

## Total Oil Purification System

The Solution for Removal & Monitoring of Particle, Sludge, Varnish, Acid and Water by ONE Purifier.

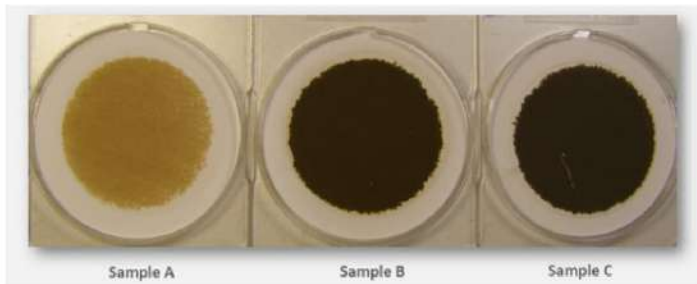
Particle and water contaminations in the lubricating and hydraulic oils cause serious operating problems by shortening life of the equipment. Also, organic oxide such as varnish and sludge has an impact on machine failure and abnormal wear.

SOLGE developed a total purifier for the first in the world that can monitor and remove all kinds of degradation by-products and external contaminants effectively as well as lower down acid number.



## MPC

### Membrane Patch Colorimetry



## Performance Test Result

**Test Oil : Turbine Oil (32cSt)/200 Liter, EHC Oil (46cSt) /200 Liter**

### Particle removal

- Below ISO17/14/12

### •Acid removal

- EHC Oil : 2.0 → ~0.08

### •Water removal

- Turbine mineral oil : 2,000ppm → ~ 50ppm

- EHC phosphate ester oil : 2,000ppm → ~

80ppm

Particle, Sludge, Varnish, Acid and Water Removal by One Purifier

## Function

### • Particle Removal

Remove particles with a high-performance particle filter (Beta ratio 1,000)

### • Varnish & Sludge Removal

Remove sludge and varnish (degradation by-products in solution by ion-exchange type filter (Patent technology)

### • Acid Removal

Remove acid with an ion-exchange-type filter (Patent technology)

### • Water Removal

Remove 100% of free water & 90% of dissolved water by membrane and dry nitrogen. Effectively remove water from EHC oil

### • Condition Monitoring (Optional)

Cleanliness/Water/Viscosity/Color/Temperature

## Benefits

- Guarantee no failure and long life of the equipment
- Tool for Proactive Maintenance
- Reduce Maintenance & Operating Cost
- Increase Asset efficiency
- Reduce wastes

## General Specification

- Flow rate : 46 L/min • Operating temp : 40°C ~ 65°C
- Power: 480VAC-3HP-3P (optional)
- Viscosity : max. 220cSt at 40
- Fluid : Mineral oil, Synthetic oil (EHC)
- Others : Portable type

## Components Specification

### • Particle removal filter

- Beta ratio 1,000, Absolute Filter
- Ratings : : 1µm, 3µm, 6µm, 12µm (Optional)

### • Varnish & Sludge removal filter

- Ion-Exchange type filter (Patent technology)

### • Acid removal filter

- Ion-Exchange type filter (Patent technology)

### • Water removal filter

- Portable Membrane type (Turbine oil)
- Dry Nitrogen purging (EHC Control Oil)

### • Real-time condition monitoring (optional) -

#### Cleanliness: Laser type, ISO/SAE/Count

- Particle : Saturation % or ppm(calculated)
- Temp. : °C
- Color : ASTM D1500, Values are 0.5~8





## Oil Flow Schematics

### TOMs-F-T (Turbine Oil)

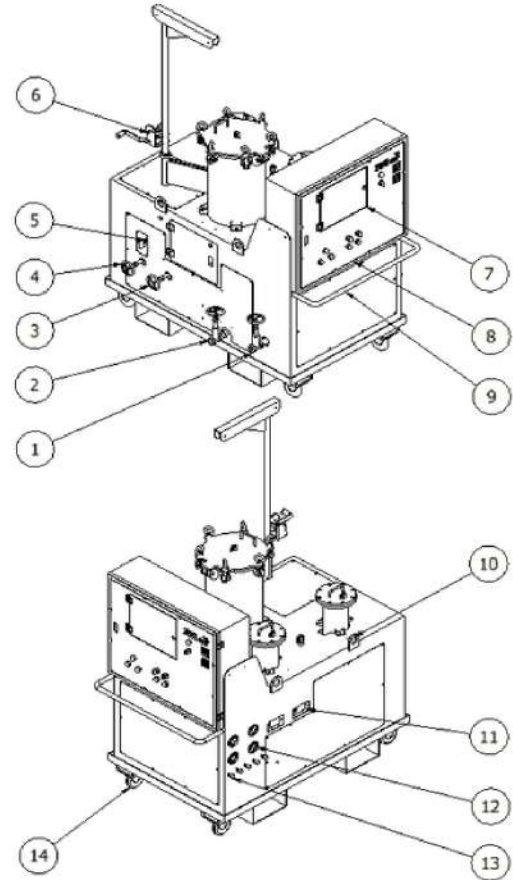
#### Purifier for Turbine oil

- Flow rate : 46 L/min
- Operating temp : 40°C ~ 65°C
- Power : 480ACV-3HP-3P (optional)
- Viscosity : max. 220cSt at 40°C
- Fluid : Mineral oil, Synthetic oil (EHC)
- Others : Portable type

### TOMs-F-PE (EHC Oil)

#### Purifier for EHC oil

- Reservoir → Pump → (Sensor) → Electrostatic Module  
→ Ion- Exchange Filter → Particle Filter → Reservoir
- Integrated with Good-N which removes water by dry nitrogen purging to the reservoir.



