

# Installation, Operating and Maintenance Manual

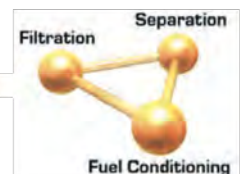
## MTC HC-80

Fuel Filtration, Restoration,  
Transfer & Tank Cleaning System



- Multi-Stage Filtration & Tank Cleaning
- Compact Industrial Design
- Minimal Consumables
- Negligible Fuel Loss
- Low Operating Costs
- No Tank Entry Needed

Optimal Fuel Quality • Reliable Power





# OPERATING AND MAINTENANCE MANUAL

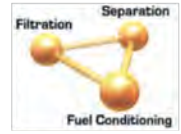
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# MTC HC-80

## High Capacity Mobile Tank Cleaning System



**MTC HC-80 High Capacity Mobile Tank Cleaning Systems** are used to clean fuel storage tanks and recondition, stabilize and decontaminate Diesel Fuel, Bio-Diesel, Light Oils and Hydraulic Fluids. They offer multi-phase tank cleaning, water & sludge removal and transfer of fuels between tanks to guarantee **Optimal Fuel Quality at All Times**.



### MTC HC-80 Systems feature:

- High Capacity Fluid Processing
- Multiple Discharge and Sample Ports for Water Removal and Fuel Transfer
- Large Contaminant Holding Capacity
- Compact Industrial Design
- Tank Cleaning while Reconditioning, Stabilizing, Decontaminating & Drying Fuel

The MTC HC-80 is a four-stage mobile fuel conditioning and tank cleaning system that efficiently removes sludge and water from fuel storage tanks, restoring and optimizing fuel quality in the same operation.

The system is designed as a “fuel/oil dialysis system” that circulates and cleans fuel/oil by pumping it from the tank, processing it through the MTC and back into the tank.

AXI’s mobile tank cleaning systems excel in combining High Capacity Filtration & Water Separation with Compact Design and Low Operating Cost to provide Optimal Fuel Quality for Peak Engine Performance and Reliability.

### MTC HC-80 SPECIFICATIONS

Flow Rate	80 GPM
Primary Filter	Carbon Steel Pre-Filter Housing, Quick Release 3-Bolt Swing Cover, Drain Valve & Air Vent, Perforated SS Strainer Basket 9/64" (3.5 mm) for use with Filter Bags
Liner & Filter Bags	Replaceable Filter Bags 1-1500 $\mu$
Secondary Filter	Carbon Steel Filter Housing, quick Release 3-Bolt Swing Cover Drain Valve & Air Vent
Filter Cartridges	Particulate Filter 2-30 $\mu$ Water Block Filters 5, 10, 30 $\mu$ Absolute Microglass Filters 3-10 $\mu$
Water Separator	RCM 1500 with Drain Valve & Air Vent
Fuel Conditioner	LG-X 4000
Smart Filtration Controller	SFC-55HC
Instrumentation & Automation	Vacuum Gauges on Primary Filter Pressure Gauge on Pump Discharge Pressure Gauges on Secondary Filter AXI Watec 550 Water Sensor Alarm Module
Pump Power/ Air Requirements	2 HP Self-Priming Centrifugal Pump 208/230V 60Hz 20A 2" Ports (NPT) Viton Seals
Ports	One Suction, Multiple Discharge & Sample Ports
Connectors	Cam & Groove Fittings and Covers
Hoses	2", 25 ft Clear Suction Hose 2", 25 ft Discharge Hose
Skid	Powder Coated Carbon Steel Lifting Eyes & Forklift Channels Drip Tray with Drain
Dimensions	36" x 45" x 58" (91 x 114 x 147 cm)
Weight	563 lbs
Not for use with fluids that have a flash point below 100°F.	



