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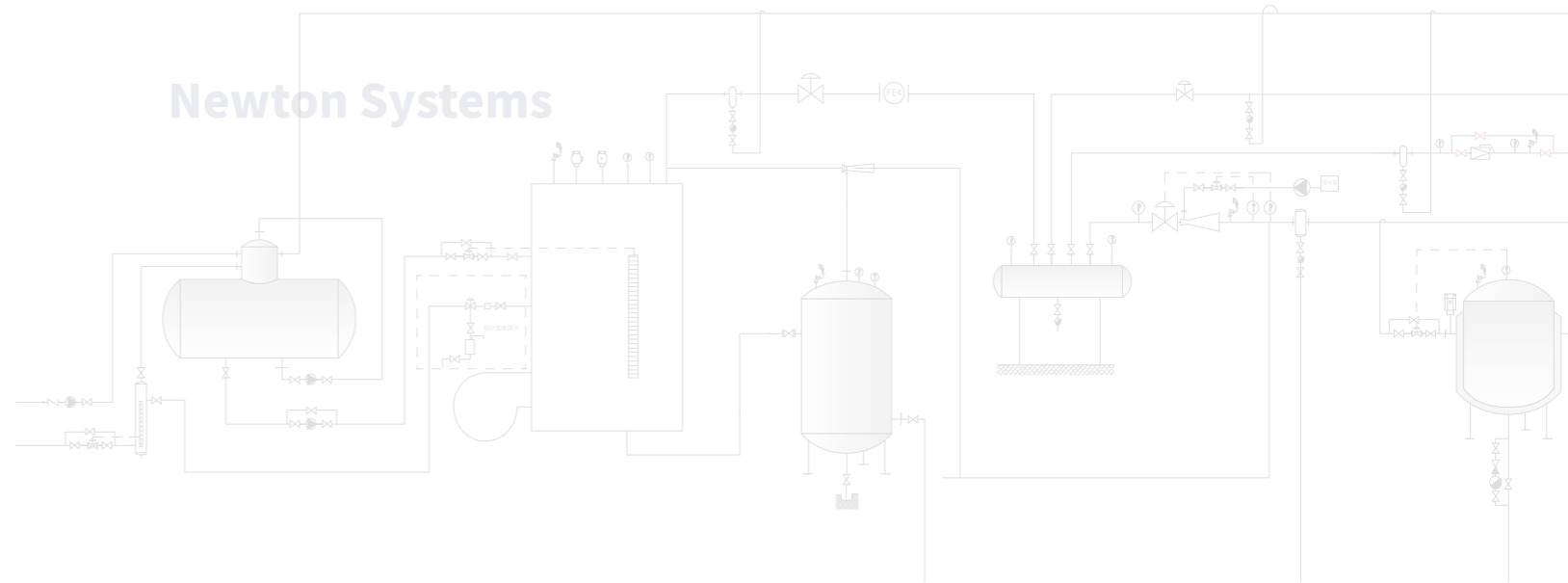
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STEAM AND THERMAL ENERGY

SMART ENERGY SAVING SYSTEM

- Steam System Solutions
- Steam Trap | Pumping System
- Heat Tracing Manifolds |
- Steam Pipe Accessories

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TRUE EFFICIENCY USE VMV

Take responsibility
Exert all one's energies
Contribute to clients
Walk the walk

VMV Newton provides overall system solutions of steam and thermal energy.

We are committed to responding to global energy conservation and emission reduction to achieve safety, environmental and sustainable development.

With VMV Newton's energy efficient systems, which can reduce white pollution, we aim for zero carbon emissions to ensure the sustainability of our entire production. We respect human rights, create a clean and safe working environment for more humane production, and win the trust of customers and society.



VMV MISSION

- Committed to global energy saving and security
- Strive for the sustainable development of mankind

VMV VISION

- To become a respected brand providing steam and thermal energy system solutions to realize everyone's dream.

VMV VALUES

- Take responsibility
- Exert all one's energies
- Contribute to clients
- Walk the walk

VMV SPIRIT

- Integrity
- Altruism
- Innovation
- Efficiency



Since 1998
WWW.VMVVALVE.COM

350

Employees

75000m²

Factory Area

37

Engineers

2000m²

Laboratory Area

Shanghai R&D
(Brand Operation)Center

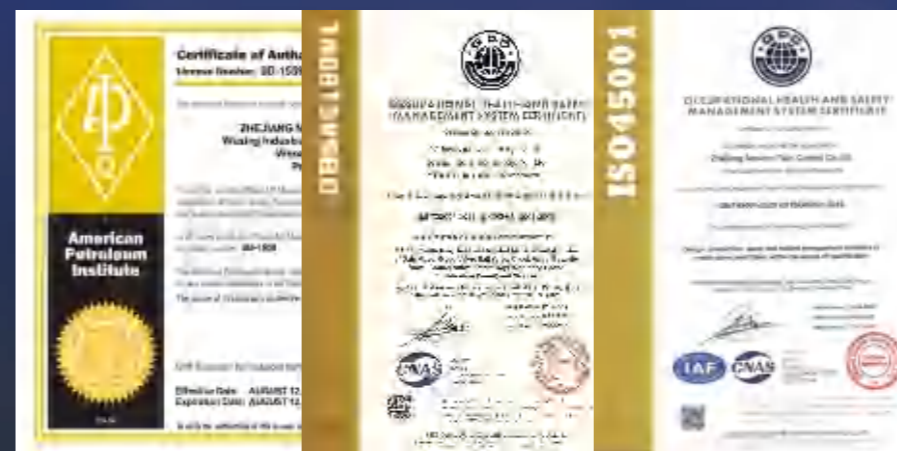


Committed to Global Energy Saving And Security
Strive For The Sustainable Development Of Mankind.

致力于全球能源节约与安全
为人类可持续发展努力奋斗



VMV®



About VMV steam system

VMV Newton is committed to providing comprehensive steam and thermal energy system solutions.

VMV has more than 30 professional engineers, specialized in steam systems, offering one-stop service like products, training and system solutions through technical communication, product selection, etc.

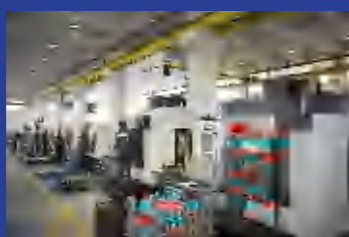
VMV's steam laboratory adopts different steam pressures to do type tests on each new product.

- Verify the pressure reduction ratio, closing performance and Cv value of the pressure reducing valve.
- Verify the capacity curve, back pressure rate, and steam leakage rate of steam trap.
- Verify the capacity curve and fatigue times of pump.

Each steam product undergoes necessary action testing by workshop's real boiler equipment, ensuring steam trap's precision and actual action flexibility.



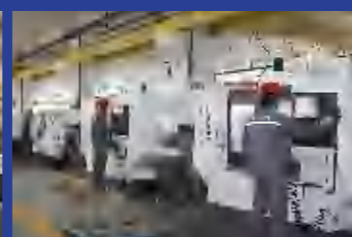
Workshop2
Bellows Sealed Valve Series



Workshop3
Steam Trap Series



Workshop5
General Valve &
Customized Valve Series



Workshop3
Control Valve Series



TRUE EFFICIENCY
USE VMV

HONORARY
CERTIFICATE

**PROFESSIONAL
MANUFACTURER OF VALVES**



**FORGED STEEL AUTOMATIC
PRODUCTION LINE**

This production line is operated by robots to turn, mill, drill, tap, and complete the whole processing at one time.



VMV PRODUCTION MANAGEMENT

- Standardized production process
- High precision machining capability
- Accurate inventory data
- Strict quality control
- Protection of workers' health
- Environment and sustainable development



**INTELLIGENT THREE-
DIMENSIONAL WAREHOUSE**

Total 3000 storage spaces, with a height of 24 meters. It can accommodate 3,600 tons of materials, improving the utilization rate of the entire space and working efficiency.



INTELLIGENT CNC MACHINE

It can process large size valve up to 40", the processing accuracy up to UM level, to ensure that each valve has high precision, to ensure zero leakage.





HIGH QUALITY CONTROL OF VMV



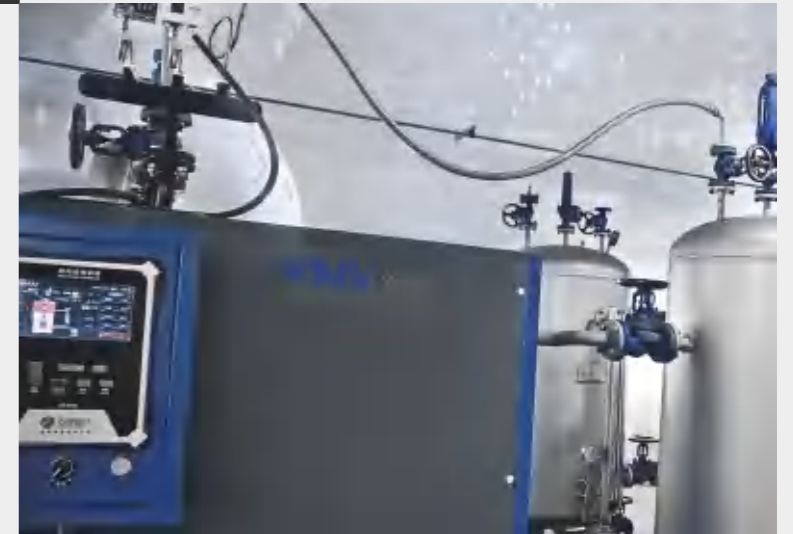
HIGH PRECISION GRINDING MACHINE

The grinding accuracy of the internal parts can be controlled within 3UM, and has excellent sealing performance.



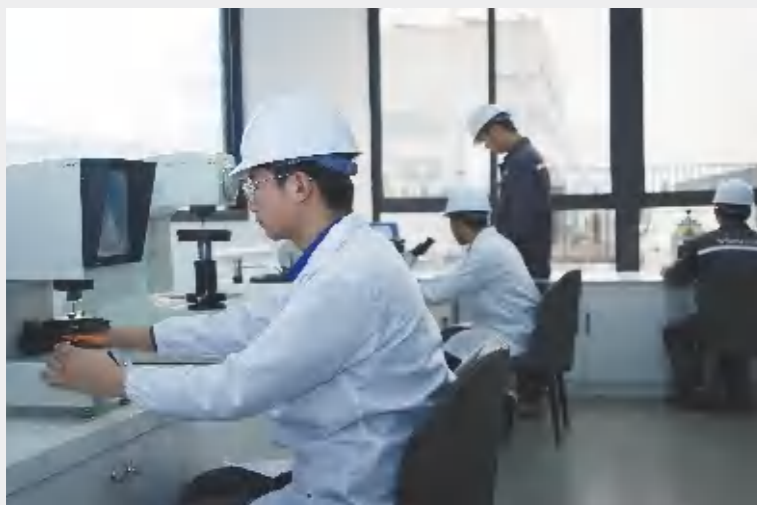
FULL PROCESS INSPECTION

Complete process inspection from incoming inspection, process inspection and finished product inspection.



DUST-FREE WORKSHOP

Control dust, particles, bacteria and other pollutants in the production environment to ensure high-precision processing technology and high-clean product.



VMV TESTING LABORATORY

Equipped with spectrometer, Rockwell hardness tester, tensile testing machine, impact testing machine, metallographic testing machine, helium mass spectrometry microleak detector, etc.



HIGH PRECISION CONTROL OF VMV

Steam System Products



Thermostatic (Bimetallic) Steam Trap
SHT21/SHT32

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P11
					15	20	25	
SHT21T/W	A105/SS	2.1	PN25	Thread/Flange	●	●	●	P12
SHT21F	A105/SS	2.1	PN25	Thread/Flange	●	●	●	
SHT32T-32	A105/SS	3.2	PN40	Thread	●	●	●	
SHT32W-32	A105/SS	3.2	PN40	Weld	●	●	●	
SHT32F-32	A105/SS	3.2	PN40	Flange	●	●	●	



Thermostatic (Capsule) Steam Trap
SKT16

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P14
					15	20	25	
SKT16T-16	304	1.6	PN25	Thread	●	●	●	
SKT16F-16	304	1.6	PN25	Flange	●	●	●	



Thermostatic (Bimetallic) Trap Station
SHT21TVS

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P15
					15	20	25	
SHT21TVST/W	A105	2.1	PN25	Thread/Flange	●	●	●	
SHT21TVSF	A105	2.1	PN25	Thread/Flange	●	●	●	



Thermostatic (Bimetallic) Steam Trap
SHT1

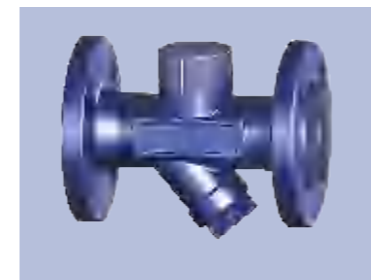
Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P16
					15	20	25	
SHT1T	420	2.1	PN25	Thread	●	●	●	
SHT1C	420	2.1	PN25	Ferrule	●	●	●	

Steam System Products



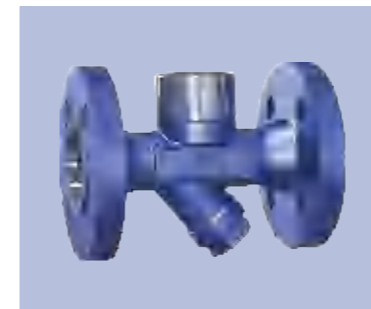
Thermodynamic Steam Trap
STD01T

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P19
					15	20	25	
STD01T-10	304	1.0	PN16	Thread	1/4"			



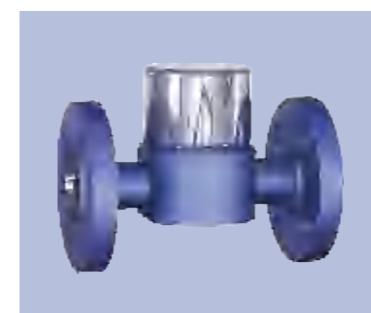
Thermodynamic (Disc) Steam Trap
STD16

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P20
					15	20	25	
STD16T/W	A105/SS	1.6	PN25	Thread/Weld	●	●	●	
STD16F	A105/SS	1.6	PN25	Flange	●	●	●	



Thermodynamic (Disc) Steam Trap
STD42

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P21
					15	20	25	
STD42T/W-25	A105/SS	2.5	PN40	Thread/Weld	●	●	●	
STD42F-25	A105/SS	2.5	PN40	Flange	●	●	●	
STD42T/W-42	A105/SS	4.2	PN63	Thread/Weld	●	●	●	
STD42F-42	A105/SS	4.2	PN63	Flange	●	●	●	



Thermodynamic (Disc) Steam Trap
STD80

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P22
					15	20	25	
STD80W	F11	8.0	PN100	Weld	●	●	●	
STD80F	F11	8.0	PN100	Flange	●	●	●	

Steam System Products



Inverted Bucket Steam Trap

SBT10A / SBT20
SBT24 / SBT30

Model	Material	PMO MPa	PN	Connection	Nominal Diameter							
					15	20	25	32	40	50		
SBT10AT/W-16	WCB/SS	1.6	PN25	Thread/Weld	●	●	●					P25
SBT10AF-16	WCB/SS	1.6	PN25	Flange	●	●	●					
SBT20T/W-16	WCB/SS	1.6	PN25	Thread/Weld	●	●	●					P26
SBT20F-16	WCB/SS	1.6	PN25	Flange	●	●	●	●	●			
SBT24T/W-45	WCB/SS	4.5	PN63	Thread/Weld	●	●	●	●	●			P27
SBT24F-45	WCB/SS	4.5	PN63	Flange	●	●	●	●	●			
SBT30T/W-16	WCB/SS	1.6	PN25	Thread/Weld			●	●				P28
SBT30F-16	WCB/SS	1.6	PN25	Flange			●	●	●	●		



Inverted Bucket Steam Trap

SBT11A

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			
					15	20	25	
SBT11AT/W-16	CF8/SS	1.6	PN25	Thread/Weld	●	●	●	P29
SBT11AF-16	CF8/SS	1.6	PN25	Flange	●	●	●	



Inverted Bucket Steam Trap

SBT11TVS

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			
					15	20	25	
SBT11TVST/W	CF8/SS	1.6	PN25	Thread/Weld	●	●	●	P30
SBT11TVSF	CF8/SS	1.6	PN25	Flange	●	●	●	

Steam System Products



Pilot Inverted Bucket Steam Trap

SBT40 / SBT50
SBT60



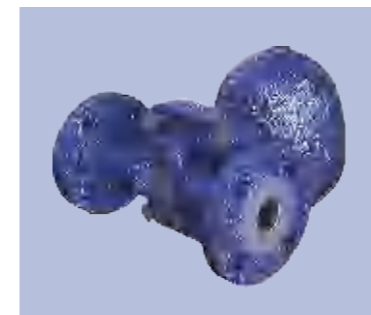
Pilot Inverted Bucket Steam Trap

SBT66



Lever Ball Float Steam Trap

SFT10A



Lever Ball Float Steam Trap

SFT20A / SFT30A

SFT40A

Model	Material	PMO MPa	PN	Connection	Nominal Diameter							
					25	32	40	50	65	80		
SBT40T/W-16	WCB/SS	1.6	PN25	Thread/Weld	●	●						P33
SBT40F-16	WCB/SS	1.6	PN25	Flange	●	●	●	●				
SBT50T/W-32	WCB/SS	3.2	PN40	Thread/Weld	●	●						P34
SBT50F-32	WCB/SS	3.2	PN40	Flange	●	●	●	●	●	●		
SBT60T/W-32	WCB/SS	3.2	PN40	Thread/Weld	●	●						P35
SBT60F-32	WCB/SS	3.2	PN40	Flange	●	●	●	●				
SBT66W	A105/F11	6.9	PN100	Weld	●	●	●	●				P36
SBT66F	A105/F11	6.9	PN100	Flange	●	●	●	●				

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			
					15	20	25	
SFT10AT/W-32	WCB/SS	3.2	PN40	Thread/Weld	●	●	●	P39
SFT10AF-32	WCB/SS	3.2	PN40	Flange	●	●	●	

Model	Material	PMO MPa	PN	Connection	Nominal Diameter							
					15	20	25	32	40	50		
SFT20AT/W-16	WCB/SS	1.6	PN25	Thread/Weld	●	●	●					P40
SFT20AF-16	WCB/SS	1.6	PN25	Flange	●	●	●					
SFT30AT/W-16	WCB/SS	1.6	PN25	Thread/Weld			●	●				P41
SFT30AF-16	WCB/SS	1.6	PN25	Flange			●	●	●	●		
SFT40T/W-16	WCB/SS	1.6	PN25	Thread/Weld			●	●				P42
SFT40AF-16	WCB/SS	1.6	PN25	Flange			●	●	●	●		

Steam System Products



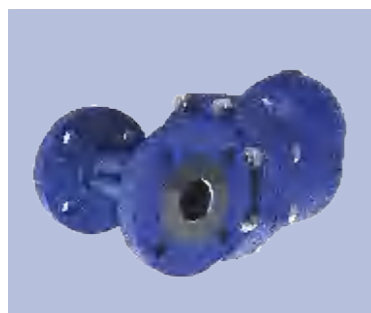
Lever Ball Float Steam Trap
SFT50

Model	Material	PMO MPa	PN	Connection	Nominal Diameter				P43
					32	40	50	65	
SFT50F-16	WCB/SS	1.6	PN40	Flange	●	●			
SFT50F-32	WCB/SS	3.2	PN40	Flange	●	●			



Lever Ball Float Steam Trap
SFT60

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P44
					32	40	50	
SFT60F-20	WCB/SS	2.0	PN40	Flange	●	●	●	
SFT60F-32	WCB/SS	3.2	PN40	Flange	●	●	●	



Lever Ball Float Steam Trap
SFT66

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P45
					50	60	80	
SFT66F-45	WCB/SS	4.5	PN100	Flange	●	●	●	
SFT66F-65	WCB/SS	6.5	PN100	Flange	●	●	●	



Lever Ball Float Steam Trap
SFT70

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P46
					50	65	80	
SFT70F-20	WCB/SS	2.0	PN40	Flange	●	●	●	
SFT70F-32	WCB/SS	3.2	PN40	Flange	●	●	●	



Lever Foot Type Steam Trap
SFT80/80A/80B

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P47
					80	100	150	
SFT80	WCB/SS	3.2	PN40	Flange	●	●	●	
SFT80A	WCB/SS	3.2	PN40	Flange	●	●	●	
SFT80B	WCB/SS	3.2	PN40	Flange	●	●	●	



Lever Ball Float Air Trap
AFT10A/AFT20A/AFT30A

Model	Material	PMO MPa	PN	Connection	Nominal Diameter					P51	
					15	20	25	32	40		
AFT10AT/W-32	WCB/SS	3.2	PN40	Thread/Weld	●	●	●				
AFT10AF-32	WCB/SS	3.2	PN40	Flange	●	●	●				
AFT20AT/W-16	WCB/SS	1.6	PN25	Thread/Weld	●	●	●				
AFT20AF-16	WCB/SS	1.6	PN25	Flange	●	●	●	●	●		
AFT30AT/W-16	WCB/SS	1.6	PN25	Thread/Weld			●	●			
AFT30AF-16	WCB/SS	1.6	PN25	Flange			●	●	●		



Steam Liquid Two Phase Flow Trap
QYL

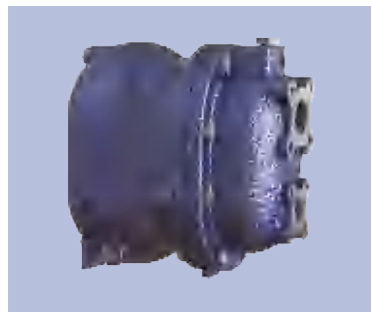
Model	Material	PMO MPa	PN	Connection	Nominal Diameter						P54
					65	80	100	125	150	200	
QYL-16	A105/SS	1.6	PN16	Flange	●	●	●	●	●	●	
QYL-40	A105/SS	3.2	PN40	Flange	●	●	●	●	●	●	

Steam System Products



Model	Material	PMO MPa	PN	Connection	Nominal Diameter		P60
					50	80	
PT20	WCB/SS	1.05	PN16	Flange	●	●	

Pump
PT20



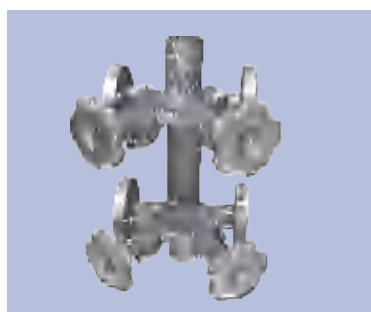
Model	Material	PMO MPa	PN	Connection	Nominal Diameter		P62
					Inlet	Outlet	
PT10	WCB/SS	1.05	PN16	Flange	40/25	25	

Pump System
PT10



Model	Material	PMO MPa	PN	Connection	Nominal Diameter		P64
					Inlet	Outlet	
SPT20S	CS/SS	1.05	PN16	Flange	80	50	
SPT20D	CS/SS	1.05	PN16	Flange	80	50	P65
SPT20T	CS/SS	1.05	PN16	Flange	80	50	P66

System Device of Single Pump Trap
SPT20S SPT20D SPT20T



Name	Model	Material	PMO MPa	PN	Connection	Nominal Diameter		P72
						Director	Manifold	
Bellows Stainless Steel Steam Distribution Tube Manifolds	BSPM03	CF8/SS	2.56	PN40 CL300	RF/RC / LOC	40/50	15/20	
Bellows Stainless Steel Condensate Collection Manifolds	BCPM03	CF8/SS	2.56	PN40 CL300	RF/RC/ LOC	40/50	15/20	P74

Bellows Stainless Steel Steam Distribution Manifolds
BSPM03 / BCPM03

Steam System Products



Bellows Forged Steel Steam Distribution Manifolds
BSPM02 / BCPM02

Name	Model	Material	PMO MPa	PN	Connection	Nominal Diameter		P77
						25	40	
Bellows Forged Steel Steam Distribution Manifolds	BSPM02	A105/SS	4	PN40 CL300	RF/RC / LOC	●	●	
Bellows Forged Steel Condensate Collection Manifolds	BCPM02	A105/SS	4	PN40 CL300	RF/RC/ LOC	●	●	P79



Control Valve

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P83
					25	20 ...	300	
V8000	WCB/SS	1.6	PN16	Flange	●	●	●	
V8000	WCB/SS	2.5	PN25	Flange	●	●	●	
V8000	WCB/SS	4	PN40	Flange	●	●	●	



Bellows Control Valve

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P84
					15	20 ...	300	
V9000	WCB/SS	1.6	PN16	Flange	●	●	●	
V9000	WCB/SS	2.5	PN25	Flange	●	●	●	
V9000	WCB/SS	4	PN40	Flange	●	●	●	

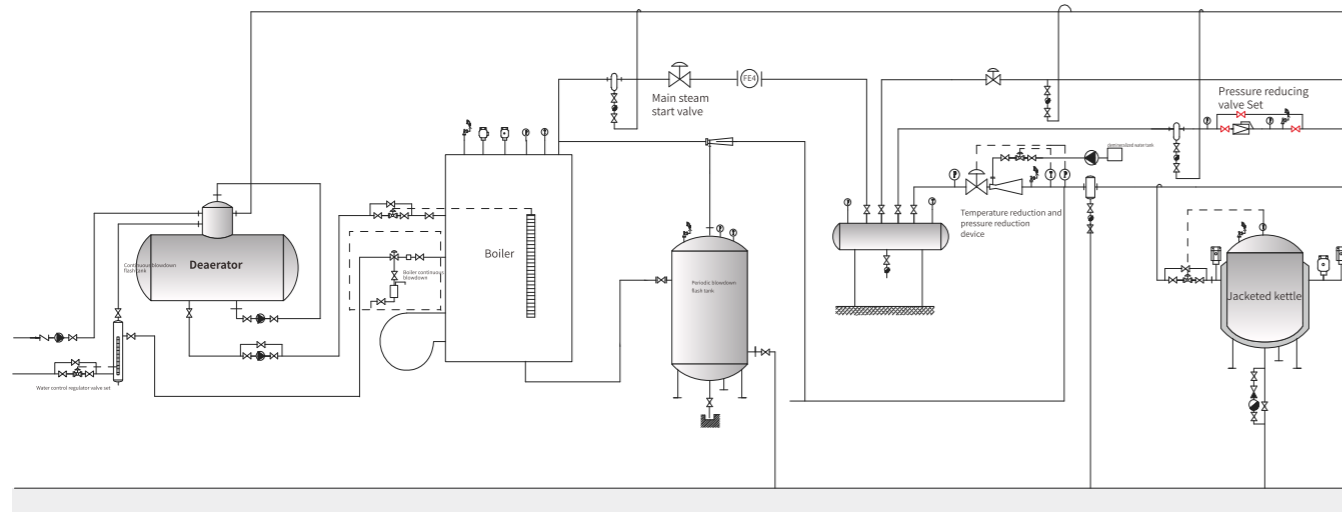


Three Way Control valve

Model	Material	PMO MPa	PN	Connection	Nominal Diameter			P85
					15	20 ...	300	
V6000	WCB/SS	1.6	PN16	Flange	●	●	●	
V6000	WCB/SS	2.5	PN25	Flange	●	●	●	
V6000	WCB/SS	4	PN40	Flange	●	●	●	

Knowledge Consulting Product Service

Steam Expertise



K—Knowledge Provide professional knowledge of steam, including steam properties, selection of pressure reducing valve, solutions of temperature reduction and pressure reduction device, control system of pressure flow, process piping of steam pipeline, selection of trap, recovery of condensate, solutions of steam recovery, etc.

C—Consulting System consultation diagnosis and design process plan. With the assistance of the user, have a detailed understanding of the production equipment, through on-site photography, recording detailed data, searching for process flow charts, and in-depth understanding of the current status of steam system piping, steam and condensate use, and finding out the existing problems of the system, according to The industrial energy-saving standard workbook compiled by VMV proposes optimization plans and formulates process plans.

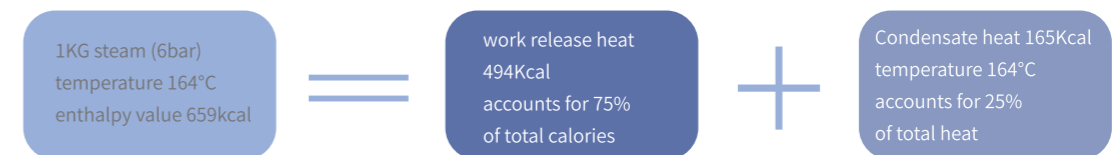
P—Product Provide quality and reliable products.

- Safe, reliable and switch flexible bellows globe valve;
- High-efficiency, energy-saving, long-life steam traps, pump traps for heat recovery, and condensate recovery devices;
- Safe and reliable pressure reducing valve group and temperature reducing and pressure reducing device;
- Space and cost saving, easy to maintain steam distribution bundles and condensate manifold bundles;
- Suitable for high-performance exhaust valves, air traps, drain valves, vacuum breakers, check valves, filters, silencer, mixers and other piping accessories under various working conditions.

S—Service Provide timely pre-sale and after-sale service. Establish a complete online and offline communication mechanism, so that every user can enjoy the technical services and technical support provided by VMV, and realize the concept of serving users.

Professional Terms

- Saturated steam:** refers to pure steam corresponding to the boiling point temperature of water under a certain pressure.
- Superheated Steam:** Steam with a temperature higher than saturated steam.
- Absolute pressure and gauge pressure:** Absolute pressure refers to the pressure in MPa relative to ideal vacuum; gauge pressure refers to the pressure in MPa relative to atmospheric pressure.
- Example:** 1 atmosphere equals 0.1013MPa absolute pressure. Gauge pressure plus 0.1013MPa equals absolute pressure.
- Steam pressure/temperature:** The saturation temperature corresponding to any pressure of saturated steam.
- Example:** The saturation temperature corresponding to the gauge pressure of saturated steam of 2 bar is 133.56°C.
- Sensible heat of saturated water:** The heat required to heat 1kg of water from 0°C to the boiling point under a certain pressure, and the unit of heat is kJ.
- Latent heat or heat of evaporation:** Under a certain pressure, the heat required to heat 1 kg of water into steam of the same pressure is called the heat of evaporation. On the contrary, the heat released by cooling 1 kg of steam of a certain pressure into condensed water of the same pressure is called latent heat. The unit of heat is kJ.
- Total heat of steam:** latent heat of steam + sensible heat of condensed water is the total heat of steam, that is, all heat above zero under a certain pressure.



Measures for Efficient Utilization of Steam Thermal Energy

- Use superheated steam for steam delivery as much as possible.
- Reduce steam pressure and increase steam latent heat through pressure reducing valve Set or desuperheating and pressure reducing device.
- Improve the steam utilization rate, do a good job of heat preservation, reasonably select different types and different displacement traps, and use high-quality steam traps to prevent leakage.
- Recover the heat of the condensed water and make full use of the sensible heat of the condensed water. Use flash tank to extract low-pressure steam, back pressure to recover condensate, pump trap to recover condensate, electric pump to recover condensate, heat exchanger to extract heat energy, etc.
- Recovery of spent steam through direct and indirect heat exchangers and heat pump suction.
- Use multi-stage heating to improve equipment steam utilization, such as double-effect, multi-effect concentration; multi-stage air preheating heating coil.
- Attach great importance to the removal of non-condensable gases from pipes and equipment.
- Reasonable piping to prevent steam lock.

Properties of Steam

Properties of Steam

Gauge bar	Saturation Temperature °C	Sensible heat of water (specific enthalpy) kcal/kg	Latent heat of evaporation (specific enthalpy) kcal/kg	Total heat of steam (specific enthalpy) kcal/kg	Steam density kg/m ³	Density of water kg/m ³
0	99.63	99.73	539.23	638.96	0.590	958.59
0.5	111.38	111.59	531.72	643.31	0.862	949.94
1	120.24	120.58	525.88	646.46	1.129	942.95
1.5	127.44	127.91	521.01	648.92	1.391	937.03
2	133.56	134.15	516.78	650.93	1.651	931.79
2.5	138.89	139.61	513.02	652.63	1.907	927.13
3	143.64	144.49	509.6	654.09	2.162	922.93
3.5	147.94	148.91	506.46	655.37	2.416	918.95
4	151.87	152.96	503.54	656.5	2.668	915.33
4.5	155.49	156.71	500.81	657.52	2.918	911.16
5	158.86	160.2	498.23	658.43	3.168	908.6
5.5	162.02	163.48	495.78	659.26	3.417	904.9
6	164.98	166.57	493.45	660.02	3.666	902.61
6.5	167.79	169.49	491.22	660.71	3.913	899.2
7	170.44	172.27	489.08	661.35	4.160	897.02
7.5	172.97	174.92	487.01	661.94	4.407	893.97
8	175.39	177.45	485.02	662.48	4.653	891.9
8.5	177.70	179.88	483.1	662.98	4.899	889.05
9	179.92	182.22	481.23	663.45	5.144	887.15
9.5	182.05	184.47	479.42	663.89	5.390	884.88
10	184.10	186.64	477.66	664.3	5.635	882.61
10.5	186.08	188.74	475.94	664.68	5.880	880.51
11	188.00	190.77	474.27	665.04	6.125	878.35
11.5	189.85	192.74	472.63	665.37	6.369	876.35
12	191.64	194.65	471.03	665.68	6.614	874.28
12.5	193.39	196.51	469.47	665.97	6.858	872.37
13	195.08	198.32	467.93	666.25	7.103	870.4
13.5	196.72	200.08	466.43	666.51	7.347	868.51
14	198.33	201.8	464.95	666.75	7.592	866.7
14.5	199.89	203.48	463.5	666.97	7.836	864.9
15	201.41	205.11	462.07	667.19	8.081	863.11
15.5	202.90	206.71	460.67	667.39	8.326	861.33
16	204.35	208.28	459.29	667.57	8.570	859.62
16.5	205.76	209.81	457.93	667.75	8.815	857.93
17	207.15	211.32	456.6	667.91	9.060	856.24

Gauge bar	Saturation Temperature °C	Sensible heat of water (specific enthalpy) kcal/kg	Latent heat of evaporation (specific enthalpy) kcal/kg	Total heat of steam (specific enthalpy) kcal/kg	Steam density kg/m ³	Density of water kg/m ³
17.5	208.51	212.79	455.28	668.07	9.305	854.63
18	209.84	214.23	453.98	668.21	9.550	853.02
18.5	211.14	215.65	452.69	668.35	9.796	851.43
19	212.42	217.04	451.43	668.47	10.041	849.83
19.5	213.67	218.41	450.18	668.59	10.287	850.48
20	214.90	219.76	448.94	668.69	10.533	846.81
20.5	216.10	221.08	447.72	668.79	10.779	845.24
21	217.29	222.38	446.51	668.89	11.025	843.81
21.5	218.45	223.66	445.32	668.97	11.272	842.32
22	219.60	224.92	444.14	669.05	11.519	840.83
22.5	220.72	226.16	442.97	669.12	11.766	839.42
23	221.83	227.38	441.81	669.19	12.013	838.01
23.5	222.92	228.58	440.67	669.25	12.260	836.61
24	223.99	229.77	439.53	669.3	12.508	835.21
24.5	225.05	230.94	438.41	669.35	12.756	833.82
25	226.09	232.1	437.3	669.39	13.004	832.43
25.5	227.11	233.24	436.19	669.43	13.253	831.12
26	228.12	234.36	435.1	669.46	13.502	829.74
26.5	229.11	235.48	434.01	669.49	13.751	828.43
27	230.10	236.57	432.94	669.51	14.000	827.13
27.5	231.06	237.66	431.87	669.53	14.250	825.83
28	232.02	238.73	430.81	669.54	14.500	824.54
28.5	232.96	239.79	429.76	669.55	14.750	823.25
29	233.89	240.83	428.72	669.56	15.001	821.96
29.5	234.81	241.87	427.69	669.56	15.252	820.75
30	235.72	242.89	426.66	669.55	15.504	819.47
30.5	236.61	243.9	425.64	669.54	15.755	816.99
31	237.50	244.91	424.63	669.54	16.007	814.6
31.5	238.37	245.9	423.62	669.52	16.260	812.22
32	239.24	246.88	422.62	669.5	16.513	809.85
32.5	240.09	247.85	421.63	669.48	16.766	807.49
33	240.94	248.81	420.64	669.46	17.019	805.22
33.5	241.77	249.76	419.66	669.43	17.273	802.95
34	242.60	250.71	418.69	669.4	17.527	800.7
34.5	243.41	251.64	417.72	669.36	17.782	798.47

Condensate Pipe Diameter/Velocity/Flow table

Professional Terms

DN	Flow m ³ /h													
	0.4m/s	0.6m/s	0.8m/s	1.0m/s	1.2m/s	1.4m/s	1.6m/s	1.8m/s	2.0m/s	2.2m/s	2.4m/s	2.6m/s	2.8m/s	3.0m/s
20	0.5	0.7	0.9	1.1	1.4	1.6	1.8	2	2.3	2.5	2.7	2.9	3.2	3.4
25	0.7	1.1	1.4	1.8	2.1	2.5	2.8	3.2	3.5	3.9	4.2	4.6	4.9	5.3
32	1.2	1.7	2.3	2.9	3.5	4.1	4.6	5.2	5.8	6.4	6.9	7.5	8.1	8.7
40	1.8	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9	10	10.9	11.8	12.7	13.6
50	2.8	4.2	5.7	7.1	8.5	9.9	11.3	12.7	14.1	15.6	17	18.4	19.8	21.2
65	4.8	7.2	9.6	11.9	14.3	16.7	19.1	21.5	23.9	26.3	28.7	31.1	33.4	35.8
80	7.2	10.9	14.5	18.1	21.7	25.3	29	32.6	36.2	39.8	43.4	47	50.7	54.3
100	11.3	17	22.6	28.3	33.9	39.6	45.2	50.9	56.5	62.2	67.9	73.5	79.2	84.8
125	17.7	26.5	35.3	44.2	53	61.9	70.7	79.5	88.4	97.2	106	114.9	123.7	132.5
150	25.4	38.2	50.9	63.6	76.3	89.1	101.8	114.5	127.2	140	152.7	165.4	178.1	190.9
200	45.2	67.9	90.5	113.1	135.7	158.3	181	203.6	226.2	248.8	271.4	294.1	316.7	339.3
250	70.7	106	141.4	176.7	212.1	247.4	282.7	318.1	353.4	388.8	424.1	459.5	494.8	530.1
300	101.8	152.7	203.6	254.5	305.4	356.3	407.1	458	508.9	559.8	610.7	661.6	712.5	763.4
350	138.5	207.8	277.1	346.4	415.6	484.9	554.2	623.4	692.7	762	831.3	900.5	969.8	1039.1
400	181	271.4	361.9	452.4	542.9	633.3	723.8	814.3	904.8	995.3	1085.7	1176.2	1266.7	1357.2
450	229	343.5	458	572.6	687.1	801.6	916.1	1030.6	1145.1	1259.6	1374.1	1488.6	1603.2	1717.7
500	282.7	424.1	565.5	706.9	848.2	989.6	1131	1272.3	1413.7	1555.1	1696.5	1837.8	1979.2	2120.6
600	407.1	610.7	814.3	1017.9	1221.4	1425	1628.6	1832.2	2035.7	2239.3	2442.9	2646.5	2850	3053.6

Working back pressure: It is the pressure at the outlet end of the steam trap under working conditions.

