Bag Filter
PFB-150-10 - 10 μ Bag Filter
PFB-150-25 - 25 μ Bag Filter
PFB-150-75 - 75 μ Bag Filter
PFB-150-250 - 250 μ Bag Filter
PFB-150-800 - 800 μ Bag Filter

Secondary Filters:

618-2-W - 2 μ Filter Cartridge
618-10-W - 10 μ Filter Cartridge
618-30-W - 30 μ Filter Cartridge
WA618-10-W - 10 μ Filter Cartridge (Water Block)
WA618-30-W - 30 μ Filter Cartridge (Water Block)
G618-3-SR - 3 μ Microglass Absolute Filter Cartridge
G618-7-SR - 7 μ Microglass Absolute Filter Cartridge
G618-10-SR - 10 μ Microglass Absolute Filter Cartridge

System Identification

Serial Number: _____ (e.g. B090010-HC-300)

Inspected By: _____ Date: _____