

DFT-1 Filter

Cart User

Manual



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V2.00

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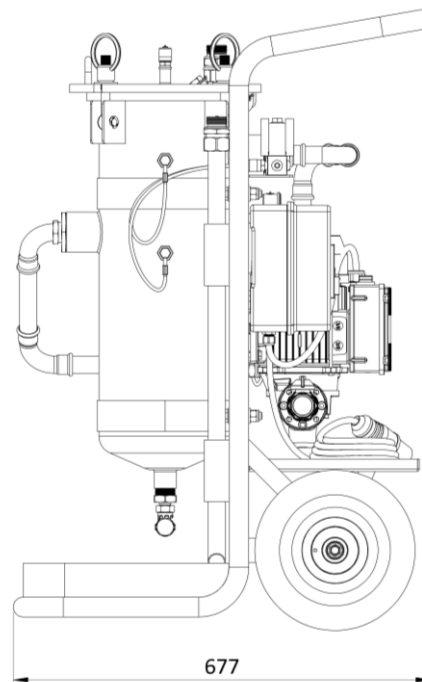
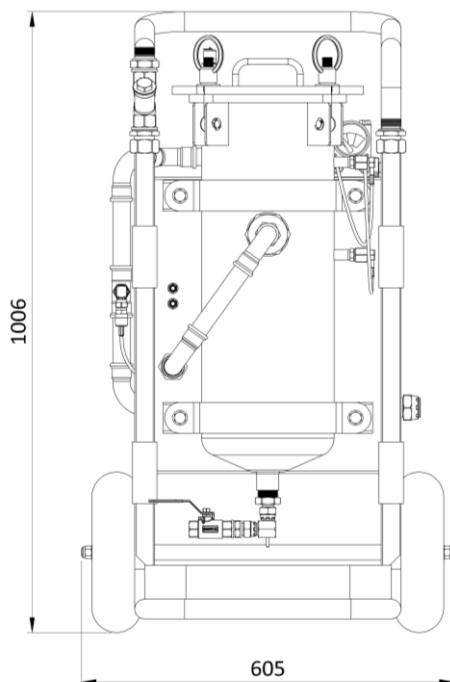
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Specifications

Specification	Detail	
	DFT-1-110	DFT-1-240
Dimensions	(w) 605mm x (d) 677mm x (h) 1006mm	
Weight	95 kg	
Frame	Mild Steel	
Finish	Powder Coated RAL 5004 (Black Blue) Satin	
Voltage	110 VAC (+10% to -6%)	240 VAC (+10% to -6%)
Frequency	50 Hz (+/-2%)	
Current	12.5 Amps	5.6 Amps
Power	1400 Watts	1400 Watts
Pump type	Gear pump	
Flow rate (max)	100 ltr/min	100 ltr/min
Viscosity range	2 to 5.35 cSt	
Duty Cycle	Continuous	
Filtration	Size 1 filter cell (various ratings available)	
Filter blocked indicator	Mechanical pop-up	
Filter bypass	2.8 bar (40 psid)	
Connections	1" BSP male hydraulic	
Suction hose	3m long x 1" BSP female swivel hydraulic (with strainer)	
Discharge hose	3m long x 1" BSP female swivel hydraulic	
Ambient temperature	-10°C to +60°C	
Maximum humidity	90% relative humidity, non-condensing	
Environment	IP55	



Typical Applications

Typical applications for the filtration unit include:

- Filtering the fluid in a diesel storage tank periodically as a supplement to continuous filtration by system filters.
- Cleaning heavily contaminated fuel to eliminate water, solid particulate and tank sludge.
- Cleaning your fuel system before restarting the system following component failure.
- Providing clean fuel when re-filling and adding fuel to storage tanks.
- Reclaiming contaminated diesel fuel.
- Transferring diesel fuel from one storage location to another.
- Emptying waste fuel quickly.