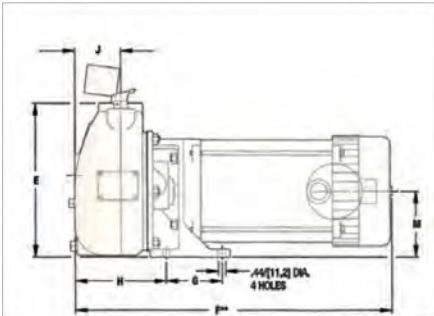
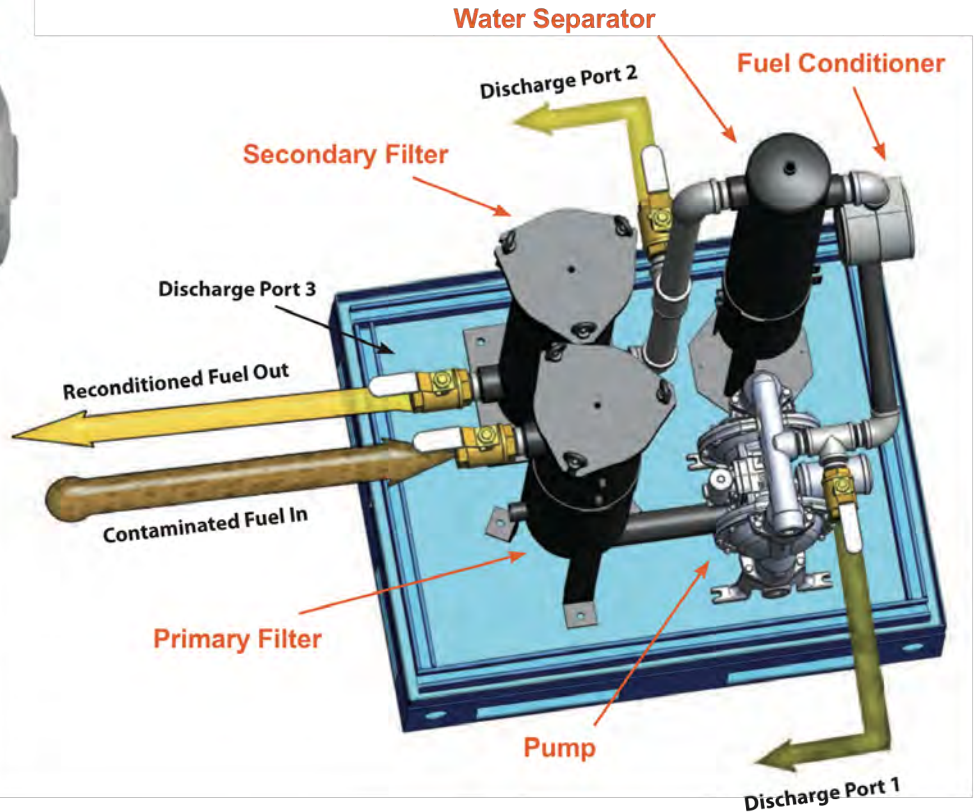
+1-239-690-9589  
1-877-425-4239 Toll Free  
[www.AXIFuelConditioning.com](http://www.AXIFuelConditioning.com)

Wherever fuel is being used or stored



The MTC HC-80 is equipped with a self-priming centrifugal pump and a direct-coupled electric motor rated at 80 GPM. The system's maximum flow rate depends on factors such as: suction lift, discharge head, hose length & diameter, pressure drop over the primary/secondary filters and separator.

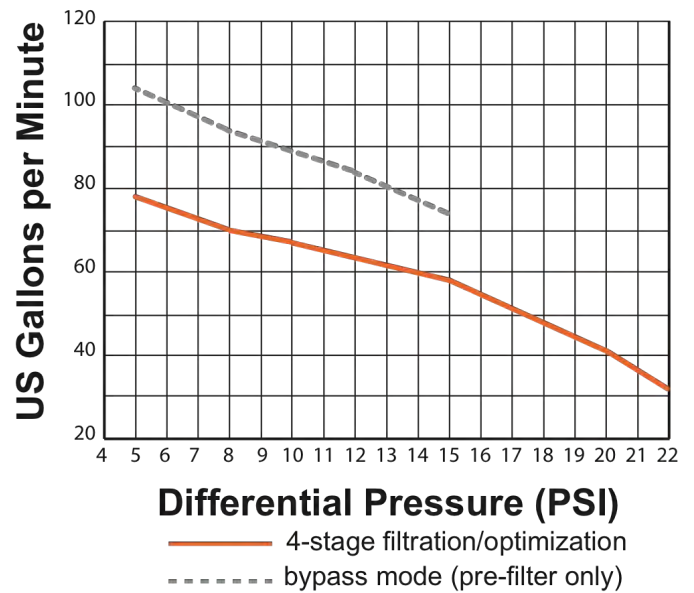
The system is equipped with an adjustable vacuum switch on the input side of the pump. Vacuum value readings reaching 15" HG vacuum indicate a clogged primary filter or suction line flow restriction/excessive lift due to excessive debris in the primary filter. This will result in pump shutdown and activate the high vacuum alarm.



### MTC HC-80 PUMP SPECIFICATIONS

Pump	Cast Iron Pump with Viton Seals Handles Solids up to 3/8" Self-Priming to 20ft Max 31 PSI
Motor	2 HP Single Phase
Power	280V 60Hz 220V 50Hz 20 AMP circuit required 11 Full Load Amps
Ports	2" NPT
Dimension	7 x 21 x 9x3-3/4" (18 x 53 x 25 cm)
Weight	101 lbs (45.8 kg)
Material	Cast Iron

### MTC HC-80 PUMP CURVE



### Automation

The SFC-55MTC is a fully automated Smart Filtration Controller with digital text readout of operating & alarm status. It provides an instant visual status report of system power, pump operation and alarms for high pressure, high vacuum and high water levels.

Installed on the MTC HC-80, the controller is equipped with a pendant power ON/OFF switch for remote control and a highly visible strobe light alarm.

### Available Options

- Digital Flow Meter
- Additional Hoses
- Sample Ports
- Skid Casters
- Spill Prevention Berms



### Digital Flow Meter

The digital flow meter is an excellent tool to monitor flow rate and system performance as well as count the amount of liquid that has been processed.

### Spill Prevention Berm

Heavy duty, portable and reusable spill prevention berms are recommended to avoid accidental fluid leakage into the environment.



