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RMF SYSTEMS

PURE POWER

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RMF™ SYSTEMS
A Des-Case Brand

ADVANCED FILTRATION & MONITORING SYSTEMS
CLEAN OIL • CLEAN MACHINE • CLEAN MANUFACTURING

THE PURE POWER OF RMF SYSTEMS

RMF SYSTEMS OFFERS THE MOST COMPLETE AND EFFICIENT OIL CLEANLINESS, CONDITIONING AND MONITORING SOLUTIONS. CONTAMINATED OIL IS THE NUMBER 1 SOURCE OF MALFUNCTIONS IN MOBILE AND INDUSTRIAL HYDRAULIC APPLICATIONS. RMF SYSTEMS PREVENTS CONTAMINATION, WHETHER IT BE PARTICLE, WATER OR AIR BORNE. CLEAN OIL PROLONGS THE SERVICE LIFE OF MACHINERY AND FLUIDS, REDUCES MACHINE DOWN TIME DUE TO MAINTENANCE AND MALFUNCTIONS, RESULTING IN INCREASED PROFITS.

HIGHEST EFFICIENCY

RMF Systems provide easy to install, extremely efficient (fineness of 0.5 micron) depth filtration systems that are available in by-pass and off-line configuration. The systems significantly reduce contamination and have a large water and silt collection capacity. For optimum control RMF Systems offers complete (remote) condition monitoring solutions ranging from individual sensors to complete systems.

LESS MACHINE DOWN TIME

Equipment becomes more and more complex and tolerances between moving parts continue to reduce. Result is that even the smallest particles can cause damage to your machinery. RMF filters are extremely efficient and remove both water and particle contamination to a fineness of 0.5 micron, preventing malfunctions by worn components.

REDUCE CARBON FOOTPRINT

COST EFFECTIVE PROTECTION

RMF filters constantly clean the oil before it reaches the main stream filter. Therefore the main stream filter only acts as an emergency filter, allowing longer usage of this expensive filter.

LESS OIL CHANGES

Oil changes are generally the result of chemical corrosion of the oil caused by the oxidation process. This process is activated by the presence of silt. Water acts as a catalyst and accelerates the oxidation process. RMF filters remove both silt AND water, significantly extending the service life of the oil.

SUSTAINABLE SOLUTIONS

Increasingly strict environmental regulations for oil changes, oil storage and used oil disposal lead to cost increases. With RMF filters you decrease your oil changes, resulting in lower costs and less down time.

CONDITION MONITORING

The RMF By-pass and Off-line filters are designed to connect a particle counter. This gives you the possibility of measuring the oil condition (cleanliness/quality) on-site and in working conditions, providing you insight in maintenance requirements. The design of the filters also allows oil samples to be drawn for external analysis for even more in-depth information on the condition of your oil.

RMF SYSTEMS CHARACTERISTICS IN SHORT

FILTER FACTS

- A filter fineness of 0.5 micron
- Large particle collection capacity
- High filtration capacity due to depth effect
- Large water absorption capacity
- A full range of filter elements

BENEFITS

- Do not adversely affect viscosity or additives
- Do not remove additives
- Reduce the oxidation process
- Reduce the forming of acids
- Save costs

CONDITION MONITORING

- Online monitoring for particles
- Water contamination in RH%
- Oil degradation

AIR CONDITIONERS
DESICCANT BREATHERS

THE RMF AIR CONDITIONERS ARE AVAILABLE IN SEVERAL RANGES.
THE AIR CONDITIONERS ARE SUITED FOR HYDRAULIC POWER UNITS, LUBE AND OIL TANKS, GEARBOXES, DIESEL FUEL TANKS AND STORAGE TANKS FOR BIODEGRADABLE FLUIDS.

CONDENSATION IN RESERVOIRS

Hydraulic and lubricating oils must be kept free from contamination and water. Most fluid reservoirs must be able to breathe, thus allowing water vapor and solid contaminants to enter. Temperature fluctuations in the reservoir will cause this water vapor to condense which will not only cause oxidation of the oil, but can also lead to considerable mechanical damage.

FILTRATION AND DRYING IN A SINGLE PROCESS

Standard air breathers remove some of the solid particles but allow water vapor in the air to pass freely. The RMF Air conditioner deals effectively with both so reservoirs can breathe clean, dry air. The air is first dried by passage through a column packed with Z-R gel granules. The dried air is then passed through a pleated synthetic fiber filter element (replaceable spin-on type) where solid particles are removed, so that the air reaching the reservoir is both clean and dry.

MONITORING

The uptake of moisture can be observed by the change in color of the indicator granules in the Z-R gel. They turn from ruby-red (active) to a light orange (replace). The Z-R gel granules are completely replaceable, non-toxic and non-carcinogenic. The operation of the air filter can be monitored by an optional filter minder.

WHERE CAN IT BE USED?
- Steel industry
- Forestry industry
- Pulp & paper industry
- Cement industry
- Food processing industry
- Petrochemical industry

WHEN SHOULD IT BE USED?
- Water problems in system are apparent
- Extreme environmental conditions
- Gearboxes with condensation problems
- To prevent breakdowns

WHY SHOULD IT BE USED?
- Reduces the water contamination level
- Prolongs the life of the additive package
- Eliminates rusting due to condensation
- Reduces machine downtime
- Reduces oxidation of the oil
- Reduces cost of ownership


ACTIVE


REPLAC E

SUCCESSFUL APPLICATIONS

- Excavators
- Wheel loaders
- Forestry machines
- Asphalting machines
- Cement mixers
- Aircraft ground support equipment
- Sugar cane harvesters
- Agricultural machines