## Product Specification

Part No.	TOMs-F-T	TOMs-F-PE
Flow Rate	46 lpm	46 lpm
Working Pressure	8 kgf/cm <sup>2</sup>	8 kgf/cm <sup>2</sup>
Power Voltage	380V / 440V / 480V, 3phase, 60Hz (Other specifications are available upon request)	380V / 440V / 480V, 3 phase, 60Hz (Other specifications are available upon request)
Power Consumption(Max)	12Kw	12Kw
Operating Temperature	40°C ~ 60°C	40°C ~ 60°C
Viscosity (Max)	220cSt at 40°C	220cSt at 40°C
Inlet port	1 1/2"	1 1/2"
Outlet port	1"	1"
Monitoring (Optional)	Display with touch screen of Cleanliness / Water / Viscosity / Color / Temperature	
Dimension	L 1490 X W 1000 X H 1687 mm	L 1330 x W 900 x H 1457 mm
Weight (Max)	613 kg	560 kg

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# Oil Filtering Machine



Standard Oil Filtration Unit –Removal of Particle/Water/Varnish & Acid



## Features and Structure

- Fitted with high performance and high-efficiency absolute filter element with a Beta ratio over 1,000
- Various filtration sizes available (0.9, 1, 3, 6, 12, 25  $\mu\text{m}$ )
- VTM filter element is available for varnish adsorption, water absorption and 0.9  $\mu\text{m}$  particle removal
- Water adsorption filter available (3, 6, 12, 25  $\mu\text{m}$ )
- Composite resin filter is available to remove soluble degradation by-products (varnish) and acid as optional
- The on-line sensor can be mounted as an optional to monitor in real-time contamination/water/oxidation (degradation) / temperature
- Convenient to move and handle with a beautiful and ergonomic design
- Easy to operate and monitor with installed control panel

## Description

For reliable operation of major facilities in industrial sites, clean management of lube oil like human blood is required. LubricationPlusOFU (Oil Filtration Unit) is the most reliable core tool to remove particle contaminants which shortens life of the equipment and causes unexpected breakdown. It is a multi-functional off-line portable purifier that can be properly used depending on the application, such as purification during operation of the facility, purification of stored oil, purification of new oil, and is equipped with an on-line sensor to monitor the oil condition in real time.

In addition to main function of particle removal, various functions such as removal of water, soluble degradation by-products (varnish) and acid are available as optional and was designed beautifully curved and shaped.



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# Oil Filtering Machine



Standard Oil Filtration Unit –Removal of Particle/Water/Varnish & Acid

## Applications

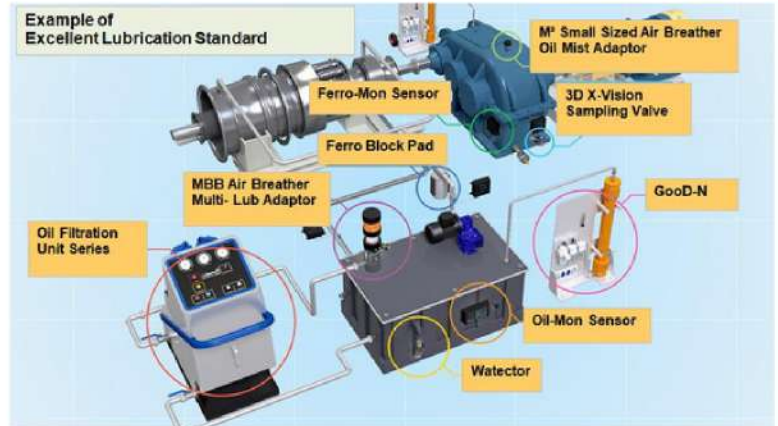
- Lubrication system
- Hydraulic system
- Reduction gearbox and pump New oil drum
- Storage tank

## Applicable Type of Oil

- Mineral Oil
- Synthetic Oil ( including Phosphate ester )

## Type of Products

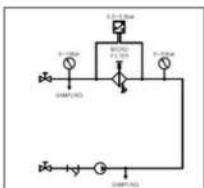
- Wide range of choice depending on application



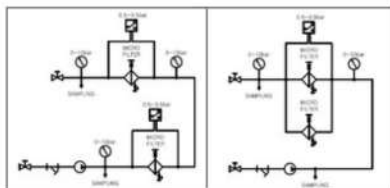
## Use for

- Circulation Purification
- New Oil Purification and Filling
- Reservoir Flushing
- Piping Flushing

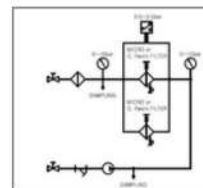
26" Housing Qty	26" Housing Arrangement	Filter Element Type	Contaminates to be removed(Selection)				Flow Rate	Power	
			Item	A	B	C			D
Single	Single	Particle Water Absorption	Par ti cl e	√	√	√	√	Max 70 LPM	220V-1 Phase (Max. 21LPM) Each Voltage- 3 Phase
Double	Single	VTM Composite Resin	Water		√	√	√		
			Solid Varnish			√	√		
			Soluble Varnish				√		



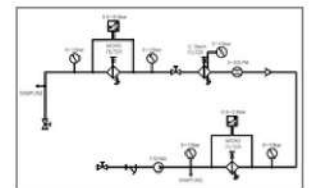
[Single Housing]



[Double Housing] (Serial / Parallel)



[Combined Composite Resin Filter Housing]



[Large Capacity Composite Resin Filter (LVR)]

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# Large Capacity High Absorption Water Band Filter



Standard Oil Filtration Unit –Removal of Particle/Water/Varnish & Acid

## Description

Clean management of lubricants such as human blood is required for the reliable operation of major equipment in industrial sites.

