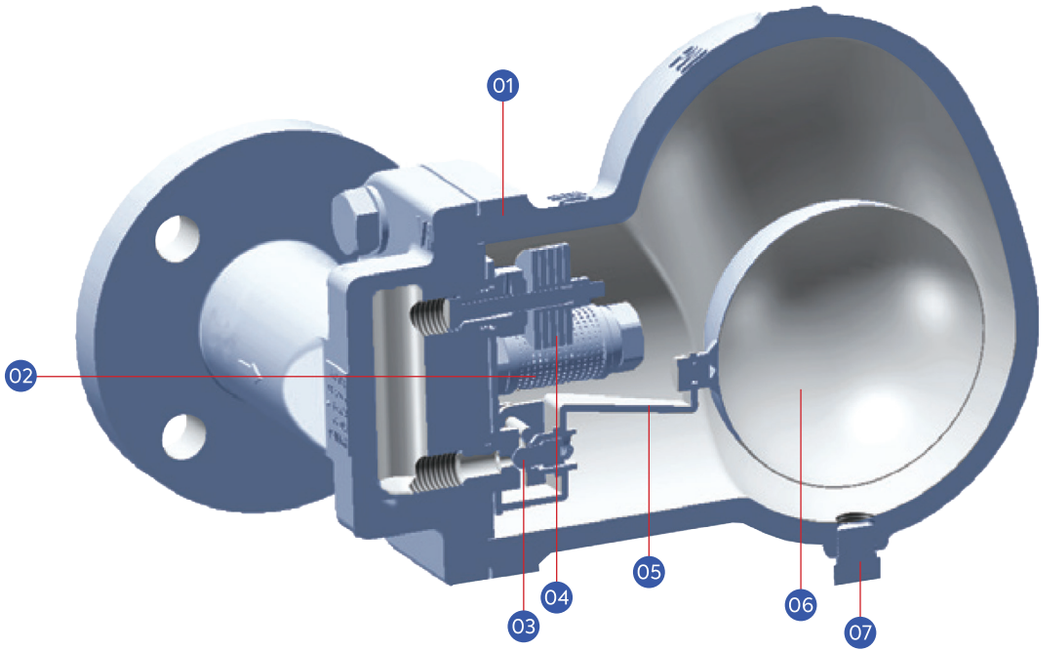
BALL FLOAT STEAM TRAP

Ball float steam traps are known for their high discharge capacity, long service life, excellent energy efficiency, resistance to water hammer, and sleek design. They are commonly used in process heat tracing, jacketed heating kettles, reboilers, and various other equipment.

ValveWerkz steam traps stand out for their unique and well-engineered internal structure, delivering high precision and reliable performance.



1. **High-Strength Corrosion Resistance**
   Constructed with WCB material, the design fully accounts for corrosion allowance, shell wall thickness, and pressure and temperature ratings.

2. **Integrated Filtering Device**
   Effectively blocks pipeline impurities from entering the valve, ensuring reliable trap operation.

3. **Precision Closing System**
   Micron-level valve seat and core deliver high sealing reliability, preventing steam leakage.

4. **Optimised Exhaust Valve**
   The air exhaust valve prevents blockage from non-condensable gases (e.g. air) during startup or normal operation.

5. **Engineered Float Assembly**
   Precisely calculated floating ball design enables consistent closure under water seal conditions without steam loss.

6. **Stainless Steel Float**
   The laser-welded stainless steel float offers exceptional durability and a long service life.

7. **Dedicated Sewage Outlet**
   Reserved outlet design allows for effective discharge of accumulated residue.

Ball Float Steam Trap

Structural Features

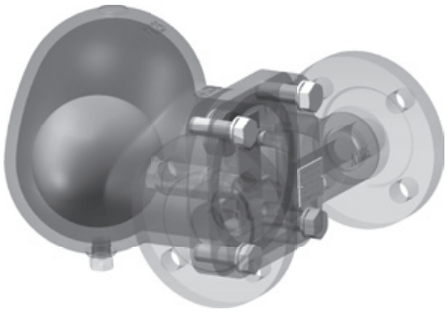
ValveWerkz incorporates a flexible closing system into its ball float steam trap, addressing common issues such as short service life and poor sealing. The design thoughtfully considers key factors including:

- Shell strength
- Pressure and temperature ratings
- Casting processability
- Fluid flow paths
- Water and steam mixing ibarct
- Auxiliary water seal closure
- Gasket performance in low-temperature environments

The ball float steam trap operates based on the density difference between steam and condensate. When the valve body fills with condensate and non-condensable gases, the air exhaust valve opens to release the gas. As condensate is drained, the float ball rises, lifting the valve core to open the trap. Once drainage is complete, the float lowers and closes the valve.

