Cyclone steam water separator

FXQ series the steam separator is a carbon steel or stainless steel equipment of pressure vessel structure, which aims to remove the water suspended in the steam that cannot be discharged through the drain valve. The steam water separator must be installed on the horizontal pipeline with the drainage outlet vertically downward. To ensure the rapid discharge of the separated liquid, a suitable set of drain valve assembly shall be connected to the drainage outlet at the bottom of the steam water separator.

- High water removal efficiency: 99% liquid water can be removed
- Small size and light weight
- Convenient installation, pipe type connection, hanging installation
- Maintenance free, high reliability
- Long service life, It can be used for 20 years
- Manufactured according to pressure vessel standards, safe and reliable
- Automatic drain valve or manual drain valve, level gauge, etc. can be selected

Equipment type

Baffle type- Baffles or folded plate separators are composed of many baffles. The fluid in the separator changes the flow direction for many times. Because the suspended water droplets have large mass and inertia, when the flow direction of the baffle changes, dry steam can bypass the baffle and continue to move forward,

while water droplets will accumulate on the baffle. The steam water separator has a large flow area, reducing the kinetic energy of the water droplets, most of which will condense and fall to the bottom of the separator, Discharge through drain valve.

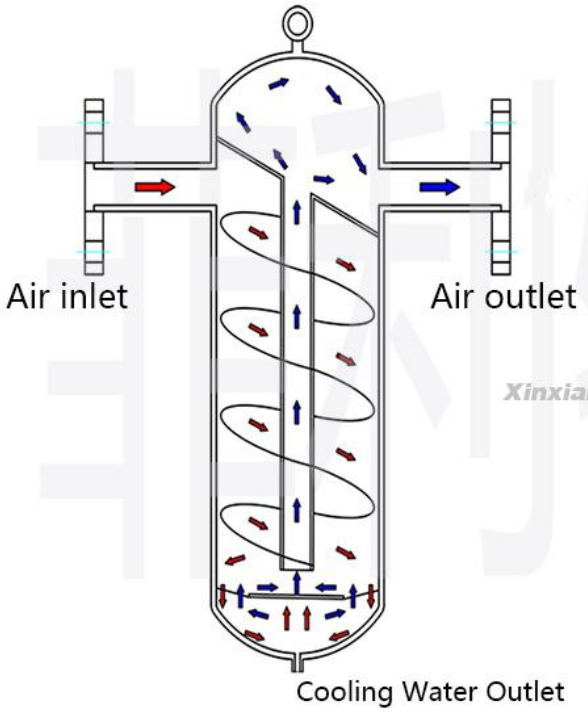
Cyclone type- A cyclone or centrifugal separator uses a series of fins to produce a high-speed cyclone, in which steam flows at a high speed. The cyclone moves downward in an inclined manner, and the water contained in the swirling gas is separated and gathered on the inner wall of the steam separator under the action of centrifugal force due to the reduced speed. The separated liquid is collected and flows into the collecting tank, which is discharged through the automatic drain valve, and the dry and clean steam is discharged from the outlet of the separator.

Adsorptive type - There is an obstacle on the steam channel inside the adsorption separator, which is generally a metal mesh pad. The suspended water drops are adsorbed after encountering it. When the water drops reach a certain extent, they fall to the bottom of the separator due to gravity. Separators combining steam spinning and adsorption are also common, and the overall separation efficiency will be improved due to the combination of these two methods.

The main difference between baffle separator, cyclone separator and adsorption separator is that baffle separator can maintain high separation efficiency in a large flow rate range, while the separation efficiency of cyclone separator and adsorption separator can reach 98% only when the steam speed is below 13m/s,

otherwise the efficiency will be very low. When the steam speed is 25m/s, the separation efficiency is only about 50%.

Equipment parameters



- Design pressure:1.0/1.6/2.5MPa
- Hydrostatic test pressure:1.25/2.0/3.0MPa
- Design temperature:300℃/572℉

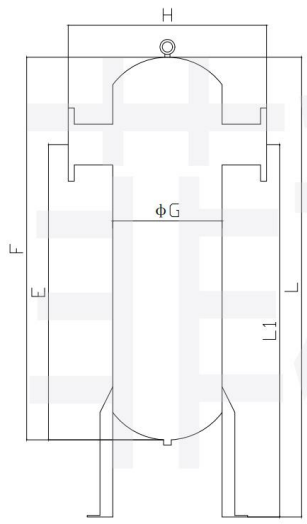
- Corrosion allowance:1mm
- separation efficiency:99%
- Shell material:Carbon steel、stainless steel

