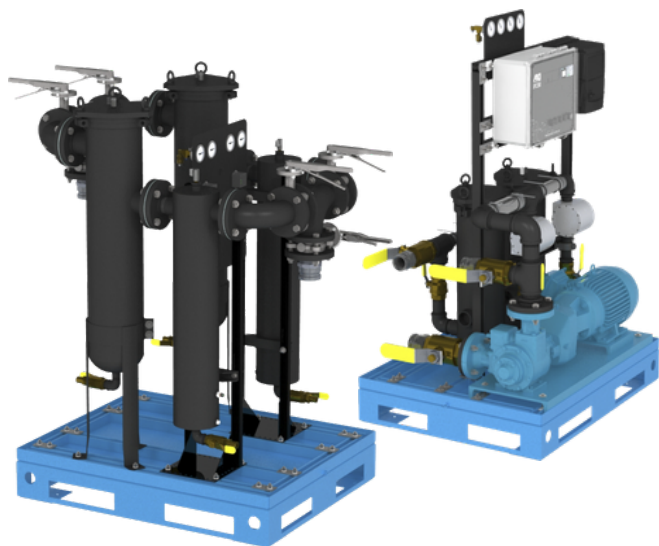




MTC HC-150



The MTC HC-150 is a high capacity mobile fuel polishing system designed to efficiently remove water, sludge, and other contaminants from fuel storage tanks. Once on site, the MTC HC-150 can be operated to ensure fuel reliability through routine servicing of the fuel tank(s). The system's fuel polishing process stabilizes diesel and bio-fuels by eliminating various contaminants, ensuring the fuel remains clean. These mobile systems feature a skid-based design that allows for maximum portability and ease of transportation between the various fuel tanks that require routine servicing.



◆ MTC HC-150 SYSTEM FEATURES:

- Multi-Stage Fuel Filtration
- Adjustable Flow Rate (VFD Controller)
- Dual-Skid Portable System Design
- Filter Isolation Capability for Uninterrupted Servicing
- Locking Cam and Groove Connections
- Fine Filter Bypass Capability
- Smart Filtration Controller
- Unique Safety & Alarm Features
- Remote Pendant Operation

◆ PRE-FILTER SKID SPECIFICATIONS:

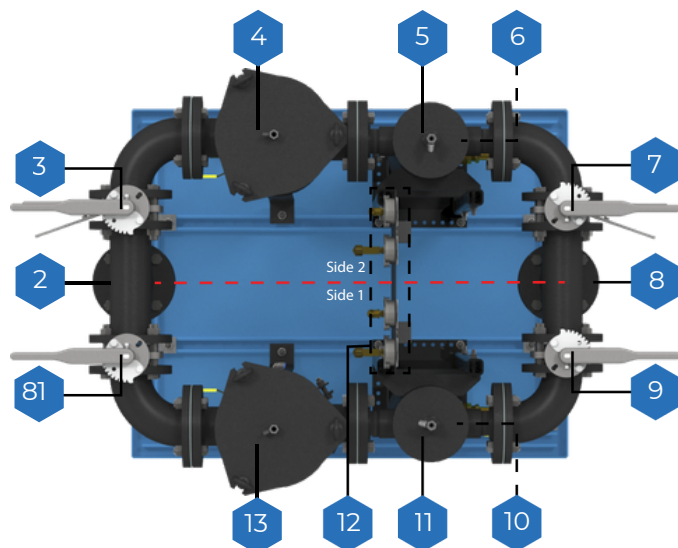
Nominal Flow Rate	10 - 150 GPM (37.9 - 567.8 LPM)
Primary Filters	Bag Filter Vessel, Liner Basket for use with 1-800µ Filter Bags
Water Separators	FP-90 Mechanical Water Separator
Plumbing	Black Iron
Ports	3" Cam & Groove In 2.5" Cam & Groove Out
Suction Hose	Clear, 25ft (7.6 m), 3" Diameter
Dimensions	≈ 59" x 36" x 45" (H x W x D) (150 x 91 x 114 cm)
Weight	≈ 850 lbs (385.5 kg)

◆ PUMP SKID SPECIFICATIONS:

Nominal Flow Rate	10 - 150 GPM (37.9 - 567.8 LPM)
Secondary Filters	Cartridge Filter Vessel, 2-30µ Particulate, 10-30µ, Water Block Filters, 3-10µ Microglass Filters
Fuel Conditioner	LG-X 4000 Inline Magnetic Conditioner
System Controller	SFC80 Smart Filtration Controller with Safety and Alarm Features
Pump	10 HP Sliding Vane Pump
Power	480V/60Hz/3Ph
Plumbing	Black Iron
Ports	3" Cam & Groove In 2.5" Cam & Groove Out 25ft (7.6 m), 2.5" Diameter
Discharge Hose	≈ 59" x 36" x 45" (H x W x D) (150 x 91 x 114 cm)
Dimensions	≈ 710 lbs (286 kg)
Weight	
Not for use with fluids that have a flash point below 100°F (37.8°C).	

