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# McHUGH

C O M P O N E N T S

## ULSD DIESEL INFORMATION

UPDATED  
SEP 2011

**To ensure compliance with regulations governing vehicle engine emissions and under EU Environmental Directive all diesel fuel/gas oil supplied in Ireland for on or off road use from March 31st 2011 must be Ultra Low Sulphur Diesel (ULSD). There are some exceptions made for diesel used in certain marine applications and for heating purposes.**

The introduction of ULSD/Gas Oil can present difficulties for end users who use their own bulk storage tanks for refuelling vehicles. However by taking some simple precautions and adopting good "housekeeping" practices the scale of the difficulties will be reduced thus protecting fuel pumps and injectors on vehicles from unnecessary and expensive damage or wear.

### **What problems can ULSD present?**



#### **Water**

The new ULSD fuel can potentially hold up to 25 times more suspended water than previous diesel / gas oil.

#### **Sources of Water contamination:**

Delivery of contaminated fuel. Condensation on inside of storage tank as fuel level drops. The natural increased effect of the ULSD fuel absorbing moisture from the atmosphere. Ingress of water through poor or damaged tank closure.



#### **Bacteria**

The new ULSD fuel creates the perfect habitat for promoting the growth of micro bacteria in the storage tank. The bacteria which grows at the interface of the fuel and the water will cause contamination of the fuel, filter blockages, excessive exhaust smoke and reduced power output from the engine.



#### **Particle Contamination**

The new ULSD fuel has a "cleaning" effect on the inside of the storage tank and piping, releasing the build up of old residue and contaminating the fuel. This effect is reduced after 2-3 fills of ULSD have occurred.



#### **System Protection**

The new ULSD fuel is extremely aggressive and will attack the components of non compatible filters, damaging seals, leading to leaks and contamination of the fuel.

### **How to solve those problems**



Ensure delivery of fuel is from a trusted supplier.



Ensure tank closure is in good condition and fitted correctly. If not already in place fit a Tank Breather Device.



Install a Cim-Tek filtration Tank Dryer in bottom of storage tank to prevent water accumulation.



It is essential that a ULSD fuel compatible, water absorbent type filter with a particle filtration capacity of 10 micron or better be installed on the tank outlet. Whilst it is possible to use such a filter with a gravity feed, for optimum efficiency and better filter performance it is recommended that the fuel should be pumped through the filter. The filter should always be fitted to the outlet side of the pump to prevent cavitation.



Initially you may need to replace the tank filters at frequent intervals until all the old contaminant has been removed.