**AFC-705 Fuel Catalyst** is a unique and powerful, broad-spectrum fuel additive concentrate for use in Diesel, Biofuels, Gasoline, Kerosene and HFO. Including AFC-705 as part of a preventative fuel maintenance program, in combination with good housekeeping, will stabilize your fuel, prevent sludge build-up and eliminate the need for expensive and toxic biocides.

### AFC-705 features:

- Cleans Fuel, Storage Tanks & Injection systems
- Improves Combustion, Lowers Emissions & Fuel Consumption
- Removes & Prevents Carbon Build Up and Corrosion
- Adds Lubricity and Inhibits Corrosion
- Extends Lube Oil & Equipment Life
- Optimizes Engine, Generator & Boiler Efficiencies
- Reduces Harmful Emissions, Soot & Particulates (CO, HCs, NOX, SOX, VOCs, Carbonyls, PAH)

## **INITIAL INSPECTION**

Congratulations on your purchase of an Algae-X® MTC Mobile Tank Cleaning System!

Upon delivery, the MTC System and accessories must be visually inspected. Shipping and handling may cause physical or electrical problems. Note any damages with the shipping company or refuse shipment in cases of severe damage.

## **OVERVIEW - MOBILE TANK CLEANING SYSTEM**

The MTC-HC80 is a four-stage mobile fuel conditioning and tank cleaning system. It efficiently removes sludge and water from fuel and oil tanks, restoring & optimizing fuel quality in the same operation.

The system is designed as a “fuel/oil dialysis system” that circulates and cleans fuel/oil by pumping it from the tank, processing it through the MTC and back into the tank.

The system can also be used to clean fuel or oil by pumping it from one tank through the MTC into another tank and / or suitable container.

The MTC-HC80 is equipped with a self-priming centrifugal pump rated at 80 GPM. The system’s maximum flow rate depends on factors such as: suction lift, discharge head, hose length & diameter, pressure drop over the primary/secondary filters and separator.

## **TANK CLEANING - WHY, WHERE AND HOW**

All storage tanks naturally accumulate water, solids and sludge resulting from condensation and the degradation of fuel and oil. The more fuel we turn over through a tank, the more debris and water will accumulate in the bottom.

**Algae-X® Fuel Conditioning and Filtration Systems** eliminate the need for costly, periodic manual tank cleaning, while **stabilizing and extending the shelf life of fuel**. This is extremely important for all applications of long-term fuel storage, especially **emergency power generators**.

The Algae-X® Mobile Tank Cleaning System is compact, easy to operate and extremely versatile.

## GENERAL TANK CLEANING PROCEDURE

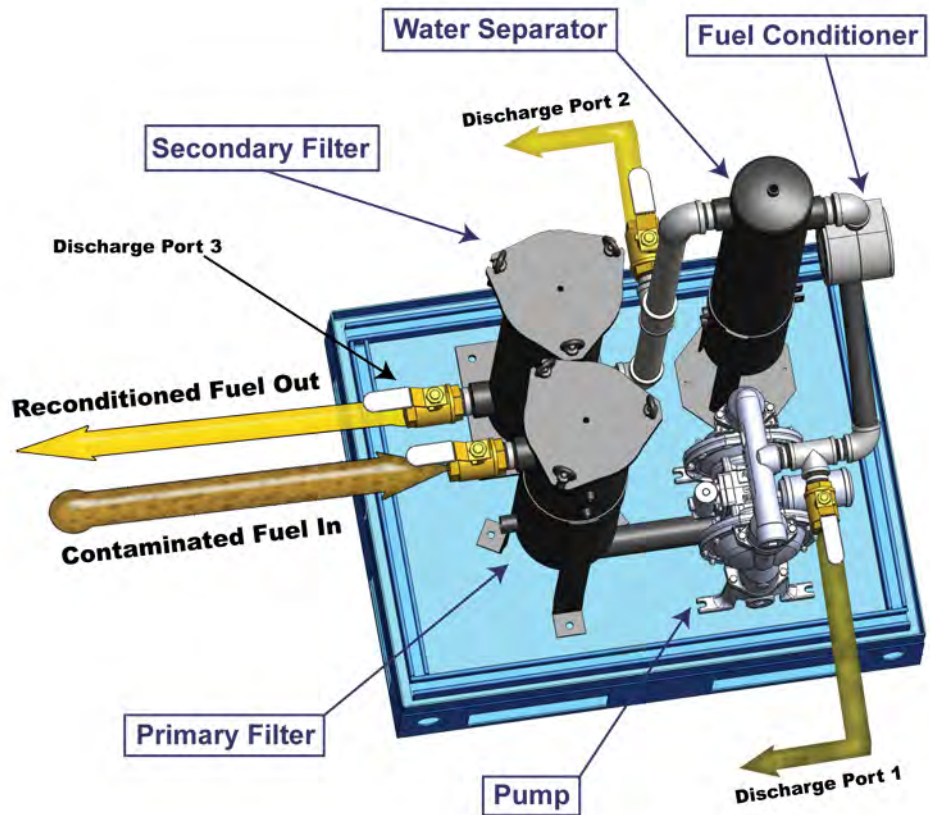
The MTC-HC80 offers three different discharge ports providing the operator with flexibility and efficiency.

