

# AXI INTERNATIONAL PRODUCT CATALOG



**INTELLIGENT FUEL  
MANAGEMENT SOLUTIONS**  
EXPERIENCE THE POWER OF ULTRA CLEAN FUEL



Over the past 20 years, AXI International has been leading the way in the field of fuel management and fuel filtration. We remain devoted to our vision: delivering ultra clean fuel and intelligent fuel management that secures the bottom line of businesses around the globe.

As reflected in this year's catalog, our engineers continue to explore, research, and develop improved fuel management and fuel filtration technologies. The AXI International product offering has increased to include renewable energy sources to drive our clean fuel technology, improved fuel quality accountability, and overall performance increases throughout our product lines.

Evident in markets around the world, the public is becoming more aware of the inherent issues related to fuel contamination, demanding answers and solutions to an ever-growing problem with fuel quality. Rest assured, AXI International will continue to lead the charge in educating the masses and innovating intelligent fuel management solutions. With AXI International, you truly can experience the power of ultra clean fuel.

A handwritten signature in black ink, appearing to read 'Wessel VanTonder', written over a horizontal line.

Wessel VanTonder  
Chief Executive Officer



# Table of Contents

<b>About AXI International</b> .....	<b>4</b>
<b>Diesel 101</b> .....	<b>6</b>
Forms of Contamination .....	10
Diesel and Water .....	10
Diesel Fuel Complexities .....	11
Volatility and Flash Point .....	11
Fuel Lubricity .....	12
Fuel Acidity .....	12
Thermal Stability .....	12
Failure Points of High Pressure Common Rail (HPCR) .....	12
Effects of Fuel Contamination .....	13
Failure Chain Reaction .....	13
Fuel Filter Efficiency .....	14
Diesel Fuel and Reliability .....	14
Achieving Optimal Fuel Quality .....	15
Glossary of Common Industry Terms .....	15
<b>Enclosed Automated Fuel Maintenance Systems (STS)</b> .....	<b>16</b>
STS 6000 Series .....	18
STS 7000 Series.....	22
STS 8000 Series.....	25
<b>Automated Fuel Maintenance Systems (FPS)</b> .....	<b>28</b>
FPS Series .....	30
<b>Solar Powered Fuel Maintenance Systems (SFM)</b> .....	<b>36</b>
SFM Series .....	37
<b>Mobile Fuel Polishing Systems (MTC)</b> .....	<b>38</b>
MTC Series .....	40
MTC-HC Series .....	43
MTC Trailer .....	46
<b>Fuel Transfer Systems (FTS)</b> .....	<b>48</b>
FTS Series .....	50
<b>Day Tank Systems (DTS)</b> .....	<b>52</b>
DTS Series .....	53
<b>Intelligent Fuel Port (IFP)</b> .....	<b>54</b>
IFP Series .....	55
<b>Inline Magnetic Fuel Conditioner (LG-X)</b> .....	<b>56</b>
LG-X Series .....	57
<b>Portable Particle Counter (FPM)</b> .....	<b>58</b>
FPM Series .....	59
<b>Enclosed System Controllers</b> .....	<b>60</b>
<b>SMART Filtration Controllers (SFC)</b> .....	<b>62</b>
SFC Series .....	63
<b>Broad-Spectrum Fuel Additive Ultra Concentrate (AFC)</b> .....	<b>64</b>
AFC Series .....	66
<b>Accessories</b> .....	<b>68</b>
<b>Desiccant Breathers</b> .....	<b>71</b>
<b>Filters (MTC)</b> .....	<b>72</b>
PF Series .....	74
FV Series .....	75
Separ Filters .....	76
Racor Filters .....	77
<b>Fuel Sampling and Testing</b> .....	<b>78</b>
<b>Custom Designed and Engineered Solutions</b> .....	<b>80</b>
<b>ISO Chart</b> .....	<b>82</b>
<b>Fuel Report Glossary</b> .....	<b>83</b>
<b>Filter Chart</b> .....	<b>86</b>
<b>Warranty</b> .....	<b>88</b>
<b>Technical Assistance and Ordering</b> .....	<b>89</b>

# WE ARE AXI INTERNATIONAL

AXI International, industry leaders in Intelligent Fuel Management™ Solutions, has specialized in fuel maintenance, fuel polishing, fuel remediation, fuel treatment, and emission control technologies for over twenty years. Our growth rides on our ability to adapt to the needs of our customers, opening up opportunities to expand our product offering. To the benefit of our customers, and the AXI network, we've become very efficient at doing so - faster than any other company in the industry.

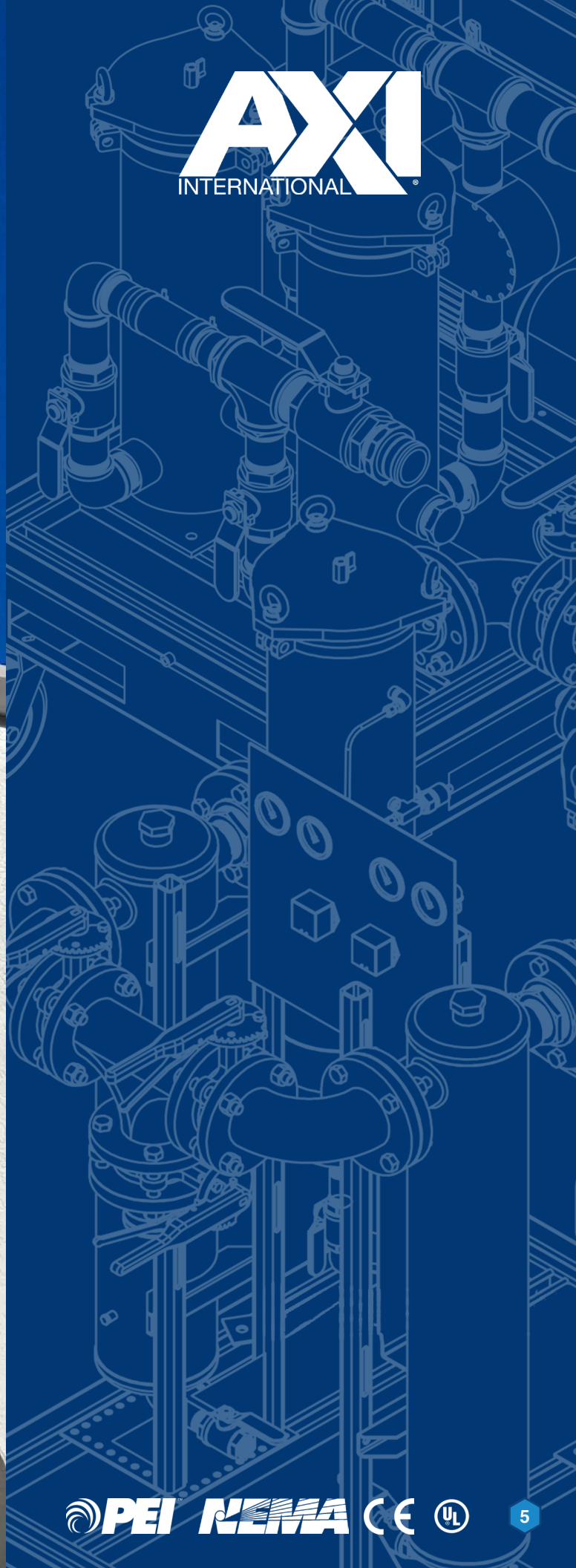
At AXI, we're passionate about delivering not only a great product and high customer ROI, but ensuring a cleaner environment and peace of mind through our ever-growing product offering. We've dedicated a significant amount of time and effort over the past twenty years in the research and development of revolutionary fuel conditioning and management technologies. This process of innovation, implementation, and analysis has set AXI International as the undisputed leader within our industry. Our Intelligent Fuel Management™ Solutions truly are second to none.

Most importantly, it is critical for us to continue to place our customers first. As the saying goes, anything worth doing is worth doing right. We operate with integrity, honesty, and passion. AXI is comprised of talented professionals that are knowledgeable, creative, highly skilled, and most importantly, customer centric. Our in-house sales, marketing, and engineering professionals are truly just a phone call away to address your needs.

AXI International Intelligent Fuel Management™ Solutions – experience the power of ultra clean fuel.



**AXI**  
INTERNATIONAL



## How Important is Diesel Fuel?


Gone are the days of the antiquated diesel engine, commonly associated with billowing smoke stacks and excessive noise. The truth about today's diesel engines is that advanced electronic engine management systems, improvements in fuel injection design, air flow and fuel management, along with post combustion treatment, have advanced many of the design limitations that previously plagued them.

Did you know that current diesel engine designs produce less harmful emissions, per volume of fuel burned, than a gasoline powered engine of similar horsepower? Despite such great advances in engine design and technology, the journey to optimal engine efficiency and performance is far from over.

New High Pressure Common Rail (HPCR) engine and injection system designs require clean fuel to operate at its full potential. The engines are designed to be more efficient, but cannot maintain optimal performance and reliability using contaminated fuel. **The problem lies in fuel quality.** Fuel degradation is a natural process that causes the formation of sediment, sludge, and acids. Bio-fuels have also caused a dramatic increase in fuel re-polymerization, causing rampant filter plugging, fuel injector failures, and an overall reduction in stored fuel shelf life. The degradation process is further accelerated by heat, pressure, temperature change, water, and microbial contamination.

Traditionally, the solution has been to periodically replace the fuel and clean the tank. This is a very expensive solution that only addresses the symptom, not the problem. Without a proper fuel maintenance system and maintenance program in place, the costs of fuel replacement, injector and engine repair, downtime costs, and lost revenue can cripple a company physically and financially. **Enter AXI International.**

# HOW IMPORTANT



*“Should you find yourself in a chronically leaking boat, energy devoted to changing vessels is likely to be more productive than energy devoted to patching leaks.” – Warren Buffett*

AXI International, an A+ rated company by the Better Business Bureau, designs, engineers, and manufactures pre-configured and custom-built fuel solutions. AXI works side by side with customers, architects, engineering firms, and facility management companies to create innovative and fully automated fuel optimization and maintenance systems.

Implementing AXI's equipment and fuel maintenance programs will eliminate the need for replacing fuel or cleaning out fuel tanks. AXI's fuel maintenance systems optimize and maintain fuel quality, preserving its integrity. The systems extend filter changeout intervals, protect engines and injection systems, and reduce harmful emissions. By filtering out contamination, separating water, and conditioning the fuel, AXI's fuel maintenance systems ensure ultra clean fuel and system reliability.

Reliability builds confidence, not only for business owners, but investors, clients, and employees alike. When a business invests in reliability, they are securing their bottom line, and in turn, the future of the business.



# IS DIESEL FUEL?



# DIESEL 101

## An Introduction to Diesel Fuel

The diesel engine has been a vital workhorse for many industries around the world. From powering emergency standby generators for hospitals, data centers, and financial institutions, to large trucks, tractors, bulldozers, trains, marine vessels, and mining fleets, the diesel engine plays an integral role in today's society and economy. The lifeblood that runs through these engines, diesel fuel, is quite an energy dense fuel with characteristics that delivers great working power.

Delivering more working power and energy than gasoline, diesel fuel is a critical component of global commerce in high demand. In fact, diesel fuel usage has increased 220% over the past 30 years.\* Increase in demand, along with tighter environmental requirements, has led to changes in the production of diesel fuel that can negatively impact the quality and stability of the fuel.

*\*United States Energy Information Administration*











If left unmanaged, diesel fuel quality can degrade rather quickly, rendering the fuel harmful to an engine. When water is introduced into fuel, a host of potentially catastrophic problems arise and propagate. In fact, water is the most damaging contaminant to diesel fuel, and the primary catalyst to additional fuel breakdown. Other contributors to fuel degradation, like microbial growth, sludge, asphaltenes, wax, and particulate, all have their own unique effect on diesel fuel and the diesel engine. Fortunately, AXI International offers solutions to remedy poor fuel quality and ensure reliability.

Understanding the complex nature of diesel fuel and its characteristics, along with forms and sources of contamination, is the first step to achieving and maintaining optimal fuel quality, as outlined below:

- **Forms of Contamination**
- **Diesel and Water**
- **Diesel Fuel Complexities**
- **Volatility and Flash Point**
- **Fuel Lubricity**
- **Fuel Acidity**
- **Thermal Stability**
- **Failure Points of HPCR**
- **Effects of Fuel Contamination**
- **Failure Chain Reaction**
- **Bio-Diesel Pros and Cons**
- **Fuel Filter Efficiency**
- **Diesel Fuel and Reliability**
- **Achieving Optimal Fuel Quality**

## Forms of Contamination

All forms of fuel contamination have their own damaging qualities that can have an effect on the efficiency and reliability of an engine and its fuel system:

-  **Water** - Water is the most damaging contaminant found within diesel fuel, and is a primary catalyst to additional fuel breakdown
-  **Microbial Growth** - There is one simple rule when it comes to microbial growth in diesel fuel - it cannot exist without the presence of water
-  **Sludge** - Sludge is typically a combination of different particulate, including microbial growth, organic and inorganic waste compounds, waxes, and other contaminants
-  **Asphaltenes** - Although asphaltenes are less than  $2\mu$  (micrometers) in size in their natural state, they have a tendency to agglomerate, forming clusters around  $100\text{-}200\mu$  that cause premature fuel filter blockage
-  **Wax** - All diesel fuels contain wax, and can contribute to premature filter blockage, especially in colder temperatures. Waxes will crystallize if the temperature drops below a certain point known as the "Cloud Point"
-  **Particulate/Dirt** - Solid particles, such as dirt and dust, cause damage to fuel system components through direct body abrasive wear and erosion

## Diesel Fuel and Water

As a common form of contamination found in diesel fuel, water can exist in three different states within diesel fuel: free, emulsified, and entrained (or dissolved).



### Free Water

Free water is water that gathers at the bottom of the fuel tank due to its higher density relative to diesel fuel (seen in the image to the left). This can only occur once diesel fuel has become saturated with water, in a dissolved state, and the temperature is not high enough to hold additional dissolved water.

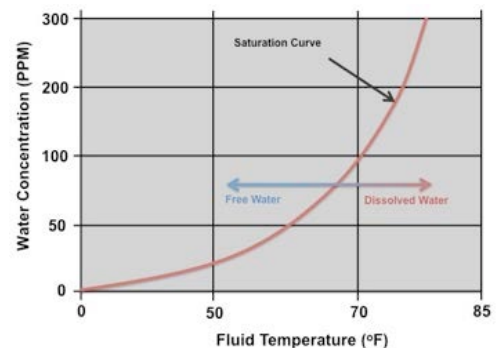


### Emulsified Water

Emulsified water is the result of mixing free water and diesel fuel. Microscopic water droplets become bound within the fuel for an extended amount of time.

### Dissolved Water

All diesel fuel has the ability to retain water in a dissolved state, up to a certain fraction. With most #2 diesel fuels found around the world, it is typically around 140-240ppm (0.014 – 0.024% by volume). As shown in the image to the right, the ability for the fuel to retain water, in a dissolved state, is highly dependent on temperature. Due to the molecular configuration of bio-diesel, it can hold more water than standard diesel fuel.

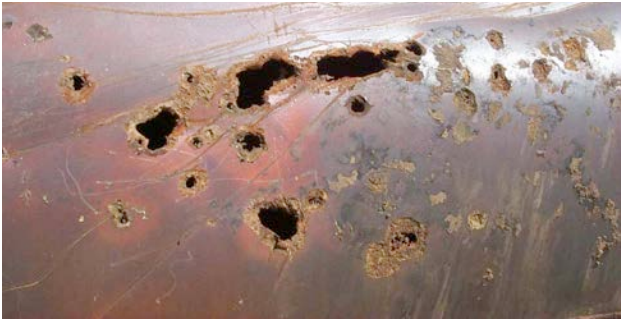




## Fuel and Lubricity

For optimal engine performance, the moving parts within the engine should move with the least amount of friction possible. Post 2006, the introduction of ULSD (Ultra Low Sulfur Diesel) has removed the majority of sulfur (<15 ppm) in order to reduce the amount of harmful pollutants found in exhaust smoke (SO<sub>x</sub>). Subsequently, this also removed some of the natural lubricating properties of the fuel. As lubricity is vital for engine operation, lubricity enhancers are a common fuel additive from either the refinery, or end user.

## Fuel Acidity



Commonly an oversight, uncontrolled acidity in fuel, caused by microbial growth, can create pits in the tank, leaving the raw metal to corrode.

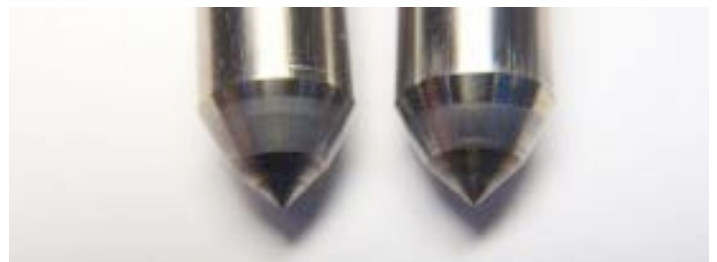
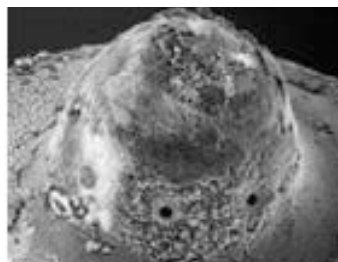
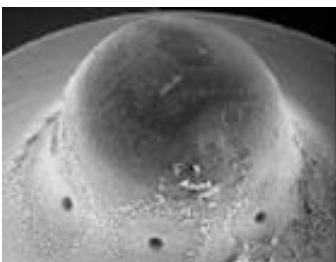
Water within the tank further accelerates the corrosion process as rust begins to form and the tank disintegrates. Metallic particles enter the fuel line, clogging filters and creating additional abrasive wear.

## Thermal Stability

In many modern diesel engines, diesel fuel serves multiple purposes. Only a portion of the fuel that is circulated and pressurized by the fuel injection system is actually combusted. The remainder of the fuel is used as lubrication and coolant for various engine components, then recycled back to the fuel tank.

During this process, bulk fuel temperatures can rise well above ambient levels. When combined with the high-temperature instability of diesel fuel, the result can cause the formation of insoluble degradation products that can cause filter plugging. In colder temperatures, the recycling of heated fuel back to a colder fuel tank can cause condensation, leading to an increase in free water within the fuel tank.

## Failure Points of HPCR (High Pressure Common Rail)



### Nozzle Holes

Fuel injector nozzle holes generally have two failure conditions, which result in a partial functional failure of a fuel injector. These two conditions are blockage and erosion, which lead to fuel non-atomization and leakage onto the cylinder head.

### Valves

Valve and valve seat erosion can lead to dripping fuel injectors, which can trigger a multitude of problems and eventually catastrophic failure. The predominant failure occurring from dripping fuel injectors is excessive piston crown temperature, which can cause the crown to deform or melt, resulting in engine failure.

## The Effects of Fuel Contamination



### Partial Functional Failure

Generally, partial functional failure relates to an inefficiency in engine performance due to continuous contamination. Signs of partial functional failure include reduced engine power, reduced engine RPM, increased fuel consumption, smoke, noise, poor idle, and rough starting.



### Catastrophic Full Functional Failure

This type of failure is highly visible to operations and high in cost, resulting in downtime from an engine that ceases to function. Many common engine failures are misdiagnosed, and when correctly analyzed, failures are attributed to the fuel injection system.

## The Failure Chain Reaction

High velocity and high-pressure fuel flow, with even the smallest amount of contamination, will gradually erode the sealing surfaces of the injector valve seat and nozzle. Once valve wear has initiated, a chain reaction gradually occurs, resulting in a partial functional failure, and evolving into the full functional failure of the valve. This failure can lead to very costly repairs with unwanted and unplanned downtime.

Below is the process of failure that gradually reduces engine and system performance:

1. Valve erosion initiates
2. Fuel leakage through the valve mating surfaces initiates
3. Localized hot spot generation through the leakage zone
4. Reduced fuel pressure at nozzle
5. Engine management system compensates reduced fuel volume by increasing injection event time (adding more fuel)
6. Reduced fuel atomization
7. Soot generation within the cylinder
8. Increased emissions
9. Loss of power
10. Partial functional failure point
11. Leakage rates continue to increase as wear continues
12. Fuel consumption increases as the Engine Controller Unit (ECU) tries to compensate for leakage
13. Visible and audible signs
14. Full functional failure point

## Fuel Filters and Efficiency

It is a common belief that the engine fuel filter, provided by the engine manufacturer, will provide the required level of contamination protection in order to achieve reliable operation. The reality is that there are several factors regarding the application of engine fuel filters that compromise their ability to achieve optimal cleanliness levels. Higher filter efficiency and beta ratings correspond to a higher grade filter, but can also come at a higher expense.

Filter efficiency is synonymous with a Beta Ratio, as seen here:

$$\left[ \frac{\beta - 1}{\beta} \right] \times 100 = \text{Efficiency} \quad \beta_N = \frac{\text{Number of Upstream Particles Greater than } N_{\mu m}}{\text{Number of Downstream Particles Greater than } N_{\mu m}}$$

Filter Efficiencies

Beta Ratio	% Efficiency
10	90%
20	95%
75	98.7%
200	99.5%
1000	99.9%

### Performance in the Field

Testing of engine fuel filters under realistic engine operational conditions can show a dramatic difference in efficiency compared to the values reported from laboratory testing, such as the ISO16889 Multipass test.

Factors that come into play that can alter results include:

- Heat
- Vibration from engine
- Fuel flow surge
- Existing contaminated fuel in fuel system

## Diesel Fuel and Reliability

Poor quality, or contaminated, diesel fuel contributes to more than 80% of fuel system related failures in HPCR systems. In order to overcome the challenges of maintaining a reliable fuel system, a paradigm shift must be made in the way consumers view diesel fuel and its function within the engine.

Over the past 60 years, little has changed in the way many diesel engine owners and operators view the importance of fuel. Historically, consumers of diesel fuel have generally purchased, stored, and distributed the fuel to machines, engines, or marine vessels with little thought regarding contamination control. However, with the introduction of new engine technology equipped with advanced, high pressure common rail fuel injection systems, many users are experiencing a high frequency of failure, decreased system reliability, and increased downtime, as well as cost challenges from a technology that promised to improve operational efficiency and environmental impact.

It is imperative that diesel engine users dramatically alter the way in which they view and treat the fuel they consume. Instead of simply seeing fuel as just a commodity, or necessary expense, it should be viewed as a “Critical Reliability Component” of the fuel system, and treated as a valuable asset.

