

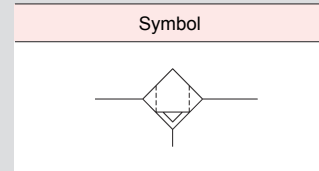
KWS series



KWS 300



KWS 600



How to order

KWS 300 - 02

① ② ③ ④

① Model

KWS	Water Separator
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② Maximum dispatch volume

200	200 ℓ/min
300	300 ℓ/min
600	600 ℓ/min
800	1500 ℓ/min

③ Port size

02	Rc(PT) 1/4"
03	Rc(PT) 3/8"
04	Rc(PT) 1/2"
10	Rc(PT) 1"

(* It is recommended to attach a filter for removing dust at the front end.)

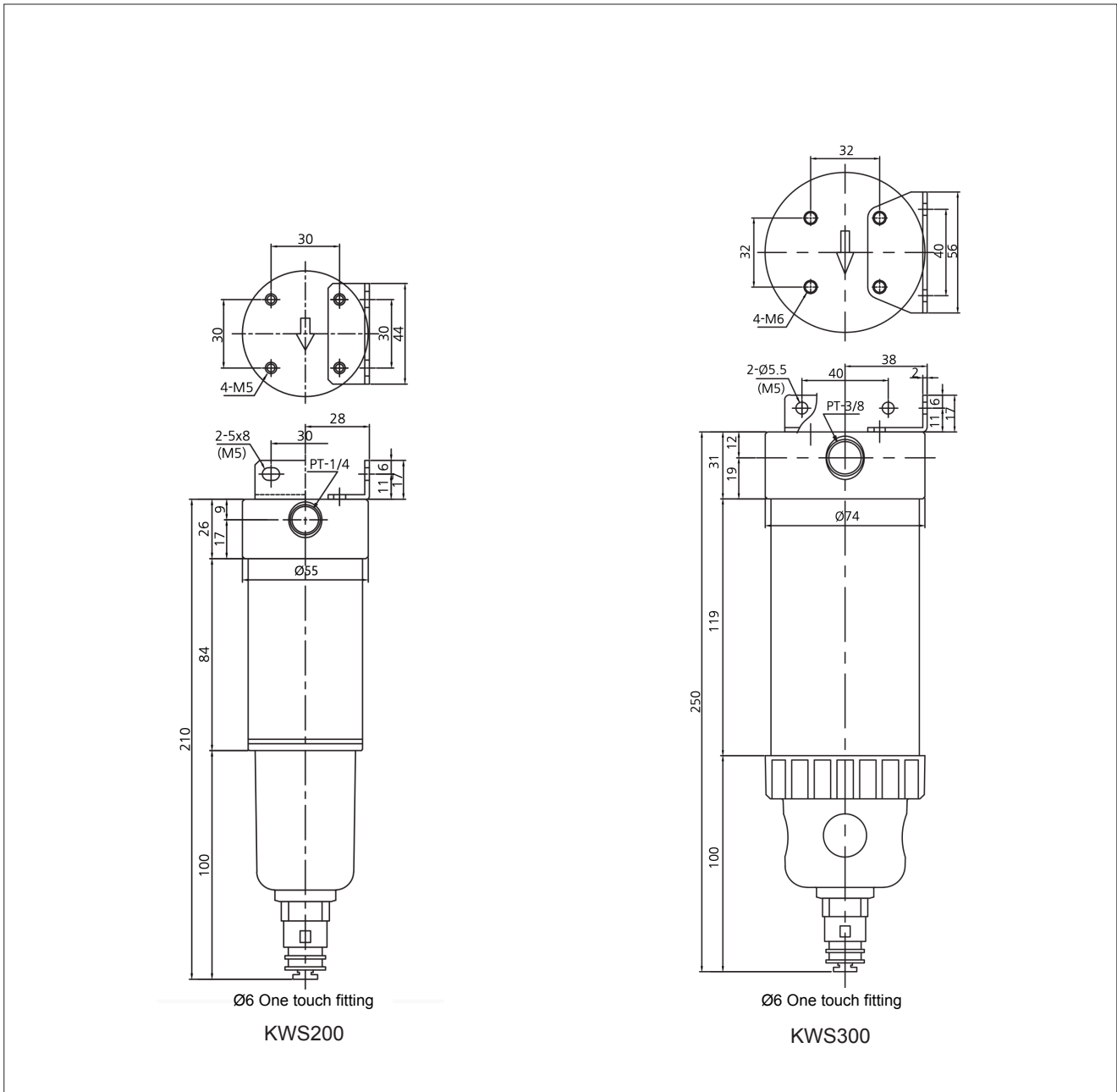
Specifications

Model	KWS200-02	KWS300-02	KWS600-03	KWS600-04	KWS800-10
Max. dispatch volume	200 ℓ/min	300 ℓ/min	600 ℓ/min	600 ℓ/min	1500 ℓ/min
Pressure dropping	0~0.25kgf/cm ² (0~0.025MPa)				
Operating pressure range	1~10.0kgf/cm ² (0.1~1.0MPa)				
Proof pressure	12.0kgf/cm ² (1.2MPa)				
Ambient & fluid temperature	-20 ~ 50℃				
Drain type	For both auto and manual drain				
Port size	Rc(PT)1/4"		Rc(PT)3/8"	Rc(PT)1/2"	Rc(PT)1"
Drain port	Ø6 One touch fitting				