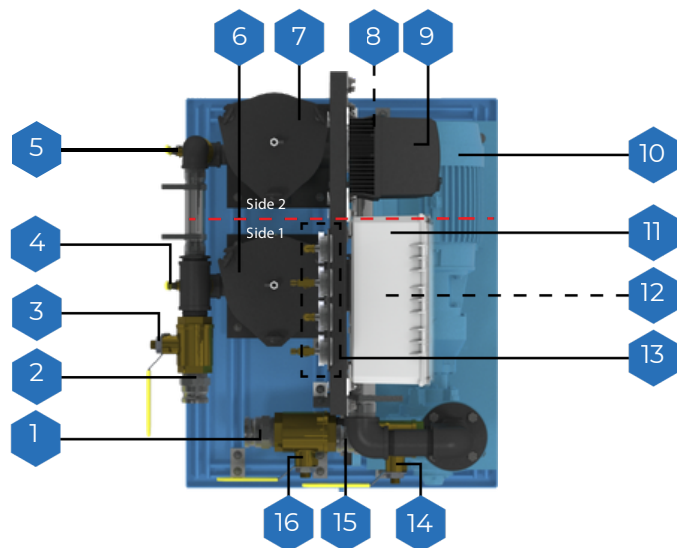
AXI MTC HC-150

PRE-FILTER SKID



1. Butterfly Isolation Valve (Side 1)
2. Fuel Inlet (From Tank)
3. Butterfly Isolation Valve (Side 2)
4. Primary Filter (Side 2)
5. Mechanical Water Separator (Side 2)
6. Water Separator Drain Valve (Side 2)
7. Butterfly Isolation Valve (Side 2)
8. Fuel Outlet (To Pump Skid)
9. Butterfly Isolation Valve (Side 1)
10. Water Separator Drain Valve (Side 1)
11. Mechanical Water Separator (Side 1)
12. Vacuum Gauge Plate
13. Primary Filter (Side 2)

PUMP SKID

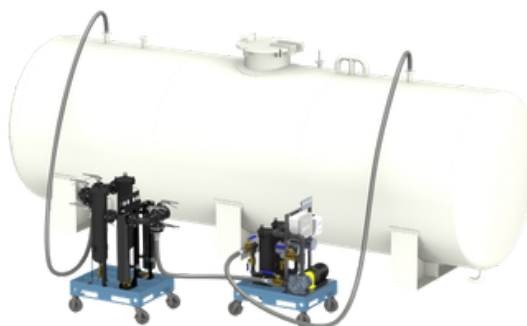


1. Fuel Inlet (from Pre-Filter Skid)
2. Fuel Discharge Port 2
3. Outlet Ball Valve (Discharge Port 2)
4. Isolation Ball Valve (Side 1)
5. Secondary Filter (Side 1)
6. Isolation Ball Valve (Side 2)
7. Secondary Filter (Side 2)
8. Fuel Conditioner (Side 2)
9. Variable Frequency Drive (VFD)
10. Motor with Coupled Vane Pump
11. Smart Filtration Controller
12. Fuel Conditioner (Side 2)
13. Pressure Gauge Plate
14. Outlet Ball Valve (Discharge Port 1)
15. Fuel Discharge Port 1
16. Inlet Ball Valve

REPLACEMENT FILTER OPTIONS:

Primary Filters	Part No.	Secondary Filters	Part No. 618-
1µ Filter Bag	PFB-150-1	2µ Particulate	2-W
5µ Filter Bag	PFB-150-5	10µ Particulate	618-10-W
10µ Filter Bag	PFB-150-10	10µ Water Block	WA618-10-W
25µ Filter Bag	PFB-150-25	30µ Particulate	618-30-W
75µ Filter Bag	PFB-150-75	30µ Water Block	WA618-30-W
250µ Filter Bag	PFB-150-250	3µ Micro Glass	G618-3-SR
800µ Filter Bag	PFB-150-800	7µ Micro Glass	G618-7-SR
			G618-10-SR