The primary advantages of the ball float steam trap include:

- High back pressure tolerance (capable of operating with pressure differences as low as 0.01 bar)
- Long service life
- Reliable performance
- Easy maintenance
- Zero steam leakage during normal operation



Material and Performance Specifications

The ball float steam trap is manufactured from ASTM A216 WCB cast steel, with parts of the valve cover made from ASTM A105. The internals are constructed from stainless steel and include a built-in filter.

Nominal pressure: PN25
Maximum allowable temperature: 425°C
Maximum working pressure: 16 Bar
Maximum working temperature: 400°C
Connection type: Threaded RC or flange (GB/T 9115.1-2000; HG/T20515-2009; HG/T20592-2009, etc.)

Selection and Installation

The ball float steam trap provides continuous drainage. It operates with a subcooling level of approximately 5°C and supports a back pressure ratio above 95% (back-end pipeline pressure to steam pressure). This makes it ideal for pipelines and Compact equipment where condensate removal and back pressure recovery are required.

When selecting a model, it's recommended to apply:

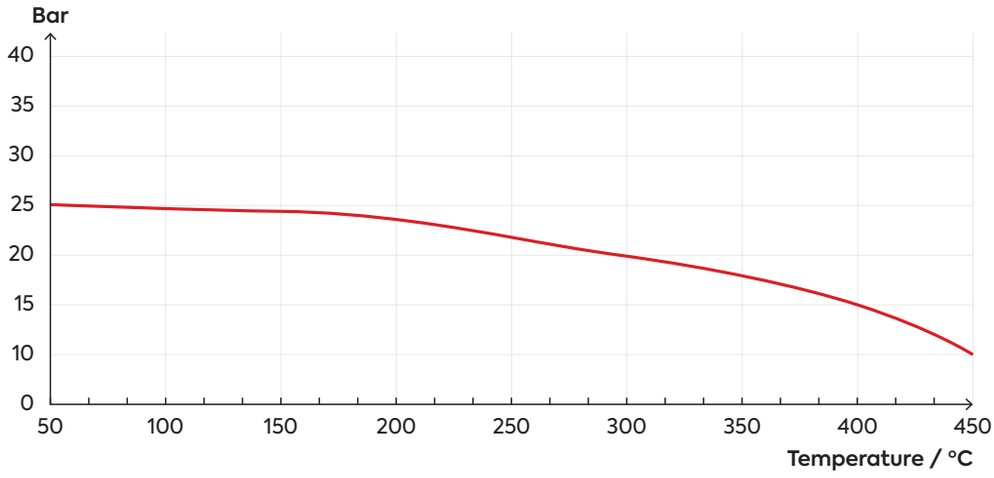
- A safety factor of 2 - 3 times for standard applications
- A safety factor of 5 - 8 times for air separation units and drying cylinders

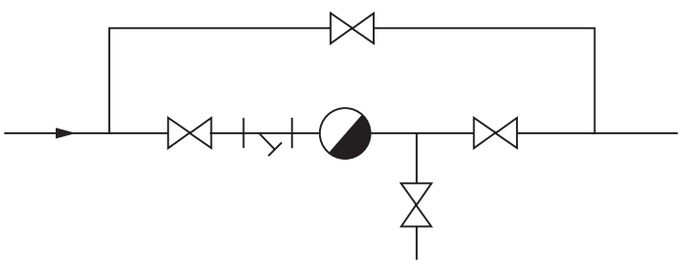
The volume of condensate and the pressure differential in the steam system are key indicators when choosing the correct trap type. For the same model, displacement increases as pressure difference rises, it is important to refer to the displacement curve for accurate selection.

Special Reminder

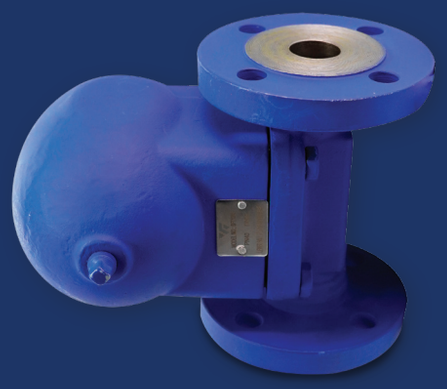
Do not confuse high displacement with a trap intended for large-diameter piping. Displacement does not equate to physical size.