## Achieving Optimal Fuel Quality

Diesel fuel that is maintained in a condition as close to “refined” as possible will outperform fuel that is under, or poorly, maintained. In order to achieve optimal fuel quality, the contaminants in fuel must be filtered out, water must be separated and removed, and the fuel must be conditioned. This process of filtration, separation, and conditioning (known as the fuel polishing process) is the foundation for achieving, and maintaining, the quality of fuel necessary for ultimate reliability.



### Working Hand in Hand

These processes work best in unison, as this combination addresses the major issues related to fuel quality. Integrating the correct fuel system solution is the first step to creating a proper fuel maintenance program that ensures optimal fuel quality.

## Glossary of Common Industry Terms

**CM** – Condition Monitoring

**CO** – Carbon Monoxide

**CO<sub>2</sub>** – Carbon Dioxide

**DEF** – Diesel Exhaust Fluid

**DPM** – Diesel Particulate Matter

**ECU** – Engine Control Unit

**EMD** – Electro-Motive Diesel

**EPA** – Environmental Protection Agency

**EUI** – Electronic Unit Injector

**GPM** - Gallons Per Minute

**GPH** - Gallons Per Hour

**HC** – Hydrocarbons

**HPCR** – High Pressure Common Rail

**ISO** – International Organization for Standardization

**MARC** – Maintenance & Repair Contract

**MCRS** – Modular Common Rail System

**MTBF** – Mean Time Between Failures

**NO<sub>x</sub>** – Oxides of Nitrogen

**OEM** – Original Equipment Manufacturer

**PLC** - Programmable Logic Controller

**PM** – Planned Maintenance

**SAE** – Society of Automotive Engineers

**SO<sub>x</sub>** - Oxides of Sulfur

**UCD** – Ultra Clean Diesel

**UL** - Underwriters Laboratories

**ULSD** – Ultra Low Sulfur Diesel

**UREA** – Active ingredient in DEF made from synthetic ammonia and carbon dioxide that catalytically reduces NO<sub>x</sub> to water (H<sub>2</sub>O) and Nitrogen (N<sub>2</sub>)

**VCO** – Valve Covered Orifice

**WWFC** – World Wide Fuel Charter

**β** - Beta

**μ** - Micrometer (Micron)



# STS SERIES

## Enclosed Automated Fuel Maintenance Systems (STS)

AXI's Enclosed Automated Fuel Maintenance Systems are programmable and automated self-contained, stand-alone fuel filtration, separation, and conditioning systems. An STS system will remove and prevent the buildup of water, sludge, and contaminants in tanks while eliminating and preventing microbial contamination. Adding an STS system will optimize and maintain diesel and bio-fuels, providing maximum sustainability.

The Enclosed Automated Fuel Maintenance Systems are ideal for storage tanks that need a permanent maintenance program to ensure optimal fuel quality at all times, when downtime is not an option. The ideal applicable industries include mission critical, power generation, mining, government, and military.

- Optimal Diesel Fuel Quality at All Times
- Safe and Reliable Emergency Power for Mission Critical Equipment
- Peak Engine Performance and Uptime for Emergency Power Systems





- Automatic Alerts
- Pump Shut Down When Filters Need Service
- Leak Detection
- Water Detection
- High Pump Vacuum
- High Pump Pressure
- Low Flow Alert
- Emergency Stop
- Stainless Steel Plumbing
- Multi-stage Water Removal and Particulate Filtration
- NEMA 12,13, 3R, 4 Powder Coated or Stainless Enclosure
- UL 508A SMART Filtration Controller



# AXI STS 6000 SERIES

INTERNATIONAL Enclosed Automated Fuel Maintenance Systems

The STS 6000 Series Programmable, Enclosed Automated Fuel Filtration Systems are designed to optimize and maintain diesel fuel indefinitely. Adding an STS 6000 Series system to your bulk storage tank will remove particulate, separate water, and condition the fuel. This innovative process stabilizes diesel and bio-fuel, eliminates microbial contamination, and ensures clean, reliable fuel at all times. The process is monitored by a Programmable Logic Controller (PLC) and can be set to run on an automated weekly timer.

The controller's alarm and operating functions are triggered when filter elements require service, a leak is detected, high pump vacuum or pressure occurs, fuel flow changes to outside its set range, or when there is water in the separator. The controller will shut down the system and communicate the alarm status.

## Optional Features

The STS 6000 Series can be configured with a number of system and enclosure options, including multi-tank configuration, enclosure heater, system stand, Stainless Steel enclosure, enclosure color options, and filtration options.

### ◆ All STS Systems Feature:

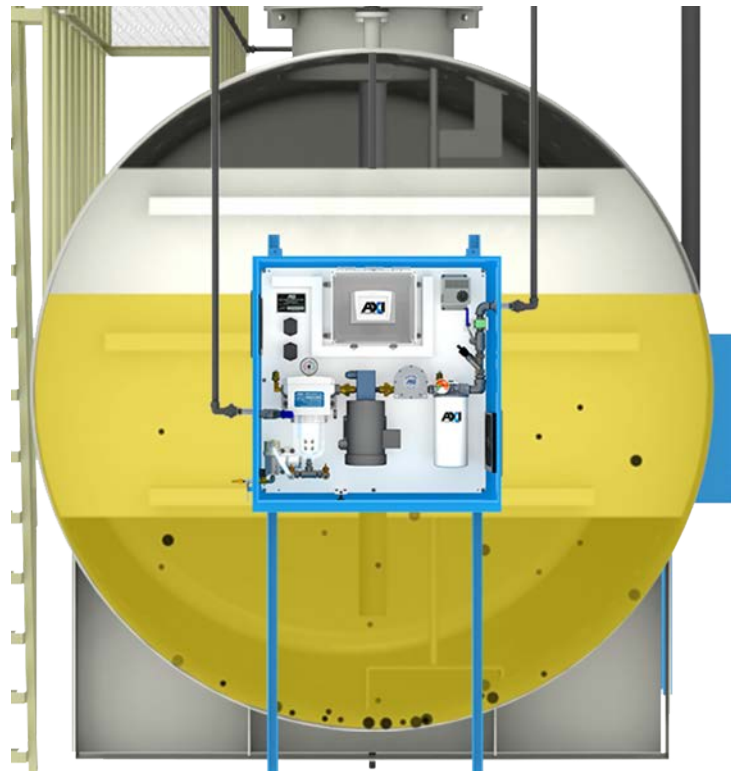
- Multi-stage Water Removal and Particulate Filtration
- NEMA 12, 13, 3R, 4 Powder Coated or SS Enclosure
- UL 508A SMART Filtration Controller
- Stainless Steel Plumbing

### ◆ SMART Filtration Controllers:

- Maintenance Alert Log File
- Runtime Totalizer
- Alarm History
- On-Screen Help

### ◆ STS 6000 Series Safety Features:

- Automatic Alerts
- Leak Detection
- Water Detection
- High Pump Vacuum
- High Pump Pressure
- Low Fuel Flow Alert
- Pump Shutdown when Filters Need Service
- Emergency Stop



## STS 6000 SX-F SPECIFICATIONS



Flow Rate (@60Hz)	2.5 GPM/150 GPH (9.5 LPM/568 LPH)
Primary Filter/Water Separator	10 or 30 $\mu$ Particulate or 60 $\mu$ Stainless Steel Screen with Centrifugal Water Separator
Secondary Filter/Water Block	1, 3, 10, 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 500 Inline Conditioner
Pump	1/3 HP Internal Gear Pump
System Controller	Programmable, Fully Automated UL 508A SMART Filtration Controller with BMS/BAS Interface and Digital Text Readout
Power	120V 50Hz 15A or 230V 60Hz 15A
Plumbing	Stainless Steel
Ports	1/2" NPT In 1/2" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	30" x 24" x 10" (H x W x D) (76 x 61 x 25 cm)
Weight	$\approx$ 190 lbs (86.2 kgs)
Ideal for Tank Sizes	$\approx$ 500-3,000 Gallons (1,893-11,356 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

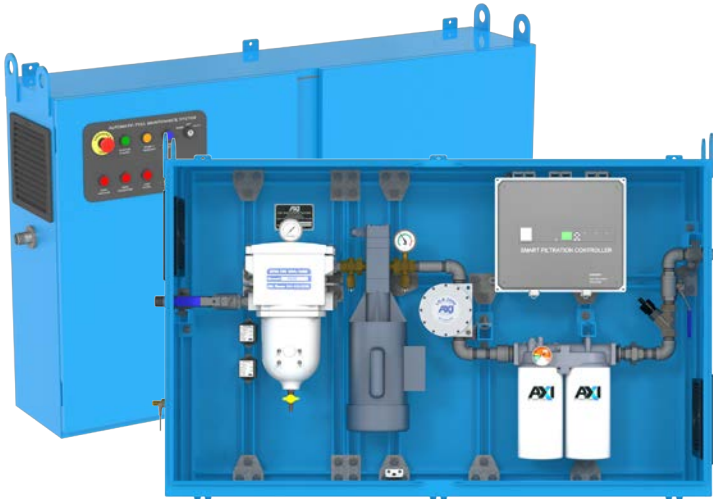
## STS 6004 SPECIFICATIONS



Flow Rate (@60Hz)	4 GPM/240 GPH (15.1 LPM/908 LPH)
Primary Filter/Water Separator	10 or 30 $\mu$ Particulate or 60 $\mu$ Stainless Steel Screen with Centrifugal Water Separator
Secondary Filter/Water Block	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 1500 Inline Conditioner
System Controller	Programmable, Fully Automated UL 508A SMART Filtration Controller with BMS/BAS Interface and Digital Text Readout
Pump	1/3 HP Spur Gear Pump
Power	120V 60Hz 15A or 230V 50Hz 15A
Plumbing	Stainless Steel
Ports	3/4" NPT In 3/4" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	36" x 36" x 12" (H x W x D) (91 x 91 x 30 cm)
Weight	$\approx$ 290 lbs (131.5 kg)
Ideal for Tank Sizes	$\approx$ 3,000-6,000 Gallons (11,356-22,712 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

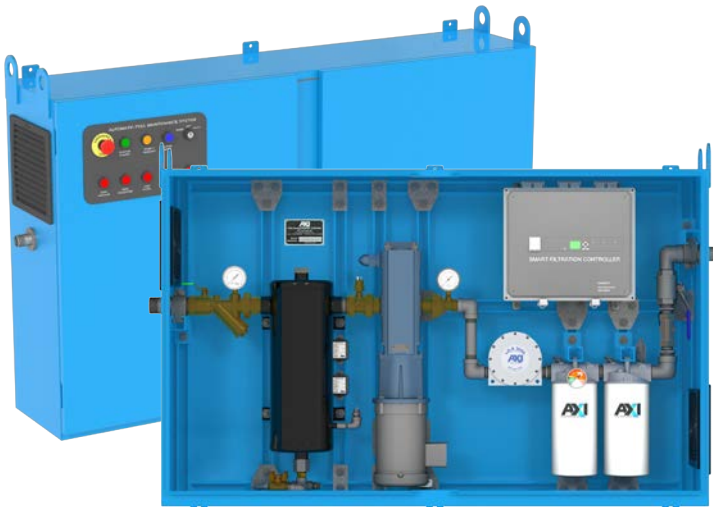
\*See Filter Replacement Chart for a complete list of filter options

## STS 6010 SPECIFICATIONS



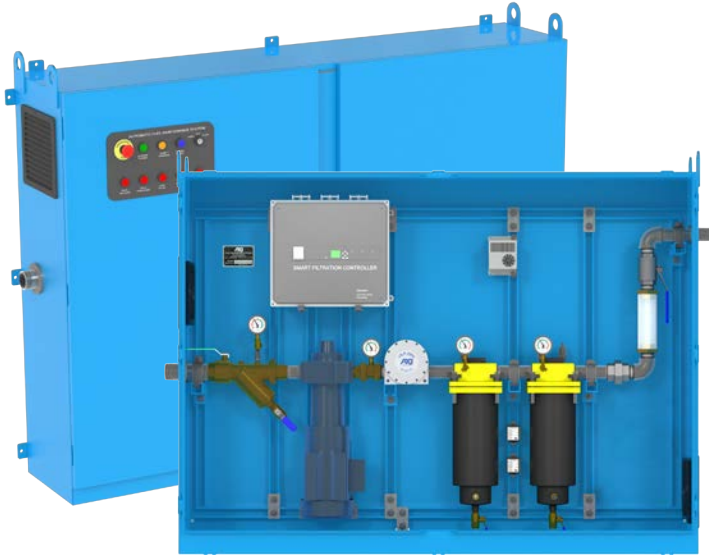
Flow Rate (@60Hz)	10 GPM/600 GPH (37.9 LPM/2271 LPH)
Primary Filter/Water Separator	10 or 30 $\mu$ Particulate or 60 $\mu$ Stainless Steel Screen with Centrifugal Water Separator
Secondary Filter/Water Block	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 3000 Inline Conditioner
System Controller	Programmable, Fully Automated UL 508A SMART Filtration Controller with BMS/BAS Interface and Digital Text Readout
Pump	3/4 HP Spur Gear Pump
Power	120V 60Hz 15A or 230V 50Hz 15A
Plumbing	Stainless Steel
Ports	1" NPT In 1" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	37" x 60" x 12" (H x W x D) (94 x 152 x 30 cm)
Weight	$\approx$ 513 lbs (232.7 kg)
Ideal for Tank Sizes	$\approx$ 6,000-15,000 Gallons (22,712-56,781 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## STS 6020 SPECIFICATIONS



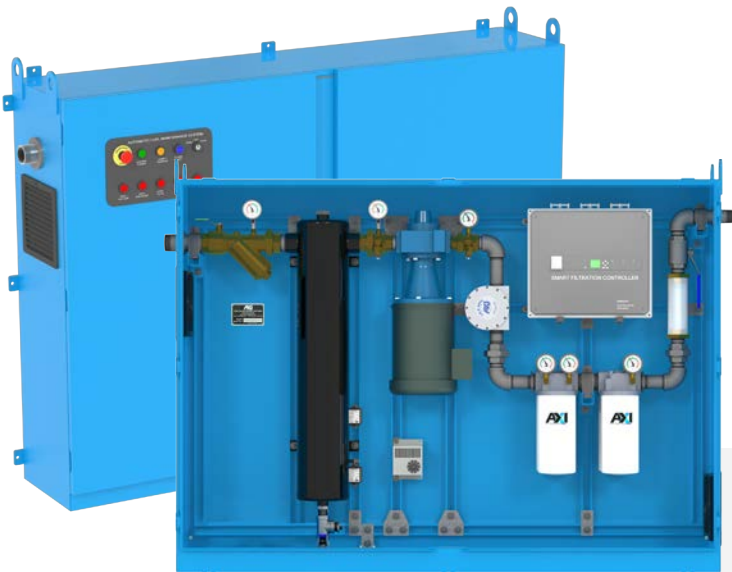
Flow Rate (@60Hz)	20 GPM/1200 GPH (75.7 LPM/4542 LPH)
Y-Strainer	20 Mesh
Mechanical Water Separator	Specific Gravity Separation and Particulate Removal
Fine Filters/Water Block	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 3000 Inline Conditioner
System Controller	Programmable, Fully Automated UL 508A SMART Filtration Controller with BMS/BAS Interface and Digital Text Readout
Pump	3/4 HP Spur Gear Pump
Power	120V 60Hz 15A or 230V 50Hz 15A
Plumbing	Stainless Steel
Ports	1 1/2" NPT In 1" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	37" x 60" x 12" (H x W x D) (94 x 152 x 30 cm)
Weight	$\approx$ 650 lbs (294.8 kg)
Ideal for Tank Sizes	$\approx$ 15,000-30,000 Gallons (56,781-113,562 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## STS 6030 SPECIFICATIONS



Flow Rate (@60Hz)	30 GPM/1800 GPH (113.6 LPM/6814 LPH)
Y-Strainer	20 Mesh
Primary Filter	1, 5, 10 or 25 $\mu$ Racor FBO Particulate or 1, 5, 10 or 25 $\mu$ Racor FBO Water Block
Secondary Filter	10 $\mu$ Racor FBO Coalescer or 1, 5, 10 or 25 $\mu$ Racor FBO Water Block
Fuel Conditioner	LG-X 4000 Inline Conditioner
System Controller	Programmable, Fully Automated UL 508A SMART Filtration Controller with BMS/BAS Interface and Digital Text Readout
Pump	2 HP Internal Gear Pump
Power	208-230V 60Hz 20A or 230V 50Hz 15A or 480V 60Hz 15A
Plumbing	Stainless Steel
Ports	2" NPT In 1-1/2" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	56" x 72" x 17" (H x W x D) (142 x 183 x 43 cm)
Weight	$\approx$ 760 lbs (344.7 kg)
Ideal for Tank Sizes	$\approx$ 25,000-45,000 Gallons (94,635-170,343 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## STS 6040 SPECIFICATIONS



Flow Rate (@60Hz)	40 GPM/2400 GPH (151 LPM/9085 LPH)
Y-Strainer	20 Mesh
Mechanical Water Separator	Specific Gravity Separation and Particulate Removal
Primary Filter	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Secondary Filter	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 4000 Inline Conditioner
System Controller	Programmable, Fully Automated UL 508A SMART Filtration Controller with BMS/BAS Interface and Digital Text Readout
Pump	5 HP Internal Gear Pump
Power	480V 60Hz 15A or 230V 50Hz 15A
Plumbing	Stainless Steel
Ports	2" NPT In 1.5" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	56" x 72" x 17" (H x W x D) (142 x 183 x 43 cm)
Weight	$\approx$ 1005 lbs (455.9 kg)
Ideal for Tank Sizes	$\approx$ 20,000-60,000 Gallons (75,708-227,125 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

\*See Filter Replacement Chart for a complete list of filter options

# AXI STS 7000 SERIES

Enclosed Automated Fuel Maintenance Systems

Similar to the 6000 series, the 7000 Series Programmable Enclosed Automated Fuel Filtration Systems are designed to optimize and maintain diesel fuel indefinitely. Adding an STS 7000 series system will remove particulate, separate water, and condition the fuel. The 7000 Series offers Modbus, TCP/IP, LAN, touch screen controller, and internet connectivity, with alerts via email or SMS.

## All STS Systems Feature:

- Multi-stage Water Removal and Particulate Filtration
- NEMA 12, 13, 3R, 4 Powder Coated or SS Enclosure
- UL 508A SMART Filtration Controller
- Stainless Steel Plumbing

## SMART Filtration Controllers:

- Maintenance Alert Log File
- Runtime Totalizer
- Alarm History
- On-Screen Help

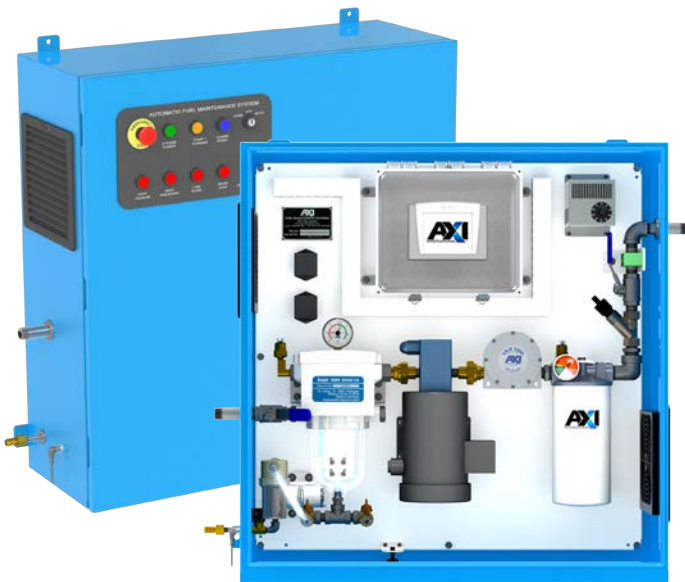
## STS 7000 Series Safety Features:

- Automatic Alerts
- Leak Detection
- Water Detection
- High Pump Vacuum
- High Pump Pressure
- Low Fuel Flow Alert
- Pump Shutdown when Filters Need Service
- Emergency Stop

## Optional Features

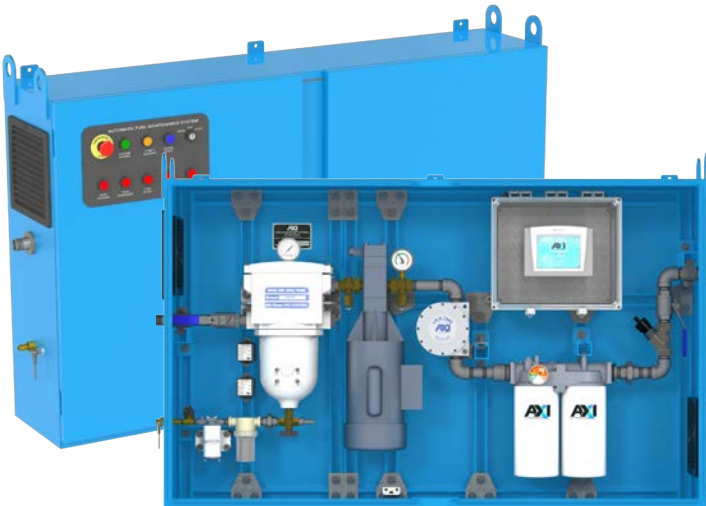
The STS 7000 series can also be configured with a number of system and enclosure options, including multi-tank configuration, automatic water drain, enclosure heater, system stand, Stainless Steel enclosure, enclosure color options, and filtration options.