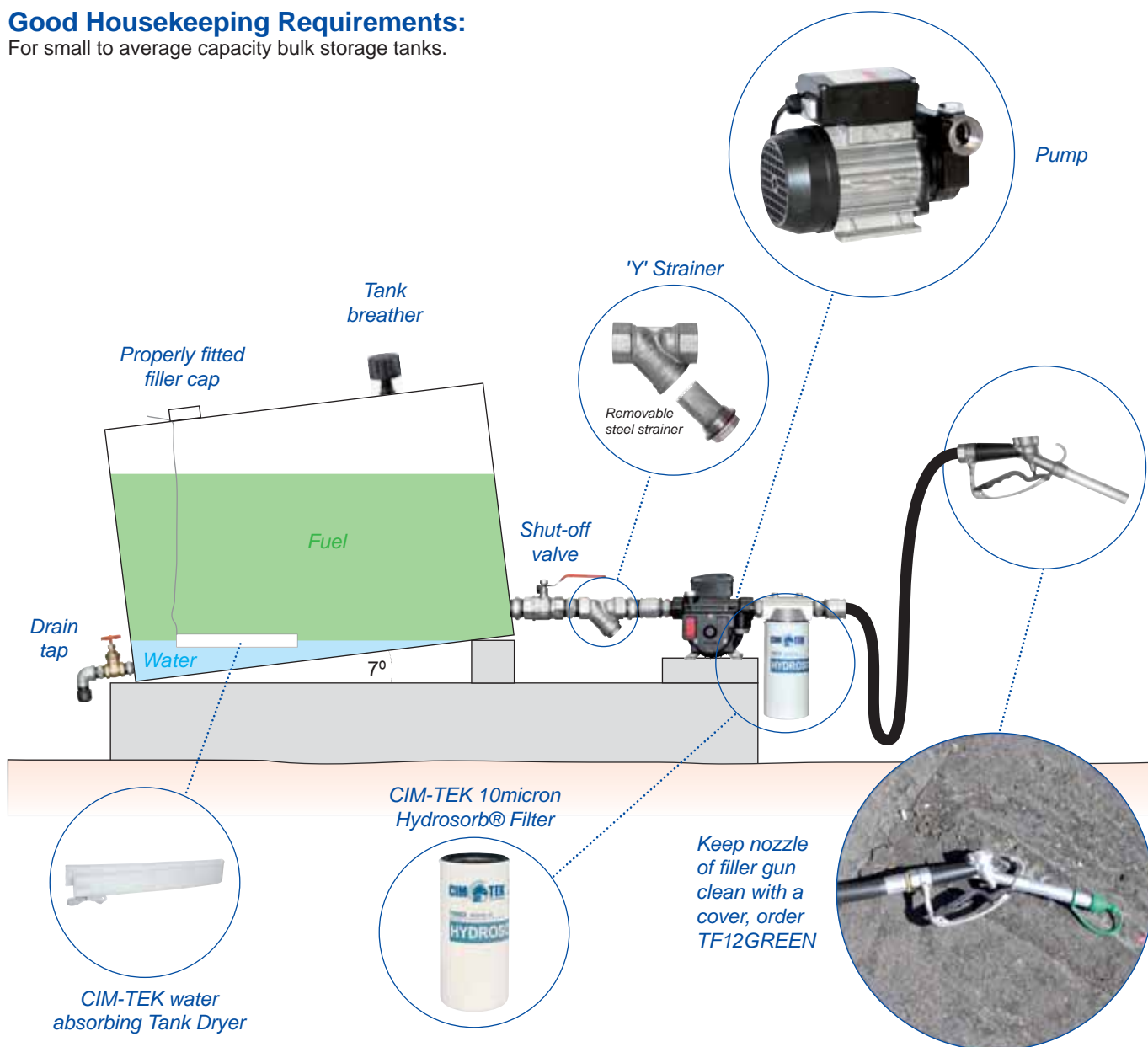
As an added protection for the engine you could consider fitting an NTZ Ultra Efficient Fuel Filter or a Fleetguard Diesel Pro® to your engine.

### **Summary**

*Be pro-active, do not wait until the problems occur. The key to ensuring clean fuel for your engine and minimizing the risk of breakdown is proper filtration and good housekeeping. See illustration and information on good housekeeping on page 2 of this leaflet. An added precaution is to keep storage tank as full as possible to reduce condensation and have as short an interval as possible between fills.*

**Good Housekeeping Requirements:**

For small to average capacity bulk storage tanks.



- Fuel tank should always be situated with the rear of the tank lower than the outlet side. This is to allow any water in the tank to gather at the rear of the tank. An angle of 7 degrees is sufficient.
- The rear of the tank should be fitted with a drainage point to allow water to be periodically drained off. Any drained off fluid should be disposed of in a safe and environmentally sound manner
- Any leaks at pipe joints should be repaired. If fuel can leak out dirt and water can leak in!!
- A correctly fitting cap should be used to close filling point on tank.
- Fit a breather cap to trap moisture entering the tank.
- Fit a Y strainer at tank outlet to catch large dirt particles before they reach the pump or filter. Regularly check and clean the strainer.
- Use a Cim-Tek Tank Dryer to absorb water at bottom of tank. Check regularly and replace when full.
- Keep nozzle of filler gun clean, cover when not in use to prevent dirt being transferred to vehicle fuel tank. Protect your nozzle with a cover, order TF12GREEN.



### HydroSorb® Filters - Water Absorbing Tank Filter

Cim-Tek Filtration, Illinois are the world leader in fuel filter technology. They offer the ideal solution to ULSD Diesel filtration with the patented HydroSorb® range of filters for particle and water removal. HydroSorb® has a high particle and water holding capacity which results in cleaner fuel. Available in 10 or 30micron.

Please use the table below to help you choose the most suitable filter for your needs.

#### HydroSorb® Filters

Less Filter Head



FILTER PART NUMBER	CT70075	CT70076	CT70060	CT70065	CT70063
DESCRIPTION	Standard water block filter with High water holding capacity	Standard water block filter with High water holding capacity	Short filter for tight spaces	Short filter for tight spaces	Commercial water block filter for high flow applications
MICRON	10	30	10	30	10
WATER BLOCK	Yes	Yes	Yes	Yes	Yes
WHC	250 ml	260 ml	130 ml	130 ml	540 ml
GRAVITY FEED	No	Yes	No	Yes	No
PUMP	Yes	Yes	Yes	Yes	Yes
LPM	95 lpm	95 lpm	95 lpm	95 lpm	150 lpm
ULSD	Yes	Yes	Yes	Yes	Yes
FILTER HEIGHT	8"	8"	5 1/2"	5 1/2"	11"