So far, Solgehas has been supplying various purifiers including OFU (Oil Filtration Unit) which have successfully applied to the contamination control of lubricants. However, there was a requirement of functional improvement on the water removal for these purifiers, and we developed water removal filter with quick removal function of large amount of water which can easily be installed on the existing particle filter element. It is band type filter and can be easily covered with outer side of particle filter element. Thus, both particle and water can be removed with particle filter covered with band type water filter.

## Features and Structure

- Can be additionally installed on the existing particle filter
- Can supply customized filters to fit various sizes of particle filters, when meeting MOQ.
- Easy installation and removal of water together with particle filter
- Large amount of water absorption compared to the size of the filter
- Quick absorption of water



## Installation and Removal



Particle filter housing covered with band filter



Top View



Removal of band filter from particle filter housing



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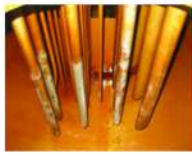
# OFU Sister Product Panel Unit VR System



Compact Size of VR System (VR Filter + Spin-on Particle Filter)

## Description

Lube oil / hydraulic oil brings various lubrication / hydraulic failures due to contamination (particles, moisture), acid, and degradation (varnish, sludge) as time goes by. Most of the purifiers and filtering machines currently in the market can somewhat remove contaminants by mechanical and physical methods, but organic acids, sludge/varnish, etc. generated by chemical degradation cannot be directly removed. It can be removed only by a composite resin filter using the latest ion exchange technology (chemical filter).



## Features and Structures

- Compact Size of VR System
  - 800mm \* 780mm, Small size compared to its purification capacity
- Removal of Degraded by-products (Varnish & Sludge)
  - Quick and effective removal of varnish & sludge, which is produced by degradation and has a fatal effect on the control system and lubrication system
  - Can remove soluble degraded by-products
- Removal of Acid
  - Removal of acids generated as a result of oil degradation and hydrolysis of phosphate ester-based control oil
- Removal of Particle
  - Efficient removal of particles by Beta Ratio 1000 Absolute Filter
  - Can remove both particles and water when covering filter housing with band type water filter



## Specification

- Part Number : OFU-PNVR-8-LVR1
- Power: 0.75KW-220V-1phase (Option)
- FlowRate: Max. 8 LPM
- Size: 800 \* 780 \* 950H (mm)
- Composition of Filters
  - Pre-Filter : Spin-on Filter 1ea (1/3/6/12  $\mu\text{m}$ )
  - VR Filter : Composite Ion Exchange Type Resin Filter 1ea
  - Pre-Filter : Spin-on Filter 1ea (1/3/6/12  $\mu\text{m}$ )



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# OFU Sister Product Panel Unit VR System

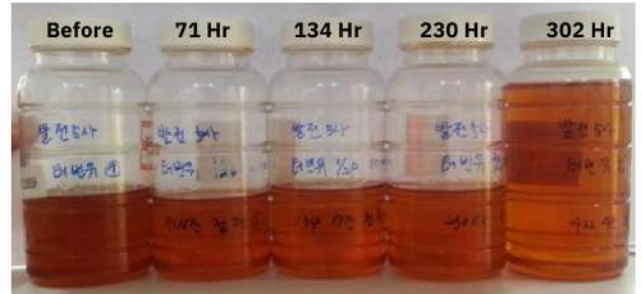


Compact Size of VR System (VR Filter + Spin-on Particle Filter)

## Case Study

### Case 1. Turbine Oil (Mineral Oil (32cSt))

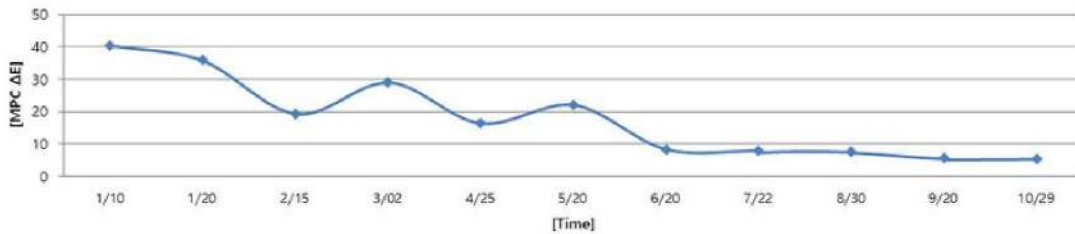
Purification Hour (HR)	Contamination (NAS)	Acid Number (mgKOH/g)	MPC
	KIPM	KIP	Overseas Lab.
Before	Above 12	M 0.1	22
71	7	0.03	5.1
134	6	0.02	1
230	6	0.03	N/
302	5	0.03	A



### Case 2. Turbine Oil (Mineral Oil (32cSt))

Date	1/10	1/20	2/15	3/02	4/25	5/20	6/20	7/22	8/30	9/20	10/29
Patch											
ΔE	40.5	35.8	19.2	29.1	16.4	22.1	8.3	7.9	7.4	5.5	5.4

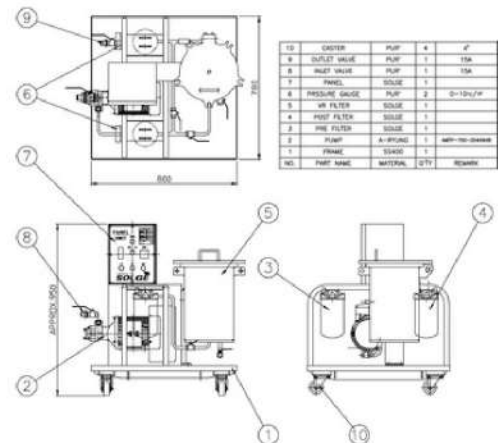
[MPC Trend : Turbine Oil]



## Benefits

- Improvement of equipment operating ratio and LCC
- Extension of lube oil life span
- Extension of equipment life span Reduction of control (hydraulic) failure Prevents journal-bearing temperature hunting (rise)
- Prevent cross-contamination after lube oil change
- Realization of proactive maintenance
- Reduction of O&M cost

## Reference Drawing



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### Summary

Ferrous wear particles, which badly affect the lubrication or hydraulic system, have to rapidly be removed because they increase the wear exponentially according to the principle of chain abrasion.