Valve Body Pressure – Rating Temperature (25 Bar; WCB)





The bimetal steam trap can be installed at any point along the pipeline or within equipment. The diagram above illustrates the standard configuration for proper installation.



ST60 Series

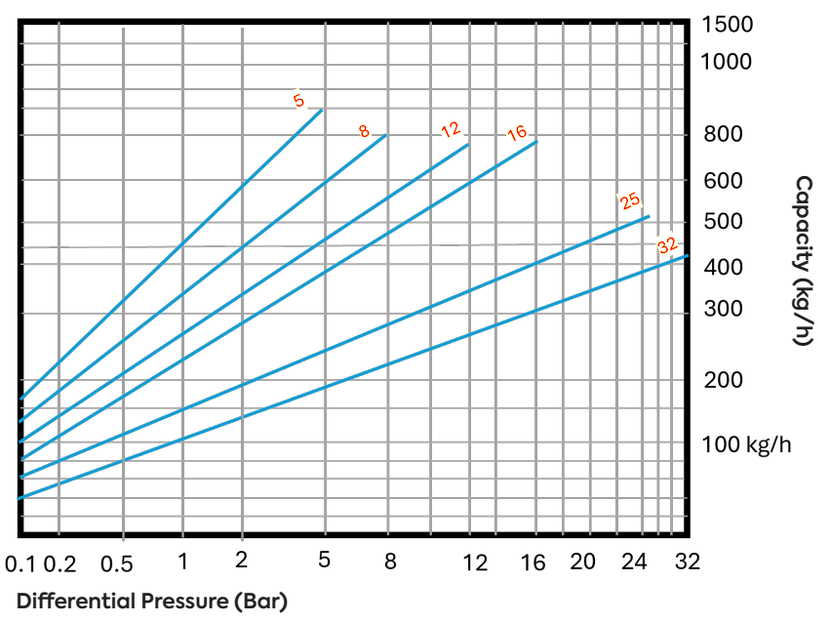
Ball Float Steam Trap

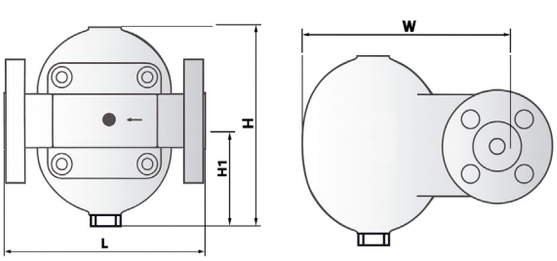
Carbon Steel SS304
SS304
Threaded End Socket Weld End Flanged End
DN15 (½") to DN80 (3")
Max Discharge = 150 T/hr
PN25 - PN100
Max W.P = 16 - 100 Bar

ST60.1 | Max Capacity = 900 kg/h

Technical Parameters	
Nominal pressure	PN40
Max. allowable pressure (Shell)	39.2 Bar / 200°C
Max. allowable temperature (Shell)	450°C / 16.6 Bar
Factory steam action test	>3 times / 16 Bar
Max. operating pressure	32 Bar
Max. operating temperature	350°C
Factory cold test pressure	60 Bar
Air test	20 Bar

Displacement Curve





Part Name	Material
Bonnet	A105 / F304 / F316
Body	WCB / CF8 / CF8M
Seat	420
Disc	440C
Other Internal Parts	304

Data Size Table

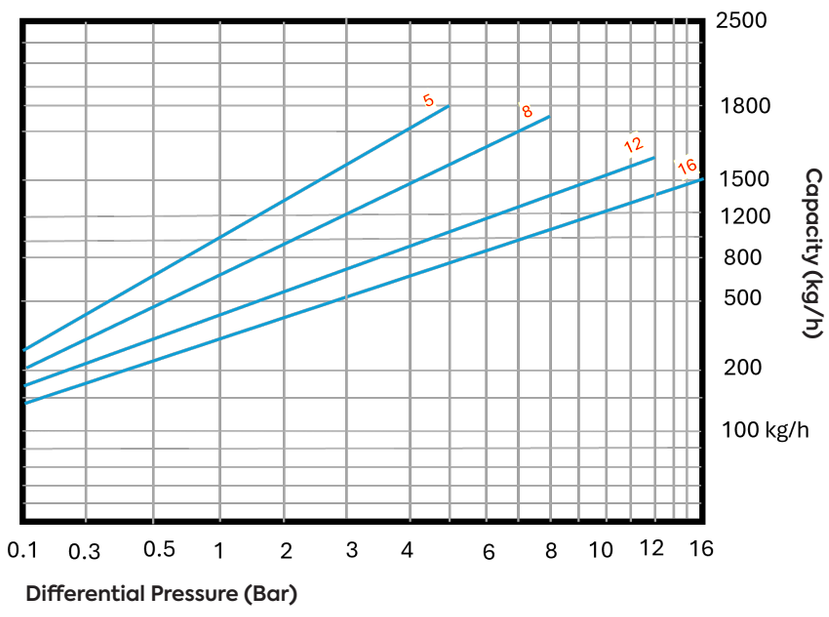
Connection	Size	L(mm)	H (mm)	H1 (mm)	W (mm)	Weight(kg)
Threaded	DN15 - 20 DN25	120 145	154 154	82 82	155 155	5.0 5.7
Butt Weld / Socket Weld	DN15 - 20 DN25	120 145	154 154	82 82	155 155	5.0 5.7
Flanged	DN15 - 20 DN25	150 160	154 154	82 82	155 155	7.0 8.1