MTC HC-150 SYSTEM INTEGRATION





MTC HC-150 Instruction, Operating, & Maintenance Manual

HIGHCAPACITYMOBILEFUELPOLISHINGSYSTEM

REV0303HC150010320

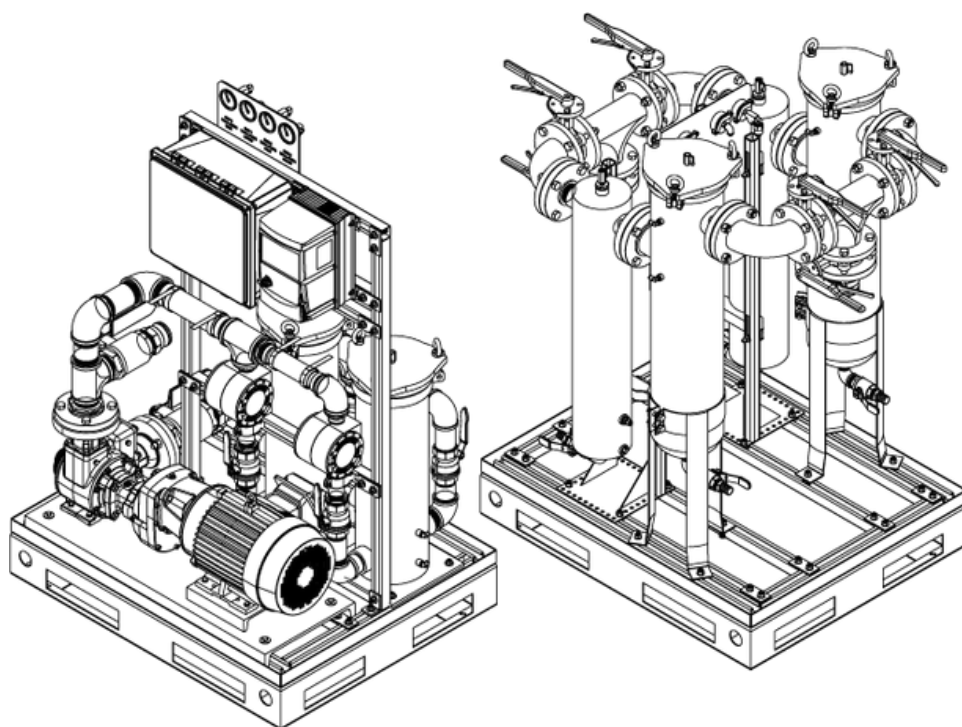




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General Overview

MTC HC-150 Specifications

Nominal Flow Rate.....	10 - 150 GPM (37.9 - 567.8 LPM)
Primary Filter (Pre-Filter Skid).....	Bag Filter Vessels, Liner Basket for use with 1-800µ Filter Bags
Water Separator (Pre-Filter Skid).....	Dual FP-90 Mechanical Water Separators
Secondary Filter (Pump Skid).....	Cartridge Filter Vessels, 2-30µ Particulate, 10-30µ Water Block, or 3-10µ Micro-glass Filters
Fuel Conditioner (Pump Skid).....	Dual LG-X 4000 Inline Magnetic Conditioner
Plumbing.....	Black Iron
Inlet Ports.....	3" Cam & Groove In
Outlet Ports.....	2.5" Cam & Groove Out
Operating Temperature.....	41 - 104°F (5-40°C)
Controller.....	SFC80 SmartFiltration Controller
Electrical.....	480V/60Hz/3Ph
Pump/Motor.....	10 HPSlidingVane Pump
Suction Capability (Primed).....	15ft.verticalliftor100ft. horizontal run (lines > 2", primed)
Maximum Fluid Viscosity.....	5 cSt
Clear Suction Hoses.....	3", 25ft.(7.6m)
Discharge Hose.....	2.5",25ft.(7.6m)
Outline Dimensions (Pre-Filter Skid).....	59"x36"x45"(150 x 91 x 114 cm) (H x W x D)
Outline Dimensions (Pump Skid).....	59"x36"x45"(150 x 91 x 114 cm) (H x W x D)
Weight (Pre-Filter Skid).....	≈850lbs.(385.5kg)
Weight (Pump Skid).....	≈900lbs.(408.2kg)