## STS 7004 SPECIFICATIONS



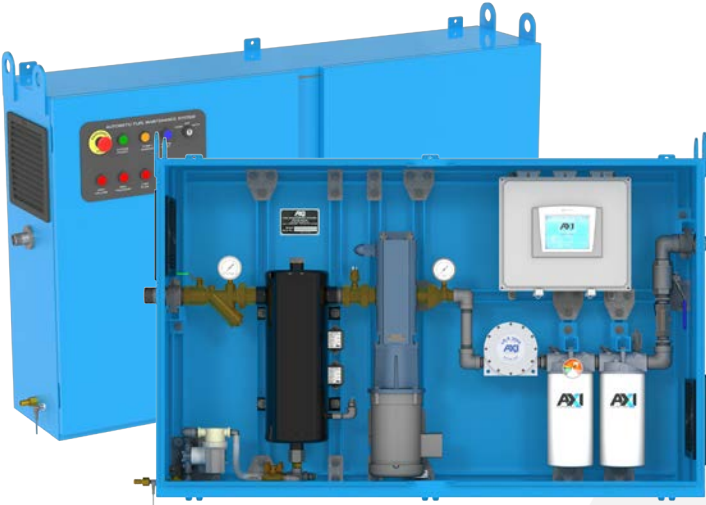
Flow Rate (@60Hz)	4 GPM/240 GPH (15.1 LPM/908 LPH)
Primary Filter/Water Separator	10 or 30µ Particulate or 60µ Stainless Steel Screen with Centrifugal Water Separator
Secondary Filter/Water Block	1, 3, 10 or 25µ Particulate or 3, 10µ Water Block
Fuel Conditioner	LG-X 1500 Inline Conditioner
System Controller	HMI PLC Controller with Touch Screen and Remote Monitoring, Modbus, TCP/IP LAN and Internet Capability
Pump	1/3 HP Spur Gear Pump
Power	120V 60Hz 15A or 230V 50Hz 15A
Plumbing	Stainless Steel
Ports	3/4" NPT In 3/4" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	36" x 36" x 12" (H x W x D) (91 x 91 x 30 cm)
Weight	≈ 305 lbs (138.3 kg)
Ideal for Tank Sizes	≈ 3,000-6,000 Gallons (11,356-22,712 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## STS 7010 SPECIFICATIONS



Flow Rate (@60Hz)	10 GPM/600 GPH (37.9 LPM/2271 LPH)
Primary Filter/Water Separator	10 or 30 $\mu$ Particulate or 60 $\mu$ Stainless Steel Screen with Centrifugal Water Separator
Secondary Filter/Water Block	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 3000 Inline Conditioner
System Controller	HMI PLC Controller with Touch Screen and Remote Monitoring, Modbus, TCP/IP LAN and Internet Capability
Pump	3/4 HP Spur Gear Pump
Power	120V 60Hz 15A or 230V 50Hz 15A
Plumbing	Stainless Steel
Ports	1" NPT In 1" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	37" x 60" x 12" (H x W x D) (94 x 152 x 30 cm)
Weight	$\approx$ 520 lbs (235.9 kg)
Ideal for Tank Sizes	$\approx$ 6,000-15,000 Gallons (22,712-56,781 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

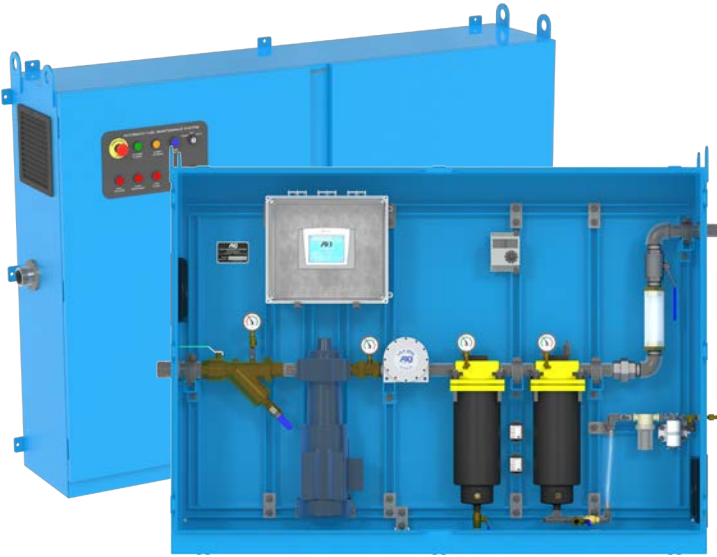
## STS 7020 SPECIFICATIONS



Flow Rate (@60Hz)	20 GPM/1200 GPH (75.7 LPM/4542 LPH)
Y-Strainer	20 Mesh
Mechanical Water Separator	Specific Gravity Separation and Particulate Removal
Primary Filter	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Secondary Filter	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 3000 Inline Conditioner
System Controller	HMI PLC Controller with Touch-Screen and Remote Monitoring, Modbus, TCP/IP LAN and Internet Capability
Pump	3/4 HP Spur Gear Pump
Power	120V 60Hz 15A or 230V 50Hz 15A
Plumbing	Stainless Steel
Ports	1 1/2" NPT In 1" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	37" x 60" x 12" (H x W x D) (94 x 152 x 30 cm)
Weight	$\approx$ 650 lbs (294.8 kg)
Ideal for Tank Sizes	$\approx$ 15,000-30,000 Gallons (56,781-113,562 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

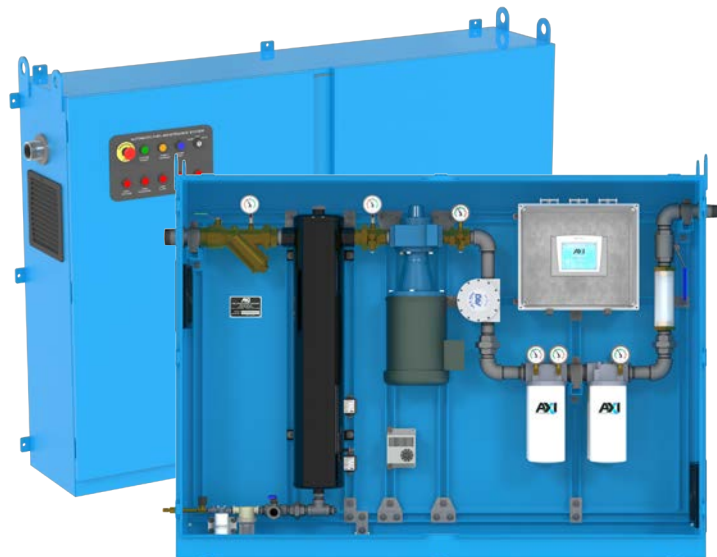
\*See Filter Replacement Chart for a complete list of filter options

## STS 7030 SPECIFICATIONS



Flow Rate (@60Hz)	30 GPM/1800 GPH (113.6 LPM/6814 LPH)
Y-Strainer	20 Mesh
Primary Filter	1, 5, 10 or 25 $\mu$ Racor FBO Particulate or 1, 5, 10 or 25 $\mu$ Racor FBO Water Block
Secondary Filter	10 $\mu$ Racor FBO Coalescer or 1, 5, 10 or 25 $\mu$ Racor FBO Water Block
Fuel Conditioner	LG-X 4000 Inline Conditioner
System Controller	HMI PLC Controller with Touch-Screen and Remote Monitoring, Modbus, TCP/IP LAN and Internet Capability
Pump	2 HP Internal Gear Pump
Power	208-230V 60Hz 20A or 230V 50Hz 15A or 480V 60Hz 15A
Plumbing	Stainless Steel
Ports	2" NPT In 1-1/2" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	56" x 72" x 17" (H x W x D) (142 x 183 x 43 cm)
Weight	$\approx$ 760 lbs (344.7 kg)
Ideal for Tank Sizes	$\approx$ 25,000-45,000 Gallons (94,635-170,343 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## STS 7040 SPECIFICATIONS



Flow Rate (@60Hz)	40 GPM/2400 GPH (151 LPM/9085 LPH)
Y-Strainer	20 Mesh
Mechanical Water Separator	Specific Gravity Separation and Particulate Removal
Primary Filter	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Secondary Filter	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 4000 Inline Conditioner
System Controller	HMI PLC Controller with Touch-Screen and Remote Monitoring, Modbus, TCP/IP LAN and Internet Capability
Pump	5 HP Internal Gear Pump
Power	480V 60Hz 15A or 230V 50Hz 15A
Plumbing	Stainless Steel
Ports	2" NPT In 1.5" NPT Out
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	56" x 72" x 17" (H x W x D) (142 x 183 x 43 cm)
Weight	$\approx$ 1005 lbs (455.9 kg)
Ideal for Tank Sizes	$\approx$ 20,000-60,000 Gallons (75,708-227,125 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	



# AXI STS 8000 SERIES

Enclosed Automated Fuel Maintenance Systems

The AXI International STS 8000 series Intelligent Fuel Management™ system is the latest innovation from the AXI Engineering team designed to be the ultimate automated fuel maintenance system for optimizing and maintaining diesel fuel indefinitely.

What elevates the STS 8000 series above the rest of the industry is the modularization of components within the system and its configuration options. The filters on the STS 8000 series are mounted inverted to promote more efficient filter draining. This minimalizes spills and potential fuel loss. The fuel is drained from the filter housing back into the fuel line by the accessory pump.

The STS 8000 series offers an Automatic Water Drain option that stores water removed from the fuel inside the enclosure. This is ideal for installations that cannot have an external holding drum, or in cold weather applications where stored water may freeze (optional enclosure heater recommended).

Knowing the cleanliness of stored fuel is critical to ensuring optimal fuel quality. In order to do so, we integrated an optical particle counter into the STS 8000 series. The particle counter will provide the ISO code of the fuel, a number which represents the level of contamination found within the fuel (see section “ISO Chart” for more information).

The STS 8000 series can be configured with a number of system and enclosure options, including multi-tank configuration, automatic water drain, particle counter, additive injection, enclosure heater, system stand, Stainless Steel enclosure, enclosure color options, and filtration options.

## STS 8004 SPECIFICATIONS



Flow Rate	4 GPM/240 GPH (15.1 LPM/908 LPH)
Pre-Filter/ Water Separator	10 or 30μ Particulate or 60μ Stainless Steel Screen with Centrifugal Water Separator
Primary Filter	1, 3, 10 or 25μ Particulate or 3, 10μ Water Block
Secondary Filter	1, 3, 10 or 25μ Particulate or 3, 10μ Water Block
Fuel Conditioner	LG-X 1500 Inline Conditioner
Smart Filtration Controller	Programmable, Fully Automated UL508a Net-Comm Touch Controller with BMS/BAS Interface and Digital Text Readout.
Pump	1/3 HP Spur Gear Pump
Additive Tank Capacity	5 Gallons
Power	120V 60Hz 15A or 230V 50Hz 15A *Other Voltages available
Plumbing	Stainless Steel
Ports	3/4" NPT In, 3/4" NPT Out
Weatherproof Cabinet	NEMA 12 (IP55), 13 (IP65), 4 (IP66) and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	52" x 36" x 12" (H x W x D) (132 x 91 x 30 cm)
Weight	≈ 350 lbs (158.8 kg)
Ideal for Tank Sizes	≈ 3,000-6,000 Gallons (11,356-22,712 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

# STS Series System Integration Configuration

To ensure optimal system operation and security, the STS series should be permanently mounted on a hard, level surface as close to the tank as possible. The STS series enclosure is weatherproof, and is designed for well-ventilated indoor or outdoor use within specified temperature range.

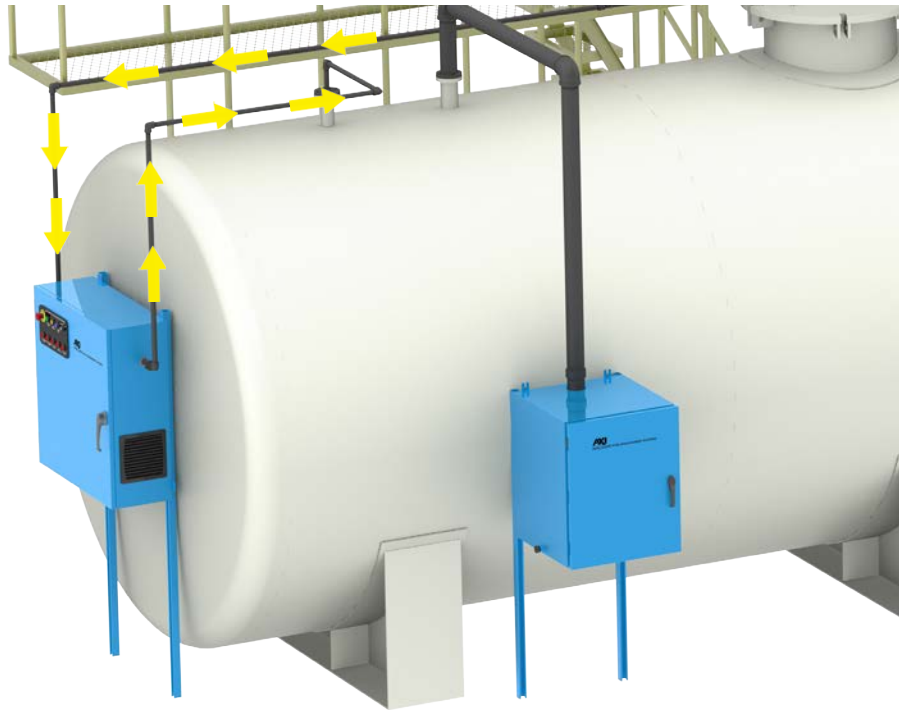
The pick-up tube/line(s) should originate from the lowest point of the tank (to remove all water and sludge), and be connected directly to the system's pump inlet port, located on the left hand side of the enclosure, and kept as short as possible. It is recommended to install an oversized, low restriction foot valve on the suction line to keep the system primed. This is especially important if the pump inlet port of the system is located above the lowest possible fuel level in the tank. A priming tee should be installed on the highest point of the suction line to be able to easily prime the lines and system.

The following is an example of how an Enclosed Automated Fuel Maintenance System could be integrated into a facility:

## STS Installation

This STS system is installed directly to the bulk fuel tank. As depicted in the image to the right, the suction line is located on the far side of the tank, while the return line is on the opposite side of the tank.

This configuration creates a sweeping motion that sends sludge, dirt, particulate, and any other form of contamination to the suction line side of the tank for removal.





# CLEAN FUEL AND YOUR FLEET

Diesel fuel is one of the largest day-to-day costs that the transportation industry faces. With the fluctuation in oil price, the pressure to maintain a profitable business is an ongoing problem.

The latest diesel engines, used in on-road trucks and locomotives, are equipped with High Pressure Common Rail (HPCR) fuel injection. To protect HPCR components, much lower concentrations of fine particulate and water need to be maintained within the fuel system than were previously accepted. Making this even more challenging are the lagging practices in the design of fuel handling and storage facilities used within the transportation industry.

The integration of an Intelligent Fuel Management™ solution bridges the gap between these fuel related risks and ultimate reliability by delivering ultra clean fuel to critical equipment. Utilizing fuel that meets manufacturer's specifications ensures engines run as designed, and extends the life of engines and stored fuel.



# FPS SERIES



- Automatic Alerts
- Pump Shut Down When Filters Need Service
- Leak Detection
- Water Detection

- High Pump Vacuum
- High Pump Pressure
- Compact Design
- Modular Controls
- Racor Filters

- Stainless Steel Plumbing
- Multi-stage Water Removal and Particulate Filtration
- UL 508A SMART Filtration Controller

## Automated Fuel Maintenance Systems (FPS)

AXI's FPS line of fuel maintenance systems are compact, and designed to optimize and maintain diesel fuel indefinitely. These compact fuel maintenance systems are specifically designed for permanent installations indoors or with limited space, such as inside genset enclosures or engine room applications. The efficiency and compact design of the FPS line is second to none in the industry, setting the standard for fuel maintenance system design and operation.

FPS systems have flow rates that range from 80 to 600 gallons per hour - making them the ideal solution for a wide variety of applications. FPS systems reverse fuel deterioration while decontaminating, cleaning, and optimizing the fuel. FPS systems are ideal for the marine, mission critical, mining, power generation, government, and military industries.

# AXI FPS SERIES

Automated Fuel Maintenance Systems

The FPS Series SMART Fuel Polishing Systems are programmable, fully automated fuel optimization systems that remove water, sludge, and contaminants. FPS systems condition and stabilize fuel, keeping it dry and free from microbial contamination. Key features of the FPS systems include: performance monitoring and alarm functions when filter elements require service, high pump vacuum or pressure exists, and when water is detected in the separator. FPS systems are mounted on a powder coated aluminum backplate.

## FPS-COMPACT SPECIFICATIONS



Flow Rate	1.3 GPM/80 GPH (4.9 LPM/302.8 LPH)
Primary Filter/ Water Separator	10 and 30 $\mu$ Particulate & Water Block & Centrifugal Water Separator
Fuel Conditioner	LG-X 500 Inline Conditioner
Pump	1/3 HP Helical Spur Gear Pump
System Controller	SMART FPS System Monitor with Safety and Alarm Features
Power	12V DC 10A or 24V DC 5A
Plumbing	Stainless Steel
Ports	1/2" Hose Barb In 1/2" Hose Barb Out
Construction	Powder Coated Aluminum Back Plate
Dimensions	14" x 10" x 8" (H x W x D) (36 x 25 x 20 cm)
Weight	$\approx$ 20 lbs (9.1 kg)
Ideal for Tank Sizes	$\approx$ 200-900 Gallons (757-3,407 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## FPS-DX-S SPECIFICATIONS



Flow Rate	1.3 GPM/80 GPH (4.9 LPM/302.8 LPH)
Strainer	50 Mesh
Fine Filter/ Water Separator	10 $\mu$ Particulate or 3 $\mu$ Water Block
Fuel Conditioner	LG-X 500 Inline Conditioner
Pump	1/3 HP Helical Spur Gear Pump
System Controller	SMART FPS System Monitor with Safety and Alarm Features
Power	12V DC 10A or 24V DC 5A
Plumbing	Stainless Steel
Ports	1/2" Hose Barb In 1/2" Hose Barb Out
Construction	Powder Coated Aluminum Back Plate
Dimensions	15" x 18.5" x 7.5" (H x W x D) (38 x 47 x 19 cm)
Weight	$\approx$ 20 lbs (9.1 kg)
Ideal for Tank Sizes	$\approx$ 200-900 Gallons (757-3,407 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## ◆ FPS Series Features:

- SMART Filtration Controller
- Fully Automated and Programmable Operation
- Integration with Building Management and Vessel Management Systems
- Modular “Plug & Play” Flexibility
- Unique Safety and Alarm Features
- Continuous Duty Pumps
- Viton Seals

## ◆ FPS Series Safety Features:

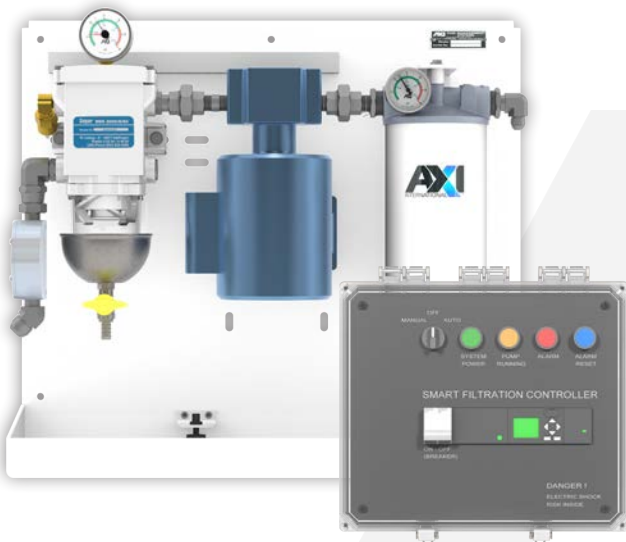
- Automatic Alerts
- Leak Detection
- Water Detection
- High Pump Vacuum
- High Pump Pressure
- Pump Shutdown when Filters Need Service

## ◆ FPS-FX SPECIFICATIONS



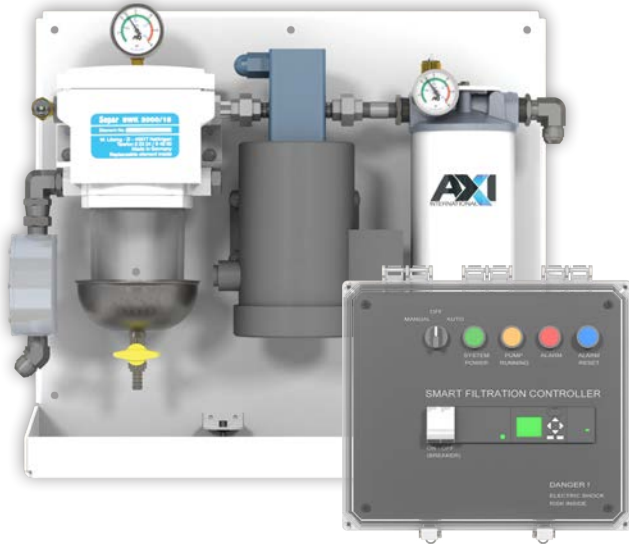
Flow Rate	2.5 GPM/150 GPH (9.5 LPM/567.8 LPH)
Primary Filter/ Water Separator	10, or 30 $\mu$ Particulate and Centrifugal Water Separator
Fuel Conditioner	LG-X 500 Inline Conditioner
Pump	1/3 HP Helical Spur Gear Pump
System Controller	SMART FPS System Monitor with Safety and Alarm Features
Power	12V DC 10A or 24V DC 5A
Plumbing	Stainless Steel
Ports	1/2" 37° Flare In 1/2" 37° Flare Out
Construction	Powder Coated Aluminum Back Plate
Dimensions	20" x 17" x 7" (H x W x D) (71 x 43 x 20 cm)
Weight	≈ 32 lbs (14.5 kg)
Ideal for Tank Sizes	≈ 500-2,000 Gallons (1,893-7,571 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## ◆ FPS-SX-F SPECIFICATIONS



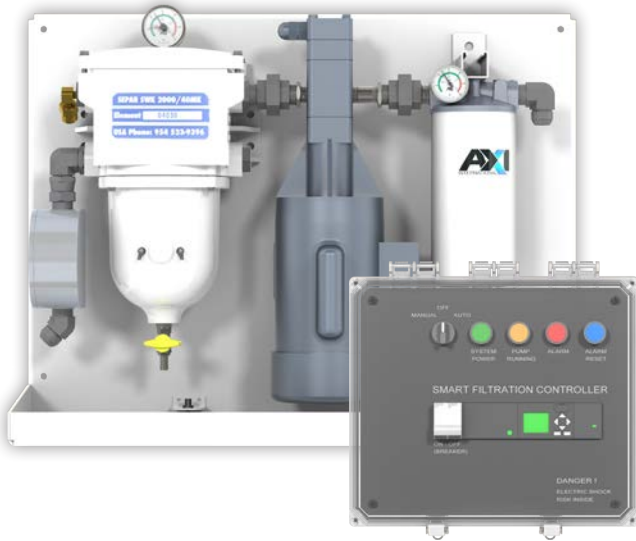
Flow Rate (@ 60Hz)	2.5 GPM/150 GPH (9.5 LPM/567.8 LPH)
Primary Filter	10 or 30 $\mu$ Particulate or 60 $\mu$ Stainless Steel Screen with Centrifugal Water Separator
Secondary Filter	1, 3, 10 or 25 $\mu$ Fine Filter or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 500 Inline Conditioner
Pump	1/3 HP Internal Gear Pump
System Controller	SFC-55 SMART FPS System Monitor with Safety and Alarm Features
Power	120V 50Hz 15A or 230V 60Hz 15A
Plumbing	Stainless Steel
Ports	3/4" 37° Flare In 1/2" 37° Flare Out
Construction	Powder Coated Aluminum Back Plate
Dimensions	23" x 26" x 9" (H x W x D) (58 x 69 x 23 cm)
Weight	≈ 57 lbs (25.9 kg)
Ideal for Tank Sizes	≈ 500-2,000 Gallons (1,893-7,571 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## FPS-MX-F SPECIFICATIONS