Health, Safety & Environmental Considerations

- This equipment should only be used for its intended purpose by competent and authorised persons, inappropriate use could cause serious injury or death.
- Prolonged contact with diesel fuel can cause damage to the skin. Appropriate PPE (personal protective equipment) should be worn when operating the unit e.g. protective gloves, safety glasses, safety shoes etc. Always observe local health and safety requirements.
- The unit should only be used on a flat, even surface and be attended at all times.
- Do not operate switches with wet hands.
- The unit must always be disconnected from the mains supply before carrying out any routine maintenance or repairs.
- Electrical cables and hoses should be checked for any signs of damage before starting the unit.
- Ensure a spill kit is available in case of any accidental spills.
- Used filters must be disposed of in accordance with local environmental requirements.

Basic Description

The DFT-1 portable filtration unit is a compact, self-contained filtration system, equipped with a high efficiency, high capacity filter cell capable of removing particulate contaminants and/or water quickly, conveniently and economically. It is designed for on-site preventative maintenance and is fitted with two standpipes and hoses for efficient fluid transfer. The suction standpipe is fitted with a strainer to trap any large contaminants and protect the pump.

Best Efficiency

When used for recirculation filtration (as opposed to transfer filtration) position the ends of both the inlet and outlet standpipe as far apart as possible inside the reservoir in order to ensure proper recirculation and cleaning.

Operate the filtration cart until the total volume of the system fluid passes through the filtration cart. For recirculation filtration, cycle the reservoir fluid through the filter cart six to eight times to ensure the total system fluid is filtered completely.

Precautionary Measures

- Never start up or run a dry pump. This will cause galling, seizing or destructive wear between the rotors, end plates and casing.
- The filtration unit is designed for diesel fuel only.
- It is not to be used for highly volatile fluids, such as gasoline, paint thinners etc.

CAUTION - DO NOT USE THE UNIT WITH THE FOLLOWING FLUIDS:

Fluids not to be used	Related dangers
Gasoline	Fire / Explosion
Inflammable liquids with PM <55°C	Fire / Explosion
Water	Oxidation
Corrosive chemicals	Oxidation / Injury to persons
Solvents	Fire / Explosion / Damage to gaskets

Component Identification

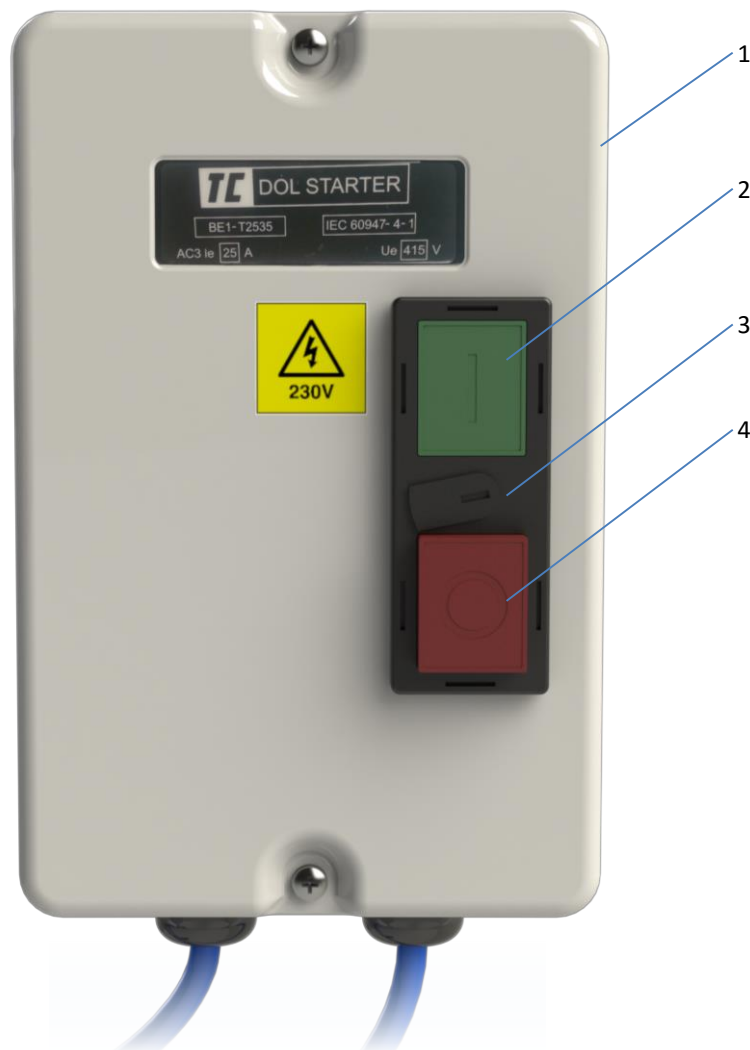


Key:

1.) Suction lance (with strainer)	8.) Inlet 1" BSP
2.) Filter housing	9.) Mains power lead
3.) Drain valve	10.) Sampling / vent tube
4.) Discharge lance	11.) Pressure gauge
5.) Differential pressure gauge	12.) Sampling point / gauge connection
6.) Electrical box	13.) Outlet 1" BSP
7.) Pump / motor	

Starting & Stopping – DOL (Direct-On-Line)

To start the unit make sure it's plugged into a fused supply (with RCD when used outdoors) of the correct voltage rating and that the inlet and outlet hoses have been correctly attached. Before switching on the unit ensure hoses are connected to the fuel supply pipework and/or lances are securely inserted into the barrel/tank.



Key:

1.) D.O.L starter box case	3.) Off button locking tab
2.) "On" push button	4.) "Off" push button

The unit is supplied with a DOL (Direct-On-Line) starter box. Once connected to the mains supply the unit can be switched on and off via the two push buttons. If for any reason the power supply cuts out, the internal contactor will unlatch to prevent accidental spillage once power is restored.

Filtration

The unit is equipped with a single filter cell housing which can be fitted with a range of media for removing large quantities of particulate and water contamination from diesel fuel.

Differential Pressure Gauge

The unit comes with a differential pressure gauge that gives an indication of the filter condition via a green, yellow and red visual indication.



Colour	Pressure Range	Notes
Green	0-15 psid	Indicates a clean and healthy filter
Yellow	16-22 psid	Indicates the filter is starting to become blocked and requires more frequent monitoring
Red	23-30psid	Indicates the filter is now fully blocked and requires changing

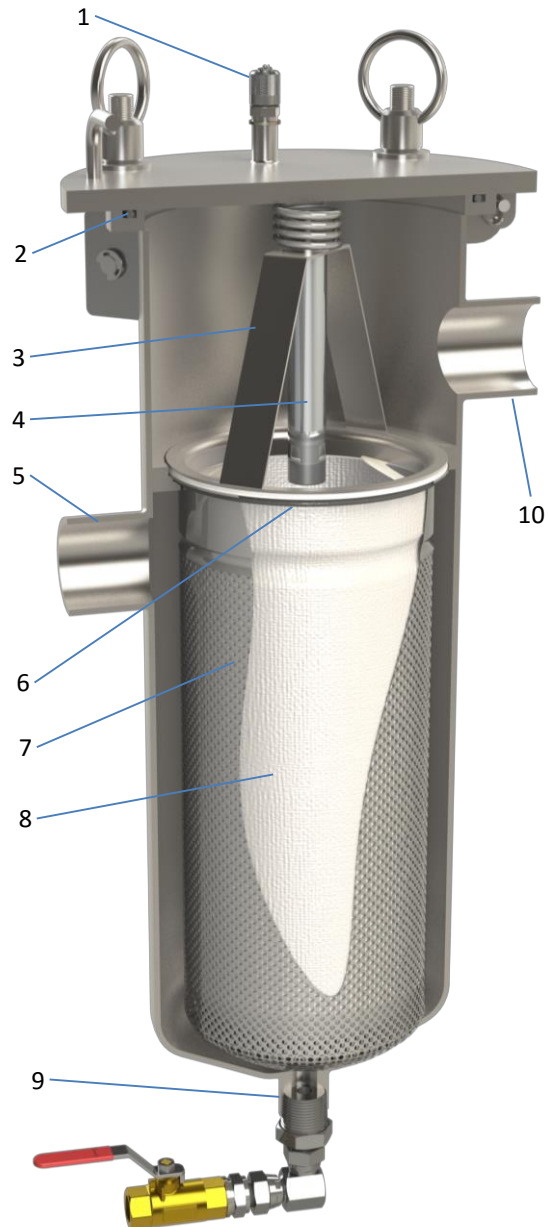
The filter cell housing is monitored by a visual differential pressure indicator, displaying the filter's condition via a green, yellow and red traffic light system.