The size range of the ferrous wear particles is very wide ranging from silt size of 1 μm or smaller to 100 μm or bigger. Large particles can be removed by a general particle filter, but particles of 3 μm or smaller are not easily removed. Ferro Block Pad can collect such fine magnetic particles easily.

Ferro Block Pad is attached to the outer surface of the spin-on filter and collects from the silt size to large magnetic particles, which, otherwise, will flow into the filter media. Ferro Block Pad reduces the burden of filter media and extends the life span accordingly. As Ferro Block Pad can be used permanently, it is cost-effective product for spin-on filter



### Benefits

- Remove fine magnetic particles of 1μm or smaller
- Can be used for high-viscosity oil with low differential pressure
- Remove non-ferrous metal particles
- Extension of particle filter life
- Silicone pad with excellent chemical resistance
- Can use permanently

Part No. : SE-FBP-1



### Material

- Magnet: Neodymium series (about 2,100 gauss)
- Pad: Silicone
- Operating temperature: -10 °C ~ 80°C
- Size: L 180W x W 90 mm Chemical resistance to
- lubricant: mineral oil/synthetic oil
- Other: Recommend this pad when replacing the filter



# M3AirBreather



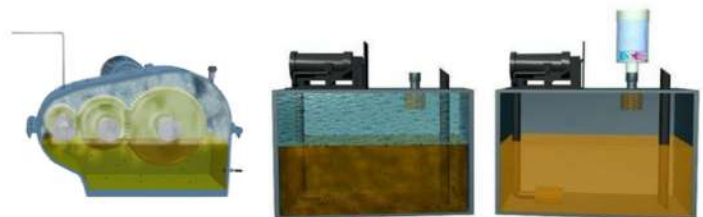
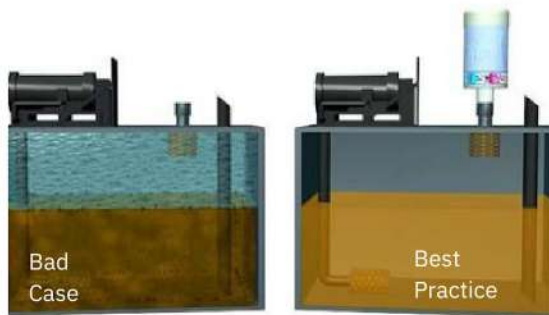
Multifunctional Micron Moisture Desiccant Air breather with Check valve attached type for maximization of service life



## Summary

All equipment using lubricating oil changes in volume according to changes in oil flow rate and temperature. As a result, airflow occurs according to the volume change, the external air that goes into the system contains a lot of contaminated particles and moisture, and this contaminated air causes a fatal failure in the facility and causes the life of the lubricant to be rapidly shortened. Therefore, 'M3 (Multifunctional Micron Moisture Filter)' is a product that prevents the intrusion of these contamination (moisture, particles) into the system so that the lubricant can be managed cleanly and dryly.

With the development and release of the large-sized MBB in localization and the development and release of this product in small and medium-sized sizes, it is possible to apply an air breather that prevents the penetration of moisture and fine particles from small to large facilities in the field, thereby enhancing the reliability of the facility has become possible to increase it even further.



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Multifunctional Micron Moisture Desiccant Air breather with Check valve attached type for maximization of service life

## Features and Structure

- Possible to remove fine particles (3 μm filter applied)
- Moisture removal from water vapor in the air (silica gel applied)
- Only the optional silica gel for moisture removal can be replaced.
- One-way airflow extends the life of the moisture module (optional)
- Selectable length of moisture removal part
- Easy to check the life of the particle filter by installing a differential pressure indicator
- Possible to check the replacement point by color change of the moisture removal module (Orange → Blue)
- Silica gel application that is not harmful



[ M3-MV-X ]



[ M3-SV-X ]



[ M3-MX-X ]



[ M3-SX-X ]

## Main Components

- Upper cover
- Lower support
- Inlet and outlet check valve
- Particle removal filter media
- Water vapor removal part
- Differential pressure indicator, etc.

	High life type (Check valve attached)		General type (Without check valve)		Etc			
	Standard (M)	Small(S)	Standard(M)	Small(S)	differential pressure gauge	Silica gel refill	Sealing pack	
Part Number	M3-MV-I	M3-SV-I	M3-MX-I	M3-SX-I	○	X	Option Add '-S'(e.g., M3-MV-I-S)	
	M3-MV-I-R	M3-SV-I-R	M3-MX-I-R	M3-SX-I-R	○	○		
	M3-MV-X	M3-SV-X	M3-MX-X	M3-SX-X	X	X		
	M3-MV-X-R	M3-SV-X-R	M3-MX-X-R	M3-SX-X-R	X	○		
Size (Height /outer diameter)	195/86[mm]	135/86[mm]	165/86[mm]	105/86[mm]			When the breather is stored for a long time, a rubber band for sealing is additionally installed on the upper cap to prevent the moisture ingress from atmosphere which shortens desiccant lifespan (Basic vacuum-packed.)	
Air volume	Measuring CFM @1PSID (Measuring LPM)	"	"	"				
Amount of silica gel	420g	200g	420g	200g				
Particle removal filter	3μm							
Connection	1" Female PF thread							
Differential pressure gauge	-25IN H2O(-62.27mbar) (-0.06227bar)							
Operating temperature (atmospheric)	-20°C~70°C							
Material	Housing(Polycarbonate, Nylon), Filter Media(P.E)							
Installation capacity	• The flow rate of the air breather is generally set to [sum of flow rate * 1~5 times] of the circulation and supply pump.							
	• Oil bath reservoirs (reducers, etc.) can be used up to 500 liters each.							

