micfil INTERNATIONAL®

QUALITY PRODUCTS MADE IN GERMANY

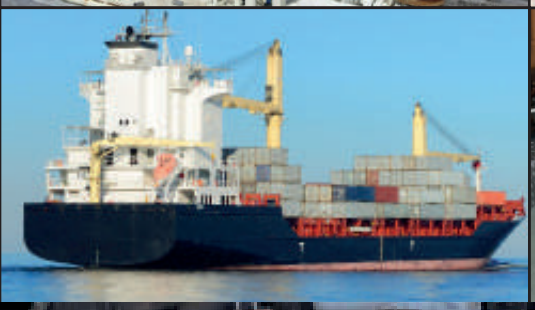
PRODUCED IN GERMANY

BROCHURE

Special oils & fuels filter system solution for:

Maritime · Offshore · Production Industry · Hydraulic sytems · Defence · Transport · Mining




BUREAU VERITAS 1828 BUREAU VER TAS

RINA 1861

TÜV

DEKRA certified ISO 70012013

UMTEC Institut für Umwelt- und Verfahrenstechnik

it's time to go green

www.micfil.com

IMPROVED FILTER INSERTS NOW ELIMINATE APPROX. 98% OF ALL BACTERIA

CONTENTS

WE WILL SIGNIFICANTLY REDUCE YOUR CARBON FOOTPRINT.
IT IS JUST A MINDSET AWAY, TALK TO US!

micfil® INTERNATIONAL

QUALITY PRODUCTS MADE IN GERMANY

MICFIL ULTRA FINE FILTERS GMBH.
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INTRODUCTION

Dear Sir or Madam,

in this brochure we would like to present our innovative range of micfil ultra fine filters - **made in Germany. Together with our modular filter systems, including water separators and fuel optimizers, we remove particles and other impurities down to 0.5 µm and bacteria/fungus are eliminated in a single pass. In addition, we remove all moisture from oil and fuel. In engine oil we prevent the formation of acid, keep the TBN high and thus the oxidation low. Additives are definitely not removed!** We achieve the same with hydraulic oil, gear oil, turbine oil, transformer oil, compressor oil and many other types of oil.

This means that you no longer need to change the oil in your engine, hydraulic or transmission system, etc. You can extend the life of the oil indefinitely (proven by regular oil analyses). Few people realize that oil is a mineral, similar as iron or copper, and can only be destroyed by combustion or oxidation.

Our filter systems improve the lubricating properties of the engine oil many times, even compared to fresh oil. We also achieve significantly more efficient combustion of fuel.

Conclusion: with our filters you can;

- **save 80-90 % engine oil, hydraulic oil, turbine oil, compressor oil, gear oil, etc.**
- **save 3-5 % diesel.**
- **eliminate approx. 98 % of all bacteria.**
- **significantly reduce spare parts demands (bearings, bearing shells, etc.).**
- **save injectors and injector pumps and achieve a much longer service life.**
- **significantly reduce the downtime of your machinery.**
- **as a company interested in the environment you can significantly reduce your carbon footprint.**

Most engine failures are caused by contaminated oil and diesel. However, we hope that this information will convince you to use micfil filters to protect your investments, reduce future running costs by 80-90% and make your contribution to environmental protection. Our customers are very satisfied with the results achieved.

If you are interested or have questions about our products,
you are welcome to contact us by phone or e-mail.
We look forward to a personal consultation with no obligation.

Yours

Cpt. Alexander Proch
CEO micfil Ultra Fine Filters GmbH.

micfil INTERNATIONAL
QUALITY PRODUCTS MADE IN GERMANY

- Up to 20 times higher filter performance than standard filters
- Improvement of the lubricity of the oil
- Longer engine life due to less wear
- Additives are not filtered out and therefore last longer less
- No conventional oil change needed
- Lower maintenance and repair costs
- Better protection of the environment through reduced oil consumption and waste oil disposal
- No limitation of motor manufacturer's warranty
- Elimination of approx. 98 % of all bacteria
- Removal of water from oils and fuels

DUE TO THE MICFIL ULTRA FINE FILTRATION AN OIL SERVICE LIFE OF MORE THAN 20,000 HOURS WITH REGULAR OIL ANALYSES HAS BEEN ACHIEVED

ULTRA FINE FILTER FOR OIL AND DIESEL

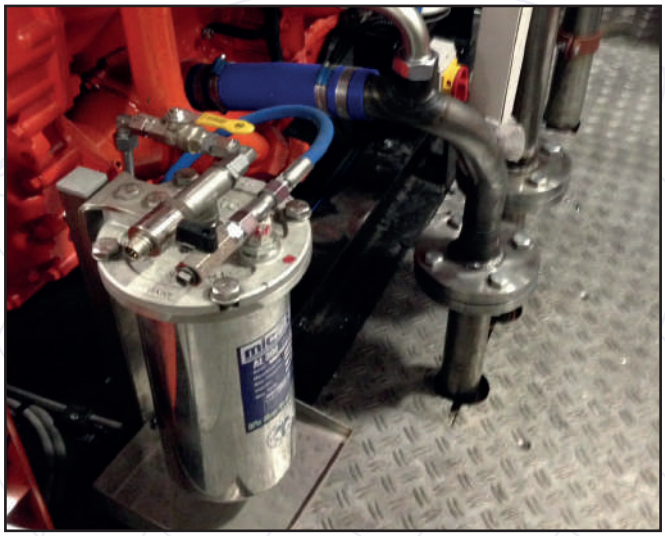
INDIVIDUAL SYSTEMS ARE AVAILABLE ON REQUEST

The housing of our micfil ultra fine filters is made of either seawater-resistant aluminium or V4A stainless steel. Our aluminium housings are RINA certified. The stainless steel housings are certified according to Bureau Veritas. The filter housings of our ultra fine filters are manufactured in various modular sizes for micfil ultra fine filter inserts of 90mm, 150mm, 300mm, 600mm, 900mm and up to 1200mm.

The new improved micfil ultra fine filter insert consists of a special tear-resistant fiber mesh with woven cellulose fibers that enables us to achieve a filter performance of up to 0.5 µm even at high flow rates and to remove bacteria (diesel fungus). The unique design of the filter allows a blockage-free operation.