Maximum working back pressure: It is the maximum pressure at the outlet end of the steam trap when it can operate correctly under the maximum working pressure.

Back pressure rate: The percentage of working back pressure and working pressure.

Working pressure difference: The difference between the working pressure and the working back pressure .

Maximum working pressure difference: between the maximum working pressure and the maximum working back pressure of Max operating different pressure.

Operating temperature TO: valve temperature in the applicable medium.

Maximum operating temperature TMO: The maximum temperature that the medium is allowed to use under the specified pressure.

Maximum allowable temperature TMA: The maximum temperature that the trap casing can withstand permanently under a given pressure.

Sub cooled temperature: The absolute value of the difference between the condensate temperature and the saturation temperature a the corresponding pressure.

Cold condensate capacity quantity mC: The steam trap can drain maximum weight of condensate within one hour at a given differential pressure and 20C .

Hot condensate capacity mH: The maximum weight of condensate that the steam trap can discharge within one hour at a given pressure difference and temperature.

Steam loss quantity mL: The amount of fresh steam leaking from the steam trap per unit time.

No load steam loss quantity mNL: The quantity of leaked steam under the condition of fully saturated steam before the steam trap.

Loads steam loss quantity mLL: The steam leakage quantity of the steam trap under a given load rate.

Technical Standard

GB/T12250-2005 "Steam Trap Terminology Marking Structure Length"	JB/T53169-1994 "Quality Classification of Steam Traps"
GB/T22654-2008 "Technical Conditions for Steam Traps"	JB/T 7928 "General Valve Supply Requirements"
GB/T12251-2005 "Test methods for steam traps"	JB/T 308 "valve model compilation method"

Professional Terms

Nominal diameter DN: It is the size expressed by a number that is common to all accessories in the piping system. The parts identified by thread or outer diameter have been distinguished. The nominal diameter is a convenient original integer for reference.

Nominal pressure PN: It is a pressure-related identification code expressed in numbers5 and is a convenient original integer for reference.

Operating pressure PO: Valve pressure at the applicable medium temperature.

Maximum operating pressure PMO: Under correct operating conditions5 the maximum pressure at the inlet end of the trap.

Maximum allowable pressure PMA: At a given temperature5 the maximum pressure that the trap casing can withstand permanently.

Minimum operating pressure POM: Min. operating pressure Under correct operating conditions5 the minimum pressure at the inlet end of the trap.

Steam Trap



Thermostatic(Bimetallic)Steam Trap

Thermostatic(Bimetallic)Steam Trap

Bimetallic trap is characterized by large undercooling, long life, good energy saving effect, water hammer resistance, beautiful appearance and so on. It is widely used in heat tracing and steam pipelines.

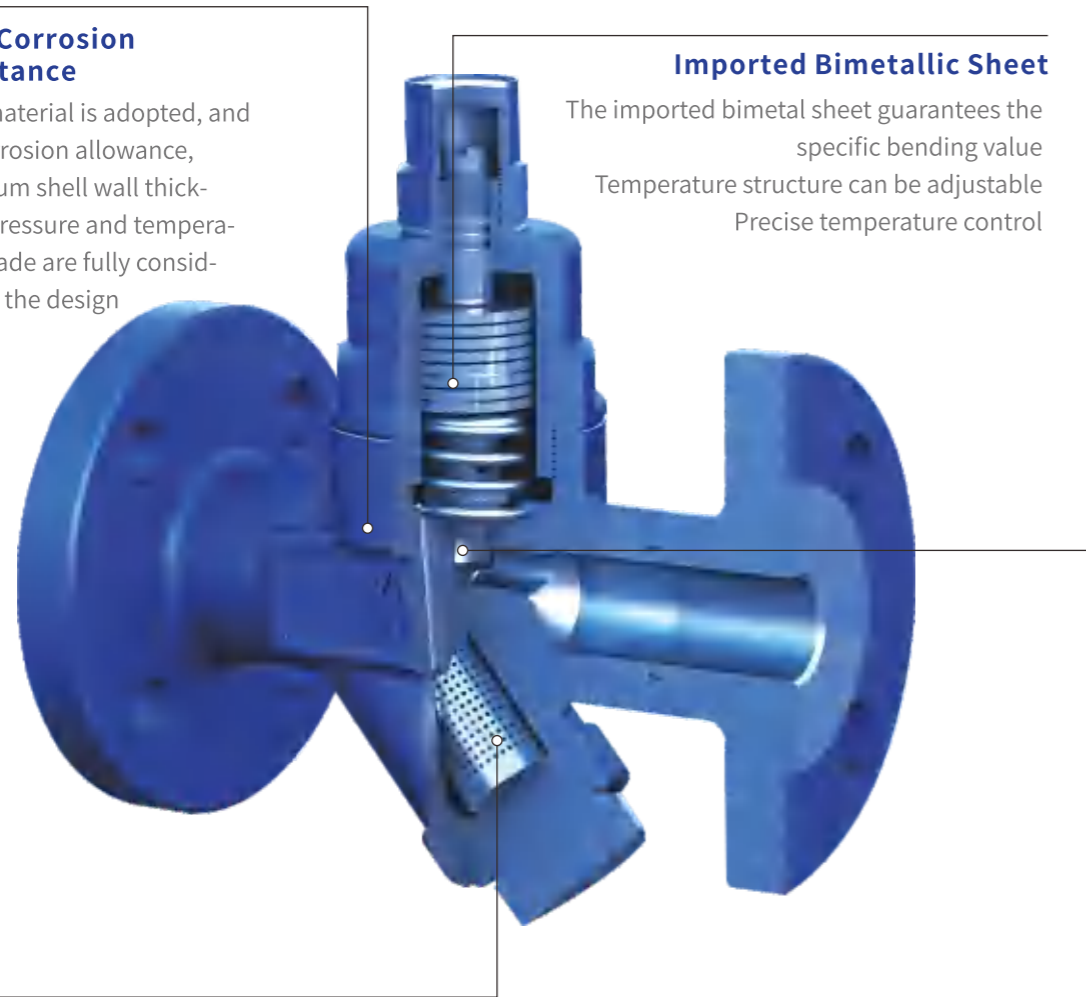
The technical advantages of VMV traps are unique and reasonable structure and high precision internal parts

High Corrosion Resistance

A105 material is adopted, and the corrosion allowance, minimum shell wall thickness, pressure and temperature grade are fully considered in the design

Imported Bimetallic Sheet

The imported bimetal sheet guarantees the specific bending value
Temperature structure can be adjustable
Precise temperature control



Built-in Filter

Effectively prevent pipeline impurities into the valve, ensure the normal work of the trap, and prevent water hammer damage to internal components.

Linear Seal Closing System

Unique linear sealing closing system and micron class high precision seat and spool ensure reliable closing without steam leakage

Features

A105 is used for VMV bimetallic trap body and bonnet. The condensate discharge temperature has been set to 120-130°C before delivery. And it can be adjusted as required.

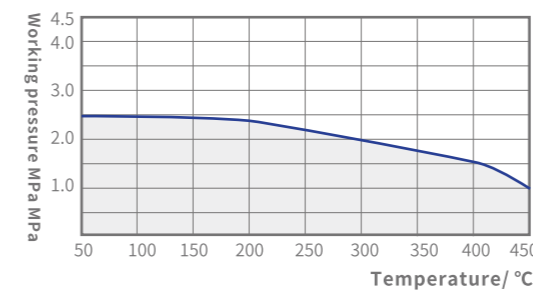
The bimetallic steam trap adopts a line sealing closing system, which has no original steam leakage, no noise, good air exhausting capacity, and makes full use of the sensible heat of condensed water, resulting in good energy saving effect.

Bimetallic trap works on the difference in temperature between steam and condensate. When the condensed water stays in the pipeline due to the high temperature, the bimetal deforms when the temperature of the energy to be released decreases, and the valve seat opens to discharge the condensed water. The user can adjust the discharge temperature of the trap at any time according to the season.



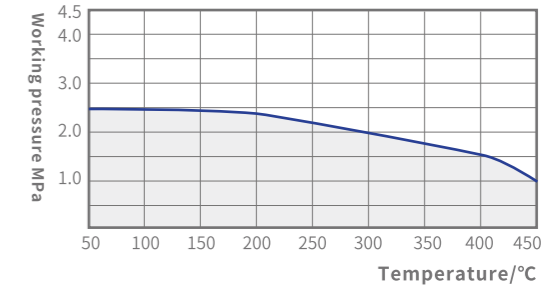
A105 Material PN25

Valve Body Pressure-Temperature Ratings



A105 Material PN40

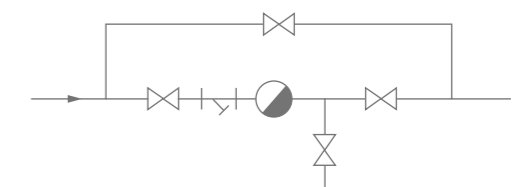
Valve Body Pressure-Temperature Ratings



Selection and Installation

The bimetallic trap drains continuously. The normal discharge temperature of SHT21 is 120-130°C, and the discharge temperature of SHT32 is 140-150°C (users can adjust it by themselves). If there is a requirement for degree of undercooling, please indicate it when ordering. The back pressure rate of bimetallic steam trap can reach 50% (back-end pipeline pressure/steam pressure), which is not suitable for closed recovery system, but suitable for pipeline and heat tracing system to remove condensate. In general, the safety factor is 2-3 times.

Notice: The amount of condensed water and differential pressure of steam-using equipment are important indicators for selection. The same type of trap will increase its displacement with the increase of differential pressure. Check the discharge curve in detail. Please do not mistakenly think it for a trap with larger diameter has larger



The bimetallic trap can be installed at any position on the pipeline or equipment. The basic configuration of the trap is shown in the figure above.

Thermostatic(Bimetallic)Steam Trap

Thermostatic(Bimetallic)Steam Trap

SHT21 Thermostatic(Bimetallic)Steam Trap

Thermostatic(Bimetallic)Steam Trap SHT32



Working Principle

- The working principle of the bimetallic trap is to rely on the different temperature between saturated steam and condensed water.
- When the set temperature is reached, the condensed water is continuously removed.

Features

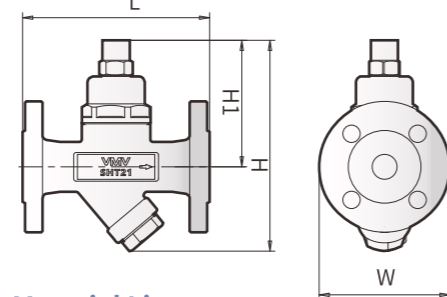
- The valve body and valve bonnet are all made of forged steel A105.
- The valve disc and valve seat are made of special stainless steel with heat treatment.The disc hardness is as high as HRC55, which improves the service life of the trap.
- Imported bimetallic ensure precise temperature control.
- The closing system adopts high-precision wire sealing structure.
- Built-in filter makes the trap work in a clean environment.
- The back pressure rate is as high as 50% or more.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap

Production and performance characteristic tests

Structure Diagram



Material List

Bonnet: A105/F304/F316

Disc: 440C+304

Body: A105/F304/F316

Other internal parts: 304

Seat: 420

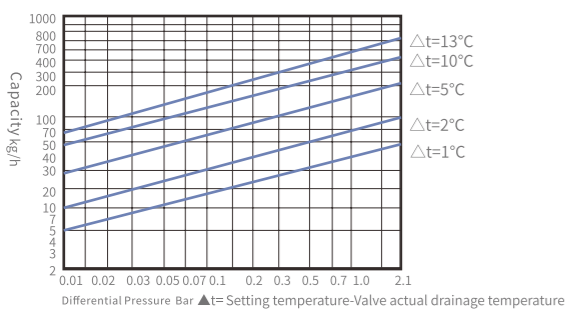
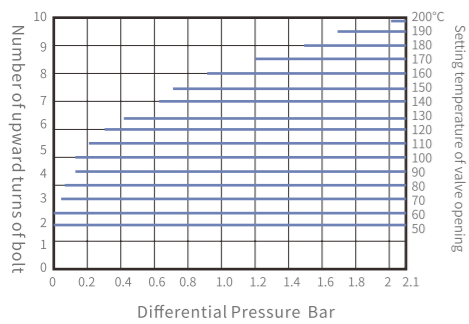
Structural Dimension Table

unit (mm)						
Model	Size	L	H	H1	W	Weight
SHT21T	DN15-25	90	168	100	55	1.8 Kg
SHT21W	DN15-25	90	168	100	55	1.8 Kg
SHT21F	DN15-25	150	168	100	115	4 Kg

Technical Parameter

Nominal pressure	PN25
Max. allowable pressure(Shell)	2.45MPa/200°C
Max. allowable temperature(Shell)	450°C/1.03MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	2.1MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Temperature Adjustment Table



Working Principle

- The working principle of the bimetallic trap is to rely on the different temperature between saturated steam and condensed water.
- When the set temperature is reached, the condensed water is continuously removed.

Features

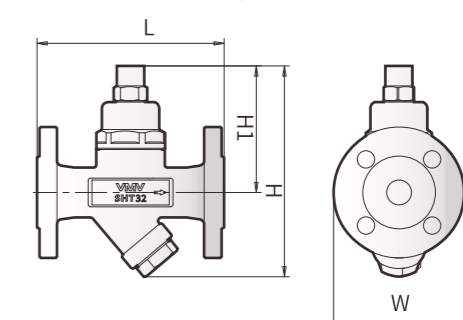
- The valve body and valve bonnet are all made of forged steel A105.
- The valve disc and valve seat are made of special stainless steel with heat treatment.The disc hardness is as high as HRC55, which improves the service life of the trap.
- Imported bimetallic ensure precise temperature control.
- The closing system adopts high-precision wire sealing structure.
- Built-in filter makes the trap work in a clean environment.
- The back pressure rate is as high as 50% or more.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap

Production and performance characteristic tests

Structure Diagram



Material List

Bonnet: A105/F304/F316

Disc: 440C+304

Body: A105/F304/F316

Other internal parts: 304

Seat: 420

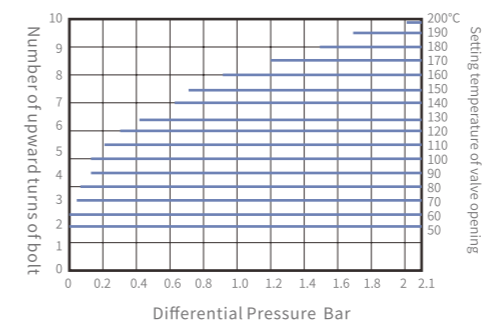
Structural Dimension Table

unit (mm)						
Model	Size	L	H	H1	W	Weight
SHT32T	DN15-25	90	168	100	55	1.8 Kg
SHT32W	DN15-25	90	168	100	55	1.8 Kg
SHT32F	DN15-25	150	168	100	115	4 Kg

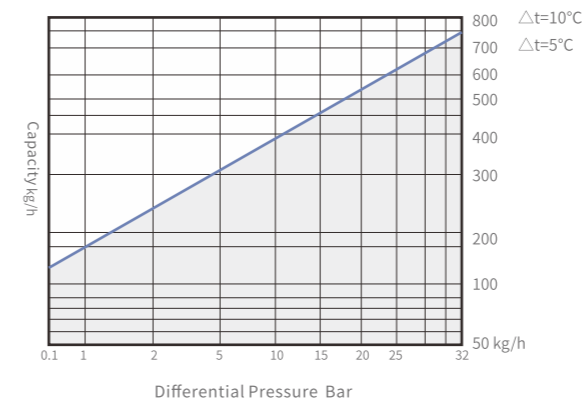
Technical Parameter

Nominal pressure	PN40
Max. allowable pressure(Shell)	4.8MPa/300°C
Max. allowable temperature(Shell)	427°C/3.2MPa
Factory steam action test	>3次/1.6MPa
Max. operating pressure	3.2MPa
Max. operating temperature	350°C
Factory cold test pressure	9.5MPa
Air test	2.0MPa

Temperature Adjustment Table



SHT32 Capacity Curve



Thermostatic(Capsule)Steam Trap

Thermostatic(Capsule)Steam Trap

Capsule Steam traps are widely used in heat tracing pipelines and equipment with small displacement and low temperature requirements due to their small size, large subcooling degree, good energy saving effect and low temperature resistance.

The technical advantages of VMV traps are unique and reasonable structure and high-precision internal parts.

High Corrosion Resistance

Stainless steel SS304 has beautiful appearance and good performance.

Large Subcooling Capsule Module

The subcooling degree of the Thermostatic (Capsule) trap is 15°C to remove the condensed water below the saturation temperature, and the energy saving is effective.



Integrated Filtration Design

Effectively prevent pipeline impurities from entering the valve to ensure the proper operation of the trap.

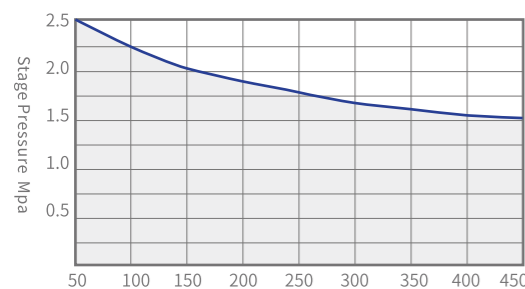
Suitable For Clean Pipes

All internal parts are made of stainless steel SS304, suitable for food, medicine and other industries.

Features

VMV Capsule steam trap body and bonnet are made of 304, which can be used in the clean environment, such as medical, health, food and other industries. The Capsule is made of stainless steel, and the condensate discharge temperature is subcooled at 15- 20°C. The Capsule steam trap adopts linear sealing closing system, which has no noise, good air exhausting capacity, fully utilizes the sensible heat of condensed water, and has good energy saving effect. Capsule Steam traps work on the difference in temperature between steam and condensate. When the steam in the pipe releases heat and the temperature decreases to produce condensate, the diaphragm in the diaphragm box shrinks and moves to open the valve seat to discharge condensate. The Capsule Steam trap can be used as a vent valve.

304 Material PN25 Valve Body Pressure-Temperature Ratings



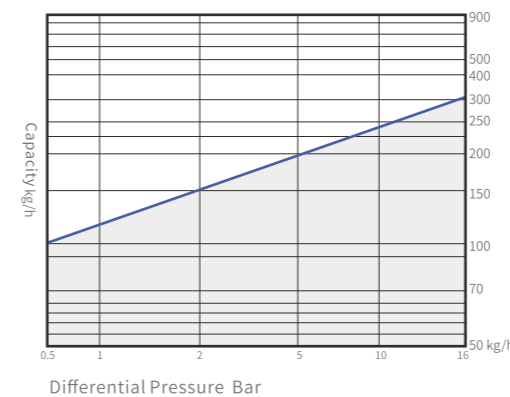
Technical Parameter

Nominal pressure	PN25
Max. allowable pressure(Shell)	1.6MPa /250°C
Max. allowable temperature(Shell)	350°C/1.46MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	204°C
Factory cold test pressure	3.8MPa
Air test	0.6MPa

Material List

Bonnet: SS304/SS316 Valve core: 304
 Body: SS304/SS316 Other internal parts: 304
 Seat: 420

SKT16 Capacity Curve



Thermostatic(Capsule)Steam Trap SKT16

Working Principle

The working principle of the film box trap depends on the temperature difference between the vapor and the liquid.

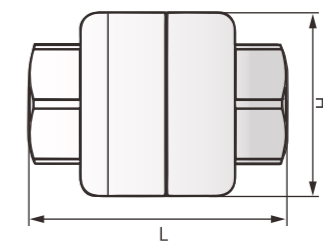
Features

- The valve body and valve bonnet are made of 304 material.
- The valve disc and valve seat are made of special stainless steel with heat treatment. The disc hardness is as high as HRC55, which improves the service life of the trap.
- Imported film box ensures precise temperature control.
- The closing system adopts high-precision spherical linear sealing structure.
- Built-in filter makes the trap work in a clean environment.
- The back pressure rate is as high as 50% or more.

Technical Standard

- GB/T12250-2005 Steam Traps Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap Production and performance characteristic tests

Structure Diagram



Structural Dimension Table

Model	Size	L	H	Weight
SKT16T	DN15-20	75	55	1Kg
SKT16T	DN25	80	55	1.2Kg
SKT16F	DN15-25	120	125	3.8 Kg

unit (mm)

Thermostatic (Bimetallic) steam trap

Thermostatic(Bimetallic)Steam Trap

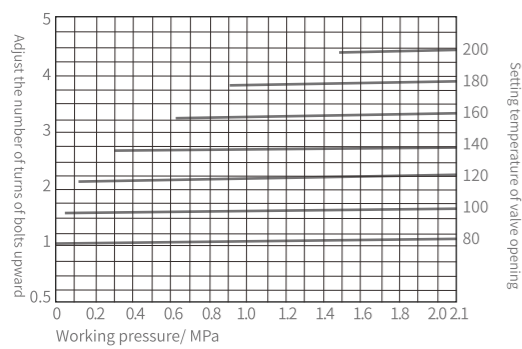
SHT21TVS Bimetallic steam trap station

Thermostatic(Bimetallic)Steam Trap SHT1

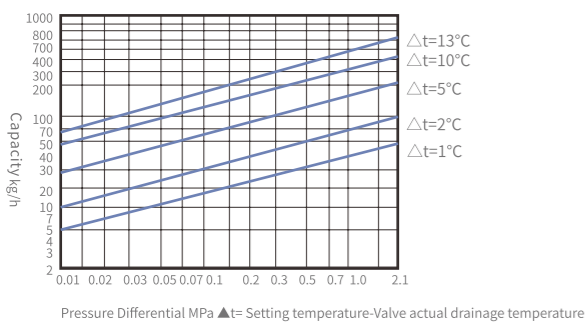


Technical Parameter

Nominal pressure	PN40/Class300
Max allowable pressure(Shell)	4.13MPa/200°C
Max allowable temperature(Shell)	450°C/3.05MPa
Max. operating pressure	2.1MPa
Max operating temperature	350°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa



SHT21TVS Capacity Curve



Working Principle

- The working principle of the bimetallic trap is to rely on the Different temperature between saturated steam and condensed water
- When the set temperature is reached, the condensate is continuously drained Features

Features

The thermostatic (bimetallic) steam trap station is a TVS station composed of stainless steel bimetallic steam traps and front and rear stainless steel valves, filters and inspection valves; the steam traps and TVS stations are made of stainless steel;Adjustable temperature bimetallic sheet makes full use of the sensible heat of high temperature condensate;It is easy to replace, and there is no need to install stop valves, filters and inspection valves at the front and rear ends of the trap; the back pressure rate is as high as 50%.

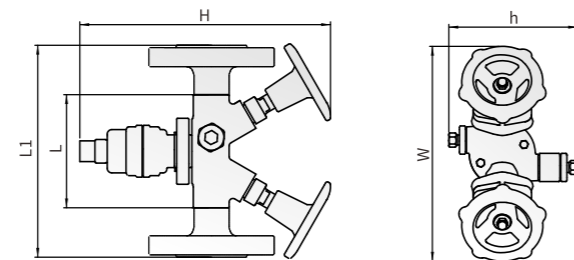
Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam traps
Production and performance characteristic tests

Material

Trap: F304 Trim: 304/420
TVS station: CF8

Structure Diagram



Structural Dimension Table

Model	Size	L	L1	L2	W	H	H1
SHT21TVS	DN15-25	120	210	230	230	265	136

unit (mm)

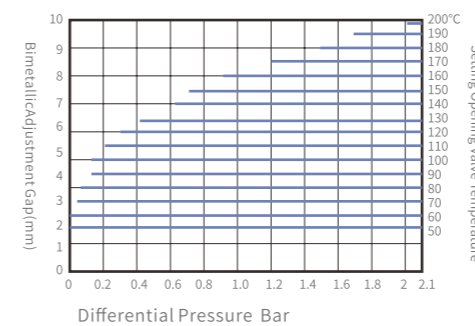


Technical Parameter

Nominal pressure	PN25
Max. allowable pressure(Shell)	1.6MPa /250°C
Max. allowable temperature(Shell)	350°C/1.46MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Material List

Bonnet: 420 Disc: 440C+304
Body: 420 Other internal parts: 304
Seat: 420



Working Principle

- The working principle of the bimetallic trap is to rely on the different temperature between saturated steam and condense water.
- When the set temperature is reached, the condensed water is continuously removed.

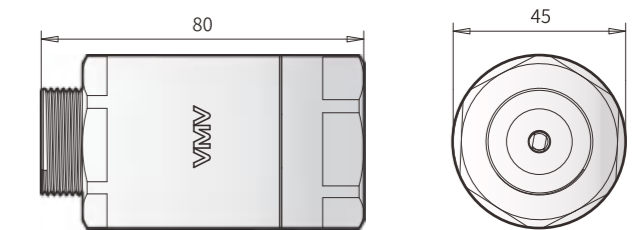
Features

- The valve body and valve bonnet are all made of forged steel A105.
- The valve disc and valve seat are made of special stainless steel with heat treatment.The disc hardness is as high as HRC55, which improves the service life of the trap.
- Imported bimetallic ensure precise temperature control.
- The closing system adopts high-precision wire sealing structure.
- Built-in filter makes the trap work in a clean environment.
- The back pressure rate is as high as 50% or more.

Technical Standard

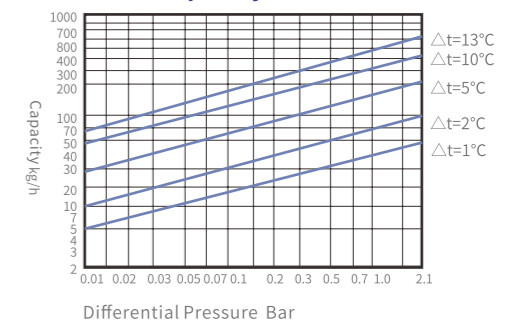
- GB/T12250-2005 Steam Traps Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap
Production and performance characteristic tests

Structure Diagram



Connection Type:RC3/4" 1/2" 3/8"

SHT1 Capacity Curve



Thermodynamic (Disc) Steam Trap

Thermodynamic (Disc) Steam Trap

Thermodynamic steam traps are widely used in low, medium and high pressure steam pipelines, process heat tracing, and small displacement equipment due to their small size, large displacement, energy saving, long life, and low temperature resistance.

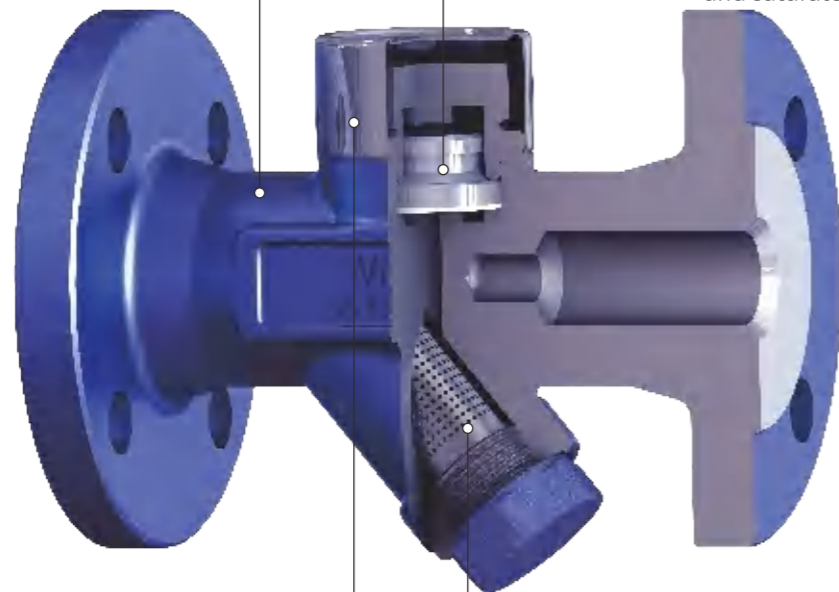
The technical advantages of VMV steam traps are unique and reasonable structure, high-precision internal parts, changeable valve seat.

High Corrosion Resistance

A105 (15CrMo) material is used, and corrosion allowance, minimum shell wall thickness, pressure and temperature grade are fully considered in the design.

Unique Seat and Disc

The valve seat and valve plate are made of martensitic stainless steel with unique heat treatment. According to different working conditions, two kinds of condensate removal solutions of low temperature (less flash steam) and saturated water can be provided



Stainless Steel Insulation Cover

Stainless steel thermal insulation cover ensures that the transformer room is not affected by the outdoor environment and prevents invalid actions.

Built-in Filter

Effectively prevent pipeline impurities from entering the valve, make sure the trap valve is working properly.

Structural Features

VMV thermodynamic steam trap uses A105 for the low pressure trap body and 15CrMo for the medium pressure trap body.

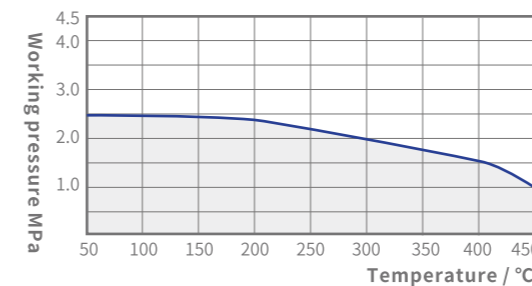
According to the Bernoulli equation, it has been repeatedly calculated and finally finalized through a large number of experiments. The product is available in low temperature and saturated versions. The low-temperature type discharges the condensate at a lower temperature (higher degree of subcooling) and has less noise, but the air discharge capacity is poor; the saturated type discharges the condensed water close to the saturation temperature (low degree of subcooling), with high noise and good air discharge capacity. Thermodynamic steam traps operate on the difference in flow rates between steam and condensate. When the condensate passes through the valve seat, the flow rate is small, and the valve plate is opened to discharge the condensate water; when the steam enters the valve seat, the valve seat is closed due to the large flow rate.

VMV Newton has broken through the problems that thermodynamic steam traps are not energy-saving, noisy, and discharges raw steam, and has become the best steam pipe guide steam trap. Its advantages are small size, long life, reliable action, convenient maintenance, and low noise (Low temperature type) no original steam leakage



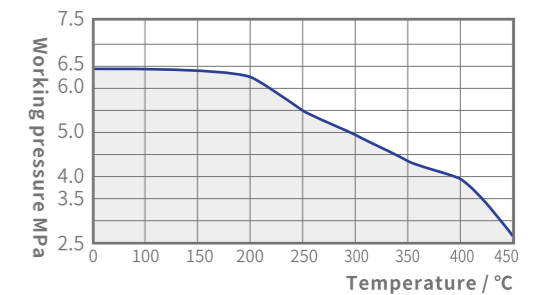
A105 Material PN25

Valve Body Pressure-Temperature Ratings



A105 Material PN63

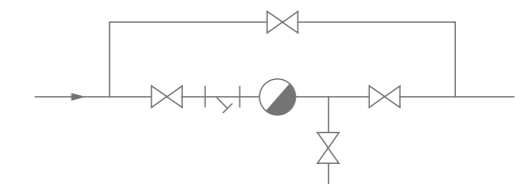
Valve Body Pressure-Temperature Ratings



Selection and Installation

The thermodynamic steam trap is intermittently drained, and the normal product STD16/STD42 steam trap has a subcooling degree of 5-10°C. The back pressure rate of the thermodynamic steam trap can reach 80% (rear pipe pressure/steam pressure), and it is suitable for pipes and small equipment to remove condensate. In general, the safety factor is 2-3 times.

Notice: The amount of condensate and the differential pressure of the steam-using equipment are important indicators for selection. The same type of trap will increase the displacement with the increase of the differential pressure. See the details on displacement curve. Please do not mistakenly think that a trap with larger diameter has larger capacity.



Thermodynamic steam traps can be installed arbitrarily at the bottom of the pipeline or equipment. The basic configuration of the steam traps is shown in the figure above.

Thermodynamic (Disc) Steam Trap

Thermodynamic (Disc) Steam Trap

STD01 Thermodynamic (Disc) Steam Trap

Thermodynamic (Disc) Steam Trap STD16



Working Principle

- Depends on the difference of steam and liquid flow rate
- Exclude saturated condensate

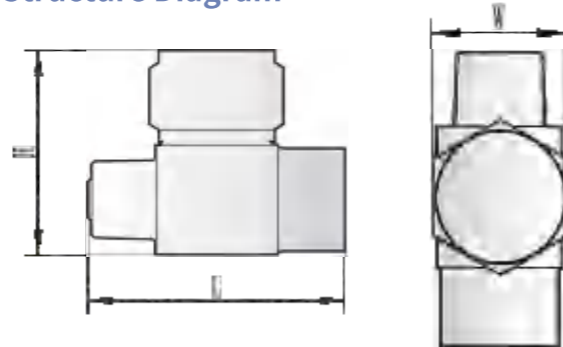
Features

- The valve body and bonnet are all made of stainless steel. Through heat treatment and aging treatment, they are not denatured and wear-resistant under high temperature and high pressure, which improves the service life of the trap.
- The fluid channel of the internal structure is designed strictly according to Bernoulli's equation, and the structure is reasonable.
- The back pressure rate is as high as 80% or more.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap Production and performance characteristic tests

Structure Diagram



Structural Dimension Table

Model	Size	L	H	W	Weight
STD01	1/4"	42	34	18	0.115Kg

- Suitable for steam irons and instrument pads in the garment

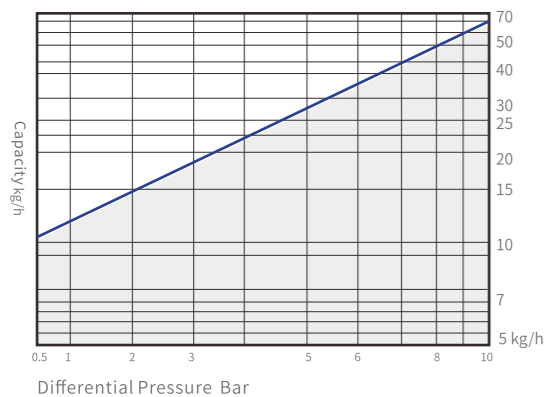
Technical Parameter

Nominal pressure	PN16
Max. allowable pressure (Shell)	1.51MPa/50°C
Max. allowable temperature (Shell)	200°C/1.09MPa
Factory steam action test	>3 times/1.0MPa
Max. operating pressure	1.0MPa
Max. operating temperature	200°C
Factory cold test pressure	2.4MPa
Air test	0.6MPa

Material List

- Bonnet: 304
- Body: 304
- Disc: 304

STD01 Capacity Curve



Working Principle

- Depends on the difference of steam and liquid flow rate
- Exclude saturated condensate

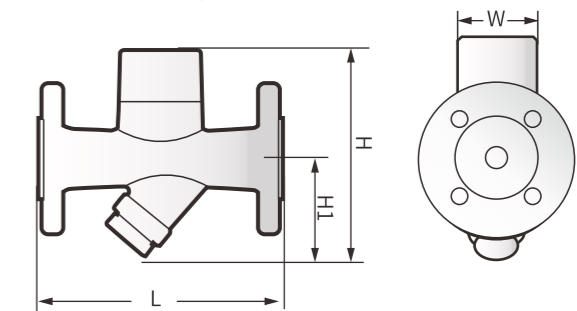
Features

- The valve body and valve bonnet are all made of forged steel.
- The valve disc and valve seat are made of martensitic stainless steel. After heat treatment and aging treatment, they are not denatured and wear-resistant under high temperature and high pressure, which improves the service life of the trap.
- Stainless steel insulation cover to isolate and slow down heat loss and eliminate invalid actions.
- The fluid channel of the internal structure is designed strictly according to Bernoulli's equation, and the structure is reasonable.
- Built-in filter makes the trap work in a clean environment.
- The back pressure rate is as high as 80% or more.
- To exclude low temperature traps with large subcooling degree, it needs to be customized.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap Production and performance characteristic tests

Structure Diagram



Structural Dimension Table

Model	Size	L	H	H1	W	Weight
STD16T	DN15-25	90	120	68	48	1/1.5Kg
STD16W	DN15-25	90	120	68	48	1/1.5Kg
STD16F	DN15-25	150	120	68	48	2.5-3Kg

- Suitable for drainage of saturated or superheated steam pipelines.