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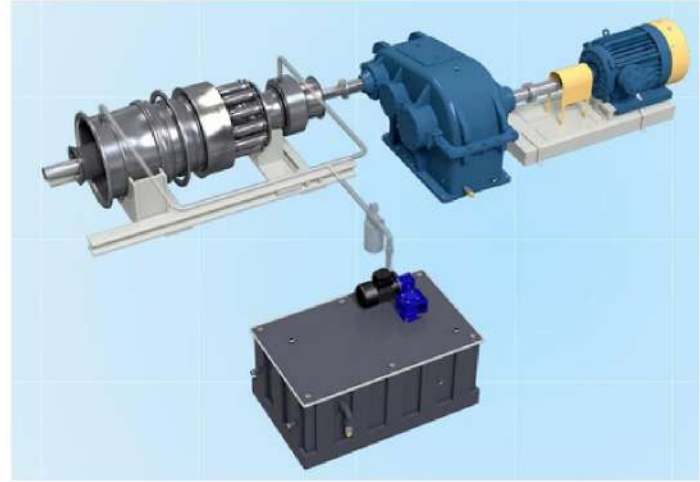
# M3AirBreather



Multifunctional Micron Moisture Desiccant Air breather with Check valve attached type for maximization of service life

## Application Field

- Lubrication/hydraulic circulation tank Gearbox / Pump
- Mobile equipment
- Bearing Housing
- Oil storage tank and large storage tank
- Other Reservoir



## Application Effect

- Lubricant/hydraulic oil contamination and moisture are improved
- Reduced failure of lubrication/hydraulic equipment
- Longer life of lubrication/hydraulic equipment
- Lubricant/hydraulic oil replacement cycle extension
- Reduced air breather replacement cost
- Reduction of maintenance/maintenance cost



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Multifunctional Micron Moisture Desiccant Air breather with Check valve attached type for maximization of service life

## Certificate of "Excellent R&D Innovative Product "



No.	Model	Category Code (8 digits)	Identification No. (8 digits)	Reg. Date
1	MBB-PSWS-XI	26101726	24424721	'21. 12. 24
2	MBB-PMWM-XI	26101726	24424722	'21. 12. 24
3	MBB-PSWX-XI	26101726	24424723	'21. 12. 24
4	MBB-PMWX-XI	26101726	24424724	'21. 12. 24
5	MBB-PXWS-XX	26101726	24424727	'21. 12. 24
6	MBB-PXWM-XX	26101726	24424725	'21. 12. 24
7	MBB-PXWL-XX	26101726	24424726	'21. 12. 24
8	MBB-M3-MV	26101726	24443873	'21. 12. 24
9	MBB-M3-SV	26101726	24443870	'21. 12. 24
10	MBB-M3-MX	26101726	24443872	'21. 12. 24
11	MBB-M3-SX	26101726	24443871	'21. 12. 24

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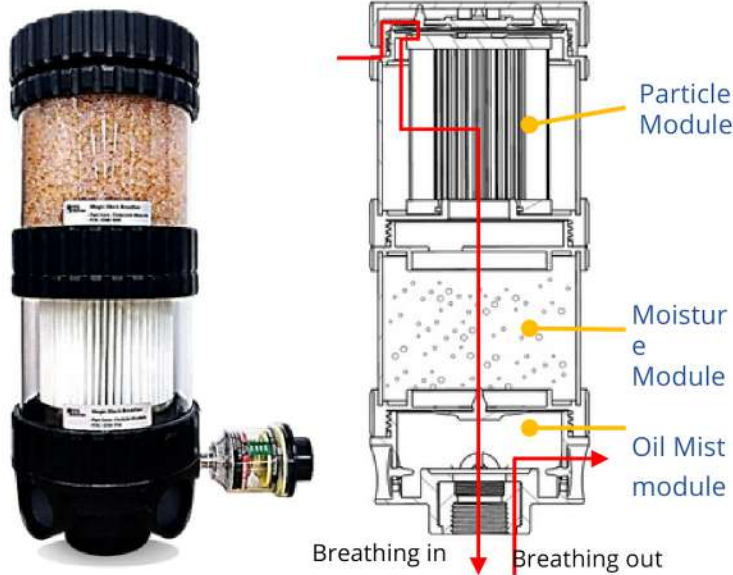
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# Magic Block Breather (MBB)

Module Type Particle and Moisture Removal Air Breather

## Summary

Volume of lube oil changes according to changes in oil flow rate and temperature, and air flow occurs according to the volume change. At this time, the external air that is sucked into the system contains many contaminated particles and moisture, and this contaminated air causes fatal failure of the equipment and rapidly shortens the life of the lube oil. Therefore, MBB (Magic Block Breather) is a solution that helps to keep the lube oil clean and dry by preventing ingress of these contaminants (moisture, particles) into the system.