Flow Rate (@ 60Hz)	4 GPM/240 GPH (15 LPM/984.2 LPH)
Primary Filter	10 or 30 $\mu$ Particulate or 60 $\mu$ Stainless Steel Screen with Centrifugal Water Separator
Secondary Filter	1, 3, 10 or 25 $\mu$ Fine Filter or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 1500 Inline Conditioner
Pump	1/3 HP Spur Gear Pump
System Controller	SFC-55 SMART FPS System Monitor with Safety and Alarm Features
Power	110V 60Hz 15A or 230V 50Hz 15A
Plumbing	Stainless Steel
Ports	3/4" 37° Flare In 3/4" 37° Flare Out
Construction	Powder Coated Aluminum Back Plate
Dimensions	23" x 26" x 9" (H x W x D) (58 x 69 x 23 cm)
Weight	≈ 70 lbs (31.8 kg)
Ideal for Tank Sizes	≈ 3,000-6,000 Gallons (11,356-22,712 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## FPS-LX-F SPECIFICATIONS



Flow Rate (@ 60Hz)	10 GPM/600 GPH (38 LPM/2271.3 LPH)
Primary Filter	10 or 30 $\mu$ Particulate or 60 $\mu$ Stainless Steel Screen with Centrifugal Water Separator
Secondary Filter	1, 3, 10 or 25 $\mu$ Fine Filter or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 3000 Inline Conditioner
Pump	1 HP Spur Gear Pump
System Controller	SFC-55 SMART FPS System Monitor with Safety and Alarm Features
Power	110V 60Hz 15A or 230V 50Hz 15A
Plumbing	Stainless Steel
Ports	1" 37° Flare In 1" 37° Flare Out
Construction	Powder Coated Aluminum Back Plate
Dimensions	26" x 34" x 12" (H x W x D) (66 x 86 x 31 cm)
Weight	≈ 125 lbs (57 kg)
Ideal for Tank Sizes	≈ 6,000-15,000 Gallons (22,712-56,781 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	







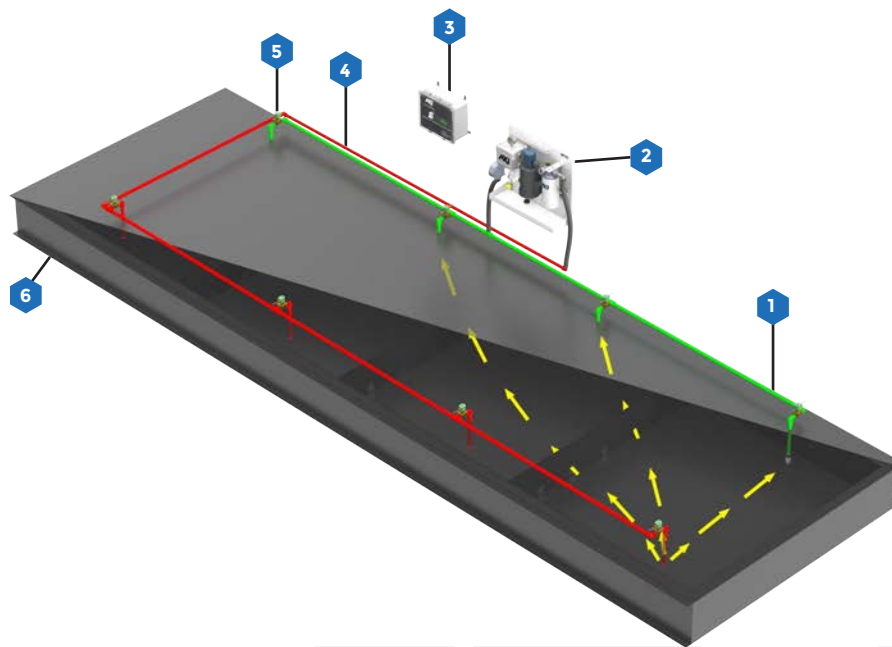
# MULTI-POINT FLOWPATH

Intelligent Actuated Valve Fuel Flow Control System

The Multi-Point Flow Path Package provides a means of ensuring optimal fuel quality for restrictive tanks containing multiple internal obstructions. Structural baffles and internal configurations can present issues for fuel path travel, leaving areas susceptible to water, sediment, and bioaccumulation.

The addition of multiple suction and discharge points within the tank creates new flow paths that can push out sludge, particulate, and other forms of contamination from hard to reach sections of the tank. This process, unique to AXI International, is the most effective way to ensure optimal fuel quality for fuel tanks constructed with baffles.

The Multi-point Flow Path package works through random valve actuation on both the supply and return plumbing. Depending on the tank configuration, the Multi-point solenoid valves can be installed throughout the tank, providing multiple, varying flow paths. Multi-point systems can control up to seven sets of solenoid valves per tank (14 total). The number of valves will determine the number of possible flow paths.



1. Suction Header
2. FPS System
3. FPS Multi-point Controller
4. Return Header
5. Point Solenoid Valve
6. Base/Belly Tank

## Mult-point FPS Series Features:

- SMART Filtration Controller
- Fully Automated and Programmable Operation
- Integration with Vessel Monitoring Systems
- Modular "Plug & Play" Flexibility
- Unique Safety & Alarm Features
- Continuous-Duty Pumps, Viton Seals
- Automatic Solenoid Actuation

*\*See Filter Replacement Chart for a complete list of filter options*

## FPS Series System Integration Configuration

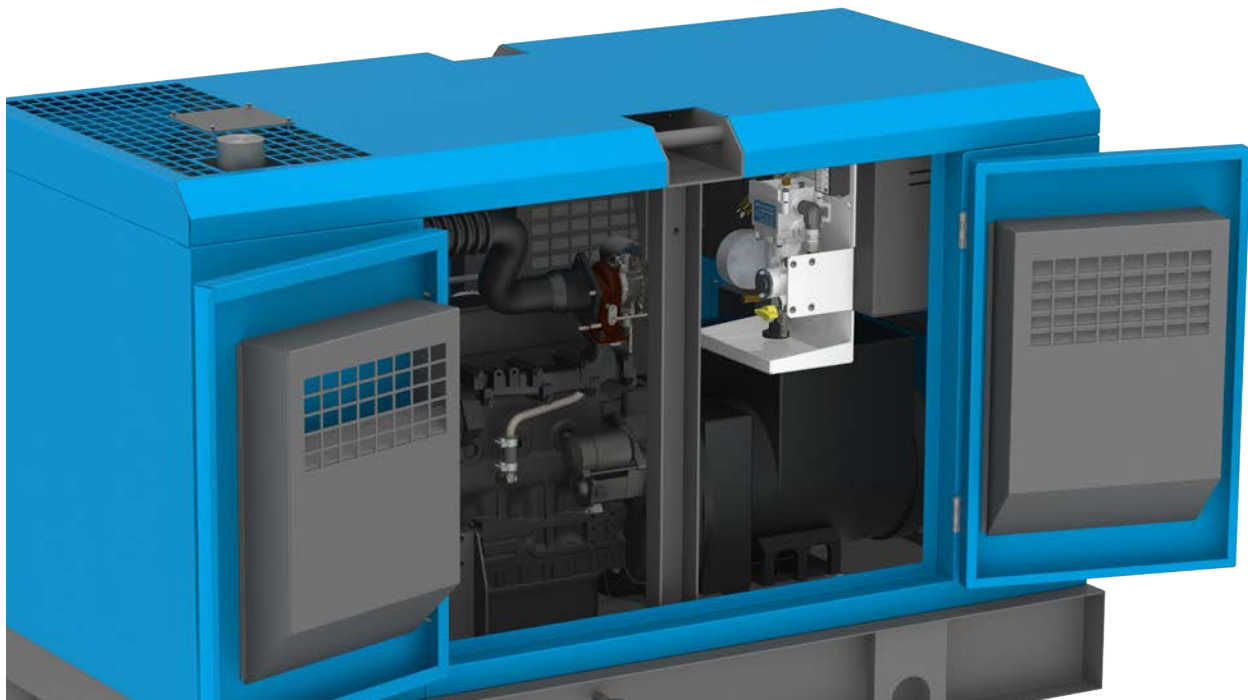
FPS systems are installed in a fuel dialysis configuration, parallel to the fuel tank. These systems combine programmable, fully automated fuel polishing with compact “Plug & Play” design within a small footprint. The FPS series can connect to a wide variety of storage and day tanks.

In marine applications, FPS systems optimize and condition all fuel taken on board, transfer fuel between tanks, and can fill the day tanks in certain applications. When ships are dry docked or winterized for long-term or off-season storage, the FPS systems will automatically preserve the quality of the fuel on board.

FPS systems are compact, lightweight and easy to install. FPS systems should be permanently mounted on a hard, level surface, and should be located as close to the tank as possible. Mounting holes are provided for proper fastening. FPS systems are designed for well-ventilated indoor use within specified temperature range. Sufficient space above the unit is needed to change the filter element comfortably. The SMART Filtration Controller is modular, and can be mounted away from the system to accommodate the available space within an engine room.

The compact design of the FPS system simplifies installation inside standard emergency/standby generator enclosures. AXI works with and supports architects, engineers, and facility managers with custom engineering for fuel system design and layout. Below is an example of how a Fuel Maintenance System should be integrated into your facility or equipment.

### FPS Series Installation Inside Genset Enclosure





# SECURING FUEL QUALITY

Emergency and standby power are the unsung heroes of Mission Critical facilities. At a moments notice, these systems need to engage, and stay running, for an unspecified amount of time. If overlooked or unmaintained, a backup power system can easily become the achilles heel of a facility.

Although weekly scheduled burns (an industry term that means running the engine for a short duration) are common, backup generators run for a short amount of time, typically under light load. In an emergency situation, the generator is subject to a heavier load. As the engine demands much more fuel than the weekly burns, the stored fuel is stirred up, causing the settled debris, and other forms of contamination, to quickly become suspended within the fuel. This can clog fuel filters - rendering the generator useless.

The integration of an Intelligent Fuel Management™ Solution ensures the fuel delivered to equipment at mission critical facilities does not fail the system. By regularly maintaining fuel quality, the potential for failure during a power outage is drastically reduced.



# SFM SERIES

## Solar Powered Fuel Maintenance System (SFM)

The SFM Series Solar Powered Intelligent Fuel Maintenance System is designed to optimize and maintain diesel fuel indefinitely by removing particulate and water in stored fuel. Powered by a solar panel and 12V DC battery, this innovative process stabilizes diesel and bio-fuels, eliminates microbial contamination, and ensures clean reliable fuel at all times. The SFM Series Solar Powered Intelligent Fuel Maintenance System is ideal for stored fuel in remote locations where grid power isn't readily available.

The SFM Series System is designed around a nickel-plated brass gear pump. Quality filtration components are connected using corrosion-resistant Stainless Steel plumbing. A pressure switch is installed on the filter housing to shut down the system when the filter is clogged and alert the user. Available filter elements include stainless steel mesh filter, particulate, and water block elements.



- Pump Shut Down When Filters Need Service
- Leak Detection

- High Pump Vacuum
- High Pump Pressure
- Stainless Steel Plumbing

- Multi-stage Particulate Filtration
- NEMA 12,13, 3R, 4 Powder Coated or Stainless Enclosure
- UL 508A SMART Solar Controller



Flow Rate	1.3 GPM/80 GPH (5 LPM/302.8 LPH)
Strainer	50 Mesh
Secondary Filter	3 $\mu$ Water Block, 10 $\mu$ Fine Filter
Pump	Helical Spur Gear Pump
Power Source	50W Solar Panel
Power Output	12V DC 10A
System Controller	SMART Solar Controller
Plumbing	Stainless Steel
Fuel Conditioner	LGX-500
Port Size	1/2" NPT In 1/2" NPT Out
Dimensions (Enclosure)	20" x 16" x 8" (H x W x D) (51 x 41 x 20 cm)
Dimensions (Solar Panel)	21.5" x 22.5" (55 x 57 cm)
Weight (System)	≈ 40 lbs (18.1 kg)
Weight (Solar Panel)	≈ 10 lbs (4.5 kg)
Ideal for Tank Sizes	≈ 200-900 Gallons (757-3,407 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	



# MTC SERIES

## Mobile Fuel Polishing Systems (MTC)

AXI's MTC Series of mobile fuel polishing systems remove water, sludge, and sediments that naturally accumulate in diesel fuel tanks, while restoring diesel fuel to a clear, bright, and pristine condition. Utilizing a multi-stage fuel polishing process, the MTC Series reconditions, stabilizes, and decontaminates bio-diesel, diesel fuel, light oils, and hydraulic fluids, providing optimal fuel quality at all times for peak engine performance and reliability.

The MTC Series is available in standard (MTC Series) or High Capacity (MTC-HC Series) flow rates, making it the most versatile line of mobile fuel polishing systems available. AXI's mobile fuel polishing systems excel in combining high capacity filtration, fuel conditioning, and water separation within a minimal footprint. MTC Systems are ideal for many applications, such as transportation and heavy equipment, equipment service centers, power generation facilities, storage tanks, fuel stations, oil rigs, fuel docks, marinas, and equipment rental companies.



- Automatic Alerts
- Pump Shut Down When Filters Need Service

- High Pump Vacuum
- High Pump Pressure
- Water Detection

- Multi-stage Water Removal and Particulate Filtration
- UL 508A SMART Filtration Controller

# AXI MTC SERIES

INTERNATIONAL Mobile Fuel Polishing Systems

The MTC Series Mobile Fuel Polishing Systems are designed to efficiently and safely clean and restore fuel to a pristine condition. Vital to the fuel polishing process, these systems incorporate a multi-stage filtration process that reconditions, stabilizes, and decontaminates diesel fuel, biofuels, light oils, and hydraulic fluids. All MTC systems are specifically designed for tanks with contaminated fuel that require the removal of water, sediment, and sludge accumulation.

AXI's Mobile Fuel Polishing Systems are built with industrial quality components, mounted on both a heavy-duty aluminum cart (MTC Series) and/or carbon steel skid (MTC-HC Series). MTC systems feature multi-stage water removal, particulate filtration, fuel conditioning, a compact industrial design, locking cam and groove connections, built-in spill containment tray, and bypass loop capability.

AXI's High Capacity Mobile Fuel Polishing Systems flow up to 150 GPM. The MTC-HC series features high capacity multi-stage water removal, particulate filtration, fuel conditioning, multiple discharge and sampling ports, large contaminant holding capacity, robust compact industrial design, liquid-filled vacuum and pressure gauges, AXI Watect water sensor, and PLC filtration system controller.

## Optional Features

MTC systems have the capability to connect to any of our pre-filter assemblies. 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. They are equipped with a basket strainer that accommodates a variety of easy-to-replace, industry standard size, filter bags from 1-1500µ.

## TK-240-XT SPECIFICATIONS



Flow Rate	4 GPM/240 GPH (15.1 LPM/908.5 LPH)
Primary Filter	50 Mesh
Secondary Filter	3µ Water Block
Fuel Conditioner	LG-X 500 Inline Conditioner
Pump	Helical Spur Gear Pump
Power	12V 10A
Port Size	1/2" In Hose Barb 1/2" Out Hose Barb
Clear Suction Hose	1/2", 15 ft (4.6 m)
Discharge Hose	1/2", 15 ft (4.6 m)
Dimensions	13" x 12" x 12" (H x W x D) (33 x 30 x 30 cm)
Weight	≈ 26 lbs (11.8 kg)
Fuel Treated in 8 Hours	≈ 1,440 Gallons (5,451 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	



## ◆ MTC-500 SPECIFICATIONS



Flow Rate	8 GPM/480 GPH (30.3 LPM/1814 LPH)
Mechanical Water Separator	Specific Gravity Separation and Particulate Removal
Final Filter	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 1500 Inline Conditioner
Pump	1 HP, Self-priming Rotary Vane Pump with Integrated Adjustable Bypass Valve
Power	115V 60Hz 15A or 230V 50Hz 15A
Ports	1" Cam & Groove In 3/4" Cam & Groove Out (Before Fine Filter) 3/4" Cam & Groove Out (After Fine Filter)
Clear Suction Hose	1", 25 ft (7.6 m)
Discharge Hose	3/4", 25 ft (7.6 m)
Dimensions	48" x 25.5" x 26" (H x W x D) (122 x 65 x 66 cm)
Weight	≈ 140 lbs (63.5 kg)
Fuel Treated in 8 Hours	≈ 3,840 Gallons (14,536 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## ◆ MTC-1000 SPECIFICATIONS



Flow Rate	15 GPM/900 GPH (56.8 LPM/3407 LPH)
Mechanical Water Separator	Specific Gravity Separation and Particulate Removal
Final Filter	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 3000 Inline Conditioner
Pump	1/2 HP, Self-priming Rotary Vane Pump with Integrated Bypass Valve
Power	115V 60Hz 15A or 230V 50Hz 15A
Ports	1" Cam & Groove In 1" Cam & Groove Out (Before Fine Filter) 1" Cam & Groove Out (After Fine Filter)
Clear Suction Hose	1", 25 ft (7.6 m)
Discharge Hose	1", 25 ft (7.6 m)
Dimensions	48" x 25.5" x 26" (H x W x D) (122 x 65 x 66 cm)
Weight	≈ 160 lbs (72.6 kg)
Fuel Treated in 8 Hours	≈ 7,200 Gallons (27,255 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

\*See Filter Replacement Chart for a complete list of filter options

## ◆ MTC-3000 SPECIFICATIONS



Flow Rate	26 GPM/1560 GPH (98.4 LPM/5905 LPH)
Mechanical Water Separator	Specific Gravity Separation and Particulate Removal
Final Filter	1, 3, 10 or 25 $\mu$ Particulate or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 3000 Inline Conditioner
Pump	3/4 HP, Self-priming Rotary Vane Pump with Integrated Adjustable Bypass Valve
Power	115V 60Hz 15A or 230V 50Hz 15A
Ports	1-1/2" Cam & Groove In 1-1/4" Cam & Groove Out (Before Fine Filter) 1-1/4" Cam & Groove Out (After Fine Filter)
Clear Suction Hose	1-1/2", 25 ft (7.6 m)
Discharge Hose	1-1/4", 25 ft (7.6 m)
Dimensions	48" x 25.5" x 26" (H x W x D) (122 x 65 x 66 cm)
Weight	≈ 200 lbs (90.7 kg)
Fuel Treated in 8 Hours	≈ 12,480 Gallons (47,242 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## ◆ MTC-X SPECIFICATIONS



Flow Rate	26 GPM/1560 GPH (98.4 LPM/5905 LPH)
Primary Filter	Bag Filter Vessel, Aluminum, 4-bolt Stainless Steel Liner Basket for use with 1-800 $\mu$ Filter Bags
Final Filter(s)	1, 3, 10 or 25 $\mu$ Particulate or Void Filter or 3, 10 $\mu$ Water Block
Fuel Conditioner	LG-X 3000 Inline Conditioner
Pump	3/4 HP, Self-priming Rotary Vane Pump with Integrated Adjustable Bypass Valve
Power	115V 60Hz 15A or 230V 50Hz 15A
Ports	1-1/2" Cam & Groove In 1-1/4" Cam & Groove Out
Clear Suction Hose	1-1/2", 25 ft (7.6 m)
Discharge Hose	1-1/4", 25 ft (7.6 m)
Dimensions	49" x 25.5" x 29" (H x W x D) (124 x 65 x 74 cm)
Weight	≈ 185 lbs (84 kg)
Fuel Treated in 8 Hours	≈ 12,480 Gallons (47,242 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

*\*See Filter Replacement Chart for a complete list of filter options*

## ◆ MTC-HC-50 SPECIFICATIONS



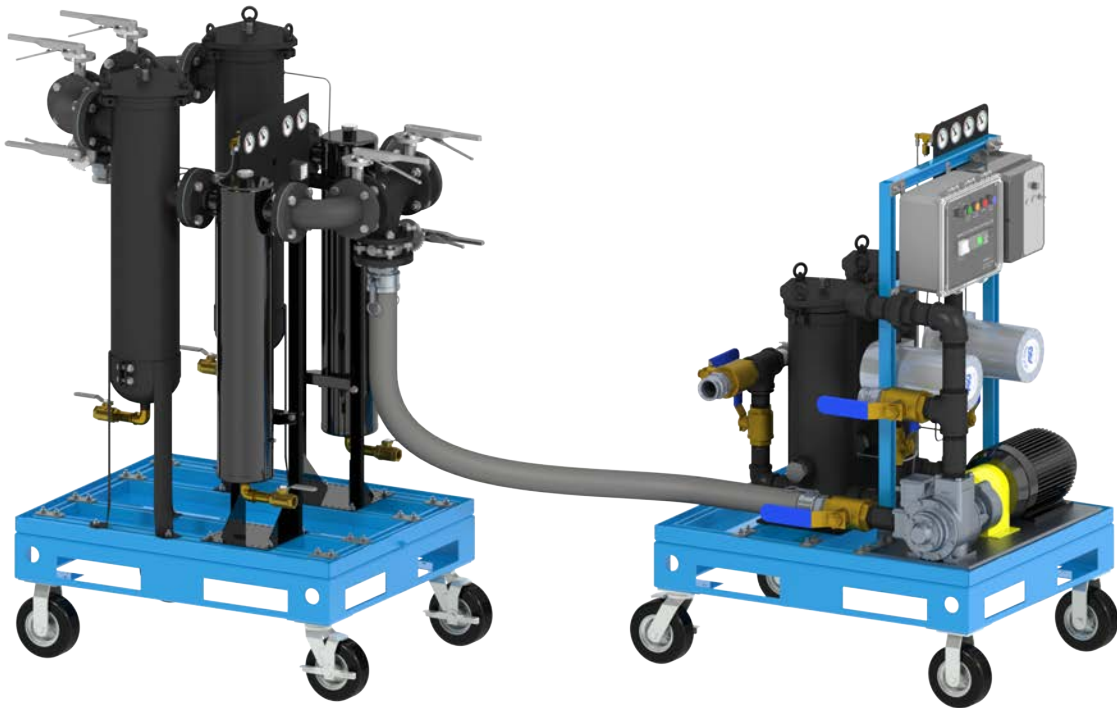
Flow Rate	Adjustable 25 GPM to 75 GPM (94.6 LPM to 284 LPM)
Primary Filter	Carbon Steel Pre-Filter Housing
Filter Bags	Replaceable Filter Bags 1 – 800µ
Secondary Filter	Carbon Steel Filter Housing
Filter Cartridges	Particulate Filter 2-30µ Water Block Filters 5, 10, 30µ, Absolute Microglass Filters 3-10µ
Water Separator	AXI FP-90 with Drain Valve and Air Vent
Fuel Conditioner	LG-X 4000 Inline Conditioner
System Controller	Programmable, Fully Automated UL 508A SMART Filtration Controller with BMS/BAS Interface and Digital Text Readout (Optional)
Pump Power	Adjustable Flow Rate Air Driven, Double Diaphragm Pump
Air Requirements	50 GPM (189 LPM) - 25 SCFM @ 90psi (620.5 kPa) 70 GPM (265 LPM) - 50 SCFM @ 90psi (620.5 kPa) 1/2" Air Hose Connection
Ports	2" Cam & Groove In 2" Cam & Groove Out
Connectors	Cam & Groove Fittings with Covers
Hoses	2" - 25 ft (7.6 m) Clear Suction Hose 2" - 25 ft (7.6 m) Discharge Hose
Dimensions	59" x 36" x 45" (H x W x D) (150 x 91 x 114 cm)
Weight	≈ 500 lbs (227 kg)
Fuel Treated in 8 Hours	≈ 36,000 Gallons (136,275 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## ◆ MTC-HC-90 SPECIFICATIONS