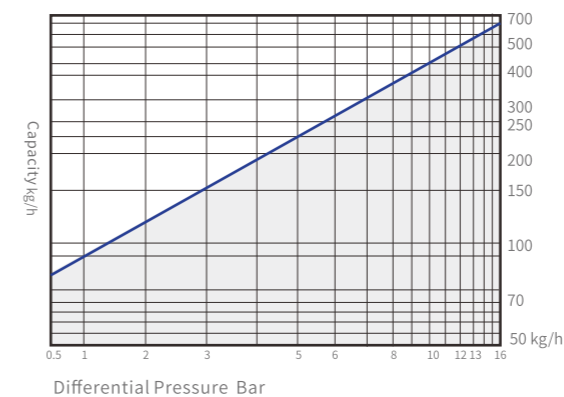
Technical Parameter

Nominal pressure	PN25
Max. allowable pressure (Shell)	2.45MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Material List

- Bonnet: A105/F304/F316
- Body: A105/F304/F316
- Disc: 440C
- Other internal parts: 304
- Seat: 440C

STD16 Capacity Curve



Thermodynamic (Disc) Steam Trap

Thermodynamic (Disc) Steam Trap

STD42 Thermodynamic (Disc) Steam Trap

Thermodynamic (Disc) Steam Trap STD80



Working Principle

- Depends on the difference of steam and liquid flow rate
- Exclude saturated condensate

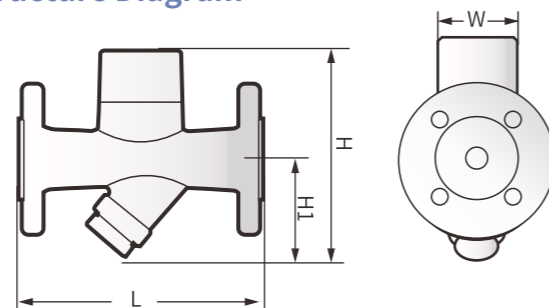
Features

- The valve body and valve bonnet are all made of forged steel.
- The valve disc and valve seat are made of special stainless steel, which is heat treated and aging treatment, no deformation and wear resistance under high temperature and high pressure, improve the service life of the trap.
- Stainless steel insulation cover to isolate and slow down heat loss and prevent the trap from emptying up phenomenon.
- The fluid channel of the internal structure is designed strictly according to Bernoulli's equation, and the structure is reasonable.
- Built-in filter makes the trap work in a clean environment.
- The back pressure rate is as high as 80% or more.
- To exclude low temperature traps with large subcooling degree, it needs to be customized.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap Production and performance characteristic tests

Structure Diagram



Structural Dimension Table

Model	Size	L	H	H1	W	Weight
STD42T	DN15-25	90	126	68	55	1.8 Kg
STD42W	DN15-25	90	126	68	55	1.8 Kg
STD42F	DN15-25	150	126	68	55	5.5Kg

• Suitable for saturated or superheated steam pipeline drainage



Working Principle

Depends on the difference of steam and liquid flow rate.

Features

- The valve body and valve bonnet are all made of forged steel. The valve disc and valve seat are made of special stainless steel, which is heat treated and aging treatment, no deformation and wear resistance under high temperature and high pressure, improve the service life of the trap.
- Stainless steel insulation cover to isolate and slow down heat loss and prevent the trap from emptying up phenomenon.
- The fluid channel of the internal structure is designed strictly according to Bernoulli's equation, and the structure is reasonable.
- Built-in filter makes the trap work in a clean environment.
- The back pressure rate is as high as 80% or more.

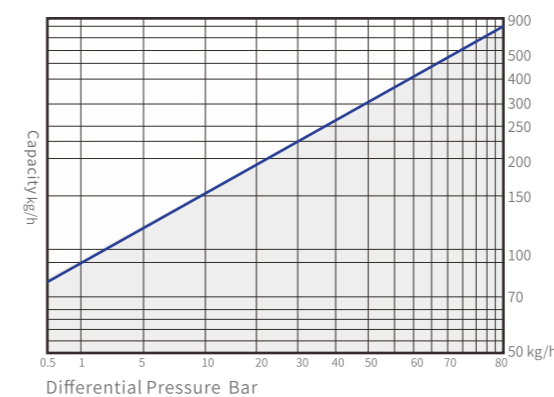
Technical Parameter

Nominal pressure	PN100
Max. allowable pressure (Shell)	9.8MPa/200°C
Max. allowable temperature (Shell)	450°C/7.29MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	8.0MPa
Max. operating temperature	420°C
Factory cold test pressure	15.0MPa
Air test	2.0MPa

Material List

Bonnet: F11	Disc: 440C
Body: F11	Other trims: 304
Seat: 440C	

STD80 Capacity Curve



Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap Production and performance characteristic tests

Structure Diagram



Structural Dimension Table

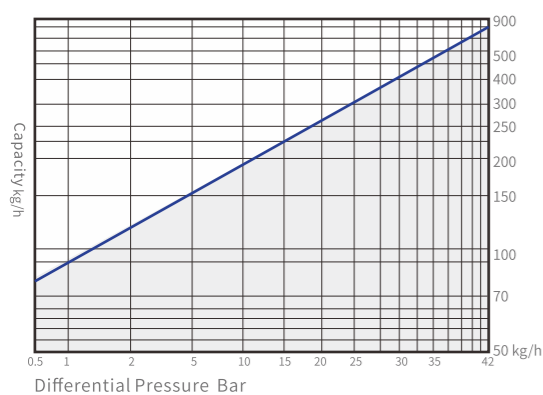
Model	Size	L	H	H1	W	Weight
STD80W	DN15-25	85	112	25	80	4.0Kg
STD80F	DN15-25	190	112	25	80	7.5Kg

• Suitable for saturated or superheated steam pipeline drainage.

Material List

Bonnet: A105/F304/F316	Disc: 440C+304
Body: A105/F304/F316	Other internal parts: 304
Seat: 440c	

STD42 Capacity Curve

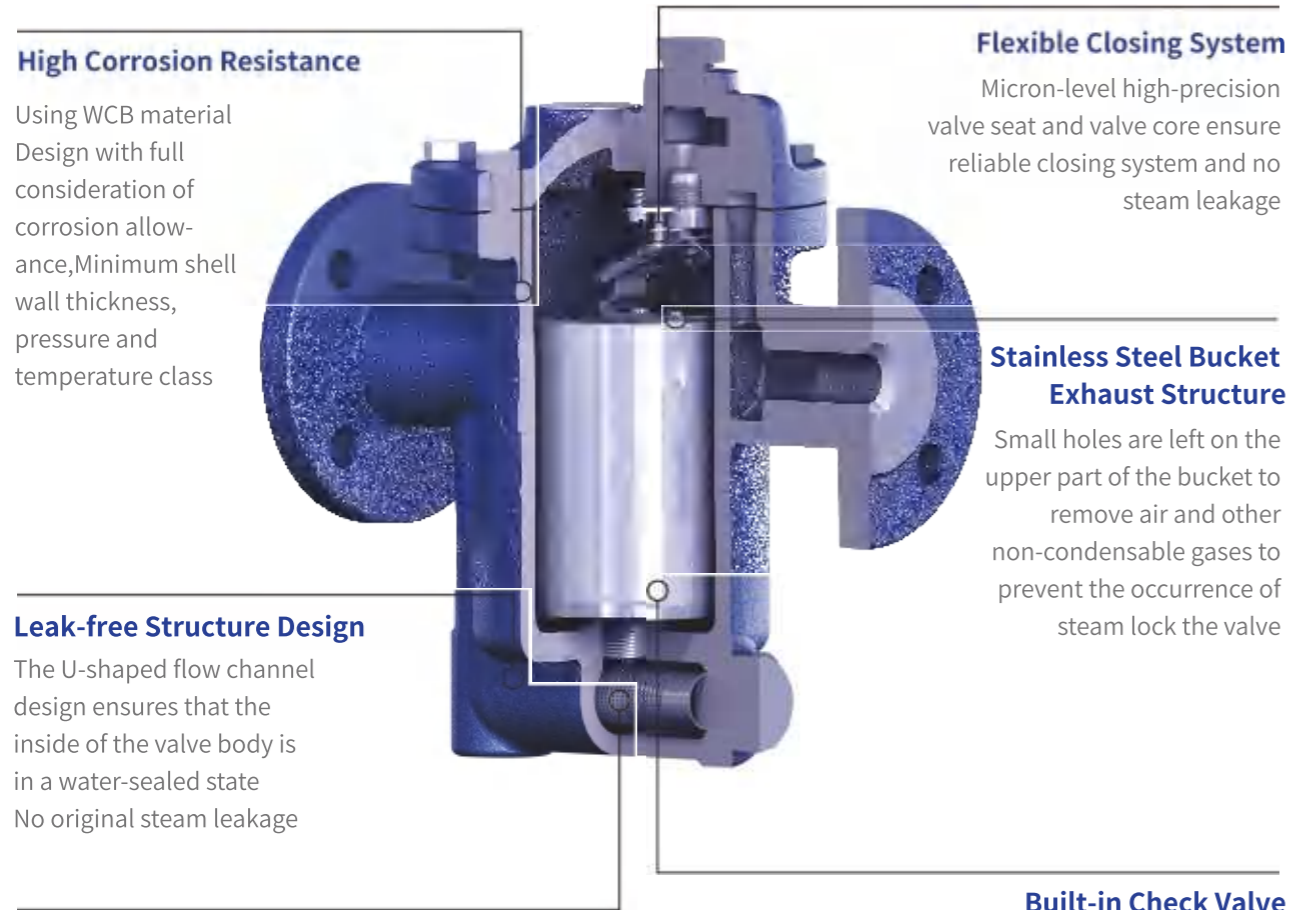


Inverted Bucket Steam Trap

Inverted Bucket Steam Trap

Inverted bucket steam traps are widely used in steam transmission pipelines, process heat tracing, jacketed heating kettles tank, reboilers and other equipment due to their safety, reliability, energy saving, long life, low temperature resistance and other characteristics.

The technical advantages of VMV traps: Unique and reasonable structure, high-precision internal parts



High Corrosion Resistance

Using WCB material Design with full consideration of corrosion allowance, Minimum shell wall thickness, pressure and temperature class

Flexible Closing System

Micron-level high-precision valve seat and valve core ensure reliable closing system and no steam leakage

Stainless Steel Bucket Exhaust Structure

Small holes are left on the upper part of the bucket to remove air and other non-condensable gases to prevent the occurrence of steam lock the valve

Leak-free Structure Design

The U-shaped flow channel design ensures that the inside of the valve body is in a water-sealed state No original steam leakage

Built-in Filter

Effectively prevent pipeline impurities from entering the valve Make sure the trap valve is working properly

Built-in Check Valve

Prevents water hammer from damaging internals. Also suitable for superheated steam environments

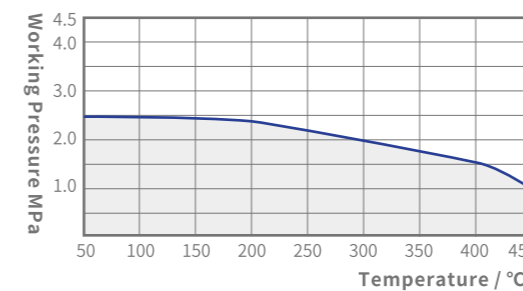
Structural Features

VMV steam trap design has fully considered factors such as shell strength, pressure and temperature grade, casting manufacturability, tightness of valve plug and seat closure, impact caused by water and vapor mixing, and the strength of valve cover gasket is affected by low temperature environment and other factors .

Inverted bucket steam traps work on the difference in density between steam and condensate. When the bucket is full of condensed water and non-condensable gas, the exhaust hole on the upper part of the bucket removes the non-condensable gas, the bucket loses buoyancy and drives the valve core to move down, the trap opens to drain, and when steam enters the bucket after draining, the bucket floats to drive the valve The core closes the trap.

The great advantages of the inverted bucket trap are high back pressure rate, long life, reliable action, convenient maintenance and no original steam leakage.

WCB/A105 Material PN25 Valve Body Pressure-Temperature Ratings

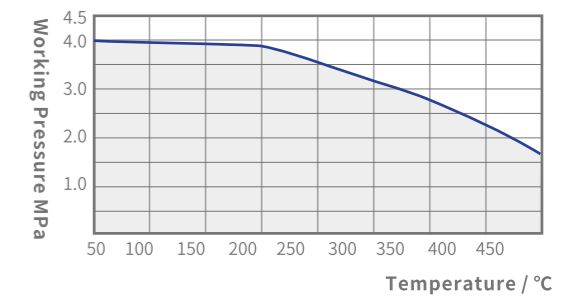


Selection and Installation

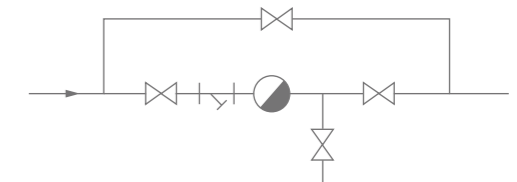
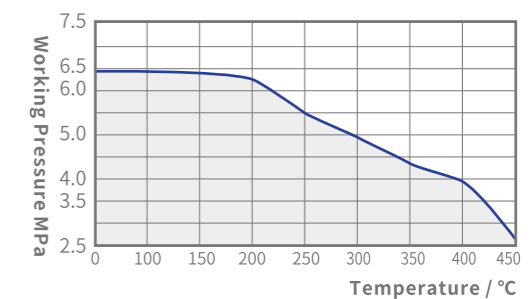
The inverted bucket steam trap is intermittently drained, the subcooling degree is 5-10°C, and the back pressure rate is over 85% (back-end pipeline pressure/steam pressure). In general, the safety factor is 2-3 times when selecting, and 5-8 times for air separation units and drying cylinders. The amount of condensed water and the differential pressure of the steam-using equipment are important indicators for model selection. For the same type of steam trap, the displacement increases with the increase of the differential pressure. See the details on capacity curve.

Notice: Please do not mistakenly think that a trap with larger diameter has larger capacity.

WCB/A105 Material PN40 Valve Body Pressure-Temperature Ratings



WCB/A105 Material PN63 Valve Body Pressure-Temperature Ratings



The inverted bucket trap is installed horizontally at the bottom of the pipeline or equipment. The basic configuration of the trap is shown in the figure above.

When the pipeline is superheated steam, a check valve must be installed to prevent the failure of the trap due to the superheated steam drying out the water seal in the trap.

Inverted Bucket Steam Trap

Inverted Bucket Steam Trap

SBT10A Inverted Bucket Steam Trap

Inverted Bucket Steam Trap SBT20



Working Principle

- Based on the differential density of steam and liquid.

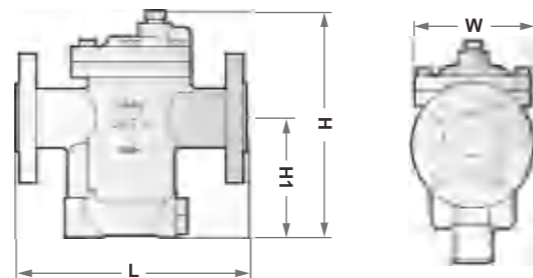
Features

- The valve body and valve cover are all made of forged steel/cast steel.
- Internal parts are all made of stainless steel and added with anti-wear allowance, extend trap life.
- U-shaped flow channel design, to achieve water sealing effect, no leakage of steam.
- Reliable flexible closure system with patented technology, no steam leakage.
- Install anti-water hammer device.
- Built-in check valve, suitable for superheated steam environment.
- Built-in filter allows the steam trap to work in a clean environment.
- Select different capacity curves according to the pressure difference to increase the capacity
- The back pressure rate is as high as 90% or more.
- After the steam is stopped, the condensed water can be removed by opening the screw plug to prevent damage to the steam trap due to low temperature freezing.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap
Production and performance characteristic tests

Structure Diagram



Structural Dimension Table

Model	Size	L	H	H1	W	Weight
SBT10AT	DN15-25	130	186	113	100	4Kg
SBT10AW	DN15-25	130	186	113	100	4Kg
SBT10AF	DN15-25	190	186	113	100	6.5Kg

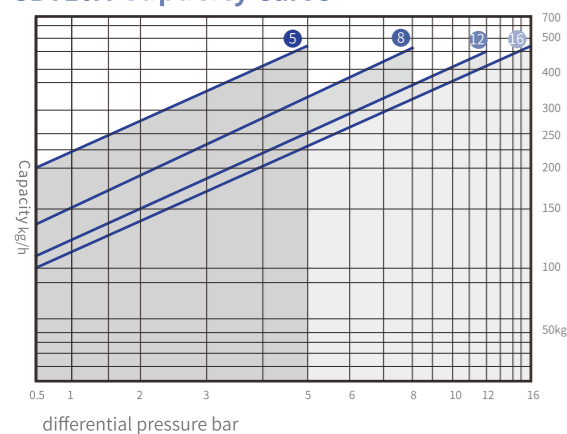
Technical Parameter

Nominal pressure	PN25
Max. allowable pressure (Shell)	2.45MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Material list

Bonnet : A105/F304/F316 Disc: 440C+304
 Body : WCB/CF8/CF8M Other internal parts: 304
 Seat : 420

SBT10A Capacity Curve



Working Principle

- Based on the differential density of steam and liquid.

Features

- The valve body and valve cover are all made of forged steel/cast steel.
- Internal parts are all made of stainless steel and added with anti-wear allowance, extend trap life.
- U-shaped flow channel design, to achieve water sealing effect, no leakage of steam.
- Reliable flexible closure system with patented technology, no steam leakage.
- Install anti-water hammer device.
- Built-in check valve, suitable for superheated steam environment.
- Built-in filter allows the steam trap to work in a clean environment.
- Select different capacity curves according to the pressure difference to increase the capacity
- The back pressure rate is as high as 90% or more.
- After the steam is stopped, the condensed water can be removed by opening the screw plug to prevent damage to the steam trap due to low temperature freezing.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap
Production and performance characteristic tests

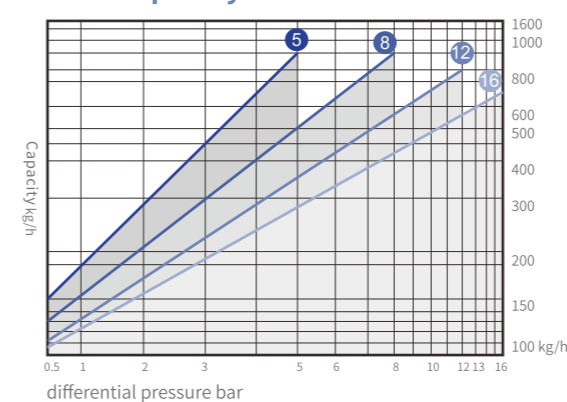
Technical Parameter

Nominal pressure	PN25
Max. allowable pressure (Shell)	2.45MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

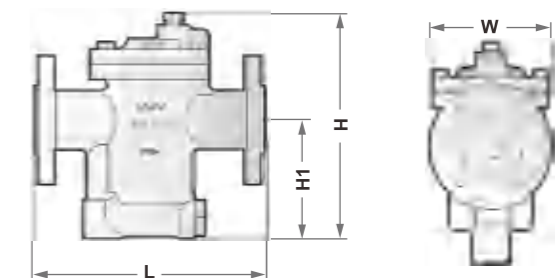
Material List

Bonnet : WCB/F304/F316 Disc: 440C+304
 Body : WCB/CF8/CF8M Other internal parts: 304
 Seat : 420

SBT20 Capacity Curve



Structure Diagram



Structural Dimension Table

Model	Size	L	H	H1	W	Weight
SBT20T	DN15-25	170	245	133	140	8Kg
SBT20W	DN15-25	170	245	133	140	8Kg
SBT20F	DN15-40	230	235	133	140	10.5Kg

Inverted Bucket Steam Trap

Inverted Bucket Steam Trap

SBT24 Inverted Bucket Steam Trap

Inverted Bucket Steam Trap SBT30



Working Principle

- Based on the differential density of steam and liquid.

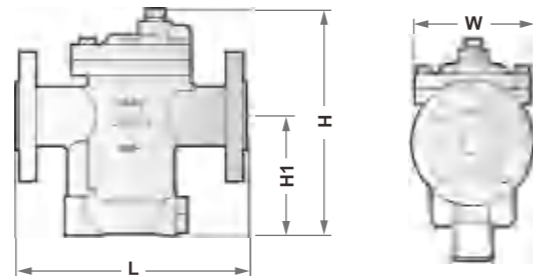
Features

- The valve body and valve cover are all made of forged steel/cast steel.
- Internal parts are all made of stainless steel and added with anti-wear allowance, extend trap life.
- U-shaped flow channel design, to achieve water sealing effect, no leakage of steam.
- Reliable flexible closure system with patented technology, no steam leakage.
- Install anti-water hammer device.
- Built-in check valve, suitable for superheated steam environment.
- Built-in filter allows the steam trap to work in a clean environment.
- Select different capacity curves according to the pressure difference to increase the capacity
- The back pressure rate is as high as 90% or more.
- After the steam is stopped, the condensed water can be removed by opening the screw plug to prevent damage to the steam trap due to low temperature freezing.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap
Production and performance characteristic tests

Structure Diagram



Structural Dimension Table

Model	Size	Unit(mm)				Weight
		L	H	H1	W	
SBT24T	DN15-40	170	250	133	140	9Kg
SBT24W	DN15-40	170	250	133	140	9Kg
SBT24F	DN15-40	230	250	133	140	12Kg

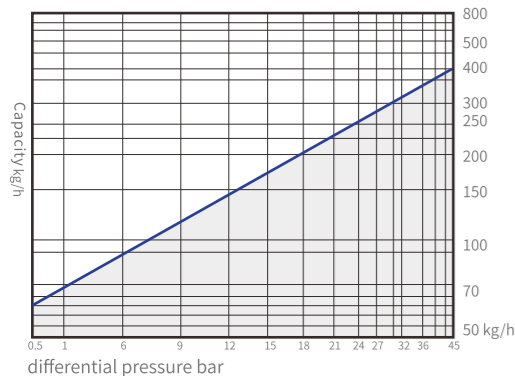
Technical Parameter

Nominal pressure	PN63
Max. allowable pressure (Shell)	6.27MPa/200°C
Max. allowable temperature (Shell)	450°C/2.6MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	4.5MPa
Max. operating temperature	350°C
Factory cold test pressure	9.5MPa
Air test	2.0MPa

Material List

Bonnet : A105/F304/F316 Disc: 440C+304
 Body : WCB/CF8/CF8M Other internal parts: 304
 Seat : 420

SBT24 Capacity Curve



working Principle

- Based on the differential density of steam and liquid.

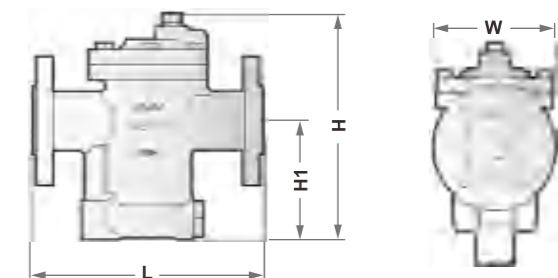
Features

- The valve body and valve cover are all made of forged steel/cast steel.
- Internal parts are all made of stainless steel and added with anti-wear allowance, extend trap life.
- U-shaped flow channel design, to achieve water sealing effect, no leakage of steam.
- Reliable flexible closure system with patented technology, no steam leakage.
- Install anti-water hammer device.
- Built-in check valve, suitable for superheated steam environment.
- Built-in filter allows the steam trap to work in a clean environment.
- Select different capacity curves according to the pressure difference to increase the capacity
- The back pressure rate is as high as 90% or more.
- After the steam is stopped, the condensed water can be removed by opening the screw plug to prevent damage to the steam trap due to low temperature freezing.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap
Production and performance characteristic tests

Structure Diagram



Structural Dimension Table

Model	Size	Unit(mm)				Weight
		L	H	H1	W	
SBT30T	DN25-32	210	320	187	174	15Kg
SBT30W	DN25-32	210	320	187	174	15Kg
SBT30F	DN25-50	270	320	187	174	19.5Kg

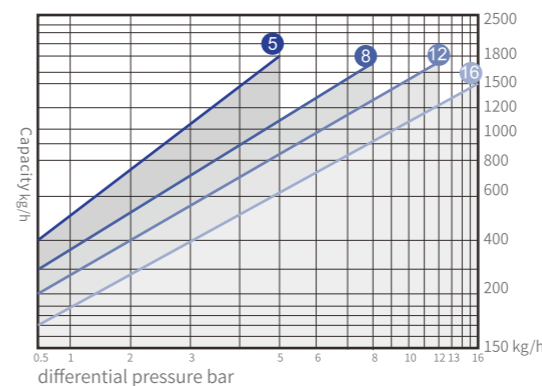
Technical Parameter

Nominal pressure	PN25
Max. allowable pressure (Shell)	2.45MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Material List

Bonnet : A105/F304/F316 Disc: 440C+304
 Body : WCB/CF8/CF8M Other internal parts: 304
 Seat : 420

SBT30 Capacity Curve



Inverted Bucket Steam Trap

Inverted Bucket Steam Trap

SBT11A Inverted Bucket Steam Trap

Inverted Bucket Steam Trap Station SBT11TVS



Working Principle

- Based on the differential density of steam and liquid.

Features

- The valve body and valve cover are all made of stainless steel.
- All internal parts are made of stainless steel, and the wear allowance has been fully considered in the design of moving parts, which improves the service life of the steam trap
- Internally installed U-shaped stainless steel pipe flow channel design to achieve water sealing effect.
- Reliable flexible closure system with patented technology, no steam leakage.
- External filter connector, so that the steam trap works in a clean environment.
- The back pressure rate is as high as 90% or more.

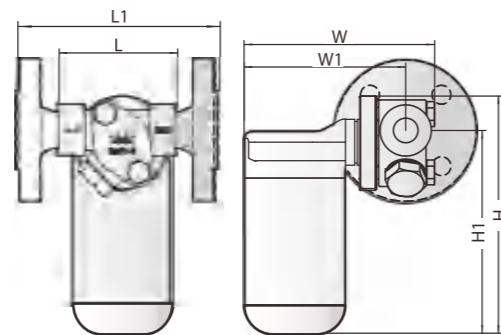
Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap Production and performance characteristic tests

Flow Chart



Structure Diagram



Structural Dimension Table

Model	Size	L	L1	W	W1	H	H1
SBT11A	DN15-25	88	210	152	130	176	150

Weight

SBT11A:4.2Kg
SBT11AF:6.1Kg

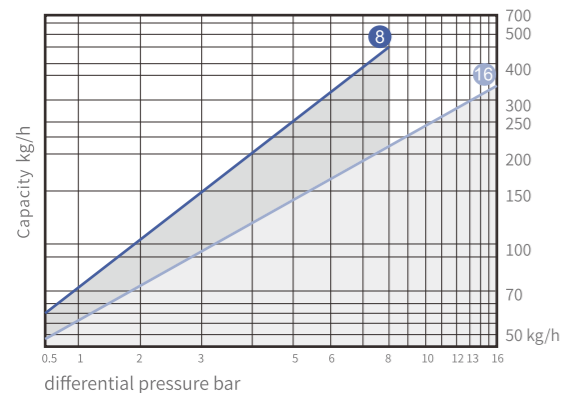
Technical Parameter

Nominal pressure	PN25
Max. allowable pressure (Shell)	1.89Mpa/50°C
Max. allowable temperature (Shell)	350°C/1.62MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	0.6MPa

Material List

Bonnet : F304/F316 Disc: 440C+304
Body : F304/F316 Other internal parts: 304
Seat : 420

SBT11A Capacity Curve



Working Principle

- Based on the differential density of steam and liquid.

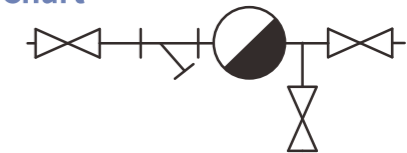
Features

- The valve body and valve cover are all made of stainless steel.
- All internal parts are made of stainless steel, and the wear allowance has been fully considered in the design of moving parts, which improves the service life of the steam trap
- Internally installed U-shaped stainless steel pipe flow channel design to achieve water sealing effect.
- Reliable flexible closure system with patented technology, no steam leakage.
- External filter connector, so that the steam trap works in a clean environment.
- The back pressure rate is as high as 90% or more.

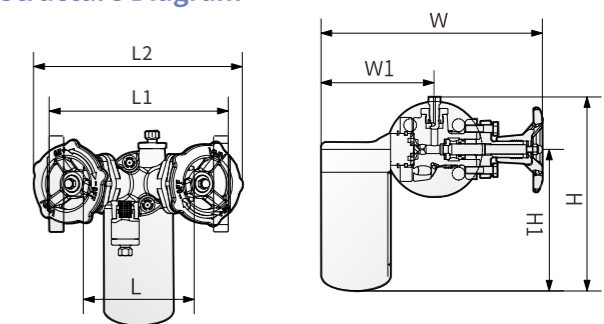
Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic steam trap Production and performance characteristic tests

Flow Chart



Structure Diagram



Structural Dimension Table

Model	Size	L	L1	L2	W	W1	H	H1
SBT11TVS	DN15-25	120	180	230	246	120	215	155

Weight

SBT11TVS:5.4Kg
SBT11TVSF:7.6Kg

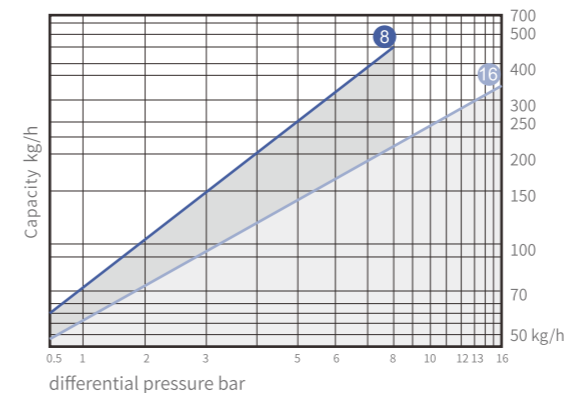
Technical Parameter

Nominal pressure	PN25
Max. allowable pressure (Shell)	1.89Mpa/50°C
Max. allowable temperature (Shell)	350°C/1.62MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	0.6MPa

Material List

Bonnet : F304/F316 Disc: 440C+304
Body : F304/F316 Other internal parts: 304
Seat : 420

SBT11TVS Capacity Curve



Pilot Inverted Bucket Steam Trap

Pilot Inverted Bucket Steam Trap

The pilot inverted bucket steam trap has the characteristics of large displacement, long life, good energy saving effect, water hammer resistance, and beautiful appearance. It is widely used in process heat tracing, jacketed heating kettles tank, reboilers and other equipment.

The technical advantages of VMV traps are: unique and reasonable structure, high-precision internal parts.

High Corrosion Resistance

Using WCB material
Fully consider corrosion allowance, minimum shell wall thickness, pressure and temperature grade when designing

Flexible Pilot Closure System

High-precision flexible pilot closing system Pilot valve guides the main valve to open and close

Stainless Steel Bucket Exhaust Structure

Small holes are left on the upper part of the bucket to remove air and other non-condensable gases to prevent the occurrence of steam lock the valve

Built-in Check Valve

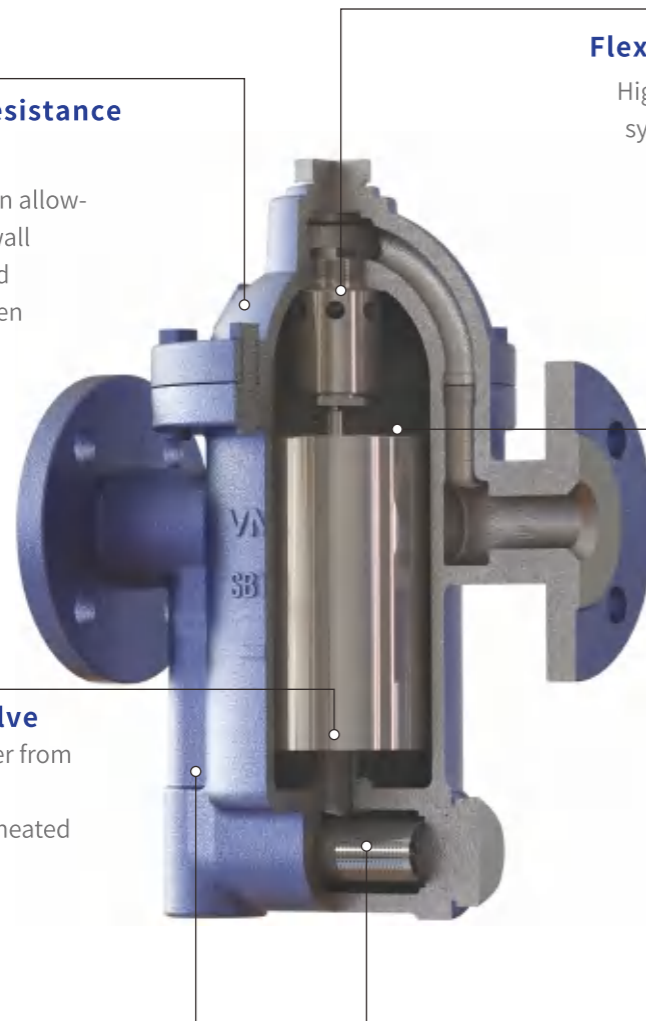
Prevents water hammer from damaging internals
Also suitable for superheated steam environment

Leak-free Structure Design

The U-shaped flow channel design ensures that the inside of the valve body is in a water-sealed state
No raw steam leakage

Built-in Filter

Effectively prevent pipeline impurities from entering the valve
Make sure the trap valve is working properly



Structural features

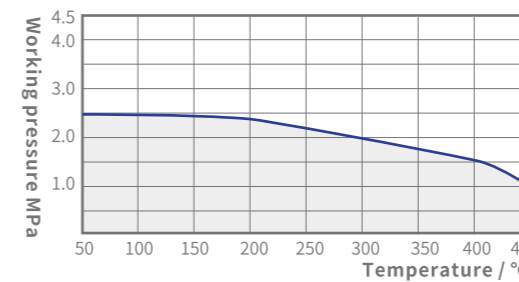
In the design of VMV trap, take full account of the strength of the shell, the pressure and temperature grade, the manufacturability of casting, the tightness of the valve core and seat closure, the impact caused by the mixing of water and steam, and the strength of the valve cover gasket are affected by the low temperature environment, etc.

Pilot inverted bucket steam traps work on the difference in density between steam and condensate. When the bucket is full of condensed water and non-condensable gas, the exhaust hole on the upper part of the bucket removes the non-condensable gas, the bucket loses buoyancy and drives the pilot valve core to move down to the bottom dead position, guiding the main valve to open, and steam enters the bucket after the trap is drained, the bucket floats to drive the pilot valve and the main valve to move up to close the trap.

The biggest advantages of pilot inverted bucket traps are small size, large displacement, high back pressure rate, long life, reliable action, convenient maintenance, and no original steam leakage.

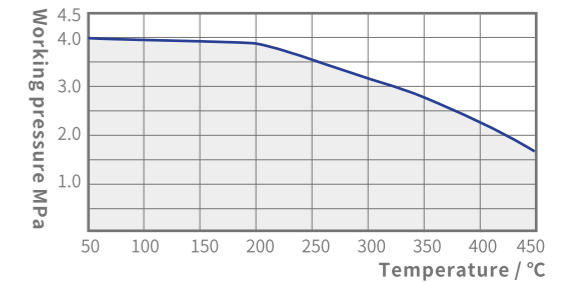
WCB/A105 Material PN25

Valve Body Pressure-Temperature Ratings



WCB/A105 Material PN40

Valve Body Pressure-Temperature Ratings



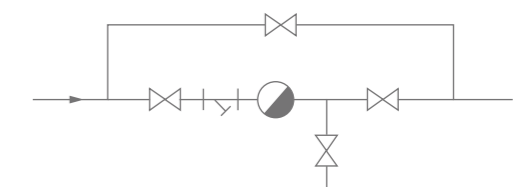
Selection and Installation of Pilot Inverted Bucket Steam Traps

The pilot inverted bucket steam trap is intermittently drained, with a subcooling degree of 5-10°C and a back pressure rate of more than 85% (back-end pipeline pressure/steam pressure). In general, the safety factor is 2-3 times when selecting, and 5-8 times for air separation units and drying cylinders.

The amount of condensed water and the differential pressure of the steam-using equipment are important indicators for model selection. For the same type of steam trap, the displacement increases with the increase of the differential pressure. See the details on displacement curve.

Special reminder: Please do not mistakenly think that a trap with a large diameter has a large displacement.

The pilot inverted bucket trap is installed horizontally at the bottom of the pipeline or equipment. The basic configuration of the trap is shown in the figure on the right.



In order to prevent the water hammer phenomenon after the water vapor in the pipeline is mixed, a check valve must be built in.

Pilot Inverted Bucket Steam Trap

Pilot Inverted Bucket Steam Trap

SBT40 Pilot Inverted Bucket Steam Trap

Pilot Inverted Bucket Steam Trap SBT50



Working Principle

- Based on the differential density of steam and liquid.
- the main valve is guided to open through the pilot valve, and the capacity is large.