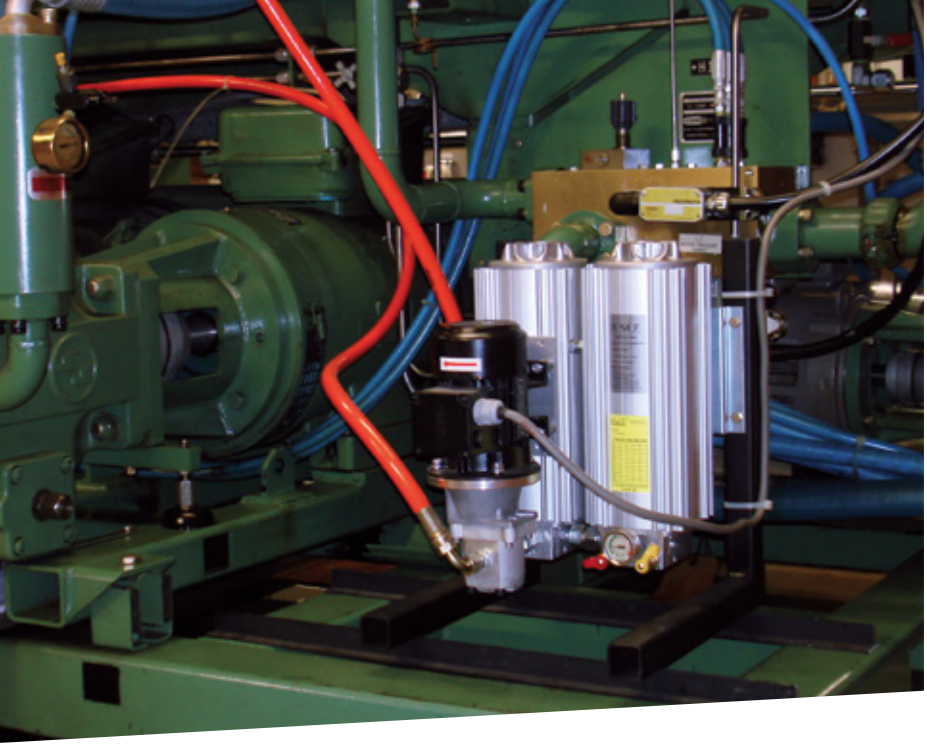
BY-PASS UNITS

THE RMF BY-PASS UNITS ARE ESPECIALLY DESIGNED FOR MOBILE APPLICATIONS IN HYDRAULIC AND/OR TRANSMISSION SYSTEMS. IN THE ABSENCE OF A PUMPED SYSTEM, THE OIL IS DRAWN FROM THE MAIN SYSTEM BY MEANS OF A SPECIALLY DESIGNED AND INTEGRATED PRESSURE COMPENSATED FLOW CONTROL VALVE.

The amount of oil extracted from the main system at any time is insignificant, ensuring that it will not affect the working of the main system. Most commonly used mineral and biodegradable oils in the mobile sector are suitable for filtration with RMF filter elements.

The By-pass Units can also be equipped with special spin-on water absorbing pre-filters. They can accommodate a range of different filter elements to suit any specific requirement.

Over the years, RMF Systems have developed considerable experience in cleansing hydraulic and transmissions systems, helping to keep them clean, extend equipment life and reduce cost of ownership (operating costs).



OFF-LINE UNITS

OLUA & OLUB

EXTREME FILTER EFFICIENCY

THE BENEFITS OF RMF FILTERS

- Reduced cost of ownership
- Extremely clean oil due to high filtration efficiency
- Prevention of channel forming by radial filtration direction
- Large dirt holding capacity
- Large water holding capacity
- Compact and easy-maintenance design
- Longer usage life for oil and components

THE RMF OFF-LINE UNITS ATTACK CONTAMINATION OF YOUR SYSTEM AT SOURCE. IN ADDITION TO SOLID PARTICLES, THESE FILTERS ARE ALSO CAPABLE OF REMOVING WATER FROM THE OIL. THE USE OF RMF FILTERS MEANS LESS DEFECTS, LESS MAINTENANCE, AND LESS WEAR AND TEAR OF THE HYDRAULIC COMPONENTS. THE RMF OFF-LINE UNITS CAN BE FITTED TO EVERY IMAGINABLE INDUSTRIAL APPLICATION WHERE HYDRAULIC OR LUBRICATION SYSTEMS ARE PRESENT.

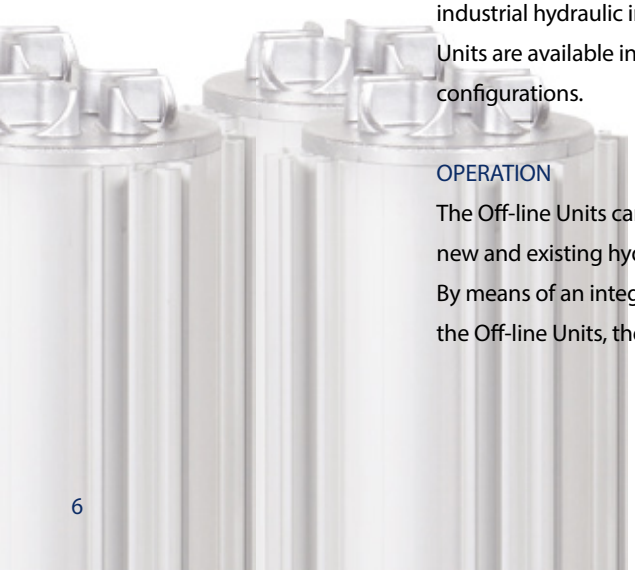
The RMF Systems radial micro filter units are characterized by their extremely efficient filter elements with a fineness of down to 0.5 micron. If required, different micron sizes are available to suit any application. The RMF Off-line Units are specially designed for industrial hydraulic installations. The Off-line Units are available in single or multiple housing configurations.

OPERATION

The Off-line Units can be easily mounted to new and existing hydraulic installations.
By means of an integrated pump-motor unit in the Off-line Units, the oil is pumped from the reservoir through the filter unit. After filtering the oil is returned to the tank. Off-line Units can continue to work even when the main system is not in use. Element change can also be done without interfering with the main system.

YOUR BENEFITS

The hydraulic market accepts that 80% of mechanical failures are caused by contamination in the system. The RMF Off-line Units attack this contamination at source and are also capable of removing water from the oil.
This prevents the catalytic reaction of water and solid particle contamination, resulting in extended useable oil life.



OFF-LINE UNITS

OLUC & OLUD

EXTREME DIRT HOLDING CAPACITY

RMF OFF-LINE FILTER UNITS CAN BE APPLIED TO EVERY IMAGINABLE INDUSTRIAL APPLICATION WHERE HYDRAULIC OR LUBRICATION SYSTEMS ARE PRESENT. AN INTEGRATED PUMP-MOTOR UNIT DRAWS OUT OF THE TANK, FILTERS IT AND PUMPS CLEAN OIL BACK INTO THE SYSTEM. OFF-LINE FILTER UNITS CAN CONTINUE TO WORK EVEN WHEN THE MAIN SYSTEM IS NOT IN USE.

Over the years, RMF Systems have developed considerable experience in cleaning hydraulic and lubrication systems, helping to keep them clean and reduce down time. RMF systems Off-line filters are easy to install and require little maintenance.

