

Installation, Operating and Maintenance Manual

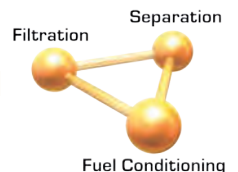
STS 6000-P35

Automated Fuel Filtration System



- UL508a SMART Filtration Controller
- Unique Alarm & Remote Monitoring
- NEMA Certified Powder Coated Cabinet
- Continuous-Duty Pump with Viton Seals
- Stainless Steel Plumbing
- Stand Alone, Reliable & Turn-Key
- Multi-Stage Water Removal and Particulate Filtration

Optimal Fuel Quality • Reliable Power



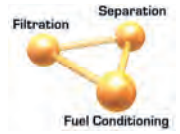
INSTALLATION, OPERATING AND MAINTENANCE MANUAL

TABLE OF CONTENTS

OVERVIEW – BASIC SYSTEM COMPONENTS	5
GENERAL SPECIFICATIONS	7
SYSTEM COMPONENTS.....	7
PRIMARY INSPECTION	8
INSTALLATION.....	8
Mounting.....	8
Electrical	9
Plumbing.....	9
Typical plumbing / Above ground tank installation (schematically).....	10
IMPORTANT INSTALLATION PRECAUTIONS	10
SMART FILTRATION CONTROLLER - ALARM FEATURES	11
INITIAL START-UP / COMMISSIONING CHECKLIST.....	11
Gauge venting / accuracy.....	11
OPERATION	11
Emergency Stop.....	11
System Operation	12
Programming the Timer	12
Fuel Line Leak.....	13
Stabilizing and Optimizing Fuel Quality.....	13
MAINTENANCE.....	14
Preventative Maintenance.....	14
Servicing primary filter	15
Servicing secondary filters	16
TROUBLESHOOTING.....	17
AUTOMATIC FUEL FILTRATION SYSTEMS WARRANTY.....	18
TECHNICAL ASSISTANCE AND ORDERING	19
Replacement filter elements.....	19
STS 6000 SYSTEM IDENTIFICATION	20
APPENDIX A - ABBREVIATIONS USED IN THIS MANUAL.....	21
APPENDIX B – DRAWINGS.....	22

STS 6000-P35

Programmable Automated Fuel Filtration System



STS 6000-P35 Programmable Automated Fuel Filtration System is a self-contained, stand-alone system that removes and prevents the buildup of water, sludge and contaminants in tanks. It stabilizes diesel and bio-fuels, eliminates microbial contamination to optimize and maintain fuel quality. STS systems guarantee **Optimal Fuel Quality** for **Reliable Power at All Times**.



STS 6000-P35 Systems feature:

- Multi-stage water removal and particulate filtration
- NEMA 12, 13, 4 Powder Coated or Stainless
- UL508A SMART Filtration Controller
- Unique Alarm Functions and Remote Monitoring
- Integrates with Building Management Systems
- Stainless Steel Plumbing
- **Stand-Alone, Reliable & Turn-Key**

For safe operation, the **STS 6000-P35** triggers automatic alarms and shuts down the pump when filters need service; a leak is detected; high separator water level, high filter vacuum, or high pump pressure occurs; or when the fuel flow is out of range.

Preventive Maintenance Plans for mission-critical power are essential. However, most service agreements do not cover fuel-related engine failures. Fuel has a limited shelf-life and even "fresh fuel" could contain water, sediment, microbes and bio-fuel components upon delivery.

Periodic generator tests-runs are too short to determine if fuel quality is adequate for the demands of continuous, full-load operation. In fact, generator test runs significantly accelerate the fuel polymerization and degradation process by returning fuel that has been compromised by heat and pressure back to the tank.

Potential liabilities can easily be avoided by implementing an **AXI Fuel Quality Maintenance Program** as part of every disaster recovery plan. An STS 6000-P35 automatically maintains fuel quality and guarantees reliable emergency power whenever it is needed.

STS 6000-P35 SPECIFICATIONS

Flow Rate	Up to 35GPM utilizing submersible pumps
Primary Filter/ Water Block/Coalescer	1, 5, 10 or 25 μ Particulate, Water Block or Coalescing
Secondary Filter/ Water Block	Dual 1, 3, 10 or 25 μ
Fuel Conditioner	LG-X 4000
Smart Filtration Controller	SMART PLC Controller
Pump	Utilizes Existing Tank Pump
Power	120V 60Hz 20A
Plumbing	Stainless Steel
Ports	1.5" NPT In/Out
Weatherproof Cabinet	NEMA 12, 13, 4 Powder Coat or Stainless
Dimensions	42" x 68" x 14" (107 x 176 x 36 cm)
Weight	≈404 lbs