The micfil ultra fine filter insert has a very large dirt holding capacity, long service life, low differential pressure and it removes moisture from oils (hydraulic, engine, turbine, transformer, compressor and transmission oil) as well as approx. 98 % of all bacteria from diesel fuels.

The modular micfil ultra fine filter systems are ideally suited for all equipment in which oils and fuels are used and perform better than most standard filters.



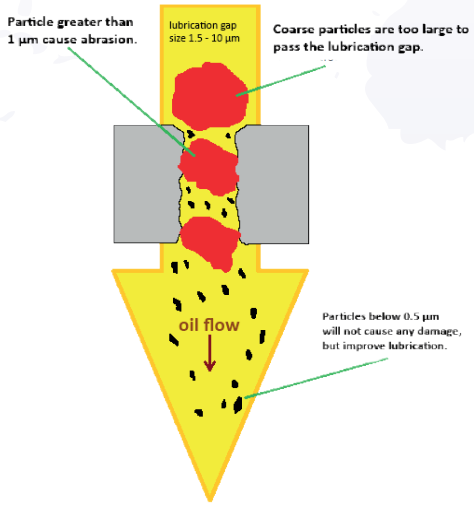
ULTRA FINE FILTER FOR ENGINE OIL

Although the lubricating gaps in the engine have a size of approx. 2 to >10 µm, the usual standard oil filters have only a filter capacity of up to approx. 20 µm at best. Oil is a mineral and does not age, but a process of change is caused by dirt and abrasion particles, combustion residues (soot), oxidation products and water (by condensation) in the engine.

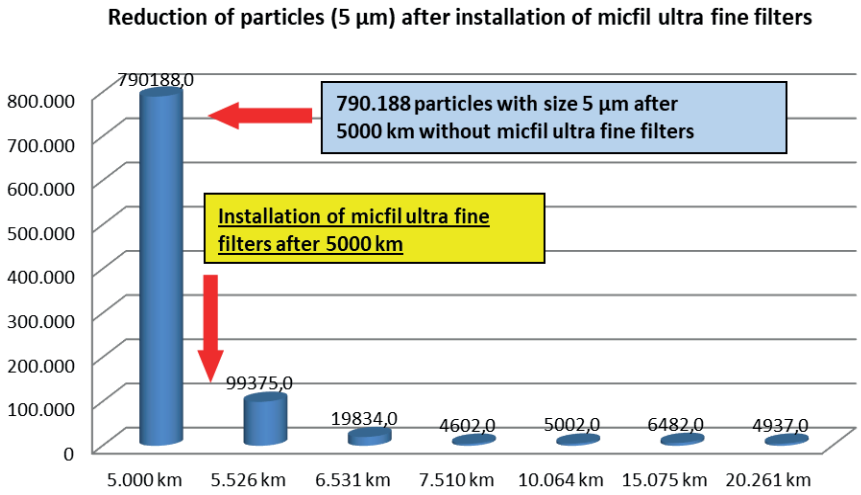
Standard filtering is not sufficient as only particles with a size of 20-35 µm are filtered. During an oil change, some of the contaminated oil remains in the engine. The number of dirt and abrasion particles is constantly increasing and the engine runs continuously with contaminated oil and solid particles. This causes further abrasion.

Standard filters are not able to filter out condensed water and prevent acid formation. This leads to a reduction in TBNs and an increased oxidation.

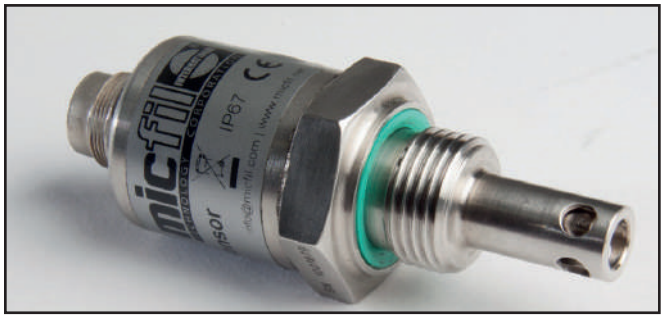
The micfil ultra fine filter has a filter performance approx. 20 times higher than a standard filter. Dirt, combustion, oxidation and abrasion particles of up to 0.5 µm are constantly filtered out of the oil. Particles of less than 1 µm remain in the oil. They do not cause any damage and accumulate in the oil which contributes to additives for better lubrication. This significantly increases the load-carrying capacity (lubricity) compared to fresh oil and the thermal load capacity of the oil. These properties become better the longer the oil is used.



In comparison: abrasion without (left) and with micfil ultra fine filter after 4000 h without oil change (right).



An oil change is therefore not necessary for technically good engines. The micfil ultra fine filter acts like an oil recycling system on the engine. Nevertheless, other causes, e.g. overheating, material defects, etc., can cause damage to the engine. The technical condition of the engine should therefore be checked regularly by oil analyses, for example by using the micfil oil condition sensor.



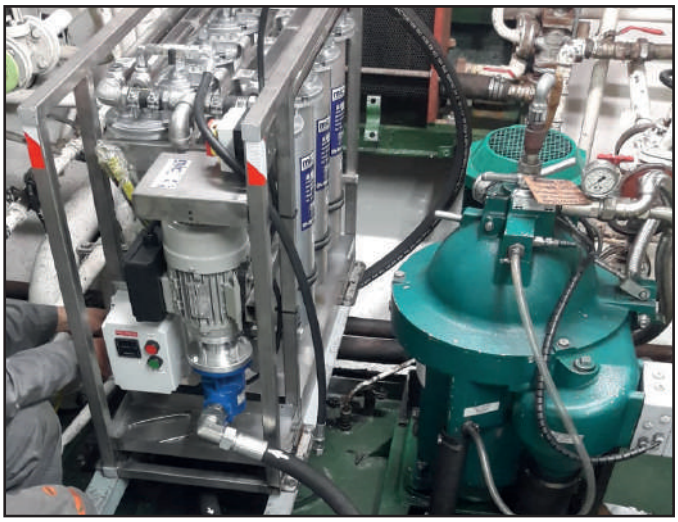
The micfil oil condition sensor indicates a sudden change in the oil, which points to a defect in the engine. Damages to the engine should be analysed and repaired - they cannot be repaired by an oil change. **Through early detection and subsequent repair larger damages and costs can be prevented. Several sensors can be managed centrally on one display.**

The micfil filter insert binds water, thus counteracts acid formation and protects the alkaline reserve in the oil.