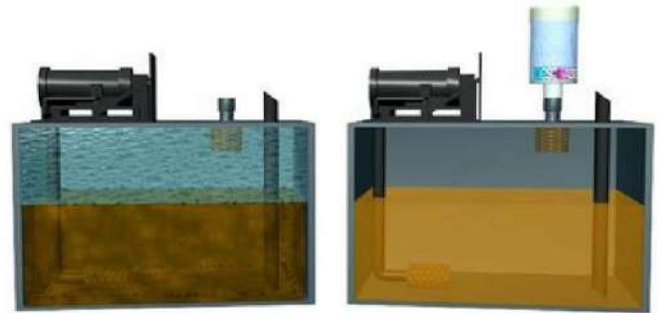


## Features and Structure

- Can remove a large number of fine particles (1 $\mu$ m pleated filter applied)
- Remove moisture in the air (silica gel applied)
- One-way airflow extends moisture module lifespan
- Various sizes are available for selection (Assembled in a modular form)
- Only used modules can be replaced
- Can check the replacement time by desiccant color (Orange  $\rightarrow$  Violet)
- Non-hazardous silica gel is applied

## Available Products

- Main Components Upper Cover, Lower Adaptor, Particle Module, Moisture Module, Oil Mist Module,
- Differential Pressure Indicator



**Replacement Time**

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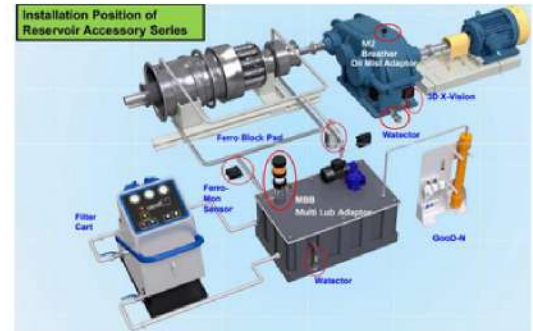
# Magic Block Breather (MBB)



Module Type Particle and Moisture Removal Air Breather

## Applications

- Lubrication/Hydraulic Circulation Tank
- Gearbox / Pump
- Mobile Equipment
- Bearing Housing
- Oil reservoir and Large Storage Tank
- Other Reservoirs



**“Excellent R&D Innovation Product” designated by the Korean Government**

Item	Standard Module (M)	Small Module (S)	Remark
Size ( Height / O.D. )	336/130 [mm]	256/130 [mm]	
Air Flow	17.2 CFM @1PSID (487 LPM) ( MBB-WMPM )	17.5 CFM @1PSID (495 LPM) ( MBB-WSPS )	
Amount of Silica Gel	620g	360g	L:1400
Particle Filtration	1μm		
Connection	1" Female PF Thread		
Differential Pressure Gauge	-25IN H2O(-62.27mbar) (-0.06227bar)		
Operating Temperature	-20°C~70°C		
Material질	Housing(Polycarbonate, Nylon), Filter Media(P.E)		
Capacity	<ul style="list-style-type: none"> <li>▪ The flow rate of air breather is generally sum of flow * 1 ~ 5 times of the relevant circulation and pump.</li> <li>▪ Oil bath reservoirs (reducers, etc.) can be used up to 2,000 liters with MBB.</li> </ul>		

## Benefits

- Improve contamination and moisture level of lubrication / hydraulic oil
- Reduce equipment failures
- Extend the life of the equipment
- Extend the replacement interval of lube / hydraulic oil
- Reduce air breather replacement costs
- Reduce maintenance cost



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# Sub-brand: MBB & M2 Air Breather



Improved facility reliability by using a high-efficiency air breather suitable for the purpose

## ■ MBB(Magic Block Breather)

The world's only air breather of replaceable particle & moisture desiccant module

### [Features and Benefits]

- Prevents humid air and dust from entering the oil tank, reservoir, reducer, etc.
- Individual mounting and replacement of particle removal module and water removal module
- Maximize the life of the desiccant with a built-in check valve
- Check lifespan by changing the color of the desiccant
- Equipped with a differential pressure gauge to check filter clogging (optional)



### [Application]

- Lubrication/hydraulic tanks, reducers, bearing housings, oil storage tanks, and other reservoirs
- All industries including power plants, petrochemicals, oil refining, steel, paper, cement,

### [Effect]

- Economical cost by partial replacement compared to the existing one-piece
- Prevention of equipment failure, life extension, lubricating oil life extension
- Prevention of moisture contamination of lubricating oil, prevention of inflow of polluted particles
- National R&D products
- Patent product

## ■ M2 Air Breather

Ultra-compact air breather with micro-particle removal function equipped with 1µm filter

### [Features and Benefits]

- 1 micron or larger particle microfiltration filter applied
- No additional sealant is required because it is sealed by O-ring
- Durable and corrosion-resistant material (nylon) Prevention of moisture penetration in outdoor facilities or water and water spray environments by using hydrophobic filter media
- Suppression of oil vapor generation and prevention of environmental pollution and oil loss by using a fine filtration filter



### [Application]

- Pump
- Reducer
- Shield for small equipment

### [Effect]

- Prevention of equipment failure and life extension, lubricating oil life extension
- Prevention of moisture contamination of lubricating oil, prevention of inflow of polluted particles

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## Water Contamination

Water is the 2nd leading cause of damage to the oil. Ingress of water shortens bearing life, accelerates the corrosion and causes corrosion of the metal surface, which eventually leads to equipment failure. This water is available in oil in three types (free, emulsified, and dissolving) and all water types must be removed, but its removability and efficiency vary depending on viscosity and oil type.

