

Installation, Operating and Maintenance Manual

MTC 1000-LX

Tank Cleaning and Fuel Restoration System



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



**DIESEL
FUEL DOCTOR**

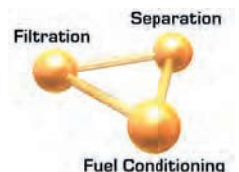
*Protecting Your Engines,
Your Equipment & the Environment*

PHONE: 517.605.5788

FAX: 888.221.2214

TORRE@DIESELFUELDOCTOR.COM

Optimal Fuel Quality • Reliable Power



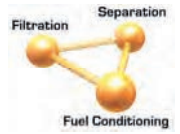
INSTALLATION, OPERATING AND MAINTENANCE MANUAL

TABLE OF CONTENTS

INITIAL INSPECTION	6
OVERVIEW - MOBILE TANK CLEANING SYSTEM	6
TANK CLEANING - WHY, WHERE AND HOW	7
GENERAL TANK CLEANING PROCEDURE	7
AFC-705 FUEL CATALYST	8
AFTER CLEANING THE TANKS	8
TANK CLEANING "101"	9
PREPARATIONS	9
START-UP PROCEDURE	9
Priming the System	9
OPERATING PROCEDURE – STEP BY STEP	10
WE ARE NOW READY FOR	10
FILTERS – MTC 500 / 1000 / 3000	12
Changing Filters	12
FILTERS – MTC 350	13
Servicing and Back-flushing the MTC-350 filter:	13
MTC MAINTENANCE	14
Draining and Storing the System	14
Pump Strainer / Y-Strainer (MTC-500)	14
Fuel / Oil Separator / Coalescer	14
Pump	14
LG-X Fuel Conditioner	14
Suction and Discharge hoses	15
SAFETY NOTES	15
TROUBLESHOOTING	16
TANK CLEANING SYSTEMS WARRANTY	18
TECHNICAL ASSISTANCE AND ORDERING	19
Replacement filter elements	19
MTC-350 / 500 / 1000 / 3000 SYSTEM IDENTIFICATION	19

MTC 1000 LX

Mobile Tank Cleaning System



Mobile Tank Cleaning and Fuel Restoration Systems clean tanks while reconditioning, stabilizing and decontaminating diesel, biofuels, light oils and hydraulic fluids. MTC systems remove water, sediment and sludge that naturally form and accumulate in tanks. They are compact, heavy-duty, multi-stage industrial systems for long-term reliable service. MTC systems clean tanks and restore fuel to its "Clear & Bright" pristine condition without the need for anyone to enter the tank.



Mobile Tank Cleaning Systems feature:

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

AXI's MTC Systems offer Three Stages of Fuel Conditioning

- Stage 1:** The separator/coalescer removes water and particulate that clog filters and harm injectors.
- Stage 2:** The ALGAE-X® Fuel Conditioner reconditions and stabilizes the fuel, reversing the process of fuel deterioration and buildup of tank sludge.
- Stage 3:** The industrial type water block fine filter removes emulsified water and very fine solids down to 3 microns.

MTC Systems are built with industrial quality components mounted on a heavy-duty aluminum cart. A clear suction hose and optional rotor sight glass show fuel flow and clarity. The large drip tray is designed to prevent spillage. Fuel can be polished without using any consumables by connecting the discharge hose to the cam & groove connection, bypassing the filter. The optional Digital Flow Meter measures the volume of liquid processed.

MTC 1000 LX SPECIFICATIONS

Flow Rate	900 GPH
Separator	Maintenance Free Centrifugal Water Separator/Coalescer
Spin-on Final Filter	1, 3, 10 or 25 μ Fine Filter 3 or 10 μ Water Block
Fuel Conditioner	LG-X 3000
Pump	Self priming rotary vane pump with integrated bypass valve & strainer
Power	115V 60Hz 20A or 230V 50Hz 20A
Ports	1" Cam & Groove
Clear Suction Hose	1", 25 ft
Discharge Hose	1", 25 ft
Dimensions	48" x 22.5" x 25" (122 x 57 x 63 cm)
Weight	160 lbs
Not for use with fluids that have a flash point below 100°F.	

MTC 1000 LX Principal Components

The **principal components** are a self-priming vane pump with integrated bypass valve and strainer, maintenance free centrifugal water separator/coalescer, spin-on fine filter and water block filters, an ALGAE-X Fuel Conditioner and clear suction hoses.

MTC Options

AXI customized Pre-Filter Assemblies have a large contaminant holding capacity to save time and accelerate the cleaning of tanks with large amounts of sludge, rust, scale and sediments.

AXI Spill Containment Berms protect the environment and are industrial quality, easy to use and fold up for storage and transportation.

AFC-705 Fuel Catalyst is a broad-spectrum fuel additive concentrate that enhances the breakdown and removal of sludge, slime and bio-fouling from tank walls and baffles.

Wherever fuel is being used or stored

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 is a three-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.