Flow Rate	Adjustable 10 GPM to 90 GPM (37.9 LPM to 340.7 LPM)
Primary Filter	Carbon Steel Pre-Filter Housing
Filter Bags	Replaceable Filter Bags 1 – 800µ
Secondary Filter	Carbon Steel Filter Housing
Filter Cartridges	Particulate Filter 2-30µ Water Block Filters 5, 10, 30µ, Absolute Microglass Filters 3-10µ
Water Separator	AXI FP-90 With Drain Valve and Air Vent
Fuel Conditioner	LG-X 4000 Inline Conditioner
System Controller	Programmable, Fully Automated UL 508A SMART Filtration Controller with Digital Text Readout, Variable Frequency Drive (VFD)
Pump	3 HP, 2", Sliding-vane, Positive, Internal Relief, Displacement, Viton Seals
Power Required	220V 50/60Hz 20A Single Phase - or - 240V 50/60Hz 20A Three Phase - or - 480V 50/60Hz 12A Three Phase
Ports	2" Cam & Groove In 2" Cam & Groove Out
Connectors	Cam & Groove Fittings with Covers
Hoses	2" - 25 ft (7.6 m) Clear Suction Hose 2" - 25 ft (7.6 m) Discharge Hose
Dimensions	59" x 36" x 45" (H x W x D) (150 x 91 x 114 cm)
Weight	≈ 710 lbs (322 kg)
Fuel Treated in 8 Hours	≈ 43,200 Gallons (163,530 Liters)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## MTC-HC-150 SPECIFICATIONS



Skid	HC-150 Pre-Filter Skid	HC-150 Pump Skid
Flow Rate	Adjustable 15 GPM to 150 GPM (56.8 LPM to 567.8 LPM)	Adjustable 15 GPM to 150 GPM (56.8 LPM to 567.8 LPM)
Primary Filters	Carbon Steel Pre-Filter Housing	N/A
Filter Bags	Replaceable Filter Bags 1 – 800 $\mu$	N/A
Final Filter	N/A	Particulate Filter 2-30 $\mu$ Water Block Filters 5, 10, 30 $\mu$ , Absolute Microglass Filters 3-10 $\mu$
Fuel Conditioner	N/A	Dual LG-X 5000 Inline Conditioners
System Controller	N/A	Programmable, Fully Automated UL 508A SMART Filtration Controller with Digital Text Readout, Variable Frequency Drive (VFD)
Mechanical Water Separators	AXI FP-90 With Drain Valve and Air Vent	N/A
Instrumentation and Automation	Vacuum Gauges for Side One and Side Two Inlet and Outlets, AXI Watect 550	Pressure Gauges for Side One and Side Two Final Filtration Inlet and Outlets
Power Required	N/A	480V 50/60Hz 25A Three Phase
Ports	3" Cam & Groove In 3" Cam & Groove Out	3" Cam & Groove In 2.5" Cam & Groove Out (Before Fine Filtration) 2.5" Cam & Groove Out (After Fine Filtration)
Connectors	Cam & Groove Fittings with Covers	Cam & Groove Fittings with Covers
Hoses	3" - 25' (7.6 m) Suction Hose 3" - 8' (2.4 m) Clear Connecting Hose	2.5" - 25' (7.6 m) Discharge Hose
Dimensions	64" x 36"x 45" (H x W x D) (163 x 91 x 114 cm)	59" x 36"x 45" (H x W x D) (150 x 91 x 114 cm)
Weight	≈ 850 lbs (385.5 kg)	≈ 900 lbs (408.2 kg)
Fuel Treated in 8 Hours	≈ 72,200 Gallons (273,307 Liters)	
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>		

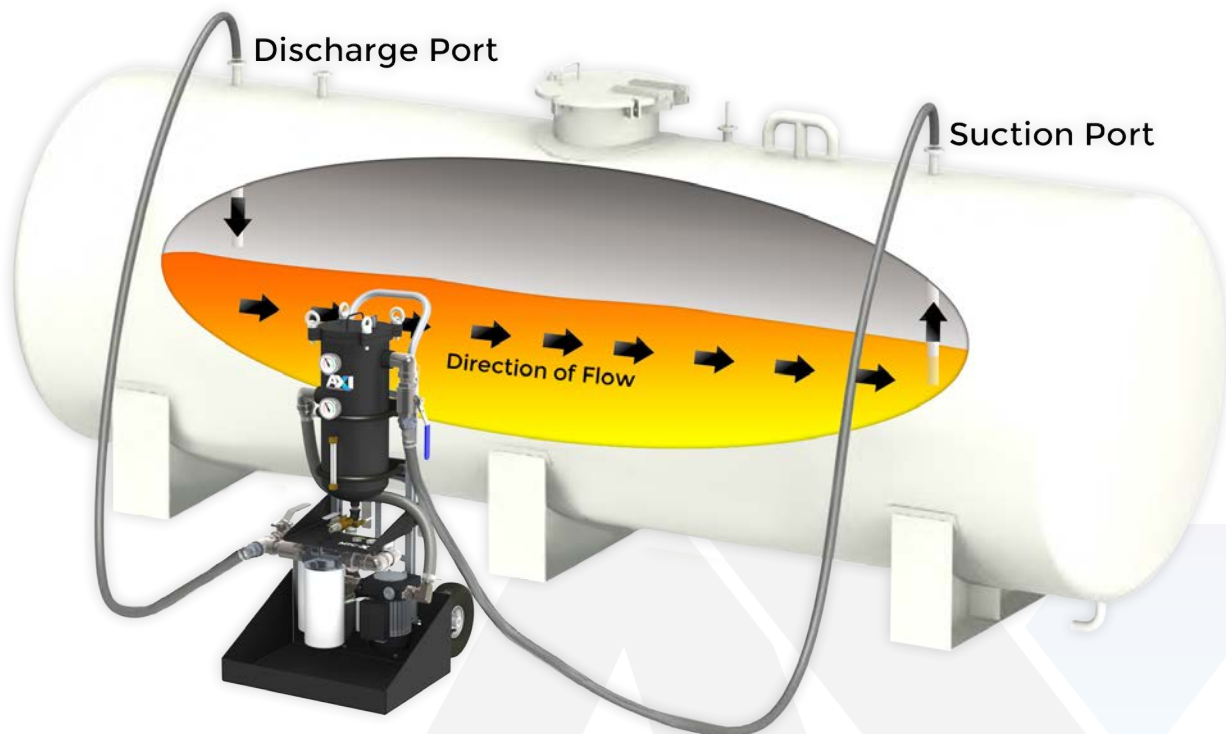
## MTC Series System Integration Configuration

MTC systems are designed to operate as fuel dialysis systems that circulate and clean fuel by pumping it from the tank, removing water, filtering particulate, and then returning it into the tank. The suction line should be placed at the lowest point of the tank to ensure free water is removed. The return line should be on the opposite end of the tank to help push or sweep particulate and other forms of contamination to the suction line. This fuel polishing process ensures fuel is left clean and dry for optimal fuel quality.

The maximum flow rate for each MTC system depends on factors such as suction lift, discharge head, hose length and diameter, as well as pressure drop over the filters. MTC systems can also clean fuel or oil for transfer between two containers by pumping it from one tank, through the MTC, and into another tank or suitable container.

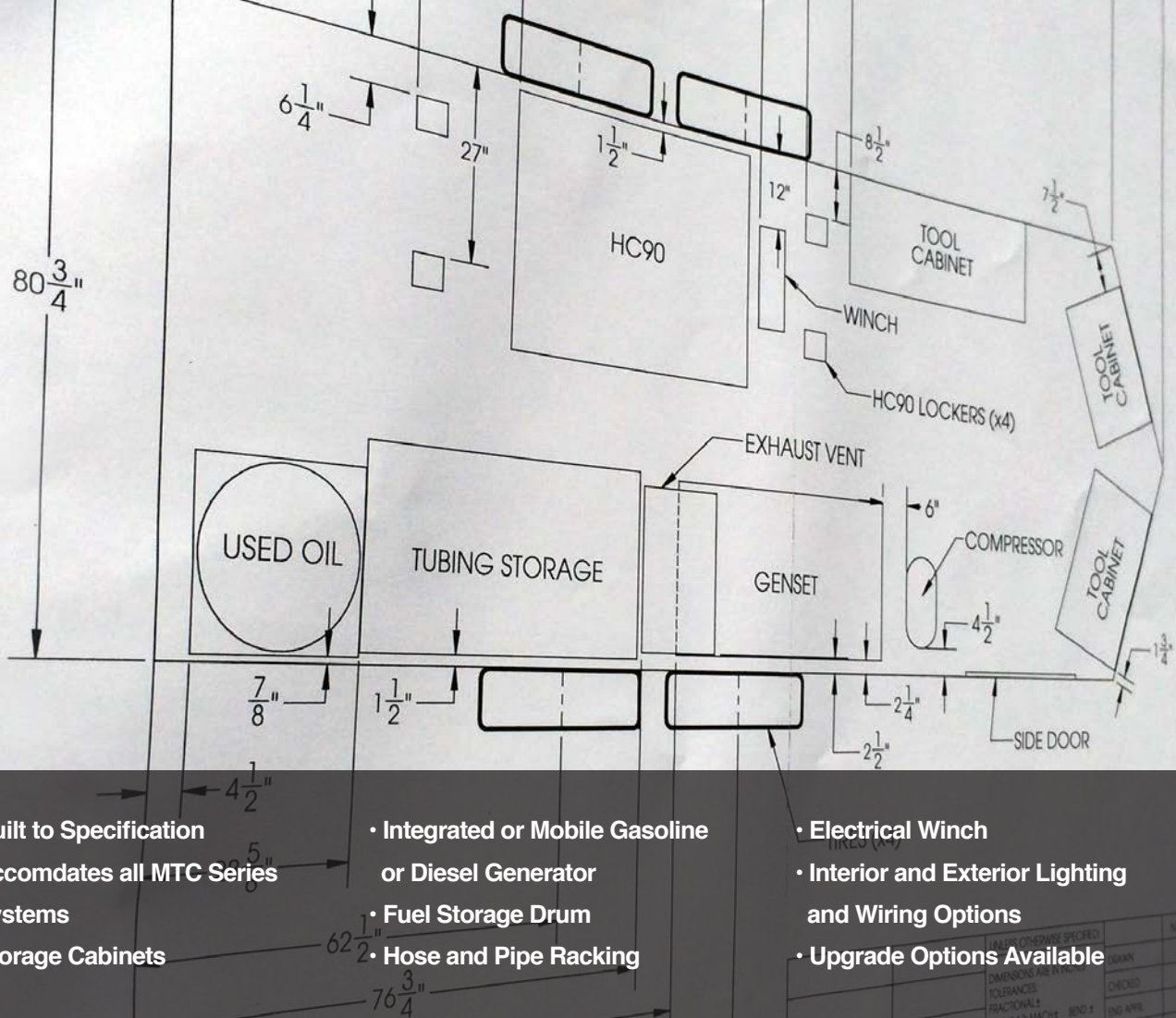
AXI's Mobile Fuel Polishing Systems are ideal for stored fuel tanks that are not permanently mounted, or locations that do not permit permanent installation of an STS system, such as on-road and rail transportation, marine applications, and construction site fuel tanks and equipment.

Below is an example of how a mobile fuel polishing system should be utilized at a fuel storage facility or fuel application.



*\*See Filter Replacement Chart for a complete list of filter options*

# MTC TRAILER



- Built to Specification
- Accommodates all MTC Series Systems
- Storage Cabinets
- Integrated or Mobile Gasoline or Diesel Generator
- Fuel Storage Drum
- Hose and Pipe Racking
- Electrical Winch
- Interior and Exterior Lighting and Wiring Options
- Upgrade Options Available

## Mobile Fuel Polishing Trailer

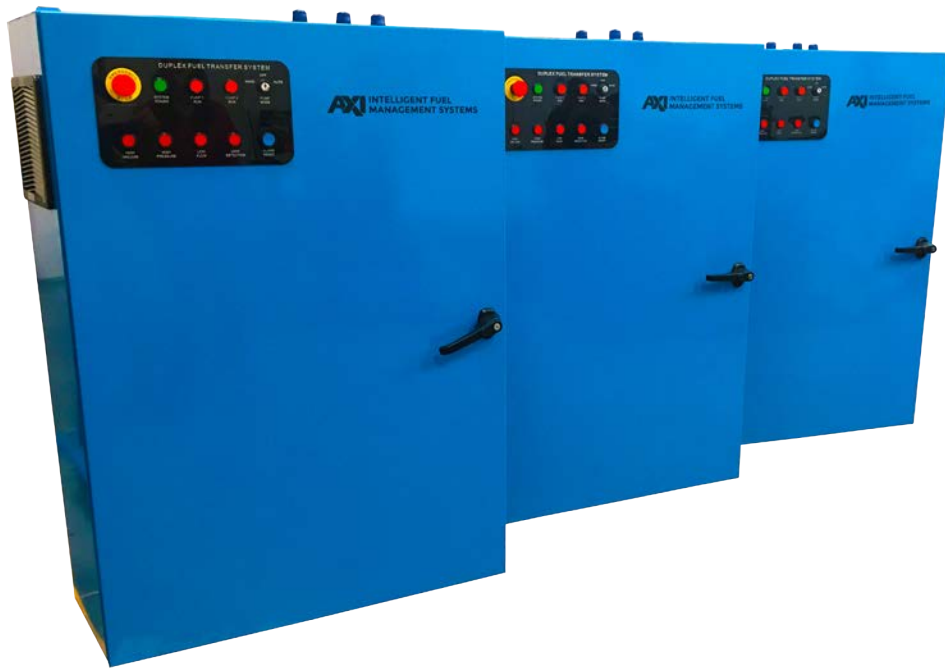
AXI's Mobile Fuel Polishing Trailer is a turn-key solution for individuals or companies looking to polish fuel at multiple locations. Delivered as a complete, customizable package, the Mobile Fuel Polishing Trailer incorporates all of the equipment and accessories necessary to execute a fuel polishing job as a stand-alone business, or an extension of an existing engine service and maintenance company.

Key components of the trailer include a High Capacity Mobile Fuel Polishing System, winch, generator, storage for filters and other tools, a work bench, hoses, waste receptacle, electricity, and interior lighting. As each trailer built by AXI is custom to the customer's order, each component of the trailer can be changed or adjusted to suit the customer's needs. Additional components and adjustments, such as exterior lighting, trailer height, or additional ports/entry ways, etc., can be integrated into the design.



# FTS SERIES





- Lead / Lag Configuration
- Automatic Alerts
- BMS Integration
- High Pump Vacuum
- High Pump Pressure
- Leak Detection
- UL 508A SMART Controller
- External Shutdown
- Visual Alarm Display

## Fuel Transfer Systems (FTS)

AXI's Automatic Fuel Transfer Systems are heavy-duty fuel transfer systems that move fuel between a bulk fuel tank and requesting sources. These units ensure that mission critical systems have a redundant, ready and steady fuel supply to run at a moment's notice.

Nominal fuel transfer flow rates range from 1 GPM to 15 GPM, based on individual project requirements and design. AXI also offers custom Fuel Transfer Systems constructed to customer specifications. Fuel Transfer Systems are ideal for applications where the bulk fuel tank and request source are relatively far apart from each other and an on-demand fuel supply is required. Trust our FTS systems for reliable fuel delivery at all times.

# AXI FTS SERIES

Automatic Fuel Transfer Systems

INTERNATIONAL

## FTS 1000 SERIES SPECIFICATIONS



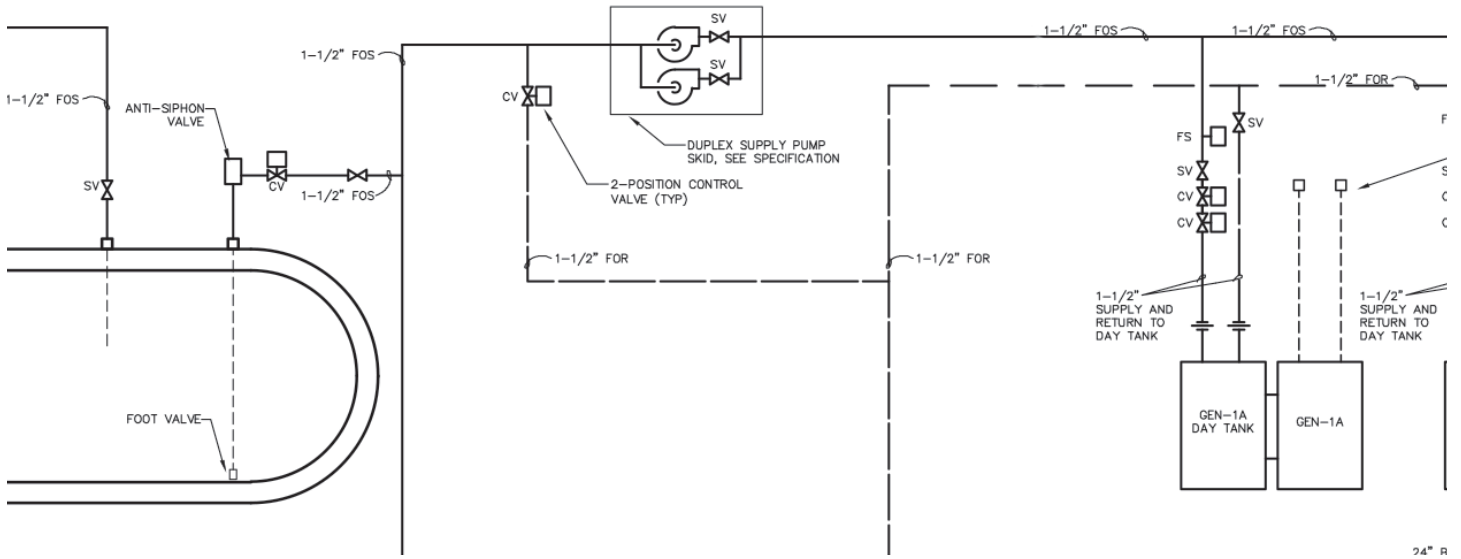
Flow Rate(s)	1 - 15 GPM (3.8 - 56.8 LPM) 60 - 900 GPH (228 - 3407 LPH)
Pump	Gear Pump, 1/3 HP - 1 HP
Power	120V 60Hz 15A or 230V 50Hz 15A *Other Voltages Available
Pressure Relief	External Pressure Relief
Pump System Controller	Fully Automated UL 508A Communication with BMS/BAS (Optional) (Allen-Bradley Required)
Plumbing	Stainless Steel
Ports	3/4" In 3/4" Out 3/4" Relief Process Connections
External Enclosure	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	52" x 36" x 12" (H x W x D) (132 x 91 x 30 cm)
Weight	≈ 265 - 305 lbs (120.2 - 138.3 kg)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## FTS 2000 SERIES SPECIFICATIONS

