

*WATER FREE*

Filter out water and oil



*water separator*  
**WATER FREE**

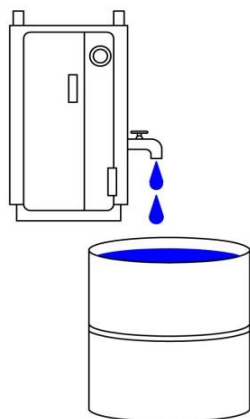
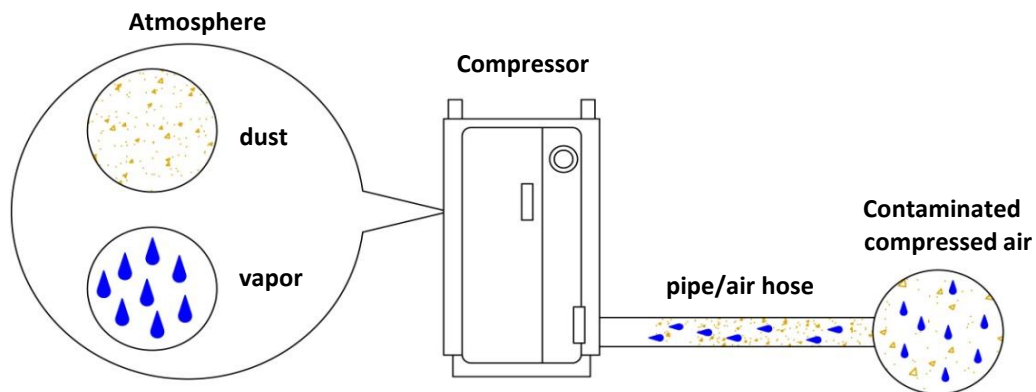
- ✓ Air-dryer substitute
- ✓ Extended pneumatic products lifetime
- ✓ Failure reduction of pneumatic products
- ✓ Reduction of maintenance time and cost for pneumatic products
- ✓ Improvement in quality

**Compressed air sanctification required**

**Contaminant in compressed air**

Solidified Particles	Abrasion particles, rusts, or minute sand can flow in to damage pneumatic products.
Bulk dense water	It leads to freezing, abrasion, or rust to shorten the pneumatic products lifetime.
Acidified oil	Acidified oil aerosols are mixed with coalesced water and become acid.
Liquid oil	It contaminates the pipe's work to lower whole system efficiency.
Micro-organism	It can lead to an unhealthy working environment with potential for personal injury.

**Compressed air problems**



**Compressed air contains moisture**

**113L = 1.8L x about 63 bottles(approx)**



※<condition> Compressor output :  
75kW - Compressing atmospheric air under the conditions 30°C, 80% relative humidity at 7 bar for 8 hours

**Coalesced water amount per compressor power**

Power [HP]	Power [kW]	Capacity [NI/min]	Coalesced Water [l/hr]
0.25	0.2	20	0.03
0.5	0.4	40	0.07
1.0	0.75	80	0.12
2.0	1.5	160	0.25
3.0	2.2	245	0.36
5.0	3.7	430	0.61
7.5	5.5	640	0.91
10	7.5	840	1.20
15	11	1280	1.80

Atmospheric drawn into compressor ● Temperature : 30°C ● Humidity : 80% ● Pressure : 6.8bar

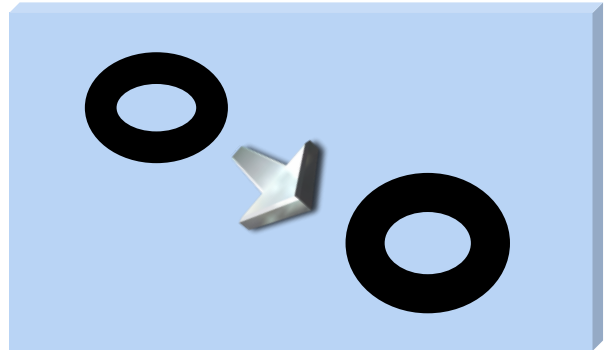
※ <condition>: Exact capacity & coalesced amount depend on compressor maker.