+1-239-690-9589
1-877-425-4239 Toll Free
www.AXIFuelConditioning.com

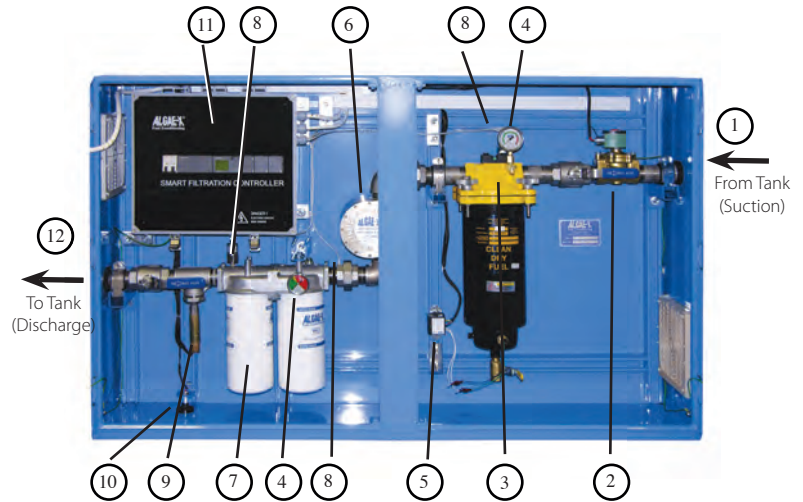
Wherever fuel is being used or stored

The system is automatically operated by the programmable UL508A **SMART Filtration Controller**. All components and control devices are contained within a fully enclosed, lockable, weatherproof, NEMA-rated cabinet.

The **principal components** are a continuous-duty motor with coupled gear pump, a strainer/primary coalescing filter with vacuum sensor and gauge, an **ALGAE-X Fuel Conditioner** and a secondary water block fine filter with pressure gauge and sensor.

The **primary filter** protects the pump, coalesces and removes water and particulate. The patented **ALGAE-X Fuel Conditioner** prevents and reverses fuel degradation, agglomeration and microbial contamination. The secondary filter is a quick-change spin-on filter designed to remove dissolved and emulsified water and contaminants down to 1 μ .

Implementing STS Fuel Quality Optimization & Maintenance Systems guarantee **Optimal Fuel Quality for Reliable Power At All Times**. STS 6000-P35 System prevents downtime, periodic tank cleaning, replacing out-of-spec fuel and fuel-quality related injection system repairs.