MTC-HC80 systems are used to efficiently clean tanks, remove water & sludge and restore fuel quality; or to simply transfer fuel from one tank to another. At a low pump rate, using **Discharge Port 1** the HC80 will easily remove sludge and water from the bottom of your tank without creating a "Milk Shake Effect" by mixing fuel, water and sludge. Discharge Port 1 can also be used to transfer fuel to another tank while processing it through the primary filter.

Processing fuel through the Primary Filter, Fuel Conditioner, Separator and back to the tank through **Discharge Port 2** reconditions the fuel and cleans tanks at a high flow rate. Returning the fuel back to the tank from **Discharge Port 3** after the secondary filter, completes the fuel dialysis and reconditioning process. Depending on the

job, Algae-X offers a choice of filter bags for the primary filter and a variety of fine filters, coalescing filters and water block elements for the secondary filter.

We always recommend keeping a "before" and "after" bottom tank sample for "show & tell" purposes and to demonstrate the improvement of fuel color, clarity and opacity.



## AFC-705 FUEL CATALYST

The use of Algae-X® AFC-705 Fuel Catalyst is an essential part of any tank cleaning procedure, to more rapidly and efficiently decontaminate and clean the entire fuel system.

Before dosing the tank with AFC-705, remove as much of the sludge and free water as possible.

Adding the Algae-X® Fuel Catalyst (AFC-705) to the tank will speed up the cleaning process by breaking down and dissolving the sludge covering the tank walls and baffles. AFC-705 will decontaminate areas and sections of the tank that are out of reach of the suction hose.

Using a higher concentration of one to twenty five hundred (1:2500) instead of one to five thousand (1:5000) has proven to be very helpful in accelerating the rate of dissolving the sludge. Even higher doses of AFC-705 may be necessary depending on contamination level of fuel.

AFC-705 is a full spectrum fuel additive containing combustion catalyst, surfactant, detergent, dispersant, corrosion inhibitor, lubricity enhancers and fuel stabilizer that eliminates the need for expensive toxic biocides.

### TANK CLEANING "101"



**! IMPORTANT ! 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.**



**! WARNING ! Do not use with gasoline, solvents, corrosive liquids, food liquids or other liquids having a flash point less than 100°F. Use with gasoline or use with any flammable liquids at a temperature exceeding their flash point, presents an immediate explosion and fire hazard**



**! IMPORTANT ! All safety measures and practices involving fuel / oil handling should be observed and followed at all times.**



**! WARNING ! For operator safety the MTC system needs to be properly grounded. Additionally all tanks, containers, hoses as well as the MTC system itself need to be bonded to prevent built-up of static electricity.**

**NOTE: Contact factory for use of MTC with biodiesel, vegetable oil or other liquid compatibility.**

## PREPARATIONS

Before operating the MTC, we recommend you first determine the amount of contaminants, free water and sludge in the tank.

Algae-X® provides a variety of **tank sampling equipment** including **Sampling Pumps**, tubing and bottles as well as **Sampling Thieves** (“Bacon Bomb”) – please see our FS Fluid Sampling line of products. Please make sure the **samples are taken from the bottom of the tank** (in the deepest spot).

An old and tried method is also “**sticking the tank**”. This means using a stick with “**Kolor Kut**” paste on the end that reaches through the top all the way to the bottom of the tank. Kolor Kut paste will show the water level in the tank and indicate how much water and sludge will have to be removed. Call Algae-X® for further information on other fuel sampling equipment.

## OPERATING PROCEDURES / TIPS

### HOSES

The intake/suction hose is a clear, see-through reinforced vacuum hose. The return hose is black, reinforced, discharge fuel hose. Both hoses are equipped with Cam & Groove couplings. Dust caps and plugs are provided and should be attached when the MTC or hoses are not being used (especially during transportation).

### “VACUUM ATTACHMENTS”

We highly recommend attaching a straight wand or pipe (cut at an angle at the end that goes into the tank) with minimum the same inner diameter as the suction hose to the suction hose to reach the lowest part of the tank bottom.

**Note: Never restrict the flow on the suction side of an MTC; e.g. by using a smaller ID hose or pipe or attaching the suction hose to a fitting on the tank that has a smaller ID than the hose. This will lead to excessive pump load, noise and ultimately damage the pump.**

### VALVE POSITIONS

Verify inlet and outlet valve positions for proper operation mode and make sure all drain and air vent valves are closed and the system is set up in a stable and safe position.

### GROUNDING / BONDING

The complete **MTC system needs to be properly grounded**. Use provided grounding reel to ground system as well as **securely bond the system to the fuel tank and / or disposal containers**.

### GAUGE VENTING / ACCURACY

After shipment, pointer of gauges may not rest at zero due to internal case pressure buildup caused by temperature variations. Accuracy may be significantly reduced. To restore gauge to operating condition, move yellow lever of fill plug to the “open” position or remove small plug from top of gauge and leave open.

## SYSTEM GAUGES

The MTC-HC80 is equipped with several gauges to monitor pump and system status as well as filter condition.