Main cause of malfunction for pneumatic components

Valve or actuator malfunction due to coalesced grease



Imbibitions of inner gasket



Rust of spool valve



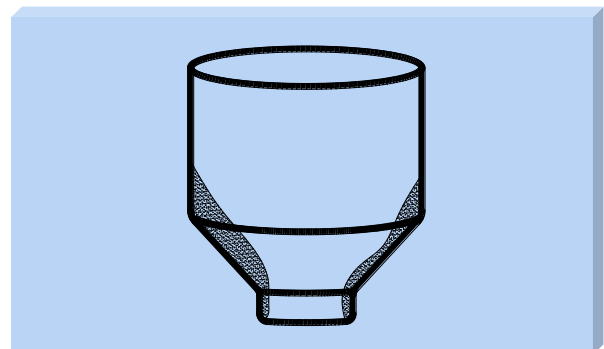
Rust of valve parts



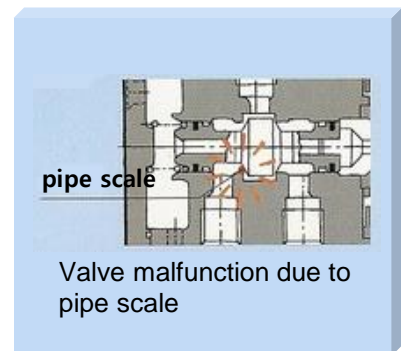
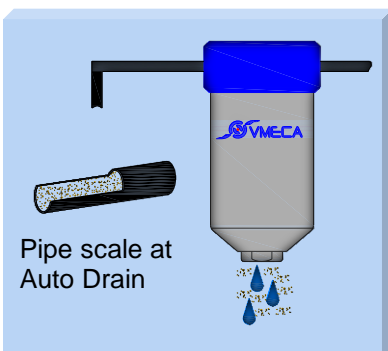
Coalesced water



Solidified powder • adhere



Pipe scale & Rust problems

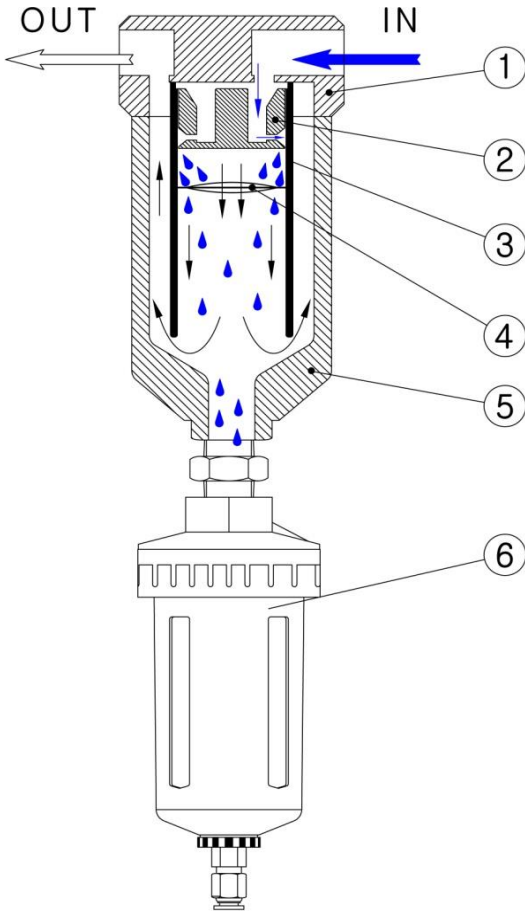


※ For reference : Exact capacity & coalesced amount depend on compressor maker.