Scope of application

- Compressed air condensate separation and recovery
- Condensate separation of steam pipeline
- Inlet and outlet separation of gas-liquid mixing part
- Condensate separation and discharge in vacuum system
- Condensate separation behind water cooling tower

- Other kinds of gas-liquid separation

Specifications and dimensions



model	caliber	Overall dimensions						Handling capacity (m^3/min)	Water discharge device	weight kg
		E mm	F mm	L1 mm	L mm	G mm	H mm			
FXQ25	DN25	280	400	/	/	133	293	4	自动放水阀	12
FXQ32	DN32	380	500	/	/	133	293	6	自动放水阀	17
FXQ50	DN50	540	700	/	/	159	355	18	自动放水阀	19
FXQ65	DN65	600	760	/	/	159	355	22	自动放水阀	35
FXQ80	DN80	705	900	/	/	219	459	42	自动放水阀	59
FXQ100	DN100	782	1000	/	/	219	489	60	自动放水阀	102
FXQ125	DN125	847	1100	/	/	273	591	70	自动放水阀	108
FXQ150	DN150	1150	1490	1450	1790	325	673	120	自动放水阀	148
FXQ200	DN200	1223	1590	1523	1890	426	874	150	自动放水阀	165
FXQ250	DN250	1291	1750	1591	2050	478	930	200	自动放水阀	202
FXQ300	DN300	1488	2050	1788	2350	630	1086	400		251
FXQ400	DN400	1760	2450	2060	2750	820	1380	600		387
FXQ450	DN450	2015	2750	2315	3050	920	1480	800		450
FXQ500	DN500	2310	3100	2610	3400	1020	1584	1000		580

Model selection method:

- Boiler steam: The boiler steam is the place where the gas water separator is needed. Generally, the baffle type or cyclone type is selected, but the effect of the baffle type is not ideal, so the cyclone type is recommended.

- Biogas: Biogas also contains water, which affects its use. Due to its flammability and explosiveness, the cost of biogas equipment will be higher in the production process, and many impurities will be brought in during the generation of biogas. Therefore, it is generally recommended that the filter element should be given priority, and manual drainage should be considered for the drainage part.

- Air compressor: air compressor is equipped with air-water separator, which is widely used, and filter element type can be selected.

- Reactor gas: because the gas produced by the reactor is corrosive, flammable and explosive, it is recommended to choose a stainless steel cyclone type steam water separator, preferably a 316 grade or above (including 316).

- Natural gas: Natural gas is flammable and explosive, so cyclone type or filter element type can be selected, and explosion-proof treatment is also required for drain valve.

These medium gases are used in the market at present. If not mentioned, please call for business advice

The company is a manufacturer, which can be customized according to customer needs!

Order information:

Generally, this gas water separator is applicable to any gas, including flammable and explosive gas. The products that the company has made are applied to compressed gas, steam, biogas, natural gas, underground waste gas, VOC gas (corrosive), etc.

When selecting the steam separator, please consider the following parameters:

Consider the treatment flow and select the appropriate caliber.

Considering the chemical properties of the filter medium and whether it contains corrosivity, the material of the steam separator shall be selected.

Considering the temperature of the filter medium, select the appropriate drain valve or high-temperature drain valve.

Provide the pressure, positive pressure or negative pressure of the pipeline. The automatic drain valve does not work under negative pressure. Special note shall be made during model selection.

Precautions for installation and use:

1. Check whether the installation position conforms to the flow direction of the medium, and ensure that it is installed in the direction of the arrow on the housing.
2. The drain outlet is installed on the horizontal pipe vertically downward to ensure smooth discharge of the separated liquid.
3. The upper end of the filter is provided with a lifting ring, which can be installed in the air to reduce the negative pressure of the pipeline equipment.

4. The drain outlet is equipped with a manual ball valve, which shall be closed during installation.

5. The ball valve is open during normal operation.

6. The automatic drain valve is connected below the ball valve. During normal operation, check whether the float ball of the drain valve is reset. During normal operation, the float shall be at the lower end of the drain valve.

7. Close the ball valve when repairing the pipeline or replacing the drain valve.

8. Bypass and inlet and outlet shut-off valves shall be set to ensure maintenance will not affect production.

9. When commissioning a new pipeline or starting a pipeline that has been out of service for a long time, it is necessary to isolate the equipment and clean the pipeline before starting the equipment.