



# Protect Your Engine



Keeping your diesel fuel free from water and other contamination is fundamental to ensuring the life of your engine.



**MARSHIP MARINE FUEL PURIFIER**  
**MADE IN THE UK**



**Contaminated fuel can be incredibly damaging to diesel engines, especially those fitted with the latest generation of high pressure fuel injection systems. Water is especially troubling as it will cause serious performance and reliability problems.**



**The MARSHIP Marine Fuel Purifier ( MFP) will remove free water and solid particulates from even the dirtiest, most contaminated fuel.**

### **How good is the quality of the fuel being used in your equipment?**

If you are hiring out generators, pumps or plant, can you be sure of the condition of the fuel going into your equipment? If you are using fuel provided to you on site, can you see that it is contaminated?

Poor fuel storage, bad fuel transfer and housekeeping practices, or simple human error, can easily result in water, sand, grit, rust etc in fuel, all of these can harm your engine.

If you cannot be sure of the quality of the fuel going into your tractors, excavators, generators or pumps the engines that power them could be at risk and you could end up with expensive repairs and downtime.

By fitting extra levels of protection on your vehicle or equipment you can reduce the risk of costly damage due to contaminated fuel.

The MARSHIP Marine Fuel Purifier (MFP) will remove free water and solid particulates from even the dirtiest, most contaminated fuel. When fitted in conjunction with a conventional fuel water separator, they will work together to ensure that your engine is protected from harmful water and particles. The MFP acts as the 'first line of defence' removing slugs of water and dirt, sludge and grit allowing the filter/separator to filter the fuel unhindered.

### **Bio-Diesel and Water**

Fuel legislation designed to reduce harmful emissions and increasing global demand for diesel has resulted in more and more bio-diesel finding its way into the fuel supply chain. The increased use of bio-diesel will increase the incidence of water contamination problems in diesel.

Why? Bio-diesel contains more water than petro-diesel (it is introduced in the production process), it is also hygroscopic it absorbs water from the atmosphere.

Petro-diesel can absorb around 50 parts per million (ppm) of water whilst bio-diesel can absorb as much as 1500ppm most global fuel standards recommend a maximum water content of 200ppm.

As ambient temperatures rise water is absorbed into the fuel, as they fall the water condenses out of the fuel and forms free water at the bottom of fuel tanks. Free water can wreak havoc in your fuel system.



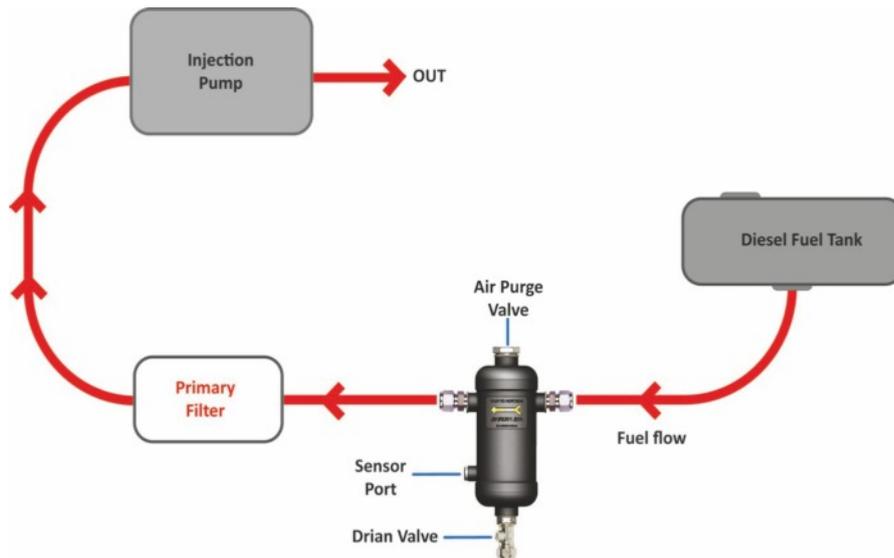
### **Major engine benefits**

**Avoid fuel/water related breakdowns**  
**Remove solid/semi solid contaminants such as dirt, rust and sludge**  
**Maintain exhaust emission standards**  
**Extend engine rebuild period and life**