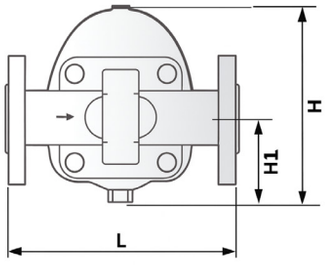
ST60.2 | Max Capacity = 1800 kg/h

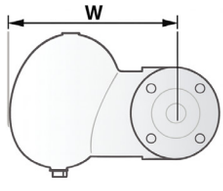
Technical Parameters	
Nominal pressure	PN25
Max. allowable pressure (Shell)	24.5 Bar / 200°C
Max. allowable temperature (Shell)	450°C / 10.3 Bar
Factory steam action test	>3 times / 16 Bar

Technical Parameters	
Max. operating pressure	16 Bar
Max. operating temperature	350°C
Factory cold test pressure	38 Bar
Air test	20 Bar

Displacement Curve







Part Name	Material
Bonnet	A105 / F304 / F316
Body	WCB / CF8 / CF8M
Seat	420
Disc	440C
Other Internal Parts	304

Data Size Table

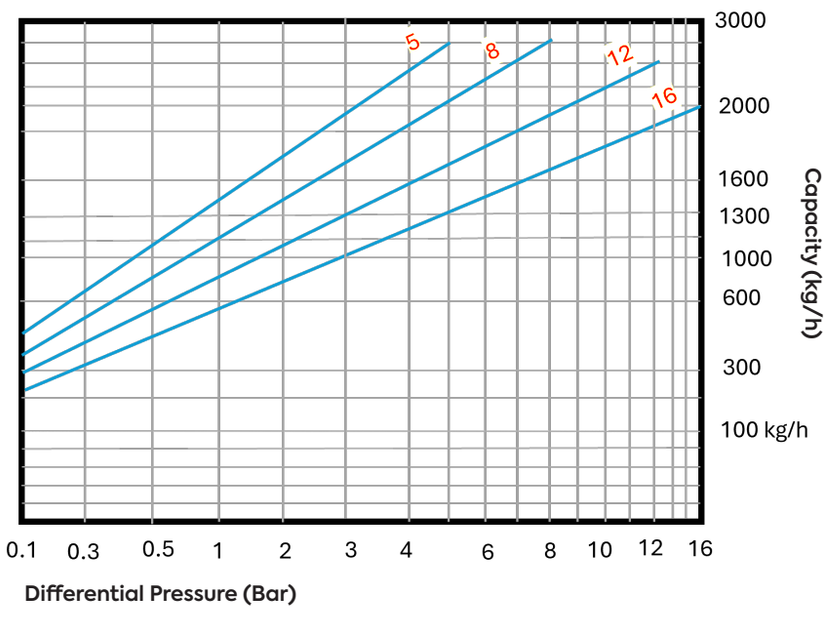
Connection	Size	L(mm)	H(mm)	H1(mm)	W(mm)	Weight(kg)
Threaded	DN15- 25	150	180	75	183	8.5
Butt Weld / Socket Weld	DN15 - 25	150	180	75	183	8.5
Flanged	DN15 - 25	210	180	75	183	11