VMECA WATER FREE

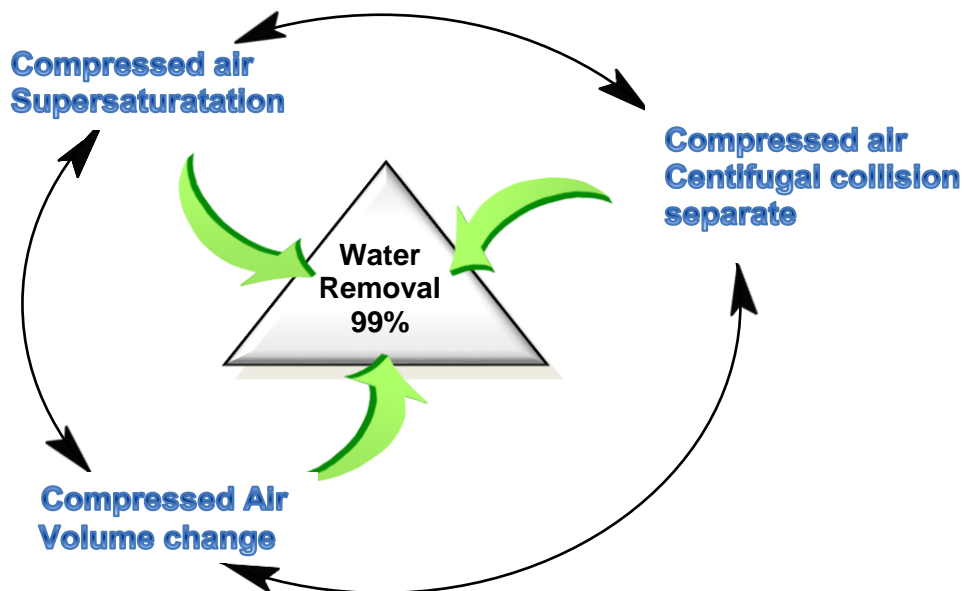
WHAT IS WATER FREE?

Compressed air is a safe and reliable power source that is widely used throughout the industry. In proportion to its wide utilization, problems caused by coalesced liquid in compressed air are increasing rapidly. Therefore, WF (Water-Free) is employed to remove moisture in compressed air to enhance its reliability.



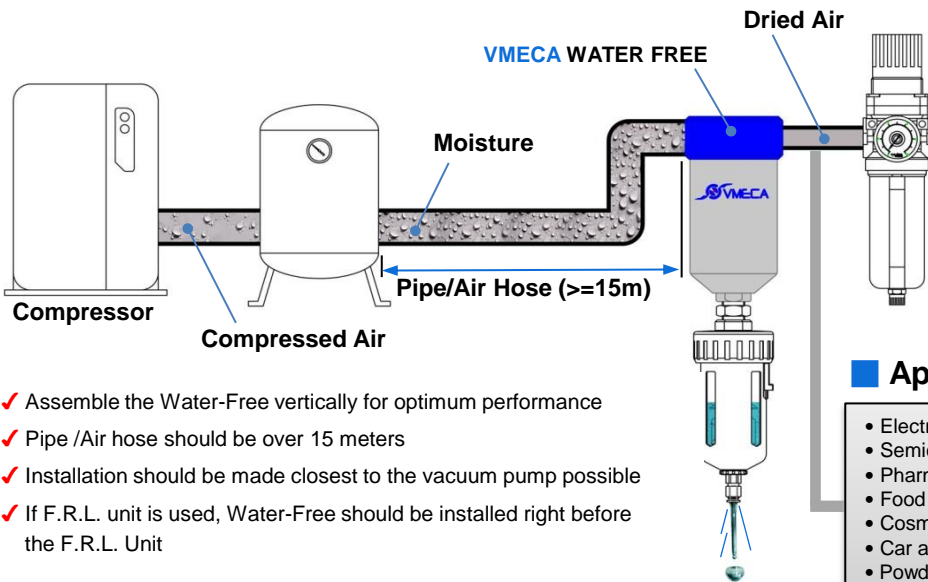
Operating Principles

Compressed air is inserted (flow) into ① Cover expanding rapidly through the ② DIFFUSER to become unstable by colliding with ③ MASH HOUSING separating it into water and moisture. Separated water collected at ④ MASH FILTER falls into the ⑥ AUTO DRAIN and reaches a certain height to drain off. Dried air comes through ⑤ BODY