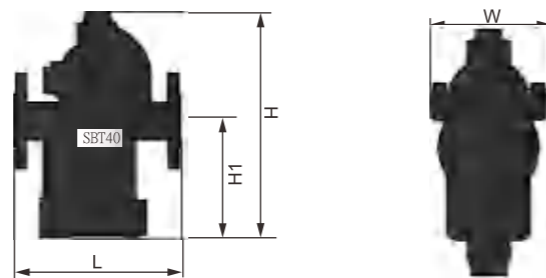
Features

- The valve body and valve cover are all made of forged steel/cast steel.
- Internal parts are all made of stainless steel and added with anti-wear allowance, extend trap life.
- U-shaped flow channel design, to achieve water sealing effect, no leakage of steam.
- Reliable flexible closure system with patented technology, no steam leakage.
- Install anti-water hammer device.
- Built-in check valve, suitable for superheated steam environment.
- Built-in filter allows the steam trap to work in a clean environment.
- Select different capacity curves according to the pressure difference to increase the capacity
- The back pressure rate is as high as 90% or more.
- After the steam is stopped, the condensed water can be removed by opening the screw plug to prevent damage to the steam trap due to low temperature freezing.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
 - GB/T22654-2008 Technical Conditions for Steam Trap
 - GB/T12251-2005 Test Methods for Steam Trap
 - ISO 6948 Automatic steam trap
- Production and performance characteristic tests

Structure Diagram



Dimension Table

Model	Size	L	H	H1	W	Weight
SBT40T	DN25-32	210	360	187	174	16.5Kg
SBT40W	DN25-32	210	360	187	174	16.5Kg
SBT40F	DN25-50	270	360	187	174	21Kg

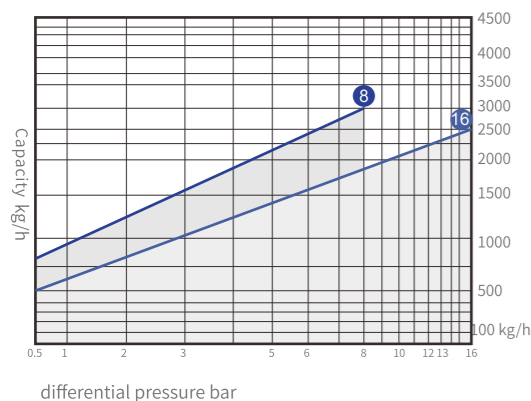
Technical Parameter

Nominal pressure	PN25
Max. allowable pressure (Shell)	2.45MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Material List

Bonnet : WCB/CF8/CF8M Disc: 440C+304
 Body : WCB/CF8/CF8M Other internal parts: 304
 Seat : 420

SBT40 Capacity Curve



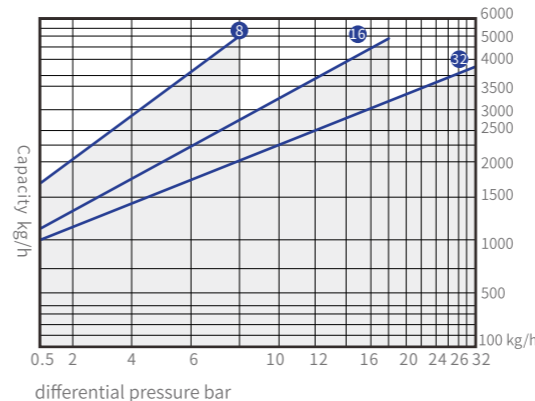
Technical parameter

Nominal pressure	PN40
Max. allowable pressure (Shell)	3.92MPa/200°C
Max. allowable temperature (Shell)	450°C/1.66MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	3.2MPa
Max. operating temperature	350°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa

Material List

Bonnet : WCB/CF8/CF8M Disc: 440C+304
 Body : WCB/CF8/CF8M Other internal parts: 304
 Seat : 420

SBT50 Capacity Curve



Working Principle

- Based on the differential density of steam and liquid.
- the main valve is guided to open through the pilot valve, and the capacity is large.

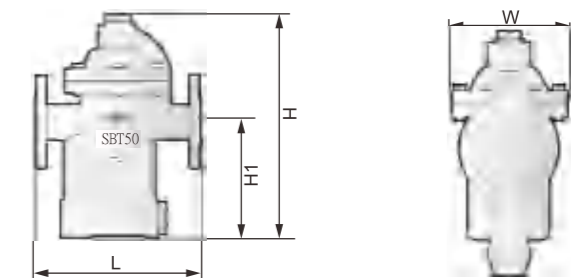
Features

- The valve body and valve cover are all made of forged steel/cast steel.
- Internal parts are all made of stainless steel and added with anti-wear allowance, extend trap life.
- U-shaped flow channel design, to achieve water sealing effect, no leakage of steam.
- Reliable flexible closure system with patented technology, no steam leakage.
- Install anti-water hammer device.
- Built-in check valve, suitable for superheated steam environment.
- Built-in filter allows the steam trap to work in a clean environment.
- Select different capacity curves according to the pressure difference to increase the capacity
- The back pressure rate is as high as 90% or more.
- After the steam is stopped, the condensed water can be removed by opening the screw plug to prevent damage to the steam trap due to low temperature freezing.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
 - GB/T22654-2008 Technical Conditions for Steam Trap
 - GB/T12251-2005 Test Methods for Steam Trap
 - ISO 6948 Automatic steam trap
- Production and performance characteristic tests

Structure Diagram



Dimension Table

Model	Size	L	H	H1	W	Weight
SBT50W	DN25-32	260	410	210	220	27.5Kg
SBT50F	DN25-50	320	410	210	220	33Kg

Pilot Inverted Bucket Steam Trap

Pilot Inverted Bucket Steam Trap

SBT60 Pilot Inverted Bucket Steam Trap

Pilot Inverted Bucket Steam Trap SBT66



Working Principle

- Based on the differential density of steam and liquid.
- the main valve is guided to open through the pilot valve, and the capacity is large.

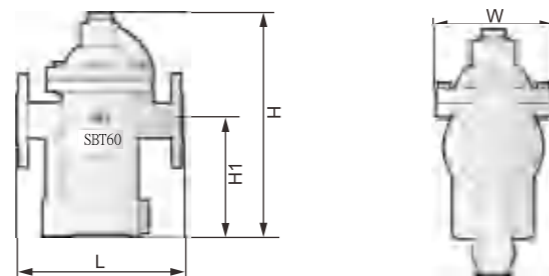
Features

- The valve body and valve cover are all made of forged steel/cast steel.
- Internal parts are all made of stainless steel and added with anti-wear allowance, extend trap life.
- U-shaped flow channel design, to achieve water sealing effect, no leakage of steam.
- Reliable flexible closure system with patented technology, no steam leakage.
- Install anti-water hammer device.
- Built-in check valve, suitable for superheated steam environment.
- Built-in filter allows the steam trap to work in a clean environment.
- Select different capacity curves according to the pressure difference to increase the capacity
- The back pressure rate is as high as 90% or more.
- After the steam is stopped, the condensed water can be removed by opening the screw plug to prevent damage to the steam trap due to low temperature freezing.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
 - GB/T22654-2008 Technical Conditions for Steam Trap
 - GB/T12251-2005 Test Methods for Steam Trap
 - ISO 6948 Automatic steam trap
- Production and performance characteristic tests

Structure Diagram



Dimension Table

Unit(mm)						
Model	Size	L	H	H1	W	Weight
SBT60W	DN25-32	260	460	260	220	27.5Kg
SBT60F	DN25-50	320	460	260	220	36Kg

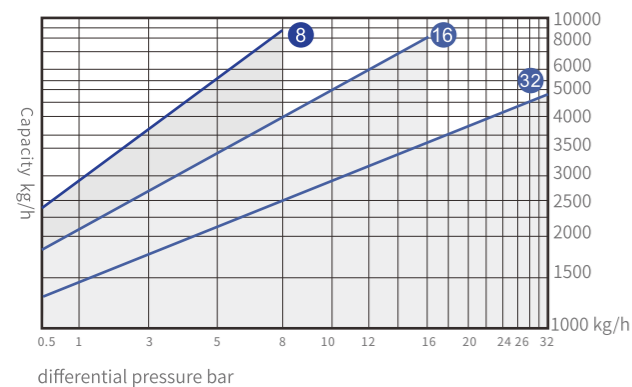
Technical Parameter

Nominal pressure	PN40
Max. allowable pressure (Shell)	3.92MPa/200°C
Max. allowable temperature (Shell)	450°C/1.66MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	3.2MPa
Max. operating temperature	350°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa

Material List

Bonnet : WCB/CF8/CF8M Disc: 440C+304
 Body : WCB/CF8/CF8M Other internal parts: 304
 Seat : 420

SBT60 Capacity Curve



Working Principle

- Based on the differential density of steam and liquid.
- the main valve is guided to open through the pilot valve, and the capacity is large.

Features

- The valve body and valve cover are made of cast steel.
- The internal parts are all made of stainless steel, and the wear allowance has been fully considered in the design of the movable parts, which improves the service life of the steam trap.
- Install anti-water shock device, so that the fluid entering the valve body does not produce water hammer phenomenon.
- Built-in check valve, suitable for superheated steam environment.
- Built-in filter allows the steam trap to work in a clean environment.
- Select different capacity curves according to the pressure.
- The back pressure rate is as high as 90% or more.

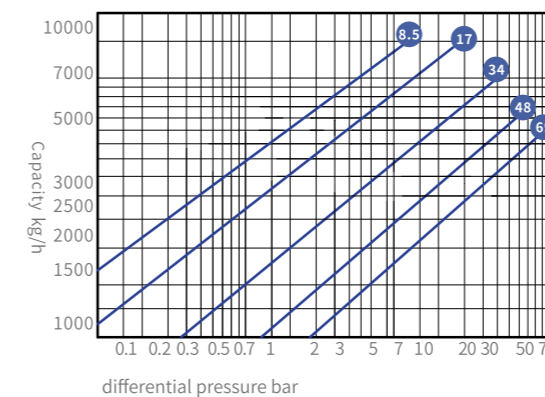
Technical Parameter

Nominal pressure	PN100
Max. allowable pressure (Shell)	6.67MPa/450°C
Max. allowable temperature (Shell)	500°C/4.981MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	6.9MPa
Max. operating temperature	50°C
Factory cold test pressure	15MPa
Air test	2.0MPa

Material List

Bonnet : A105/ F11 Disc: 440C+304
 Body : A105/ F11 Other internal parts: 304
 Seat : 420

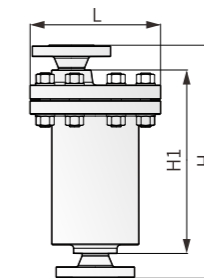
SBT66 Capacity Curve



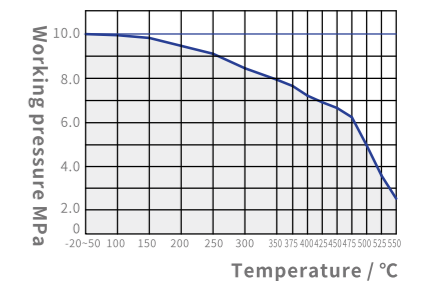
Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
 - GB/T22654-2008 Technical Conditions for Steam Trap
 - GB/T12251-2005 Test Methods for Steam Trap
 - ISO 6948 Automatic steam trap
- Production and performance characteristic tests

Structure Diagram



F11 PN100 Valve Body Pressure-Temperature Ratings



Dimension Table

Unit(mm)					
Model	Size	H	H1	W	Weight
SBT66W	DN25-50	536	422	300	27.5Kg
SBT66F	DN25-50	536	422	300	36Kg

Lever Ball Float Steam Trap

Lever Ball Float Steam Trap

The lever ball float trap has the characteristics of large displacement, long life, good energy saving effect, water hammer resistance, beautiful appearance, etc. It is widely used in process heat tracing, jacketed heating kettles tank, reboilers and other equipment.

The technical advantages of VMV traps are: unique and reasonable structure, high-precision internal parts.

High Corrosion Resistance

Using WCB material
Fully consider corrosion allowance, minimum shell wall thickness, pressure and temperature grade when designing

Unique Exhaust Air Valve

The unique air exhaust valve makes the trap no air blocking phenomenon caused by air and other non-condensable gases during initial or normal operation.

Flexible Closing System

Unique flexible closing mechanism
No rigid impact to ensure long life
Micron-level high-precision valve seat. The valve core ensures reliable and tight closing

Built-in Filter

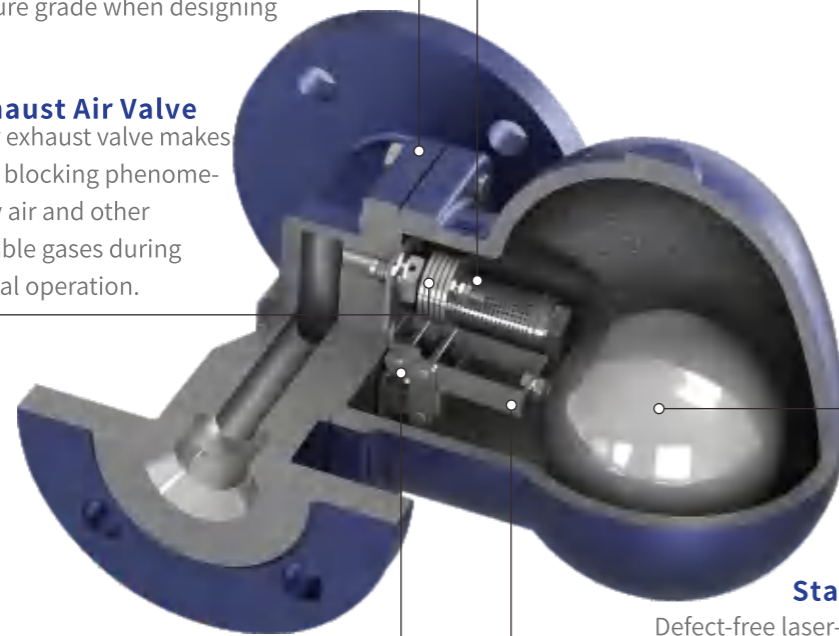
Effectively prevent pipeline impurities from entering the valve
Keeps traps working properly while preventing water hammer from damaging internal components

Stainless Steel Float

Defect-free laser-welded float ensures long service life of the trap

Unique Float Assembly

Precisely calculated structure of the floating ball assembly enables the closing system to work in a water-sealed state without steam leakage



Structural Features

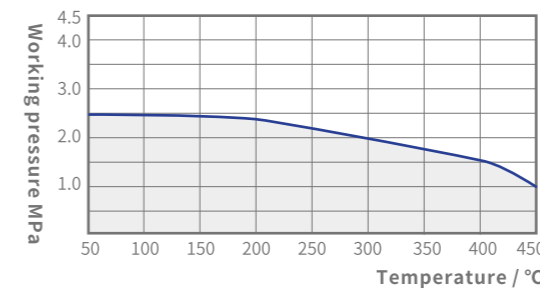
The flexible closing system is applied to the lever ball float trap, which solves the problems of short life and lax closing. In the design, the strength of the shell, the pressure and temperature grade, the manufacturability of casting, the impact caused by the fluid flow channel and the water-vapor mixing are considered, and the closed system works in a water-sealed state.

Lever ball float steam trap works on the difference in density between steam and condensate. When the valve body is filled with condensed water and non-condensable gas, the air exhaust valve is opened to remove the non-condensable gas, the floating ball moves up to drive the valve core to open, and after the condensate is drained, the floating ball drives the valve core to move down and closes the trap.

The biggest advantage of lever ball float trap is high back pressure rate (differential pressure 0.01bar can work), long life, reliable action, easy maintenance and no original steam

WCB/A105 Material PN25

Valve Body Pressure-Temperature Ratings

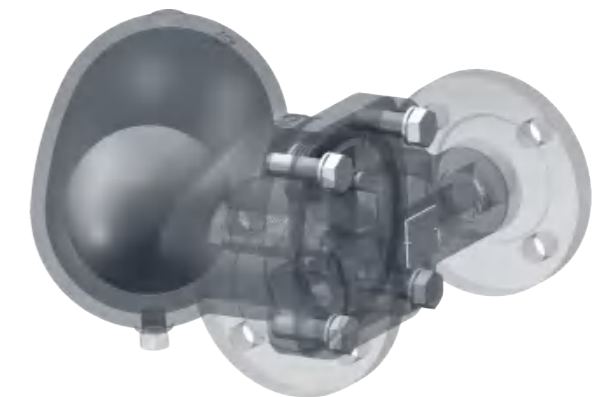


Lever Ball Float Trap

The lever ball float type steam trap is for continuous drainage, the subcooling degree is about 5°C, and the back pressure rate is over 95% (back-end pipeline pressure/steam pressure). In general, the safety factor is 2-3 times when selecting, and 5-8 times for air separation units and drying cylinders. Condensate volume and differential pressure of steam-using equipment are important indicators for model selection. The same type of trap increases with the increase of pressure difference and displacement. See the details on displacement curve.

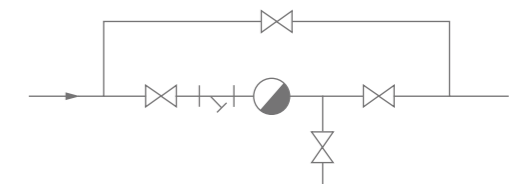
Special reminder: Please do not mistakenly think that a trap with a large diameter has a large displacement.

The lever ball float trap is installed horizontally at the bottom of the pipeline or equipment, and the SFT10 trap can be installed horizontally or vertically. The basic configuration is shown in the figure on the right.



The lever ball float type steam trap is made of ASTM216 WCB/WC6 /CF8/ CF8M stainless steel, some bonnets are made of ASTM A105/F304/F316, the inner parts are made of stainless steel, and there is a built-in filter device.

- Nominal pressure: PN25;
- Max allowable temperature: 425°C;
- Max working pressure: 1.6MPa /2.0MPa /3.2MPa /4.5MPa/6.5MPa;
- Max operating temperature: 400°C;
- Connection type: threaded RC or flange (GB/T9124.1-2019; HG/T20615-2009; HG/T20592-2009, etc.)



Lever ball float traps are best suited for back pressure recovery of condensate.

Lever Ball Float Steam Trap

Lever Ball Float Steam Trap

SFT10A Lever Ball Float Steam Trap

Lever Ball Float Steam Trap SFT20A



Working Principle

- Based on the density of vapor and liquid.

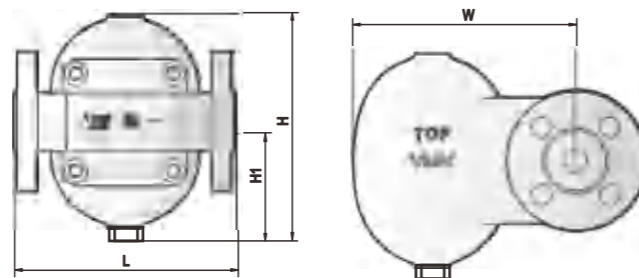
Features

- The valve body and bonnet are made of cast steel/forged steel.
- All internal parts are made of stainless steel, and the wear allowance has been fully considered in the design of movable parts, which improves the service life of the trap.
- Special flow channel design to achieve zero water hammer.
- Patented flexible closing system and micron-level precision closing system double guarantee no steam leakage and long service life.
- Built-in air exhaust valve to prevent air lock.
- The independent filter makes the trap work in a clean environment.
- Choose different displacement curves according to the pressure.
- The back pressure rate is as high as 95%

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking
- Structure Length
- GB/T22654-2008 Technical Conditions for Steam Traps
- GB/T12251-2005 Test Method for Steam Traps
- ISO 6948 Automatic steam traps
- Production and performance characteristic tests

Structure Diagram



Dimension Table

Model	Size	Unit(mm)				Weight
		L	H	H1	W	
SFT10AT	DN15-20	120	154	82	155	5.0 kg
	DN25	145	154	82	155	5.7 kg
SFT10AW	DN15-20	120	154	82	155	5.0 kg
	DN25	145	154	82	155	5.7 kg
SFT10AF	DN15-20	150	154	82	155	7.0 kg
	DN25	160	154	82	155	8.1 kg

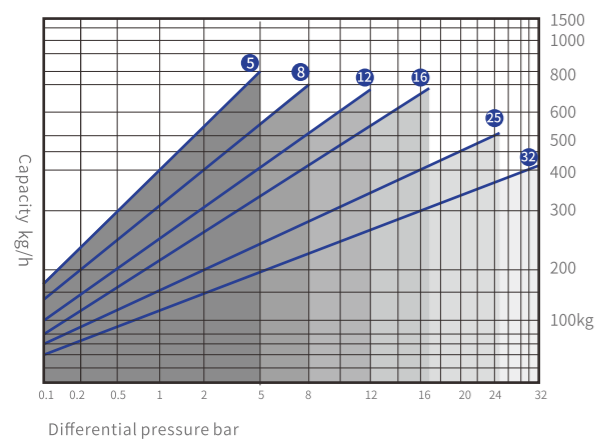
Technical Parameters

Nominal pressure	PN40
Max. allowable pressure (Shell)	3.92MPa/200°C
Max. allowable temperature (Shell)	450°C/1.66MPa
Factory steam action test	>3times/1.6MPa
Max. operating pressure	3.2MPa
Max. operating temperature	350°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa

Material List

Bonnet: A105/F304/F316 Disc: 440C
 Body: WCB/CF8/CF8M Other internal parts: 304
 Seat: 420

SFT10A Capacity Curve



Working Principle

- Based on the density of vapor and liquid.

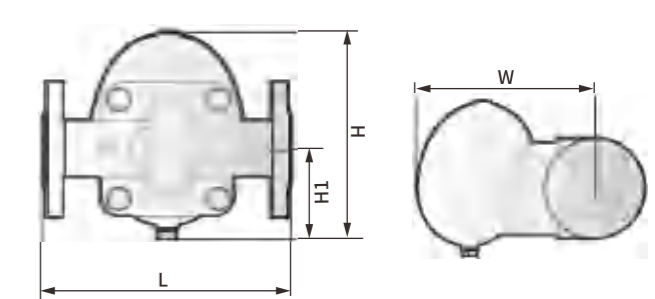
Features

- The valve body and bonnet are made of cast steel/forged steel.
- All internal parts are made of stainless steel, and the wear allowance has been fully considered in the design of movable parts, which improves the service life of the trap.
- Special flow channel design to achieve zero water hammer.
- Patented flexible closing system and micron-level precision closing system double guarantee no steam leakage and long service life.
- Built-in air exhaust valve to prevent steam lock.
- The independent filter makes the trap work in a clean environment.
- Choose different displacement curves according to the pressure.
- The back pressure rate is as high as 95%
- The drain plug is designed at the bottom of the trap to ensure that the internal water is removed after stopping, to prevent floating ball from freezing in cold weather.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking
- Structure Length
- GB/T22654-2008 Technical Conditions for Steam Traps
- GB/T12251-2005 Test Method for Steam Traps
- ISO 6948 Automatic steam traps
- Production and performance characteristic tests

Structure Diagram



Dimension Table

Model	Size	Unit(mm)				Weight
		L	H	H1	W	
SFT20AT	DN15-25	150	180	75	183	8.5 kg
SFT20AW	DN15-25	150	180	75	183	8.5 kg
SFT20AF	DN15-25	210	180	75	183	11 kg

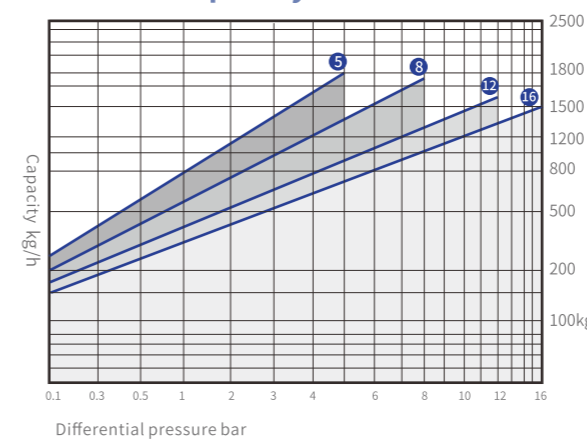
Technical Parameters

Nominal pressure	PN25
Max. allowable pressure (Shell)	2.45MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Factory steam action test	>3times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Material List

Bonnet: A105/F304/F316 Disc: 440C
 Body: WCB/CF8/CF8M Other internal parts: 304
 Seat: 420

SFT20A Capacity Curve



Lever Ball Float Steam Trap

SFT30A Lever Ball Float Steam Trap



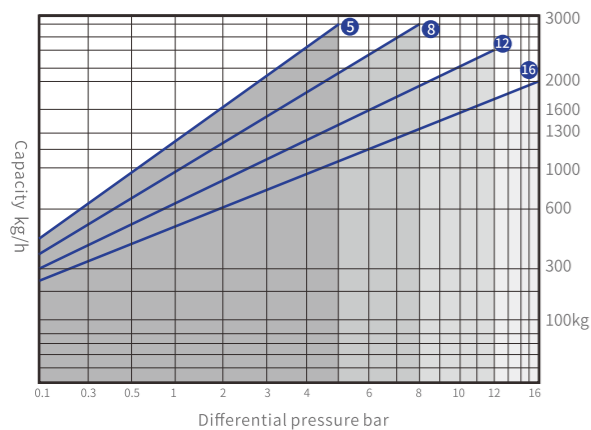
Technical Parameters

Nominal pressure	PN25
Max. allowable pressure (Shell)	2.45MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Material List

Bonnet: A105/F304/F316 Disc: 440C
 Body: WCB/CF8/CF8M Other internal parts: 304
 Seat: 420

SFT30A Capacity Curve



Working Principle

- Based on the differential density of steam and liquid.

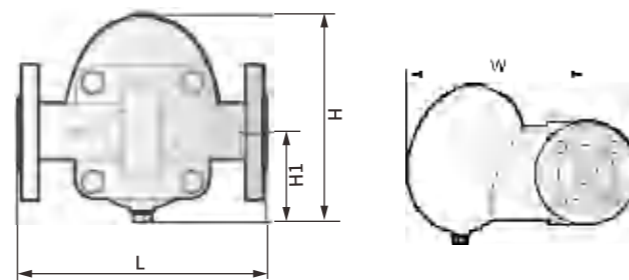
Features

- Valve body and bonnet are made of cast steel, forged steel.
- All internal parts are made of stainless steel, and the wear allowance has been fully considered in the design of movable parts, which improves the service life of the steam trap.
- Special flow channel design to achieve zero water hammer.
- Patented flexible closing system and micron-level precision closing system double guarantee no steam leakage and long service life.
- Built-in air exhaust valve to prevent steam lock.
- Built-in filter makes the steam trap work in a clean environment.
- Choose different capacity curves according to the differential pressure.
- Back pressure rate is as high as 95%.
- Drain plug is designed at the bottom of the steam trap to ensure that the internal water will be drained, to prevent floating ball from freezing damage in cold weather.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic Steam Trap Production and Performance Characteristic Tests

Structure Diagram



Dimension Table

Model	Size	L	H	H1	W	Weight
SFT30AT	DN25-32	170	210	90	235	12 kg
SFT30AW	DN25-32	170	210	90	235	12 kg
SFT30AF	DN25-50	230	210	90	235	16.5 kg

Lever Ball Float Steam Trap

Lever Ball Float Steam Trap SFT40A



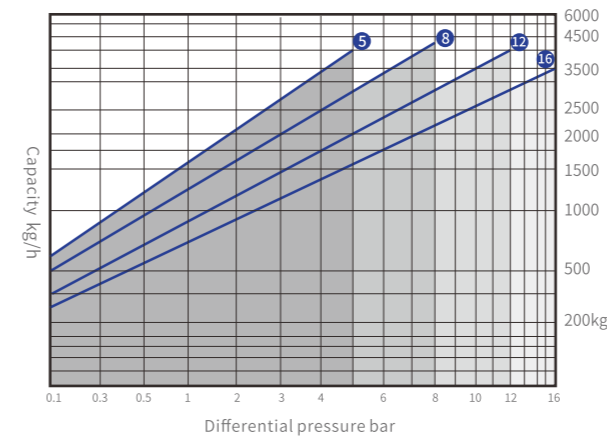
Technical Parameters

Nominal pressure	PN25
Max. allowable pressure (Shell)	2.45MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Material List

Bonnet: A105/F304/F316 Disc: 440C
 Body: WCB/CF8/CF8M Other internal parts: 304
 Seat: 420

SFT40A Capacity Curve



Working Principle

- Based on the differential density of steam and liquid.

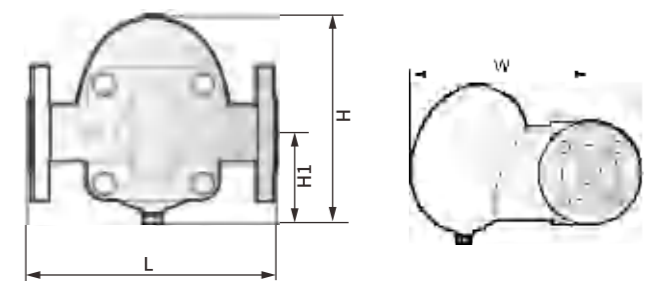
Features

- Valve body and bonnet are made of cast steel, forged steel.
- All internal parts are made of stainless steel, and the wear allowance has been fully considered in the design of movable parts, which improves the service life of the steam trap.
- Special flow channel design to achieve zero water hammer.
- Patented flexible closing system and micron-level precision closing system double guarantee no steam leakage and long service life.
- Built-in air exhaust valve to prevent steam lock.
- Built-in filter makes the steam trap work in a clean environment.
- Choose different capacity curves according to the differential pressure. Back pressure rate is as high as 95%.
- Drain plug is designed at the bottom of the steam trap to ensure that the internal water will be drained, to prevent floating ball from freezing damage in cold weather.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic Steam Trap Production and Performance Characteristic Tests

Structure Diagram



Dimension Table

Model	Size	L	H	H1	W	Weight
SFT40AT	DN25-32	210	260	115	285	20 kg
SFT40AW	DN25-32	210	260	115	285	20 kg
SFT40AF	DN25-50	270	260	115	285	26 kg

Lever Ball Float Steam Trap

Lever Ball Float Steam Trap

SFT50 Lever Ball Float Steam Trap

Lever Ball Float Steam Trap SFT60



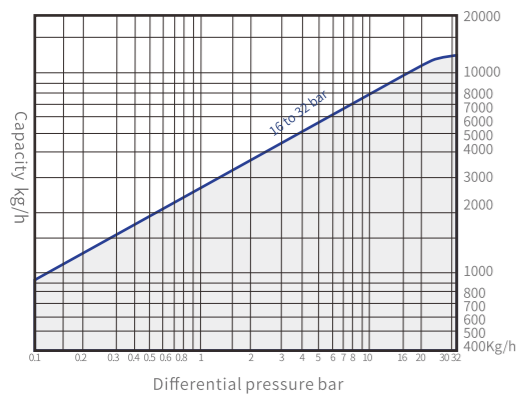
Technical Parameters

Nominal pressure	PN40
Max. allowable pressure (Shell)	3.92MPa/200°C
Max. allowable temperature (Shell)	450°C/1.66MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	3.2MPa
Max. operating temperature	350°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa

Material List

Bonnet: WCB Disc: 420
 Body: WCB Other internal parts: 304
 Seat: 420

SFT50 Capacity Curve



Working Principle

• Based on the differential density of steam and liquid.

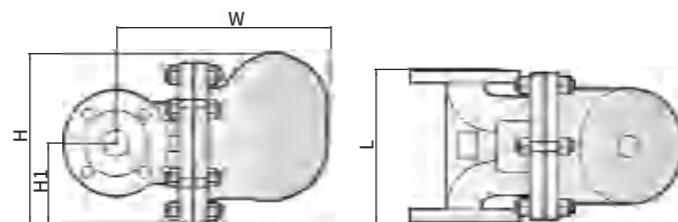
Features

- Valve body and bonnet are made of cast steel, forged steel.
- All internal parts are made of stainless steel, which improves the service life of the steam trap.
- Adopting double balanced valve seat, with an ultra long service life.
- Built-in air exhaust valve to prevent steam lock.
- Water seal design, no original steam leakage.
- Choose different capacity curves according to the differential pressure.
- Back pressure rate is as high as 95%.
- Drain plug is designed at the bottom of the steam trap to ensure that the internal water will be drained, to prevent floating ball from freezing damage in cold weather.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic Steam Trap Production and Performance Characteristic Tests from freezing damage in cold weather.

Structure Diagram



Dimension Table

Unit(mm)						
Model	Size	L	H	H1	W	Weight
SFT50	DN32	230	265	122	340	27 kg
	DN40	230	265	122	340	27.5 kg



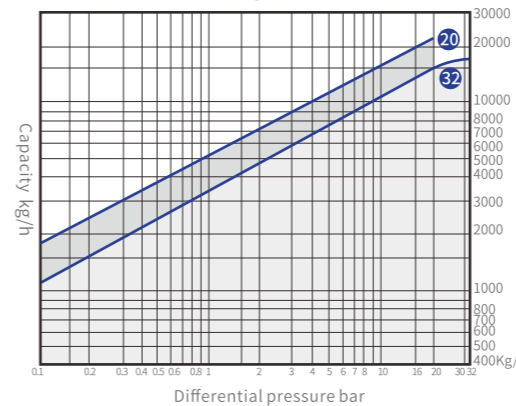
Technical Parameters

Nominal pressure	PN40
Max. allowable pressure (Shell)	3.92MPa/200°C
Max. allowable temperature (Shell)	450°C/1.66MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	3.2MPa
Max. operating temperature	350°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa

Material List

Bonnet: WCB Disc: 420
 Body: WCB Other internal parts: 304
 Seat: 420

SFT60 Capacity Curve



Working Principle

• Based on the differential density of steam and liquid.

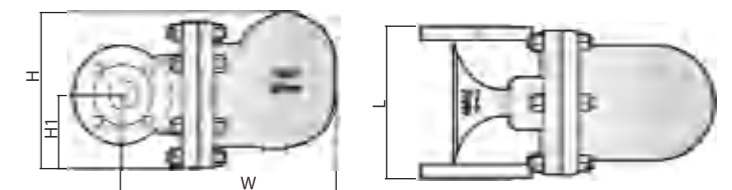
Features

- Valve body and bonnet are made of cast steel, forged steel.
- All internal parts are made of stainless steel, which improves the service life of the steam trap.
- Adopting double balanced valve seat, with an ultra long service life.
- Built-in air exhaust valve to prevent steam lock.
- Water seal design, no original steam leakage.
- Choose different capacity curves according to the differential pressure.
- Back pressure rate is as high as 95%.
- Drain plug is designed at the bottom of the steam trap to ensure that the internal water will be drained, to prevent floating ball from freezing damage in cold weather.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic Steam Trap Production and Performance Characteristic Tests

Structure Diagram



Dimension Table

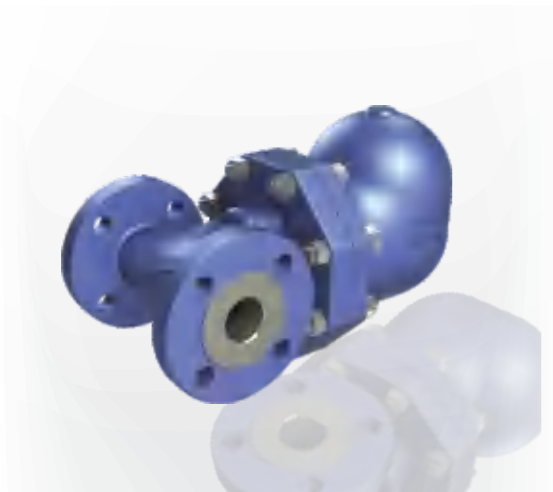
Unit(mm)						
Model	Size	L	H	H1	W	Weight
SFT60	DN32	230	266	125	360	31 kg
	DN40	230	266	125	360	32kg
	DN50	230	266	125	360	33 kg

Lever Ball Float Steam Trap

Lever Ball Float Steam Trap

SFT66 Lever Ball Float Steam Trap

Lever Ball Float Steam Trap SFT70



Working Principle

- Based on the differential density of steam and liquid.

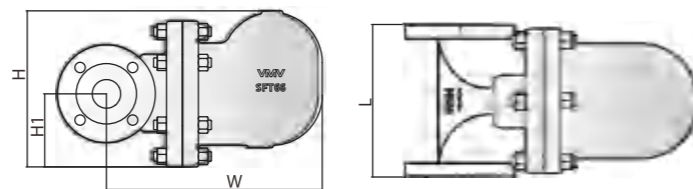
Features

- Valve body and bonnet are made of cast steel, forged steel.
- All internal parts are made of stainless steel, which improves the service life of the steam trap.
- Special flow channel design to achieve zero water hammer.
- Adopting double balanced valve seat, with an ultra long service life.
- Built-in air exhaust valve to prevent steam lock.
- Water seal design, no original steam leakage.
- Choose different capacity curves according to the differential pressure.
- Back pressure rate is as high as 95%.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic Steam Trap Production and Performance Characteristic Tests

Structure Diagram



Dimension Table

Model	Size	Unit(mm)				Weight
		L	H	H1	W	
SFT66	DN50	330	267	114	378	41kg
	DN65	350	267	114	378	42kg
	DN80	350	267	114	378	45kg

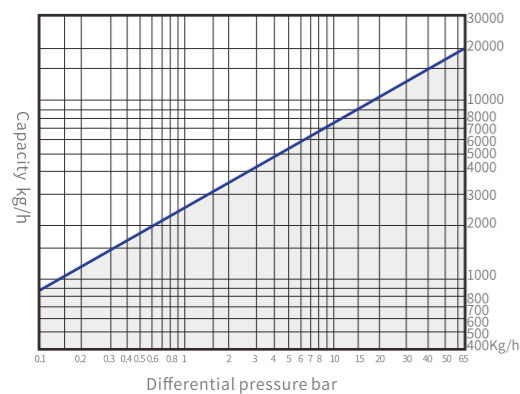
Technical Parameters

Nominal pressure	PN100
Max. allowable pressure (Shell)	9.8Mpa/200°C
Max. allowable temperature (Shell)	450°C/7.29MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	6.0MPa
Max. operating temperature	425°C
Factory cold test pressure	15.0MPa
Air test	2.0MPa

Material List

Bonnet: WCB	Disc: 420
Body: WCB	Other internal parts: 304
Seat: 420	

SFT66 Capacity Curve



Working Principle

- Based on the differential density of steam and liquid.

