

# 24/7 FUEL PROTECTION FOR DAY TANKS AND SMALLER STORAGE TANKS

**Small fuel stores can be business-critical. Protect them with the DDF1.**

Diesel-powered equipment does not have to be large to be vital to your business success. Small excavators determine if a construction project finishes on time. Small generators make sure telecoms towers work when grid power fails.

The Diesel Defence DDF1 is an on-tank fuel polishing unit that keeps small fuel reserves clean and reliable. It makes sure that diesel-powered equipment has the clean fuel it needs to run reliably.

The DDF1 continuously circulates the fuel in your storage tanks, halting the spread of damaging contaminants. It tackles the three main forms of diesel contamination:

- Solid particulates.
- Water.
- Microbial growth.



DIESEL DEFENCE  
Fuel Polishing

## Stored fuel is under attack

Modern diesel degrades over time. Within 6 to 12 months, water, particulates and microbial growth can render it unusable.

## Flexible and compact

A range of filter elements allow the DDF1 to adapt to varying scenarios. One unit can cope with heavy contamination or final polishing.

## Telecoms and railways

Telecoms towers and railway signal boxes provide critical services. Their emergency generators need dependable fuel.

**Let's talk**

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# CRITICAL POWER NEEDS CLEAN FUEL

A site's power generation infrastructure includes redundant hardware to reduce the chance of a critical failure. Most designs risk disaster by failing to treat their shared fuel stock as a single point of failure.



## One less problem to fix

IPU helps you meet your business objectives. You do not want to be worried about contaminated fuel or unreliable power. Let IPU remove one weakness in your power infrastructure so you can concentrate on what makes your business a success.

## Professional service

IPU's services range from supplying an economical and standard fuel polishing system to manufacturing a bespoke unit to suit your site, staff and environment. These services can include:

- Site survey.
- Consultancy with site stake-holders.
- Physical, electrical and mechanical assessment.
- Detailed general assembly (GA) drawings.

## Fuel management professionals

IPU are a single-source provider for all aspects for fuel management and maintenance:

- On-site or lab-based fuel testing.
- Fuel cleaning or replenishment.
- Mobile and fixed fuel polishing units.
- Out-sourced fuel management service.

## Engine and fuel suppliers

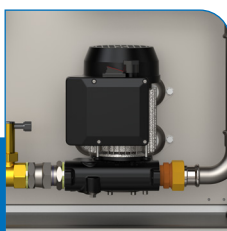
Engine manufacturers and fuel suppliers have tightened their approach to fuel contamination.

Standard warranties on all major engine brands exclude damage caused by contaminated fuel. This damage can be deep within the engine on components such as fuel injectors. It is inevitably expensive to repair and the cost falls on the operator - you.

Fuel suppliers advise any organisation storing fuel to employ appropriate measures to maintain the condition of their fuel. These measures include a fuel polishing system.

# PRODUCT HIGHLIGHTS

## High flow rate pump



The DDF1 uses an ultra-reliable 50lpm (litres per minute) self-priming vane pump. Such a high flow rate is exceptional in an entry level polisher. It delivers two advantages:

- Faster cleaning. The DDF1 could process a 2,000l tank in 40 minutes. A more generic polisher capable of 10lpm would take 3 hours 20 minutes.
- Better cleaning. The higher flow rate induces enough turbulence to drive contamination into the filter.

## Simple control

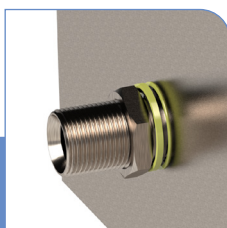


The DDF1's push-button control panel uses clear labels that any service engineer or technician can understand. No specialist expertise is required.

The control panel includes alarm and status indicators to alert operators to conditions such as 'no flow', 'filter change' or 'bund alarm'.

The unit can be rapidly reset, turned off and on or switched into manual mode.

## Connectors



1" BSP Male connectors are used for both the inlet and outlet connectors on the DDF1.

The connectors are attached to anti-rotation fittings so over-tightening will not damage the unit or piping.

Mapress pipe connections are used to ensure the unit is leak-free.

## External Alarm



An external alarm alerts passing staff members to difficulties such as a blocked pipe, clogged filter or empty tank.

By siting the alarm outside the DDF1's protective enclosure, the alarm is visible even when the enclosure is locked and inaccessible.

## RELATED PRODUCTS

### FiltaSolid



FiltaSolid filter elements remove particulates from your fuel. The 800, 900 and 999 series offer 80.0%, 90.0% and 99.9% efficiency on particles between 1 and 800µm (microns).