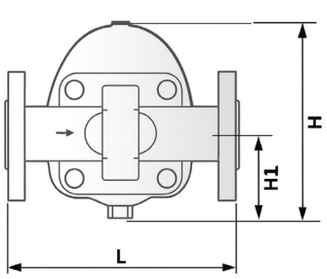
ST60.3 | Max Capacity = 2750 kg/h

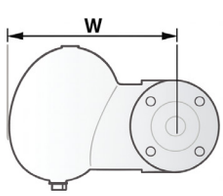
Technical Parameters	
Nominal pressure	PN25
Max. allowable pressure (Shell)	24.5 Bar / 200°C
Max. allowable temperature (Shell)	450°C / 10.3 Bar
Factory steam action test	>3 times / 16 Bar

Technical Parameters	
Max. operating pressure	16 Bar
Max. operating temperature	350°C
Factory cold test pressure	38 Bar
Air test	20 Bar

Displacement Curve







Part Name	Material
Bonnet	A105 / F304 / F316
Body	WCB / CF8 / CF8M
Seat	420
Disc	440C
Other Internal Parts	304

Data Size Table

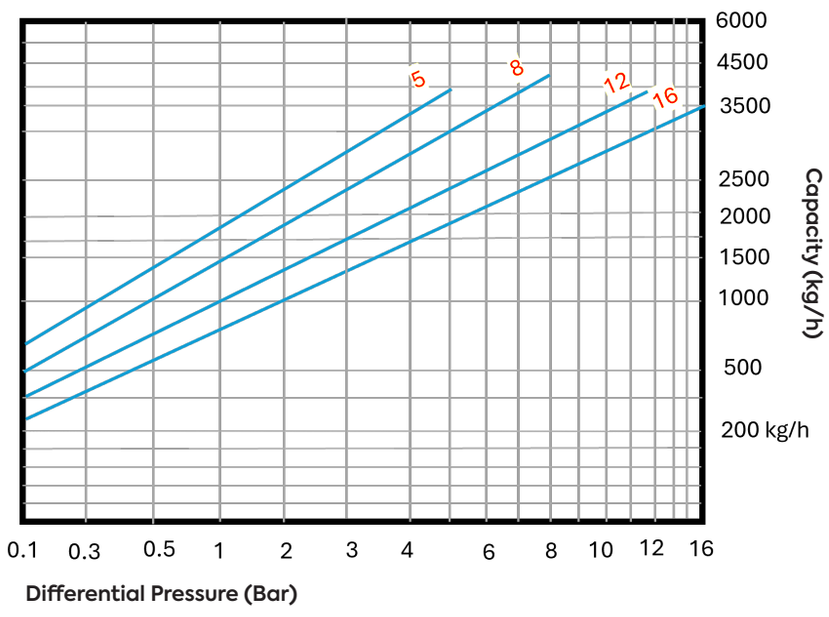
Connection	Size	L (mm)	H(mm)	H1(mm)	W(mm)	Weight(kg)
Threaded	DN25 - 32	170	210	90	235	12
Butt Weld / Socket Weld	DN25 - 32	170	210	90	235	12
Flanged	DN25 - 50	230	210	90	235	16.5

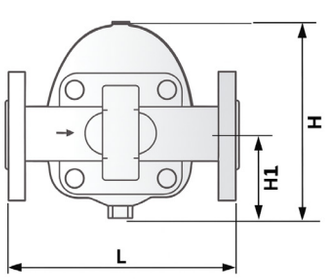
ST60.4 | Max Capacity = 4200 kg/h

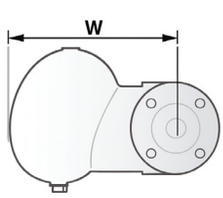
Technical Parameters	
Nominal pressure	PN25
Max. allowable pressure (Shell)	24.5 Bar / 200°C
Max. allowable temperature (Shell)	450°C / 10.3 Bar
Factory steam action test	>3 times / 16 Bar

Technical Parameters	
Max. operating pressure	16 Bar
Max. operating temperature	350°C
Factory cold test pressure	38 Bar
Air test	20 Bar

Displacement Curve







Part Name	Material
Bonnet	A105 / F304 / F316
Body	WCB / CF8 / CF8M
Seat	420
Disc	440C
Other Internal Parts	304