!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

- SFC80 Smart Filtration Controller
 - Control Circuit Breakers (CB1, CB2)
 - Smart Filtration PLC with LCD Display
 - Pump Control Selector Switch (Manual/Off/Auto)
 - System Power Indicator Light
 - Pump Running Indicator Light
 - Alarm Indicator Light
 - Alarm Reset Push Button
- Vacuum & Pressure Switches
- Vacuum & Pressure Gauges
- Water Detection Alarm Modules
- Inlet and Outlet Butterfly Valves (Pre-Filter Skid)
 - Inlet Isolation Butterfly Valve (Side 1 and 2)
 - Outlet Isolation Butterfly Valve (Side 1 and 2)
- Inlet and Outlet Ball Valves (Pump Skid)
 - Inlet Ball Valve
 - Isolation Ball Valves (Side 1)
 - Isolation Ball Valves (Side 2)
 - Outlet Ball Valve (Discharge Port 1)
 - Outlet Ball Valve (Discharge Port 2)
- Remote Pendant Switch

Pump/Motor

- 10 HP Sliding Vane Pump
- Internal Pressure Relief

Primary Filters

- Bag filter element (purchased separately)
- Water Detection Sensor Probe
- Drain Valve

Mechanical Water Separators

Water Separator

Drain Valve

Fuel Conditioners

- Inline Magnetic Fuel Conditioner

Secondary Filters

- Cartridge filter element (purchased separately)

Plumbing

- Black Iron

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 establish either fuel polishing mode, the user must attach both system hoses to the system in the proper configuration. The Intake/Suction Hoses are clear and see-through while the Discharge Hose is black and opaque. Both hoses are equipped with quick disconnect cam & groove couplings.

1. First, attach the quick disconnect end of the clear Suction Hose to the Inlet Port of the Pre-Filter Skid.
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: Never restrict the flow on the suction side of an MTC; e.g. by using a smaller ID hose or pipe attachment. This will lead to excessive pump load, noisy operation, and ultimately pump damage.

4. Next, connect one end of the second Suction Hose to the outlet port of the Pre-filter Skid and the other end to the inlet port of Pump Skid.

Bypass Mode:

In bypass mode, the fuel bypasses the Pump Skid's Secondary Filters only to be ran through the Pre-Filter Skid's Primary Filters and Water Separators for the bulk removal of water, sludge, and particulate. To establish bypass mode:

1. Attached the quick disconnect end of the black Discharge Hose to Discharge Port 1 of the Pump Skid (located just above the Pump Skid's Inlet Port).
2. Before running the pump, ensure all Inlet, Outlet, and Isolation Butterfly Valves on the Pre-Filter Skid, the Pump Skid's Inlet Ball Valve, and the proper Discharge Ball Valve (Discharge Port 1) are in the open position.
3. Also, ensure the other discharge ball valve (Discharge Port 2), all Pump Skid Isolation Ball Valves (Side 1 and 2), and the Water Separator and Primary Filter drain valves are in the closed position.

Fine Filtration Mode:

In fine filtration mode, the fuel is run through the Pump Skid's high efficiency Secondary Filter elements to remove free water and fine particulate as small as 1 micron. To establish fine filtration mode:

1. Attached the quick disconnect end of the black Discharge Hose to Discharge Port 2 (located after the Secondary Filter Vessels).
2. Before running the pump, ensure all Inlet, Outlet, and Isolation Butterfly Valves on the Pre-Filter Skid, the Pump Skid's Inlet and Isolation Ball Valves (Side 1 and 2), and the proper Discharge Ball Valve (Discharge Port 2) are in the open position.
3. Also, ensure the other Discharge Ball Valve (Discharge Port 1), and the Water Separator and Primary Filter drain valves are in the closed position.

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 “AUTO” 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.

Manual Mode:

Place the Selector Switch in the “MANUAL” 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. Setup up the system in the Bypass Mode configuration (see Setup Procedures – Bypass Mode) and be sure to install a large micron (200 μ or larger) filter bags in the Primary Filter vessels on Pre-Filter Skid.

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

2. Place the Discharge Hose into a separate discharge waste container and ensure that the hose is secured and will not vibrate out of the container when the system is operating.
3. To remove as much of the free water and sludge as possible, the Suction Hose (with a straight wand or pipe attachment) should be placed at the deepest part of the tank.
4. Connect the system to an appropriate power source and switch the breakers on the System Controller to “ON”.
The “System Power” Indicator should illuminate on the System Controller.
5. Set the Pump to run at a lower initial speed (10-20 Hz) by adjusting the knob on the VFD Controller and turn the Pump on via the Selector Switch on the System Controller.
6. Be prepared to immediately switch the pump off once the fluid begins to fill the discharge container in order to inspect the discharge fluid.
7. 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.
8. Switch off the Pump and drain all water and debris from the hose and the Water Separator (via the drain valves) into an appropriate waste bucket or container.