Flow rate* (l/h)	Filter type
50	1x AL/ST 150
100	1x AL/ST 300
300	2x AL/ST 300
600	3x AL/ST 300

*Higher flow rates or oil volumes are possible by adding additional filters.

ULTRA FINE FILTER FOR GEAR OIL



Gearboxes are exposed to heavy loads and standard filtering is not sufficient in most cases. **An additional micfil ultra fine filter with a filtration capacity of up to 0.5 µm cleans the oil permanently and keeps it largely free of condensed water. This minimizes abrasion and damage.** micfil ultra fine filters have proven to work efficient especially under difficult operating conditions, e.g. in wind turbines.

Particle size ISO 4406	Without micfil filter (per 100 ml)	With micfil filter (per 100 ml)
> 4 µm	177.305	13.925
> 6 µm	48.601	3.246
> 10 µm	6.557	1.547
> 14 µm	4.615	466
Water ppm	281	54
ISO 4406	21/19/16	18/16/12

Due to the additional ultra fine filtration up to 98% of the solid particles and up to 90% of the water are filtered out compared to standard filtration.

Flow rate* (l/h)	Filter type
125	1x AL/ST 150
250	1x AL/ST 300
500	2x AL/ST 300
750	3x AL/ST 300

*Higher flow rates or oil volumes are possible by adding additional filters.

ULTRA FINE FILTER FOR TURBINE/COMPRESSOR/HYDRAULIC OIL

The maintenance of the turbine/compressor/hydraulic oil is often neglected. **Regular oil maintenance is one of the crucial factors for trouble-free operation.** The components in modern turbines, compressors and hydraulic systems operate on an oil film of less than 10 µm. This low oil film guarantees a smooth function of the systems, but requires an absolutely clean oil. In practice, many pressure fluids which are used in turbines, compressors, hydraulic systems etc. are highly contaminated even when they are new and unused. This is not always visible since the visibility limit for the human eye is approx. 40 µm.

The micfil ultra fine filter used in the return or off-line flow with a filter performance of up to 0.5 µm ensures continuous cleaning of the turbine/compressor/hydraulic oil and absorbs condensed water. It reduces component wear on valves, cylinders and pistons and reduces the risk of malfunctions.

Particle size ISO 4406	Without micfil filter (per 100 ml)	With micfil filter (per 100 ml)
> 2 µm	1.845.320	52.475
> 5 µm	1.583.675	2.450
> 10 µm	1.415.367	341
> 15 µm	1.256.380	45
Water ppm	5.450	175
ISO 4406	21/21	11/6

Using micfil ultra fine filters, up to 99 % of the solid particles and 98 % of the water are filtered out compared to a standard filtration.

Flow rate* (l/h)	Filter type
250	1x AL/ST 150
500	1x AL/ST 300
1000	2x AL/ST 300
1500	3x AL/ST 300

*Higher flow rates or oil volumes are possible by adding additional filters.

ULTRA FINE FILTER FOR FUEL

The high injection pressure of modern diesel engines requires clean and water-free fuel, which is not always available. **Standard filtering is not enough in many cases. The high particle filtering power of the micfil ultra fine filter of up to 0.5 µm, the absorption of water (in contrast to a standard filter) and the removal of bacteria make the micfil ultra fine filter a very effective fuel filter. Injection nozzles and pumps, as well as piston rings are protected and their service life is significantly extended**. Unburnt particles do not get into the oil via the piston rings.

Particle size ISO 4406	Without micfil filter (per 100 ml)	With micfil filter (per 100 ml)
> 2 µm	2.817.700	143.500
> 5 µm	1.534.500	20.400
> 15 µm	11.040	2.270
> 25 µm	2.270	530
ISO 4406	22/21/14	18/15/12

Even in the case of heavily polluted fuel, the additional micfil ultra fine filtration filters out up to 98% of the solid particles and water, as well as up to 98% of all bacteria in a single pass compared to standard filtration.

Flow rate* (l/h)	Filter type
300	1x AL/ST 150
600	1x AL/ST 300
1.200	2x AL/ST 300
1.800	3x AL/ST 300

*Higher flow rates or oil volumes are possible by adding additional filters.

WATER SEPARATOR

In the case of water in the fuel tank (condensed water caused by temperature differences or mixing during refueling), an ideal breeding ground for diesel-specific bacteria, fungi, yeasts and algae is created at the boundary layer between water and fuel. These microorganisms and their excretions lead to slimy deposits and acids. Bacteria can multiply rapidly. They double every 20 minutes under optimal conditions! Microorganisms and their slimy excrements clog filters and form tank sludge. **In extreme cases, this can lead to a total blockage of the entire fuel system and engine failure.**

The new micfil stainless steel water separator is used as a pre-filter for the micfil ultra fine filter and has proven to be effective in practice.

Together with our micfil ultra fine filter, the micfil water separator removes 99% of free water from fuel and is maintenance-free as no filter inserts have to be replaced. Due to its stainless V4A housing, it can also be used under extreme hazardous conditions.

An optional water sensor can be used to indicate the level of the extracted water in the water separator as an optical and acoustic signal. Central monitoring of several water separators is possible on one display. The water separator can be emptied manually or fully automatically.

micfil INTERNATIONAL®

QUALITY PRODUCTS MADE IN GERMANY

FILTER SYSTEMS FOR OIL AND DIESEL

FILTER SYSTEMS FOR HIGHER FLOW RATES

FB BULKFILTER

MOBILE TANK CLEANING SYSTEM

ECO WALL MOUNTED DIESEL CLEANING SYSTEM

BAG FILTER

ENGINE MONITORING AND MAINTENANCE

VACUUM OIL DEHYDRATION UNIT

AIR DEHUMIDIFIER

LASER CONTAMINATION MONITORING SENSOR

FILTER HEATING

MORE MICFIL PRODUCTS

MICFIL WATERS (WATER FILTER)

MICFIL TOUGHGUARD-NHP (CLEAR COAT)

MICFIL AQUADUNA (CLEANING SYSTEM)

If you are interested or have any questions about our product range, you are welcome to contact us by phone or e-mail. We are pleased to send you our complete product catalogue.