Features

- Valve body and bonnet are made of cast steel, forged steel.
- All internal parts are made of stainless steel, which improves the service life of the steam trap.
- Special flow channel design to achieve zero water hammer.
- Adopting double balanced valve seat, with an ultra long service life.
- Built-in air exhaust valve to prevent steam lock.
- Built-in filter makes the steam trap work in a clean environment.
- Back pressure rate is as high as 95%.
- Drain plug is designed at the bottom of the steam trap to ensure that the internal water will be drained, to prevent floating ball from freezing damage in cold weather.

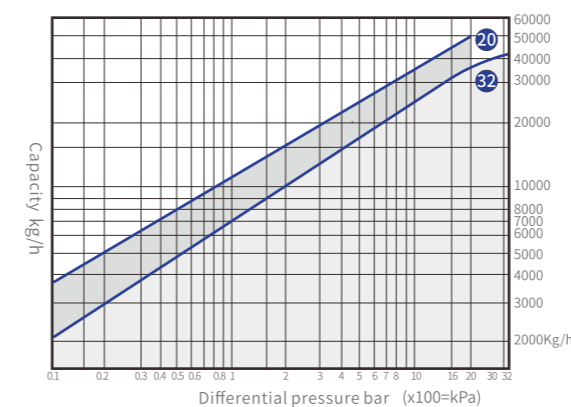
Technical Parameters

Nominal pressure	PN40
Max. allowable pressure (Shell)	3.92MPa/200°C
Max. allowable temperature (Shell)	450°C/1.66MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	3.2MPa
Max. operating temperature	350°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa

Material List

Bonnet: WCB	Disc: 420
Body: WCB	Other internal parts: 304
Seat: 420	

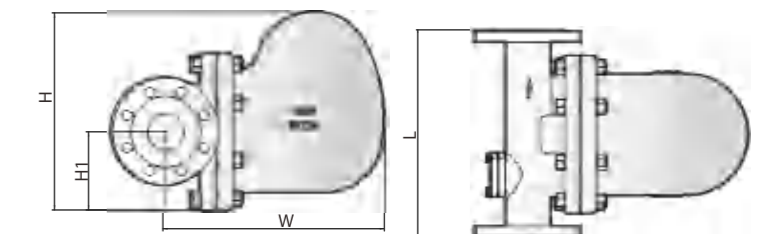
SFT70 Capacity Curve



Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic Steam Trap Production and Performance Characteristic Tests

Structure Diagram



Dimension Table

Model	Size	Unit(mm)				Weight
		L	H	H1	W	
SFT70	DN50	380	345	135	385	53 kg
	DN65	380	345	135	385	54kg
	DN80	380	345	135	385	56 kg

Lever Ball Float Steam Trap

Lever Ball Float Steam Trap

SFT80 Lever Ball Float Steam Trap

Lever Ball Float Steam Trap SFT80 SFT80



Features

- Valve body and bonnet are made of cast steel, forged steel.
- All internal parts are made of stainless steel, which improves the service life of the steam trap.
- Adopting double balanced valve seat, with an ultra long service life.
- Upper and lower flow channels ensure no steam lock.
- Water seal design, no original steam leakage.
- Back pressure rate is as high as 95%.



SFT80



SFT80A



SFT80B

Technical Parameters

Nominal pressure	PN40
Max. allowable pressure (Shell)	3.92MPa/200°C
Max. allowable temperature (Shell)	450°C/1.66MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	3.2MPa
Max. operating temperature	350°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa

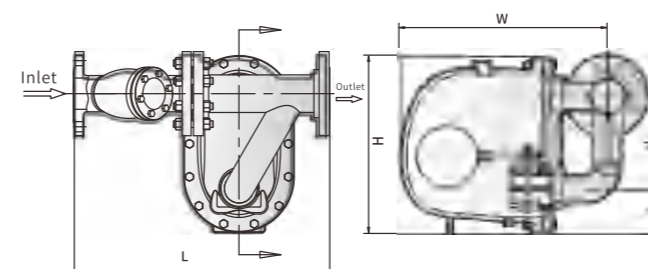
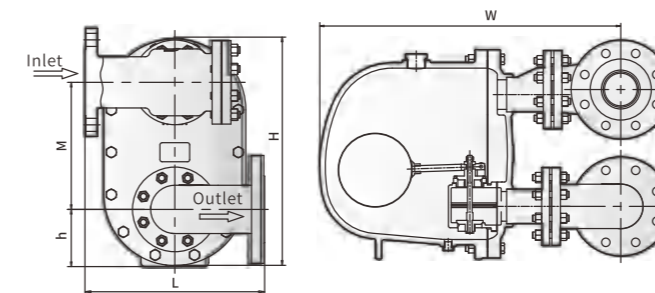
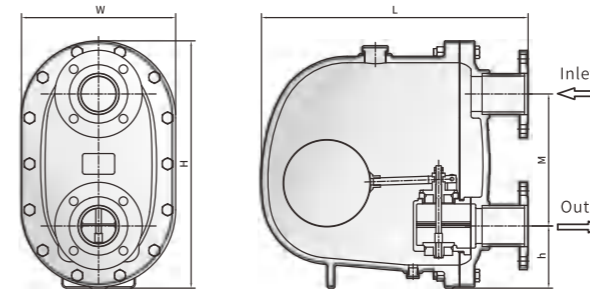
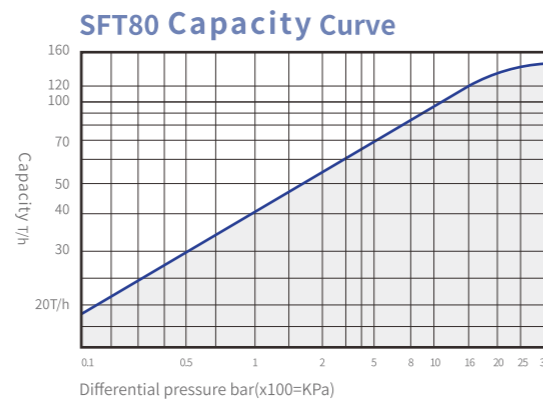


Material List

Bonnet: WCB Disc: 420
 Body: WCB Other internal parts: 304
 Seat: 420

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic Steam Trap Production and Performance Characteristic Tests



SFT80 Dimension Table

							Unit(mm)
Model	Size	L	H	W	h	M	Weight
SFT80	DN80	570	538	335	135	287	138kg
	DN100	590	538	335	135	287	145kg
	DN150	630	538	335	135	287	150kg

SFT80A Dimension Table

							Unit(mm)
Model	Size	L	H	W	h	M	Weight
SFT80A	DN80	310	538	620	135	287	160kg
	DN100	350	538	900	135	287	185kg
	DN150	420	538	960	135	287	200kg

SFT80B Dimension Table

							Unit(mm)
Model	Size	L	H	W	h	M	Weight
SFT80B	DN80	720	538	570	135	287	160kg
	DN100	775	538	570	135	287	190kg
	DN150	900	538	570	135	287	210kg

Air Trap

Air Trap

The basic concept of air trap is an automatic device that discharges the water (or liquid) in the air storage tank, gas equipment and non condensable gas pipeline through the drain valve without gas leakage. The drainage of air pipeline is called air trap, and using in non condensable gas pipeline is called drain valve. Air traps are characterized by large capacity,

long life, good energy-saving effects, water hammer resistance, and beautiful appearance. They are widely used in compressed air or non condensable gas tanks, pipelines and air separation equipment. The technical advantages of VMV steam traps are unique and reasonable structure and high-precision internals!

High Strength Corrosion Resistance

Using WCB material, full consideration of corrosion allowance, minimum shell wall thickness, pressure and temperature rating.

Flexible Closing System

Single valve seat and flexible closing system are adopted to ensure super long service life and closing accuracy.

Built-in Filter Device

It can effectively prevent pipeline impurities from entering the valve, ensuring the normal operation of the trap, and prevent water hammer from damaging internal components.

Pressure Equalizing Flange

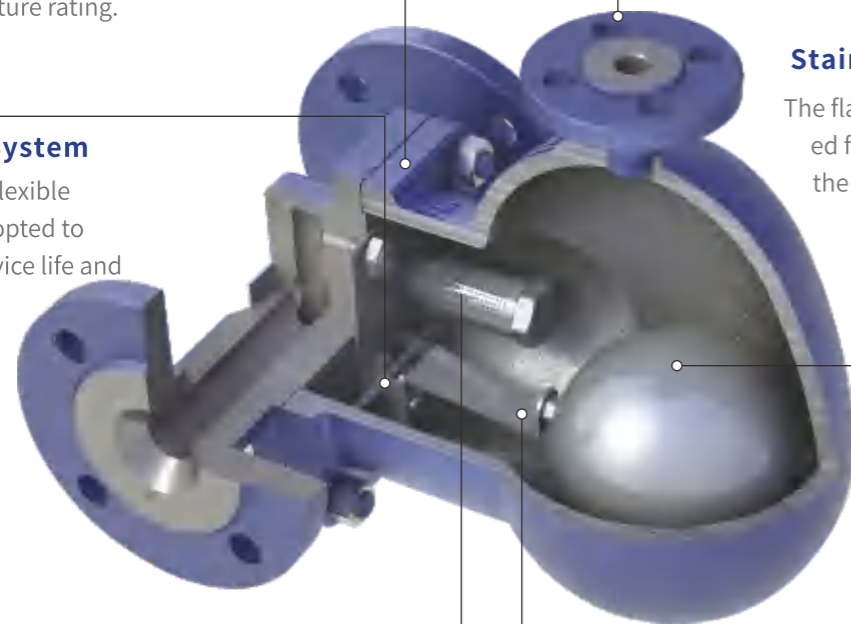
Structure with pressure equalizing balance pipe avoid air blockage

Stainless Steel Float

The flawless laser-welded floating ball ensures the long working life of the steam trap

Unique Float Assembly

Precisely calculated floating ball component structure makes the closing system work under water seal without steam leakage.



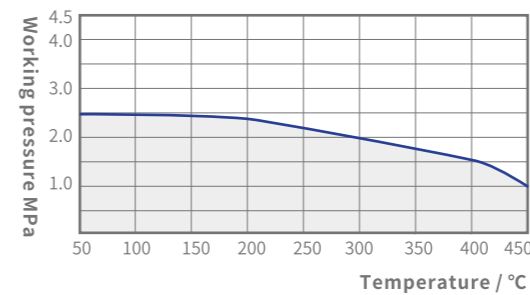
Structural Features

VMV applies the flexible closing system to air trap, which solves the problems of short life-time and bad sealing. In the design, factors such as shell strength, pressure and temperature grade, casting processability, fluid flow path, impact caused by water and vapor mixing, closing of the auxiliary water seal, and the strength of the valve cover gasket affected by the low temperature environment are fully considered. Air trap relies on the density difference between steam and condensate to work. When the valve body is full of non-condensable gas, the gas is discharged through the balance pipe, and the water enters the trap. The floating ball moves up and drives the valve core to open. After discharging the condensed water, the floating ball drives the valve core to move down and closes the drain valve. Air trap has the following advantages, long life, reliable operation, convenient maintenance, no original steam leakage. The greatest advantage of the air trap is can work under pressure as low as 0.1bar.



WCB/A105M aterial PN25

Valve Body Pressure - Rating Temperature

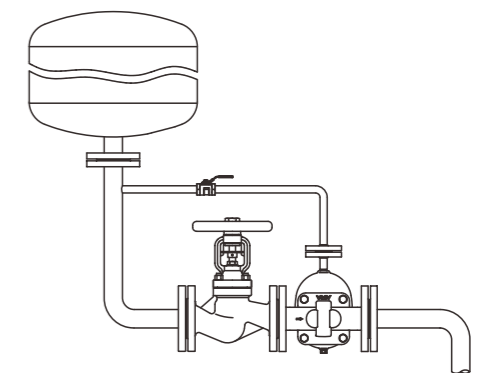


Air Trap Selection and Installation

The air trap can drain water continuously. It is suitable for discharging water or liquid from gas transmission pipeline, gas storage tank and air separation unit. Generally, the safety factor is 2-3 times when selecting models. The displacement of air trap increases with the increase of pressure difference. Check the displacement curve in detail. Special reminder: Please do not mistakenly think that the large diameter trap with large displacement. The air trap is installed horizontally at the bottom of the pipeline or equipment, being equipped with pressure equalizing and balancing pipe and flange as leaving factory-(PN25, DN10 RF). The basic configuration is shown on the graph.

The air trap is made of ASTM216 WCB cast steel, part of the bonnet is made of ASTM A105, the internals are made of stainless steel, with built-in filter.

- Nominal pressure: PN25;
- Maximum allowable temperature: 200°C/2.45MP;
- Maximum working pressure: 2.5MPa;
- Maximum working temperature: 200°C;
- Connection type: thread RC or flange (GB/T 9115.1-2000; HG/T20615-2009; HG/T20592-2009, etc.)



Installation method: remove the upper plug, screw on the balance pipe with flange, and connect the air inlet pipe and balance pipe.

Air Trap

Air Trap

AFT10A Air Trap

Air Trap AFT20A



Working Principle

- Based on the differential density of steam and liquid.

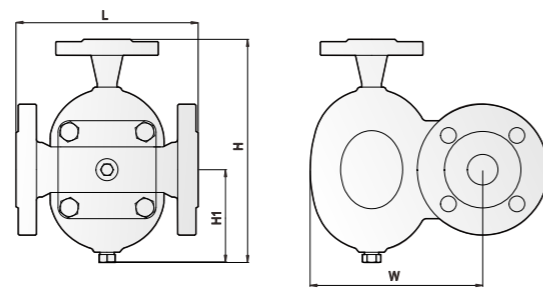
Features

- Valve body and bonnet are made of cast steel, forged steel.
- All internal parts are made of stainless steel, and the wear allowance has been fully considered in the design of movable parts, which improves the service life of the steam trap.
- Special flow channel design to achieve zero water hammer.
- Patented flexible closing system and micron-level precision closing system double guarantee no steam leakage and long service life.
- Pressure equalization pipe completely solves the air blockage.
- Built-in filter makes the air trap work in a clean environment.
- Choose different capacity curves according to the differential pressure, increase capacity.
- Drain plug is designed at the bottom of the air trap to ensure that the internal water will be drained, to prevent floating ball from freezing damage in cold weather.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic Steam Trap Production and Performance Characteristic Tests

Structure Diagram



Dimension Table

Unit(mm)						
Model	Size	L	H	H1	W	Weight
AFT10AT	DN15-25	160	196	80	151	9 kg
AFT10AW	DN15-25	160	196	80	151	9 kg
AFT10AF	DN15-25	160	196	80	151	12 kg

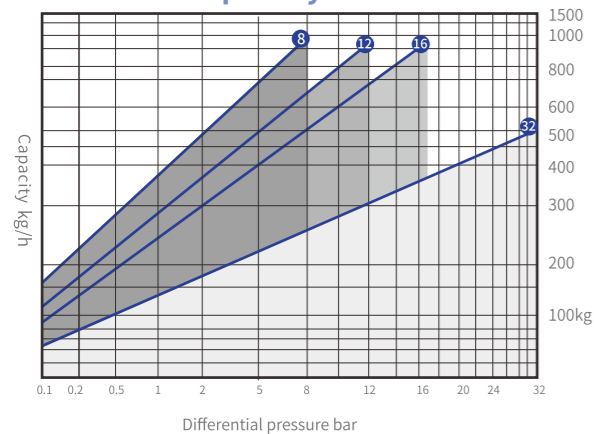
Technical Parameters

Nominal pressure	PN40
Max. allowable pressure (Shell)	3.46MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Max. operating pressure	3.2MPa
Max. operating temperature	250°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa

Material List

Bonnet: A105 Disc: 440C
 Body: WCB Other internal parts: 304
 Seat: 420

AFT10A Capacity Curve



Working Principle

- Based on the differential density of steam and liquid.

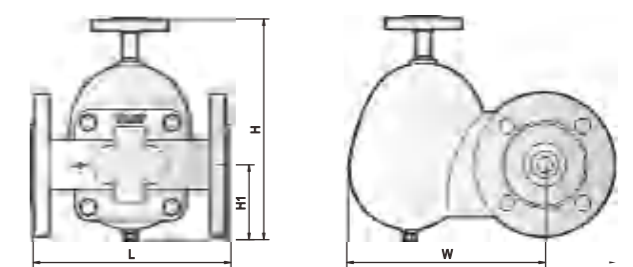
Features

- Valve body and bonnet are made of cast steel, forged steel.
- All internal parts are made of stainless steel, and the wear allowance has been fully considered in the design of movable parts, which improves the service life of the steam trap.
- Special flow channel design to achieve zero water hammer.
- Patented flexible closing system and micron-level precision closing system double guarantee no steam leakage and long service life.
- Pressure equalization pipe completely solves the air blockage.
- Built-in filter makes the air trap work in a clean environment.
- Choose different capacity curves according to the differential pressure, increase capacity.
- Drain plug is designed at the bottom of the air trap to ensure that the internal water will be drained, to prevent floating ball from freezing damage in cold weather.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic Steam Trap Production and Performance Characteristic Tests

Structure Chart



Dimension Table

Unit(mm)						
Model	Size	L	H	H1	W	Weight
AFT20AT	DN15-25	150	225	75	183	9 kg
AFT20AW	DN15-25	150	225	75	183	9 kg
AFT20AF	DN15-25	210	225	75	183	12 kg

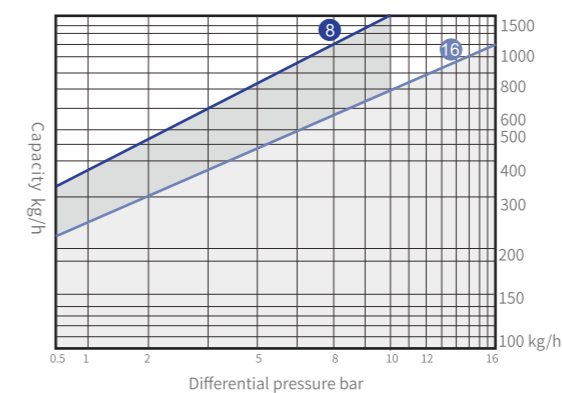
Technical Parameters

Nominal pressure	PN25
Max. allowable pressure (Shell)	2.45MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Material List

Bonnet: A105 Disc: 440C
 Body: WCB Other internal parts: 304
 Seat: 420

AFT20A Capacity Curve



Air Trap

Steam Liquid Two Phase Flow Trap

AFT30A Air Trap

Steam Liquid Two Phase Flow Trap QYL



Working Principle

- Based on the differential density of steam and liquid.

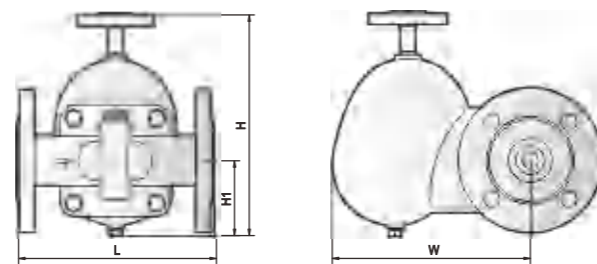
Features

- Valve body and bonnet are made of cast steel, forged steel.
- All internal parts are made of stainless steel, and the wear allowance has been fully considered in the design of movable parts, which improves the service life of the steam trap.
- Special flow channel design to achieve zero water hammer.
- Patented flexible closing system and micron-level precision closing system double guarantee no steam leakage and long service life.
- Pressure equalization pipe completely solves the air blockage.
- Built-in filter makes the air trap work in a clean environment.
- Choose different capacity curves according to the differential pressure, increase capacity.
- Drain plug is designed at the bottom of the air trap to ensure that the internal water will be drained, to prevent floating ball from freezing damage in cold weather.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Structure Length
- GB/T22654-2008 Technical Conditions for Steam Trap
- GB/T12251-2005 Test Methods for Steam Trap
- ISO 6948 Automatic Steam Trap Production and Performance Characteristic Tests

Structure Diagram



Dimension Table

Model	Size	Unit(mm)				Weight
		L	H	H1	W	
AFT30AT	DN25-32	170	260	87	235	12.5 kg
AFT30AW	DN25-32	170	260	87	235	12.5 kg
AFT30AF	DN25-32	230	260	87	235	17 kg

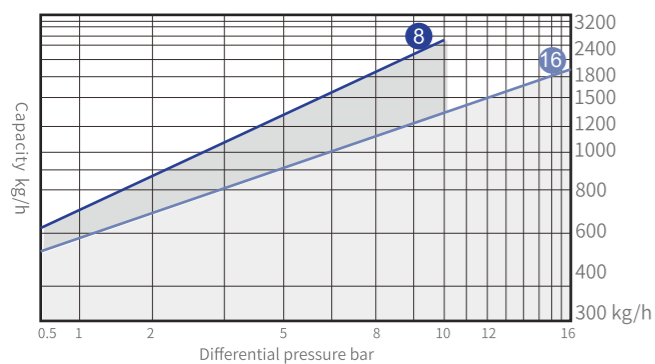
Technical Parameters

Nominal pressure	PN25
Max. allowable pressure (Shell)	2.45MPa/200°C
Max. allowable temperature (Shell)	450°C/1.03MPa
Factory steam action test	>3 times/1.6MPa
Max. operating pressure	1.6MPa
Max. operating temperature	350°C
Factory cold test pressure	3.8MPa
Air test	2.0MPa

Material List

Bonnet: A105 Disc: 440C
 Body: WCB Other internal parts: 304
 Seat: 420

AFT30A Capacity Curve



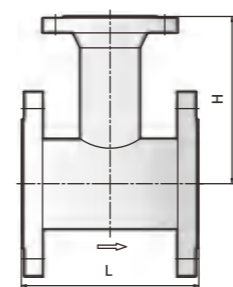
Technical Parameters

Nominal pressure	PN16
Max. allowable pressure (Shell)	1.43MPa/150°C
Max. operating pressure	1.38MPa/200°C
Max. operating temperature	204°C
Factory cold test pressure	2.4MPa
Air test	2.0MPa

Nominal pressure	PN40
Max. allowable pressure (Shell)	3.92MPa/200°C
Max. operating pressure	3.2MPa
Max. operating temperature	350°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa

Structure Diagram Dimension Table

Model	Size	Unit (mm)	
		L	H
QYL-16 PN16	65-50	235	205
	80-50	255	210
	100-50	265	225
	125-50	265	265
	150-80	265	265
QYL-40 PN40	200-80	297	310
	80-50	327	240
	100-50	269	287
	125-80	260	245
	150-80	364	305



Working Principle

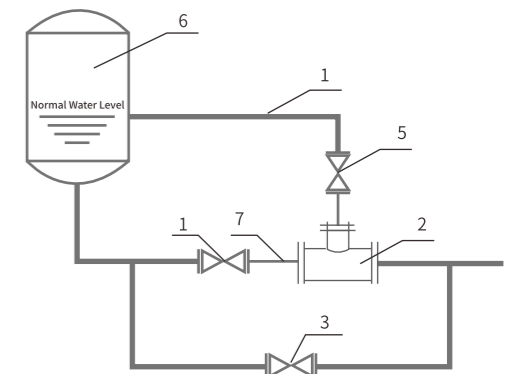
After the drainage flows through the specially designed front-end valve core and is blocked, it enters the valve chamber. The liquid level in the container slowly rises to the interface of the phase change tube, and the phase change tube changes from a vapor phase signal to a liquid phase signal. At this time, the front end drainage and liquid phase pipe drainage mix and flow towards the designated rear end throat. Due to the unchanged throat area setting, the maximum drainage displacement occurs when the liquid level rises to the required normal water level (the rear valve core is the control expansion end); When the liquid level decreases, the steam consumption signal increases and enters the regulator, reducing the effective flow area of the throat drainage and the drainage discharge, thereby achieving the purpose of controlling the water level.

Features

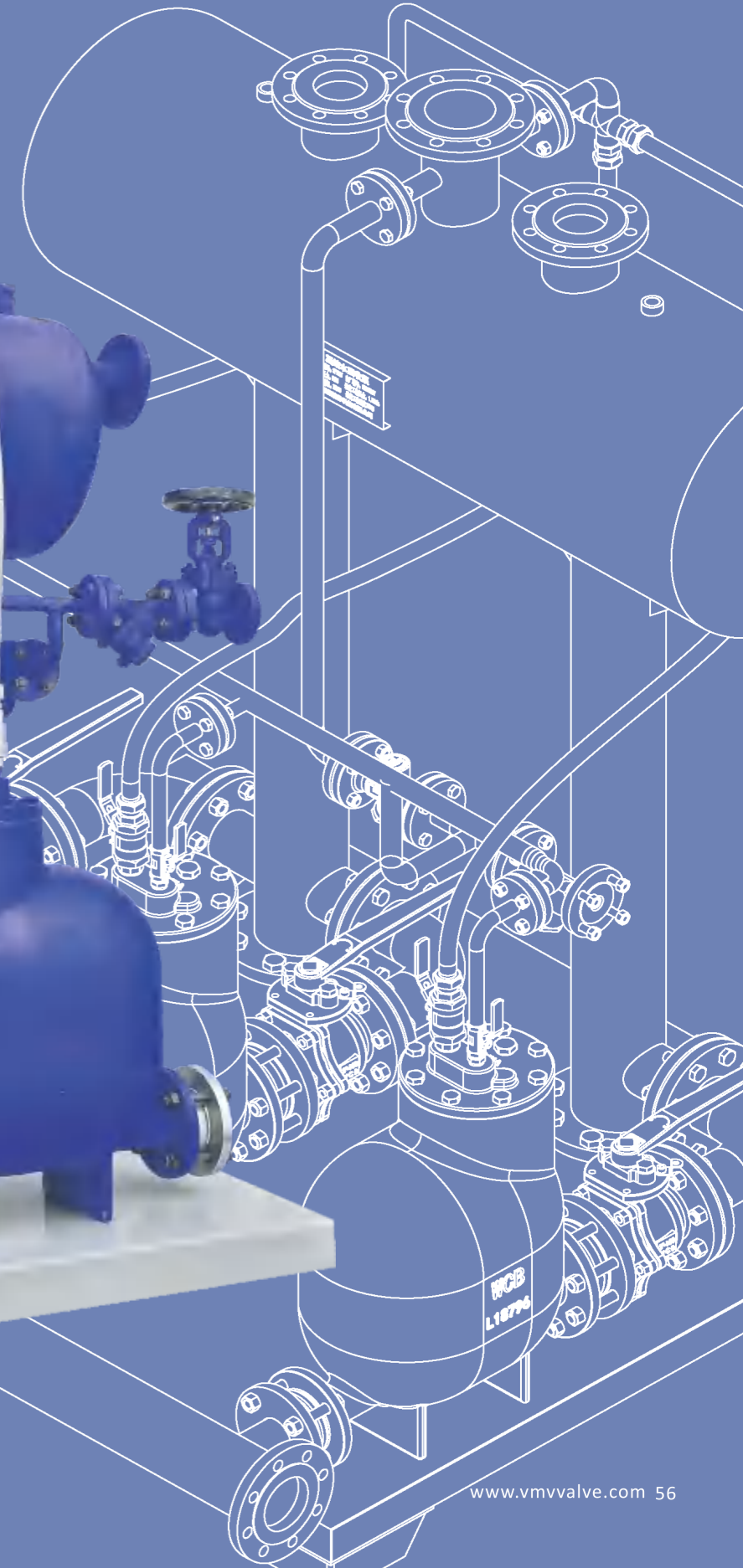
1. Phase change tube (signal tube): To collect steam and liquid phase signals based on the liquid level.
2. Self regulating liquid level controller: The main equipment for controlling the liquid level.
3. Bypass valve: A gate valve that corrects errors caused by inaccurate parameter provision.
4. Inlet valve: A gate valve.
5. Steam valve: A gate valve.
6. Heater
7. Connection short pipe

Material List

Body: A105/SS
 Seat: 420



Pumping System

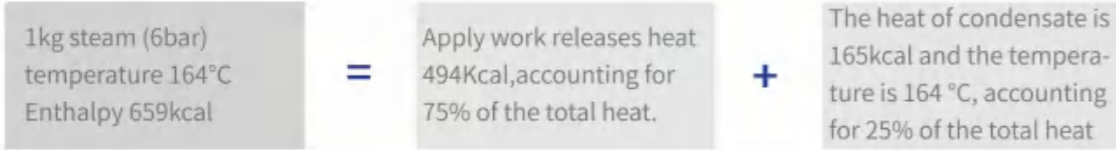


Properties of Steam & Condensate Recovery

Pump T20

Why recycle condensate

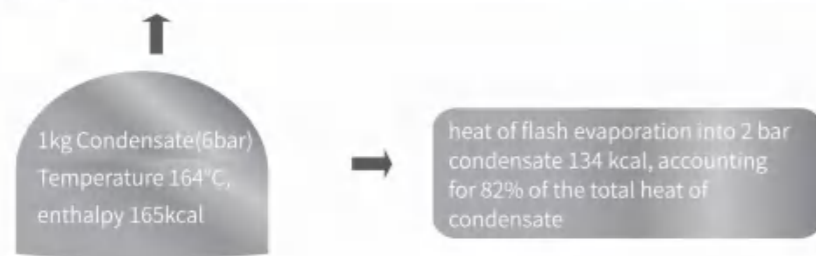
The steam generates condensate through heat exchange. The condensate is separated and discharged through the steam trap. The condensate contains a lot of heat energy.



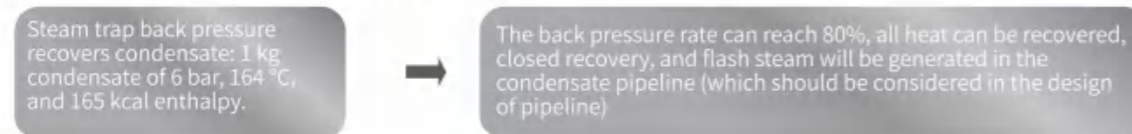
Condensate heat energy recovery method

Recovery of heat energy by flash tank

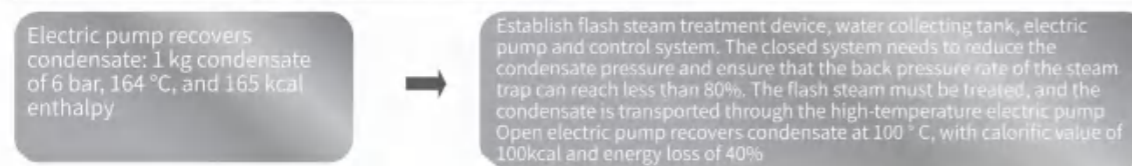
2 bar low-pressure steam 0.058 kg is generated, and the temperature is 133 °C, accounting for 19% of the total heat of condensate



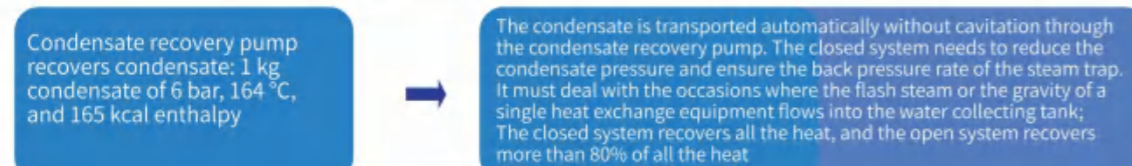
Steam trap back pressure recovers condensate heat energy



Electric pump recovers condensate heat energy



Condensate recovery pump recovers condensate heat energy



Newton developed "pump type steam trap", also known as "mechanical power pump", based on the lever ball float ball steam trap technology. It uses the principle of steam trap and relies on steam, air and other gases as power to transport condensate from low-pressure area to high-pressure area, or from negative pressure area (vacuum) to normal pressure area

Condensate recovery pump has a series of advantages, such as automatic control, no cavitation, simple maintenance, No need for electricity, water hammer resistance, large displacement, explosion-proof, no noise, and the head of delivery determined by the pressure of power steam (gas), which is unmatched by other pumps. It is widely used in the transportation of condensate in steam system and liquid with low viscosity and no volatilization.

Convenient Replacement and Maintenance

Open the valve cover at a glance without removing the pipe connection

High Corrosion Resistance

High temperature alloy spring is used for long-term stable operation at 540°C

Valve Core and Valve Seat

The valve seat and valve core are made of stainless steel, and the closing adopts flexible closing system with small wear, reliable closing and long service life



Long Life and High Precision

Welding of key parts
Stellite alloy
Precision of key
internals reach
μm level

Selection conditions of pump

1. Condensate delivery capacity kg / h
2. Back pressure (head of delivery) MPa
3. Power steam (air) Pressure Mpa
4. Water inlet normal diameter DN
5. Water outlet normal diameter DN

Pump

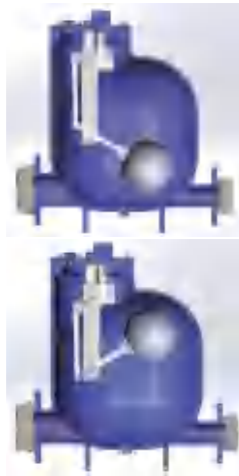
Pump

Pump **PT20**

Working Principle

Enter condensate and exhaust steam(air)

At the beginning, the water inlet check valve is opening, the water outlet check valve is closed due to high back pressure, the water start to enter the pump, and the floating ball is at a low level, with the rise of water level and the opening of exhaust valve, the floating ball reaches the highest controller and is in the switching critical state.



Enter steam(air) and exhaust condensate

The controller starts switching at the high position and closes the exhaust valve: open the power steam (air), inject steam into the valve, and push the condensate in the pump to the high-pressure area under the steam pressure: at this time, the water inlet check valve cannot feed water due to the high pressure in the pump. When the floating ball reaches the low position, the controller switches to close the power steam and opens the exhaust valve to enter the next action cycle.



Technical Parameter

Design Standards

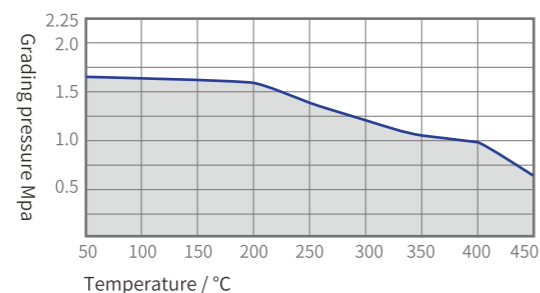
- GB / T22654-2008 Technical conditions for steam trap
- GB / T12251-2005 Test methods for steam trap
- GB / T12224-2005 General requirements for steel valves

Nominal Pressure	PN16(150LB)	Design Pressure Of Valve Body	2.5MPa	Water Inlet Diameter	DN80 RF
Maximum Allowable Pressure	1.6MPa/204°C	Maximum Allowable Temperature	300°C /1.23MPa	Water Outlet Diameter	DN50 RF
Maximum Working Pressure	1.05 MPa	Maximum Operating Temperature	250°C	Steam Outlet Diameter	1" RC
Maximum Power Steam Inlet Pressure	1.05MPa	Steam (Air) Consumption	Steam 5kg / T condensate Air 7.6m3/T condensate	Steam Inlet Diameter	1/2" RC

Material List of Main Parts

Valve Body,Cap	WCB	Ball	304
Valve Seat	420	Control Rack	304+Stellite
Valve Core	440C	Fastener	Carbon steel grade 8.8
Spring	Nickel-base superalloy	Gasket	SS304+flexible graphite

WCB/A105Material PN16 valve shell pressure temperature rating



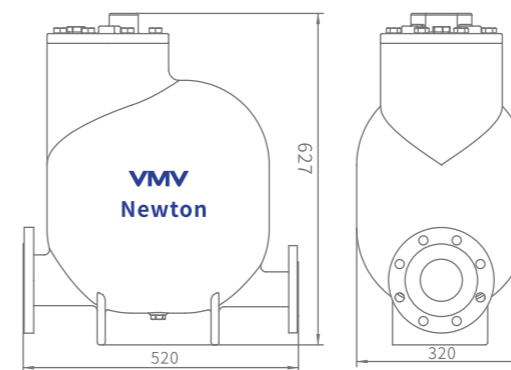
Performance characteristics

- Non electric drive, driven by steam or compressed air, explosion-proof and safe, and can be used in any environment.
- Compact structure, without any requirements for installation, even in the open field, its normal operation will not be affected.
- Automatic control, the amount of the water output is determined by the water inflow. When the amount of condensate increases, the working frequency increases, when it decreases, the working frequency decreases, and the work stops once there's no condensate.
- No cavitation work, which completely overcomes the cavitation defect of electric pump.
- All stainless steel internals and special materials ensure performance and service life.

Remarks

- It is recommended that the head height of fluid entering is more than 0.5m (the pump cover is the benchmark), and the "correction coefficient of inlet height" can be referred to;
- Power steam inlet connection RC1 / 2 ";
- For the normal operation of the pump, the saturated condensate needs flash or condensation treatment, and the closed system must ensure the differential pressure and back pressure rate of the normal operation of the steam trap.
- The standard configuration of condensate inlet and outlet is HG/ T20592-2009 PN16 flange connection. If ASME16.5, JIS and other standards is required, please specify.

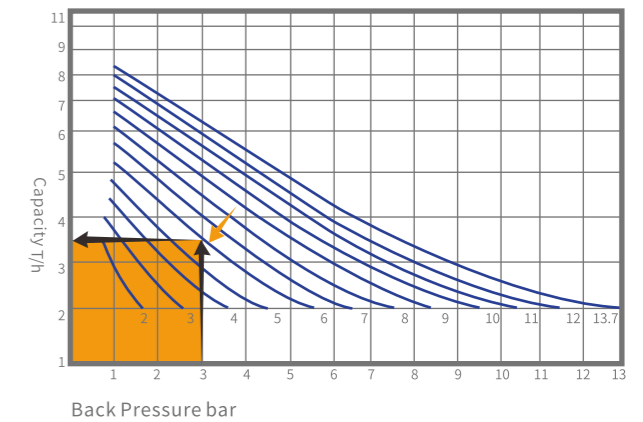
Structure diagram



Maintenance

Attached accessories: one set of valve cap gasket and one set of valve seat gasket. Recommended spare parts list: one valve seat, one valve core and one spring.