**WATER FREE Installation and Application**

**WATER FREE Installation**



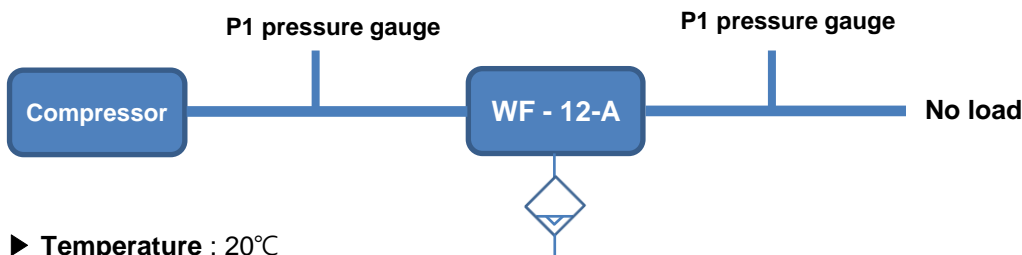
**Application**

- Electrical and electronics industries
- Semiconductor line
- Pharmaceutical produce line
- Food processing line
- Cosmetic factory
- Car assembling line
- Powder transferring
- Wooden machine
- Precision machine tool
- Fabrics manufacture
- NC machine
- Various air tools
- Various air cylinder
- Chemical facilities
- Paint facility
- Packaging machine
- Electric power plant
- Printing machine
- Ship manufacture
- Air motors Air bearing

- ✓ Assemble the Water-Free vertically for optimum performance
- ✓ Pipe /Air hose should be over 15 meters
- ✓ Installation should be made closest to the vacuum pump possible
- ✓ If F.R.L. unit is used, Water-Free should be installed right before the F.R.L. Unit

**WATER FREE Performance Test**

1. Test items: Water separation test
2. Test model : **WF -12-A**
3. Purpose: Example of water separation
4. Test overview



- ▶ **Temperature** : 20°C
- ▶ **Absolute Humidity** : 50%
- ▶ **Compressed Air** : 200 NI/min

5. Test Result

	After 1 hour	After 2 hour
Water Drain	30 cc	49 cc
P1 = 6.9 bar, P2 = 6.7 bar Depression (P1-P2) : 0.2 bar		

**Features and Advantages of WATER FREE**

**Features of Water free**

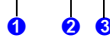
- ✓ Moisture removal up to 99%
- ✓ No maintenance
- ✓ Minimal pressure loss
- ✓ No effect in performance by time, flow rate and moisture proportion.
- ✓ No electricity and simple dynamics design

**Water free Advantages**

- ✓ Air-dryer substitute
- ✓ Extended pneumatic products lifetime
- ✓ Failure reduction of pneumatic products
- ✓ Reduction of maintenance time and cost for pneumatic products
- ✓ Improvement in quality

**Order No.**

**Order No.    WF - 34 - A B**



**1 Connect port**

- 38 - G3/8"
- 38L - G3/8"
- 12 - G1/2"
- 34 - G3/4"
- 01 - G1"