MICFIL EXAMPLE INSTALLATIONS

MICFIL INSTALLATION ON AN EXCAVATOR IN A MINE IN SEMIRARA

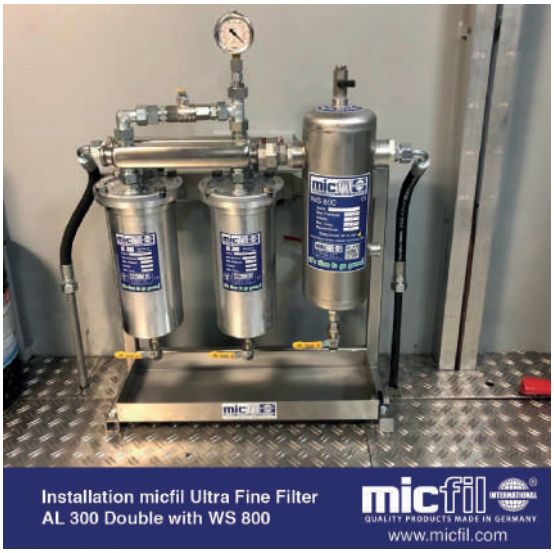
MICFIL INSTALLATION ON A CROISIEUROPE "RIVER CRUISE SHIP"

Filter element change for diesel after 800-1.500 h. Filter element change (oil) after 800 h.

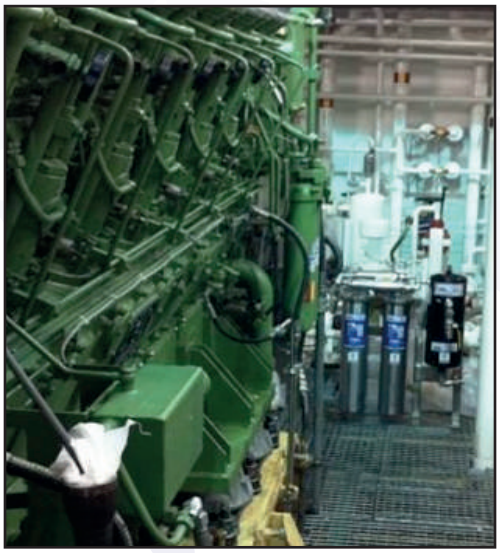
INSTALLATION OF FB BULK FILTERS ON AN INDONESIAN REFINERY FOR DIESEL AND BIODIESEL

Changing 1 µm high flow filter elements HF900 after 16.000.000 l.

MICFIL INSTALLATION ON A CATERPILLAR 36516 GENERATOR (PDVESA)



MICFIL INSTALLATION ON THE MS L'ADROIT



Fuel cleaning of an ABC engine, between the day tank and the main engine. The max. flow rate is 5.600 l/h.

INSTALLATION OF A MICFIL SYSTEM ON A 3 MW GAS TURBINE

MICFIL INSTALLATION ON A CROATIAN NAVI SHIP

micfil double system AL600 for oil

micfil quad system AL600 with WS1000 for diesel

INSTALLATION OF MICFIL SYSTEMS ON UCC TUB 26 TUGBOATS WITH TWO CUMMINS K50-CP 1005 ENGINES

micfil double system AL300 for oil

micfil double system AL300 and WS800 for diesel

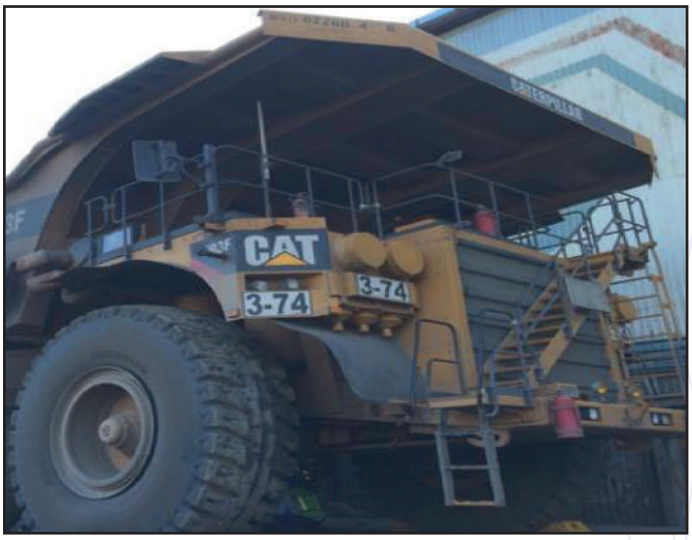
MICFIL WATER SEPARATOR AND DIESEL FILTER INSTALLATION ON AN ACTROS MILITARY TRUCK IN DOHA

INSTALLATION OF MICFIL AL 300 DOUBLE SYSTEMS FOR DIESEL AND OIL ON A CUMMINS GENERATOR

Before the installation of the micfil filters

After the installation of the micfil filters

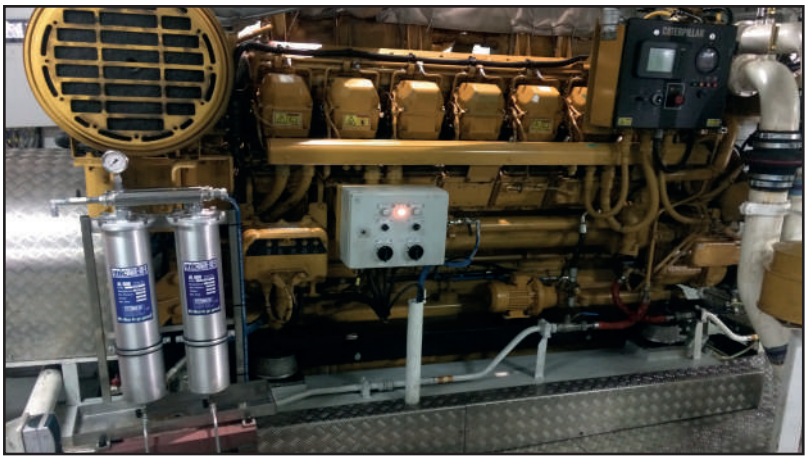
INSTALLATION OF A MICFIL AL 300 DOUBLE DIESEL SYSTEM ON A CATERPILLAR 797 F DUMP TRUCK