PT20 Capacity Curve



How to check the Capacity

For example:
The power steam pressure is 6bar, and the back pressure at the rear end is 3bar (lbar = 10m).
Step 1: Find out the power steam 6bar curve, and see the curve pointed by the yellow arrow;
Step 2: Lift 30m, i.e. back pressure 3bar (lbar=10m), Find the lower horizontal axis 3bar and move it up to 6bar to intersect the curve (see the black arrow);
Step 3: Move the intersection to the left to find out the displacement value and get the displacement of 3.5t/h;
Step 4: 3.5t/h x head height correction coefficient = actual displacement

Head Height Correction Coefficient

Inlet Height (m)	Capacity Correction Factor			
	DN25	DN40	DN50	DN50*DN50
0.15	0.90	0.75	0.75	0.80
0.30	1.00	1.00	1.00	1.00
0.60	1.15	1.10	1.20	1.05
0.90	1.35	1.25	1.30	1.15

Maintenance cycle: After one year of operation, open the pump cover to check the wear of mechanical parts, and open the sewage outlet for sewage discharge once without removing the connecting pipe.

Pumping System

Pump

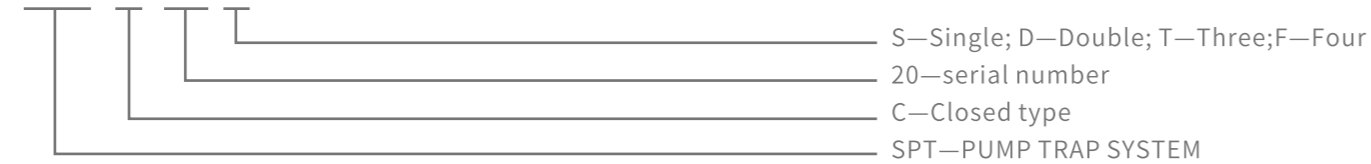
Pump PT10

Newton Mechanical Power Pumps assemble the pump and tank control valve to form a complete condensate recovery system, which only needs to be connected to the power steam or air, intake pipe, return pipe to operate

According to the displacement, VMV pumping system device is divided into single pumping system device SPT20S, double pumping system device SPT20D, three pumping system device SPT20T and four pumping system device SPT20F. According to the system, it is divided into open system and closed system.

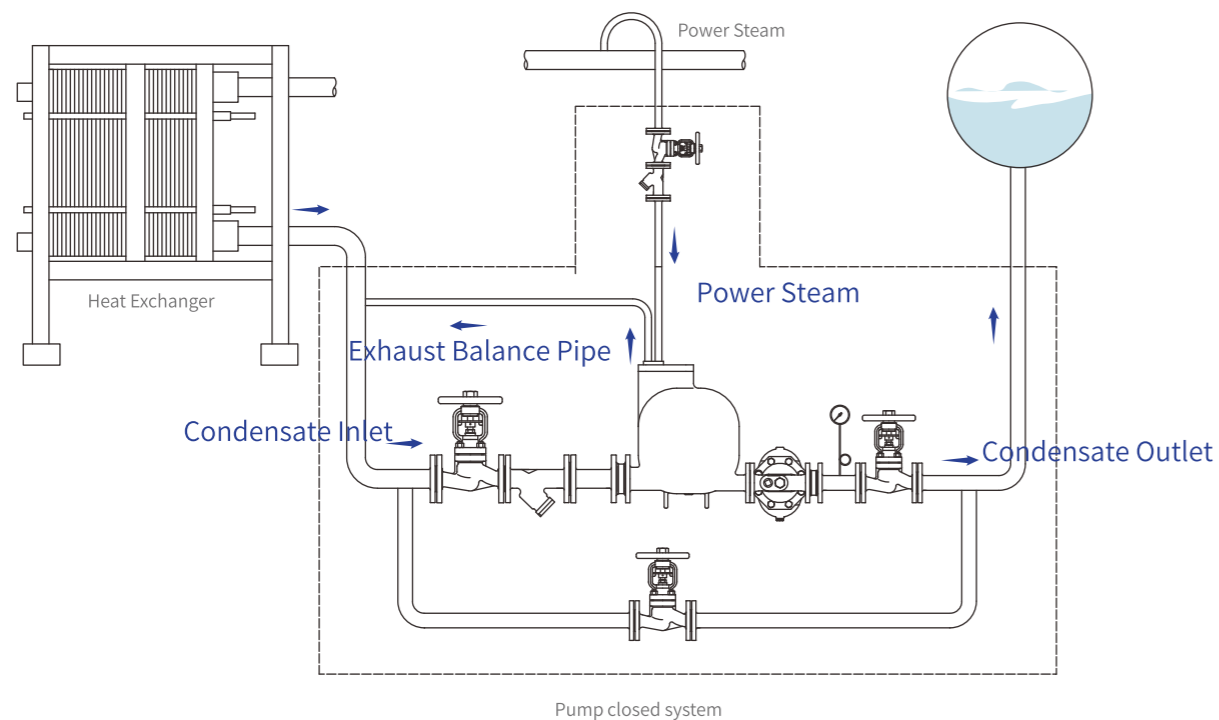
Product Model Compilation:

SPT C 20 S



Model of open system: SPT20S, SPT20D, SPT20T, SPT20F
 Model of closed system: SPTC20S, SPTC20D, SPTC20T, SPTC20F

Pump Closed System



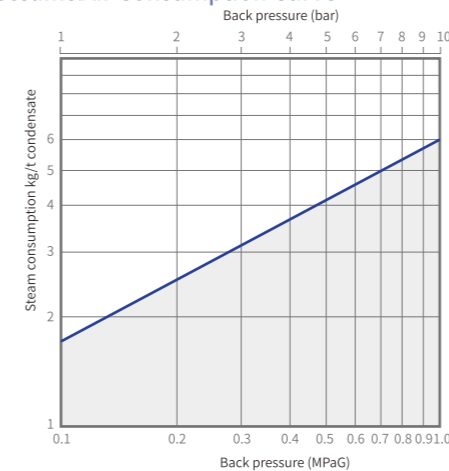
Application.

Compact pump trap, suitable for condensate discharge or recovery, with a wide range of applications. It is used to discharge low flow condensate water in low level storage tanks.

Main Parts Material List

Body/ Bonnet	WCB / QT450	Ball	304
Seat	420	Control frame	304
Disc	440C	Bolt	B7/2H
Spring	Nickel-base superalloy	Sealing gasket	Flexible graphite

Steam&Air Consumption Curve



Product Features

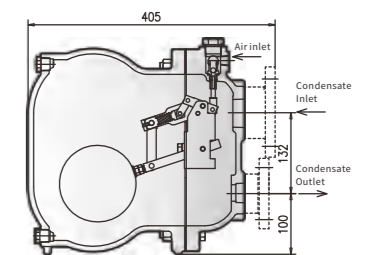
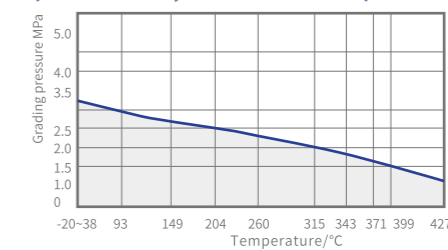
1. There will be no cavitation when discharging high-temperature condensed water.
2. No need for electric drive or installation of liquid level control devices, safer to use.
3. Low head operation (minimum 300mm).
4. Online replacement of internal components makes cleaning very simple and reduces maintenance costs.
5. High quality stainless steel internals and hardened working surfaces ensure the reliable operation of the pump.
6. Compact structural design minimizes installation space.

Installation precautions

Check valves must be installed at the inlet and outlet of the pump type drain valve. Choose different connection methods based on the interface format. The pressure of the power medium minus the back pressure must be greater than 0.05MPa.

If a closed recovery system is used, the power medium used must be consistent with the fluid being pumped. When using non condensable gases such as air and nitrogen as power media, please communicate and confirm with us.

Valve shell pressure temperature rating (PN2.5MPa; WCB material)



Technical Parameter

Nominal pressure	PN16(150Lb)
Max. allowable pressure	1.6MPa/204°C
Max. operating pressure	1.05MPa
Max. power steam inlet pressure	1.05MPa
Valve body design pressure	2.5MPa
Max. allowable temperature	300°C /1.23MPa
Max. Working temperature	250°C /1.37MPa
Water Inlet diameter	DN40RF DN25RF/RC
Water Outlet diameter	DN25RF/RC
Exhaust port diameter	DN20 RC
Air intake diameter	DN15 RC

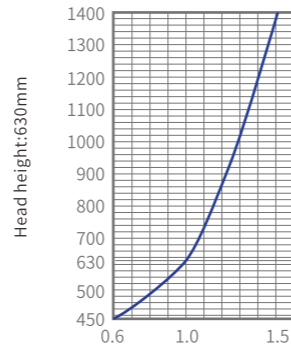
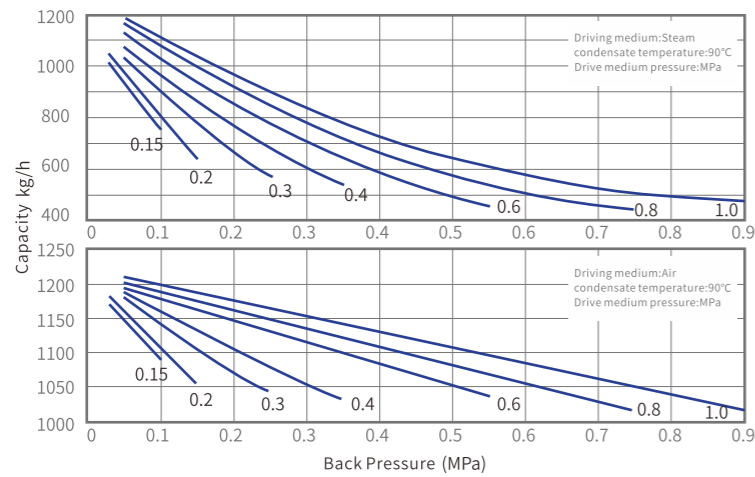
Pump

Pumping System

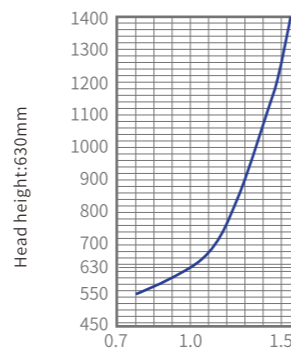
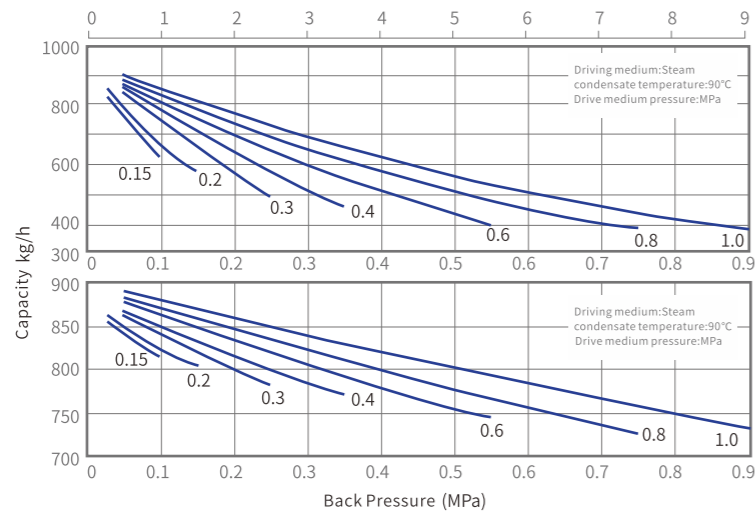
PT10 Pump

Single Pumping system device (open) SPT20S

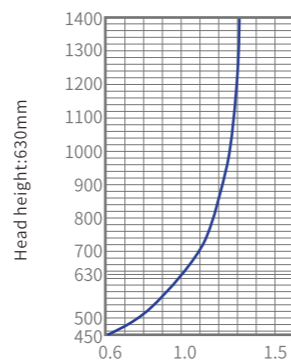
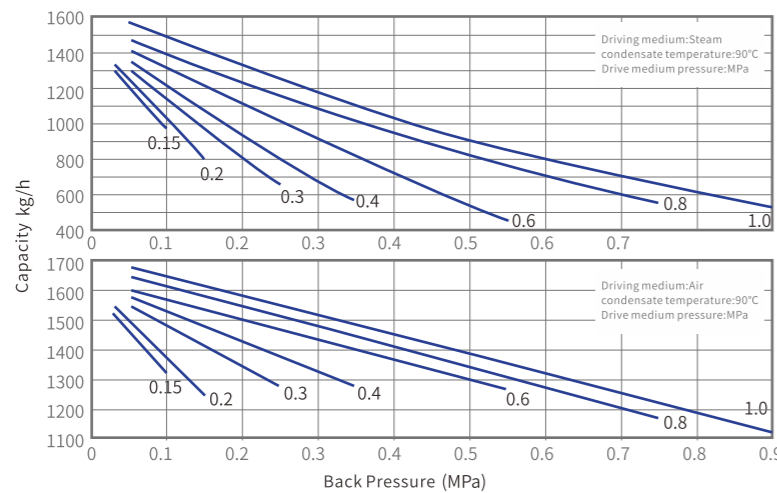
PT10
Connection: Thread
Inlet diameter: DN25
Outlet diameter: DN25
Check valve: MH71H-16P
Inlet diameter: DN25
Outlet diameter: DN25
Head height: 630mm



PT10
Connection: Flange
Inlet diameter: DN25
Outlet diameter: DN25
Check valve: MH71H-16P
Inlet diameter: DN25
Outlet diameter: DN25
Head height: 630mm



PT10
Connection: Flange
Inlet diameter: DN40
Outlet diameter: DN25
Check valve: MH71H-16P
Inlet diameter: DN40
Outlet diameter: DN25
Head height: 630mm

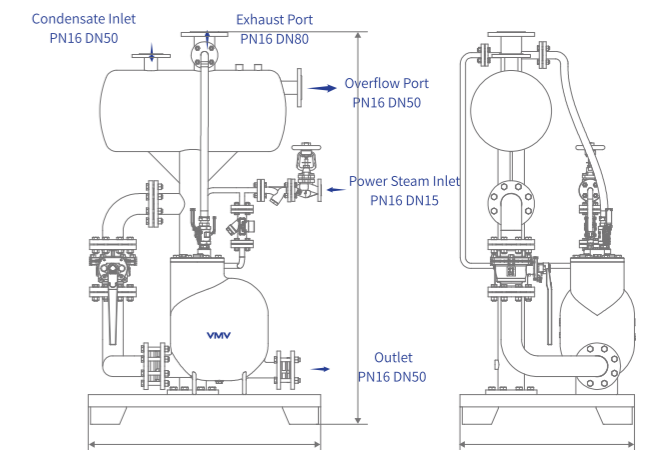


Model: SPT20S (open system)
Name: Single Pumping System Device (open)
Weight: 280kg
Volume: 1000x750x1688 (mm)
Nominal pressure: PN16
Maximum Allowable Pressure: 1.6mpa/204 ° C
Maximum Working Pressure: 1.05mpa/250 ° C
Flange Standard: HG/T20592; PN16 RF
Power Steam Consumption: 5kg / T (condensate)
Power Air Consumption: 7.6m3/t (condensate)
Limitation: The water collecting tank (upper water tank) is not under pressure and is only used as open buffer water collection.

Technical Standard

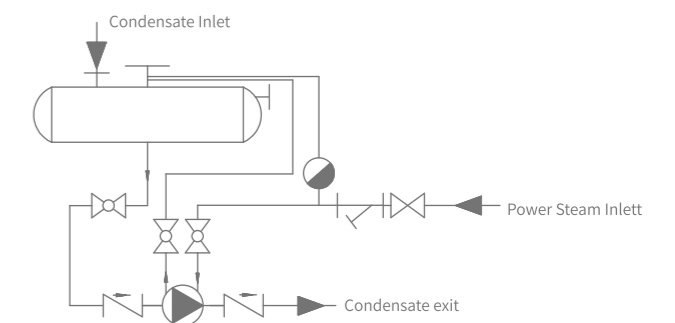
- GB/T12250-2005 Steam Trap Terminology Marking Construction Length
 - GB/T22654-2008 Technical conditions of steam trap
 - GB/T12251-2005 Test methods for steam trap
 - ISO 6948 Automatic steam trap
- Production and performance characteristic tests

Structure Chart



Device Configuration of Single Pumping System

Part Name	Part Model	Specifications	Material	Quantity
Pump	PT20	DN80/DN50	WCB	1
Check Valve	H71H-16P	DN80 PN16	304	1
Check Valve	H71H-16P	DN50 PN16	304	1
Open water collecting tank			Q345	1
Ball Valve	Q11H-16P	DN25	304	1
Ball Valve	Q11H-16P	DN15	304	1
Steam Trap	STD16F-16	DN15	WCB	1
Bellow Seal Globe Valve	WJ41H-16C	DN15 PN16	WCB	1
Base			Q345	1
Ball Valve	Q41H-16C	DN80 PN16	WCB	1
Filter	YG45H-16C	DN15 PN16	WCB	1
Exhaust hose		DN25 PN16	304	1



Flow Chart of Single Pumping System

Pumping System

Pumping System

SPT20D SPT20D Double Pumping System Device (Open)

Three Pumping System Device (Open) **SPT20T**

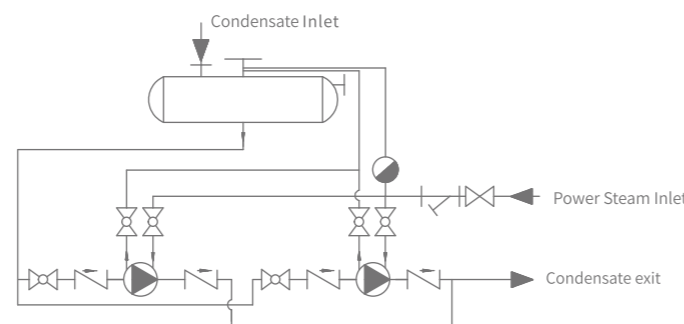
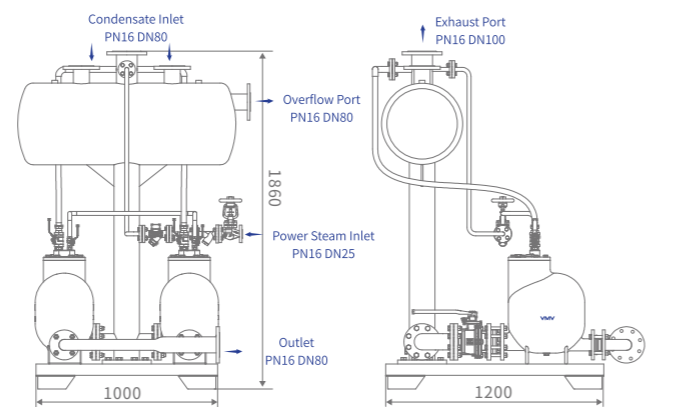


Model: SPT20D (open system)
 Name: Double Pumping System Device (Open)
 Weight: 486kg
 Volume: 1000x1200x1860 (mm)
 Nominal pressure: PN16
 Maximum Allowable pressure: 1.6mpa/204 ° C
 Maximum Working pressure: 1.05MPa
 Flange Standard: HG / T20592; PN16 RF
 Power Steam Consumption: 5kg / T (condensate)
 Power Air Consumption: 7.6m³/t (condensate)
 Limitation: The water collecting tank (upper water tank) is not under pressure and is only used as open buffer water collection.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Construction Length
 - GB/T22654-2008 Technical conditions of steam trap
 - GB/T12251-2005 Test methods for steam trap
 - ISO 6948 Automatic steam trap
- Production and performance characteristic tests

Structure Chart



Flow chart of double pumping system

Device Configuration of double Pumping System

Part Name	Part Model	Specification	Material	Quantity
Pump	PT20	DN80/DN50	WCB	2
Check Valve	H71H-16P	DN80 PN16	304	2
Check Valve	H71H-16P	DN50 PN16	304	2
Open water collecting tank			Q345	1
Ball Valve	Q11H-16P	DN25	304	2
Ball Valve	Q11H-16P	DN15	304	2
Steam Trap	STD16F-16	DN15	WCB	1
Bellow Seal Globe Valve	WJ41H-16C	DN25 PN16	WCB	1
Base			Q345	1
Ball Valve	Q41H-16C	DN80 PN16	WCB	2
Filter	YG45H-16C	DN25 PN16	WCB	1
Exhaust hose		DN25 PN16	304	2

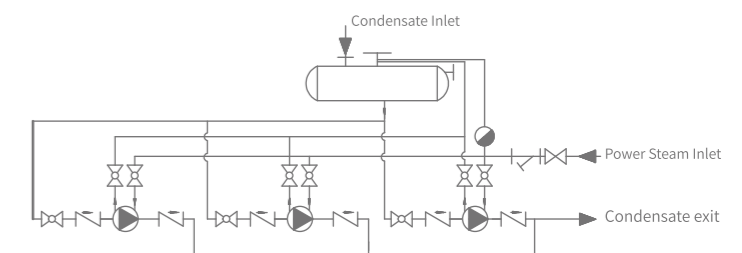
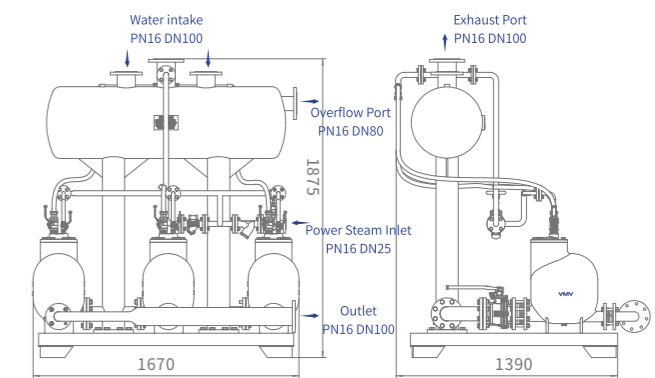


Model: SPT20T (open system)
 Name: Three Pumping System Device (Open)
 Weight: 740kg
 Volume: 1670x1390x1875 (mm)
 Nominal pressure: PN16
 Maximum Allowable Pressure: 1.6mpa/204 ° C
 Maximum Working Pressure: 1.05mpa/250 ° C
 Flange Standard: HG / T20592; PN16 RF
 Power Steam Consumption: 5kg / T (condensate)
 Power Air Consumption: 7.6m³/t (condensate)
 Limitation: The water collecting tank (upper water tank) is not under pressure and is only used as open buffer water collection.

Technical Standard

- GB/T12250-2005 Steam Trap Terminology Marking Construction Length
 - GB/T22654-2008 Technical conditions of steam trap
 - GB/T12251-2005 Test methods for steam trap
 - ISO 6948 Automatic steam trap
- Production and performance characteristic tests

Structure Chart

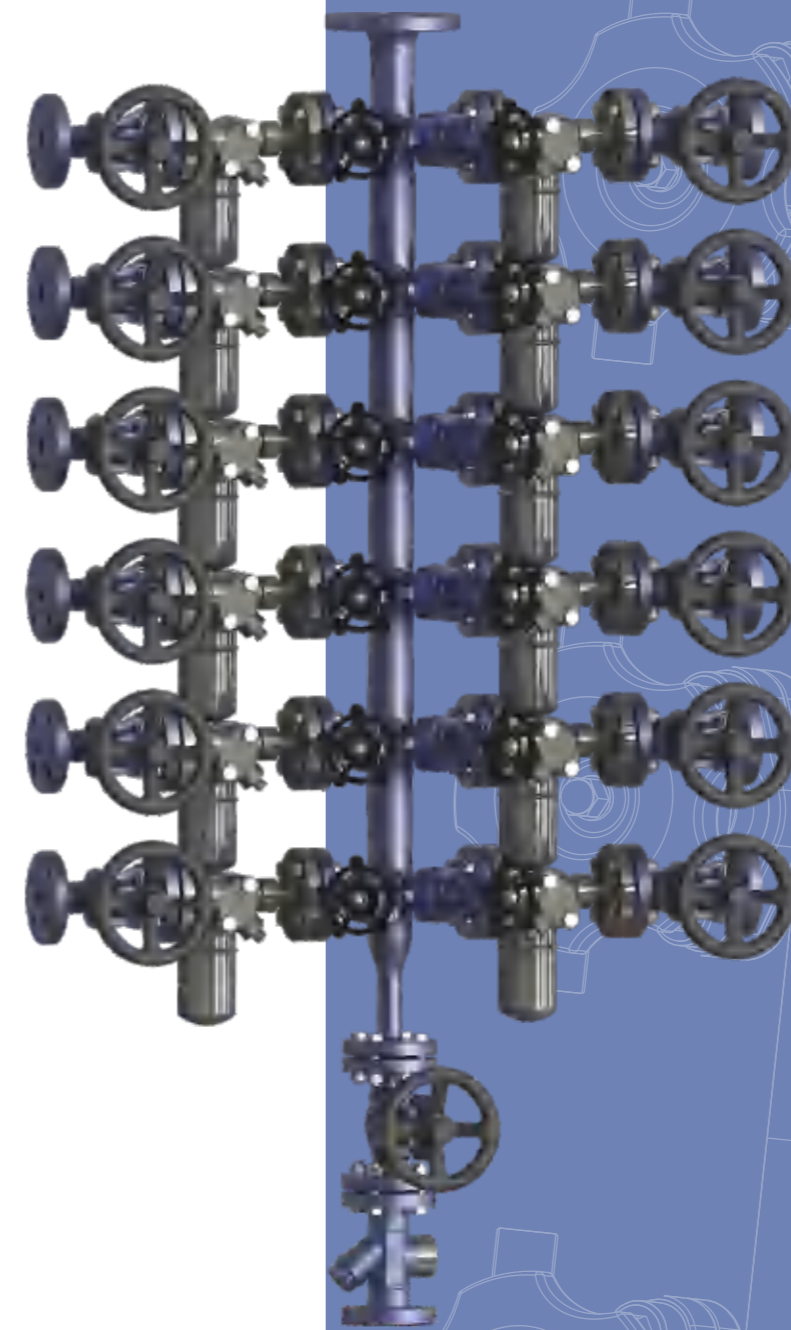


Flow chart of three Pumping system

Device Configuration of three Pumping System

Part Name	Part Model	Specifications	Material	Quantity
Pump	PT20	DN80/DN50	WCB	3
Check Valve	H71H-16P	DN80 PN16	304	3
Check Valve	H71H-16P	DN50 PN16	304	3
Open water collecting tank			Q345	1
Ball Valve	Q11H-16P	DN25	304	3
Ball Valve	Q11H-16P	DN15	304	3
Steam Trap	STD16F-16	DN15	WCB	1
Bellow Seal Globe Valve	WJ41H-16C	DN25 PN16	WCB	1
Base			Q345	1
Ball Valve	Q41H-16C	DN80 PN16	WCB	3
Filter	Y type	DN25 PN16	WCB	1
Exhaust hose		DN25 PN16	304	3

Heating System Solution



Typical Heating System

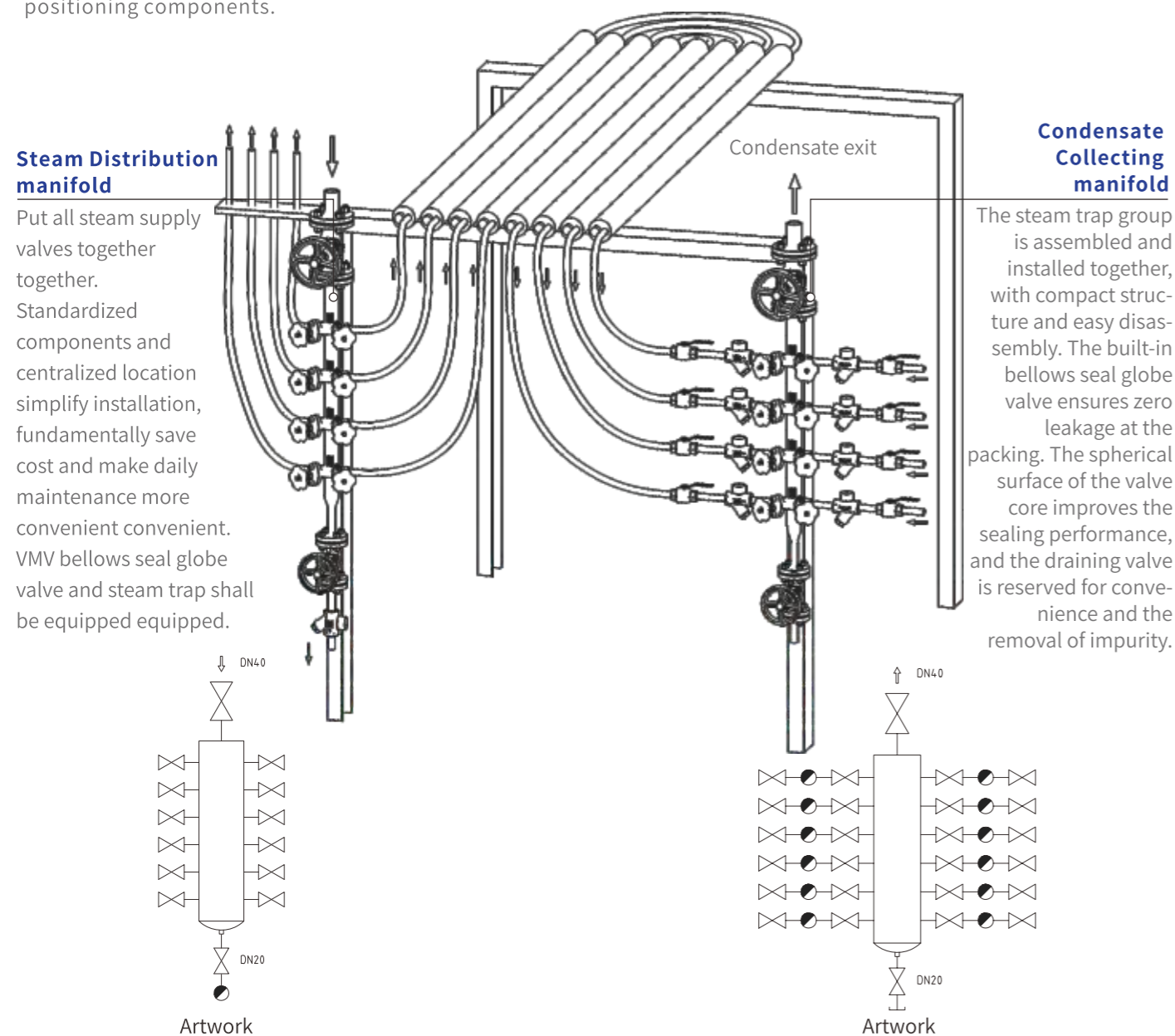
Bellows Stainless Steel Steam Manifolds

Product Description

VMV typical Heat tracing system" integrates all the components required by steam distribution tube bundle and condensate collection tube bundle (steam trap, manifold, valve, etc.), and designs all the components together. The manifold , reduces the device cost and provides compact and easy disassembly centralized positioning components.

Application

Steam distribution manifold and condensate collection manifold are widely used in petroleum refining, textile raw material chemical industry, coal chemical industry, etc. With the advantages of convenient management and maintenance, high product quality, low construction cost and short construction period.



Steam Distribution manifold

Put all steam supply valves together together. Standardized components and centralized location simplify installation, fundamentally save cost and make daily maintenance more convenient convenient. VMV bellows seal globe valve and steam trap shall be equipped equipped.

Condensate Collecting manifold

The steam trap group is assembled and installed together, with compact structure and easy disassembly. The built-in bellows seal globe valve ensures zero leakage at the packing. The spherical surface of the valve core improves the sealing performance, and the draining valve is reserved for convenience and the removal of impurity.

Product Description

VMV Bellows Stainless Steel Steam Manifolds"incorporate integral bellows globe valves for steam distribution and condensate collection systems. Depending on the installation,BSPM and BCRM can be used for steam distribution or condensate collection.

The main body adopts the medium temperature wax silica sol precision casting process, and the material CF8 has strong corrosion resistance.

Manifolds Body

High strength and corrosion resistance
Temperature resistant up to 350°C
Precision casting, exquisite appearance
Integrated, compact structure

Handwheel

Corrosion-resistant material handwheel
Beautiful
Good grip

Threaded Pressure Sleeve

Packing and thread pressure sleeve
Avoid loosening
Martensitic stainless steel
High hardness and corrosion resistance

Valve Core, Valve Seat

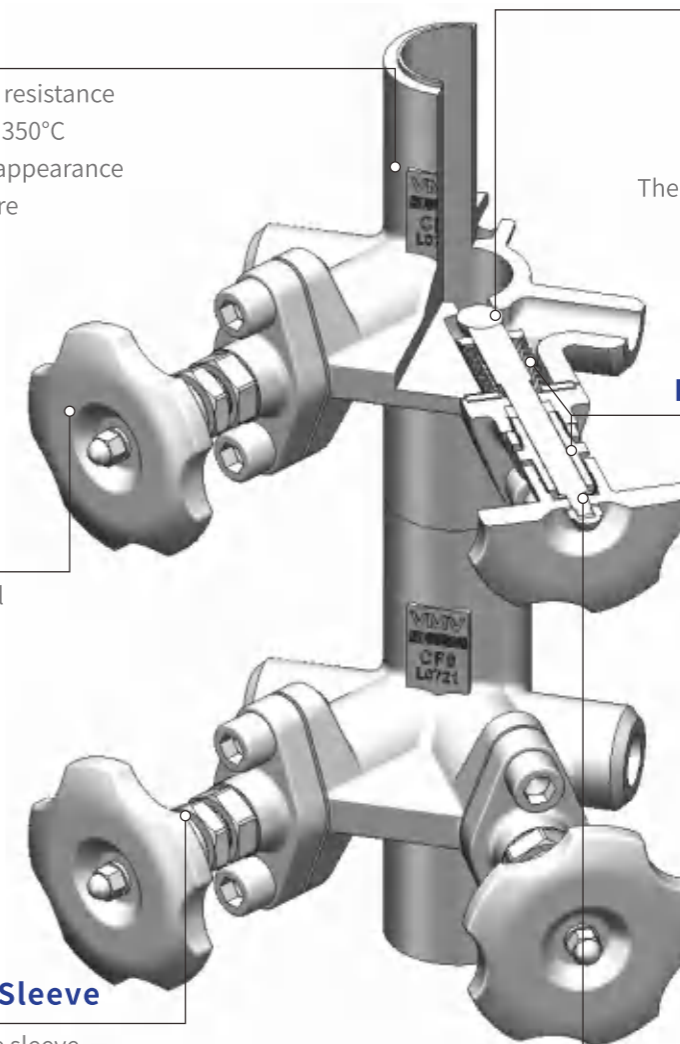
Integral spherical valve core
Matching Conical Seat
Achieve linear sealing
Improve sealing performance
The valve core adopts martensitic hardening treatment
Improve scour resistance

Bellows Components

Built-in stainless steel bellows components and graphite packing realize double sealing guarantee of valve stem

Concealed Drive Thread

The drive thread is placed inside the handwheel
Dustproof and waterproof,
Easy to switch



Bellows Stainless Steel Steam Manifolds

Bellows Stainless Steel Steam Distribution Manifolds



Technical Parameter

Nominal pressure	PN40/Class300
Max. allowable pressure (shell)	3.03Mpa/200°C
Max. allowable temperature (shell)	450°C/2.16MPa
Max. operating pressure	2.56MPa
Max. operating temperature	350°C
Factory cold test pressure	6.0MPa
Air Seal test	2.0MPa

Notice

- During operation, the bellows globe valve should be fully opened or fully closed, and cannot be used for throttling.
- Do not use strong wrench to close the valve, to prevent damage to the bellows caused by excessive torque.

Structural Features

- Integrated design, solid structure, shorten on-site construction time
- Maximize saving installation space and easy maintenance
- Integral ball seal face and V-line seal seat Ensure perfect sealing
- Adopt stainless steel bellows design, easy to open, Durable, eliminates leaks at packing.

Technical Standard

- GB12224-1989 General Requirements For Steel Valves
- GB12228-1989 General Valve Carbon Steel Forgings Technical Conditions
- GB/T 9131-2000 Steel Pipe Flange Pressure-Temperature Class
- GBT13927-2008 Industrial Valve-Pressure Test
- GBT1048-2019 Definition and Selection of Nominal Pressure of Piping Components

Steam Distribution Manifolds

When installing, it is recommended that the steam inlet be installed at the top, and the steam trap set at the bottom. It is best to recover the condensed water discharged from the trap group. If it is directly discharged into the atmosphere, it is recommended to install a silencer.

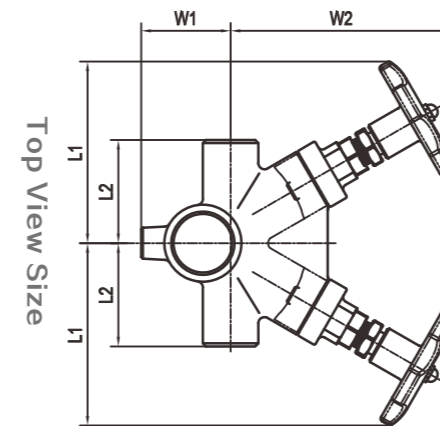
Condensate Manifolds

During installing, it is recommended that the top be the condensate outlet, and the bottom should be installed with a shut-off valve for sewage discharge.