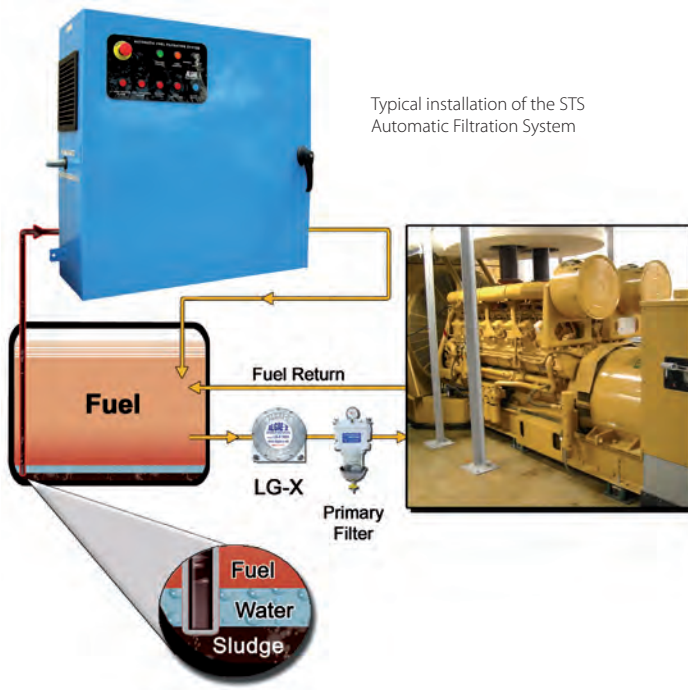


Inside the STS 6000-P35

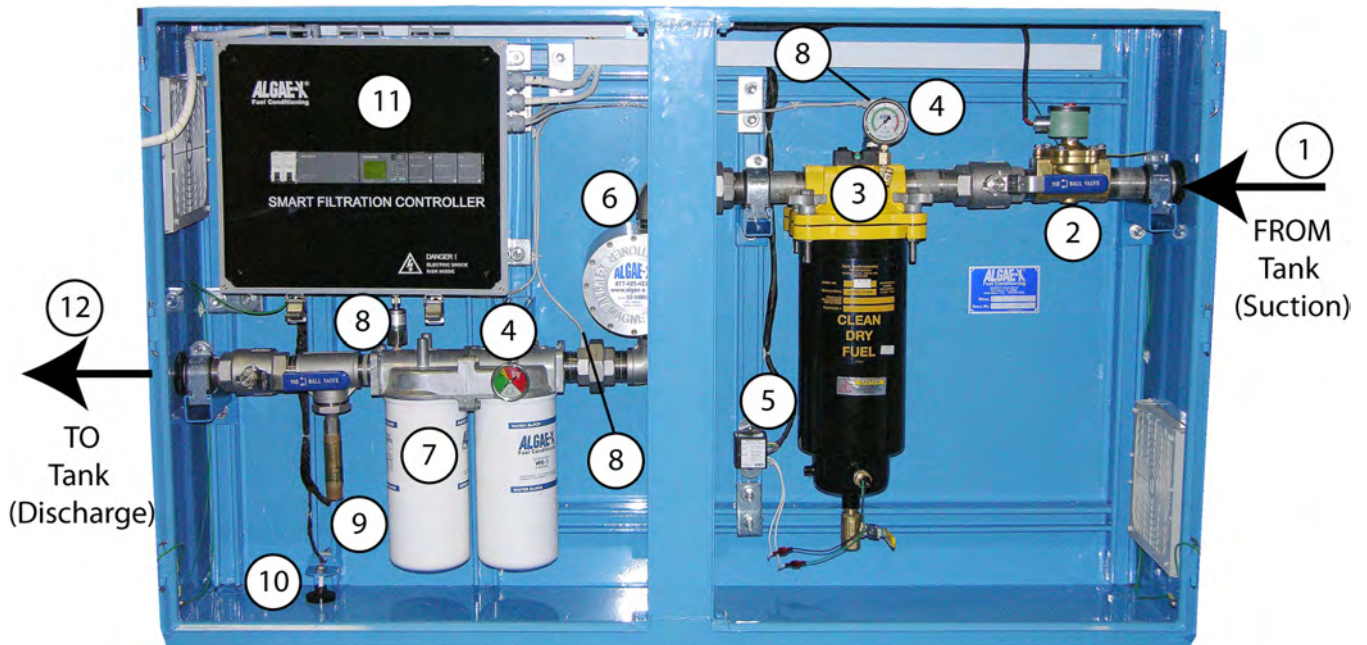
1. Fuel Inlet (From Tank)
2. Solenoid
3. FBO Primary Filter / Coalescer
4. Pressure Gauges
5. Watect 550 Water Sensor Alarm Module
6. ALGAE-X® Magnetic Fuel Conditioner
7. Secondary Filters
8. Pressure Transmitters
9. Flow Switch
10. Float Switch
11. ALGAE-X® SMART Filtration Controller
12. Fuel Outlet (To Tank)

STS 6000-P35 Accessories:

- Multiple tank functions
- AFC-705 Fuel Catalyst
- Digital Flow Meter
- Foot Valve
- Wide range of filter elements



OVERVIEW – BASIC SYSTEM COMPONENTS



- | | |
|---|--|
| 1) Fuel Inlet (From Tank) | 7) Secondary Filters |
| 2) Solenoid | 8) Pressure Transmitters |
| 3) FBO Primary Filter / Coalescer | 9) Flow Switch |
| 4) Pressure Gauges | 10) Float Switch |
| 5) Watect 550 Water Sensor Alarm Module | 11) ALGAE-X® Smart Filtration Controller |
| 6) ALGAE-X® Magnetic Fuel Conditioner | 12) Outlet |

GENERAL SPECIFICATIONS

STS 6000-P35

Flow Rate	35 gpm / 2100 gph 16,800 Gallons per 8 hour shift 50,400 Gallons per 24 hours
Outline Dimensions (Enclosure)	37" x 60" x 12" (H x W x D)
System Weight	approx. 400 lbs
Operating Temperature	41 to 104° F; 5 to 40° C
Electrical	115 V / 60 Hz / single phase (standard)
Solenoid	115 V / 60 Hz, NC, Direct Acting
Timer	Programmable Digital Timer
Inlet	1-1/2" NPT male port
Outlet	1-1/2" NPT male port
Max. Fluid Viscosity	5 cSt

Note: The STS 6000 is designed to meet environmental standards for safe operation. (NOT for use with fluids that have a flash point below 100°F (38°C), e.g.: gasoline, alcohol, ...)

SYSTEM COMPONENTS

CONTROL AND SAFETY DEVICES

- Algae-X "Smart Filtration Controller" in electrical sub enclosure – UL 508A listed Industrial Control Panel
- Programmable Digital Timer –Memory backup to retain program memory during power outages
- System/ Solenoid control switch (Auto-Off-Manual), weatherproof, key operated
- Alarm Reset - weatherproof push button
- Power available indicator
- System/Pump running indicator
- External remote shut-down feature
- Inlet and outlet shut off ball valves
- Emergency stop button
- Leak sensor and alarm indicator (system shutdown)
- Primary filter high differential pressure alarm indicator and system shutdown (pressure transmitter)
- Primary filter / coalescer high water alarm indicator and system shutdown (water sensor)
- Secondary filter high differential pressure alarm indicator and system shutdown (pressure transmitter)
- System high discharge pressure alarm indicator and system shutdown (pressure transmitter)
- Paddle type flow switch with "no flow" alarm indicator and system shutdown (flow switch)

PRIMARY FILTER / WATER SEPARATOR

- RACOR FBO fuel filter / coalescer with water sensor probe
- Drain valve on the bottom
- Analog pressure gauge
- Differential pressure indicator
- 10-micron coalescing filter cartridge (other filter elements available)

FUEL CONDITIONER

- Inline Algae-X Fuel Conditioner eliminates and prevents microbial contamination and the formation of sediments that naturally occur in diesel fuel.