Filter Cell Housing

Changing a Filter Cell

As a guideline the following procedure can be used for changing a filter cell:

1. Ensure inlet and outlet pipework has been closed off to prevent siphoning.
2. Relieve any excess pressure by briefly opening the drain valve or vent.
3. Loosen the 4 swing bolts and open the lid.
4. Remove the filter securing bracket (if the optional magnet is included, clean off any rust).
5. Lift out the filter cell via the strap handle. It is likely the filter basket will also come out.
6. Remove the filter cell from the basket and replace with a clean filter.
7. Refit the filter basket, making sure the basket O-ring is still in place and correctly seated.
8. Refit the filter securing bracket, making sure the spring is attached.
9. Close the lid, making sure the lid O-ring is correctly seated.
10. Gradually tighten each of the 4 swing bolts in a typical star/cross sequence to allow even seating of the lid onto the O-ring seal.



Key:

1.) Vent (1620 test point)	6.) Filter basket O-ring
2.) Lid O-ring	7.) Filter basket
3.) Filter securing bracket	8.) Filter cell
4.) Magnet (optional)	9.) Drain port
5.) Outlet port	10.) Outlet port

Cleaning the Magnet (Optional)

An optional magnet can be installed into the filter housing basket clamp for removal of ferromagnetic material, extending the useful life of the filter cell.



Removal of ferromagnetic material can be carried out using a suitable tool as shown above (Filtertechnik part number FT-RRTO1).

The tool is to be located at the top of the magnet and downward force applied to push the material off the magnet. This waste material can then be disposed of or recycled.

Purging Air from the Filter Housing

When starting the system for the first time or after a filter cell change air will be trapped within the upper section of the filter housing and require purging. Failure to remove all the air can result in aeration of the fuel and reduced filtration performance.



With the system is turned on the sampling / vent tube can be screwed onto the vent port, where the remaining air will be pushed out of the filter housing. The end of the tube should be inserted into a sample bottle or cloth to prevent any fluid from spraying towards the operator.

Once all the air has been removed make sure the sampling / vent tube is disconnected to prevent siphoning or spillage of fluid.

Fuel Sampling



The filter housing incorporates ports either side of the filter cell which are used for monitoring the differential pressure. These ports are fitted with 1620 minimes test points, where the existing tube connections can be removed and the sampling tube can be attached for pre and post filtration sampling.

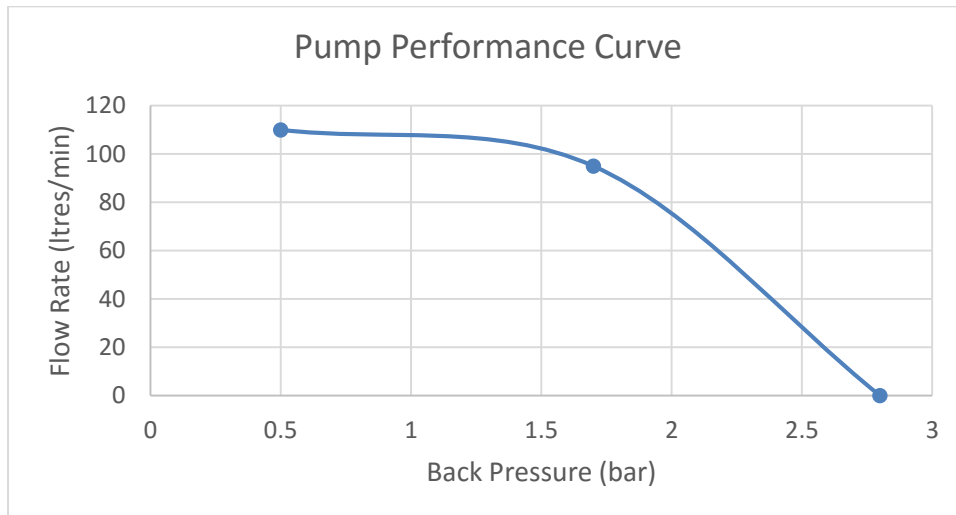
When taking a fuel sample ensure the tube has already been inserted into the sampling container before attaching to the 1620 minimes test points to avoid accidental spillage.