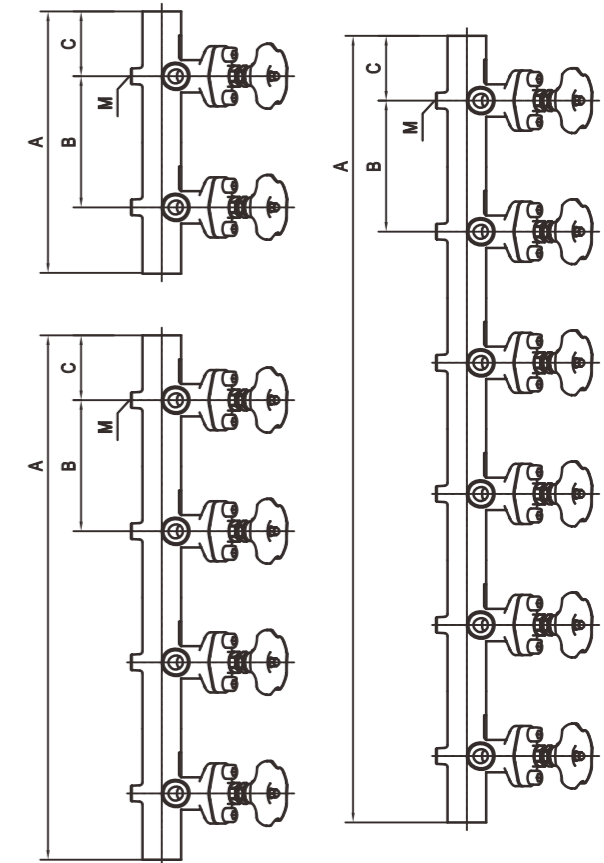
Material Table

Manifolds	CF8
Bonnet	CF8
Bellows Assembly	SS304
Stem	SS304
Valve core	SS440C
Handwheel	SS304
Gasket	Flexible graphite

Structural Diagram



BSPM03 Size



Structure Size Table

Product	Interface	Director	Manifold	Shape size							Weight	
				A	B	C	L1	L2	W1	W2		M
BSPM03-4	4	40/50	15/20	340	170	85	120	67	145	58	M12	9.2
BSPM03-6	6	40/50	15/20	510	170	85	120	67	145	58	M12	13.8
BSPM03-8	8	40/50	15/20	680	170	85	120	67	145	58	M12	18.5
BSPM03-10	10	40/50	15/20	850	170	85	120	67	145	58	M12	23.1
BSPM03-12	12	40/50	15/20	1020	170	85	120	67	145	58	M12	27.8

Bellows Stainless Steel Steam Distribution Manifolds

Bellows Stainless Steel Condensate Collection Manifolds

Product Description

VMV's "Steam Distribution Manifolds" integrates all the components required for it (steam traps, manifolds, valves, etc.). All components are installed on the base bracket, and the manifolds are scientifically distributed on both sides to provide a compact, easy-to-disassemble centralized positioning assembly.

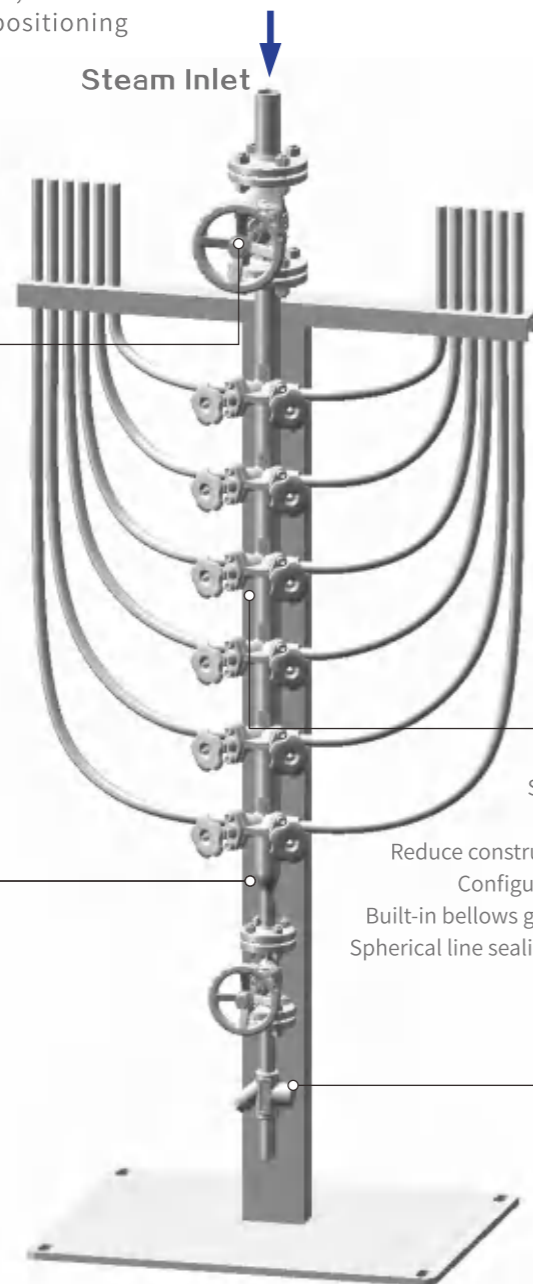
The Body is made of corrosionresistant material CF8, which is suitable for highend manifolds, instruments, chemical corrosionresistant pipes and pipeline heating. The instrument heating distribution pipes can be connected by ferrules.

Bellows Globe Valve

- Equipped with bellows globe valve for steam inlet
- Ensure zero leakage and maintenance free at the packing
- Line Sealed Seat
- Improve sealing performance
- Precision machined stainless steel handwheel
- Ergonomically designed

Manifolds Assembly Base

- Optional customized steel base and frame
- Manifolds on both sides for optimal installation sequencing
- Easy on-site installation



Manifolds Stainless Steel Material

- Centralize all steam distribution valves
- Standardized and integrated skid-mounted combination

- Reduce construction time and cost for on-site installation
- Configure VMV bellows globe valve and steam trap
- Built-in bellows globe valve ensures zero leakage at packing
- Spherical line sealing structure of valve core improves sealing performance

Steam Trap

- Bottom configuration steam trap
- Remove condensed water

Product Description

VMV's "Condensate Manifold" integrates all components required for it (steam traps, manifolds, valves, etc.). All components are installed on the base bracket, and the manifolds are scientifically distributed on both sides to provide a compact, easy to disassemble centralized positioning assembly.

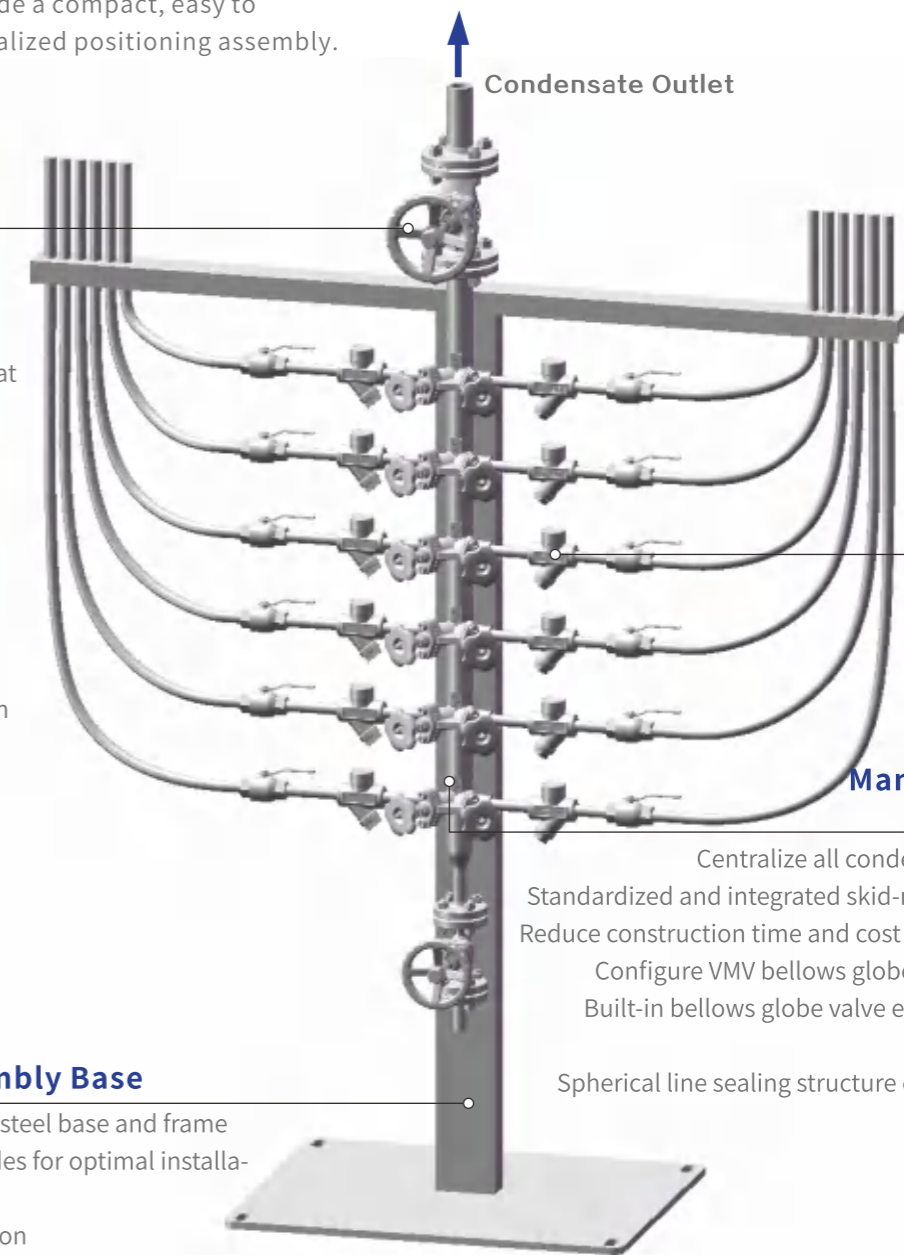
The Body is made of corrosionresistant material CF8, which is suitable for highend mainfolds, instruments, chemical corrosionresistant pipes and pipeline heating. The instrument heating recovery pipes can be connected by ferrules.

Bellows Globe Valve

- Condensate outlet configuration
- Bellows globe valve
- Ensure zero leakage at the packing
- Maintenance free
- Line Sealed Seat
- Improve sealing performance
- Precision machined stainless steel handwheel
- Ergonomically Design

Manifold Assembly Base

- Optional customized steel base and frame
- Manifolds on both sides for optimal installation sequencing
- Easy on-site installation



Manifold Stainless Steel Material

- Centralize all condensate recovery valves
- Standardized and integrated skid-mounted combination

- Reduce construction time and cost for on-site installation
- Configure VMV bellows globe valve and steam trap
- Built-in bellows globe valve ensures zero leakage at packing
- Spherical line sealing structure of valve core improves sealing performance

Steam Trap

- Configure thermodynamic, thermostatic, bucket inverted and other types of steam traps

Bellows Forged Steel Manifolds

Bellows Forged Steel Manifolds

Product Description

VMV's "Bellows Forged Steel Manifolds" have built-in bellows globe valves for steam distribution and condensate collection systems. Depending on the installation, BSPM and BCPM can be used for steam distribution or condensate collection.

The main body adopts the overall forging process material A105, which is dense and high in strength. Suitable for heat tracing of chemical pipelines.

Manifold Body

High strength and corrosion resistance
Temperature resistant up to 350°C
Integrated, compact structure

Valve Core, Valve Seat

Integral spherical valve core
Mating Conical Seat
Achieve linear sealing
Improve sealing performance
The valve core adopts martensitic hardening treatment
Improve scour resistance

Bellows Assembly

Built-in stainless steel bellows assembly
It and the graphite packing realize the double sealing guarantee of the valve stem

Handwheel

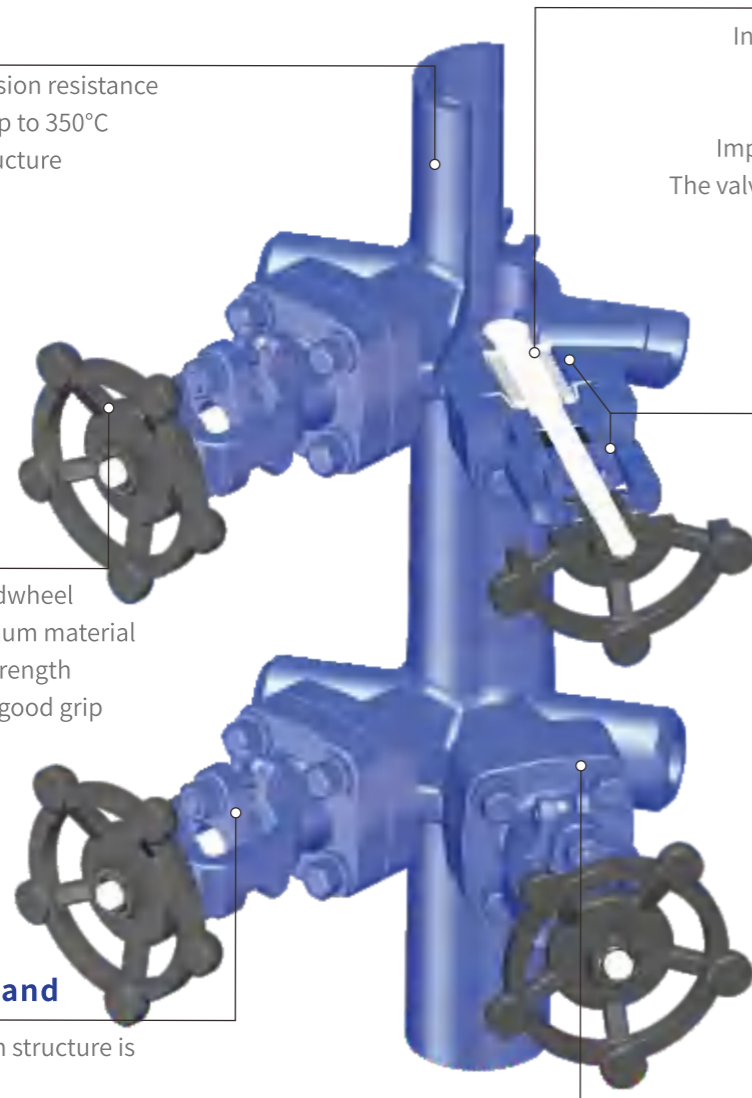
Integral molding of handwheel made of die-cast aluminum material
Light weight and high strength
Beautiful and compact, good grip

Gland, Packing Gland

The packing compaction structure is center-adjustable
Split gland, packing gland
Prevent valve stem from sticking

Valve Bonnet

Special custom forged bonnet
High structural strength



Technical Parameter

Nominal pressure	PN40/Class 300
Max. allowable pressure (shell)	3.92MPa/200°C
Max. allowable temperature (shell)	450°C/1.66MPa
Max. operating pressure	4.0MPa
Max. operating temperature	350°C
Factory cold test pressure	6.0MPa
Air test	2.0MPa

Notice

During operation, the bellows globe valve should be fully opened or fully closed, and cannot be used for throttling. Refuse to use an afterburner wrench to close the valve to prevent the bellows from being damaged by excessive torque.

Structural Features

- Integrated design, solid structure, shorten on-site construction time
- Maximize installation space saving and easy maintenance
- Integral ball seal face and Stellite alloy hardened seat for perfect sealing
- Adopt stainless steel bellows design, easy to open, durable, eliminate leakage at the packing.

Technical Standard

- GB12224-1989 General Requirements For Steel Valves
- GB12228-1989 General Valve Carbon Steel Forgings Technical Conditions
- GB/T 9131-2000 Steel Pipe Flange Pressure-Temperature Class
- GBT13927-2008 Industrial Valve-Pressure Test
- GBT1048-2019 Definition and Selection of Nominal Pressure of Pipelining Components

Steam Distribution Manifolds

When installing, it is recommended that the steam inlet be installed at the top and the steam trap set the bottom. It is best to recover the condensed water discharged from the trap group. If it is directly discharged into the atmosphere, it is recommended to install a silencer.

Condensate Manifolds

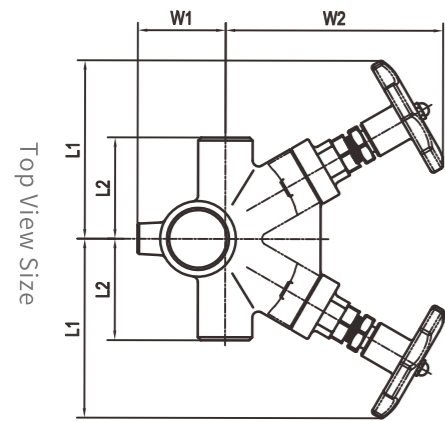
During installation, it is recommended that the top be the condensate outlet, and the bottom should be installed with a shut-off valve for sewage discharge.

Material Table

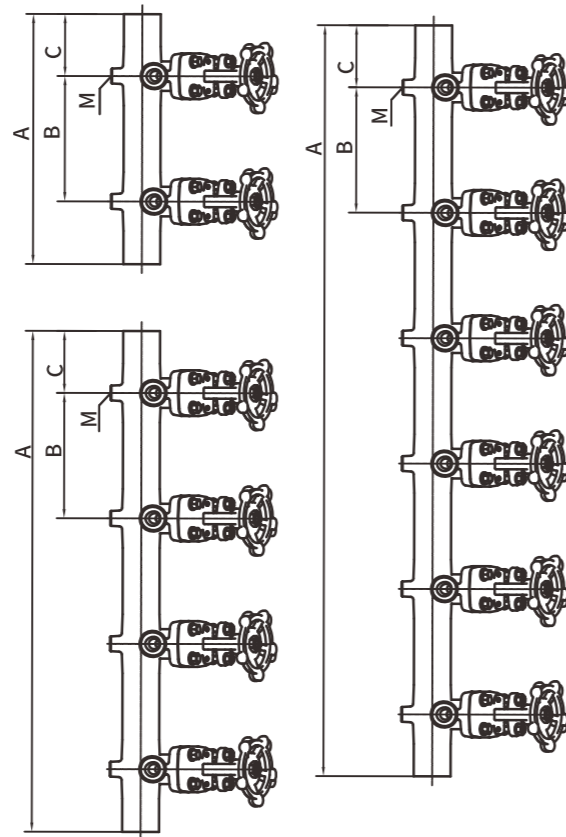
Manifolds Body	A105
Bonnet	A105
Bellows Assembly	SS304
Stem	SS304
Valve Core	SS440C
Handwheel	SS304
Gasket	Flexible Graphite

Bellows Forged Steel Steam Distribution Manifolds

Bellows Forged Steel Steam Distribution Manifolds



BSPM02 Size



BSPM02-12

Structure Size Table

Product	Interface	Director	Manifold	Shape Size								Weight
				A	B	C	L1	L2	W1	W2	M	
BSPM02-4	4	40	15/20	340	170	85	135	75	168	58	M12	10.5
BSPM02-6	6	40	15/20	510	170	85	135	75	168	58	M12	15.8
BSPM02-8	8	40	15/20	680	170	85	135	75	168	58	M12	21.2
BSPM02-10	10	40	15/20	850	170	85	135	75	168	58	M12	26.5
BSPM02-12	12	40	15/20	1020	170	85	135	75	168	58	M12	31.8

Unit(mm)

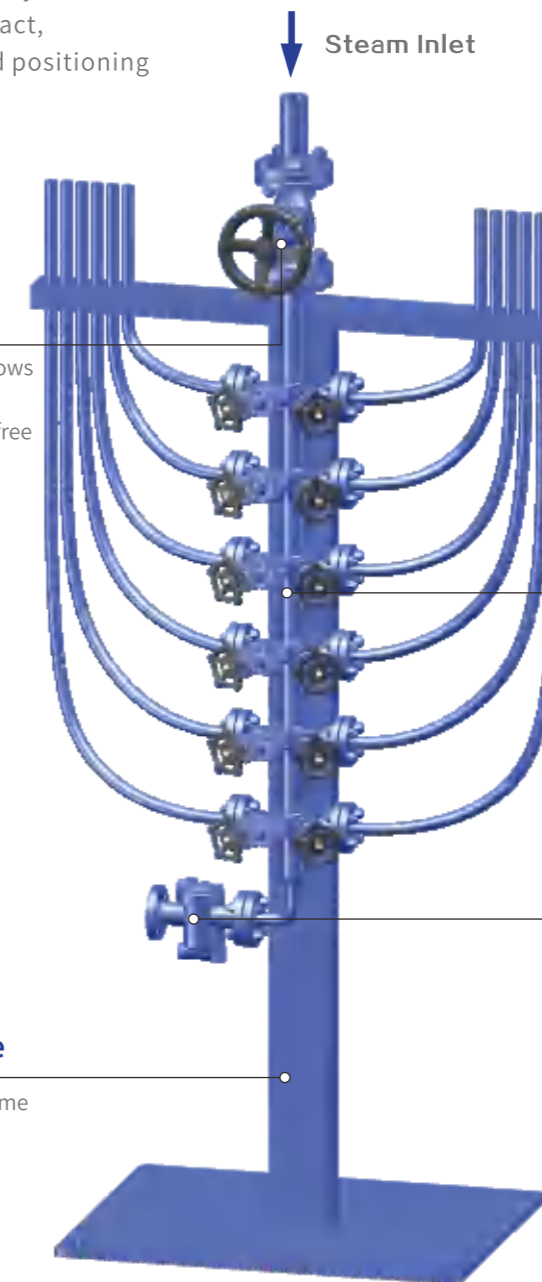
Product Description

VMV's "Steam Distribution Manifolds" integrates all the components required for it (steam traps, manifolds, valves, etc). All components are installed on the base bracket, and the manifolds are scientifically distributed on both sides to provide a compact, easy-to-disassemble centralized positioning assembly.

The Body is made of forged carbon steel material A105, the main body is dense, and it is suitable for highpressure chemical pipelines and pipeline heating.

Bellows Globe Valve

The steam inlet is equipped with a bellows globe valve
 Ensure zero leakage and maintenance free at the packing
 Line Sealed Seat
 Improve sealing performance



Manifolds Body Forged Carbon Steel

Centralize all steam distribution valves
 Standardized and integrated skid-mounted combination
 Reduce construction time and cost for on-site installation
 Configure VMV bellows globe valve and steam trap
 Built-in bellows globe valve ensures zero leakage at packing
 Spherical line sealing structure of valve core improves sealing performance

Steam Traps

Bottom configuration steam trap
 Remove condensed water

Manifolds Assembly Base

Optional customized steel base and frame
 Manifolds on both sides for optimal installation sequencing
 Easy on site installation

Bellows Forged Steel Condensate Collection Manifolds

Bellows Forged Steel Condensate Collection Manifolds

Product Description

VMV's "Condensate Manifold" integrates all components required for it (steam traps, manifolds, valves, etc.). All components are installed on the base bracket, and the manifolds are scientifically distributed on both sides to provide a compact, easy to disassemble centralized positioning assembly.

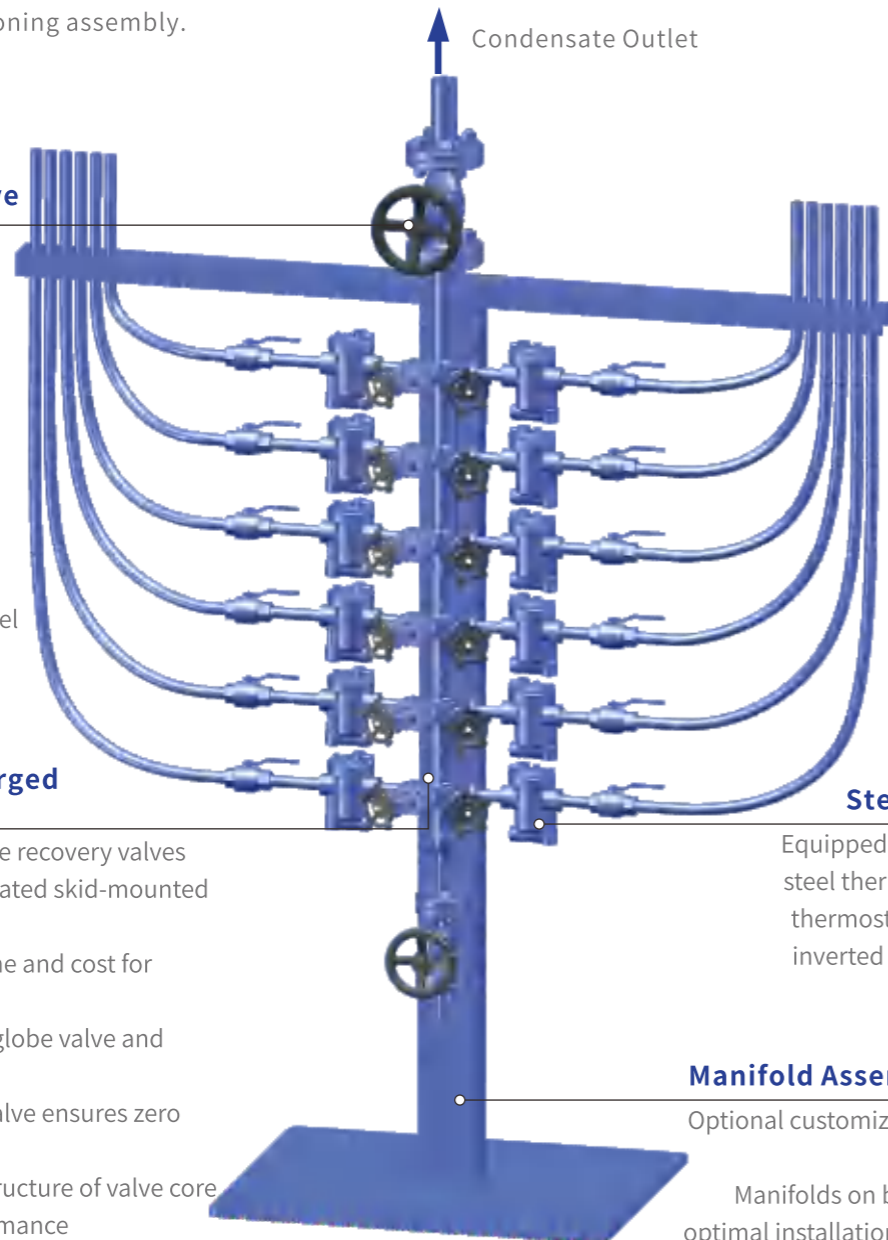
The Body is made of forged carbon steel material A105, the main body is dense, and it is suitable for high-pressure chemical pipelines and pipe-line heating.

Bellows Globe Valve

- Condensate outlet configuration
- Bellows globe valve
- Ensure zero leakage at the packing
- Maintenance free
- Line Sealed Seat
- Improve sealing performance
- Precision machined stainless steel handwheel
- Ergonomically Design

Manifolds Body Forged Carbon Steel

- Centralize all condensate recovery valves
- Standardized and integrated skid-mounted combination
- Reduce construction time and cost for on-site installation
- Configure VMV bellows globe valve and steam trap
- Built-in bellows globe valve ensures zero leakage at packing
- Spherical line sealing structure of valve core improves sealing performance



Steam Traps

Equipped with carbon steel thermodynamic, thermostatic, bucket inverted steam traps.

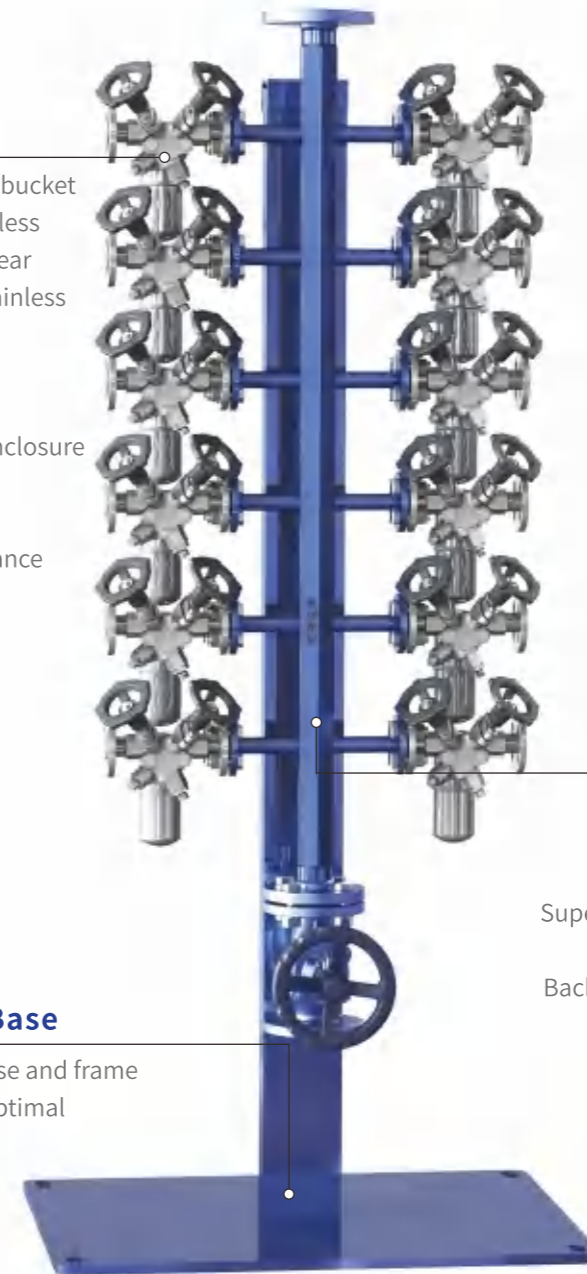
Manifold Assembly Base

Optional customized steel base and frame
Manifolds on both sides for optimal installation sequencing
Easy on-site installation

Stainless Steel Trap Combination

Equipped with stainless steel bucket inverted steam trap and stainless steel trap station, (Front and rear stainless steel globe valve, stainless steel filter, check valve)

Fully enclosed, shockproof enclosure
Small, Lightweight Traps
Freezer resistant, no damage
Super anticorrosion performance



Manifolds Body Forged Steel Material

A105 forged steel material
Hexagonal steel pipe design
Fully consider corrosion allowance
Super strong siphons inside the manifolds form a water seal
Back pressure recovers condensate at low points in the pipeline

Manifold Assembly Base

Optional customized steel base and frame
Manifolds on both sides for optimal installation sequencing
Easy on-site installation

BCPM03-12

Steam System Control Valve

V8000 Series Control Valve

V9000 Series Bellows Control Valve

V6000 Series Three-way Control Valve

MT Series Pneumatic Diaphragm Actuator



V8000 SERIES CONTROL VALVE

V9000 SERIES BELLOWS CONTROL VALVE

Product advantages

The V8000 model solves the above problems well and owns the following features:

- Good stability against high differential pressure
- Long-lasting seals in high-temperature operations
- High regulation precision with low leakage
- Long service life of packing
- Convenient and quick on-site valve maintenance
- Fast response speed

VMV equipped with either pneumatic diaphragm actuator or electric actuator according to the user's on-site energy.



Structure and characteristics

Single-seat control valve

Valve stem double guided structure

Keeping the packing and valve stem coaxial at any times can prevent abnormal wear of the packing caused by eccentricity, greatly improving the service life of the packing.

Thread + pin connection structure

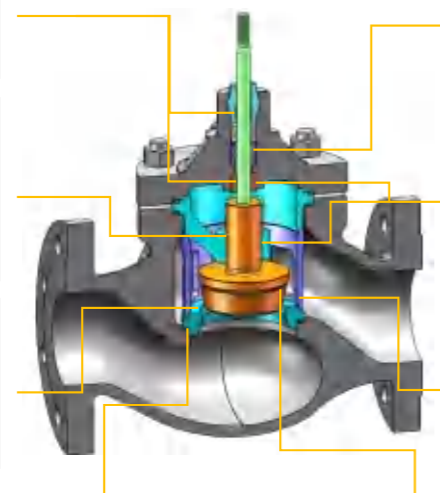
The valve plug and the valve stem is tightly connected by threads and pins, with no any relative movement gap, effectively prevent fatigue and fracture of the valve stem from relative swing of the valve plug and valve stem.

Up-pressure valve seat structure

By loosening the valve bonnet bolts, the internal components of the valve can be removed one by one, allowing for quick maintenance and components on-site, thus saving the user's replacement of the valve seat and internal maintenance time

Gasket quantitative compression structure

Prevent the gasket from being overly compressed to achieve durable sealing without external leakage.



Spring-loaded packing gland structure

Provide a continuous and stable compressive force for the packing, allowing the packing to automatically compensate for wear during use, achieving long-term stable sealing.

Valve plug double-guided structure

The valve plug operates smoothly, not prone to vibration and sticking, ensuring higher regulating precision.

Elastic pressure cage compensation structure

Under high-temperature conditions, the pressure cage can absorb the axial displacement caused by high temperatures and convert it into radial elastic deformation, prevent the gasket or valve internal components from failing due to thermal stress deformation.

Single seat sealing structure

Lower leakage and hard sealing can meet level V and above leakage requirements for a long time.

Product advantage

- Long-term operation, maintenance-free to keep working
 - Zero leakage of valve stem during long operation cycles
 - Bellows' operational service life >500,000 times
 - High regulating precision
 - Fast response speed
 - Convenient and quick on-site valve maintenance
 - Wide temperature range(-196°C~588°C)
- VMV equipped with either pneumatic diaphragm actuator or electric actuator according to the user's on-site energy



Structure and Characteristics

Single-seat control valve

Bellows anti-rotation Structure

The keyway on the valve stem is matched with the pin of the bellows sleeve. Forcing the bellows to move along the axis to prevent damage and increase the service life of the bellows.

Bellows failure detection structure

A pressure gauge or pressure sensor can be connected to the detection port on the valve bonnet for real-time monitoring of bellows leakage.

Single bonnet structure

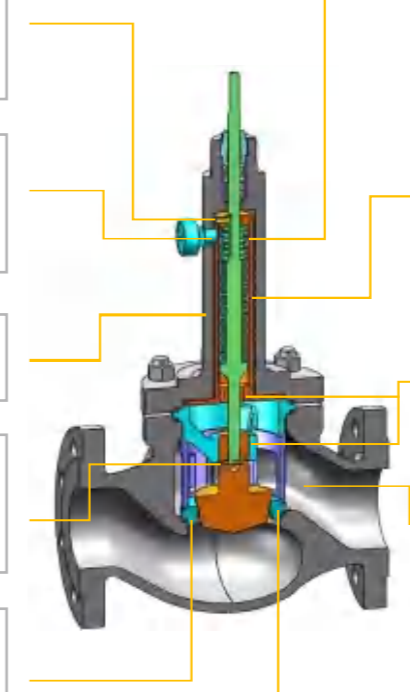
Lower external leakage risk.

Thread + Pin Connection Structure

The plug and stem are closely connected, and there is no relative moving gap. Effectively prevent stem fatigue and fracture caused by the relative swing of the plug and stem.

Sealing gasket quantitative compression structure

Prevent the gasket from being overly compressed to achieve durable sealing without leakage.



Bellows external pressure bearing structure

Provide stable pressure load for bellows, reduce movement and increase the maximum allowable stress, thus improving the bellows service life and valve operation accuracy.

Bellows structure with protective armor

Protects the bellows during handling, installation, and operation. Without bonnet parts, more convenient and fast to replace

Double-guided valve plug structure

The valve core operates smoothly, not prone to vibration and sticking, ensuring higher regulating precision.

Bellows and flow channel separation structure

Prevent the medium from directly impacting the bellows, improve the service life of the bellows.

Up-pressure valve seat structure

By loosening the valve bonnet bolts, the internal components of the valve can be removed one by one, allowing for quick maintenance and replacement of the valve seat and internal components on-site, thus saving the user's maintenance time

V6000 SERIES THREE-WAY CONTROL VALVE

MT SERIES PNEUMATIC DIAPHRAGM ACTUATOR

Product Advantages

- The V6000 series control valves have the following features:
- High regulating precision with low leakage rates
 - Long service life of the packing material
 - Convenient and quick on-site valve maintenance
 - Fast response speed
 - Optional bellows seal to achieve zero external leakage
 - Long-term operation, maintenance-free to keep working
- VMV equipped with either pneumatic diaphragm actuator or electric actuator according to the user's on-site energy



Product Introduction

The MT series pneumatic diaphragm actuator is designed with a single-spring or multi-spring structure, providing an axial output thrust. It is compact in structure, light in weight, small in size, performs highly, has a long service life, and delivers a significant output thrust. It is used in conjunction with GLOBE control valves, globe valves, and other straight-stroke valves, facilitating a tight and easy valve closure.

Working principle: The electrical signal from the control instrument, after being converted into air pressure by the positioner or solenoid valve, is input into the diaphragm chamber. This pressure acts on the diaphragm to generate thrust, causing the output shaft to move.

MT actuator has excellent versatility and interchangeability. In the field, the action mode can easily be reversed by simply flipping the upper and lower diaphragm chambers. Its unique design, which requires no external air supply tubing, means air is supplied to the positioner and actuator through holes in the mounting bracket, eliminating the need for external tubing. Compared to traditional designs, this arrangement is more reliable and requires less space for control valves assembly. This method ensures a safe air supply to the actuator and significantly simplifies the assembly process of the positioner.



Structure and Characteristics

Three-way control valve

Valve stem double-guided structure

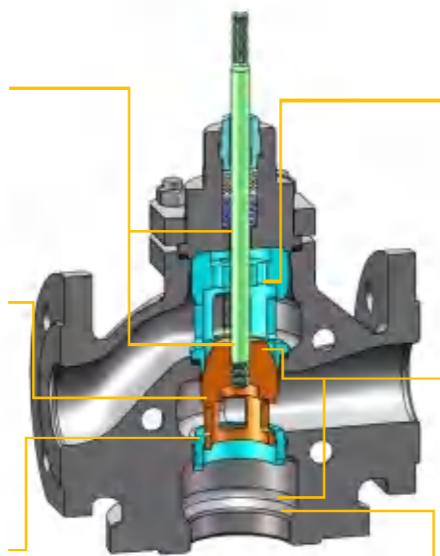
Keeping the packing and valve stem coaxial at all times can prevent abnormal wear of the packing caused by eccentricity, greatly improving the service life of the packing.