Dimension (mm)	Ø55×210	Ø74×250	Ø90×312		Ø130×377
Weight	0.4kg	0.75kg	1.1kg		4.3kg

Feature

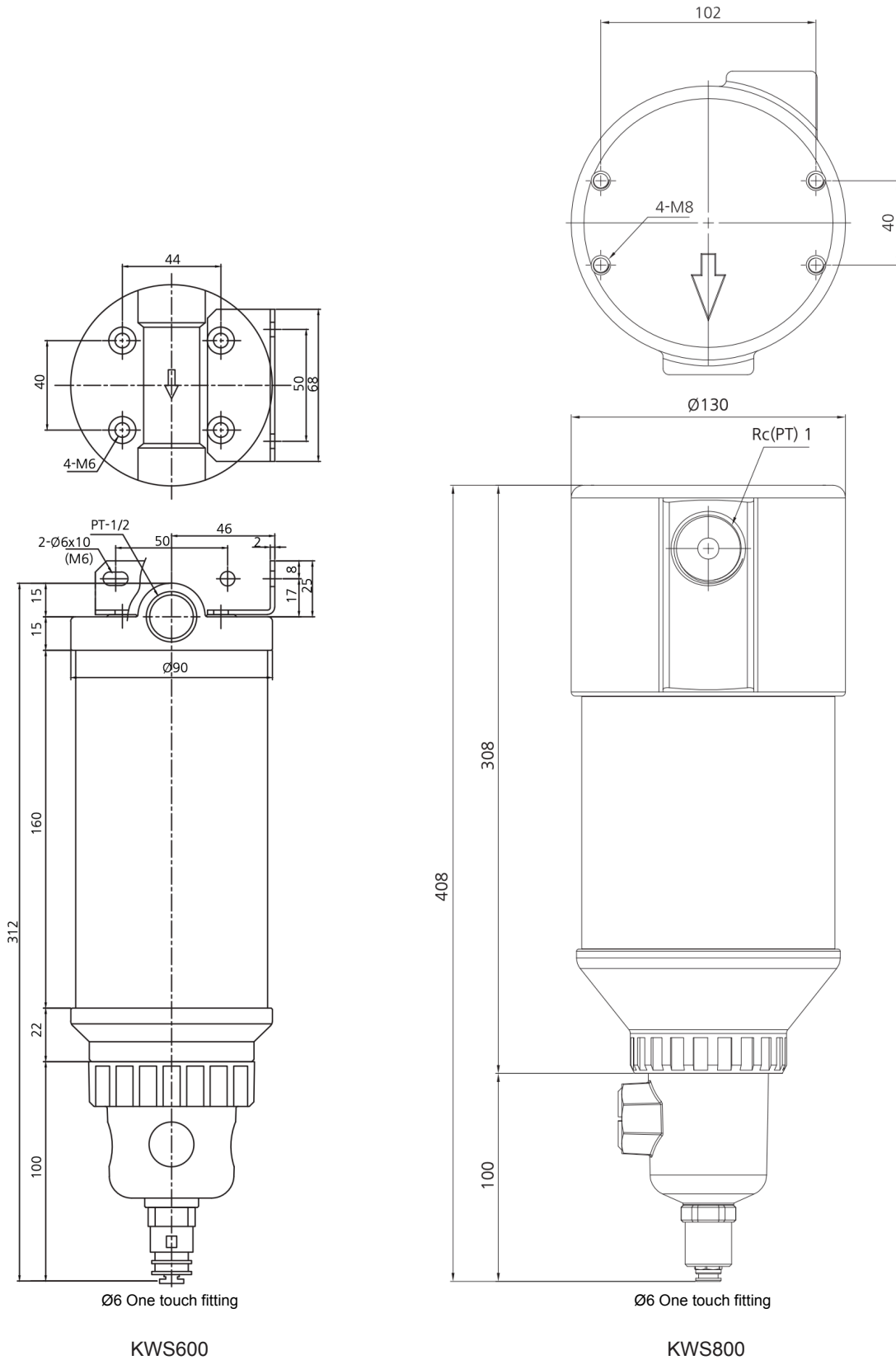
- No element, no need of spare parts
- Rate of moisture elimination : 99.99%
- Rate of oil : 99.99%
- Low pressure drop
- No need of maintenance, no replacement parts (Except for drain valve)
- Semipermanent life (except drain valve)
- Maintain 100% of initial performance with its semipermanent life
- Have better performance than using water separator and oil separator together
- In case of pneumatic application, air dryer and after cooler can be omitted
- Extended the life compare with expensive filter
- Performance does not vary with the change of air capacity
- Performance does not vary with the intake of water
- Simple structure and no malfunction problem
- Significant reduction of bacteria (No sterilizing function)
- Get rid of problems caused by solenoid valve
- No need of power supply
- Light weight