The RMF systems range of Off-line filters OLU1C and OLU1D are Off-line filters that consist of a stainless steel filter housing, pump motor combination and a cellulose extreme high dirt holding filter element. The filter element is of a multi section design, it consists of four sections to allow for large dirt and water holding capacity and wide range of fluid viscosity.

The pumps and motors can be selected to specifically suit individual applications and conditions. The OLU1C units have a single element and the OLU1D carry two elements stacked. Elements can easily be changed.
A single element can hold more than 2.6 liter of water and has a Dirt Holding Capacity of more than 1.5 kg.

RMF Systems OLU1C and OLU1D are extremely suited for applications where large contamination levels (water and solid contaminant) can be found. The rugged design and stainless steel housing also make it suited for harsh environmental conditions such as mining, marine and off-shore industry.

WHERE CAN IT BE USED?
- Steel industry
- Mining industry
- Marine industry
- Off-shore industry
- Hydraulic test benches

WHEN SHOULD IT BE USED?
- Systems with excessive water content
- Systems with large solid particle contamination
- Harsh environmental conditions

WHY SHOULD IT BE USED?
- Reduces water content
- Reduces solid particle contamination
- Reduces operating cost
- Reduces down time
- Increases fluid and component service life

APPLICATIONS

The Giant can be used on hydraulic power units, lube and oil tanks, large gear- boxes and storage tanks for biodegradable fluids. Industries that are successfully applying 'The Giant' include: steel industry, marine industry, automotive industry, pulp & paper industry.

THE GIANT FACTS

- The water absorbing elements can remove as much as 4 liters of water per element
- The micro glass elements can remove up to 1 kg of solid particle contamination

GIANT OFF-LINE UNIT

THE GIANT OFF-LINE UNIT IS ALSO KNOWN AS 'THE GIANT'. THE GIANT'S FILTER HOUSING IS COMBINED WITH A PUMP MOTOR GROUP AND AN ELECTRICAL CONTROL BOX. THIS IS AN EASY TO USE PLUG-AND-PLAY FILTER SOLUTION. IT ONLY REQUIRES ELECTRICAL POWER, SUCTION AND RETURN LINES.

The Giant Off-line Unit can be easily mounted to new and existing hydraulic installations. By means of an integrated pump-motor unit in the Off-line filter Unit, the oil is pumped from the reservoir through the filter unit and after filtering the oil is returned to the tank. Elements are available in different micron sizes to suit any application. Water absorbing elements can also be applied.

THE GIANT

The RMF Systems Giant Off-line Unit is especially designed for industrial hydraulic and lubrication systems. The pump is a cast steel gear pump with a large viscosity range from 12 cSt - 800 cSt. Filter elements available for the Giant, run from 1 µ up to 12 µ. When fitted with water absorbing elements, the reduced water contamination level prolongs the life of the additive package and reduces oxidation of the oil, components and bearing surfaces.

MONITORING

The Giant can be equipped with additional components for Condition Monitoring, such as the CMS (Contamination Monitoring Sensor), the OQS (Oil Quality Sensor) and the OQD (Oil Quality Display). The electrical control box is already prepared for these additions.

GOLU3C
THE GIANT GETS EVEN BIGGER

THE GOLU3C IS THE LARGEST AND MOST POWERFUL FILTER UNIT FROM RMF SYSTEMS. IT HOLDS THREE FILTER ELEMENTS WHICH CAN VARY FROM 1 TO 25 MICRONS. THIS FILTER UNIT CAN BE COMBINED WITH A PUMP MOTOR FOR OFF-LINE USAGE, THERE ARE SEVERAL PUMP MOTOR CHOICES AVAILABLE. THE ONLY THING TO BE DONE IS CONNECTING HYDRAULIC AND ELECTRIC CONNECTIONS.

The GOLU3C is specially designed for industrial and lubrication applications and can handle flows of up to 1500 l/min. The robust steel housing makes it suitable for hostile environments. The unit comes with a delta p indicator which is visual / electrical.
The standard housing has no by-pass but by-passes are an option. Water absorbing elements can also be fitted to this housing, the GOLU3C is extremely suited for large lubrication or hydraulic systems. Element change is easy, the lid can be lifted by means of a bolt lift device and then the lid can be rotated away.

GOLU BENEFITS

- Reduces solid particle contamination
- Maintains excellent cleanliness levels
- Reduces water contamination
- Reduces machine downtime
- Reduces oxidation of the oil
- Extends the machines useful life
- Reduces cost of ownership

MULTIPURE

HYDRAULIC FLUID IS A CRUCIAL COMPONENT OF HYDRAULIC SYSTEMS. CONTAMINATION OF THIS FLUID IS THE MAIN CAUSE OF HYDRAULIC SYSTEM FAILURES. FILTRATION OF HYDRAULIC FLUIDS IS THE SOLUTION, BUT CAN BE A COMPLICATED PROCESS, ESPECIALLY FOR LARGE VOLUME RESERVOIRS.