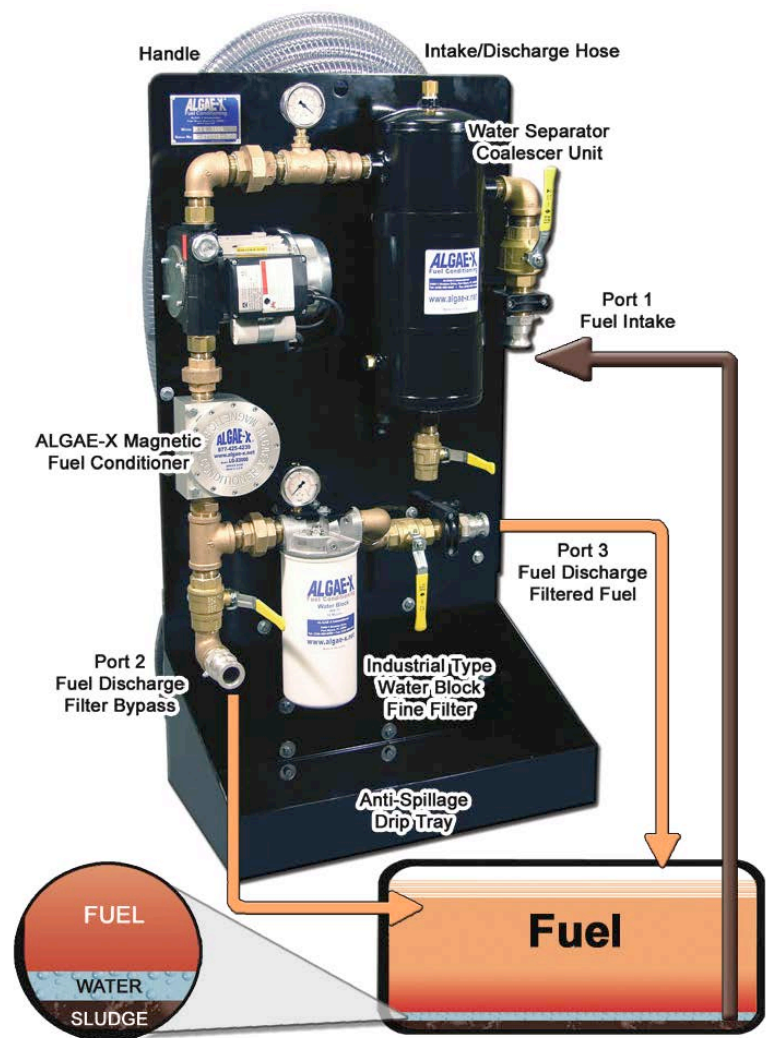
The system can also be used to clean fuel or oil by pumping it from one tank through the MTC into another tank and / or suitable container.

The MTC System processes fuel or oil by pumping it from the tank through the clear intake hose on Port 1, through the oil-water-sludge separator and then the Algae-X® Fuel Conditioner.

The discharge hose can be connected to either Port 2 or Port 3.

Port 2 sends the fuel directly back to the tank, bypassing the filter. Port 3 sends the fuel through the water block / fine filter and then back to the tank.

Ports 1, 2 and 3 are equipped with Quick Disconnect Couplings that easily connect to the matching couplings on suction and discharge hoses.



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. It is ideal for use:

- in marinas, to clean tanks on board of all types of vessels
- at construction sites
- in remote areas with on-site fuel storage for heavy equipment
- in service trucks maintaining standby generators
- in truck/vehicle depots
- in hydraulic oil tanks

GENERAL TANK CLEANING PROCEDURE

The MTC has three different operating modes providing the operator flexibility and efficiency.

In Phase One, bulk water and sludge are removed from the tank into a separate container for disposal. In Phase One the **fuel bypasses the filter**. The Separator/ Coalescer and Algae-X® Fuel Conditioner work in conjunction removing free water, sludge, and particulate, as small as 5 micron, from the tank. The system is **not in a re-circulating mode**. The fuel enters through Port 1 and exits through Port 2 into a separate waste container. Water and sludge are directly removed from the tank and collected in an appropriate container for disposal.

In Phase Two, the MTC system is in **recirculating mode**, continuously restoring, reconditioning and returning the fuel back to the tank. Phase Two will **continuously remove free water and particles as small as 5 micron using only the water separator and Algae-X® Fuel Conditioner**. The fuel enters in Port 1 and returns back to the tank from Port 2. The **fuel bypasses the filter**, which will economize on consumable filter elements. Phase two will restore the fuel to a clear and bright condition.

In Phase Three, the MTC system is still in a **recirculating mode**. The fuel enters through Port 1 and exits through Port 3 back to the tank. In addition to the water separator and Algae-X® Fuel Conditioner, **this phase incorporates the water block / fine filter removing even invisible particles down to 3 micron, as well as entrained and emulsified water.**

Phase Three will restore the fuel to its optimal clear and bright condition.

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**.

The catalyst is best introduced **into the process during Phase Two**. 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**.

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.

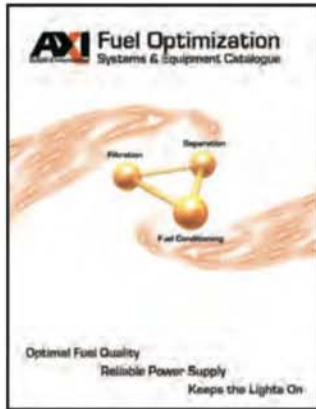
AXI designs and manufactures standardized and custom-engineered Automated Fuel Conditioning, Fuel Polishing and Transfer Systems, Tank Cleaning Equipment, Fuel Additives and In-line Fuel Conditioners to ensure optimal fuel quality at all times.

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.

- Peak Engine Performance
- Reliable Power Supply
- 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.



See the full product line in the AXI Systems and Equipment Catalogue, available at www.AXIFuelConditioning.net.



DIESEL FUEL DOCTOR

*Protecting Your Engines,
Your Equipment & the Environment*

PHONE: 517.605.5788
FAX: 888.221.2214
TORRE@DIESELFUELDOCTOR.COM