Structure



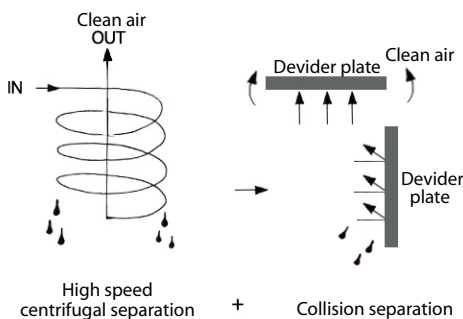
- ※ Automatic operating and manual operating both are applicable. Water can be drained manually when drain valve is blocked.
- ※ Customized water separator without drain is available where manually-operated drain valve is attached.
- ※ 3 types of water separators are available depending on flow rate. Irregular large-sized type and special application type available upon customer request.

Dimensions



Summary

- Water separator is a new concept air filter (water and oil separator), quite different from conventional one.
- Though there is no filter element in the water separator, one water separator alone is capable of performance far better than two filters combined by one conventional filter intended to remove moisture (mist separator etc) and the other one to remove oil.
- With no filter element as well as mechanical element having such motion as rotation, reciprocation etc, the water separator is "totally free from repair, no need for consumables".
- Despite use of air dryer, the reason why water comes from the end of water separator is that water trickles are generated as air is condensed in the pipe. As pollution or corrosion is attributable in large part to fine water trickles rather than water vapor, air required in the devices such as cylinder or air conditioner where air is used is most probably "one where fine water trickles are completely removed" rather than particularly dry air. Even though the water separator does not lower dew point in an air, it certainly removes water trickles, however fine they may be.
- As in general, equipment which need compressed air are far installed from compressor, it is realistically difficult to completely remove moisture and oil with dryer alone as air is condensed along the long pipeline. This is the reason multi stage filters are used in most cases. However, no matter how many stage filter are used, moisture is not completely removed. As the water separator is capable of completely removing moisture and oil, one unit of the water separator alone installed just in front of main equipment is enough to perform its intended function, thus it saves installation and maintenance fee.