INSTALLATION OF MICFIL AL150 SYSTEMS FOR DIESEL AND OIL ON A POLICE BUS IN DUBAI

INSTALLATION OF MICFIL AL300 SYSTEMS FOR DIESEL AND OIL ON A FISHING BOAT

INSTALLATION OF AL600 SYSTEMS ON A DREDGER



AL600 double system for oil on a generator

AL600 double system with WS800 for diesel on the main engine

INSTALLATION OF MICFIL AL600 SYSTEMS ON A HEAVY-LIFT TRANSPORT SHIP

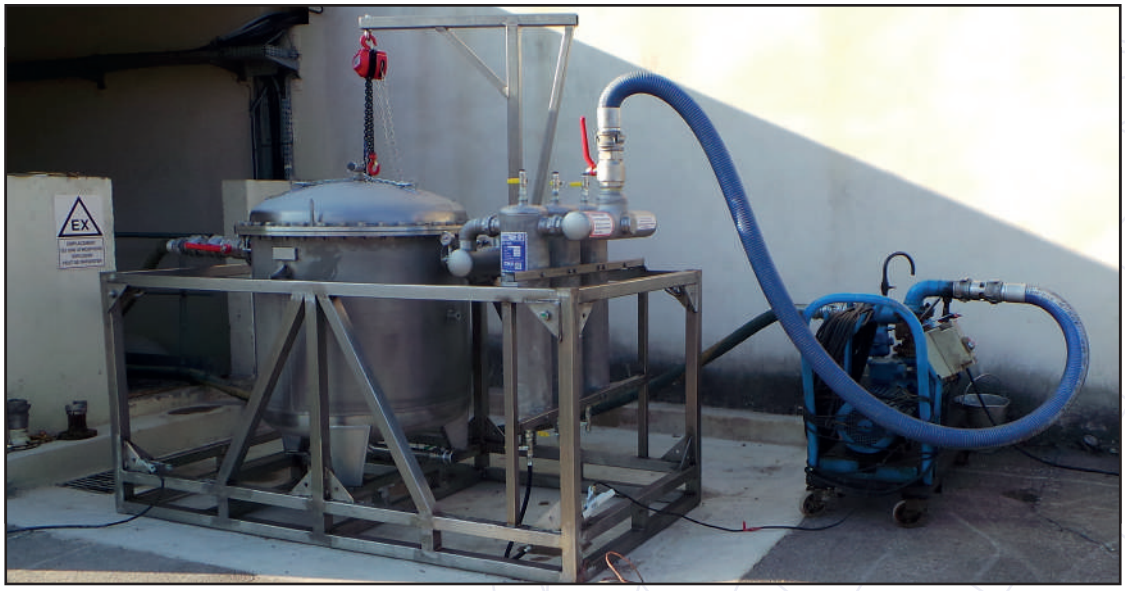
INSTALLATION OF A FB900 ON A MINING FUEL STATION

INSTALLATION OF AL150 SYSTEMS FOR DIESEL ON A PASSENGER FERRY

INSTALLATION OF AL300 SYSTEM ON A FUEL TRUCK

INSTALLATION OF THE ECO 3600 SYSTEM AT A FUEL STORAGE

INSTALLATION OF A FB1000 SYSTEM ON A FUEL STORAGE



CERTIFICATE

ISO 9001:2015

DEKRA Certification GmbH hereby certifies that the organization

micfil Ultra Fine Filters GmbH

Scope of certification:

Production and distribution of ultra fine filters, specialized ultra fine filters according to customer specifications and systems for diesel and oil cleaning

Certified location:

Römerring 11, 74821 Mosbach, Germany

has established and maintains a quality management system according to the above mentioned standard. The conformity was adduced with audit report no. A18041425 / 2021.

Certificate registration no.:	81018616/1	Certificate valid from:	2021-10-18
Validity of previous certificate:	2021-10-17	Certificate valid to:	2024-10-17

Language translation

Dr. Gerhard Nagel
DEKRA Certification GmbH, Stuttgart, 2021-08-10

DEKRA Certification GmbH * Handwerkstraße 15 * D-70565 Stuttgart * www.dekra.de/audits

page 1 of 1

CroisiEurope

Les croisières, c'est notre métier

CERTIFICATION

To Micfil International

After due consideration of a number of filtration systems we have decided to install Micfil filtration systems on main and auxiliary engines (Cummins, Volvo) of two of our vessels for filtration of fuel as well as engine oil.

After one year of use we are extremely pleased with the results of the systems and we decided recently to install them on all the vessels of our fleet.

Today our company is operating over 30 Cruse River and Costal ships in Europe.

Made in Strasbourg, on ...16.05.2013.....

Laurent BODEIN
Responsable service mécanique

CROISIEUROPE - Service technique
3 bis rue du Havre - 67000 STRASBOURG
TEL. 03 88 44 64 63 - FAX 03 88 84 45 27
SIRET 998 348 601 00043 - LICENCE 067 95 00 29

CERTIFICATION

A Micfil France

Fin 2011 nous avons installé les systèmes Micfil sur les moteurs principaux et auxiliaires (Cummins, Volvo) de deux de nos bateaux de croisière, pour la filtration du carburant et de l'huile moteurs.

Après un an d'utilisation à notre entière satisfaction nous avons décidé d'équiper l'ensemble de notre flotte des systèmes de filtration Micfil.

A ce jour notre compagnie opère plus de 30 bateaux de croisière fluviale et côtière en Europe.

Fait à Strasbourg, le ...16.05.2013.....

Laurent BODEIN
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Alsace Croisières : S.A. au capital de 2 000 000 € - Siren 998348601000043 - IM067100025 - N° identification TVA : FR 95998348601 - Garantie Financière : APS
Assurance RCP : Allianz / Draber Neff, Espace Européen de l'Entreprise 9, rue de la Haye 67300 Schiltigheim - N° police : 43884621 - APE : 5030Z

Vehicles working hard in hot dusty conditions place high demands on oil and filtering. After testing, the Micfil filter system has shown its worth

BETTER FILTERS MAKE OIL BETTER

Oil filtration is a huge factor in engine life, especially for rigs like Ron's continent-hopping Nissan Patrol

WORDS BY RON MOON

Throughout my long involvement with this magazine, I've been mucking around with oils – mainly synthetic ones – and I've also played around with a range of different oil filters in the never-ending quest to rid myself of the hassle of changing engine oil, especially on a big trip.