SECONDARY FILTER

- Two 3 Micron water blocking spin on filter (other filter elements available)
- Pressure gauge (stainless steel, liquid filled)

WEATHERPROOF DOUBLE DOOR WALL-MOUNTED ENCLOSURE WITH LOCKABLE HANDLES / LATCHES

- 14-gauge steel construction with continuously welded seams
- Concealed hinges
- Finished in polyester powder coat inside and out over phosphatized surfaces
- Spill tray with leak detection
- Louvered side panels
- Brackets for wall mounting
- Literature pocket

STAINLESS STEEL PLUMBING

PRIMARY INSPECTION

Upon arrival, the STS 6000-P35 Automatic Fuel Filtration 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:

- If the packing crate shows signs of damage inspect the STS-6000 cabinet for damage. Check the entire outside of the cabinet for damage that could indicate internal mechanical or electrical problems.
- Check locking handles, door and hinge operation.
- Check pump/motor hardware and all plumbing connections for tightness.
- Check all electrical terminals and connections for tightness.

INSTALLATION



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

MOUNTING

The STS-6000 is a totally enclosed system and should be **permanently wall mounted on a hard, level surface**. Use provided **mounting feet for proper fastening**. This weatherproof unit is designed for well-ventilated indoor or outdoor use within specified temperature range and should be located as close to the tank as possible.

Please allow about 1 ft of space between the side louvers of the enclosure and nearby objects. This space is necessary to ensure sufficient ventilation of cooling air for the system and motor.

ELECTRICAL



! WARNING ! To avoid the risk of electric shock make sure that the power supply to the system is disconnected and ensure that the system is at zero volts, before working on any of the system's electrical parts.

Make sure that the systems power requirements and rated voltage / frequency match your electrical system (See wiring diagram). The STS 6000 may only be connected to properly grounded power sources for operator safety. Connect all components to the ground studs provided as shown on the electrical drawings.



! WARNING ! The whole system (Enclosure, doors, plumbing, motor, electric sub panel) must be properly grounded for operator safety.

Depending on length of run, use copper wiring according to specification in wiring diagram and connect system to a separate UL listed breaker (not included) appropriate for branch circuit protection.

Note: Wiring and electrical installation must be in accordance with all applicable Federal, State and Local rules, laws, standards and regulations.

Remote Pump Shut-Down Feature:

If required, connect the “external pump shut down input terminal” (see wiring diagram) and follow the specifications provided in the electrical wiring diagram to disable pump (e.g.: remote shut down, remote pump control, ...). Please note that the contact needs to be supplied with +24V DC from the power supply of the STS 6000 Algae-X Smart Filtration Controller.

Remote Monitoring - Dry Contacts:

The STS provides two NO (normally open) dry contacts for remote alarm monitoring. Please see wiring diagram for contact rating, connection and location.

“Summary Alarm” – dry alarm contact for high pressure, no flow or water detection (as well as Emergency stop and overload relay triggered)

“Leak Detection” – dry alarm contact for leak detection

Pump/System Running Remote Monitoring Feature:

Two NO dry contacts are provided for remote “Pump Running” monitoring. Please see wiring diagram for contact rating, connection and location.

PLUMBING

Use proper quality approved fuel line materials with at least 1-1/2” inner diameter on the supply side from the tank and at least 1-1/2” inner diameter on the return / discharge side back to the tank.

