

Installation, Operating and Maintenance Manual

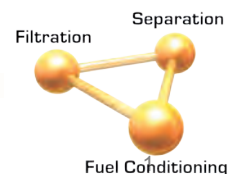
TK 240

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

Optimal Fuel Quality • Reliable Power



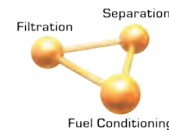
INSTALLATION, OPERATING AND MAINTENANCE MANUAL

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TK 240-XT

Portable Tank Cleaning & Fuel Transfer System



Portable Tank Cleaning and Fuel Transfer Systems are used for re-circulating, polishing and transferring diesel fuel and light oils in boats, stand-by generators, trucks, buses, agricultural machinery and heavy equipment. The TK 240-XT is compact, portable and easy to use. For marine applications, the TK 240 can be used in conjunction with the existing on-board primary filter/water separator. Equipped with a 12V DC motor, the TK 240 effectively removes water and sludge from the bottom of tanks and transfers waste to an appropriate waste receptacle. The TK 240-XT guarantees **Optimal Fuel Quality for Reliable Power at All Times**.



TK 240-XT Portable Tank Cleaning Systems feature:

- Compact Design for Portability
- Minimal Consumables Used
- Negligible Fuel Loss
- Low Operating Costs

TK systems are designed around a self-priming 240 GPH nickel-plated brass gear pump. Quality filtration components are connected using corrosion-resistant stainless steel plumbing. A pressure gauge is installed on the filter housing to ensure optimal filter usage by showing remaining filter life. Available filter elements include stainless steel screens, particulate or water block elements.

TK 240-XT Package:

- Nickel-plated Brass Gear Pump
- LG-X 500 Fuel Conditioner
- 15 Micron Water Block Cartridge
- Pressure Gauge
- Inline Strainer
- Specially Designed Spill Tray
- Suction & Discharge Hoses and Clamps
- Filter Wrench
- 8 oz. bottle of AFC-705

Optional Items:

- 10 micron Replacement Filter Cartridge
- 40 Mesh (380 micron) Cleanable Stainless Screen
- 80 Mesh (178 micron) Cleanable Stainless Screen

TK 240 SPECIFICATIONS

Flow Rate	240 GPH
Filter	Standard: 15 Micron Water Block Optional: 40, 80 Mesh SS Screen or 10 Micron Particulate
Fuel Conditioner	LG-X 500
Pump	Nickel-plated Brass Gear Pump
Port Size	1/2"
Monitoring	Pressure Gauge
Power Requirements	12V 10A
Clear Suction Hose	1/2" 13 ft
Flexible High Pressure Discharge Hose	1/2" 13 ft
Dimensions	13" x 12" x 12" (33 x 30 x 30 cm)
Weight	26 lbs
Not for use with fluids that have a flash point below 100°F.	

SYSTEM COMPONENTS



- 1) Fuel Inlet (From Tank)
- 2) Screen/Strainer
- 3) Pump
- 4) DC Power Terminals

- 5) LG-X 500
- 6) Fuel Filter
- 7) Fuel Outlet
- 8) Pressure Gauge

GENERAL SPECIFICATIONS

TK 240

Flow Rate	approx. 240 gph (908 l/h)
Outline Dimensions	12" (305mm) x 13" (330mm) x 12.5" (320mm) (L x W x H)
System Weight	12.5 lbs (5.7 kg)
Operating Temperature	32 - 104° F (0 - 40° C)
Electrical	12 V DC, 10 A (standard) 24 V DC / 5 A – with fuse
Pump	Brass Gear Pump
Suction capability	5 ft (1.5m) vertical lift (lines >1/2", primed)
Max. allowed discharge pressure	28 PSI (1.8 bar)
Inlet / Outlet	1/2" hose barb
Inlet / Outlet ports on pump head.....	3/8" BSPP
Max. Fluid Viscosity	46 cSt
Fluids	Diesel fuel, hydraulic, engine and lube oil, water, antifreeze
Strainer (40 Mesh / 380 Micron).....	TK-070
Fuel Conditioner	LG-X 500
Fuel Filter w/ clear bowl (15 Mic. WB Cartridge).....	TK-080 (TK-082 replacement cartridge)
Pressure Gauge.....	CI-12

OPERATING INSTRUCTIONS

TK systems are equipped with either a 12 V DC or 24 V DC motor. Connect the positive pole of your battery with the red wire connector of the TK first and then the black wire to the negative battery pole. After the initial hook up check system operation to ensure the pump is running in the right direction. If the motor is running in the opposite direction or is not running at all, reverse the two electrical leads. Prime the pump and strainer. The TK system is now ready for action.