#	Gauge description	What is measured	Normal range	Max. allowed
1	System inlet vacuum	Fuel lift, losses in hoses, any restriction prior to inlet port	0-15"HG	18"HG
2	Pump inlet vacuum	#1 plus pressure drop of bag filter	0-15"HG	18"HG
3	<i>Differential pressure / primary filter (#2 - #1)</i>	<i>Calculated value (filter bag condition)</i>		<i>15"HG = change filter</i>
4	Pump discharge pressure	Total discharge pressure of pump	0 – 30 PSI	60 PSI
5	Fine Filter pressure	#8 plus pressure drop of secondary fine filter element	0 - 25 PSI	30 PSI
6	System outlet pressure	Discharge head, losses in hoses, any restriction after outlet port	0 - 5 PSI	30 PSI
7	<i>Differential pressure / fine filter (#5 - #6)</i>	<i>Calculated value (filter element condition)</i>		<i>25 PSI = change filter</i>

## PRIMING THE SYSTEM

Fill the Primary filter with fuel until the fuel level is above the suction port of the pump prior to startup. The pump may prime slowly depending on distance of lift. This will not damage the pump

## TANK CLEANING STEPS

**PHASE ONE:** Initially remove bulk water and sludge from the bottom of the tank into a separate suitable disposal container (use discharge port 1).

**Note: Disposal of tank sludge, water and filter elements should be done in accordance with Federal, State and Local regulations.**

**PHASE TWO:** After removing the bulk of the sludge and water from the tank and draining the separator, insert discharge hose – after **connecting it to port 2** - into tank as far away from the suction hose as possible. Verify that both hoses are properly placed in the fuel tank and that the valves on the MTC system are in the correct position.

Depending on the amount of contaminant in the tank, we recommend you stop the pump frequently and check for free water and sludge by draining the water separator. It may be necessary to depress the air purge valve on top of the separator after opening the drain valve.

**Monitor the bag filter and change the bag filter element when the differential vacuum reaches 15"HG.**

The MTC should be kept running in the Phase Two recirculating mode until clean fuel samples can be drained from the separator. Then, we are ready for final polishing.

Now is the time to **add Algae-X® AFC-705 Fuel Catalyst** in a dose of 1 : 2500 or 1 gal of AFC-705 for 2500 gallons of fuel. Higher doses of AFC-705 may be necessary depending on condition of fuel.

**Note: The separator/coalescer has to be full at all times to perform properly. You can do so by using the air purge valve located on top.**

PHASE THREE is the final fine filtration cycle. The fuel now returns back to the tank through the **discharge hose connected to Port 3**. The fuel now also flows through the water block / fine filter that removes even the finest invisible particles down to 1 micron (depending on filter element) as well as entrained and emulsified water (make sure you are using Water Block filters) and restores the fuel to its optimal pristine and sparkling condition.

Monitor the pressure gauge on the filter vessel. **When the pressure reaches 20 - 25 PSI, it is time to change the filter.**

**Note: Some fine (secondary) filters are only for particulate removal and will allow water to pass through – for complete water elimination we highly recommend to finish a tank cleaning job with a Water Blocking secondary filter.**

#### DIGITAL FLOW METER (OPTIONAL)

The digital flow meter is an excellent tool to monitor flow rate and system performance as well as count the amount of liquid that has been processed.

**Note: If your MTC is equipped with the optional flow meter in the discharge hose please make sure to use at least a 800 micron filter bag in the primary filter to protect the meter.**



**! WARNING ! Never run an MTC system unattended.**

#### SFC-55-MTC SMART FILTRATION CONTROLLER

Make sure that the systems power requirements and rated voltage / frequency match your electrical system (See wiring diagram and / or marking on SFC-55-MTC). The SFC-55-MTC may only be connected to properly grounded power sources for operator safety. Do not run over, crush or pull the power supply cable and wiring harness otherwise it may be damaged. Protect the cables from oil, heat and sharp edges.



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

The system is equipped with an adjustable vacuum switch on the input side of the pump. Vacuum values readings reaching 15" HG vacuum indicate excessive debris in the primary filter (or a flow restriction or too high suction height and therefore pressure drop in the suction line) and will result in pump shutdown and activate the high vacuum alarm.

**Note: 15" HG vacuum = clogged primary filter or suction line flow restriction / excessive lift.**

System pressure over 25 PSI will trigger a high-pressure alarm and will automatically shut down the pump.

## PUMP OPERATION

Apply control power to unit. Place breaker on the Algae-X SFC-50-MTC Smart Filtration Controller in the "ON" position.

### MANUAL:

Place the selector switch in the "MANUAL" position. The pump motor will run until the switch is returned to the "OFF" or "AUTO" mode positions or till an alarm has been tripped.

### AUTOMATIC:

Place the key switch in the "AUTO" position. When the timer contacts close, the pump will start and run until the timer setting has expired.

## PROGRAMMING THE TIMER

The programmable timer is part of the Micro PLC settings of the SFC-55-MTC Smart Filtration Controller.