Essentially oil does not wear out, break down or deteriorate. It does become contaminated with water, acids, carbon, dirt, metal particles and sludge. So, in theory, if you have a perfect oil filter you would never have to change your oil.

THAT'S THE HOLY GRAIL I'VE BEEN LOOKING FOR

Over the last few years I've been running Red Line Oil in my modifed Nissan Patrol. It's a fancy, fully synthetic oil that has seen me extend my oil changes out to as much as 100,000km with an accompanying scientific oil analysis every 10 to 20,000km and the addition of a low-tech toilet roll bypass filter. Those bypass filters are a pain to change and clog up relatively quickly, so you need to change them regularly.

Since changing the oil at 100,000km, I've run the Patrol out to 30,000km at a time, changing the oil filters, topping up with Red Line oil and taking an oil sample.

In early 2013, I discovered the new Micfil oil filter, which is designed and manufactured in Germany and can be used in oil, hydraulic oil and fuel systems.

An ultra-fine insert is the key to this filter, consisting of a tear-resistant mesh woven with cellulose fibres. It looks a little like a fancy toilet roll, but that's where the similarity ends. These filters are water absorbent, rated to five microns, have a very high contamination absorption capacity, a long lifespan, and low pressure differential. Available in three sizes, the smallest filter (FE150) is suitable for engines with an oil capacity of up to 50 litres.

The replacement interval for these filters is 500 to 600 hours of service and I'd guess that since my Patrol only takes around 12 litres of oil, even with the additional Micfil filter, I'd be looking at the 600-hour mark. That's somewhere around 40,000km before a filter change!

Testing in Germany with big truck and industrial engines has indicated that with a Micfil bypass filter, oil change intervals can be extended out to 20,000 hours or more. That's something like 1.3 million kilometres! In fact, Micfil promotional pamphlets claim: "No oil change is necessary after the installation of the Micfil ultra-fine oil filter." I'm not so sure about that, but it sounds promising.

When used as an oil filter, the Micfil is to be fitted as a bypass filter (i.e. in parallel to the main oil filter) and I had the crew at Outback 4WD in Bayswater, Victoria set the system up for us, with the fairly large FE150 filter assembly mounted on the firewall.

On our recent trip around Australia, where we clocked 31,000km, we changed the normal engine oil filters at 15,000km, leaving the Micfil filter alone and topping up with just two litres of Red Line. Back in Bayswater we took an oil sample and sent it off for analysis (see results table: Test 2). The oil analysis report was comprehensive, with 22 minerals listed, along with soot, water, viscosity, oxidation, fuel dilution and

15 March 2019

MS Breydel
J.-M.&P. Deroo-Prud'homme
Schouteerpark 19
Be-9070 Destelbergen
E mail :msbreydel@live.be

Dear Alex,

It's time for a bottle of champagne, because we have reason to celebrate!

On 02.09.2009 we installed your filter system of the company Micfil Ultra Filter at our ABC engine for oil. At this time the engine had already run 15880 hours.

With meanwhile 40500 engine hours we only change the Micfil filter insert every 800 hours but our 900l of oil are no longer changed.

For our 10 years of operation since the installation, the inside of the engine is absolutely clean and carbon coating is no longer present.

Since the sulphur content in the diesel was already reduced years ago, e.g. all slow runners got problems with carbon coating in the engine. From the pistons up to the first segments of the spring and valve seats it could have possible bad consequences: in the worst case a total failure of the engine.

During the last years, as in the years before, our ABC engine was serviced exclusively by the manufacturer, the ABC Maschinenfabrik in Gent.

Since the installation of the filter systems there have been no wear problems with the engine.

With the filter of the company micfil I have with my tested ABC engine not only a green engine from the outside (due to the green painting), but particularly also a green engine from the inside, as I considerably reduce my carbon footprint by not having to change the oil.

The oil consumption of the machine is normal and as always we top up about 20l oil per Danube trip.
I can only recommend everyone to install a micfil filter system on their machines for oil and diesel.

A few years ago I also installed micfil filters for my gearbox and for my hydraulic control system and I am equally satisfied.

Best regards,

Kpt. Jean-Marie Deroo

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Nauenstrasse 63 A | 4002 Basel | Switzerland
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River Advice
Competence on Inland Waterways

(Abt. Technik)

Fa. micfill Ultra Fine Filters Ltd.
Alexander Proch
Römerring 11
74821 Mosbach
Deutschland

Basel, 13 . Februar 2019

Reference and field report

In spring 2016 we equipped five of our managed ships - MS River Voyager, MS River Splendor, MS River discovery II, MS River Venture, MS RIver Navigator - with micfil Ultra Fine Filters. The filter systems equipped with oil and water sensors were installed on Caterpillar C32, 3508 (main engine type) and Caterpillar C18 engines (generators and bow thrusters) for filtering diesel and engine oil.

From the very beginning we have carried out regular oil analyses (every 250 hours), which all confirmed that the engine oil is now in perfect quality and purity after approx. 6,000 - 10,000 hours and that we therefore normally no longer need to change the oil. Since then, we have also had less wear, more savings on spare parts and considerable relief of the environment through large savings of engine oils and better combustion of our diesel.

For this reason, we have also decided this year to equip the main propulsion system type Veth VZ 750 - VZ 900 with their filter system on all five ships.

We are extremely satisfied with the installed micfil Ultra Fein filter systems and can confirm that we save a lot of costs per year per ship.

Yours sincerely

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Schweiz
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Fax: +41 61 205 15 32

Technischer Direktor

Reference to use MicFil filter on the MS Julia

13.03.2017

Dear Mr Proch,
We are already using a number of different filters from MicFil (gas oil filter and additional lubrication oil filter).
We are very satisfied with the performance of these filters.
We have noticed since the use of the filters in the mentioned areas that we emit much less soot particles, that the machine runs more quietly and above all we get the gas oil so clean, the nozzles since the last change now since 5395 operating hours in the machine Work without changing.
(See also information on nozzle change).
The use of all filters is amortized by extending the lifetime of the nozzles.
In the lubrication oil analyzes, which I have also made available to you, it is clear that, despite a running time of the oil of 3000 operating hours, the pollution is very low.