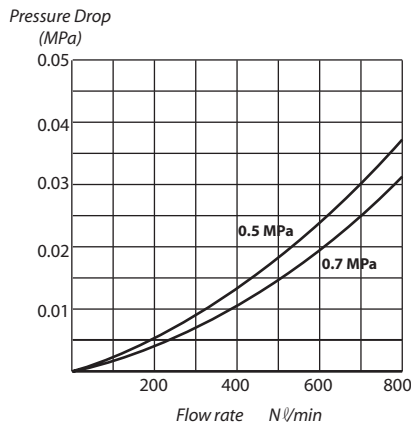
Special Centrifugal Separation (Patented)

- By adopting "multi-nozzle-based high-speed centrifugal separation (worldwide patents are being filed) independently developed by us, we have successfully achieved a high moisture removal rate, thus totally eliminating any need for parts requiring "replacement" such as filter elements.
- With its center in stable condition, compressed air rotates at high speed by virtue of "multi-nozzle" in helical configuration installed in a radial arrangement. At this time, air is completely separated from moisture due to significant difference in density between them.
- Separated moisture drops to the drain below due to gravity and then, is automatically discharged by float-type discharge valve. This solution is capable of handling a large amount of flow while maintaining high moisture removal rate without pressure being lowered too much.

Differences Between General Water Separator & Water separator

No	Item	Water separator	General Air Filter
1	Principle of water removal	- Centrifugal separating method - High-speed centrifugal separation by radial multi-nozzle (No element required)	- Separation by passing through micro-pores in (non-woven fabric or sintered etc) filter element.
2	Water (and oil) removal	- Remove 99.99% - Remove oil efficiently - Same moisture removal rate when air is used 100%. - All "liquid components" are removed. (So is oil)	- Increase usage of air degrade water filtering performance - As clogging progresses with use over time, moisture removal rate decreases. - Part of moisture separated is sucked into high-speed air and discharged.
3	Pressure lost (Pressure different)	- 0~0.25 Kg/cm ² - Pressure differential does not depending on operating time	- The longer operating time the higher pressure differential
4	Maintenance and service life	- Without being equipped with filter element, the water separator is "totally free from repair", except for drain valve. - Semipermanant service life - Maintain initial performance condition anytime	- Filter element should be exchanged on a regular basis - Non-semipermanant service life
5	Filter function	- Water separator eliminate both water and oil - Higher efficiency compare with using water separator and oil separator separately	- Required water separator and oil separator separately to eliminate water and oil
6	Foreign particle removal	- Primarily not intended to remove particulate impurities, it decreases them significantly.	-
7	Sterilization	- Reduce bacteria significantly (Around 90~95%. Note, no sterilizing effect)	- Note, no sterilizing effect
8	Economic	- Significant cost savings on replacement parts (element) and maintenance. - Cost savings on installation of dryer and after cooler. - Savings on air dryer operation cost (electricity etc).	- Replacement parts and labor cost are required due to replacement of filter. - High-priced dryer and after cooler are required.

Pressure Lost Characteristic



As the water separator adopts separation by virtue of "multi-nozzle" independently by us, "cross-sectional area" through which air passes is very wide. Thus, relative to amount of flow handled by the water separator, loss of pressure (differential pressure) is extremely little. It is below 0.25kg/cm².

Application

- Painting facility
- Food manufacturer
- Pharmaceutical company
- CNC machine
- Semiconductor manufacturing facilities
- Nitrogen manufacturing facility
- Medical equipment
- Dentist
- PCB manufacturing line

Installation

1. Be sure that the water separator is installed in a vertical position to produce effect to the maximum extent possible.
2. Be sure that the water separator is installed "immediately ahead of" main equipment. As the pipe becomes longer behind the water separator, condensation may be caused by difference in temperature between the inside of the pipe and open air.
3. Check direction toward inlet and outlet for compressed air.
4. If a lubricator is used to lubricate air cylinder, be sure that the water separator is installed in front of the lubricator.
5. To prevent drain valve from being blocked, it is recommended that general filter be installed just ahead of the water separator.