The TK is an excellent, compact and versatile tank cleaning and fuel polishing system. Step one in fuel polishing is always the removal of water and sludge from the tank bottom straight into an appropriate waste container. Insert the suction hose so that the end reaches the lowest point in the tank (this can also be achieved by using a straight pipe connected to the end of the hose). After that has been accomplished, circulate the fuel through the TK system back to the tank until the appearance of the fuel is "Clear & Bright", the filters elements stay clean and the reading on the pressure gauge will not rise any more.

In most instances, circulating the fuel through a combination of LG-X Fuel Conditioner and fuel filter 2-4 times will do the job. Final polishing should be done with the TK-082 15 micron water blocking filter element. For tanks with heavy sedimentation we recommend to use the cleanable wire mesh TK-083/4 element for initial tank cleaning.

In marine applications, the TK system can be used in connection with the existing onboard primary filter/water-separator. Hooked up in this way, the fuel can flow from the tank to the onboard primary filter, through the TK and then back to the tank, either through the return line, an inspection port or the fill pipe. Please make sure the flow rate of your existing primary filter matches the flow rate of the TK.

Note: The TK 240 is not designed for permanent installation.

The application of a “Water Block” filter element (e.g. TK-082) will remove emulsified water from your fuel. The use of Algae-X Fuel Catalyst, AFC-705, will accelerate the tank cleaning process. AFC-705 should be applied after free water and sludge have first been removed from the tank.

Use proper quality approved fuel line materials with at least 1/2” inner diameter and up to 15 ft in length for the suction hose to connect TK 240 to accessories and/or tanks. For more viscous fluids the hose length should be shortened and ID increased. Fuel lines that are too long, or have an ID that is too small will place excessive load on the pump motor and may shorten its life.

**The TK 240 is designed to meet environmental standards for safe operation.
Larger capacity systems available.**

STABILIZING AND OPTIMIZING FUEL QUALITY

The use of **AFC-705 is an essential part of any tank cleaning procedure**, to more rapidly and efficiently decontaminate and clean the **entire fuel system**. AFC-705 will decontaminate compartments of the tank that are out of reach of the suction line. Depending on the condition of the fuel and the amount of sludge build-up, it is recommended to initially use a double dose of one to twenty-five hundred (1:2500 or 1 oz : 20 gallons of fuel), instead of the normal maintenance ratio of one to five thousand (1:5000 or 1 oz : 40 gallons of fuel). This has proven to be very helpful to enhance and accelerate the tank cleaning process by breaking down and dissolving tank sludge. AFC-705 contains detergent, surfactant, dispersant, corrosion inhibitor, lubricity enhancer, fuel stabilizer and combustion catalyst. It does NOT contain biocides.

AFC-705 should always be used periodically to stabilize fuel stored for 90 days or more.



! 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. Motor is NOT explosion proof. Do not use within 20 ft (6m) of hazardous locations where explosive vapors may be present.



! WARNING ! Gear pumps are capable of developing extremely high pressure. Care must be taken not to operate the pump with either the suction (inlet) or discharge (outlet) lines closed or obstructed. If the pump is allowed to run without fuel serious damage may occur. Only run the system when you are able to supervise it. Unattended Operating of the TK 240 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: Water, fuel and sediments removed from the tank should be handled and disposed in accordance with Federal, State and Local regulations.

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 at inlet
2. Defective pressure relief valve or check valve
3. Excessive lift
4. Pump worn

Noisy operation

1. Insufficient fuel supply
2. Air leaks in the inlet pipe

Pump leaks fuel

1. Loose pump plumbing fittings
2. Worn pump shaft seal

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:

1. This warranty shall only extend to and is only for the benefit of original purchasers who use the products covered hereby
2. 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.
3. 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.
4. 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.
5. 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.
6. 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 • Email: 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: info@algae-x.net
Internet: www.algae-x.net

Please provide the following information:

Serial Number of your TK 240, the required part numbers and quantity. The drawings / parts list included in this manual are the most accurate source of part numbers for your TK 240.

REPLACEMENT FILTER ELEMENTS

TK-081 10 Micron
TK-082 15 Micron

REPLACEMENT SCREEN/STRAINER ELEMENTS

TK-083 40 Mesh (380 Micron)
TK-084 80 Mesh (178 Micron)

TK 240 SYSTEM IDENTIFICATION

Serial Number: _____ (e.g. B 070010 – 180)

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.

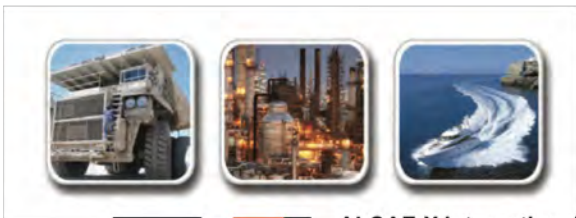
- Peak Engine Performance
- Reliable Power Supply
- Lower Maintenance Costs
- Lower Exhaust Emissions



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.



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