#### Filter Heads

to suit HydroSorb® Filters



1" HOUSING PART NUMBER	CT50034	CT50034	CT50034	CT50034	CT50105
1 1/2" HOUSING PART NUMBER	-	-	-	-	CT50208



### Tank Dryer - Water Absorbing Polymer

Cim-Tek has developed a water absorbing product called the Tank Dryer for use with fuel storage tanks. The Tank Dryer contains a proprietary super-absorbent polymer that absorbs free water at the bottom of tanks containing diesel, bio diesel and fuel oil. It is easy to use, inexpensive, and helps to prevent downtime caused by water contamination. Take care of the problem before it starts . . . use Cim-Tek® Tank Dryer.

DESCRIPTION	PART NUMBER
Cim-Tek Tank Dryer	CT60038

Don't take chances with cheap imitations

### Goldenrod Partical and Water Block Filter Assemblies

The Goldenrod Partical and Water Block fuel filter has a transparent bowl which allows for visual monitoring of fuel.

Suitable for ULSD Diesel.

Genuine **GOLDENROD**



TYPE	MICRON	WATER BLOCK	GRAVITY FEED	PUMP FEED	LPM	ULSD	PAPER ELEMENT ONLY	COMPLETE ASSEMBLY & ELEMENT
Particle only	10	No	Yes	Yes	100 lpm	Yes	<b>TOG50470</b>	<b>TOG50495</b>
Particle / Water block	15	Yes	Yes	Yes	100 lpm	Yes	<b>TOG50496</b>	<b>TOG50W496</b>

### AC Pump & Filter Kits

Includes:

- Tank Dryer
- 'Y' Strainer
- Pump (Available with 60 or 100lpm pump)
- CIM-TEK 10micron Hydrosorb® filter
- Fittings



DESCRIPTION	PART NUMBER
60lpm AC pump and filter kit	<b>PFK001</b>
100lpm AC pump and filter kit	<b>PFK002</b>

### AC Distributor Unit & Filter Kits

Includes:

- Tank Dryer
- 'Y' Strainer
- Distributor Unit with delivery hose and nozzle (Available with 60 or 100lpm pump)
- CIM-TEK 10micron Hydrosorb® filter
- Fittings



DESCRIPTION	PART NUMBER
60lpm AC Distributor unit and filter kit	<b>PFK003</b>
100lpm AC Distributor unit and filter kit	<b>PFK004</b>

### DC Pump & Filter Kits

Includes:

- Tank Dryer
- 'Y' Strainer
- Pump (40lpm pump, 45/60lpm available on request)
- CIM-TEK 10micron Hydrosorb® filter
- Fittings



DESCRIPTION	PART NUMBER
40lpm 12V DC pump and filter kit	<b>PFK005</b>
40lpm 24V DC pump and filter kit	<b>PFK006</b>

### Diesel Delivery Hoses to suit Pump & Filter Kits



DESCRIPTION	PART NUMBER
4 metre 1" delivery hose to suit AC units (1" BSP x 1" BSP)	<b>DDH14</b>
6 metre 1" delivery hose to suit AC units (1" BSP x 1" BSP)	<b>DDH16</b>
4 metre 3/4" delivery hose to suit DC units (1" BSP x 3/4" BSP)	<b>DDH344</b>
6 metre 3/4" delivery hose to suit DC units (1" BSP x 3/4" BSP)	<b>DDH346</b>

### Automatic Delivery Guns



DESCRIPTION	PART NUMBER
Aluminium nozzle with automatic shut off - 60lpm	<b>TOG1038</b>
Aluminium nozzle with automatic shut off - 120lpm	<b>TOG1040</b>



**Grotamar® 82 - Diesel Biocide**

The first biocide with a protective formula for modern diesel fuels.