## Features and Function

- Can remove three types of water (Free, Emulsified, Soluble)
- Applicable to high viscosity oil up to 460cSt
- Can remove solid particles
- Water can be removed without depletion of additives
- Digital display for temperature, humidity, pressure and differential pressure



## Performance Test

Water Removal performance 2 liter / hr

## Test Condition

- PurifierEx-Driwith 35 lpm, Dry Nitrogen Purging 60°C with 60 lpm
- Contaminants Water 10 ltr, Agitating 30 min, Target Contamination 50,000 ppm
- Measurement COMPUTRAC Moisture Analyzer

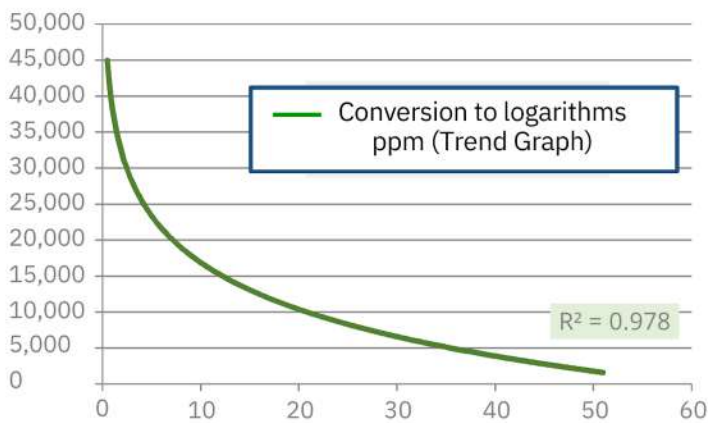
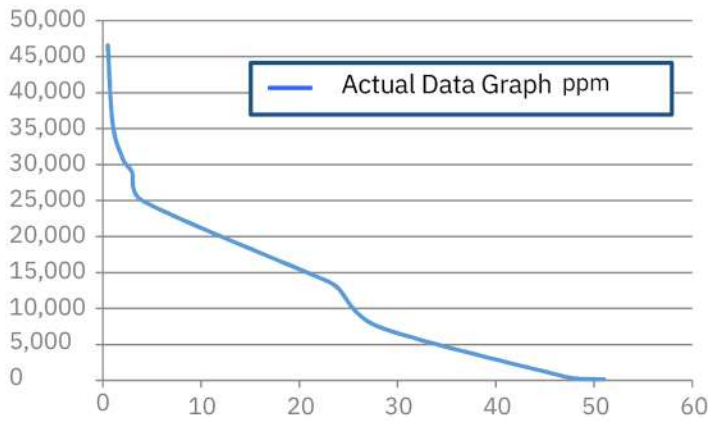
## Standard Model

Part No.	SED-E35H2N2
Flow rate	35LPM
Power	460V 3 phase. Other specs available upon request
Filter	Pre Filter (6µm) Disk Module GooD-N Post Filter (3µm)
Dimension	W 1,000 x L 1,715 x H 1,660 mm
Weight	Approx. 650kg

## Test Result

Operating Hour	Water (ppm)	Measuring Time
0.5	46,587	10:26
1	35,647	11:30
2	30,899	12:30
3	28,851	13:30
4	24,994	14:30
23	13,693	9:30

OperatingHour	Water (ppm)	Measuring Time
24	12,749	10:30
28	7,498	14:30
47	519	9:15
48	285	10:15
49	189	11:15
51	162	13:18



#5 Sample #3 Sample  
 (32ppm) (1,528ppm)  
 After 15 hours operation



# GooD-N (Dry Nitrogen Purging Unit)

For Water Removal



## QES (ASIA-PACIFIC) SDN. BHD.

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## Description

The cause of lubrication failure of all equipment is contamination (particles, water). The ingress of these contaminants into the equipment is due to the poor air breather and poor sealing on the top of the tank. GoD-N extracts dry and pure nitrogen from utility air on site and injects it into the equipment by generating positive pressure inside, thus it completely blocks the ingress of external contaminants and removes the moisture inside.

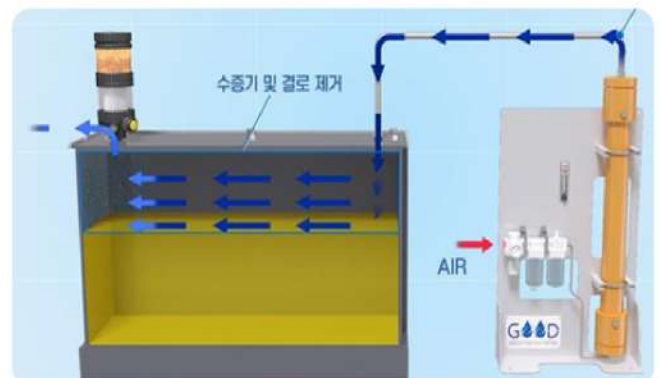


## Features and Structure

- Continuous dry nitrogen is generated and flows into the reservoir.
- Can be used as general Utility Air without the supply of Instrument Air
- By generating positive pressure in the head space of the reservoir, there is no ingress of external contaminants into the reservoir.
- Remove moisture inside
- No rotating components inside bring no failure factor, and the lifespan is semi-permanent.
- Low maintenance cost as consumables are just air filters in the front side.
- Reduces oxidation of the oil by blocking oxygen and delays oil degradation.