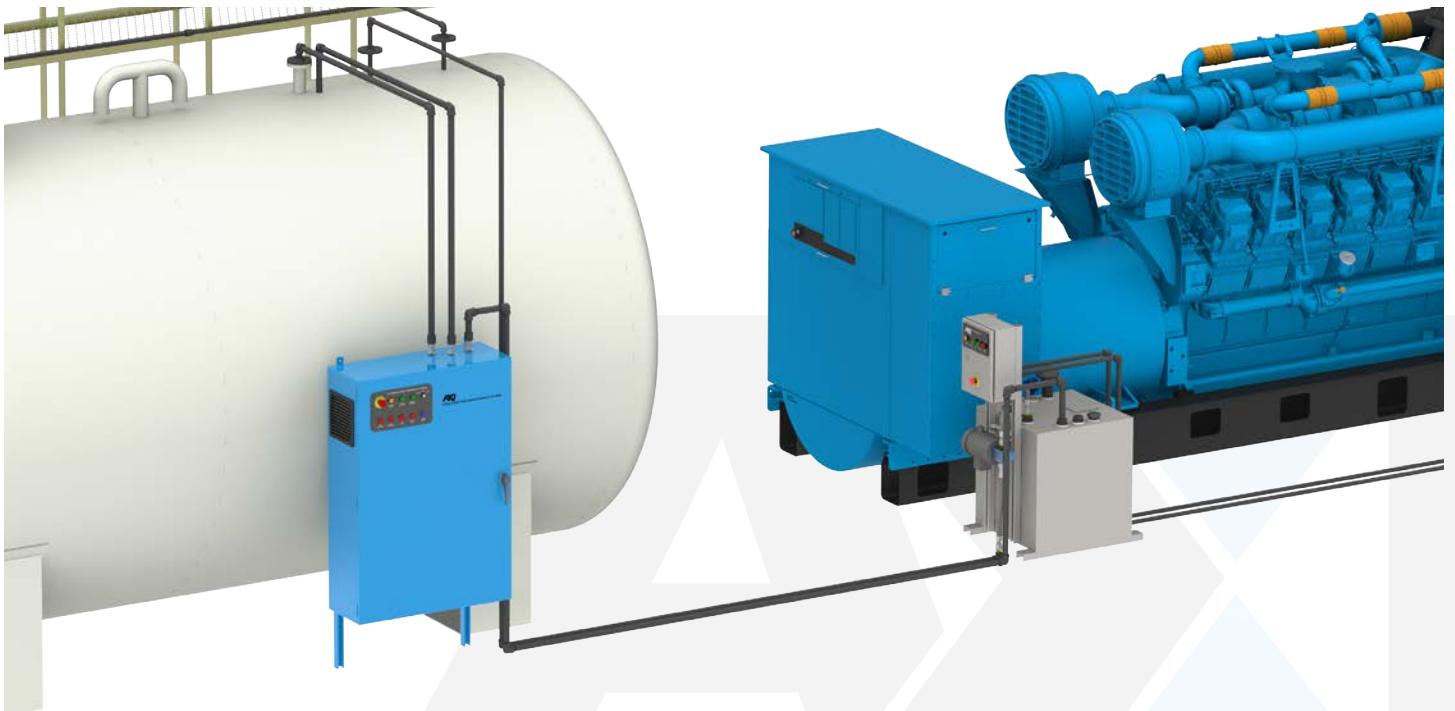


Flow Rate(s)	1-15 GPM (3.8 - 56.8 LPM) 60 - 900 GPH (228 - 307 LPH)
Pump(s)	Gear Pump, 1/3 HP - 1 HP
Power	120V 60Hz 15A or 230V 50Hz 15A *Other Voltages Available
Pressure Relief	External Pressure Relief
Pump System Controller	Fully Automated UL 508A Communication with BMS/BAS (Optional) (Allen-Bradley Required)
Plumbing	Stainless Steel
Ports	3/4" - 1" In 3/4" - 1" Out 3/4" - 1" Relief Process Connections
External Enclosure	NEMA 12 (IP55), 13 (IP65), 3R (IP32), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	52" x 36" x 12" (H x W x D) (132 x 91 x 30 cm)
Weight	≈ 305-405 lbs (138.3-183.7 kg)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

## Typical FTS Site Plan Configuration



## Typical FTS Integration into Facility Fuel System





# DTS SERIES

## Ready-Use Fuel Tank Systems (DTS)

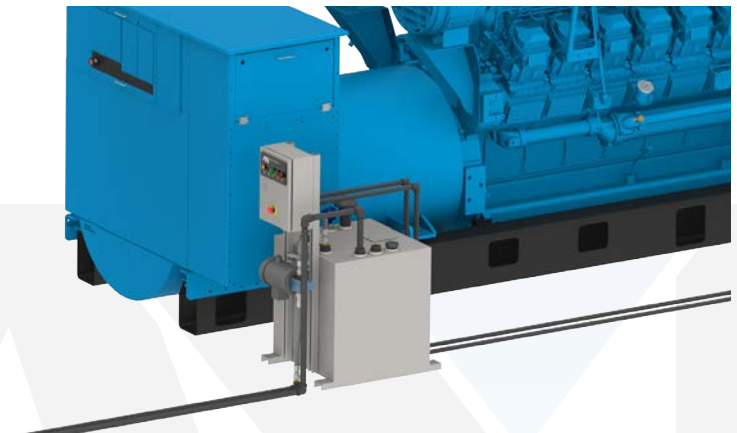
AXI's Ready-Use Fuel Tanks are fuel storage tanks constructed to customer specifications, available in single wall or double wall construction, per UL 142 specifications, to fire safety tanks, per UL 2085 specifications. The tanks are available with pumps for transferring fuel to and from the storage tank. All tanks are designed with an interstitial wall to capture leaks and alert the user of triggered alarms. All tanks are primed and finish coated to customer specification. Ready-Use Fuel Tanks are ideal for mission critical systems that need a ready fuel supply to run at a moment's notice.

# AXI DAY TANK SYSTEMS

INTERNATIONAL Ready-Use Fuel Storage Tanks



<b>Flow Rate</b>	1 - 15 GPM (60 - 900 GPH) 3.8 - 56.8 LPM (228 - 3408 LPH)	<b>Rated Tank Size</b>	50-500 Gallon (189.2-1892.7 Liters)
<b>Supply and Return Pumps</b>	Internal Gear Pump(s) or Spur Gear Pump(s)	<b>Ports</b>	Generator Supply and Return, Emergency Vent, Atmospheric Vent, Inspection (Custom), Accessory
<b>Power</b>	120V 60Hz 15A or 230V 50Hz 15A *Other Voltages Available	<b>Control Cabinet</b>	NEMA 4 (IP66) Powder Coated or Stainless Steel (Optional)
<b>Filter/Strainer</b>	20/40 Mesh Y-Strainer on Inlet of Pump(s)	<b>Tank Dimensions</b>	Varies by Model
<b>System Controller</b>	Fully Automated UL 508A Communication with BMS/BAS (Optional) HMI Touch Screen Controller (Optional)	<b>Contamination Basin</b>	Varies by Type
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>			





# IFP SERIES

## Intelligent Fuel Port Series (IFP)

The AXI Intelligent Fuel Port is a compact, economical solution for fuel filling with spill prevention and fault alerts for fuel storage tanks. The Intelligent Fuel Port features an enclosed port for hose connection from a fuel source. The enclosure has a containment basin to collect any fuel that may spill during the filling process. The Intelligent Fuel Port can be mounted to a wall or on a stand, and provides the user alerts and statuses from the connected storage tank(s).

The AXI Intelligent Fuel Port is capable of managing fuel distribution for multiple tanks. The Smart-Comm System Controller can manage up to four (4) fuel tanks. The Net-Comm System Controller can manage up to six (6) tanks. By utilizing actuated valves, the controller can distribute fuel to the appropriate tank, while monitoring respective tank levels.

### IFP SERIES SPECIFICATIONS



Plumbing	2" (3" Optional)
Outlet Port	3" NPT
Inlet Port	2", 3", or 4" Connection
Ports Connection	Cam & Groove Quick Disconnect
Controller	System Automation Controller
Hand Pump Capacity	10 ounces/stroke
Shutoff	Manual (Automatic Optional)
Spill Containment	20 Gallons (75.7 Liters)
Enclosure Cabinet	NEMA 12 (IP55), 13 (IP65), 4 (IP66), and 4X (IP66) Powder Coat or Stainless Steel
Dimensions	42" x 30" x 24" (H x W x D) (107 x 76 x 61 cm)
Weight	≈ 250 lbs (113.4 kg)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	

# LG-X SERIES

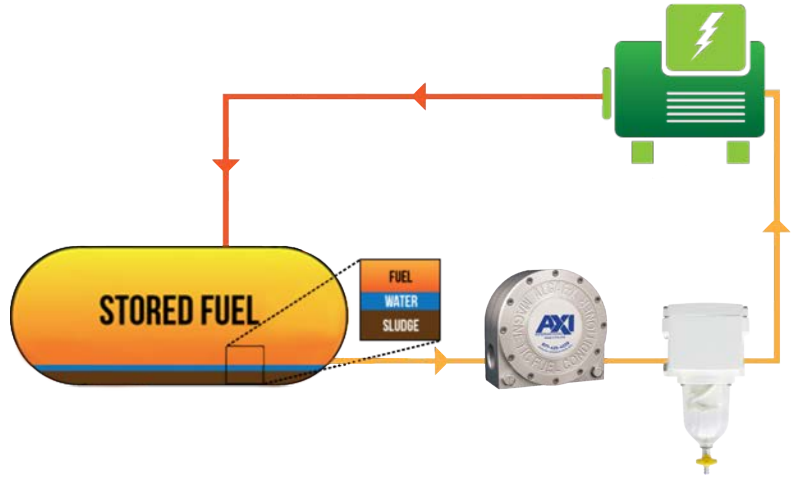
## ◆ Inline Magnetic Fuel Conditioner (LG-X)

AXI's patented Fuel Conditioners stabilize and condition fuel by reducing the size and mass of clusters of fuel molecules. In combination with particulate filters and water separators, fuel conditioners prevent fuel degradation while keeping ferrous particles out of the fuel stream. Adding an LG-X inline fuel conditioner between the engine's primary filter and fuel tank will improve combustion, ensure peak turbo performance, decrease exhaust temperature, improve fuel economy, lower emissions, and extend filter, injector and engine life. Fuel Conditioners are ideal for any application where fuel is stored or used.



# AXI LG-X SERIES

Inline Fuel Conditioner



LG-X SERIES	200	500	1500	3000	4000/5000
-------------	-----	-----	------	------	-----------

Port Size (NPT/BSP)	1/4"	1/2"	3/4"	1"	1-1/2"/ 2"
Max Flow Rate (On Engine)	1-25 GPH (3.8-95 LPH)	20-110 GPH (76-416 LPH)	50-350 GPH (189-1325 LPH)	200-800 GPH (757-3028 LPH)	1500 / 2500 GPH (5678 / 9464 LPH)
Weight	1lb (0.45kg)	2lb (0.9kg)	3.5lb (1.6kg)	7.5lb (3.4kg)	27/35lb (12/16kg)
HP Range	Up to 200 HP (Up to 149.1 kW)	Up to 500 HP (Up to 372.8 kW)	Up to 1500 HP (Up to 1118.5 kW)	Up to 3000 HP (Up to 2237.1 kW)	3000 HP and up (2237.1 kW and up)





FUEL PARTICULATE MONITORING & TESTING KIT

CHARGE

COMPUTER

# PARTICLE COUNTER

- Rigid, industrial-strength case
- Self contained with on-board pump
- Real-time detection, alert, display, and print of contamination and moisture
- Latest particle counting technology
- Private labeling for receipt print out

POWER

INLET FLUID

OUTLET FLUID



# AXI FPM SERIES

INTERNATIONAL Mobile Fuel Particulate Monitoring & Testing Kit

The AXI Fuel Particulate Monitor is a self-contained mobile particle counter system, complete with integral pump and governed flow rate. Whether on-site, or in the laboratory, the system displays and reports instant cleanliness readings. Samples from oil and fuel tanks, or sample bottles, can be analyzed quickly and accurately, identifying immediate issues and minimizing the frequency of laboratory analysis.

The FPM has an imaging sensor capable of determining the following particulate sizes: 4, 6, 14, 21, 25, 38, 50, and 70 micron. It will read any contaminant that is in the fluid, and group them into the category based on size. Water count is tracked on the unit with Relative Humidity (RH%), and if there are large bubbles, or free water, it will be visible in the higher 50, 70 micron readings. When the 50 and 70 particle count is overly high, the particle counter receipt will indicate that there is likely water, or bubbles, within the sample. This does not completely nullify the results, but will indicate the detection of a potential problem.

## FPM SPECIFICATIONS



Flow Rate	200 mL/m Nominal
Power	14V Battery
Runtime	2 - 3 Hours, Depending on Usage and Fluid Viscosity
Electrical Ports	Battery Charge Port USB Type-B Data Logging Port
Printer	Thermal Printer with Paper Dispenser
Storage	Integrated Sample Bottle Storage
Power Switch	Power Indicator
Fluid Inlet/Outlet Ports	Dry Disconnect Fittings
Suction Hose	Flexible Tubing 2 ft (0.6 m)
Discharge Hose	Flexible Tubing 2 ft (0.6 m)
Dimensions	17.5" x 14.2" x 7.5" (45 x 36 x 19 cm)
Weight	≈ 16 lbs (7.3 kg)
<b>Not for use with fluids that have a flash point below 100°F (37.8°C).</b>	



# SYSTEM CONTROLLERS

## Enclosed System Controllers

AXI's System Controllers are designed for automated use and integrated into fuel management systems. With stand-alone and communication integration options, System Controllers provide an industrial design for reliable fuel management. System Controllers provide a number of different integration options, and can be completely customized, to ensure they will meet specification requirements.

The System Controller features include Modbus, TCP/IP, LAN and Internet Capability, Runtime Totalizer, External Indicators, Automatic Alerts, Emergency Stop, Email and SMS Maintenance Alert Capability, and Alarm History. System Controller options are: BACnet/BMS integration, Multi-System Control, On-Screen Help, Touch Screen HMI, Stack Light, and more.



SMART-COMM

SMART-COMM PLUS

NET-COMM LITE

NET-COMM TOUCH

NET-COMM PLUS



	SMART-COMM	SMART-COMM PLUS	NET-COMM LITE	NET-COMM TOUCH	NET-COMM PLUS
Net Communication	×	×	✓	✓	✓
Pump Control	1-2	1-2	1-2	1-4	1-4
Alarm Message	LCD/Indicator	LCD/Indicator	Lights/Indicator	Touch Screen 4"	Touch Screen 6"
Available Inputs	8	8	16	16	16
Available Outputs	4	4	16	16	16
Power Supply 24 VDC	2.5A	2.5A	5A	5A	5A
Dimensions	12" x 16" x 6" (30.5 x 40.6 x 15.2 cm)	12" x 16" x 6" (30.5 x 40.6 x 15.2 cm)	16" x 20" x 6" (40.6 x 50.8 x 15.2 cm)	16" x 20" x 6" (40.6 x 50.8 x 15.2 cm)	16" x 20" x 6" (40.6 x 50.8 x 15.2 cm)
Analog Module Option	✓	✓	✓	✓	✓
I/O Module Option	✓	✓	✓	✓	✓
Expansion Modules	Varies	Varies	Varies	Varies	Varies
PLC Type	Siemens	Siemens	Allen-Bradley	Allen-Bradley	Allen-Bradley
Supply Power Options	1Ph/115 VAC	1Ph/115 VAC 3Ph/480 VAC	1Ph/115 VAC 3Ph/480 VAC	1Ph/115 VAC 3Ph/480 VAC	1Ph/115 VAC 3Ph/480 VAC



# SMART FILTRATION CONTROLLERS

## SMART Filtration Controllers (SFC)

AXI's fuel filtration systems ensure reliable fuel by monitoring the system's performance and automating the fuel maintenance cycles through our SFC Series Controllers. The SFC Controllers are fully automated filtration controllers with digital text readout for system alarm status, and are easy to program for scheduled periodic fuel maintenance.

Key features the SFC Series includes are BMS/BAS interface, modes of operation (Manual, Auto, and Off) and an automatic system shutdown on alarm trigger.

## SFC-50 SPECIFICATIONS



Power	(Green) 115V/60HZ 230V/50HZ
Pump Running	(Orange)
Alarm	(Red)
Alarm Reset	(Blue)
Modes	Manual/Off/Auto
Screen	LCD (4 lines, 48 characters)
Breakers	15 A
Weight	10 lbs (5 kg)
Dimensions	10" x 12" x 8" (H x W x D) (25 x 30 x 20 cm)

## SFC-55 SPECIFICATIONS



Power	(Green) 115V/60HZ 230V/50HZ
Pump Running	(Orange)
Alarm	(Red)
Alarm Reset	(Blue)
Modes	Manual/Off/Auto
Screen	LCD (4 lines, 48 characters)
Breakers	10, 15 A
Weight	15 lbs (6.8 kg)
Dimensions	13.4" x 16" x 7.4" (H x W x D) (34 x 41 x 19 cm)



# FUEL ADDITIVES



# The Benefits of AFC

The key components of the AFC formula are the driving force behind the efficacy of AFC. Derived from its unique formulation of combustion catalysts, dispersants, surfactants (AFC-705 only), and deposit surface modifiers, AFC specifically targets the problems of contaminated fuel systems in storage tanks and deposits in engines, turbines, and burners.

## **Remove engine deposits**

The combustion catalyst in AFC removes carbon deposits by interacting with the heavier, long-chain, combustion resistant elements of the fuel, by lowering the energy of activation. This allows the release of carbon in the form of CO<sub>2</sub> at a lower temperature.

## **Prevent deposit formation**

The catalytic components inhibit the agglomeration process from forming heavy deposits. The agglomeration process is stopped at the primary and secondary particle formation phase, resulting in smaller, lighter particles.

## **Reduce fuel consumption**

AFC promotes the combustion process by utilizing both injected fuel and the stored energy in carbon deposits, leading to more efficient conversion of the fuel to H<sub>2</sub>O and CO<sub>2</sub>. As the engine detects the change, it recognizes it does not need the same amount of fuel to be delivered to sustain operation, and adjusts accordingly.

## **Reduce emissions**

As deposits are removed, the emissions of carbon monoxide (CO), nitrous oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>), hydrocarbon (HC) particulate, and other forms of soot are drastically reduced, as the fuel is being consumed more completely and efficiently.

## **Cooler exhaust, lower NO<sub>x</sub>**

Fuel has a limited amount of energy that becomes available during the combustion process through the production of H<sub>2</sub>O and CO<sub>2</sub>. The catalytic components in AFC enhance the combustion process. When more of the fuel's energy is released during the combustion phase, less energy will be available to be released during the exhaust phase. The difference in energy release correlates to a temperature difference. Higher energy release in the combustion chamber means lower energy release during the exhaust phase, which results in lower production of NO<sub>x</sub>.

## **Extend lube oil life**

Most diesel engines use fuel as a source of engine lubrication. AFC treated fuel has improved lubrication properties, which in connection with the removal of deposits, result in cleaner, longer lasting lubrication oil. This leads to reduced engine wear, less maintenance and down time, and lower operating cost.

## **Extend equipment life**

Engine life can be significantly increased as the result of complete deposit removal, cleaner oil, and reduced friction. The complete and proper combustion of fuel prevents knocking, a symptom of inefficient combustion, that occurs after the standard combustion timing. This unintentional knock sends a shockwave through the rotational assembly of the engine that can cause undue stress and wear. With AFC, injectors, valves, rings, and other associated parts do not wear as quickly, promoting a longer lifecycle for the engine.

## **Enhanced fuel lubricity**

Over the years, government regulations have required the reduction of the sulfur content in diesel fuel. The process of removing sulfur also reduces the lubricating properties of the fuel. AFC contains a lubricity-enhancing agent that promotes less friction between moving parts.

## **Corrosion inhibition (AFC-705 only)**

Prevent the corrosion process with AFC's corrosion inhibitor. This multi-functional component, as part of the fuel stabilization process, ensures the fuel does degrade. This same component ensures the entire fuel system is protected from corrosion.

## Broad-Spectrum Fuel Additive Ultra Concentrate (AFC)

AXI's AFC Series are unique and powerful broad-spectrum fuel additives specifically formulated for use in diesel, bio-fuels, gasoline, kerosene, and HFO. The AFC Series should be used as part of any preventative fuel maintenance program for both commercial and recreational applications. The AFC Series enhances the breakdown and removal of sludge, slime, and bio-fuels from tank walls and baffles that are difficult to access.

AXI's Fuel Additives have a chemical affinity to the hydrocarbons in diesel fuel, helping engines tap into the fuel's full potential by burning it more completely. Expect AXI's Fuel Additives to improve fuel economy, increase filter life, increase horsepower, increase time between regens, add engine lubricity, and extend DEF and UREA lifespan. AXI's Fuel Additives are **EPA registered** for on-road and off-road use. They continue to clean and stabilize fuel for up to twelve (12) months with a single dose wherever fuel is stored or used.



AFC Series	AFC-705	AFC-710 (Tier 4)	AFC-805 (Tier 4, Cold Weather)
Active Ingredients	Combustion Catalyst, Dispersant, Surfactant, Corrosion Inhibitor, Lubricity Enhancer	Combustion Catalyst, Dispersant, Corrosion Inhibitor, Lubricity Enhancer	Combustion Catalyst, Dispersant, Anti-Gelling Agent, Corrosion Inhibitor, Lubricity Enhancer
Treatment Ratio	1:5000	1:5000	1:5000
8oz Bottle	320 Gallons (1,211 Liters)	320 Gallons (1,211 Liters)	320 Gallons (1,211 Liters)
1 Gallon Jug	5,000 Gallons (18,927 Liters)	5,000 Gallons (18,927 Liters)	5,000 Gallons (18,927 Liters)
5 Gallon Jug	25,000 Gallons (94,635 Liters)	25,000 Gallons (94,635 Liters)	25,000 Gallons (94,635 Liters)
55 Gallon Drum	275,000 Gallons (1,040,988 Liters)	275,000 Gallons (1,040,988 Liters)	275,000 Gallons (1,040,988 Liters)



# AFC POWDER SERIES

Powdered Broad-Spectrum Fuel Additives for Bulk Treatment

## Powdered Fuel Additive Ultra Concentrate (AFC)

Powdered AFC-710 is a unique and powerful Tier 4 compliant broad-spectrum fuel additive specifically formulated for HPCR (High Pressure Common Rail) engine use with diesel, bio-fuels, gasoline, kerosene, and heavy fuel oil. Powdered AFC-710 should be used as part of any preventative fuel maintenance program and is ideal for use in high turnover and bulk storage fuel tanks.

Similar to liquid AFC, powdered AFC-710 enhances the breakdown and removal of sludge, slime, and bio-fouling from tank walls and baffles that are difficult to access. Powdered AFC-710 effectively decontaminates and cleans an engine’s entire fuel and injection system. Unlike other additives that require agitation for complete diffusion, powdered AFC-710 will diffuse throughout the tank without stirring, cleaning and stabilizing fuel for up to 12 months with a single dose.



Active Ingredients	Combustion Catalyst, Dispersant, Corrosion Inhibitor, Lubricity Enhancer
Treatment Ratio	1:5000
40 gram bag	500 Gallons (1,893 Liters)
140 gram bag	2,000 Gallons (7,571 Liters)
334 gram bag	5,000 Gallons (18,927 Liters)

AFC interacts with the heavier, long chain, combustion resistant elements of the fuel and existing carbon deposits. This interaction allows these deposits to break down and burn. The “molecular atomization” of the fuel, and the destruction and burning of the surface deposits, produce the following positive effects on the combustion process:

- Quicker, more complete combustion
- Optimal use of available oxygen
- Lower excess air requirements
- Removal of existing deposits
- Better heat transfer
- Lower fuel consumption
- Increased overall efficiency

The background of the entire page is a close-up photograph of two AXI pressure gauges and a bundle of grey hoses. The gauges are stainless steel with white faces and black needles. The left gauge has a scale from 0 to 2.0 bar and 0 to 20 psi, with a green arc from 0 to 1.0 bar and a red arc from 1.0 to 2.0 bar. The right gauge has a scale from -20 to 1.0 bar and -20 to 1.0 inHg, with a red arc from 0 to 1.0 bar. The hoses are grey and have some text printed on them, such as "1 1/2\"/>

# ACCESSORIES

## System Accessories

AXI International offers a wide variety of system accessories that provide an extra layer of protection and analysis. AXI's accessories play a key role in the fuel maintenance and fuel polishing process.