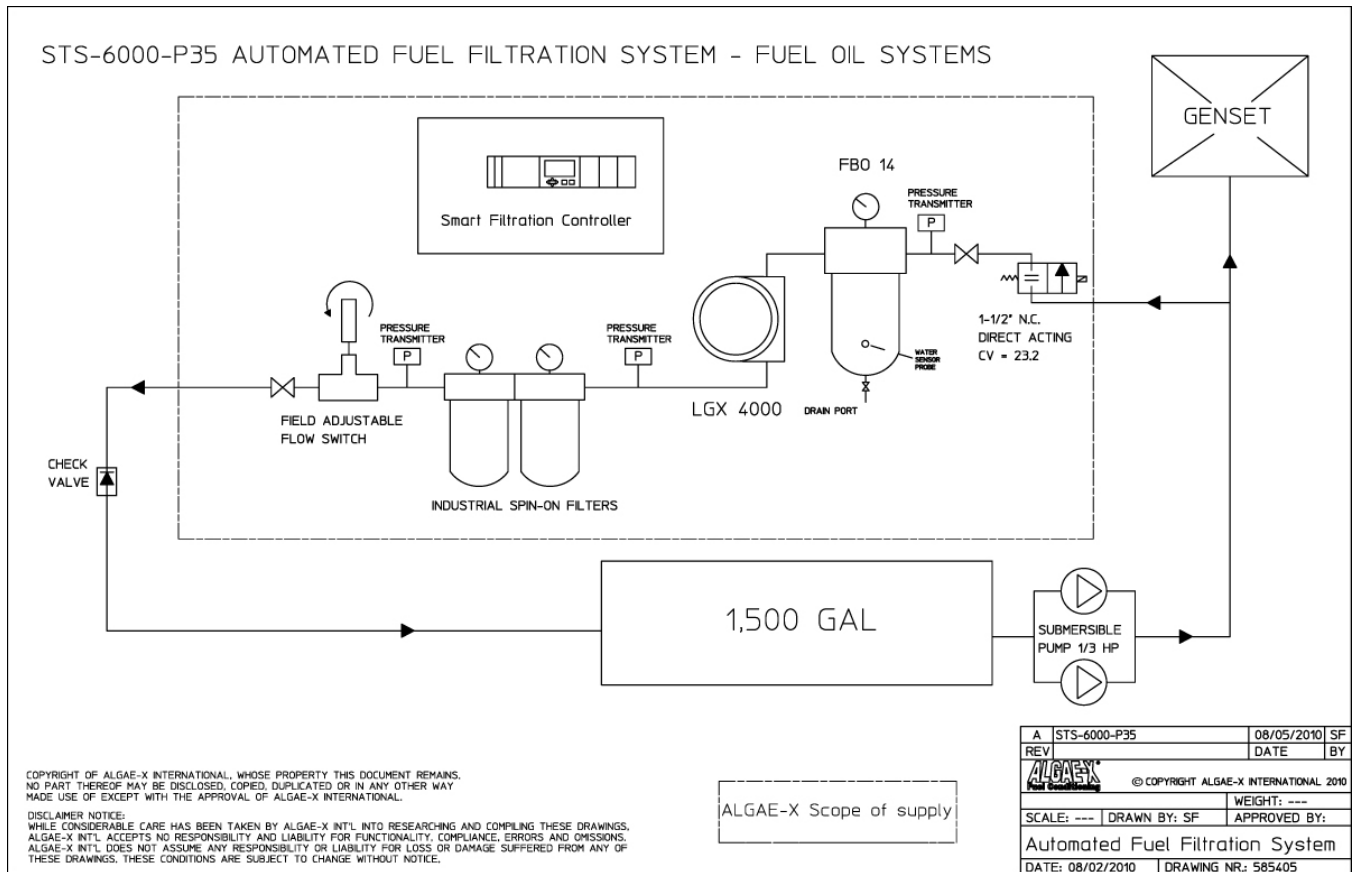
Note: Do not put any stress on plumbing of STS 6000 and use a backing wrench when connecting the external plumbing.

The return line(s) should be plumbed to the “PUMP OUTLET – RETURN TO TANK” port (on the left side of the system) and enter the tank as far as possible from the pick up tube close to the tank bottom. A (swing) check valve may be required on the return line(s) on some installations to prevent back flow pressure.

Multiple suction and/or return lines may be connected to a manifold outside the STS-6000 (see options list). Anti-Siphon or other external plumbing devices may be required – please check local regulations / code.

Note: Plumbing and Installation must be in accordance with all applicable Federal, State and Local rules, laws, standards and regulations.

TYPICAL PLUMBING / ABOVE GROUND TANK INSTALLATION (SCHEMATICALLY)



IMPORTANT INSTALLATION PRECAUTIONS

The suction line of the system should be independent and separate from the suction line of the engine. If that is not possible, appropriate valves must be installed to completely separate the STS-6000 from the engine fuel system to prevent any possible interference with safe engine operation.

It is highly recommended to plumb the discharge line independent and separate of the engine’s fuel return line back to the tank. If the return line from the engine and the discharge of the STS 6000 have to be combined in any way, adequate valves should be installed to prevent any possible interference with safe engine operation.

Note: If any of the STS 6000 system’s fuel lines are used in combination with the engine’s fuel system, the STS 6000 should be disabled during engine operation (use the provided “remote pump shut down” feature as shown in the electrical drawing and described above).

SMART FILTRATION CONTROLLER - ALARM FEATURES

The STS 6000 is equipped with an **Algae-X Smart Filtration Controller**. System and alarm status are displayed on the industrial control panel (on the door) via indicator lights and on the text display directly on the controller.

If **all red indicator alarm lights are illuminated** please see the text display for further info. One of the two situations will be present:

Emergency stop button depressed (Unlock E-Stop button by turning and push "ALARM RESET" button to return to normal operation.