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. Before turning on the Pump, ensure the system is still setup in the Bypass Mode configuration (see Setup Procedures – Bypass Mode).
2. Remove the Discharge Hose from the waste container and place it into the tank.
3. If possible, ensure the Suction and Discharge Hoses are placed as far apart as possible.

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

4. 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, switch on the pump and watch the clear suction hoses for fuel flow.
5. While polishing, it is good practice to watch the fuel flow and regularly stop the pump to check for buildup of free water and sludge in the Water Separators (see Maintenance – Servicing the Water Separator). Should the water level rise and trip a Water Sensor Probe on one of the Water Separators, a High Water alarm will be triggered indicating that the Water Separator needs to be drained of water.
6. It is also good practice to monitor the Vacuum Gauges for both Side 1 and Side 2 of the Pre-Filter Skid to know when to service a clogged Primary Filter element in order to avoid flow restriction (see Maintenance – Servicing the Primary Filter). Should a Vacuum Switch detect a reading above the pre-established set point, a High Vacuum alarm will be triggered indicating that the corresponding Primary Filter bag needs to be changed.
7. The system should be kept running until clean fuel samples can be drained from the Water Separator. 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. Before turning on the Pump, ensure the system is setup in the Fine Filtration Mode configuration (see Setup Procedures – Fine Filtration Mode) and be sure to install filter bags and cartridges in all Primary and Secondary Filter Vessels respectively.
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 (10-15 Hz).
2. Remove the suction hose from the tank while the pump is still running and wait until system is purged of any remaining fuel as indicated by an audible change in the pump's operation.

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

3. Turn off the pump and place an appropriate container under the Water Separators and Discharge Port 1.
4. Open their respective ball valve and use the air purge valve on top of the separators to make sure all of the fluid can be drained from the system.

Alarms

Alarms featured on the system include:

- High Water (pump shutdown, alarm indication)
 - Activated when the water trips the Water Detection Alarm Module via the Water Detection Sensor Probe located on the Mechanical Water Separator. The system will go into an alarm state and the pump will not be allowed to run until the Water Separator has been serviced (see Maintenance – Servicing the Water Separator) and the alarm has been cleared via the Alarm Reset Button on the system controller.
- High Vacuum (pump 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 (pump 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.



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

Smart Filtration Controller (SFC-55)

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

Pump Control Selector Switch (Manual/Off/Auto)

Turns the system on to either “Manual” or “Remote” operational modes (See Operation – System Controller)

Pump Running Indicator Light

Indicated the system pump is running

System Power Indicator Light

Indicates the system has power

Alarm Indicator Light

Indicates the labeled alarm (displayed on the Smart Filtration PLC) has been tripped

Alarm Reset Push Button

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

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-150 system has a Sliding Vane Pump that operates at 150 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:

$$\text{Example: } 25 \text{ (GPM)} = 2.5 \times 10 \text{ (Hz)}$$
$$\text{Flow Rate (GPM)} = 2.5 \times \text{Frequency (Hz)}$$

Frequency Knob

Toggles the pump speed between 10 Hz to 60 Hz

Note: All other VFD Control Functions are disabled.



Priming the System

The pump supplied with the system is NOT automatically self-priming and must not be run dry.

!WARNING! If the pump is allowed to run without fuel, pump damage can occur.

Priming Procedure

Before turning on the pump make sure the entire suction side of the system (suction hose, primary filter/water separator, plumbing, and pump) is primed and filled with oil/diesel fuel. Running the pump dry could cause pump damage and pump to not operate properly.



Commissioning/Initial Start-Up

Initial Test Procedures

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

- **High Water Alarm** - Jump the Water Detection Sensor Probes by placing a conductor across the two horizontal contacts. The pump should turn off after 10 seconds and “High Water” alarm should be indicated on the System Controller. Remove the metal and reset the alarm by pushing the Alarm Reset button on the System Controller.
- **High Vacuum Alarm** - Slowly, partially close Inlet Butterfly Valve on Pre-Filter Skid. 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 button on the System Controller.
- **High Pressure Alarm** - Slowly, partially the Outlet Ball Valve on the Pump Skid. 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 Outlet Ball Valve again. Reset the alarm by pushing the Alarm Reset button 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 10Hz to 60Hz via the Variable Frequency 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. Check system and all parts for corrosion and rust.
3. 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.
4. Check all plumbing joints for leaks, tighten fittings and joints as necessary.
5. Inspect all filter vessels and elements.