**2 Auto Drain**

- A - Auto Drain Attached
- No Mark - Non-attached

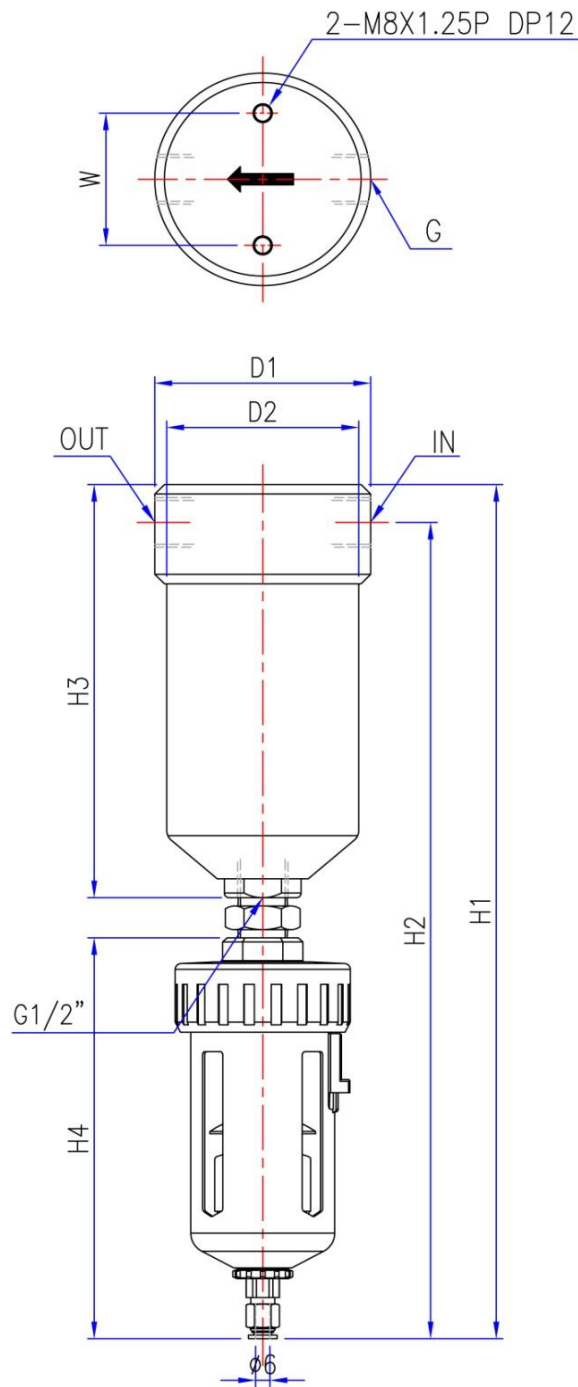
**3 L - type Bracket**

- B - Bracket Attached
- No Mark - Non Attached

**Product Specification**

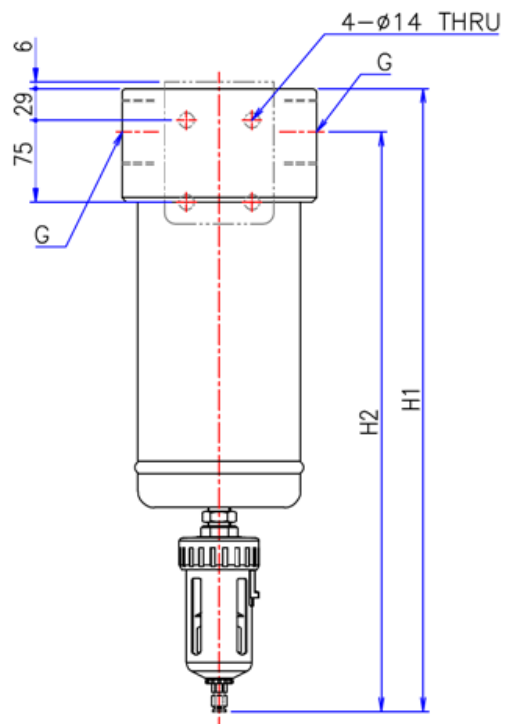
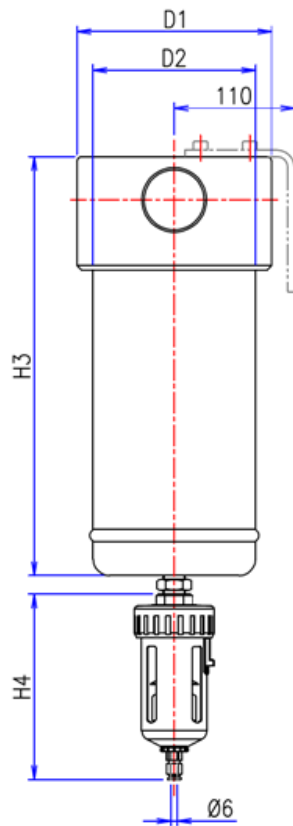
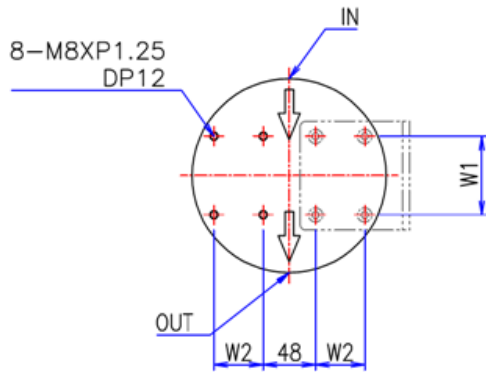
Model / Subject	WF - 38L - A	WF - 38 - A	WF - 12 - A	WF - 34 - A	WF - 01 - A	WF - 02 - A
Max. flow rate (NI/min)	650	1,300	2,000	3,000	5,000	18,000
Depression (bar)	0.2					
Operating pressure (bar)	3 ~ 10					
Water Drain Effect (%)	99					
Oil Removal (%)	70					
Drainage meathod	Automatic (manual)					
Port Size	G3/8"	G3/8"	G1/2"	G3/4"	G1"	G2"
Drain outlet	Outer Diameter Ø6 hose one touch fitting					
Weight (Kg)	1.85	1.85	1.85	2.85	2.85	9.90