Overload relay (OLR) tripped. Remove front panel of Smart Filtration Controller and push reset button on OLR relay, close panel again and push "ALARM RESET" button on door panel to return to resume operation.

Note: All red indicator lights on the control panel illuminated at the same time indicates that either the Emergency stop button has been pressed or that the overload relay has been tripped.

INITIAL START-UP / COMMISSIONING CHECKLIST

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.

OPERATION



! 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. Use with gasoline or use with any flammable liquids at a temperature exceeding their flash point, presents an immediate explosion and fire hazard.



! WARNING ! Never use the STS 6000 at a temperature exceeding the flash point of its contents.

EMERGENCY STOP

Note: In case of an emergency the Solenoid can be closed and system disabled by depressing the red "EMERGENCY STOP" button on the control panel.

To release the "EMERGENCY STOP" button located on the control panel turn the red knob in the direction indicated by the arrows on the mushroom button and push the "ALARM RESET" button to acknowledge.

SYSTEM OPERATION

Apply control power to unit. Place breakers in the Algae-X Smart Filtration Controller in the "ON" position.

Automatic:

Place the key switch in the "AUTO" position. When the timer contacts close, the solenoid will open until the timer setting has expired.

Manual (Override):

Place the key switch in the "RUN" position. The solenoid will open until the switch is returned to the "OFF" or "AUTO" mode positions or till an alarm or overload has been tripped.

PROGRAMMING THE TIMER

The programmable timer is part of the Micro PLC settings of the Algae-X Smart Filtration Controller located inside the STS 6000 system.

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

1. Please make sure the Emergency Stop button is not engaged, the key switch set to "OFF" and push the "ALARM RESET" button on the control panel.
2. When power is first applied to the system the display of the PLC will show (blinking) date and time.
3. We will now **set current date and time** (must be in military format):
4. Hit the "ESC" button
5. Select '**Stop**' and press "OK"
6. Select '**Yes**' (use down ▼ arrow key) and press "OK"
7. Select '**Setup**' (use down ▼ arrow key) and press "OK"
8. Select '**Clock**' and press "OK"
9. Select '**Set Clock**' and press "OK"
10. 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).
11. When finished entering press "OK" to confirm
12. Press "ESC"
13. Select '**Start**' and press "OK" – correct time and date should be displayed
14. We are now ready to **program the timer** (military time format must be used):
15. Hit the "ESC" button
16. Select '**Set Param**' (use down ▼ arrow key) and press "OK"
17. Push down ▼ arrow key till '**Timer 1**' is displayed
18. Press "OK"
19. 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.
20. Use arrow keys in same manner to program the '**On**' time – when the system will switch on (on the selected day/days)
21. Use arrow keys in same manner to program the '**Off**' time – when the system will switch off (on the selected day/days)
22. Press "OK" to confirm entry when finished
23. If required you can set up to 3 Timers by using the up and down arrow key
24. Press "ESC" twice to return back to the time and date display

Please call Algae-X International with any questions.

FUEL LINE LEAK

If fuel is detected in the spill / drip tray, the float switch will activate the fuel leak alarm illuminating the "LEAK DETECTION" indicator. The solenoid will close and the system will remain locked out of operation until the leak has been corrected and the "ALARM RESET" button has been pushed.

Before removing the spilled fuel from the basin, turn the key switch to the "OFF" position.

Always make sure to find the cause of the leakage and correct it. After removing the spilled fuel, allowing the leak switch to return to its normal position, the key switch can be returned to the "AUTO" or "RUN" mode.

Note: Disposal of fuel and associated waste should be done in accordance with Federal, State and Local regulations.

STABILIZING AND OPTIMIZING FUEL QUALITY

We recommend treating the fuel with the **ALGAE-X® Fuel Catalyst (AFC-705)**. This will enhance and accelerate the tank cleaning process by breaking down and dissolving existing tank sludge. 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) instead of one to five thousand (1:5000) This has proven to be essential in accelerating the tank cleaning process. AFC-705 contains detergent, surfactant, dispersant, corrosion inhibitor, lubricity enhancer and combustion catalyst. It does not contain biocides. AFC-705 should always be used periodically in particular to stabilize fuel that is stored for longer periods of time.

Note: In cases of severe tank contaminant build-up (sludge) and high water level in bottom, it is recommended to clean the tank (vacuum bottom) and polish the fuel before initial use of an STS system.

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 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.

PREVENTATIVE MAINTENANCE

The STS-6000 Automatic Fuel Filtration System should be visually inspected and tested a minimum of every six 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 8 hours day and five days a week.