The upper port will provide pre-filtration sampling, while the lower port will provide post-filtration sampling.

Alternatively an FS9001 fuel & oil cleanliness monitor can be attached to these ports for providing real-time instant readings of fuel cleanliness.

Pump

The unit is fitted with a continuously rated vane pump capable of delivering up to 100 ltrs/min and a maximum pressure of 2.8 bar, after which point the pumps internal bypass will open.



The pump can achieve a suction lift height of 2m (up to 4m with a non-return valve installed). Prior to the initial start-up phase the pump should be wetted which will aid in suction performance and prevent galling and serious damage to the internal gears.

Isolation Valves



Isolation valves are fitted to the inlet and outlet ports. These should be closed off when the system is not in use, or when filter cells are being changed out. It is also advisable to cap off ends of the pipework to prevent contaminants from entering the system.

Hoses & Lances

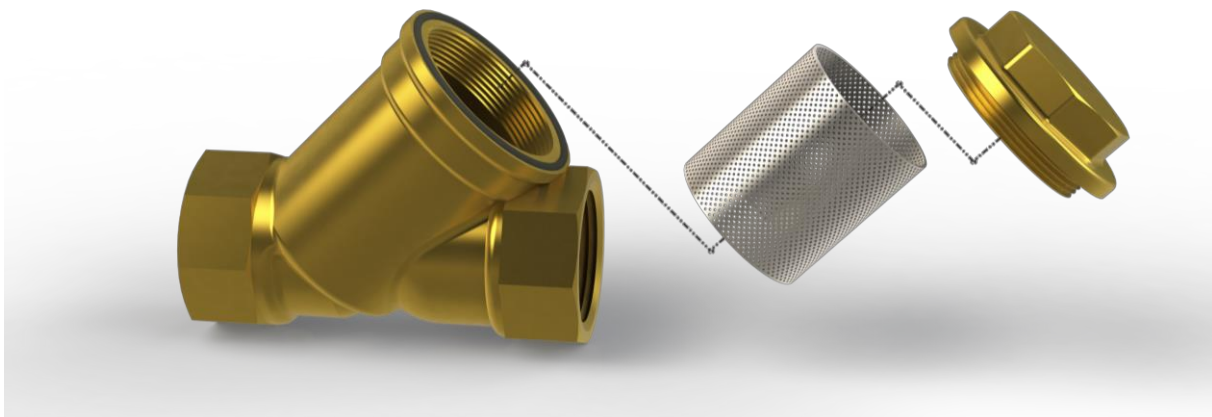
The unit is supplied with two 1" lances, a suction lance with strainer to protect the pump and a discharge lance. Each lance is 1000mm long.

When not in use it is advisable to plug the hoses and cap off the lances to prevent ingress of dust or other contaminants.

Lances should be cleaned prior to inserting in the tank/barrel being cleaned.



Suction Strainer



The suction strainer will periodically need cleaning by unscrewing the cap, removing the mesh strainer and cleaning this out with a fluid suited for the units intended purpose e.g. hydraulic oil.

Troubleshooting

Symptom	Problem	Solution
Does not start	On/Off switch No electrical power	Turn switch on pump/motor and control box Check fuses
Erratic motor noise	Defective motor Motor overheated Worn motor vanes	Replace motor Allow motor to cool Replace motor vanes
Intermittent start/stop operation	High viscosity fluids	H.V fluids cause the motor to overheat intermittently
Hot motor	Pumping heavy load	Motor will heat up, allow to cool
No flow	No fluid in filter housing	Run the unit for a few seconds
Erratic pump noise	Suction leak	Check inlet fittings and hoses
No suction	Blocked strainer	Clean or replace strainer
Reduced flow	High viscosity Filter cell dirty Obstruction in hoses Suction leak Worn vanes	Check fluid compatibility Replace filter cell Clean hoses Check tightness of fittings Replace vanes
Differential pressure indicator shows yellow/red	Filter cell dirty Obstructed outlet	Replace or clean filter cell Clear outlet obstruction
Differential pressure indicator does not move	No cell fitted	Install filter cell
Hoses discolour	Fluid Compatibility	May occur over time, should not impair performance
Hoses becoming rigid	Fluid Compatibility	Brittle hoses would require replacement
Spills under unit	Defective shaft seal Hose leaks	Replace seals where necessary Tighten all joints