- Specifically developed for modern diesel fuels including low sulphur diesels and fuel containing biodiesel
- New protective formula to prevent premature oil degradation caused by ageing
- Fast and highly effective against bacteria, yeasts and moulds
- Excellent long-term protection for fuel tank, pipes and engine
- Excellent solubility and dispersion in all types of diesel fuels, heating oils (including B0-B20) and biodiesel
- No corrosive combustion products
- Effectively protects steel, aluminium, copper and other non-ferrous metals against corrosion

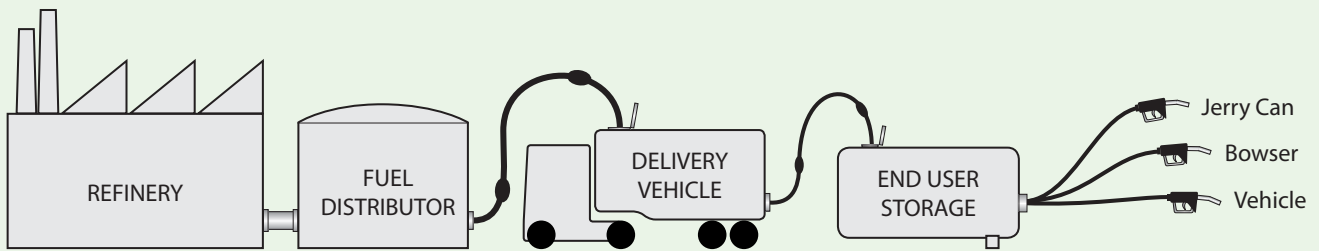


**Dosing:**

- Shock dosing: 1 bottle of grotamar® 82 (1 litre) per 1000 litres of fuel
- Preventative: Add 250ml per 1000 litres of fuel every time the tank is refilled

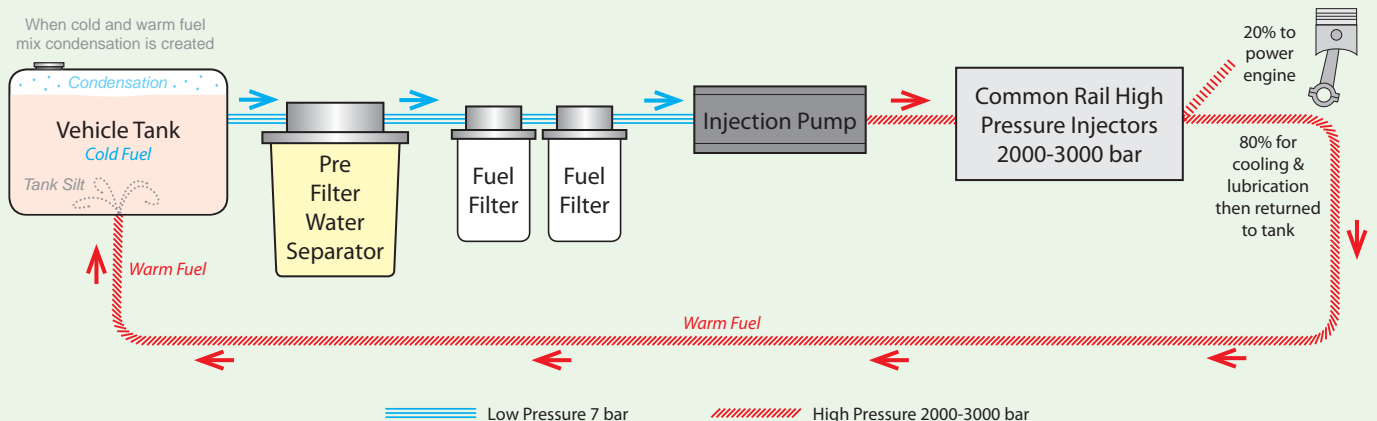
DESCRIPTION	PART NUMBER
1 litre bottle of Grotamar® 82	BIOC001

**Diesel Transport: Possible Areas of Contamination**



**Diesel Movement in Vehicle**

When cold and warm fuel mix condensation is created





## Lower Fuel Consumption, that's what it's about!



It is a known fact that an engine's fuel consumption increases as it ages; this is a result of wear of the fuel system and the engine. This wear reduces the engine's capacity, as a result of which more throttle is required to achieve the same performance. By removing a significant amount of wear particles from the engine oil and fuel, the ageing process is slowed down dramatically. As a result, both the lubrication of the engine and the reaction time in the fuel system remain in optimal condition. This also means optimal fuel consumption is achieved.

### Ultra efficient fuel filter

The introduction of common rail diesel injection systems, with extremely high injection pressures and sensitive components, has led to higher cleanliness requirements of the fuel. Particles in the fuel cause excessive wear, a limited life-time and an increase in injection system failures. The contamination levels of standard fuel increase the need for an effective filter even more.

### Concrete Advantages of Cleaner Fuel:

- Fewer breakdowns
- Less wear and tear
- Structural cost savings
- Longer service life of equipment
- Improved performance
- Environmentally friendly

The ATFD/ALD fuel filters are installed directly in the main circuit, preferably directly after the standard fuel filters. To be assured of optimal filtration, the fuel system needs to be fitted with a proper water separator. The ATFD/ALD fuel filters are equipped with an internal bypass, thereby ensuring an unrestricted flow of fuel through the entire fuel system under all circumstances.