THE MULTIPURE

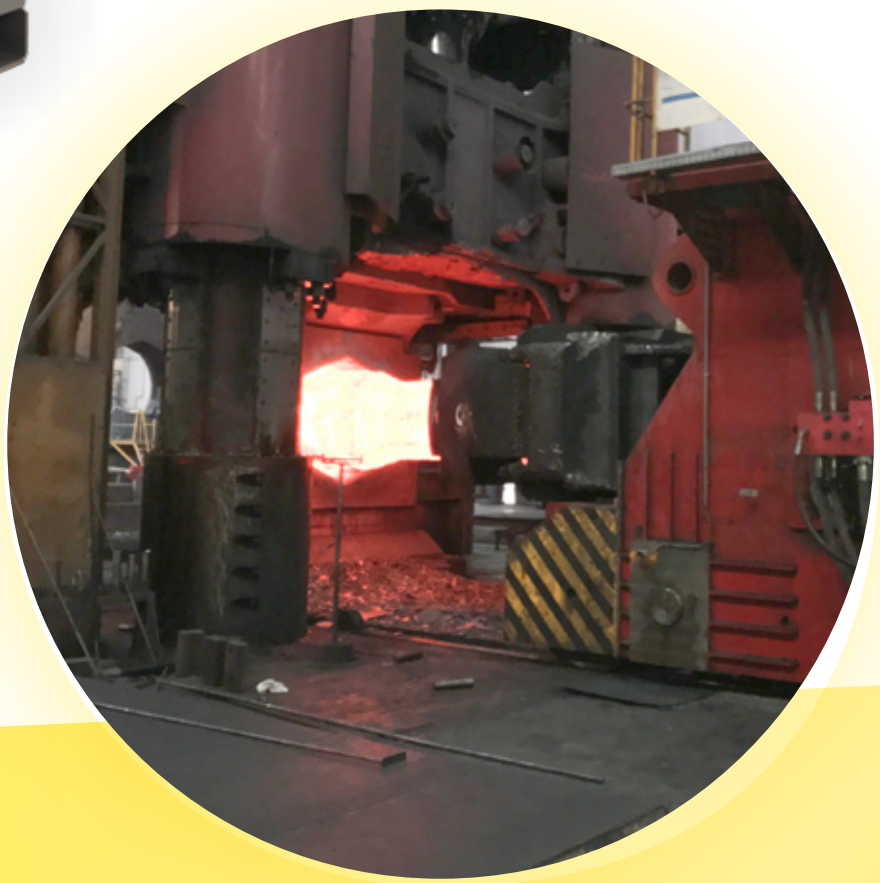
RMF Systems specially designed the MultiPure for the filtration of hydraulic fluids in large reservoirs. The filtration unit comes as a one skid design, it combines 12 highly efficient Cellulose filter elements (60 HB) in a carbon steel housing.
The robust steel pump with integrated safety guarantees a stable flow of the oil through the filter elements.
The MultiPure is suitable for almost any industry and has an electric motor that is compatible with most common electrical grids.

REMOVAL OF SMALL PARTICLE CONTAMINATION

Most standard fitted system filters contain fibreglass filter elements and do not remove particles smaller than 3 micron. These smaller particles quickly develop in hydraulic applications with high pressures. Cluttering of these small particles can result in the development of varnish, an increase of the TAN value of the oil and significantly reduces the lubrication quality of the oil. Causing severe damage to your system.

Benefits

- Removes even the smallest contamination particles
- Prevents high TAN values
- Significantly prolongs service life of fluid and system
- Reduces downtime and maintenance costs
- Reduces cost of ownership



WHERE CAN IT BE USED
- Automotive industry
- Plastic industry
- Industrial applications

WHEN SHOULD IT BE USED
- Systems with different viscosities
- For quick flushing

WHY SHOULD IT BE USED
- If limited time is available
- If permanent installation is not possible

VARIPURE

RMF SYSTEMS VARIPURE, THE MOST ADVANCED FILTER TROLLEY FOR CLEAN OIL TRANSFER AND OFF-LINE FILTERING OF HYDRAULIC AND LUBRICATING FLUIDS.

The VariPure has a sturdy ergonomically designed frame and large tyres for easy manoeuvring on all floor surfaces.
The unit has a large removable drip tray, the tray prevents spills and is easy to empty.

A sturdy steel low noise gear pump offers an efficient pumping source. The pump has a broad viscosity range 12cSt - 800cSt which allows a variety of fluids to be pumped.
An internal safety valve in the pump protects the unit from over pressuring.

The pump flow is controlled by means of a frequency controller which allows the RPM of the electric motor to be adjusted to the desired level with the corresponding oil flow.

The VariPure holds two 60G fibre glass elements and offers a divers choice of elements, ranging from 1 micron up to 12 micron. Water absorbing elements are offered in the same micron size.

The filters are equipped with a visual-electrical delta P indicator which shows filter saturation and automatically shuts down the unit when filter elements are saturated.
Sampling points for particle counter and bottle sampling are provided.
The unit comes with suction and return hoses. An automatically retracting cable cord is available as an option on single phase units.

SPECIFICATIONS
- Pump 25 cc / rev
- RPM adjustable 750-2000 RPM
- Flow rate 18 l/min up to 50 l/min
- Safety valve set @ 6bar
- Available in all single phase and three phase voltages

VACUUM DEHYDRATION UNITS

THE RMF VACUUM DEHYDRATION UNITS ARE DESIGNATED OIL PURIFICATION UNITS WHICH CAN BE APPLIED DIRECTLY TO VARIOUS TYPES OF MACHINE RESERVOIRS. THE UNITS DEHYDRATE AND CLEAN MOST TYPES OF OIL SUCH AS LUBRICATING, HYDRAULIC, TRANSFORMER AND SWITCH OILS BY REMOVING PARTICLES, GASSES, AND WATER. THE PURIFIED OIL SATISFIES THE MOST STRINGENT QUALITY REQUIREMENTS, SUCH AS STATED IN THE ISO 4406.

WHERE CAN IT BE USED?

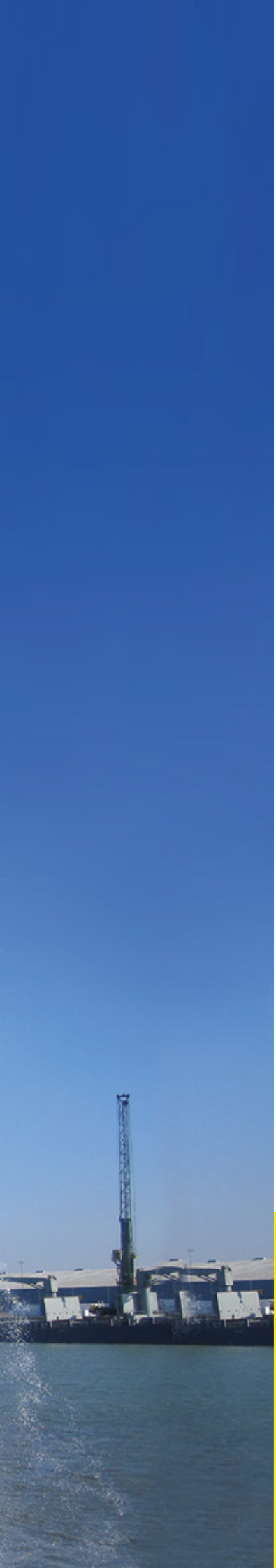
- Paper industry
- Steel industry
- Marine industry (dredgers/thrusters)
- Machine tool industry
- Mining industry
- Tunneling machines

WHEN SHOULD IT BE USED?

- Continuous water ingress
- Air or gas problems
- General water and contaminant problems

WHY SHOULD IT BE USED?