Spare Parts List

Description	Part Number
1 µm disposable polypropylene	FT-19PP001-1GYEP
5 µm disposable polypropylene	FT-19PP005-1GYEP
10 µm disposable polypropylene	FT-19PP010-1GYEP
25 µm disposable polypropylene	FT-19PP025-1GYEP
50 µm disposable polypropylene	FT-19PP050-1GYEP
100 µm disposable polypropylene	FT-19PP100-1GYEP
200 µm disposable polypropylene	FT-19PP200-1GYEP
10 µm recleanable nylon	FT-19NM010-1GYEP
25 µm recleanable nylon	FT-19NM025-1GYEP
50 µm recleanable nylon	FT-19NM050-1GYEP
75 µm recleanable nylon	FT-19NM075-1GYEP
100 µm recleanable nylon	FT-19NM100-1GYEP
200 µm recleanable nylon	FT-19NM200-1GYEP
300 µm recleanable nylon	FT-19NM300-1GYEP
400 µm recleanable nylon	FT-19NM400-1GYEP
600 µm recleanable nylon	FT-19NM600-1GYEP
800 µm recleanable nylon	FT-19NM800-1GYEP
1 µm absolute rated pleated filter	FT-CE-01-Z01
1 µm high efficiency disposable polypropylene	FT-19HE001-1GYEP
5 µm high efficiency disposable polypropylene	FT-19HE005-1GYEP
FiltaSorb2 water removal cell	FT-FA-01-002


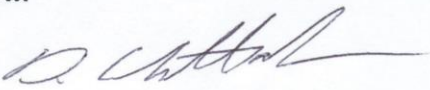
Warranty Statement

All products manufactured or distributed by Filtertechnik Ltd are subject to the following, and only the following, Limited Express Warranties, and no others:

For a period of one (1) year from and after the date of delivery of a new Filtertechnik product, Filtertechnik warrants and guarantees only to the original purchaser/user that such a product shall be free from defects of materials and workmanship in the manufacturing process. The warranty period for pumps and motors is specifically limited to ninety (90) days from the date of delivery. A product claimed to be defective must be returned to the place of purchase. Filtertechnik, at its sole option, shall replace the defective product with a comparable new product or repair the defective product. This express warranty shall be inapplicable to any product damaged or impaired by external forces or used for any purpose other than that for which it was originally sold.

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EC Declaration of Conformity

 <p>Filtertechnik Filtration, Purification & Separation Solutions</p>		<p>EC DECLARATION OF CONFORMITY</p>
<p>Machinery Description</p>		
<p>Machine Type</p>	<input type="text" value="DFT FILTER CART"/>	
<p>Serial Number</p>	<input type="text"/>	
<p>Applicable Directives</p> <p>Low voltage Directive 73/23/EEC (as ammended by 93/68/EEC) Electromagnetic Compatibility Directive 2004/108/EC Machinery Directive 98/37/EC</p>		
<p>Declaration</p> <p>We, Filtertechnik Limited, decalre that the above referenced product(s), to which the declaration relates, is in conformity with the provisions of the Directives listed above</p> <p>IMPORTANT</p> <p>This declaration is only valid when the machinery has been installed, operated and maintained in accordance with the applicable Installation, Operation and Maintenance Instructions and safety guidelines contained within as well as instructions supplied for equipment assembled with or intended for use with this equipment.</p> <p>The technical construction file for this product is maintained at the address given below.</p> <div style="text-align: center;">  </div> <p>Mr D Whittaker, Engineering Director Filtertechnik Limited, 1 Central Park, Lenton Lane, Nottingham, NG7 2NR England.</p>		