Servicing the Water Separators

It is recommended the Water Separators be periodically serviced to prevent excessive water buildup. A “High Water” alarm will indicate when the water separators need to be drained.

Draining of Water Separator:

1. Ensure the system’s pump is turned off.
2. Close the inlet butterfly and outlet ball valves.
3. Place an appropriate container under the Water Separator’s drain valve.
4. Remove the top plug to allow air in and fuel to flow out.
5. Open the drain valve and allow the water and sludge to drain.
6. Close the drain valve when you begin observing clean fuel.

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.

Servicing the Primary Filters

A clogged filter element restricts the flow of fuel, resulting in the vacuum gauges indicating a pressure drop. A “High Vacuum” alarm will indicate when a filter change should be made on the Primary Filters.

Changing a Bag Filter:

1. Ensure the system’s pump is turned off.
2. Close the inlet butterfly and outlet ball valves.
3. Release all pressure in system by carefully opening the air vent valves.
4. Loosen the vessel’s lid screws and open the lid
5. Remove the old filter bag and check the inner housing for any debris or sludge.
6. Place the new filter bag into the housing.
7. Apply a film of lubricating oil to the lid gasket. Replace the O-Ring if worn or damaged.
8. Tighten the lid screws evenly to ensure the lid is fully seated on the O-Ring gasket.
9. Open the inlet butterfly and outlet ball valves.

10. Check for leaks when re-starting and pressurizing the system.

Servicing the Secondary Filters

A clogged filter element restricts the flow of fuel, resulting in the system's pressure gauges indicating a pressure spike. A "High Pressure" alarm will indicate when a filter change should be made on the Secondary Filters.

Changing a Fine Filter Cartridge:

1. Ensure the system's pump is turned off.
2. Close the inlet butterfly and outlet ball valves.
3. Release all pressure in system by carefully opening the air vent valves.
4. Loosen the vessel's lid screws and open the lid
5. Remove the old filter cartridge(s) and check the inner housing for any debris or sludge.
6. Place the new filter element into the housing.
7. Apply a film of lubricating oil to the lid gasket. Replace the O-Ring if worn or damaged.
8. Tighten the lid screws evenly to ensure the lid is fully seated on the O-Ring gasket.
9. Open the inlet butterfly and outlet ball valves.
10. Check for leaks when re-starting and pressurizing the system.

Replacement Filter Chart

MTC HC SERIES FILTERS				ALL FILTERS ARE ABSOLUTE, UNLESS OTHERWISE NOTED WB: WATERBLOCK SS: STAINLESS STEEL SCREEN					
MTC HC SERIES FILTERS									
	2μ	10μ	10μ WB	30μ	30μ WB	3μ MICRO-GLASS	7μ MICRO-GLASS	10μ 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							
	1μ	5μ	10μ	25μ	75μ	250μ	800μ
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
8. Check valve installed backwards

Insufficient fuel delivered

1. Air leak in inlet
2. Defective pressure relief valve or check valve
3. Excessive lift
4. Pump worn
5. Inoperative foot valve
6. Piping improperly installed or dimensioned
7. 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 inlets side not appropriately dimensioned

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

1. Heavily contaminated fuel/excess water in tank
2. Restriction in plumbing on inlet side too high
3. Excessive lift
4. Inoperative foot valve
5. Inlet ball valve not fully open
6. Suction line clogged

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

1. Heavily contaminated fuel/excess water in tank
2. Restriction in plumbing on discharge side too high
3. Head (lift) on discharge side too high
4. Check valve stuck or defective
5. Outlet ball valve not fully open
6. 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

Noisy operation

1. Insufficient fuel supply
2. Air leaks in the inlet pipe
3. Air or gas in fuel on the suction side
4. Excessive pump load (vacuum > 15" HG)

Pump requires frequent re-priming

1. Inoperative foot valve
2. Inoperative check valve
3. Inoperative solenoid valve
4. Pump cavitation
5. Plumbing air leaks
6. Lift too high
7. 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

SALES CONTACT



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