**Note: The PLC uses military time – all times programmed must be in that format.**

1. When power is first applied to the system the display of the PLC will show (blinking) date and time.
2. We will now **set current date and time** (must be in military format):
3. Hit the "ESC" button
4. Select '**Stop**' and press "OK"
5. Select '**Yes**' (use down arrow key) and press "OK"
6. Select '**Setup**' (use down arrow key) and press "OK"
7. Select '**Clock**' and press "OK"
8. Select '**Set Clock**' and press "OK"
9. Using the arrow keys set current day of the week, time and date as indicated in the display and press "OK" ( or to change value, or to change between week day, time and date).
10. When finished entering press "OK" to confirm
11. Press "ESC"
12. Select '**Start**' and press "OK" – correct time and date should be displayed
13. We are now ready to **program the timer** (military time format must be used):
14. Hit the "ESC" button
15. Select '**Set Param**' (use down arrow key) and press "OK"
16. Push down arrow key till '**Timer 1**' is displayed
17. Press "OK"
18. Use left and right arrow keys to select the day/days of the week the system should automatically turn on and the up or down arrow key to activate the selected day.
19. Use arrow keys in same manner to program the '**On**' time – when the system will switch on (on the selected day/days)
20. Use arrow keys in same manner to program the '**Off**' time – when the system will switch off (on the selected day/days)
21. Press "OK" to confirm entry when finished
22. If required you can set up to 3 Timers by using the up and down arrow key
23. Press "ESC" twice to return back to the time and date display

**Please call Algae-X International with any questions.**

## FILTERS – MTC-HC80

**Note: Always have an adequate supply of filter elements on hand.**

### CHANGING PRIMARY BAG FILTER

The vacuum gauges on the bag filter vessel show the pressure drop over the filter. **15”HG vacuum indicates** the bag filter element should be replaced.

1. For a “no mess” bag filter change the bag filter vessel should be pumped empty.
2. Close the inlet ball valve and then open the air purge valve on the top of the bag filter housing to allow air to enter.
3. Turn on the pump at low air pressure (low flow) for a couple strokes till fuel is removed from the bag filter vessel (pumped dry).
4. Make sure pump is turned off, pressure is released and discharge valve after the pump is closed (close all discharge valves), then open the lid.
5. Replace bag filter element and make sure it seals tight within the perforated basket. For best results bag should be fully extended into the basket. 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 O-Ring within the bag filter vessel.
6. Apply a film of lubricating oil to the lid gasket. Replace O-Ring if worn or damaged.
7. Tighten lid screws evenly (alternating the screws) to ensure no air can enter the system and lid is fully seated onto O-Ring gasket.
8. Verify inlet and outlet valve positions for proper operation mode and make sure all drain and air vent valves are closed. Check for leaks and air intrusion when re-starting the system.

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

**Note: Disposal of tank sludge, water and filter elements should be done in accordance with Federal, State and Local regulations.**

### CHANGING SECONDARY FINE / WATER BLOCK FILTER

There are two types of **Algae-X® fine filters** available.

1. 1 to 100 micron particulate filter
2. 1 TO 100 micron **water block fine filter**

The **Algae-X® Water Block** removes entrained and emulsified water from fuel and oil.

The pressure gauges on the fine filter vessel show the pressure drop over the filter. **20-25 PSI indicates** when the filter element should be replaced.

The water block filters are used to remove entrained and emulsified water from the fuel stream. Saturation of water block filter will cause the pressure drop over the filter to increase (even if the pleated filter paper does not show any contaminants).

1. Optional: To remove some fuel from the fine filter vessel use steps 1 through 3 from above.
2. Before replacing the filter element, close the valves prior and after the fine filter vessel for complete isolation. Make sure all pressure in the system has been released (open air vent valves carefully and slowly).
3. Make sure pump is turned off, and then open the lid.
4. Replace filter element and hand tighten top seal plate nut. Check inner housing and basket for debris and sludge and remove if necessary.
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. Verify inlet and outlet valve positions for proper operation mode and make sure all drain and air vent valves are closed.
8. Check for leaks and vent air from filter housing when re-starting the system.

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 tank sludge, water and filter elements should be done in accordance with Federal, State and Local regulations.**

## AFTER CLEANING THE TANKS

### 1. Stabilize the Fuel

AFC-705 should always be used to **stabilize the fuel** in tanks used for long-term fuel storage. When no Algae-X® re-circulating system or STS Automatic Filtration System is in place, AFC-705 will maintain fuel quality and prevent formation of solids for six to twelve months. Added during the tank cleaning phase it is not necessary to use AFC-705 again for 6 months or more.

### 2. Prevent Water from Accumulating

The use of Algae-X® Water Eliminators will **prevent water** from accumulating in the tank. The water eliminators will absorb and remove any future water from condensation or other sources. Preventing water accumulation eliminates microbial growth and the need for toxic biocides.

### 3. Monitor Fuel Quality

Liqui-Cult Fuel Test Kits are ideal to monitor your fuel supply for microbial contamination. The tests quantify bacterial and fungal activity.

Algae-X® Tank Cleaning Systems significantly lower operating costs, save fuel, eliminate periodic tank cleaning and the build up of solids, sludge and acids.

