

# Protect Your Engine



## The Fuel Purifier (FP)



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



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 IPU Fuel Purifier (FP) will remove 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 IPU Fuel Purifier (FP) will remove 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 FP 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.



**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

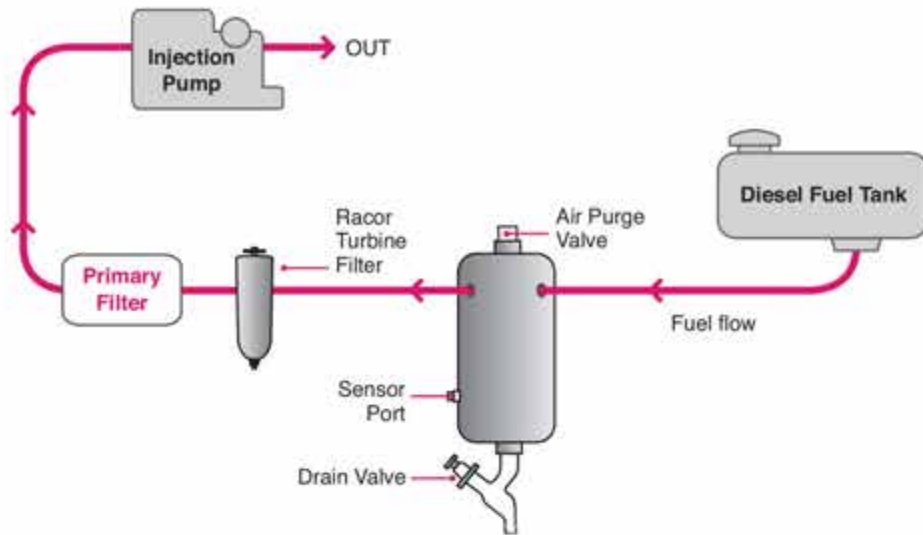
Water is a very poor lubricant and metal on metal contact occurs resulting in scuffing and wear

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





## How the IPU 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 can be supplied to indicate this. The sensor can be linked to the IPU communication systems so that drain requirements can be identified from any PC, globally.



### 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 filterless
- Fewer unscheduled repairs and call outs





## What customers say

"Customer savings in relation to fuel are very significant. When a fuel related breakdown occurs, the fuel tank has to be drained and the fuel disposed of. On bigger machines this can be fuel up to the value of £250 wasted. By fitting the IPU FP we have reduced fuel wastage and have seen several other benefits" (see below)

Ray Luxton - Business Development Manager, Holt JCB



80% reduction in field contamination related call outs to machines fitted with the FP.

Warranty claims in relation to fuel pumps and injectors have been eliminated.

Significant environmental and disposal cost benefit that the 2-300 litres of waste fuel does not have to be disposed of.

## Model Options

### Unit

### Description

#### FP100



For engines up to 100hp approx. Maximum flow rate = 1.9 litres per minute  
**Dimensions** FP100 – 70mm Dia. x 170mm long

#### FP200



For engines up to 200hp, approx. Maximum flow rate = 6 litres per minute  
**Dimensions** FP200 – 115mm Dia. x 200mm long

#### FP500



For engines up to 500hp, approx. Maximum flow rate = 10 litres per minute  
**Dimensions** FP500 – 115mm Dia. x 320mm long

For engines with a higher HP rating the FP500 can be installed in parallel - for example an 800hp engine should have 2 x FP500 in parallel, a 1250hp engine should have 3 x FP500 in parallel, etc

**Protect your engine from avoidable damage  
 and extend its life with the IPU Fuel Purifier**

### IPU GROUP Fuel Conditioning

Visit our Group website [www.ipu.co.uk](http://www.ipu.co.uk)

IPU Group, Churchbridge, Oldbury,  
 West Midlands, B69 2AS England  
 T: +44 (0) 121 511 0400 F: +44 (0) 121 511 0401  
 E: [ipu@ipu.co.uk](mailto:ipu@ipu.co.uk)

© IPU Group February 2011



2003/372