## Applications

- Cooling Tower
- Gearbox EHC System
- Pump and Gearbox
- Reservoir Hydraulic System Tank
- Can replace Purge Mist installation equipment
- Lubrication tank with severe moisture contamination





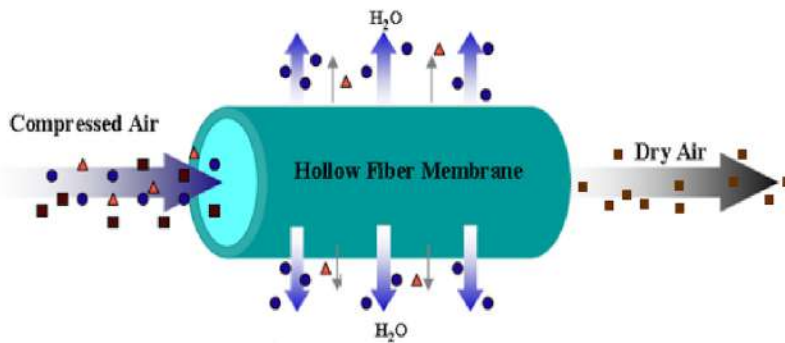
## Specifications

Item	Stationary Type	Portable Type
Part Number	SGD-N	SGD-N-P
Dew Point	Max - 60°C	
Dimension (L*D*H) [mm]	430*170*980	600*500*1160
N <sub>2</sub> Outlet	21.2L/min.	
N <sub>2</sub> purity (@100psi/ Atmosphere21°C)	>97%	
Max Air Consumption (@100psi)	34L/min.	
Consumables (Replacement / Year)	1 <sup>st</sup> Front Filter : SAF-GDN-P,	2 <sup>nd</sup> Front Filter : SAF-GDN-W

## Working Principal (Nitrogen Generation)

By using a porous membrane filter that can selectively permeate, moisture and oxygen permeate through the membrane filter and nitrogen flows as it is, generating dry and pure nitrogen.

- Moisture
- Nitrogen
- ▲ Oxygen



## Working Principal (Moisture Removal)

- If dry nitrogen is continuously injected and is forming fine positive pressure in the head space of the reservoir, inflow of external contaminants (moisture, particles) can be prevented.
- When dry nitrogen and oil containing moisture in the reservoir come into contact, the moisture in the oil moves to dry nitrogen due to the equilibrium principle, and the nitrogen-containing moisture is discharged to the outside.

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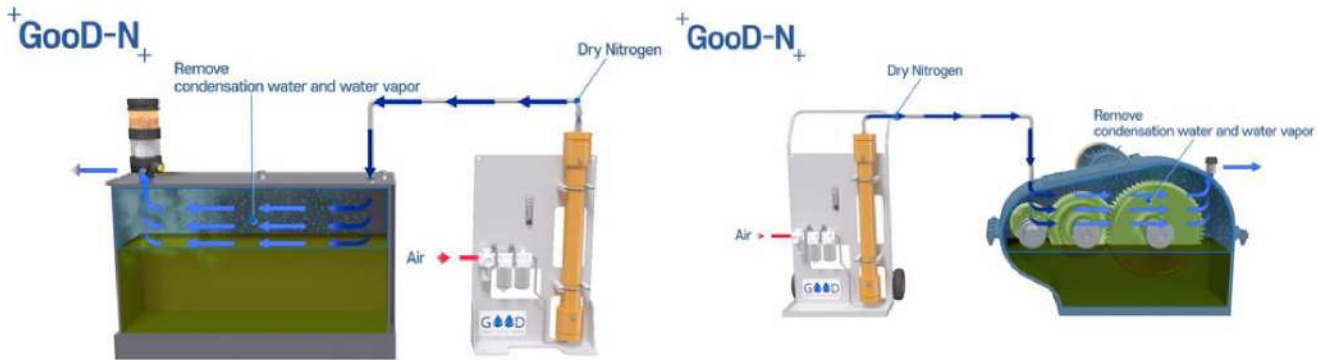
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# GooD-N (Dry Nitrogen Purging Unit)



For Water Removal



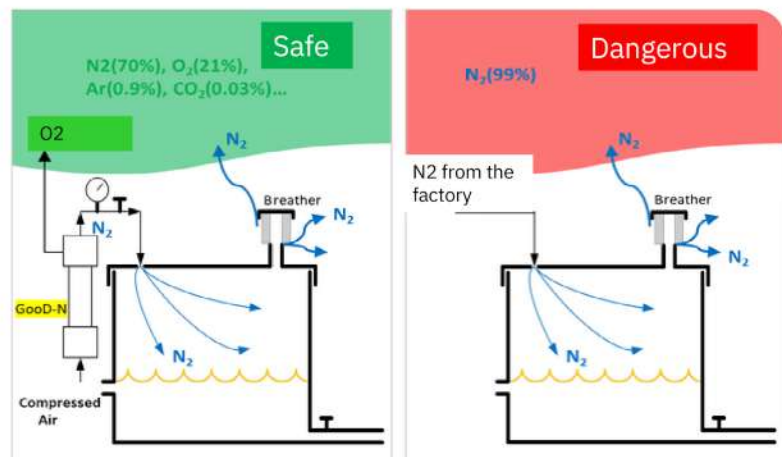
## FAQ

**Q : Our factory produces Nitrogen. Can I get the same effect if I use it as a substitute for GooD-N?**

**A : No.**

First of all, there are two major problems in connecting and using nitrogen produced in the factory. First, there is a risk of moisture contamination in the nitrogen because the pipe on the way to the equipment is exposed to the outside, and condensation may be generated due to the temperature difference. Secondly, for safety reasons, there is a risk of suffocation if the nitrogen concentration in the plant is getting high. If you continue to supply nitrogen produced in the factory, the concentration of nitrogen in certain areas will increase and workers will be exposed to this kind of risk. However, in the case of GooD-N, nitrogen from the compressed air is separated and put into the equipment, and the oxygen and other gases are discharged to the outside, so that the total nitrogen and oxygen concentrations are balanced like the atmosphere, making it safe. (See the picture below)

Thirdly, Nitrogen produced in the factory is uneconomical because its production cost is much higher than GooD-N.



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