Typical applications

**Example of information required to assist in specifying a filtration system custom to your site.**

The image to the right is part of a typical questionnaire which can aid in specifying the set up of your diesel storage.

### Diesel Storage

**Diesel Storage and Consumption Questionnaire**

Customer Name : \_\_\_\_\_

Contact Number : \_\_\_\_\_

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• Type and Age of Storage Tank :      Steel       Plastic       Years

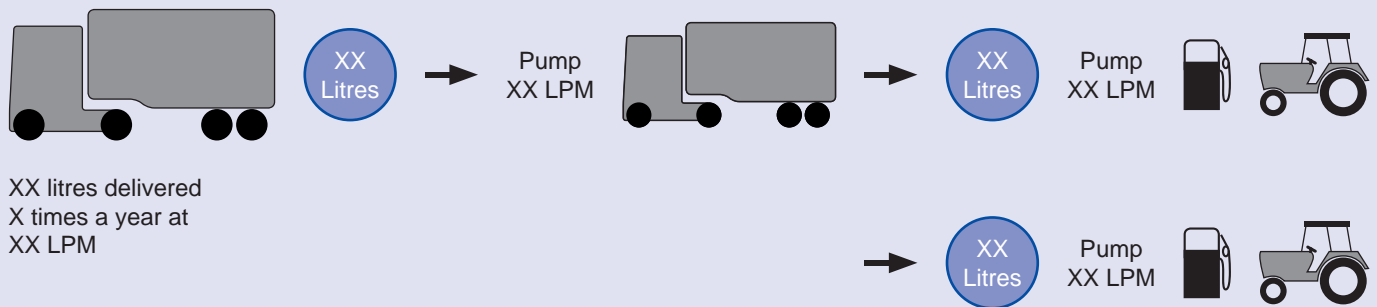
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• Location :      Outdoors       Sheltered       Indoors

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• Capacity in Litres :       litres

### A Site Layout Schematic Outlining Handling of Fluids After Delivery



*Photos of your application including the Tank, Inlet and Outlet connections*



### Sizing Fuel Filtration Systems

- Flow rate
- Pump type and pressure
- Delivery method and rate
- Pipe Size
- Tank size
- Water options
- Volume of usage
- Target ISO cleanliness

**MR. FUNNEL Fuel Filter Funnel**



The Mr. Funnel Fuel Filter is a heavy-duty, fast-flow, convenient and portable funnel with built-in, patent pending filter. Its specially designed to filter out water, dirt, and debris from most fuels including, gasoline, diesel, heating oil, and kerosene. Ideal for Lawnmowers, ATV, Chainsaws, Boats, Strimmers, Generators etc.



The Mr. Funnel Fuel Filter comes in four different fast-flow models. Models differ mainly on flow rate. If your need is to transfer 20 liters or less of fuel, then the F1 and F3 are for you. If you are transferring more than 20 liters, then the F8 and F15 are right for you. F15 is the fastest flow model at up to 56 liters per minute. This model can also be used at a fuel pump. Get your Mr. Funnel Fuel Filter today, and keep your engine running smooth.

Extension for F3 funnel available on request, Part Number: FGP030004.

	F1	F3	F8	F15
<b>DIAMETER</b>	90	140	216	216
<b>HEIGHT</b>	150	220	254	254
<b>FLOW RATE</b>	10 lpm	14 lpm	19 lpm	56 lpm
<b>PART NUMBER</b>	<b>FGP030000</b>	<b>FGP030001</b>	<b>FGP030002</b>	<b>FGP030003</b>



*Available to Order*

**Diesel Pro®**

Dirt and contaminant removal, effective fuel / water separation and high quality filtration reduce component wear and create optimized fuel atomization and engine power. Fleetguard Diesel Pro® address critical fuel filtration problems and protect engine's components. With three times longer filter life than standard filters and up to seven times better fuel / water separation for emulsified water than competitive products, the new Diesel Pro® offers an integrated solution to customer needs.

DESCRIPTION	PART NUMBER
Diesel Pro® -16mm ports, 7 micron filtration	<b>FH23616M</b>



For a full listing on all the parts in our Fuel Delivery Range see our Workshop Catalogue.

Listings include:

- Fuel Guns
- Fuel Meters
- Filters / Strainers
- Fuel Pumps
- Delivery Hoses
- Hosetails / Fittings

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