AXI's Portable Spill Berm ensures fuel and other fluid spills are contained, protecting the ground beneath it. Flow Gauges, displaying either gallons per minute or total fuel passed, are a convenient way to track fuel passing through a MTC Series system. AXI's gauges measure pressure and vacuum, informing users of potential issues, such as clogged filters. Desiccant breathers trap moisture before air enters a fuel tank, ensuring the tank remains dry, and inhibiting microbial growth.



## PORTABLE SPILL BERM SPECIFICATIONS



Weight	5 lbs (2.3 kg)
Dimensions	48" x 48" x 6" (H x W x D) (122 x 122 x 15 cm)
Tongue Tear	125 lbs (56.6 kg)
Grab Tensile	475 lbs (215 kg)
Dielectric Strength	77.3 KV
Weather Resistance	10,000 Hours
Certifications	ASTM

## FLOW METER SPECIFICATIONS



	DM-30	DM-50	DM-100	DM-300
Flow Range	3-30 GPM (11.4 - 114 LPM)	3-50 GPM (11.4 - 189 LPM)	10-100 GPM (37.9 - 378.5 LPM)	3-300 GPM (11.4 - 1135 LPM)
Typical Accuracy	+/- 5% (factory calibrated)	+/- 1.5% (field calibrated)	+/- 1.5% (factory calibrated)	+/- 1.5% (factory calibrated)
Port Size	1" NPT	1" NPT	1 1/2" NPT	2" NPT
Maximum Pressure Drop	1 PSIG (.07 bar) @ full flow	5 PSIG (.34 bar) @ full flow	4 PSIG (.27 bar) @ full flow	7 PSIG (.48 bar) @ full flow
Power	2 x AAA batteries	2 x AAA batteries	2 x AAA batteries	2 x AAA batteries
Temperature	+14° to 130°F	140°F with Display 250°F without Display	140°F with Display 250°F without Display	140°F with Display 250°F without Display
Weight	1 lbs (0.45kg)	2 lbs (0.9kg)	2.8 lbs (1.3kg)	2.5 lbs (1.1kg)

## GAUGE SPECIFICATIONS



Gauges	CI-20	GV-10	VG-30	PG-30	PG-60
Type	Pressure Gauge	Vacuum Gauge	Vacuum Gauge	Pressure Gauge	Pressure Gauge
Range	0-60 PSI (0-4.1 bar)	0-30" Hg (0-1 bar)	0-30" Hg (0-1 bar)	0-30 PSI (0-2 bar)	0-60 PSI (0-4.1 bar)
Connection	Center Back 1/8" NPT	Center Back 1/8" NPT	Bottom 1/4" NPT	Bottom 1/4" NPT	Bottom 1/4" NPT
Design Type	Dry, Color Coded	Dry, Color Coded	Liquid Filled, SS	Liquid Filled, SS	Liquid Filled, SS
Dial Diameter	1-1/2" (3.8 cm)	1-1/2" (3.8 cm)	2" (5.1 cm)	2" (5.1 cm)	2" (5.1 cm)
Weight	2.5 oz (0.07 kg)	2.5 oz (0.07 kg)	3.5 oz (0.1 kg)	3.5 oz (0.1 kg)	3.5 oz (0.1 kg)

# AXI BREATHERS

INTERNATIONAL Desiccant Breathers

Rebuildable Steel (RS) breathers are designed specifically for applications, such as bulk storage tanks or large circulating lube oil systems, where there are very high temperatures, extremely polluted air, or a corrosive environment. This breather unit replaces the standard dust cap or OEM breather cap on equipment, or tanks. As air is drawn into the tank, through the breather, the pleated filter element removes solid particulate while the desiccant extracts moisture, keeping the air within the tank dry at all times.



Breather	DC-RS-3	DC-RS-9	DC-RS-150	DC-RS-200
Unit Height	11.5" (29 cm)	18.25" (46.4 cm)	36.8" (93.3 cm)	42.75" (108.6 cm)
Unit Diameter	10.13" (25 cm)	10.13" (25.7 cm)	23.5" (59.7 cm)	23.5" (59.7 cm)
Connection Size	2" (5.1 cm)	2" (5.1 cm)	4" (10.2 cm)	4" (10.2 cm)
Adsorption Size	.14 Gallons (.54 Liters)	.43 Gallons (1.6 Liters)	7.13 Gallons (27 Liters)	9.51 Gallons (36 Liters)
Max. Flow Rate	636 GPM (2407.5 LPM)	596 GPM (2256.1 LPM)	1870 GPM (7078.7 LPM)	1796 GPM (6786.6 LPM)
Filter Rating	1µ Absolute	1µ Absolute	1µ Absolute	1µ Absolute
Operating Temp. Range	-20° to 200°F (-28.8° to 93.3°C)	-20° to 200°F (-28.8° to 93.3°C)	-20° to 200°F (-28.8° to 93.3°C)	-20° to 200°F (-28.8° to 93.3°C)

Standard breathers provide simple, yet dependable protection from moisture and particulate contamination in fuel across multiple industries and applications. These versatile breathers are five times more effective than the leading non-desiccant breathers, providing optimal defense against humidity. A pink breather means it has done its job, keeping moisture out of the fuel and it is time to replace the breather with a new one.



Breather	DC-1	DC-2	DC-3	DC-4
Unit Height	5.3" (13.5 cm)	6.1" (15.6 cm)	8.1" (20.6 cm)	10.1" (25.7 cm)
Unit Diameter	2.5" (6.4 cm)	4" (10.2 cm)	4" (10.2 cm)	4" (10.2 cm)
Connection Size	3/8" Multi-Fit	1" Multi-Fit	1" Multi-Fit	1" Multi-Fit
Adsorption Capacity	0.01 gallons (0.04 liters)	0.03 gallons (0.1 liters)	0.06 gallons (0.2 liters)	0.09 gallons (0.3 liters)
Max. Flow Rate	31 GPM (117.3 LPM)	120 GPM (454.2 LPM)	120 GPM (454.2 LPM)	120 GPM (454.2 LPM)
Filter Rating	3µ Absolute	3µ Absolute	3µ Absolute	3µ Absolute
Operating Temp. Range	-20° to 200°F (-28.8° to 93.3°C)	-20° to 200°F (-28.8° to 93.3°C)	-20° to 200°F (-28.8° to 93.3°C)	-20° to 200°F (-28.8° to 93.3°C)



# FILTERS

## Filters, Separators, and Coalescers

As the most common forms of fuel contamination, the damaging effects of particulate and water can be catastrophic, damaging critical, and costly, engine components, like high pressure fuel pumps and fuel injectors. Integration of particulate filtration and water separation is the first step to ensuring fuel remains clean and dry.

AXI International offers a variety of standard and custom engineered filtration and water separation equipment in both nominal and absolute rated media for every application. These filters will remove the smallest of particulate from fuel, providing superior contamination protection and reliable engine operation. AXI Water Block Filters separate water and particulate from fuel down to  $3\mu$ , helping prevent sludge and microbial growth. Ask your AXI representative for more information on the appropriate filter for your specific application.





- Pre-Filter Vessels
- Pressure Filter Vessels
- Fine Filters

- Bag Filters
- Coalescing Media
- Water Separators

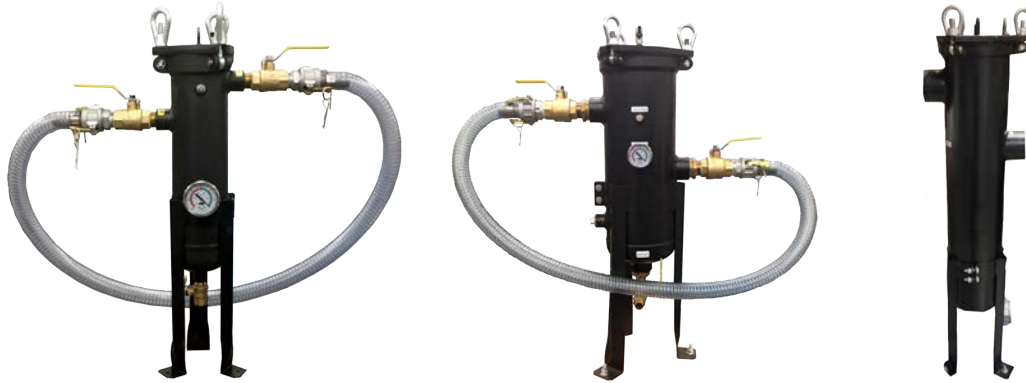
- Water Block Filters
- Filter Cartridges
- High Capacity Filters

# AXI PF SERIES

INTERNATIONAL Mobile, High Capacity Pre-Filter Assembly

AXI's Pre-Filter Vessels are designed to provide large-capacity, heavy duty pre-filtering when used as an accessory to an MTC System, or as a stand alone pre-filter unit. AXI Pre-Filter Vessels facilitate the tank cleaning process by trapping extraordinary amounts of sludge, rust, scale, and other contaminants upstream.

AXI Pre-Filter assemblies provide a substantial reduction in the cost of higher efficiency consumables during a tank cleaning operation. This allows for the utilization of inexpensive pre-filter bags compared to fine filtration methods. Pre-filter assemblies include ball valves for the inflow and outflow lines, a drain valve, hose-kit, and a vacuum gauge to indicate the need to change the filter bag. The PF-10-HD and PF-30-HD can be mounted on a heavy-duty aluminum, two-wheel cart for ease of mobility and setup.



Pre-Filter	PF-10-HD	PF-30-HD	PF-40-HD
MTC Connectivity	MTC-500	MTC-1000 and 3000	Independent Pre-Filter
Available Connection	Cam & Groove Quick Disconnect	Cam & Groove	Vessel Only
Shut-Off Valve	1"	1.5"	3" (Optional)
Drain	1/2" NPT	1" NPT	(Optional)
Gauges	Stainless Steel Liquid-Filled Vacuum Gauge	Stainless Steel Liquid-Filled Vacuum Gauge	(Optional)
Dimensions	26" x 19.5" x 5.5" (H x W x D) (66 x 50 x 14 cm)	40" x 28" x 8.5" (H x W x D) (102 x 71 x 22 cm)	56" x 14" x 14" (H x W x D) (142 x 35.5 x 35.5 cm)
Weight	16 lbs (7 kg) (w/out cart)	112 lbs (51 kg) (w/out cart)	160 lbs (72 kg) (w/out cart)

## PF-60-HD

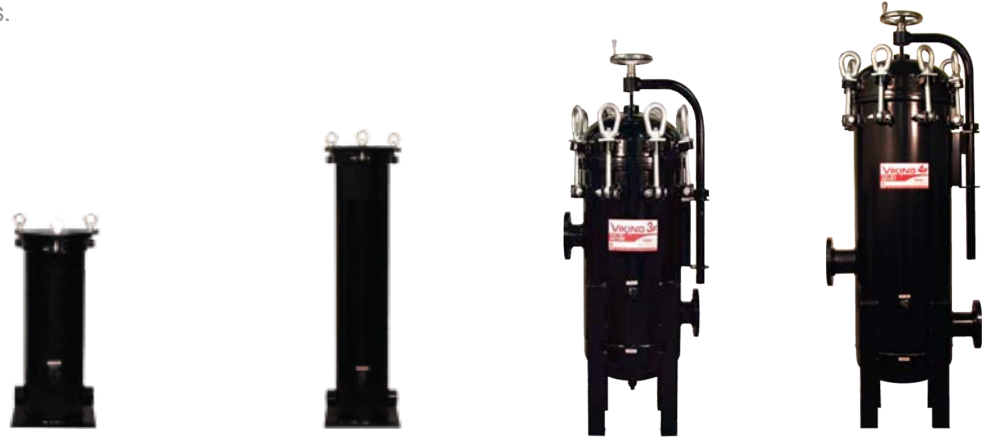
Flow Rate	1,200 GPM (4,542 LPM)
Pressure Rating	150 PSI (1,034 kPa)
Filtration	1 - 250µ Particulate
Inlet/Outlet	6" Flanged
Material	Carbon Steel Housing
Finish	Epoxy Coated Inside and Outside
Filter Elements	Requires 6 - 6" x 18" (15.2 x 45.7 cm) Elements



# AXI FV SERIES

INTERNATIONAL Pressure Filter Housing

AXI FV Series Pressure Vessels are a powerful addition to your tank cleaning and filtering system. The FV series is made from durable carbon steel, and provides large capacity, heavy-duty fine filtration and water removal for tank cleaning jobs with sludge, rust, scale, and other contaminants.



Filter Housing	FV-120	FV-150	Viking-3F	Viking-4F
Flow Rate	120 GPM (454 LPM)	150 GPM (568 LPM)	300 GPM (1136 LPM)	500 GPM (1893 LPM)
In/Out Connections	2" NPT	2" NPT	3" Flanged	4" Flanged
Filter Elements	Fine Filters 2-30 $\mu$ Water Block Filters 2-30 $\mu$	Fine Filters 2-30 $\mu$ Water Block Filters 2-30 $\mu$	Fine Filters 2-30 $\mu$ Water Block Filters 2-30 $\mu$	Fine Filters 2-30 $\mu$ Water Block Filters 2-30 $\mu$
Filter Elements Required	1	2	4	8
Vent Port	1/4" NPT	1/4" NPT	1/2" NPT	1/2" NPT
Drain Port	2" NPT	2" NPT	1" NPT	1" NPT
Gauge Ports	(2) 1/4" NPT	(2) 1/4" NPT	(2) 1/4" NPT	(2) 1/4" NPT
Dimensions	12" x 12" x 32.5" (L x W x H) (30 x 30 x 82.5 cm)	12" x 12" x 50.5" (L x W x H) (30 x 30 x 128 cm)	24" x 24" x 59" (L x W x H) (60 x 60 x 150 cm)	28" x 28" x 78" (L x W x H) (71 x 71 x 198 cm)
Weight	110 lbs (50 kg)	130 lbs (59 kg)	480 lbs (218 kg)	590 lbs (268 kg)

AXI Spin-On Fine Filters range in micron size from 1 $\mu$  up to 25 $\mu$ . These filters will remove the smallest of particulate and water from fuel, providing superior contamination protection and reliable engine operation. AXI Bag Filters are used in Pre-Filter Vessels and Mobile Fuel Polishing Systems, which range in size from 1 $\mu$  up to 800 $\mu$ . AXI Fuel Filter Cartridge options include 2 $\mu$ , 3 $\mu$ , 7 $\mu$ , 10 $\mu$ , and 30 $\mu$  filtration. Water Block Cartridges and Water Block Filters are available in both 3 $\mu$  and 10 $\mu$ . AXI Water Block Spin-on Filters separate and absorb water from fuel as it passes through the filter.

## FINE FILTERS

## FILTER CARTRIDGES

## WATER BLOCK

## BAG FILTERS



# AXI SEPAR FILTERS

INTERNATIONAL Separ Primary Filters

Separ water separators and fuel filters are a simple solution to an array of fuel related problems. First, the fuel enters the interior vane system, which gives circular motion to the fuel. Next, with the fuel still in circular motion, the fuel reaches the bowl section where water and heavier particulate are forced to settle on the bottom of the bowl. Here, the fuel passes the second vane system, changing rotation, which separates smaller size water droplets and finer particulates. Just below the filter element, the fuel passage widens considerably, thus reducing its speed and allowing even more contaminants to fall down into the bowl by gravity. The final filtration of the remaining contaminants is accomplished by the long life filter element. The clean fuel leaves the filter via the ports on either side of the filter. Low restriction reduces wear on fuel pumps and ensures full engine RPM. Back flushable (cleanable) element reduces down time and costly element changes.



Separ Filter	2000/5	2000/10	2000/18	2000/40MK
Max. Flow Rate	1.3 GPM (5 LPM)	2.6 GPM (10 LPM)	4.8 GPM (18 LPM)	10.5 GPM (39.7 LPM)
In/Out Port	3/4" - 16 UNF	7/8" - 14 UNF	1-1/16" - 12 UNF	1-5/16" - 12 UNF
Pressure Drop at Max. Flow	0.53" Hg	0.31" Hg	0.44" Hg	0.95" Hg
Filtration	10 or 30μ and 60μ SS Element	10 or 30μ and 60μ SS Element	10 or 30μ and 60μ SS Element	10 or 30μ and 60μ SS Element
Dimensions	11.5" x 5.5" x 3.7" (H x W x D) (23.9 x 14.0 x 9.3 cm)	13" x 8" x 4" (H x W x D) (33 x 14.6 x 10.7 cm)	15" x 8" x 6.5" (H x W x D) (38.5 x 14.6 x 16.5 cm)	19" x 11.5" x 8" (H x W x D) (48 x 29 x 20 cm)
Space Above for Element Change	2.4" (6.1 cm)	2.4" (6.1 cm)	2.4" (6.1 cm)	2.4" (6.1 cm)
Dry Weight	4 lbs (1.8 kg)	5 lbs (2.3 kg)	11 lbs (5 kg)	24 lbs (10.9 kg)

## SWK-2000-40UM



Max. Flow Rate	600 GPH (2,271.3 LPH)
In/Out Port	1.25" JIC, 37" Flare
Sensors	Watect 550 (2)
Dimensions	24" x 32" x 20" (H x W x D) (61 x 81 x 51 cm)
Weight	85 lbs (38 kg)

# AXI RACOR FILTERS

Racor Primary Filters

The fuel filter and water separator removes particulate and water from your fuel before it can damage precision engine components. These turbine style filters are needed whenever an application demands the combination of heavy duty, high capacity water separation/fuel filtration along with ease of use, quick maintenance, and precision manufacturing. The cartridge style element is easy and quick to change. Simply remove the cap, pull out the old filter with the provided handle, and slide a new element in.



Racor Filter	500MA	900MA	1000MA
Max. Flow Rate	1 GPM (3.8 LPM)	1.5 GPM (5.7 LPM)	3 GPM (11.4 LPM)
In/Out Port	3/4" - 16 UNF	7/8" - 14 UNF	7/8" - 14 UNF
Pressure Drop at Max. Flow	0.3 PSI (2.1 kPa)	0.34 PSI (2.3 kPa)	0.49 PSI (3.4 kPa)
Filtration	2, 10, or 30μ	2, 10, or 30μ	2, 10, or 30μ
Space Above for Element Change	4" (10.2 cm)	5" (12.7 cm)	10" (25.4 cm)
Dimensions	11.5" x 5.8" x 4.8" (H x W x D) (29.2 x 14.7 x 12.2 cm)	17.5" x 5.6" x 6" (H x W x D) (43.2 x 14.2 x 15.2 cm)	22" x 5.6" x 7" (H x W x D) (55.9 x 14.2 x 17.8 cm)
Weight	4 lbs (1.8 kg)	6.5 lbs (2.9 kg)	10 lbs (4.5 kg)

## FBO-10



## FBO-14



FBO Filter	FBO-10	FBO-14
Max. Flow Rate (#2 Diesel)	20 GPM (76 LPM)	25 GPM (95 LPM)
In/Out	1.5" NPT	1.5" NPT
Filtration	2, 5, 10, or 25μ	2, 5, 10, or 25μ
Space Below for Element Change	2.4" (6.1 cm)	2.4" (6.1 cm)
Dimensions (H x Ø)	16.5" x 8.6" (42 x 22 cm)	22.8" x 8.6" (58 x 22 cm)
Weight	5 lbs (2.3 kg)	11 lbs (5 kg)



# SAMPLING AND TESTING

## Fuel Sampling and Testing

Fuel deterioration and microbial contamination result in an expensive loss of stored fuel that negatively impacts engine and generator performance and reliability. Implementing a fuel quality sampling, testing, and monitoring program is a must to maintain optimal fuel quality.

From submersible sampling devices and sample pumps, to water finding pastes and contamination test kits, utilizing AXI's sampling and testing equipment as part of a regular fuel maintenance program helps identify potential sources of fuel issues.

AXI International also offers independent laboratory testing, identifying the potential causes of fuel contamination in order to treat the problem of the fuel deterioration, and not the symptoms.

## TS-SS SPECIFICATIONS

The TS-SS or “Bacon Bomb” is an industrial strength device used to take fuel samples from fuel tanks. The device has a plunger which opens via trip line or extension rod, allowing the user to take samples at different levels within the tank. The plunger will also open when it hits the bottom of the tank. The plunger then closes when the device is withdrawn.



Model	TS4-SS	TS8-SS	TS16-SS
Sample Size	4 oz. (120 ml)	8 oz. (240 ml)	16 oz. (480 ml)
Construction	304 Stainless Steel Viton “O” Ring	304 Stainless Steel Viton “O” Ring	304 Stainless Steel Viton “O” Ring
Outside Diameter	1.375” (3.5 cm)	1.375” (3.5 cm)	2.0” (5.1 cm)
Length	10.375” (26.3 cm)	17.375” (44.1 cm)	14.5” (36.8 cm)
Weight	1.6 lbs (0.8 kg)	2.5 lbs (1.1 kg)	3.3 lbs (1.5 kg)

## FUELSTAT FUEL TEST



As part of a regular fuel maintenance program, fuel testing provides a means of understanding the level of contamination in stored fuel. The FuelStat fuel test allows for on-site fuel testing, with results delivered in just minutes.

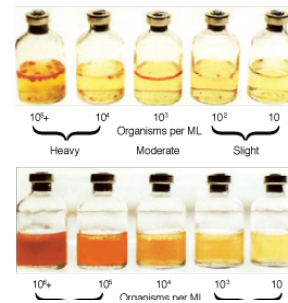
## FS SERIES SPECIFICATIONS

The FS Series kit makes it easy to obtain fuel samples from multiple locations within a tank. The FS Series contains a hand pump and uses flexible 1/4” tubing and see-through bottles. The pump protects against cross contamination by drawing fluids directly into the bottle and can be used for fuels, oil, hydraulic fluids, coolant, water and other liquids.