Data Size Table

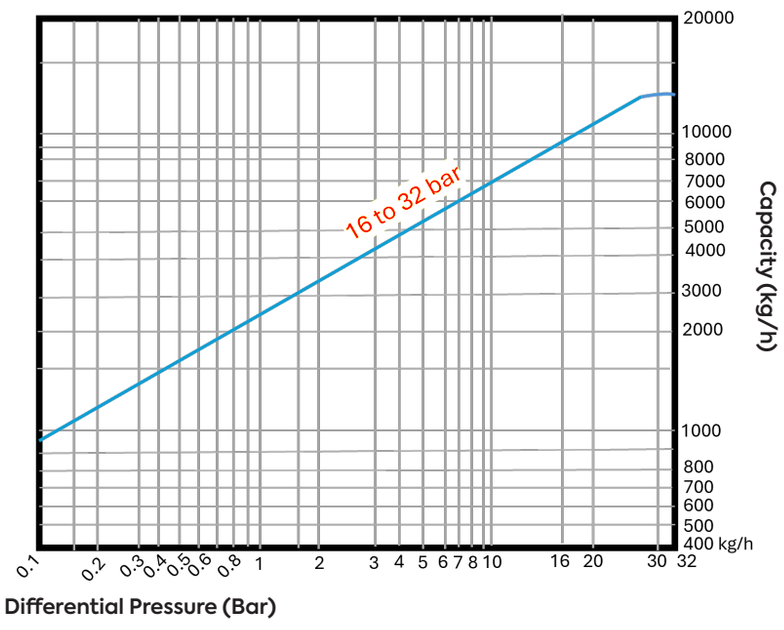
Connection	Size	L(mm)	H(mm)	H1(mm)	W(mm)	Weight(kg)
Threaded	DN25 - 32	210	260	115	285	20
Butt Weld / Socket Weld	DN25 - 32	210	260	115	285	20
Flanged	DN25 - 50	270	260	115	285	26

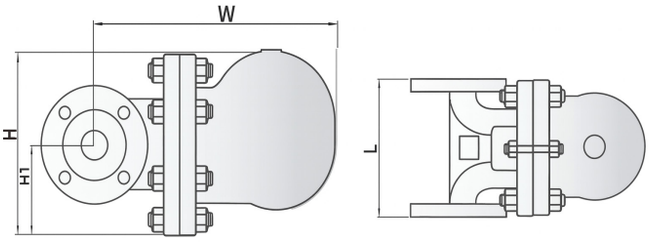
ST60.5 | Max Capacity = 12500 kg/h

Technical Parameters	
Nominal pressure	PN40
Max. allowable pressure (Shell)	39.2 Bar / 200°C
Max. allowable temperature (Shell)	450°C / 16.6 Bar
Factory steam action test	>3 times / 16 Bar

Technical Parameters	
Max. operating pressure	32 Bar
Max. operating temperature	350°C
Factory cold test pressure	60 Bar
Air test	20 Bar

Displacement Curve





Part Name	Material
Bonnet	WCB
Body	WCB
Seat	420
Disc	420
Other Internal Parts	304

Data Size Table

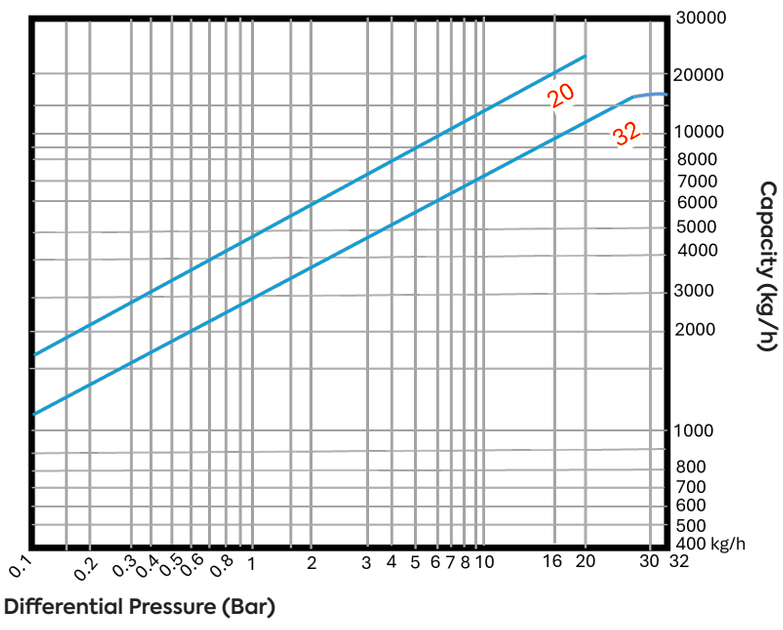
Connection	Size	L(mm)	H(mm)	H1(mm)	W(mm)	Weight(kg)
Flanged	DN32	230	265	122	340	27
	DN40	230	265	122	340	27.5