Algae-X® Technology enhances personnel safety and addresses environmental concerns by preventing the need for costly toxic biocides.

Larger capacity Mobile and Stationary Tank Cleaning Systems are available.

## MTC MAINTENANCE



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



**! IMPORTANT ! Always disconnect the system from the air and electric power supply before working or servicing it. Do not proceed with any maintenance unless the pressure or vacuum has been released, the system has been allowed to reach ambient temperature and all fluids have been drained.**

## DRAINING AND STORING THE SYSTEM

1. **Before releasing the quick disconnect couplings**, allow all fuel to flow out of the hoses by draining the system or **take the suction hose out of the tank while the pump is still running and wait till system is purged and empty.**
2. Place an appropriate container under each drain valve. Use the air purge valve on top of the separator to make sure all of the fluid can be drained from the system.

## FUEL / OIL SEPARATOR / COALESCER

The separator is a closed dynamic separator / coalescer that does not require any consumables. When draining water and sludge from the separator:

1. Place an appropriate container under the drain valve
2. Open the drain valve and close when observing clean fuel
3. Push the air-purge valve to allow air in and fuel to flow out

The Separator needs to **be serviced** and **flushed from time to time**. This can be done by removing the top plug, opening the drain valve on the bottom and flushing the separator to make sure no debris and contaminants restrict the flow.

## PUMP

Check pump for leaks, worn and damaged parts. **Detailed safety, operation and maintenance instructions are available in the supplied pump manual.** We highly recommend carrying a spare pump or a pump spare parts kit.

## LG-X FUEL CONDITIONER

**Ferrous particles and rust** can collect inside the LG-X unit and over time cause a **flow restriction and/or diminish its effectiveness.** Open the lid of the LG-X Fuel Conditioner by unscrewing the lid screws and clean the magnet and fuel chamber. Inspect O-rings prior to reassembly.

## SUCTION AND DISCHARGE HOSES

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

## SAFETY NOTES

The MTC Pump is designed to be used with diesel fuel and oils only. The pump is NOT designed for gasoline, alcohol or other explosive or corrosive liquids.

Please contact us if you are not sure if the liquid you are intending to polish and clean is compatible with the MTC system.

Biocides are extremely toxic and may enter the body through the skin. It is recommended to use adequate protection and avoid skin contact with **biocide-treated fuels and oil.**



**! WARNING ! DO NOT USE WITH GASOLINE. This System is not meant for use with gasoline nor with other flammable liquids having a flash point less than 100°F (38°C). Use with gasoline or any flammable liquids at a temperature exceeding their flash point, presents explosion and fire hazards.**



**! WARNING ! Care must be taken not to operate the pump with either the suction (inlet) or discharge (outlet) lines closed or obstructed. Only run the system when you are able to supervise it. Unattended Operating of the MTC is NOT recommended.**



**! WARNING ! Some fuels may have been treated with biocides. Biocides are extremely toxic and may enter the body through the skin. Use adequate protection and avoid contact.**

**Note: Disposal of tank sludge, water and filter elements should be done in accordance with Federal, State and Local regulations. These materials need to be treated as chemical waste.**

## TROUBLESHOOTING

### No fuel delivery

1. Pump does not run
2. Fuel supply or return blocked
3. Primary filter clogged
4. Lift is too high
5. Air leak in fuel supply to pump
6. Intake or outlet valve closed
7. Liquid too viscous (thick)
8. Foot valve clogged / inoperative

### Insufficient fuel delivered

1. Air leak at inlet
2. Insufficient air supply
3. Lift too high
4. Pump worn
5. Inoperative / too small foot valve
6. Flow restriction in hose / plumbing / primary filter
7. Liquid too viscous
8. Filter plugged

### Vacuum gauge shows more than 15"HG:

1. Restriction on inlet side too high
2. Lift too high
3. Inoperative foot valve
4. Inlet ball valve not fully open
5. Suction line / Primary filter clogged

### Pressure gauge more than 20 – 25 PSI with clean or new filter element installed

1. Restriction on discharge side too high
2. Head (lift) on discharge side too high
3. Check filter for water saturation (WB only)
4. Outlet ball valve not fully open
5. Discharge line clogged

### Noisy operation

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

### Pump requires frequent re-priming

1. Inoperative foot valve
2. Pump cavitations
3. Plumbing air leaks
4. Lift too high
5. Leaking pump seal

**Note: We highly recommend installing the optional Digital Flow Meter in the discharge hose of the MTC (can also be factory equipped – if requested). The Digital Flow Meter is an excellent tool to monitor the performance of the equipment and will measure how much fuel has been processed through the MTC.**

# **TANK CLEANING SYSTEMS WARRANTY**

## **LIMITED WARRANTY**

ALGAE-X® 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 ALGAE-X® 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 purchasers who use the products covered hereby

Any warranty claim received by ALGAE-X® 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.

This warranty shall not apply to products (1) which have been tampered with, altered or repaired by anyone other than ALGAE-X® without the express prior written consent of ALGAE-X® (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 ALGAE-X® under this warranty is limited to the repair or replacement of the defective product. ALGAE-X® 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. ALGAE-X® ASSUMES NO LIABILITY FOR ANY GENERAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL, CONTINGENT OR OTHER DAMAGES UNDER ANY WARRANTY, EXPRESS OR IMPLIED, AND ALL SUCH LIABILITY IS HEREBY EXPRESSLY EXCLUDED.