- Efficient water, gas and particulate removal
- Extension of fluid service life
- Reduces fluid disposal
- Minimizes corrosion in systems
- Reduces fluid conductivity
- Reduces operating cost



SIMPLE OPERATION

The Vacuum Dehydration Units neither remove nor alter oil additives. The water removal process is based on pure vacuum evaporation inside a vacuum chamber at a maximum temperature of 60 °C. Solid particle removal is achieved through a well proven RMF Systems micro filter. The dehydration units do not require continuous attention whilst operating, once connected properly and commissioned, oil purification is a semi-automatic process.

The desired oil temperature can be selected on a thermostat which is included in the integrated heater element. Oil supply and removal from the vacuum chamber is a full automatic process which is controlled by a PLC. The only manual action is the emptying of the pre-condenser and waste
water container (depending on model). Overflow of the waste container or tank is protected through a float switch which will shut down the dehydration unit once the maximum level is reached.

WATER, GAS AND PARTICLE REMOVAL

The Vacuum Dehydration Units remove liquid, gas and solid contamination, which are corrosive and contribute to the reduction of machine life. Water, gas and solid particle contamination greatly increase maintenance costs and contribute to unwanted break downs or total machine failures. The Mini Water Vac and Maxi Water Vac offer protection against malfunctions, break downs or total failures, the dehydration units also protect the environment by reducing oil consumption and oil disposal along with its inherent costs and problems.

CMS RELATED PRODUCTS

CMS USB-I CONNECTOR

A custom-made solution for easy connection of a PC/Laptop to the CMS. Comprised of a USB:RS485 interface with a terminal block pre-wired to connect directly to the CMS. An extra terminal block gives the option of wiring to external devices through two solid-state relays.

Benefits

- Outside influences such as extraneous contamination can be eliminated
- Dynamic changes in the system can be measured and used for diagnostic purposes
- Instant / Accurate test results
- Eliminating unscheduled filter changes
- Real time system monitoring
- Permanent online monitoring makes it possible to monitor critical systems
- Cost saving due to pro-active maintenance
- Large backlit display and keypad for easy usage
- 8 Channels solid contamination measurement

CONTAMINATION MONITORING SENSOR

CMS 2

THE CMS 2 IN-LINE CONTAMINATION MONITOR AUTOMATICALLY MEASURES AND DISPLAYS PARTICULATE CONTAMINATION, MOISTURE AND TEMPERATURE LEVELS IN VARIOUS HYDRAULIC FLUIDS.
IT IS DESIGNED SPECIFICALLY TO BE MOUNTED DIRECTLY TO SYSTEMS, WHERE ONGOING MEASUREMENT OR ANALYSIS IS REQUIRED, AND WHERE SPACE AND COSTS ARE LIMITED.

WATER SENSOR

The Water Sensor option measures water content using a capacitive RH (relative humidity) sensor. The result is expressed as percentage saturation, 100% RH corresponds to the point at which free water exists in the fluid, i.e. the fluid is no longer able to hold the water in a dissolved solution.

SOFTWARE

All CMS units are supplied with software to download new results automatically as they are generated, provided the test is done while being directly controlled by the software.
Or alternatively historical results can be downloaded from the CMS's inbuilt memory.
The CMS memory has space for around 4,000 log entries, when full, the oldest log entry is overwritten.

- Which tests are logged, and when, are determined by the log settings
- Each log entry is time-stamped and contains the CMS serial number, so that it can be identified later.

CMS Atex zone II

FEATURES

- Twin laser system and eight channels for different particle sizes
- Complete Qwerty keyboard
- Integrated printer
- Large LCD display
- Light weight rugged industrial portable case
- Rechargeable battery for independent use
- USB connection for connecting to a PC/Laptop
- Unaffected by system flow, pressure and temperature fluctuations
- Bottle sampler facility for 110 ml & 500ml options

PORTABLE LASER PARTICLE COUNTER

FLUID ANALYSIS IS A CRUCIAL COMPONENT OF ANY OIL MANAGEMENT PROGRAM. EARLY DETECTION OF POTENTIAL PROBLEMS CAN PREVENT COSTLY REPAIRS AND DOWNTIME. THE PORTABLE LASER PARTICLE COUNTER (PLPC) IS THE MOST COMPLETE WAY TO MEASURE THE CONTAMINATION LEVEL OF YOUR SYSTEM. WITH THE PLPC YOU HAVE THE ABILITY TO MEASURE, ANALYZE AND DOCUMENT YOUR RESULTS IMMEDIATELY WITHOUT THE NEED OF ANY ADDITIONAL EQUIPMENT. THE PORTABLE LASER PARTICLE COUNTER MAKES IT POSSIBLE TO DETECT THE ISO CLEANNESS LEVELS OF THE HYDRAULIC FLUID. IT CAN ALSO REPORT IN ANY OTHER INTERNATIONAL THE ISO CLEANLINESS LEVELS STANDARDS

CHARACTERISTICS

The Portable Laser Particle Counter features a twin laser system and eight channels for different particle sizes in order to guarantee high accuracy and repeatability. This compact unit is easy to handle for mobile and inline applications for systems with pressures up to 400 bar.

PORTABLE LASER PARTICLE COUNTER

The PLPC is a fully equipped portable laser particle counter. It features a complete QWERTY keyboard, an integrated thermal printer, an internal rechargeable battery and a large LCD display.

The unit has an internal data memory and is available with the included Windows® based software package for reports and data downloads.

BOTTLE SAMPLING UNIT

If a direct particle count on your system is not possible, the PLPC bottle sampler unit allows you to take measurement samples for analysis at a later time.

Oil Quality Sensor (OQS)

Oil Quality Display (OQD)