<b>FS100</b>	Fuel Sample Pump
<b>FS110</b>	4 oz. (120 ml) Plastic Bottles
<b>FS116</b>	16 oz. (480 ml) Plastic Bottles
<b>FS120</b>	0.25” (0.64 cm) Diameter Suction Tubing in 100 ft. (30.48 m) Length

## LIQUI-CULT FUEL TEST



Microbial Contamination Testing Kits are excellent tools to monitor aerobic bacteria, anaerobic bacteria, fungus, yeast, mold, and microbial activity. They easily demonstrate and quantify bacterial contaminant growth in fuels and other fluids.



# CUSTOM DESIGNS





- Mobile Fuel Polishing Open Trailers
- Mobile Fuel Isolation and Filtration Skids
- Fuel Filtration and Dispensing Skids
- Mobile High Capacity Fuel Polishing Enclosed Trailers
- High Capacity Mobile Fuel Polishing Skids

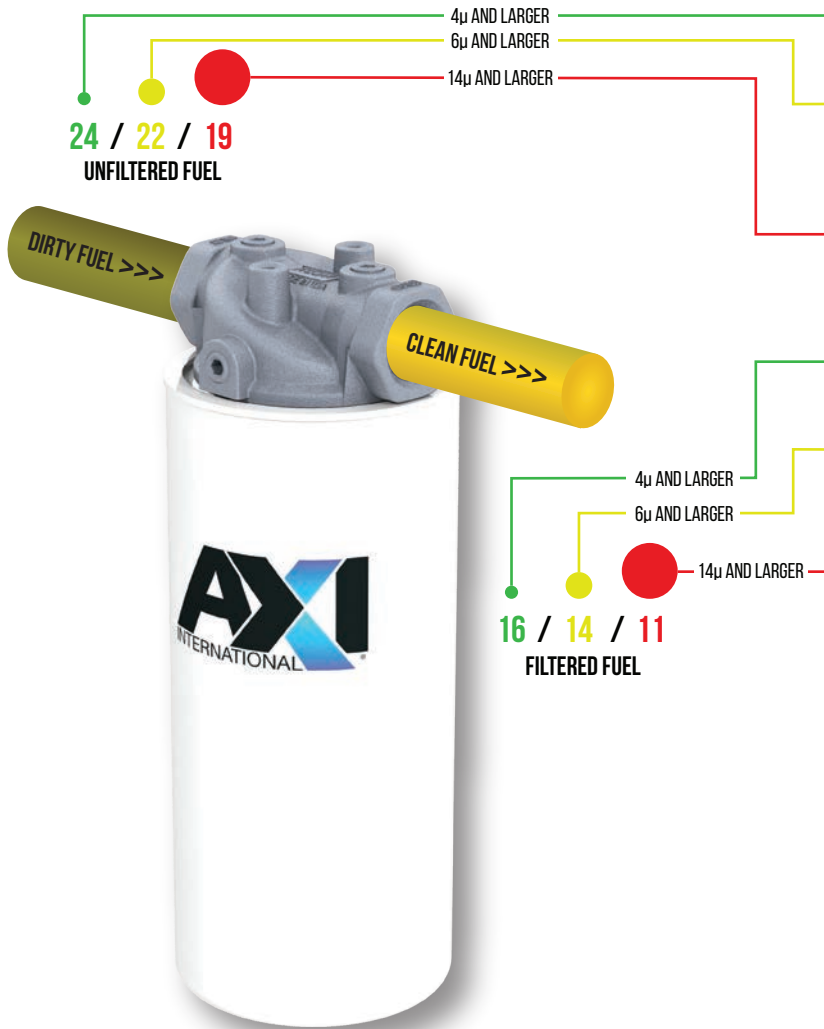
## Custom Designed and Engineered Solutions

AXI designs, engineers, and manufactures custom-built fuel management and filtration systems. Working side by side with customers, architects, engineering firms, and facility management companies, AXI creates solutions that meet the highest level of standards and specifications. From concept and design consultation, to specification review, development, and start-up, our in-house engineering professionals excel in transforming challenging projects into opportunities for innovation.

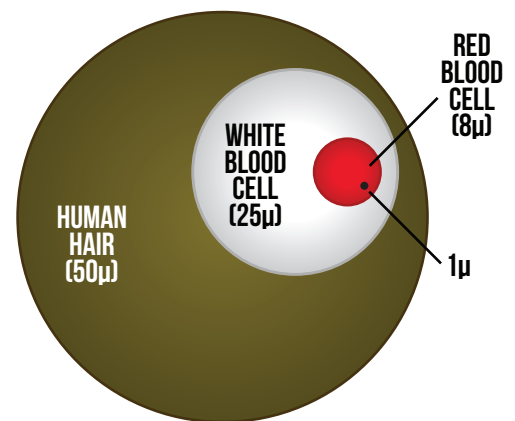
# AXI ISO 4406 CHART

INTERNATIONAL Explanation of ISO Codes

The ISO 4406 cleanliness code is used to quantify particulate contamination levels per milliliter of fluid at three sizes: 4 $\mu$ , 6 $\mu$ , and 14 $\mu$ . The ISO code is expressed by three numbers (i.e. 19/17/14). Each number represents a contaminant level code for the correlating particle size quantity. The code includes all particles of the specified size and larger. It is important to note that each time a code increases, the quantity range of particulate is doubled.



ISO 4406 CHART		
CODE	PARTICLES PER MILLILITER	
	MORE THAN	UP TO/INCLUDING
24	80,000	160,000
23	40,000	80,000
22	20,000	40,000
21	10,000	20,000
20	5,000	10,000
19	2,500	5,000
18	1,300	2,500
17	640	1,300
16	320	640
15	160	320
14	80	160
13	40	80
12	20	40
11	10	20
10	5	10
9	2.5	5
8	1.3	2.5
7	0.64	1.3
6	0.32	0.64



Fuel analyses can identify causes for fuel filter plugging, smoking, loss of power, poor injector performance, malfunctioning throttle position sensors, and sticking valves. Testing confirms a number of critical properties of fuel, such as sulfur content. Most importantly, testing can verify compliance with manufacturer specifications and standards for cleanliness and warranty requirements.

## Cetane Index (D-976)

Cetane Index is a measure of the ignition quality of diesel fuel. It is often mistaken as a measure of fuel quality. Cetane Index is a measure of a fuel's ignition delay. This is the time period between the start of injection and start of combustion of the fuel. There is no benefit to using a higher Cetane Index fuel than is specified by the engine's manufacturer. Diesel fuels with a Cetane Index lower than the minimum engine requirements can cause rough engine operation, and are more difficult to start, especially in cold weather or at high altitudes. Many low Cetane fuels increase engine deposits, resulting in more smoke, increased exhaust emissions, and increased engine wear.

## Karl Fischer (D-6304)

Karl Fischer is a method of determining water content in fuels. Unlike the water and sediment test, Karl Fischer detects free water, dissolved water, and emulsified water in the fuel. Some high pressure injectors are sensitive to water levels as low as 200 parts per million (ppm). Water also provides a breeding ground for bacteria and fungus.

## Water and Sediment (D1796)

Water and sediment is a measure of the amount of free water and particulate in the fuel that can be removed from the fuel by centrifugal separation. Water and sediment negatively impact the life of fuel filters, causes damage to injectors and fuel pumps, and causes rust in metal fuel tanks.

## ISO Cleanliness (ISO 4406)

Particle counts give us the ISO Cleanliness Code. Simply put, it is a measure of how clean the fuel is. Particle counters count the number of particles per milliliter and the resulting ISO Cleanliness Code is based on these counts. While ASTM has not yet specified a required cleanliness level, research has found that for most high pressure injection engines today, a rating of 20/19/15 should be considered the maximum allowable. Some engine manufacturers specify 18/16/13, or better.

## API Gravity (D-287)

API Gravity is related to heat content, which effects power and economy. API Gravity is an indication of the energy content of fuel. A fuel with a high density (low API gravity) contains more BTUs per gallon than a fuel with a low density (higher API gravity). API is also a measure of a fuel's density (or weight per gallon). The higher the API gravity, the less a gallon of fuel weighs and the less energy it contains. As a general rule, there is a 3-5% decrease in the thermal energy content of fuel for every 10°F increase in API gravity, which is roughly the same percentage decrease in engine power.

## Distillation (D-86)

Distillation testing provides a measure of the temperature range over which fuel volatilizes, or turns to vapor. The initial boiling point (IBP) should be high enough to prevent early ignition. Early ignition can damage the engine, reduce power output and fuel economy. If the IBP and low evaporated percentage numbers are high, poor starting may result. Low IBP can indicate contamination in gasoline, solvent, or light ends. High boiling points range from 5% to 50% evaporated and may increase warm up time. A lower boiling point than 50% is desirable to minimize smoke and odor. Low 90% end points tend to ensure low carbon residuals and minimum crankcase oil dilution. High end points in the 90% range may indicate contamination with oils or other heavy distillates, and can result in incomplete combustion and oil dilution in the crankcase.

## Micro-Organisms (D6469)

Micro-organisms breakdown or degrade fuels and cause corrosion of metals - especially iron and steel. They plug fuel filters and lines, cause fuel gauge malfunctions, and effect tank linings, hoses, and coatings. They may also damage fuel pumps, injectors, and in-line instruments. Bacteria count also plays a role in the clarity of fuel, as a significant amount of bacteria must be present in order to effect fuel clarity. For example, a count of 8 billion bacteria per gallon will not have an effect on fuel clarity.

## Low Temperature Operability

Several tests are commonly used to characterize the low temperature operability of diesel fuel. These are Cloud Point (D-2500), Low Temperature Flow Test (LTFT - D-4539) and Cold Filter Plugging Point (CFPP D-6371). For non-additized fuel, the Cloud Point and the LTFT correlate very well. Since Cloud Point is more practical as a quality control test, it is listed as the primary recommendation. The CFPP and LTFT tests are more real world indicators of low temperature performance, especially for additized fuel.

## Lubricity (HFRR - D-6079)

Lubricity describes the ability of a fluid to minimize friction between, and damage to, surfaces in relative motion under loaded conditions. Shortened life of engine components, such as fuel injection pumps and unit injectors can occur due to lack of fuel lubricity. The High Frequency Reciprocating Rig (HFRR) is a microprocessor-controlled reciprocating friction and wear test system which provides a fast, repeatable assessment of the performance of fuels and lubricants. It is particularly suitable for wear testing relatively poor lubricants such as diesel fuels and for boundary friction measurements of engine oils, greases and other compounds.

## Sulfur (D-5453)

Most fuel today is required to have a sulfur content of 15 ppm or less. Since 2014, all fuels are required to be 15 ppm or less.

## Flash Point (D-92)

The flash point temperature of diesel fuel is the minimum temperature at which the fuel will ignite (flash) on application of an ignition source under specified conditions. Flash point varies inversely with the fuel's volatility. Flash point minimum temperatures are required for proper safety and handling of diesel fuel. Due to its higher flash point temperature, diesel fuel is inherently safer than many other fuels, such as gasoline.

## Copper Corrosion (D-130)

The copper strip corrosion test indicates potential compatibility problems with fuel system components made of copper alloys such as brass or bronze.

## **Kinematic Viscosity (D-445)**

Viscosity affects injector lubrication and fuel atomization. Fuels with low viscosity may not provide sufficient lubrication for the precision fit of fuel injection pumps or injector plungers, resulting in leakage or increased wear. Fuels which do not meet viscosity requirements can lead to performance issues. Diesel fuels with high viscosity tend to form larger droplets upon injection, which can cause poor combustion and increased exhaust smoke.

## **Ramsbottom Carbon Residue (D-524)**

The Ramsbottom Carbon Residue test is intended to provide some indication to the extent of carbon residue that results from the combustion of a fuel. The limit is a maximum percentage of deposits by weight.

## **Ash Content (D-482)**

Ash is a measure of the amount of metals contained in the fuel. High concentration of these materials can cause injector tip plugging, combustion deposits, and injection system wear. Soluble metallic materials cause deposits, while abrasive solids will cause fuel injection equipment wear and shorten filter life.

## **DuPont F21-31**

The DuPont method is for determining the relative stability of distillate fuels such as home heating oils or diesel fuels under short-term, high temperature, aging conditions involving air exposure. It may also be used to evaluate the effectiveness of additives in inhibiting sediment formation, and color degradation, of distillate fuels under the conditions of the test.

## **Thermal Stability (D6468)**

Thermal stability testing aims at collecting reaction rate data and applying that data to assess whether a specified quantity of material can be used so that runaway reactions are avoided. This is important when considering processing and long-term storage. Data collected during this test includes onset temperature, kinetic parameters, time to maximum rate, critical temperature/temperature of no return, and self accelerating decomposition temperature.



# AXI FILTER CHART

INTERNATIONAL

## STS SERIES FILTERS

ALL FILTERS ARE ABSOLUTE, UNLESS OTHERWISE NOTED | WB: WATERBLOCK | SS: STAINLESS STEEL SCREEN

CARTRIDGE FILTERS	SPIN-ON FILTERS									
	10µ	30µ WB	60µ SS	1µ B100/B10	3µ	3µ WB	10µ	10µ WB	25µ	3µ X-GLASS
STS 6000-SX-F	01010	01030	01060S	FF-1	FF-3	WB-3	FF-10	WB-10	FF-25	FFZ-3
STS 6004/7004/8004	01810	01830	01860S	FF-1	FF-3	WB-3	FF-10	WB-10	FF-25	FFZ-3
STS 6010/7010	04010	04030	04060S	FF-1*	FF-3*	WB-3*	FF-10*	WB-10*	FF-25*	FFZ-3*
STS 6020/7020				FF-1*	FF-3*	WB-3*	FF-10*	WB-10*	FF-25*	FFZ-3*
STS 6040/7040				FF-1*	FF-3*	WB-3*	FF-10*	WB-10*	FF-25*	FFZ-3*

STS 6030**/7030**	1µ	5µ	10µ	25µ
	FBO-60339 MICRO FILTER	FBO-60340 MICRO FILTER	FBO-60357 MICRO FILTER	FBO-60341 MICRO FILTER
	FBO-60342 WATER BLOCK	FBO-60343 WATER BLOCK	FBO-60358 WATER BLOCK	FBO-60344 WATER BLOCK
	FBO-60336 COALESCING	FBO-60337 COALESCING	FBO-60356 COALESCING	FBO-60338 COALESCING

\*\*30 GPM SYSTEMS REQUIRE TWO DIFFERENT FILTERS. STANDARD; PRIMARY FILTER IS MICROFILTER, SECONDARY IS COALESCING

SPIN-ON FILTERS	FF-1	FF-3	FF-10	FF-25	FFZ-3	FFZ-10	WB-3	WB-10	WBS-3
EFFICIENCY (@MICRON)	NOMINAL	97.30%	98.70%	97.80%	99.30%	98.70%	99.3% @ 10µ	98.3% @ 10µ	98.70%
BETA (@MICRON)	N/A	37.0	76.9	45.5	142.9	76.9	142.9	58.8	76.9
HOLDING CAPACITY							21 OZ.	21 OZ.	

## FPS SERIES FILTERS

ALL FILTERS ARE ABSOLUTE, UNLESS OTHERWISE NOTED | WB: WATERBLOCK | SS: STAINLESS STEEL SCREEN

CARTRIDGE FILTERS	SPIN-ON FILTERS												
	10µ	15µ WB	30µ	40µ SS	60µ SS	80µ SS	1µ B100/B10	3µ	3µ WB	10µ	10µ WB	25µ	3µ X-GLASS
FPS-DX									WBS-3	FFS-10			
FPS-COMPACT	00510		00530		00560								
FPS-FX	01010		01030		01060S								
FPS-FX-R	2020TM-OR		2020PM-OR										
FPS-SX-F	01010		01030		01060S		FF-1	FF-3	WB-3	FF-10	WB-10	FF-25	FFZ-3
FPS-SX-R	2020TM-OR		2020PM-OR										
FPS-MX-F	01810		01830		01860S		FF-1	FF-3	WB-3	FF-10	WB-10	FF-25	FFZ-3
FPS-LX-F	04010		04030		04060S		FF-1	FF-3	WB-3	FF-10	WB-10	FF-25	FFZ-3

## MTC SERIES FILTERS

ALL FILTERS ARE ABSOLUTE, UNLESS OTHERWISE NOTED | WB: WATERBLOCK | SS: STAINLESS STEEL SCREEN

CARTRIDGE FILTERS						SPIN-ON FILTERS						
10μ	15μ WB	30μ	40μ SS	60μ SS	80μ SS	1μ B100/BIO	3μ	3μ WB	10μ	10μ WB	25μ	3μ X-GLASS
TK-240								WBS-3	FFS-10			
MTC-500						FF-1	FF-3	WB-3	FF-10	WB-10	FF-25	FFZ-3
MTC-1000						FF-1	FF-3	WB-3	FF-10	WB-10	FF-25	FFZ-3
MTC-3000						FF-1	FF-3	WB-3	FF-10	WB-10	FF-25	FFZ-3
MTC-X						FF-1	FF-3	WB-3	FF-10	WB-10	FF-25	FFZ-3

## MTC HC SERIES FILTERS

ALL FILTERS ARE ABSOLUTE, UNLESS OTHERWISE NOTED | WB: WATERBLOCK

CF SERIES CARTRIDGE FILTERS			JPM SERIES CARTRIDGE FILTERS							
5μ	5μ WB		2μ	10μ	10μ WB	30μ	30μ WB	3μ MICRO GLASS	7μ MICRO GLASS	10μ MICRO GLASS
HC-50	618-5	WB618-5	618-2-W	618-10-W	WA618-10-W	618-30-W	WA618-30-W	G618-3-SR	G618-7-SR	G618-10-SR
HC-90	618-5	WB618-5	618-2-W	618-10-W	WA618-10-W	618-30-W	WA618-30-W	G618-3-SR	G618-7-SR	G618-10-SR
HC-150	618-5	WB618-5	618-2-W	618-10-W	WA618-10-W	618-30-W	WA618-30-W	G618-3-SR	G618-7-SR	G618-10-SR
FV-120	618-5	WB618-5	618-2-W	618-10-W	WA618-10-W	618-30-W	WA618-30-W	G618-3-SR	G618-7-SR	G618-10-SR
FV-150	618-5	WB618-5	618-2-W	618-10-W	WA618-10-W	618-30-W	WA618-30-W	G618-3-SR	G618-7-SR	G618-10-SR
VIKING 3F	618-5	WB618-5	618-2-W	618-10-W	WA618-10-W	618-30-W	WA618-30-W	G618-3-SR	G618-7-SR	G618-10-SR
VIKING 4F	618-5	WB618-5	618-2-W	618-10-W	WA618-10-W	618-30-W	WA618-30-W	G618-3-SR	G618-7-SR	G618-10-SR

WHEN ORDERING, FILTERS LISTED IN MTC HC SERIES ARE TO BE PREFIXED WITH SERIES NAME (E.G. HC-50 5μ FILTER: CF618-5)

JPM SERIES FILTERS	618-2-W	618-10-W	WA618-10-W	618-30-W	WA618-30-W	G618-3-SR	G618-3-SR	G618-10-SR
EFFICIENCY (@MICRON)	98.00%	98.00%	98.0%	98.00%	98.00%	99.50%	99.50%	99.50%
BETA (@MICRON)	50.0	50.0	50.0	50.0	50.0	200.0	200.0	200.0

## FILTER BAGS

	1μ	5μ	10μ	25μ	75μ	250μ	800μ
PF-10HD	PFB-10-1	PFB-10-5	PFB-10-10	PFB-10-25	PFB-10-75	PFB-10-250	PFB-10-800
PF-30HD	PFB-30-1	PFB-30-5	PFB-30-10	PFB-30-25	PFB-30-75	PFB-30-250	PFB-30-800
MTC-X	PFB-30-1	PFB-30-5	PFB-30-10	PFB-30-25	PFB-30-75	PFB-30-250	PFB-30-800
MTC-50	PFB-30-1	PFB-30-5	PFB-30-10	PFB-30-25	PFB-30-75	PFB-30-250	PFB-30-800
MTC-90	PFB-30-1	PFB-30-5	PFB-30-10	PFB-30-25	PFB-30-75	PFB-30-250	PFB-30-800
MTC-150	PFB-150-1	PFB-150-5	PFB-150-10	PFB-150-25	PFB-150-1	PFB-150-250	PFB-150-800

## AXI INTERNATIONAL WARRANTY LIMITED WARRANTY

AXI 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 AXI International 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 purchaser(s), or end customer(s) who use the products covered hereby. This warranty is not an on-site warranty. Travel requests will be at the discretion of AXI International. Defective systems and ancillary products will require a return authorization number and shipping to AXI International's facility in Fort Myers, FL.

Any warranty claim received by AXI International 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. Claims outside of this one (1) year period, and for claims not listed within, payment, repair, or service will be awarded at the discretion of AXI International.

This warranty shall not apply to products (1) which have been tampered with, altered or repaired by anyone other than AXI International without the express prior written consent of AXI International (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 AXI International under this warranty is limited to the repair or replacement of the defective product. AXI International 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. AXI INTERNATIONAL 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.

AXI INTERNATIONAL 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 AXI INTERNATIONAL OTHER THAN THE EXPRESS WARRANTY PROVIDED FOR HEREIN.

AXI International 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 AXI International to make similar changes in such products that were previously manufactured.

## WARRANTY CLAIM PROCEDURE

To make a claim under this warranty, please call AXI International 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 AXI International, arrange for a Field Engineer to inspect your system. If the inspection discloses a defect covered by its limited warranty, AXI International will either repair or replace the defective parts or products. AXI assumes no liability, if upon inspection, AXI International 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 AXI International:

AXI International  
5400-1 Division Drive, Fort Myers, FL 33905  
Phone: +1-877-425-4239  
Fax: +1-239-465-0881



# TECHNICAL ASSISTANCE AND ORDERING

Please write, fax, email or call:

AXI International

5400-1 Division Drive, Fort Myers, FL 33905

Phone: +1-877-425-4239

Fax: +1-239-465-0881

Email: [info@axi-international.com](mailto:info@axi-international.com)

Website: [www.axi-international.com](http://www.axi-international.com)

Type of Equipment / System / Engine: \_\_\_\_\_

Number of Tanks: \_\_\_\_\_

Tank(s) Capacity: \_\_\_\_\_

Above or Below Ground: \_\_\_\_\_

Notes: \_\_\_\_\_

---

---

---

---

---

---

---

---





# AXI INTERNATIONAL

[www.AXI-International.com](http://www.AXI-International.com)

 AXI.International  AXInternational  AXIFuel  AXIFuel