With Best Regards

Andreas Rohrmann

Andreas Rohrmann
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Hello Alex, 10.03.2017
For your information!
As you know, we have been using your Micfil Al 300 filter for palm oil filtration for our 400KVA MAN combined heat and power unit for years. I thought you wanted to know my experience.
The micfil filter inserts I had on 01.08.2016 at 24940 operating hours installed and changed on 10.02.2017 with 28473 operating hours. (3533 operating hours)
The engine consumes about 95 liters per hour and it is about 40% over the return back pumped into the day tank which goes again through the filters. Through the filters were pumped about 495000 liters.
The lifetime of the injection nozzles has now more than doubled, to almost 8000 hours, and after the control of the nozzles we have determined that they are still absolutely in order. This saves me a lot of money and lowers my operating costs, since we usually had to change before the installation of your filter usually after approximately 4000 hours because of wear. I think we can use again 4000 hrs. I keep you up to date with this.

Hallo Alex,

Zu deiner Info! Wie du weist benutzen wir deinen Micfil Al 300 Filter zur Palmölfilterung für unser 400KVA MAN Blockheizkraftwerk schon seit Jahren. Ich dachte mir dass du meine Erfahrung wissen möchtest. Die micfil Filtereinsätze hatte ich am 01.08.2016 bei 24940 Betriebsstunden eingebaut und am 10.02.2017 bei 28473 Betriebsstunden gewechselt. (3533 Betriebsstunden)Der Motor verbraucht pro Stunde ca. 95 Liter und es werden ca. 40% über den Rücklauf zurück in den Tagestank gepumpt die wieder durch die Filter gehen. Durch die Filter wurden somit ca. 495000 Liter gepumpt. Die Lebensdauer der Einspritzdüsen hat sich jetzt schon mehr als verdoppelt, auf fast 8000 Std, und nach Kontrolle der Düsen haben wir festgestellt dass sie immer noch absolut in Ordnung sind. Das spart mir sehr viel Geld ein und senkt meine Betriebskosten, da wir normalerweise vor dem Einbau deiner Filter meist schon nach ca. 4000 Std wegen Verschleiß wechseln mussten. Ich denke das wir nochmal problemlos 4000 Std weiter benutzen können. Ich halte dich diesbezüglich auf dem Laufenden.

Mit freundlichen Grüßen,

Ulrich Östringer

Tel.: 07253/9270-12
Fax: 07253/9270-5512
E-Mail: Ulrich.oestringer@auto-oestringer.de

Auto Östringer GmbH
Hauptstr.
76684 Östringen

LAFARGE
CEMENT

15th of January 2015

Dear Segun,

Thank you for visiting our site and introducing us to Micfil filtration.
Due to the quality of the diesel fuel we use here in Nigeria, the equipment that utilizes the new Tier 3 & 4 engines have a history of injector and fuel system related downtimes.
Before fitting the Micfil filter to our payloaders and compressors fuel system a set of injectors lasted 265 hours and 3 hours respectively before they failed.
The machines now have clocked up over 3000 hours on the injectors without issues.
The added bonus of using the Micfil filter, is we are also saving costs by not having to change out the OEM fuel filters every three to four days (due to the fuel quality) and the downtime this incurs.
I appreciated your service and look forward to building a healthy business relationship for the future.

Regards,

Marino Mangone
Maintenance Manager
Km 64, Lagos-Abeokuta Expressway, Ewekoro, Ogun State.
P.M.B. 21011, Ikeja, Lagos.
Mobile: +234 701 583 4322
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Website: www.lafargewapco.com

Mallorca, 03.Sept 2014

Reference and review micfil ultrafine filter on MTU engines 16V2000M94 / 516 100 459

My name is Oliver Stoll, I am the captain and engineer of the 41 m superyacht MY SEAFIRE, equipped with 3 x MTU engines type 16V2000M94/516 100 459. I would like to share my experience of using the micfil ultra-fine filter from micfil, Binau, Germany.

In 2013, the superyacht MY SEAFIRE was built in the shipyard AB Yachts Viareggio with MTU engines and was delivered with the standard manufacturer filter system Racor 10Mic. From the beginning (after approximately 5 h) there were significant problems in the fuel system with our main engines with constantly blocking fuel filters and defective injectors which were caused by impurities in the diesel and Kevlar fibers, with the result that large diesel quantities extremely increased the exhaust temperature and the engines automatically shut down. Even after several attempts by the MTU service in Italy, Malta and Spain, these problems, to our displeasure, could not be resolved. This resulted in long periods without the use of the vessel due to the failure of the main engines to the detriment of the owner and the shipyard. After a long search for a suitable filter system I found in the company micfil Ultra Fine Filters Ltd in Germany, unknown to me, a system which has been the only one able to solve our serious problems.
Only after installing micfil water separators and 0.5 Micron micfil Ultrafine filter from Micfil and the complete replacement of the injectors, feed pumps, injection pump and all lines, were we able to reliably eliminate these problems, which could be dangerous at sea.
The cost of the replacement of these parts and the, there from, resulting detriment for us and the shipyard were, to say the least, "Enormous".
Since the installation of micfil systems, which make all the other filters obsolete, we now enjoy an absolutely safe and trouble-free engine operation.
Meanwhile, since installation and testing of the filters at every 50,000 ltr (approx.) diesel, the engines have 420 operating hours (approx 400.000l diesel) without any negative change in differential pressure and flowrate.
We now have, despite, often very dirty diesel, an unrivaled diesel quality with very long service life of the filter cartridges. It is a pity that MTU or the shipyards still install completely outdated filter systems for this type of engine which no longer can cope with today's deteriorating diesel standards. Thus the owner of the engines is burdened with the costs of high and completely unnecessary maintenance cost, that are absolutely necessary for a safe and smooth operation. I can only recommend this filter equipment to yacht owners with MTU engines to specifically avoid these problems, especially as the price of the filter system is at a similar level to Racor or Parker filters.