- Prior to performing the maintenance procedure ensure that:
- The electrical sub-panel mounted main disconnect switch is operating properly,
- the user supplied remote circuit breaker is in the "Off" position, and
- that all sources of power are isolated from the unit.
- Proceed only after this has been verified and properly tagged.
- Drain visible water and sediment from primary filter / coalescer (see Servicing Primary Filter / coalescer below).
- Check enclosure and all parts for corrosion and rust.
- Check locking latches, door and hinge operation.
- Check cabinet mounting hardware. Tighten as necessary.
- Check pump/motor hardware for tightness. Pump/motor hardware will loosen after normal operation due to vibration. This hardware is lock nutted, check all bolts for secure nuts.
- Check all electrical terminals and connections for tightness.
- Check all plumbing joints for leaks. Tighten fittings and joints as necessary. Remove accumulated fuel in drip tray as necessary.
- Inspect all filters and separators. See section below on filter inspection and service.

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

Note: All filter elements should be replaced at least every six months.

SERVICING PRIMARY FILTER

Set the telltale gauge pressure indicator (red pointer) to slightly above the black needle prior to operation. The gauge will indicate maximum vacuum pressure during system operation.

Clogging filter elements restrict the flow of fuel and the system's pressure gauge will indicate a pressure drop. The gauge and differential pressure indicator are mounted on top of the primary filter head. At a pressure drop of 25 PSI (red dial area of the gauge) the solenoid will automatically close and activate the "HIGH PRESSURE ALARM" indicator light. The signal indicates that it is time to change the filter elements.

SERVICING AND BACK-FLUSHING PRIMARY FILTER:

1. Turn key switch to the "OFF" position – make sure pump will not turn on
2. Close the inlet and outlet ball valve
3. Place a fuel waste container below the drain valve on the bottom of the filter
4. Open the drain valve
5. Allow all fluid to drain from the filter
6. Open the vent valve on the cover of the housing ; allow the unit to thoroughly vent before opening the cover
7. Loosen the 4 knobs attaching the head to the housing flange
8. Remove the head gasket and discard
9. Remove and discard the expended cartridge in a FIRE-SAFE place. In accordance with local and national regulations.
10. Flush the interior of the housing with clean, processed, filtered product or a suitable solvent. A nonmetallic bristle brush will help to remove caked-on debris. Rinse the housing and unit cover with a clean solvent and dry with soft, lint-free wiping cloths.
11. Lightly lubricate new head gasket with Vaseline or Petroleum Jelly and position it on the head. If Vaseline is not available lubricate the gasket with the fuel or oil it will be used in.
12. Insert a new cartridge into the housing. Position housing (with cartridge) underneath filter head. Push/twist cartridge onto head spigot. The head "conical spring" will seat/seal the cartridge in the housing.
13. "Rotate" housing onto the collar bolts, hand tighten knobs until head is "snug" to housing.

NOTE: A torque wrench is recommended. Tighten all collar bolts to 100 in lbs.

14. Close the drain valve on the bottom of the housing.
15. SLOWLY open the inlet and outlet valves; allow the unit to fill completely.
16. Leave the vent valve on top of the unit open; to allow entrapped air to escape while filling.
17. When a small amount of fluid flows from the vent, close it tightly.
18. During the initial filling and after the above maintenance, and while unit is in operation, examine housing and all connections for leaks. Including head/flange junction.
19. Push the "ALARM RESET" button on the control panel to acknowledge the alarm and reset it
20. Return the pump selector key switch to "AUTO" or "RUN"
21. Check for leaks when re-starting and pressurizing the system. Your system is now ready to resume normal operation

SERVICING COALESCER

If the water level in the primary filter/water coalescer reaches a certain level in the bowl, the water sensor will trigger the alarm "HIGH WATER ALARM" and close the solenoid. The signal indicates that it is time to drain the bowl on the secondary filter.

SERVICING SECONDARY FILTERS

Clogging filter elements and saturation of the water block filters restrict the flow of fuel and the system's pressure gauge will indicate a pressure drop.

The gauge and differential pressure indicator are mounted on top of the secondary filter head. At a pressure drop of 25 PSI (red dial area of the gauge) the solenoid will close and activate the "HIGH PRESSURE ALARM" indicator light. The signal indicates that it is time to change the filter elements.

There are several types of Algae-X spin on fine filters available; we recommend using the WB-3 (3 micron water block fine filter). The Algae-X Water Block incorporates polymer technology to remove emulsified water from fuel.

CHANGING THE SECONDARY FILTERS:

Note: Both secondary spin on filters need to be replaced at the same time. Always use two of same type filter elements – never mix two different kinds or micron ratings.

1. Turn key switch to the "OFF" position – make sure pump will not turn on
2. Close the inlet and outlet ball valve
3. Place an appropriate container underneath the filters
4. Remove both old spin on filters with the provided filter wrench by turning the cartridge counter clock wise seen from the bottom of the cartridge
5. Apply a film of lubricating oil to the gasket of the new filters. Screw the new filter canisters to the filter head until the gasket is tight and secure (an additional ½ to one turn after the filter makes contact with the gasket)
6. Open the inlet and outlet ball valve
7. Push the "ALARM RESET" button on the control panel to acknowledge the alarm and reset it
8. Return the pump selector key switch to "AUTO" or "RUN"
9. Check for leaks when re-starting and pressurizing the system

Your system is now ready to resume normal operation

Note: Disposal of fuel, associated waste and filters should be done in accordance with Federal, State and Local 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 fuel contains biocide type products.