OIL QUALITY SENSOR

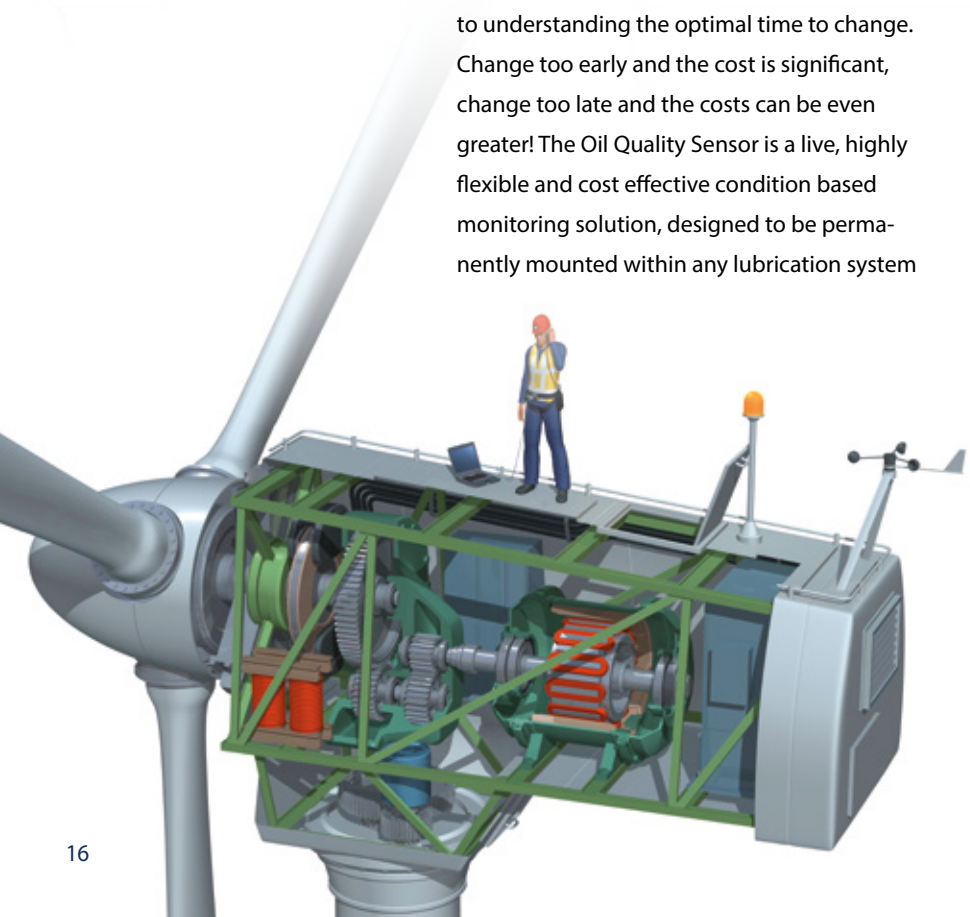
OQS

THE OIL QUALITY SENSOR (OQS) FROM RMF SYSTEMS PUTS YOU IN CONTROL WITH REAL-TIME MONITORING OF OIL DEGRADATION AND WATER INGRESS. EXPENSIVE OIL CHANGES ARE NOW BASED ON OIL CONDITION, NOT ON HISTORICAL SCHEDULE.

BENEFITS
- ▶Reduced maintenance cost
- ▶Extended oil change intervals
- ▶Scheduled downtime intervals for increased productivity
- ▶Reduced waste oil cost
- ▶Improved equipment reliability
- ▶Low cost investment tool
- ▶Reduced carbon foot print
- ▶Reduces total cost of ownership

The requirement to implement an effective monitoring and maintenance program for lubricants in critical plant machinery has never been greater. With the escalating price of crude oil and the vast improvements that are being seen in the quality of lubricants available today, it is more important than ever for organizations to ensure that they are maximizing the service life of the oil used.

Monitoring oil quality is clearly fundamental to understanding the optimal time to change. Change too early and the cost is significant, change too late and the costs can be even greater! The Oil Quality Sensor is a live, highly flexible and cost effective condition based monitoring solution, designed to be permanently mounted within any lubrication system on any type of machine. Over 60 times more sensitive to oil contamination than any other dielectric constant measuring sensor, it provides real-time monitoring of water ingress and oxidation levels.



OIL QUALITY DISPLAY

The Oil Quality Display is a simple but powerful device which allows you to read the quality and temperature of the oil from a sensor without a PC.
This enables you to set up the display box on site and then be able to see the oil quality and temperature readings as required. Use an Android app to connect your Smartphone with the OQD smart via Bluetooth. With it being IP67 rated (when connected) you do not need to worry about the need to keep it in a dry place. Also with it being made from polycarbonate it is a strong durable product which cannot be damaged easily. The new 'Rate of Change' feature allows you to easily monitor the degradation of oil over a programmable period of time.

OQS SAMPLE CASE

THE WORLD'S MOST ADVANCED PORTABLE TEST KIT

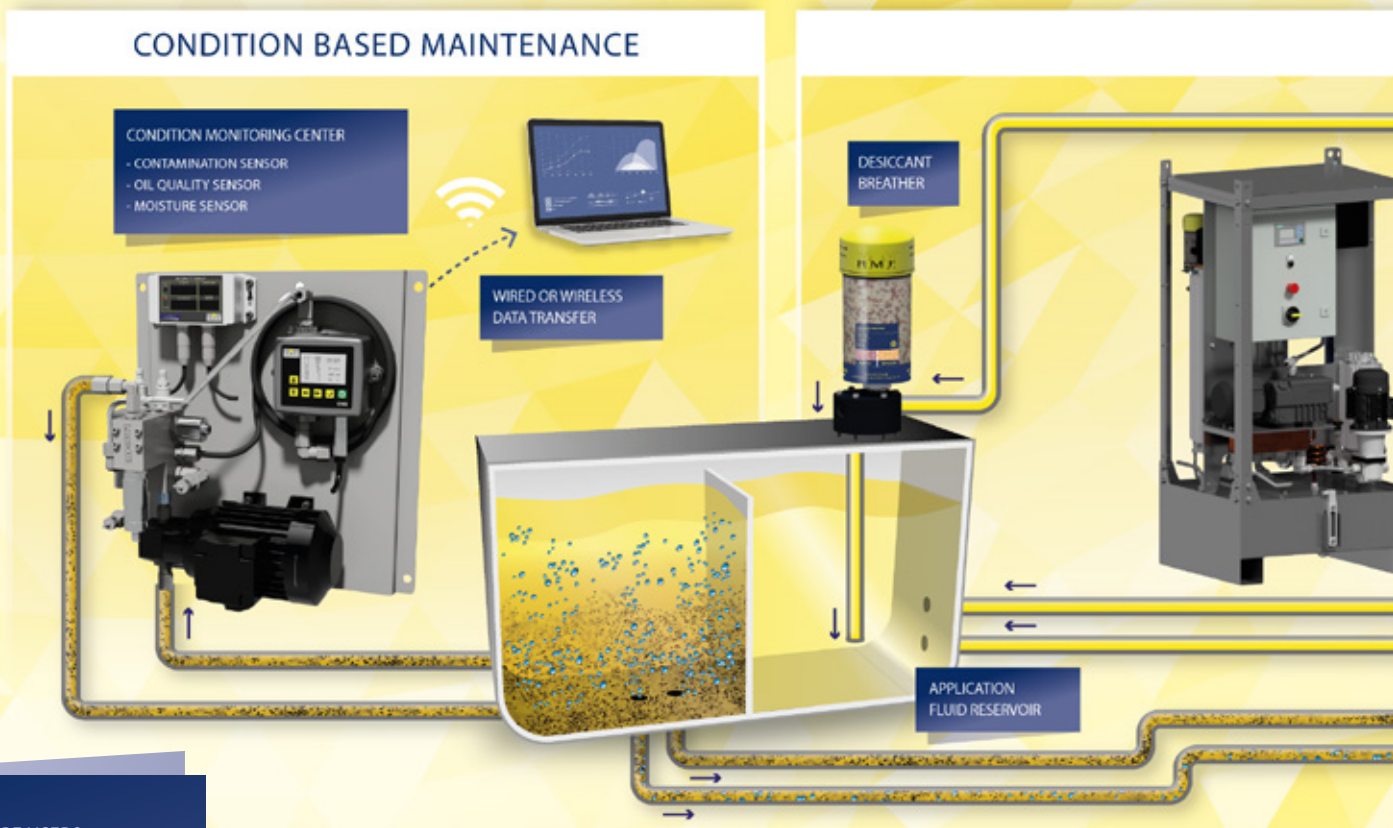
OQS Sample Case is the world's most advanced portable oil testing kit that enables accurate condition sample tests of any oil anywhere in just seconds. From a small sample, advanced technology provides an instant readout of the oil's precise condition. OQS Sample Case is an invaluable field or workshop service and maintenance tool that helps to ensure your equipment operates reliably and efficiently. OQS Sample Case will quickly pay for itself through extended service intervals and reduced break downs.