Up-pressure valve seat structure

By loosening the valve cover bolts, the internal components of the valve can be removed one by one, allowing for quick maintenance and replacement of the valve seats and internal components on-site, thus saving the user's maintenance time.

Sealing Gasket Quantitative Compression Structure

Prevent the gasket from being overly compressed to achieve durable sealing without leakage.



Spring-loaded packing gland structure

Provide a continuous and stable compressive force for the packing, allowing the packing to automatically compensate for wear during use, achieving long-term stable sealing.

Valve plug double-guided structure

The valve plug operates smoothly, not prone to vibration and sticking, ensuring higher regulating precision.

Single seat sealing structure

Lower leakage and hard sealing can meet level V and above leakage requirements for a long time.

MT2 and MT3 actuators

Anti-loosening nut structure

Prevents the push rod from loosening, enhancing connection stability.

Ultra-high fatigue strength diaphragm material

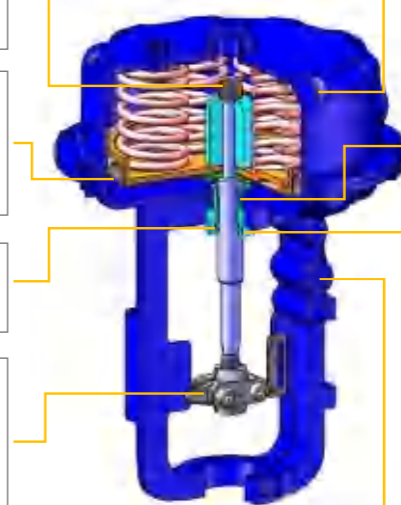
Operational life of over 200,000 cycles, ensuring long maintenance-free periods for customers.

Dustproof sealing ring structure

Double sealing, long-lasting and leak-proof.

Opening and closing nut connection structure

Closely connected with no gaps, easy to disassemble, high adjustment precision, and high stability.



Embossed diaphragm cover structure

Enhances the pressure resistance of the diaphragm cover, and increases the output thrust of the actuator.

Ultra-long self-lubricating bearing guide structure

Operates smoothly without creep, low friction, and high action type precision.

External threaded connection structure

Enables quick interchangeability between direct and reverse action, improving the efficiency of on-site changeovers of operational modes for users.

Built-in air intake hole structure

No external air source tubing required, reduces the space needed for positioner installation, and decreases the number of potential leak points, regulating more stable.

DIN STANDARD SAFETY VALVE(A48E)

PILOT OPERATED PRESSURE REDUCING VALVE(DP17)



Product Advantages

- High precision in action
- Good repeatability
- Return seat accurately
- Easy to operate and maintain

Specifications

- Product design standards:ISO 4126-2013
- Test standard:ISO 4126-2013
- Flange standards:DIN2543-2000

Application

Steam, Heat Transfer Oil, chemical, Water.

Performance Specification

Nominal Pressure		PN
Test Pressure	Shell test	1.5PN
	Sealing test	1.1PN
	Air test	0.6
Maximum output pressure		PN
Output pressure range		0.2-PN

Material of Major Parts and Components

Body	G5-C25、1.4301、1.4401
Seat	1.4301、Stellite
Disc	1.4021、14301+Stellite
Spring	1.4301、1.4401
Copper guide sleeve	Copperalloy、D2、BL2
Gasket	Stainless steel + Flexible graphite
Cover	G5-25、1.4301、1.4401
Nut	ASTM 194-2H、A194-8
Double-headed bolt	ASTM 193-B7、A193-B8



Product Advantages

- Especially suitable for steam and water
- Max inlet pressure. 16 bar ,25 bar.
- Outlet pressure (Springs pressure setting range)
Yellow 1-3bar ;Blue 2-8bar, Red :7-12bar
- Diameter:15-200mm.
- Media temperature: 0-285 C
- Max rate inlet pressure/outlet pressure. 10:1.
DIN,ANSI,GB

Specifications

- Design standard:GB12244
- Flanged ends: DIN
- Test & inspection:GB-12244-46

Application

Steam, Heat Transfer Oil, Chemical, Petroleum Pipeline, Oil Refining Equipment, Toxic And Hazardous Substances Strong Penetrating Medium.

Performance Specification

Nominal Pressure		PN	
Test Pressure	Shell test	1.5PN	Mpa
	Sealing test	1.1PN	
	Air test	0.6	
	-	-	
Suitable temp		-196°C~660°C	

Material of Major Parts and Components

Body,bonnet	WCB
Seat	2Cr13
Disc	2Cr13
Stem	2Cr13
Diaphragm	1Cr 18Ni 9Ti
Adjustment spring	60Si2mn

Steam Piping Accessories

The piping system must be equipped with bellows globe valves, strainers, check valves, mixers, vacuum breakers, steam separators, and sight glasses.



Bellows Seal Globe Valve

Bellows Seal Globe Valve



Conical seal: The sealing surface has self-cleaning function and is not easy to adhere to impurities, which can achieve linear sealing.



Balanced disc seal: Small disc relieves pressure and drives large disc to open easily.



Flat soft seal: The surface of the soft seal can prevent the sparks when opening and closing, it's suitable for gas media and corrosion resistance conditions.

Product Advantage

- Conical disc design. Benefit from the cone and streamline shape design, the disc can remove the impurities, keep valve in reliable seal and longer service life.
- Double seal design (bellows+packing). Bellows design form a metal seal to prevent leakage, and packing can provide seal if the bellows failed.

- Patented central locate design. It can protect stem from tremble and lower noise, so the bellows has stable performance and long service life.
- Coated sand casting technology. Sand mixed with binder and other additives makes the rough casting with less defects like pore, trachoma and cracks, and better tensile strength.

Specifications

- Design standard: EN12516
- Face to face dimension: EN558
- Flange ends: EN1092-1
- Test & inspection: EN12266

Application

- Thermal oil, Steam, Hot and cold water, Fatty acids, Ammonia, Natural gas, etc.



• Ergonomic hand wheel design



• Double seal design (bellows+packing)



• Bellows transition connection
• Improve welding quality



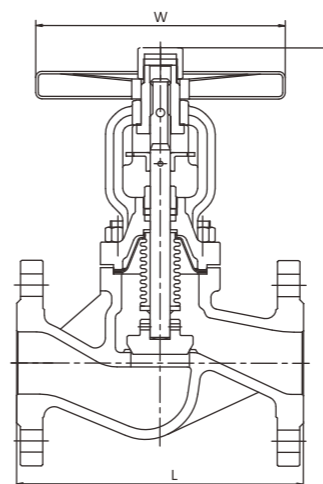
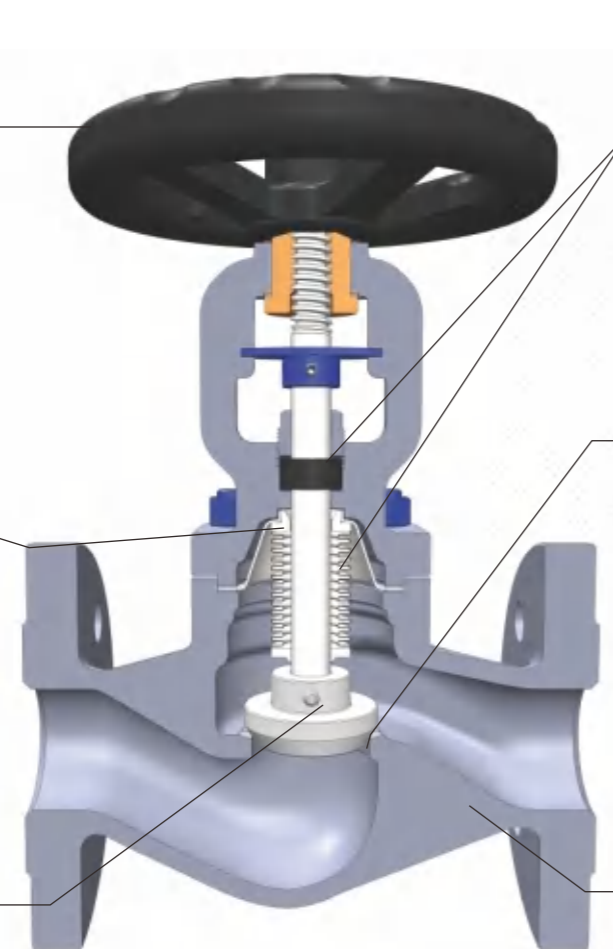
• Sealing surface overlay welding alloy layer
• Roughness $\leq 0.5\mu m$



• Conical disc or other customized disc



• German coated sand casting
• Surface finish: 12.5~25 microns



Data Dimension Table

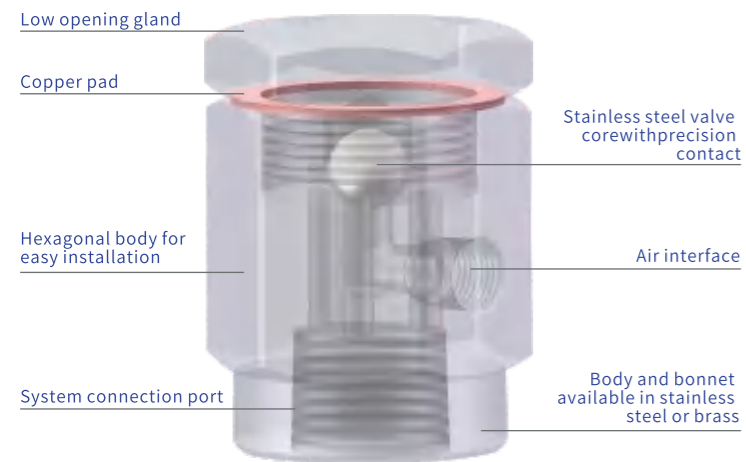
DN	PN16			PN25			PN40		
	L	W	H \approx	L	W	H \approx	L	W	H \approx
15	130	Φ140	192	130	Φ140	192	130	Φ140	192
20	150	Φ140	192	150	Φ140	192	150	Φ140	192
25	160	Φ160	207	160	Φ160	207	160	Φ160	207
32	180	Φ160	207	180	Φ160	207	180	Φ160	207
40	200	Φ180	234	200	Φ180	234	200	Φ180	234
50	230	Φ200	253	230	Φ200	253	230	Φ200	253
65	290	Φ220	305	290	Φ220	305	290	Φ220	305
80	310	Φ250	337	310	Φ250	337	310	Φ250	337
100	350	Φ300	391	350	Φ300	391	350	Φ300	391
125	400	Φ350	441	400	Φ350	441	400	Φ350	441
150	480	Φ400	497	480	Φ400	497	480	Φ400	497
200	600	Φ450	672	600	Φ450	672	600	Φ450	672
250	730	Φ550	775	730	Φ550	775	730	Φ550	775
300	850	Φ600	852	850	Φ600	852	850	Φ600	852
350	980	Φ700	1021	980	Φ700	1021	980	Φ700	1021
400	1100	Φ700	1140	1100	Φ700	1140	1100	Φ700	1140

Vacuum Breaker

Vacuum Breaker

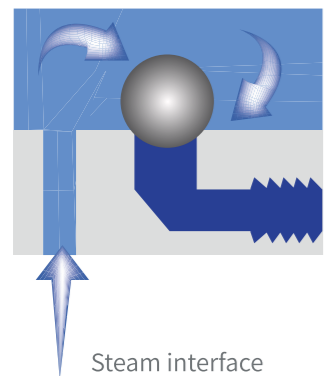
Vacuum Breaker **VB21**

VMV vacuum breaker protect your equipment from vacuum damage while helping to efficiently drain condensate from lines and containers.



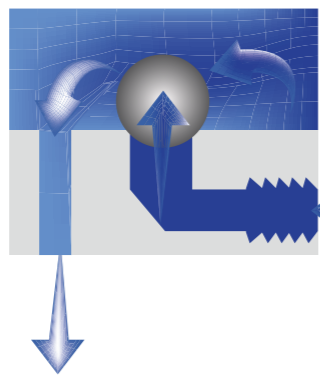
working principle

when working fine



The high and precision valve core valve seat adopts a linear seal. When the pipeline is under pressure, the valve seat and valve core is tightly closed, and there is no steam leakage.

when a vacuum occurs



When the pressure of the steam system drops to normal pressure, the steam in the equipment cools down, and the valve core opens when a negative pressure is generated and a vacuum state occurs.

Air entering

※ The differential pressure at which the valve opens is 4.6 mmHg

Technical Parameter

Working medium	Steam, Air	Max. allowable temperature	425 °C
Nominal pressure	2.5MPa	Max. air intake	9m3/h
Max.working pressure	2.1MPa	No load leak rate	0.1%
Max.pressure	0.01MPa	Connection method	RC

Application

This product is robust and reliable and can be used in a variety of systems and equipment to prevent vacuum, such as:

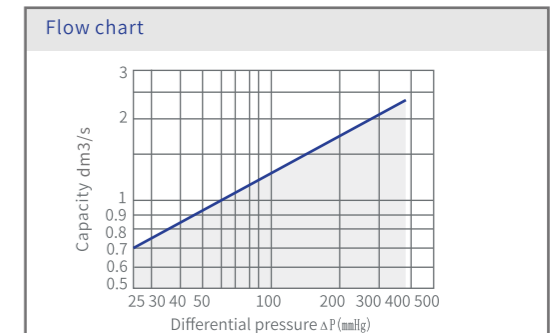
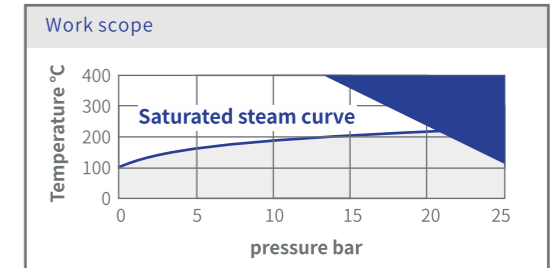
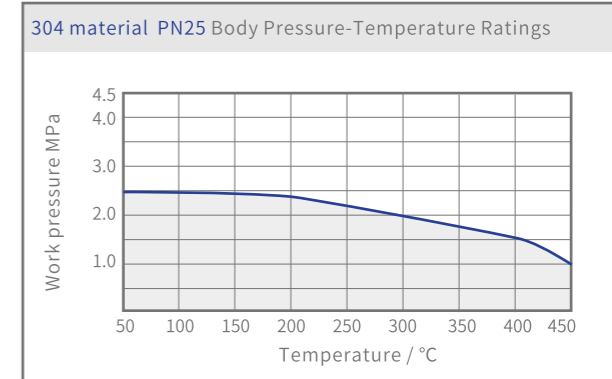
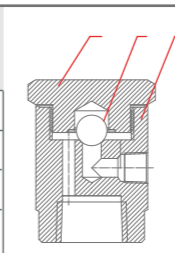
- Heat Exchanger
- Steam Storage Tank
- Boiler
- Jacketed pot
- Sterilization room
- Steam main line

Advantage

- Protects expensive equipment from vacuum damage
- Small size and sensitive action
- Simple, robust and reliable design
- VMV's domestic expert team technology, knowledge and service guarantee

Material of main parts

Number	Name	Material
1	Bonnert	SS304
2	Valve core	SS440C
3	Valve body	SS304



Size Parameters

Model	Connection Method	Nominal Size	Nominal Pressure	External Dimensions mm			Weight Kg
				A	B	C	
VB21	thread	1/2"	PN25	40	54	35	0.38
VB21	thread	3/4"	PN25	52	65	46	0.7

Silencer

Mixer

DF3 Silencer

Mixer IN40M



Product Features

The DF3 silencer is compact and is used to discharge to the steam trap outlet of the inlet condensate return line. It reduces the noise and water hammer problems caused by rapid cooling of flash condensate at the trap discharge outlet.

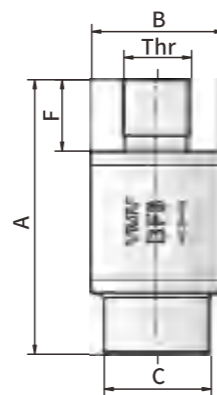
The main body of the silencer is made of SS304, the inner part is stainless steel, and a filter device is installed at the inlet.

- Nominal pressure PN25;
- The maximum allowable temperature is 400°C;
- Maximum working pressure 2.5 MPa;
- Maximum operating temperature 325°C
- The connection method is threaded Rc, BSP, NPT

Technical Standard

- GB/T41318-2022 Ventilation Silencer
- GB/T12224-2015 General Requirements for Industrial Steel Valves

Structure Diagram



Structural Dimension Table

Product Type	Nominal Size	A	B	C	Thr	f	Weight
DF1	DN15	85	37	30	RC 1/2"	18	0.3 kg
DF2	DN20	90	39	35	RC 3/4"	20	0.3 kg
DF3	DN25	95	47	44	RC 1"	24	0.3 kg

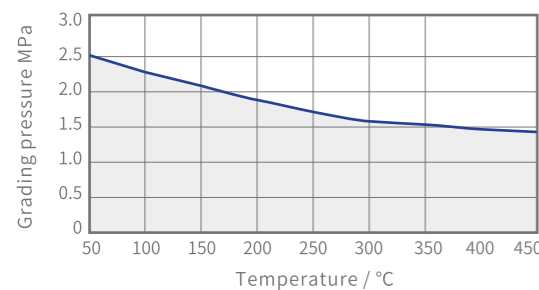
Technical Parameter

Model	Connection Method	Nominal Pressure PN MPa	Working Pressure Range MPa	Max. allowable Temp. °C @ Pre. MPa
DF1	Screw thread	25	0.05-2.5	325@1.6
DF2	Screw thread	25	0.05-2.5	325@1.6
DF3	Screw thread	25	0.05-2.5	325@1.6

Material Table

- Body: 304
- Interface: 304
- Other Internals: 304

304 Material PN25 Valve Body Pressure-Temperature Ratings



Technical Parameter

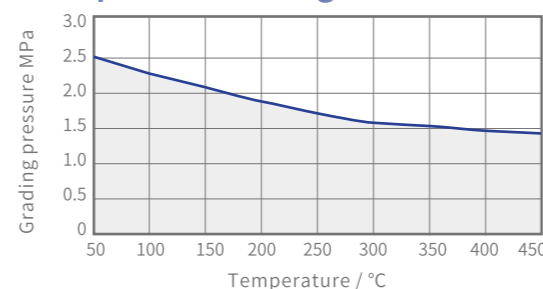
Model	Connection Method	Nominal Pressure PN	Working Pressure Range MPa
IN40M	Threaded	25	0.5-1.7
	Butt welding	25	0.5-1.7

Condition Temperature °C / Pressure MPa	Maximum Heating Temperature °C /
207/1.7	90
207/1.7	90

Inlet Pressure Versus Flow

System Pressure bar	Flow Kg/h	System Pressure bar	Flow Kg/h
0.5	222	9	1820
1	400	10	1950
2	580	11	2250
3	805	12	2370
4	970	13	2595
5	1125	14	2710
6	1295	15	2815
7	1445	16	2065
8	1620	17	3200

CF8 Material PN25 Valve Body Pressure-Temperature Ratings



Mixers are used where steam is used to heat water or other fluids. When working, the highspeed jet of steam sucks and mixes the liquid from the annular hole, and then sprays the heated medium into the water tank. The steam and the medium are fully mixed to avoid the temperature stratification difference.

IN40M has external thread and butt welding type. When installing with higher flow rate, two or more injectors can be installed in parallel.

Structural Features

- All stainless steel 304 material
- No moving parts, compact design
- Noise and vibration can be minimized

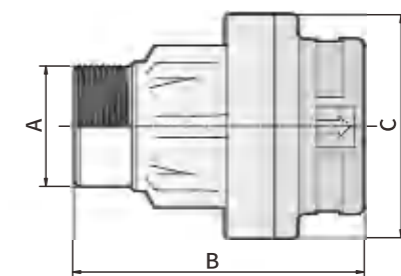
Installation Notes

- The mixer is installed low in the tank, preferably on the centerline, and injects steam horizontally.
- The piping can be inside or outside the tank.
- Steam piping must be well secured to protection against vibration and stress on tank walls.
- It is recommended to use a suitable adhesive on threaded joints.

Technical Standard

- JB/T8540-2013 Steam Jet Vacuum Pumps
- SH/T3118-2018 Steam Ejectors
- NB/T47015-2011 Welding Specification for Pressure
- Vessels GB/T12224-2015 General Requirements for Industrial Steel Valves

Structure Diagram



Structural Dimension Table

Model	Nominal Size	A	B	C	Weight
IN40M	DN40	ZG1 1/2"	118	92	1.6 kg
	DN40	BWΦ48X5	118	92	1.6 kg

Mixer

Wafer Check Valve

IN Silencer Mixer

Wafer Check Valve ZM71H-25P



Features

Silencers are used where steam is used to heat water or other fluids. When working, the highly sprayed steam inhales the liquid from the ring hole, mixes it, and then sprays the heated medium into the water tank. The steam and the medium are fully mixed to avoid the difference in temperature stratification. The mixer is externally threaded and butt-welded, and two or more injectors can be installed in parallel when higher flow rates are required.

Structural Features

All stainless steel.
No moving parts, compact work involving noise and vibration minimization

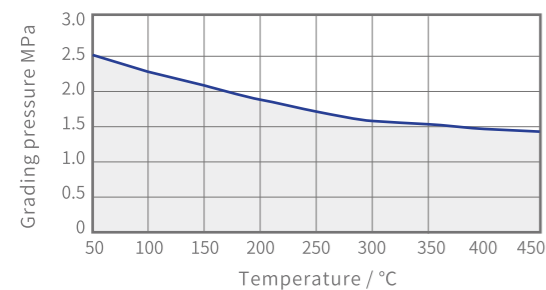
Occasion Applicable

Boilers Ideal for feed water heating and deaeration Efficient steam heating, mixing and circulation of water and other fluids.

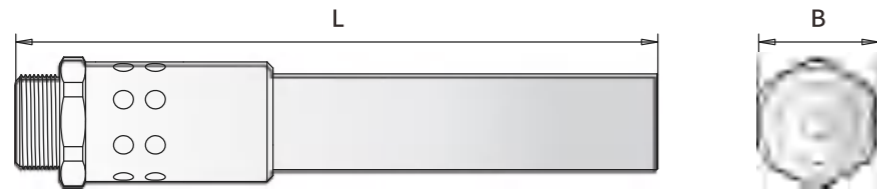
Installation Precautions

The silencer is installed at a lower position in the tank, preferably at the center line, spraying steam horizontally.
Pipes can be installed inside or outside the tank. Steam piping must be securely secured against vibration and stress on the tank walls.
It is recommended to use a suitable adhesive for threaded joints.

Valve Shell Pressure-temperature Rating (PN2.5MPa; 304 material)

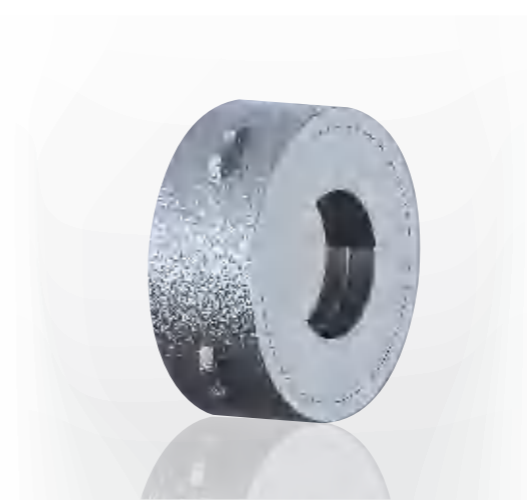


Structure Diagram



Structural Dimension Table

Wodel	Connection	DN	PN	Mpa	Temp °C/Mpa	L	A	B	Rc	Weight
IN	Thread	IN15	25	0.5-1.7	207/1.7	210	40	36	1/2"	0.5kg
	Thread	IN20	25	0.5-1.7	207/1.7	210	40	36	3/4"	0.5kg
	Thread	IN25	25	0.5-1.7	207/1.7	230	50	44	1"	0.85kg
	Thread	IN32	25	0.5-1.7	207/1.7	270	50	50	1-1/4"	1.7kg
	Thread	IN40	25	0.5-1.7	207/1.7	320	65	60	1-1/2"	2.5kg
		IN50	25	0.5-1.7	207/1.7	360	76	70	2"	4kg



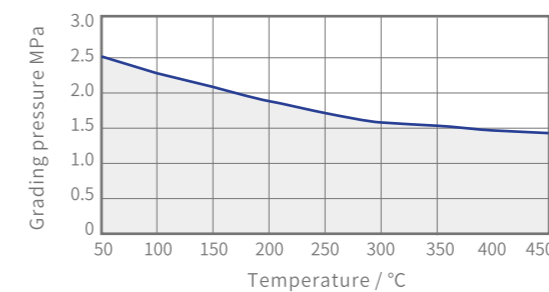
Technical Parameter

Model	Connection Method	Nominal Pressure PN MPa	Working Pressure Range MPa	Max. allowable Temp. °C @ Pre. MPa
		25	0.05-2.5	220@2.5
		25	0.05-2.5	220@2.5
		25	0.05-2.5	220@2.5
MH71H-25P	Wafer	25	0.05-2.5	220@2.5
		25	0.05-2.5	220@2.5
		25	0.05-2.5	220@2.5
		25	0.05-2.5	220@2.5

Material Table

Valve body:304 Valve disc:420J2
Valve seat:420J2 Spring:304

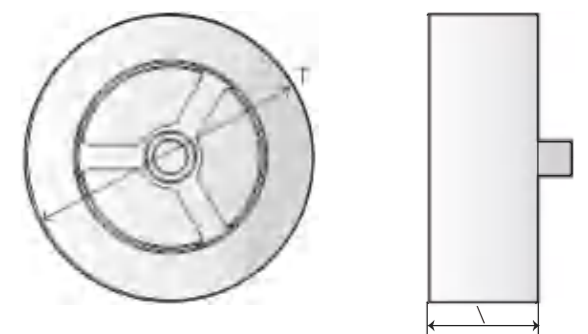
(PN25; CF8/304 material) Valve Body Pressure-Temperature Ratings



Structural Features

ZM71H-25P is a wafer type check valve. The valve seat and valve disc are processed by heat treatment and aging treatment, and the machining accuracy reaches Micron (µm) level, and zero leakage when closed. Suitable for steam pipelines, noncorrosive gases, liquids and other media

Structure Diagram



Structural Dimension Table

Model	Nominal Size	L	D	Weight
MH71H-25P	DN20	19	55	0.24 kg
	DN25	22	64	0.36 kg
	DN32	28	74	0.55 kg
	DN40	32	84	0.76 kg
	DN50	40	103	1.32 kg
	DN65	46	122	2 kg
	DN80	50	135	2.5 kg

DIN Y-Strainer

Steam Separator

YG45 DIN Strainer

Steam Separator AS7



Structural Features

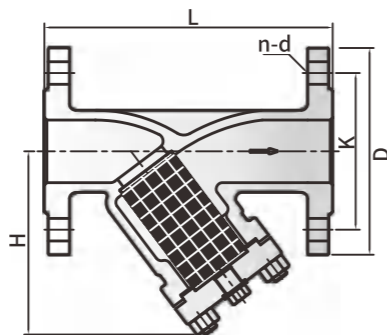
The DIN standard Y type strainer is a device used to eliminate particulate impurities in the medium, which can effectively protect the normal operation of valves and equipment on the pipeline. When cleaning is required, just take out the detachable strainer screen and reload it after processing, which is extremely convenient for maintenance. WCB cast steel material, double layer stainless steel strainer screen, more thorough filtration of impurities and better corrosion resistance.

Optional drain plug for quick maintenance.

Technical Standard

- HG/T21637-1991 Chemical Pipeline Strainer
- GB/T12224-2015 General Requirements for Industrial Steel Valves

Structure Diagram



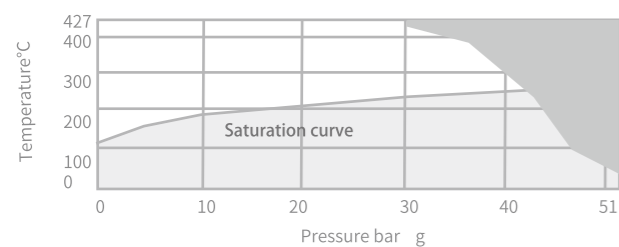
Structural Dimension Table

Model	Nominal Size	L	H	D	K	n-d	Weight
YG45	DN15	130	85	95	65	4-14	2.9 kg
	DN20	150	95	105	75	4-14	3.5 kg
	DN25	160	110	115	85	4-14	4.8 kg
	DN32	180	125	140	100	4-18	6.6 kg
	DN40	200	145	150	110	4-18	8.8 kg
	DN50	230	155	165	125	4-18	10.6 kg
	DN65	290	175	185	145	4-18	17.5 kg
	DN80	310	210	200	160	8-18	20.5 kg
	DN100	350	230	220	190	8-18	29 kg
	DN125	400	270	250	220	8-18	43 kg
DN150	480	300	285	250	8-22	64 kg	

Technical Parameter

Model	Connection Method	Nominal Pressure PN MPa	Working Pressure Range MPa	Max. allowable Temp. °C @ Pre. MPa
		15	0.05-1.6	260@1.0
		20	0.05-1.6	260@1.0
		25	0.05-1.6	260@1.0
		32	0.05-1.6	260@1.0
		40	0.05-1.6	260@1.0
YG45	Flange	50	0.05-1.6	260@1.0
		65	0.05-1.6	260@1.0
		80	0.05-1.6	260@1.0
		100	0.05-1.6	260@1.0
		125	0.05-1.6	260@1.0
		150	0.05-1.6	260@1.0

Work Scope



Working Principle

This product is used to separate droplets contained in steam, compressed air and other gas systems. The insulation jacket can improve the performance of the separator.

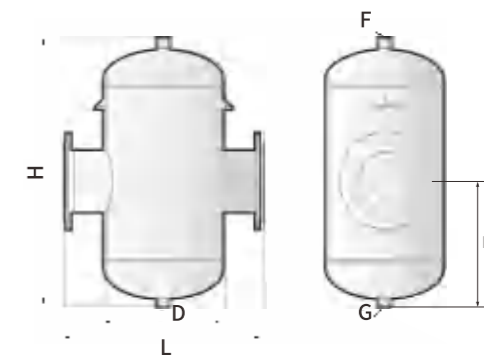
Technical Standard

- GB/T3572-2014G
- B/T12224-2015

Technical Parameter

Model	Connection Method	Nominal Pressure PN MPa	Working Pressure Range MPa	Max. allowable Temp. °C @ Pre. MPa
		16	0.05-1.6	260@1.0
		16	0.05-1.6	260@1.0
		16	0.05-1.6	260@1.0
		16	0.05-1.6	260@1.0
		16	0.05-1.6	260@1.0
AS7	Flange	16	0.05-1.6	260@1.0
		16	0.05-1.6	260@1.0
		16	0.05-1.6	260@1.0
		16	0.05-1.6	260@1.0
		16	0.05-1.6	260@1.0
		16	0.05-1.6	260@1.0

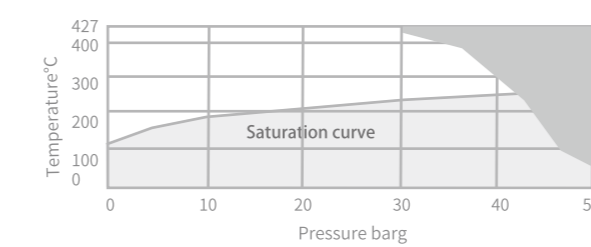
Structure Diagram



Structural Dimension Table

Model	Nominal Size	L	H	D	E	F	G	Weight	Capacity
AS7	DN15	230	450	108	200	1/2"	1/2"	2.9kg	2.9L
	DN20	230	450	108	200	1/2"	1/2"	3.5kg	3.5L
	DN25	350	500	159	220	1/2"	1/2"	4.8kg	4.8L
	DN32	350	500	159	220	1/2"	1/2"	6.6kg	6.6L
	DN40	360	500	159	220	3/4"	1/2"	8.8kg	8.8L
	DN50	420	638	219	252	1"	3/4"	10.6kg	10.6L
	DN65	420	638	219	252	1"	3/4"	17.5kg	17.5L
	DN80	523	735	273	332	2"	3/4"	20.5kg	20.5L
	DN100	574	795	324	337	2"	3/4"	29kg	29L
	DN125	656	843	356	310	2"	3/4"	43kg	43L
DN150	706	935	406	347	2"	3/4"	64kg	64L	

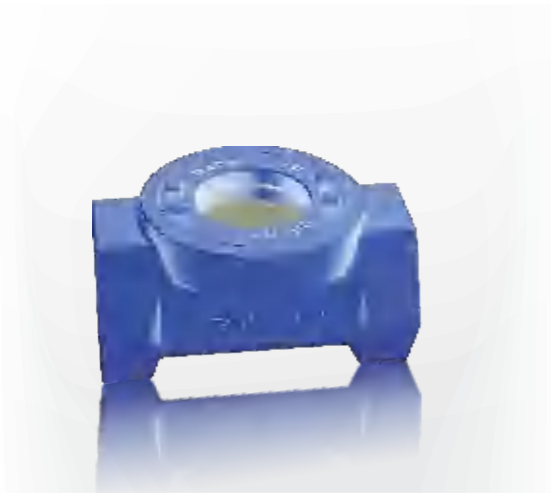
Work Scope



Sight Glass

Condensate Recovery System and Steam Energy-saving Products

S1 Sight Glass



Overview

Single window sight glass, threaded connection, available in different sizes in carbon steel products.

Structural Features

1. The structure is compact, saving installation space to the greatest extent and meeting customer needs.
2. Provide customized threaded connections (BSP or NPT) to meet the individual needs of customers.
3. Temperature resistant calcified glass lens with explosion proof function.
4. Flexible graphite gasket with high sealing and erosion resistance.

Applicable scope

It is used for the flow and reaction of liquid, gas, steam and other media in the pipelines of petroleum, chemical, pharmaceutical, food and other industrial production equipment, and plays a role in monitoring production and avoiding accidents in the production process.

Warning

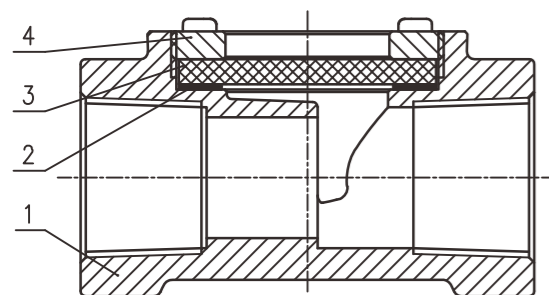
Condensed water in some applications can dissolve the window glass, especially if the water contains corrosive alkaline and acidic substances. Therefore, it is recommended to check the window glass regularly and replace the glass immediately if it becomes thinner. When viewing, wear goggles to protect your eyes.

Technical Parameter

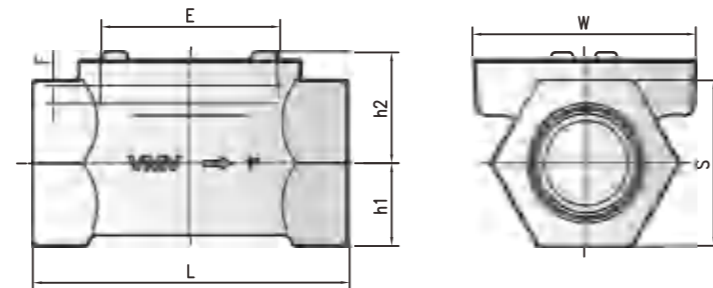
Model	Connection Method	Nominal Pressure PN MPa	Working Pressure Range MPa	Max. allowable Temp. °C @ Pre. MPa
	Screw thread	5	0.05-0.35	148@0.35
S1	Screw thread	5	0.05-0.35	148@0.35
	Screw thread	5	0.05-0.35	148@0.35
	Screw thread	5	0.05-0.35	148@0.35

Material Table

Body: A105
 Gasket: Flexible Graphite
 Window: high temperature quartz glass
 Bonnet: A105



Data Sheet



Structural Dimension Table

Model	Nominal Size	L	W	S	h1	h2	E	F	Weight
S1	DN10	89	63	31	16	29	51	5	0.55Kg
	DN15	89	63	31	16	29	51	5	0.55Kg
	DN20	89	63	37	19	32	51	5	0.65Kg
	DN25	90	63	47	24	33	51	5	0.8Kg

Condensate Flash Recovery System



Condensate flash system



P1	Primary steam pressure	bar	P	Power steam pressure	bar
P2	Flash steam pressure	bar	Pb	Back pressure	bar
Q1	Saturated condensate flow rate	kg/h			

Steam Ejector



Parameters that users need to provide

Noun	Definition	单位
Pp	Absolute pressure of working steam	Pa
tp	Temperature of working steam	°C
Vp	Specific volume of working steam	M³/kg
ip	Specific enthalpy of working steam	kJ/kg
PH	Absolute pressure of injected steam	Pa
TH	Temperature of injected steam	°C
VH	Specific volume of injected steam	M³/kg
iH	Specific enthalpy of injected steam	kJ/kg
GH	Flow rate of injected steam	kg/h
PC	Pressure after steam compression	Pa

Tube Heat Exchanger



Parameters that users need to provide

S	Heat Exchange Area	m ²	Q2	Secondary medium flow rate	kg/h
Ps	Primary pressure	bar	T21	Initial temperature of secondary me	°C
T1	Primary temperature	°C	T22	Secondary medium outlet temperat	°C
DN	Primary nominal diameter	DN		Secondary nominal diameter	