Size (mm)	Ø90X364	Ø90X364	Ø90X364	Ø106X433	Ø106X433	Ø178X570

**Dimensional information**



Model	G	H1	H2	H3	H4	D1	D2	W
WF - 38 A WF - 38L A	G3/8"	362	346	175	170	90	80	56
WF - 12 A	G1/2"	364	347	177	170	90	80	56
WF - 34 A	G3/4"	433	409	246	170	106	90	60
WF - 01 A	G1"	433	409	246	170	106	90	60

Dimensional information



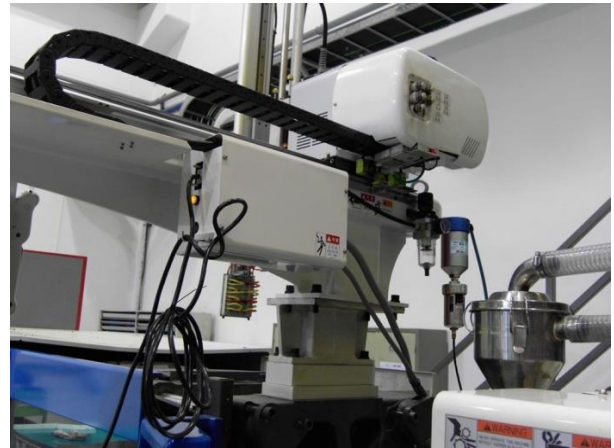
Model	G	H1	H2	H3	H4	D1	D2	W1	W2
WF - 02 A	G2"	570	531	384	170	178	149	72	45



## ■ WATER FREE Application



▲ Veneer sheet transfer line in wooden industry



▲ Cylinder and pump protection for injection molding line auto-ejector



▲ Vacuum pump and pneumatic actuator of packaging machine



▲ Vacuum conveyor for dried materials



▲ Protection of pneumatic actuator in factory automation line



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