### FiltaSorb



FiltaSorb filter elements deliver unbeatable performance in water absorption. FiltaSorb cells also remove solid particulates down to 1µm (micron).

### DieselCheck



The DieselCheck portable diesel analyser quickly, accurately and economically checks a sample's water and particulate content and fuel density.

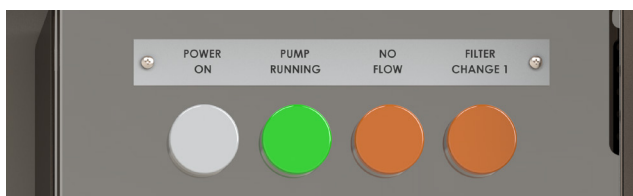
### DDF2



The Diesel Defence DDF2 suits larger tanks which require more installation flexibility. Its flow rate of 100lpm is delivered in a variety of form factors with an optional touch-screen.

## OPTIONS

### Enhanced Alarms



A standard DDF1 has two status indicators: 'system running' and 'alert'.

Optional alert indicators such as 'no flow', 'filter change' and 'bund alarm' can help operators quickly identify the specific nature of a fault.

## CASE STUDIES



### Canary Wharf, London

Replaced high-maintenance, ineffective polishing unit; brought fuel into compliance with EN590.

[www.ipu.co.uk/case1001](http://www.ipu.co.uk/case1001)



### Good Hope Hospital

Fuel cleaning brought fuel into compliance with ISO 4406 and EN590; no man-entry was required.

[www.ipu.co.uk/case1002](http://www.ipu.co.uk/case1002)





## IMPECCABLE DESIGN GENERATES SUPERIOR PERFORMANCE

IPU's high-performance fuel polishing units have evolved through years of real world use. Our impeccable design and manufacturing processes deliver superior results for our customers.

### Integrated components

IPU's Diesel Defence range are integrated systems. Each component is designed or selected to work harmoniously with the rest of the unit.

Our pumps, for example, are selected to deliver a flow rate that produces optimum performance from our FiltaSorb and FiltaSolid filter elements.

### Adhering to standards

Diesel Defence fuel polishers bring your stored fuel into specification with international standards.

Particulates are removed so fuel exceeds the 18/16/13 cleanliness standard specified by ISO4406:2017.

Water is extracted from fuel to below the 200ppm (parts per million) level mandated by EN590.

Search our website ([www.ipu.co.uk](http://www.ipu.co.uk)) for "ISO 4406" and "EN 590" for more details on fuel cleanliness standards.

# SPECIFICATIONS

	DDF1
PERFORMANCE	
Flow rate <sup>1</sup> (lpm)	50
Indicative tank size (l)	10,000
Filtration Efficiency (max.)	99.9%
Particulate Removal (min) (µm)	1

BASIC SPECIFICATIONS	
Filter housing(s)	1
Filter size and type	Size 9
Enclosure	Mild Steel / Stainless Steel
Control System	Push-Button
Pump Type	Self Priming Vane
Maximum system pressure (bar)	3
Remote Emergency Stop	Yes
Differential Pressure Indicator	Electrical
Float Switch	Yes

## Notes

- 1 Flow rates are maximum rates. Fuel cleanliness, fuel viscosity, distance and other conditions may affect actual performance in the field. Please contact IPU to ensure we offer the correct unit for your application.
- 2 Based on system specification.



# SPECIFICATIONS

	DDF1
ELECTRICAL	
Voltage (V)	230
Frequency (Hz)	50 / 60
ENVIRONMENTAL	
Noise Level (dBA @ 1m)	< 85
Operating Temperature (°C)	0 to 50°C
Environmental Protection	IP66
PHYSICAL	
Operating Size <sup>2</sup> (hwd) (mm)	900 x 900 x 400
Dry weight <sup>2</sup> (kg)	66
PIPEWORK & CONNECTIVITY	
Inlet Connections	1" BSP M
Outlet Connections	1" BSP M
BMS Output	Yes





## THE COMPANY YOU WANT TO DO BUSINESS WITH

IPU helps businesses reach the profitability and efficiency they seek.

For nearly sixty years, we have delivered the expert assistance and customer service that lets our domestic and international customers excel in their industries.

We support businesses in sectors including power-generation, oil & gas, marine, IT & telecoms, manufacturing and government.

Our industry experience, competitive pricing and superb support let us evolve from a regular supplier to become the company our customers *want* to do business with.



For further details, please visit:

[IPU.CO.UK/FUEL](http://IPU.CO.UK/FUEL)

For more information, please contact:

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