Captain Oliver Stoll
MY SEAFIRE Palma 03.Nov. 2015

from 30.03.2012

An die Firma Micfil
Am Bahnhof 6
74862 Binau

VOF Stuut-Morsink
Robert & Janet Stuut- Morsink
M/S S Miryana
Verhulststraat 46
8031 EV Zwolle
Nederland

Dear Mr. Proch, we are happy to Confirm to you the very good effect of your micfil filter. We have in our river cargo ship M / S Miryana MTU 2000 Series Main Machine. With the MTU filters, normal supplied, we always had significant problems. The standard filters were usually already after 120 -150 hr completely clogged so that they then had to be changed which meant significant costs and disadvantages for us. In 2005, we then installed the micfil ultrafine filter. Since that time we have to our complete satisfaction no problems with the diesel any more. We change the micfil inserts now after 2000 hours In addition, the filter conserves our injectors to a considerable extent and saves us high costs.

With kind Regards

Robert Stuut

Better Filters make better oil

On our recent trip around Oz where we clocked up 31,000km, saw me change my normal engine oil filters at 15,000km and topping up with 1.5 litres of Red Line. Back in Bayswater we took an oil sample and sent it off for analysis to see how it fared - see Test 2.
Test 1 was after 27,000km in the USA after one oil filter change and with the addition of 2.5-litres of oil to replace oil lost during that filter swap. Note the sulphur content is well down in Test 1 - US diesel fuel has far less sulphur than our fuel!
There's an improved readings for TBN with the MicFil filter. TBN stands for 'total base number' and refers to the reserve alkalinity the oil has which fights the acid formed in the engine. This acid formation in the engine comes from combustion, high temperatures, exposure to oxygen, sulphur, fuel dilution along with water from the combustion process or condensation. If this reading was below one or two you'd be thinking of changing the oil. Helping that TBN figure is the improvement in the amount of water in the oil. With the MicFil the amount of water in the oil is some 100 times less than with the previous oil filter system I used.
Pentane Insolubles (PI - a measure of soot of a certain size) and TGA soot (which is a finer form of soot) are both improved with the MicFil, even though we've done some 6K ... or 25% more kilometres. In the past we've had PI readings of over 30 and TGA soot figures of six (due to poor engine tuning and running at high altitudes in South America) so we are a long way short of that.
Iron is probably the biggest indicator of wear in an engine. Over the course of all our testing the iron figure has remained remarkably stable at around 55-65ppm for 25-30,000km, some five times better than a good quality mineral oil we tested previously.
As far as viscosity is concerned Red Line starts at 14.5 and can go up to as high as 50% more than the original, meaning it can increase to over 21 before there is an issue. Again the MicFil is better and at 16.24 the viscosity of the oil has only shifted a small amount from new.

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Best regards

Filip

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TEST	Km	TBN	Iron	PI	Dis-per	TGA soot	Sul	Vis	Water
1	25K	7.44	62	0.872	Good	3.1	4850	17.09	0.124
2	31K	6.96	56	0.669	Good	2.6	6200	16.24	0.001

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To Micfil filters and Fuel optimizing systems.

Dear Alexander,

I am writing to let you know how successful your filters have been for me. I own/run a river cargo ship. My main engine is an ABC – 8M D x C built in 2004 (April) I use FAMM Delo SHP 30 engine oil. The engine oil has been in use since 06 Feb 2009, the engine hours were **14,130** at that time. I had your micfil filters installed on 02 Sept 2009 the engine hours were **15,750** at that time. I change the filter inserts every 800 hours. I have not changed the oil since I have installed the filters, only topped it up when it needs it. The condition of my engine is very good: No oil sludge or sediment. The upright walls inside the engine are clean The old carbon residue is gone and the engine is much cleaner. The engine hours now are **22,300.**Since I do not have to change my oil now and my ABC takes between 500 and 550 liters of oil I am saving a lot of oil and a lot of Euros!!! On my smaller generator (HATZ 30KW; 4cylinder) the oil cost saved is not so much but it is still worth it for less wear and tear on the engine. On the Bow thrusters engine {GM 165 PS 2-stroke motor, Type 671 N) It is also good for the engine as it does not save me on oil here. Previously there was only a fine mesh filter, this was not enough

Cpt. Jean-Marie Deroo

Betreff:zu friede kunde
Datum: Fri, 10 Feb 2012 17:07:58 +0100
Von: W. Baars - Kilstroom B.V. <kilstroom@vaart.net>
An: <ap@micfil.com>

beste Alexander

wir habe ab 2004/2005 filter von Horst und immer zufrieden,wir
machen jeder 3 monaten eine oilanalyse und dieze ist immer gut .wir haben 30.000 stunden mit unsere Deutz hauptmachine ohne oilwechsel(unsere castrolbunkerstation ist nicht zo fro mit dieze filters). im 2011 habe ich noch werbung gemacht fur Micfil filters im der scheepvaartkrant. ich wunsch weiterhin eine gute zusammenarbeit im zukomst.
Met vriendelijke groet,Wim Baars
Kilstroom B.V.

Dear Alexander,(Translation)
Since 2004/2005 we have filter from HW-micfil and are always satisfied, we make an oil analysis every 3 months and these are always good. We have 30.000 hours with our Deutz main engine without an oil change (our Castrol oil bunker station is not so happy with these filters). In 2011 I have made advertising for micfil in "the ScheepvaartKrant". (a shipping newspaper) I wish for a continuing collaboration in the future.

TYRE RENEWALS LTD
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Email: enquiries@tyre-renewals.co.uk
www.tyre-renewals.co.uk

Date: 01.08.2011

To whom it may concern,

We confirm that we installed Micfil oil Filters on our Cummins KTA38 Diesel Generator in January 2011 and following 6 months of use are now in a position to can verify that the filters have exceeded our expectations.

Before fitting these filters, our normal routine before the installation of Micfil filters, being an engine oil and filter change every 250-300hours. With engine hours of approximately 10hrs/day, this represented a significant cost to our business throughout the year. Since fitting these filters we are proud to say that we have not made an engine oil change.

Following the installation of the Micfil filters, instead of changing the engine oil, we now regularly check the quality of the oil, and change the filter inserts every 800hours. The costs savings associated with this are approximately £250.00 per month.

We are extremely pleased that we installed these filters and would be happy to recommend them to any owners of large diesel powered generators, looking to reduce their operational costs.

Yours Sincerely,

Rob Dix.

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Registered VAT No. 130 0807 22
Directors: R. N. Dix J. Dix L. Dix G. Dix M. J. Rees

NOTES

micfil INTERNATIONAL®

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micfil_headquarters

micfil Ultra Fine Filters GmbH

it's time to go green

2022.01.05