EQUIPMENT OWNER BENEFITS

- Reduce costly break downs
- Reduce service costs by extending intervals
- Maximise service team efficiency
- Identify potential problems before they arise
- Cost effective

SERVICE TEAM BENEFITS

- Quick and easy
- Large oil database
- Designed for use in the field
- Instant diagnosis of potential problems
- Minimise time consuming external lab tests
- Add-on option oil database



WHERE CAN IT BE USED?
- ▶Wind/Tidal/Wave energy
- ▶Gearbox applications
- ▶Offshore & Ship systems
- ▶Lubrication & Oil systems
- ▶Mobile Equipment
- ▶Test Benches

WHEN SHOULD IT BE USED?
- ▶Entrained air or turbulent flows
- ▶Higher viscosity fluids
- ▶Un-pressurized systems

WHY SHOULD IT BE USED?
- ▶Easy to retro-fit
- ▶Exceptional communication & 4,000 tests memory
- ▶Reliable & accurate performance

CONDITION MONITORING CENTER

CMC

RMF SYSTEMS CMC COMBINES TECHNOLOGY TO ENABLE SAMPLING ON LOW PRESSURE HYDRAULIC AND LUBRICATION SYSTEMS WHERE AERATION CAN BE AN ISSUE. THE CMC SUPRESSES THE AIR BUBBLES SO THEY ARE NO LONGER COUNTED AS PARTICLES.

The CMC can be installed in most low pressure hydraulic and lubrication systems. One option ranging from zero bar pressure to a max of 50 bar on the inlet of the system and 0,5 bar on the return of the system. The other option can be installed on systems with a max of 0,5 bar on inlet of CMC pump and a max of 6 bar on system return.

These two options give the user the versatility to install the CMC in a variety of different system applications. Also the Condition Monitoring Center can be designed with an integrated magnetic coupling. This option can handle inlet pressures of 25 bar and 25 bar pressure on the outlet of the unit.

Utilizing the best particle monitor in its class as standard, the CMC delivers simplicity, practicality & accuracy for the most demanding of applications.

Proven optical technology and algorithms, ensure consistent monitoring of your system, providing peace of mind for your operators/investors. All variants of CMC come with a CMS complete with RS485/232 MODBUS & CANBUS (J1939 typical) protocols for remote control.

CMS communication & motor power needs to be completed by the customer during installation. The cable for motor power is not supplied.

DESIGNED WITH YOU IN MIND

The CMC is configured deliberately to provide customers the versatility they require for existing systems or those in development. The automatic particle monitor (CMS) has a wide range of communication protocols allowing for integration in logic controllers. A small footprint make it the ideal solution for safe installation on new or retrofit applications. A wide range of operating voltages allow us to support a global market, and emerging technologies.

SMART OFF-LINE UNITS

THE SUCCESSFUL APPLICATION OF DEPTH FILTRATION ON HYDRAULIC AND LUBE OIL SYSTEMS AND THE GROWING DEMAND FOR CONDITION MONITORING SYSTEMS TO OPTIMIZE THE APPLICATION OF THE FILTERS HAS LED TO THE DEVELOPMENT OF THE NEXT GENERATION IN RMF SYSTEMS TECHNOLOGY: RMF OFF-LINE FILTERS WITH AN INTEGRATED CONDITION MONITORING CENTER.

ONE ECONOMICAL INSTALLATION

Smart Off-line Units enable machine operators to keep their hydraulic oil clean and monitor Oil conditions real-time in one economical installation. The integrated CMC(Condition Monitoring Center) can be combined with the entire selection of Off-line Units in the RMF Systems range (see page 6-9).

OLUSC OPERATION

The filter unit acts as a kidney loop, continuously pumping a small amount of oil through extreme fine filters. In addition the filter is equipped with an integrated Condition Monitoring Center which reports oil cleanliness, relative humidity and oil degradation. An extra motor-pump set is installed to guarantee correct operation of the Condition Monitoring Center.