ALGAE-X® MAKES NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WITH RESPECT TO THE PRODUCTS COVERED BY THIS WARRANTY POLICY, EXCEPT AS EXPRESSLY PROVIDED FOR HEREIN. NO EMPLOYEE, AGENT, REPRESENTATIVE OR DISTRIBUTOR IS AUTHORIZED TO MAKE ANY WARRANTY ON BEHALF OF ALGAE-X® OTHER THAN THE EXPRESS WARRANTY PROVIDED FOR HEREIN.

ALGAE-X® 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 ALGAE-X® to make similar changes in such products that were previously manufactured.

## **WARRANTY CLAIM PROCEDURE**

To make a claim under this warranty, please call our ALGAE-X® at (239) 690 9589 or (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 ALGAE-X®, arrange for a Field Engineer to inspect your system. If the inspection discloses a defect covered by its limited warranty, ALGAE-X® will either repair or replace the defective parts or products. ALGAE-X® assumes no liability, if upon inspection, ALGAE-X® 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. For service and sales, please contact ALGAE-X®:

ALGAE-X® International  
5400-1 Division Drive, Fort Myers, FL 33905 ▪ 877-425-4239 ▪ Fax: 239-690-1195  
Internet: [www.algae-x.net](http://www.algae-x.net) ▪ Email: [algae-x@algae-x.net](mailto:algae-x@algae-x.net)

## TECHNICAL ASSISTANCE AND ORDERING

### Please write to, fax, email or call:

ALGAE-X® International  
5400-1 Division Drive  
Fort Myers, FL 33905

Tel: 239-690-9589  
Fax: 239-690-1195  
Email: [algae-x@algae-x.net](mailto:algae-x@algae-x.net)  
Internet: [www.algae-x.net](http://www.algae-x.net)

### Please provide the following information:

Serial Number of your MTC (located on the metal serial plate) the required part numbers and quantity.

## REPLACEMENT FILTER ELEMENTS

### Primary (Bag) Filter:

PFB-30-10 10 Micron bag, felt, polyester  
PFB-30-25 25 Micron bag, felt, polyester  
PFB-30-75 75 Micron bag, felt, polyester  
PFB-30-250 250 Micron bag, multifilament mesh, polyester  
PFB-30-800 800 Micron bag, multifilament mesh, polyester  
Other micron sizes and materials available

### Secondary (Fine) Filter:

CF-618-5 Filter Cartridge - particulate - 5 micron  
CF-618-10 Filter Cartridge - particulate - 10 micron  
CFWB-618-5 Filter Cartridge - Water Block - 5 micron  
CFWB-618-10 Filter Cartridge - Water Block - 10 micron  
Other micron sizes available

### Also available:

Extra suction and discharge hoses  
Digital Flow Meter  
Rotor Sight Glass  
Casters, pneumatic wheels  
Larger capacity, custom designed systems for higher flow rates and larger tanks

## MTC-HC80 SYSTEM IDENTIFICATION

Serial Number: \_\_\_\_\_ (e.g. B 090010 – HC80)

Voltage (Controller):

- 208-230V AC / 60 Hz
- 230 V AC / 50 Hz

Inspected by: \_\_\_\_\_ Date: \_\_\_\_\_

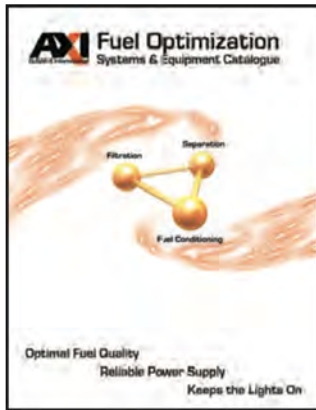
AXI designs and manufactures standardized and custom-engineered Automated Fuel Conditioning, Fuel Polishing and Transfer Systems, Tank Cleaning Equipment, Fuel Additives and In-line Fuel Conditioners to ensure optimal fuel quality at all times.

Our scope of expertise covers fuel storage and fuel supply systems from single engine installations to power plants. AXI is your single source for all fuel conditioning related equipment and support available world-wide.

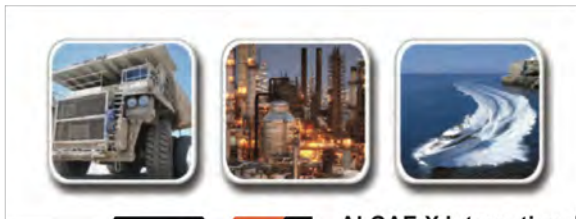
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- Lower Maintenance Costs
- Lower Exhaust Emissions



Read about the secret life of fuel and find solutions in the AXI Brochure, available at [www.AXIFuelConditioning.net](http://www.AXIFuelConditioning.net).



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ALGAE-X International

5400-1 Division Dr

Fort Myers, FL 33905

1 877-425-4239

+1 239-690-9589

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