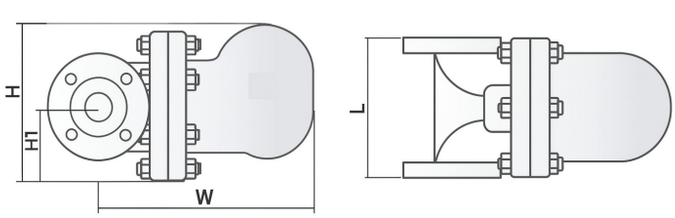
ST60.6 | Max Capacity = 23000 kg/h

Technical Parameters	
Nominal pressure	PN40
Max. allowable pressure (Shell)	39.2 Bar / 200°C
Max. allowable temperature (Shell)	450°C / 16.6 Bar
Factory steam action test	>3 times / 16 Bar

Technical Parameters	
Max. operating pressure	32 Bar
Max. operating temperature	350°C
Factory cold test pressure	60 Bar
Air test	20 Bar

Displacement Curve





Part Name	Material
Bonnet	WCB
Body	WCB
Seat	420
Disc	420
Other Internal Parts	304

Data Size Table

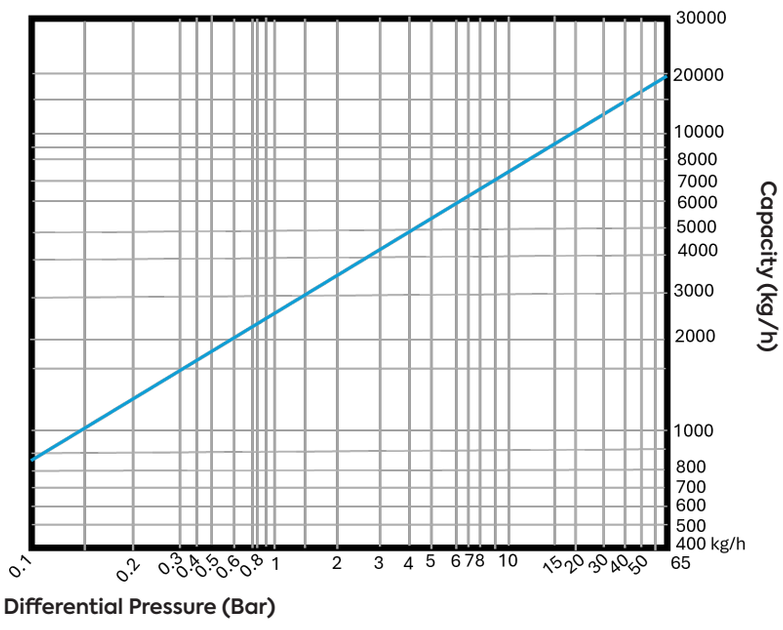
Connection	Size	L(mm)	H(mm)	H1(mm)	W(mm)	Weight(kg)
Flanged	DN32	230	266	125	360	31
	DN40	230	266	125	360	32
	DN50	230	266	125	360	33

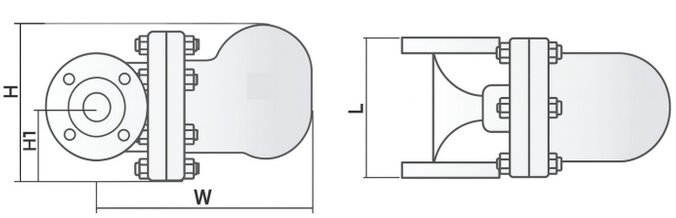
ST60.7 | Max Capacity = 20000 kg/h

Technical Parameters	
Nominal pressure	PN100
Max. allowable pressure (Shell)	98 Bar / 200°C
Max. allowable temperature (Shell)	450°C / 72.9 Bar
Factory steam action test	>3 times / 16 Bar

Technical Parameters	
Max. operating pressure	60 Bar
Max. operating temperature	425°C
Factory cold test pressure	150 Bar
Air test	20 Bar

Displacement Curve





Part Name	Material
Bonnet	WC6
Body	WC6
Seat	420
Disc	420
Other Internal Parts	304