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
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 inlet side not appropriately dimensioned

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

1. Heavily contaminated fuel / excessive water in tank
2. Restriction in plumbing on discharge side too high
3. Head (lift) on discharge side too high
4. 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

AUTOMATIC FUEL FILTRATION 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 • 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: algae-x@algae-x.net
Internet: www.algae-x.net

Please provide the following information:

Serial Number of your STS 6000, the required part numbers and quantity.

The drawings / parts list included in this manual are the most accurate source of part numbers for your STS 6000.

REPLACEMENT FILTER ELEMENTS

Primary Filter:

FBO-60339 Micro filter element - 1 Micron
FBO-60340 Micro filter element - 5 Micron
FBO-60357 Micro filter element - 10 Micron
FBO-60341 Micro filter element - 25 Micron

Secondary Filter:

WB-3 3 Micron Water Block spin on filter cartridge
WB-10 10 Micron Water Block spin on filter cartridge

Also available:

- Larger or smaller capacity, custom designed systems for higher or lower flow rates
- Two Tank Control
- Digital Flow Meter
- Foot Valves
- Rotor Sight Glass

STS 6000 SYSTEM IDENTIFICATION

Serial Number: _____ (e.g. B 070010 – P35)

System Specification:

Voltage:

120 V AC / 60 Hz

230 V AC / 50 Hz

Primary Filter Element:

1 Micron

10 Micron

5 Micron

25 Micron

Secondary Filter Element:

3 Micron Water Block

10 Micron Water Block

Inspected by: _____

Date: _____

APPENDIX A - ABBREVIATIONS USED IN THIS MANUAL

Abbreviations of terms used with STS 6000 Automatic Fuel Filtration Systems. When following a drawing utilize this guide to define abbreviated system and component names. This is a master list. The drawings and text pertaining to your equipment may not contain all these terms.

AC	Alternating Current	MOT	Motor
AHR	Alarm Horn Relay	N.C.	Normally Closed
AH	Alarm Horn	NEC	National Electric Code
BPRV	Back Pressure Regulating Valve	NEMA	National Electric Manufacturers Assoc.
BRK	Motor/Pump Bracket	N.O.	Normally Open
BV	Ball Valve	NP	Nameplate
C	Contactors	NPT	National Pipe Thread
CB	Circuit Breaker	O.D.	Outside Diameter
CSR	Check Strainer Relay	OLR	Over Load Relay
CV	Check Valve	OPT	Option
DC	Direct Current	PCB	Printed Circuit Board
DPDT	Double Pole Double Throw	PCRX	Pump Control Relays
F	Fuse	PG	Pressure Gauge
FLWS	Flow switch	PLR	Pipe Leak Relay
FS	Float switch	PRV	Pressure Relief Valve
GA	Gauge	PRS	Pressure Switch
GAL	Gallons	PS	Power Supply
GPM	Gallons Per Minute	PSI	Pounds Per Square Inch
HFL	High Fuel Level Relay	PSR	Pressure Switch Relay
HG	Mercury	PRR	Pump Running Relay
HP	Horsepower	SC	Swing Check Valve
HZ	Hertz	SOL	Solenoid
I.D.	Inside Diameter	TB	Terminal Block
JB	Junction Box	T	Control Transformer
" HG	Inches of Mercury	TDR	Time Delay Relay
L	Lamp	TEFC	Totally Enclosed, Fan Cooled
L.E.D.	Light Emitting Diode	THR	Tank Heater Control Relay
LFF	Loss of Flow Relay	TS	Transducer Pressure Switch
LFL	Low Fuel Level Relay	V	Voltage
LPR	Low Pressure Relay	VAC	Voltage, Alternating Current
MDB	Main Distribution Block	VDC	Voltage, Direct Current
MDS	Main Disconnect Switch	VG	Vacuum Gauge

APPENDIX B – DRAWINGS

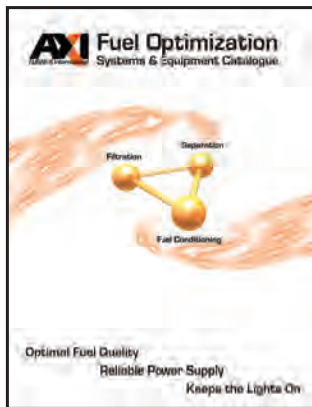
AXI designs and manufactures standardized and custom-engineered Automated Fuel Conditioning, Fuel Polishing and Transfer Systems, Tank Cleaning Equipment, Fuel Additives and In-line Fuel Conditioners to ensure optimal fuel quality at all times.

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- 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.



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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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