### **Major environmental benefits**

**Cleaner engine combustion**  
**Significantly extend the life of the standard engine fuel filter**  
**Save on paper consumables as the Fuel Purifier is filter less**  
**Fewer unscheduled repairs and call outs**

# How the MARSHIP Marine Fuel Purifier works



When the fuel enters the unit the baffles in the system immediately induce a swirling action, which causes water and solid contaminants to separate out of the fuel. The contaminants sink to the base of the unit where they are retained - the contaminants are simply drained and disposed of when the system is full. An optional sensor with buzzer can be supplied to indicate this.

## Model Options



MFP 100 MFP 200 MFP 500

Model Type	HP Guide	IN/OUT Ports	Top Port	Drain Valve Bottom Port	Width	Length	Bracket	Empty Weight
<b>MFP100</b>	100	14mm	M20 Bleed Valve	14mm ball valve	70mm	170mm	Separate	.90kg
<b>MFP200</b>	200	14mm	M20 Bleed Valve	14mm ball valve	115mm	200mm	Separate	1.60kg
<b>MFP500</b>	500	3/4 BSP	M20 Bleed Valve	14mm ball valve	115mm	320mm	Separate	2.25kg

All dimensions exclude fittings

Weights and dimensions are approximate and may vary slightly.

Flow rates can differ dependent on fitment pipe size/temperature etc

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## MARSHIP Water Sensor Kit

With the changes in diesel fuel and the evident increase of the diesel bug together with other contaminates, it is imperative expensive damage is prevented to machinery.

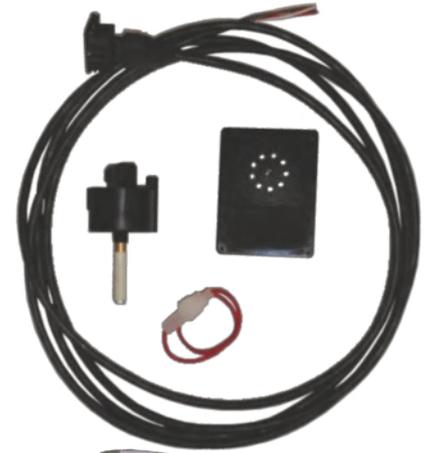
The water sensor kit has been developed alongside the Purifier to offer an extended safeguard to engines.

Once the Purifier has been fitted to protect your machine, it is imperative that the water/contamination is drained regularly.

The MARSHIP Water Sensor Kit has been developed to prompt owners, operators and hirers of the necessity to supply the engine with clean diesel.

The kit comprises a sensor, alarm (buzzer), 3 metre wiring loom complete with moulded connecting plug, an in line fuse holder and warning label.

The sensor is dual voltage 12/24VDC , simple to install and it is recommended that the buzzer is sited in an audible position for the operator. The sensor can be linked to the MARSHIP communication systems so that drain requirements can be identified from any PC, globally.



### Water in your fuel can cause

Engine misfiring and lower power input.  
Wear to fuel injector and pumps. Corrosion of fuel system and engine parts. Explosive damage to fuel injectors Acceleration of fuel oxidation

### Potential damage to your engine

Fuel injectors can get clogged and fuel delivery and injector spray patterns are affected.  
Water is a very poor lubricant and metal on metal contact occurs resulting in scuffing and wear.  
Steel components will rust in the presence of water.  
The combustion process will superheat any water present which can cause injector tips to be 'blown off'.  
The oxygen in water acts to speed up the process of fuel deterioration .

**Suitable for any diesel equipment, can be fitted to Mobile Plant, Generators & Agricultural**

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