AIR CONDITIONER ACCESSORIES

BENEFITS RMF OIL-DEMISTERS

- Reduces premature filter exchange
- Reduces fluid spills on machine surfaces
- Reduces environmental risks
- Reduces fluid waste
- Reduces safety issues with oil spills
- Reduces cost of ownership

WHERE CAN IT BE USED?
RMF Oil-Demisters can be used on:

- Hydraulic power units
- Lube and oil tanks
- Gearboxes
- Pump vents
- Pulp Refiners

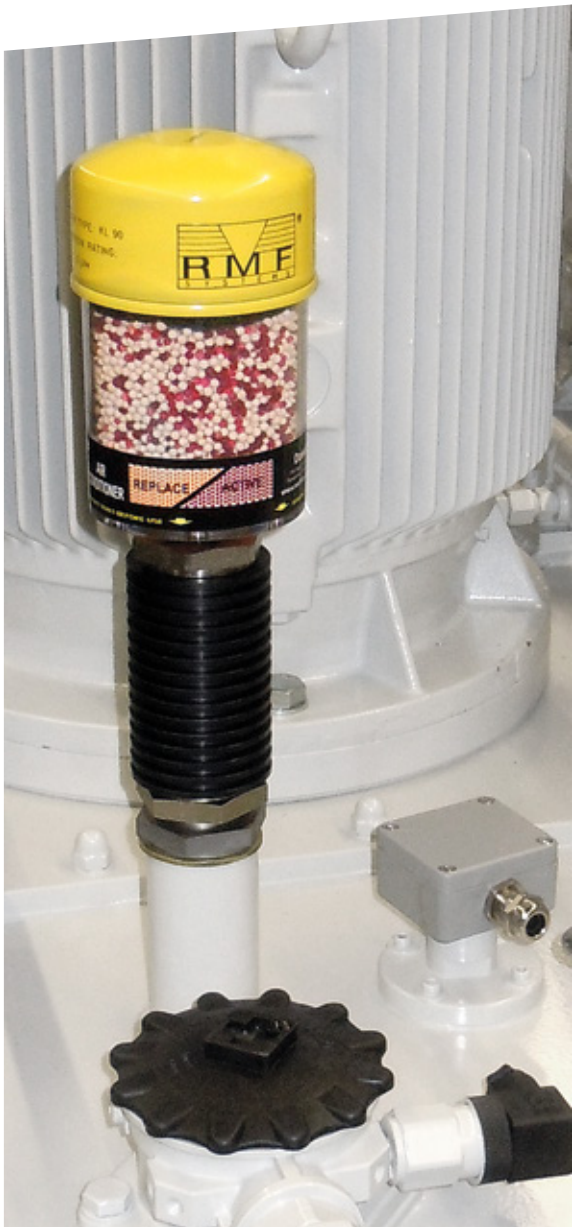
OIL-DEMISTERS

THE RMF SYSTEMS OIL–DEMISTERS ARE SPECIALLY DESIGNED TO PREVENT OIL MIST OR FLUID MIGRATION THROUGH AIR VENTS. THE RMF DEMISTER CONSISTS OF AN ALUMINUM BODY WITH EXTERNAL COOLING RIBS AND CAN BE FITTED BELOW THE AIR CONDITIONER OR AIR FILTER.

Inside this aluminum body a coalescing post is positioned. When migrating oil vapor rises up this post the vapor coalesces into oil droplets which run down the outer diameter of the post and are guided back to tank through holes at the base of the post. In case of excessive splash the oil is contained in the post and runs down the slits in the post and is also returned to the reservoir.

OIL MIST

Air vents are used to compensate changes in air volume above the fluid level in gear boxes, hydraulic reservoirs, pump housings etc. High temperatures and thermal expansion cause migration of oil vapors through the air vent, blocking air filters and causing oil spills on machine surfaces. These fluid spills cause both an environmental and safety issue, they are also the cause of shortened air filter life and avoidable fluid consumption. In case of dynamic, volatile gearbox systems not only Oil Mist can migrate through air vents, but fluid splash can cause extreme fluid migration.



MOUNTING PLATES

RMF offers a range of Mounting or Adaptor Plates that can be fitted to hydraulic reservoirs. The mounting plates all have the standard DIN-24557/2 pattern. Mounting plates range from simple fitting of air conditioner only, mounting plate with additional port for vacuum indicator (Filter Minder), to mounting plates with additional porting, connection for suction and return ports for Off-line filters.

The mounting plates allow for simple and quick air conditioner and off line filter installation without the need for welding/drilling etc. The sealing on the tank lid is achieved by an 'O' ring which is part of delivery. The mounting plates can be used with all RMF Systems Air Conditioners.

FILTER MINDER

To monitor the state of the air filter, RMF Systems offers a Filter Minder (vacuum switch).
The filter minder is a combination graduated indicator and switch (N/O), a yellow indicator moves up in the window and locks at the highest air filter restriction.
When it reaches the red zone, or highest recommended restriction, it closes a contact and can send a signal to the filter warning light. The locked position at highest restriction must be reset manually. The filter minder can be fitted to a variety of the RMF Mounting or Adaptor Plates.

FILTER ELEMENTS

THE PRINCIPAL OF THE RMF SYSTEMS FILTERS IS BASED ON THE UNIQUE ORIGINAL FILTER ELEMENTS. WITH A CHOICE OF FILTER FINENESS DOWN TO 0.5 MICRON THEY HAVE THE CAPACITY TO REMOVE EVEN THE SMALLEST OF DIRT PARTICLES FROM THE OIL. RMF SYSTEMS OFFERS A WIDE RANGE OF ELEMENTS IN MICRON SIZES, FILTER MEDIA AND FLUID COMPATIBILITY. COMBI-ELEMENTS (WATER AND SOLID PARTICLE RETENTION) COMPLEMENT THE UNIQUE RANGE.

CELLULOSE ELEMENTS

The RMF Systems Cellulose filter elements are unique in their design. They consist of several hundred layers of long fiber cellulose which are wound on a perforated center tube.
The micro filter element works as a fine filter through which oil passes, trapping solid particles throughout all the layers of cellulose. The long fiber cellulose is also capable of absorbing water, adding the benefit of water removal from the oil. RMF Systems cellulose elements are extremely efficient and have a large dirt holding capacity.

FIBERGLASS ELEMENTS

RMF Systems offers a range of Fiberglass filter elements in a fineness of 1 micron to 12 micron (depending on housing). The Fiberglass filter elements (conventional pleated construction) are extremely efficient and have a large dirt holding capacity. These filter elements are particularly suited for gearbox applications where high viscosity fluids limit the use of the cellulose elements.

WATER SORB FILTER INSERTS

RMF Systems offers a specially designed Water Sorb combination filter element: water absorbing and particle retention. The elements have layers of polymers in between layers of fiberglass, creating a unique media to remove both water and solid particles.

WATER SORB SPIN-ON ELEMENTS

RMF Systems offers a specially designed Spin-on filter, the H2O Sorb for water absorbing and particle retention. This Spin-on filter element with a fineness of 20 micron is constructed of a unique medium containing water absorbing polymer which chemically bonds water.

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RMF™ SYSTEMS
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