Data Size Table

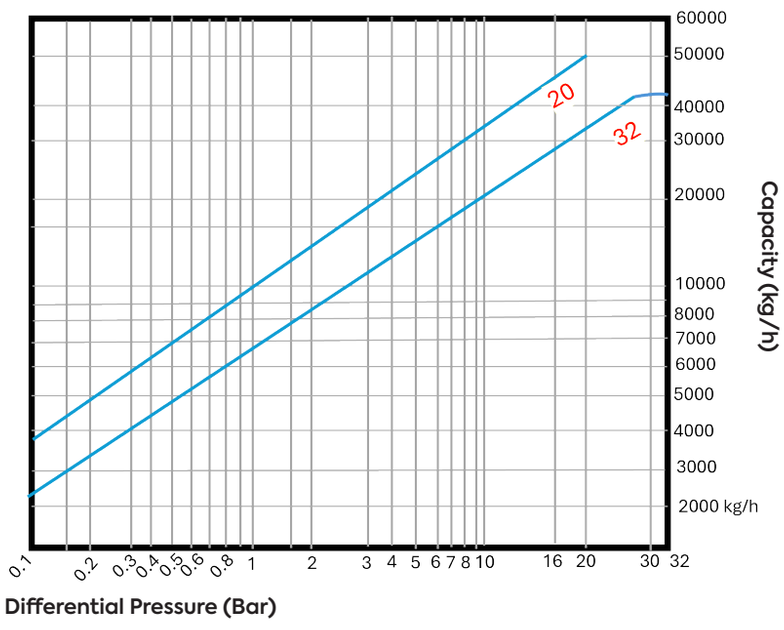
Connection	Size	L(mm)	H(mm)	H1(mm)	W(mm)	Weight(kg)
Flanged	DN50	330	267	114	378	41
	DN65	350	267	114	378	42
	DN80	350	267	114	378	45

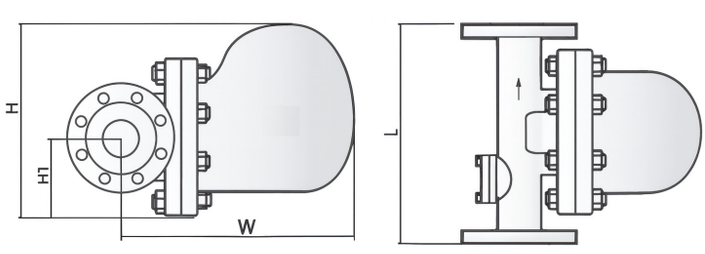
ST60.8 | Max Capacity = 50000 kg/h

Technical Parameters	
Nominal pressure	PN40
Max. allowable pressure (Shell)	39.2 Bar / 200°C
Max. allowable temperature (Shell)	450°C / 16.6 Bar
Factory steam action test	>3 times / 16 Bar

Technical Parameters	
Max. operating pressure	32 Bar
Max. operating temperature	350°C
Factory cold test pressure	60 Bar
Air test	20 Bar

Displacement Curve





Part Name	Material
Bonnet	WCB
Body	WCB
Seat	420
Disc	420
Other Internal Parts	304

Data Size Table

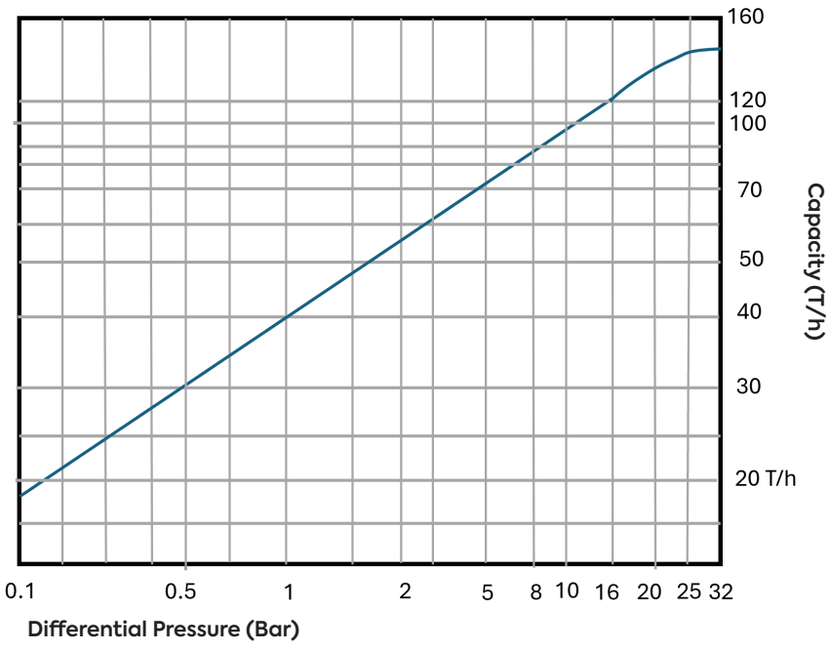
Connection	Size	L(mm)	H(mm)	H1(mm)	W(mm)	Weight(kg)
Flanged	DN50	380	345	135	385	53
	DN65	380	345	135	385	54
	DN80	380	345	135	385	56

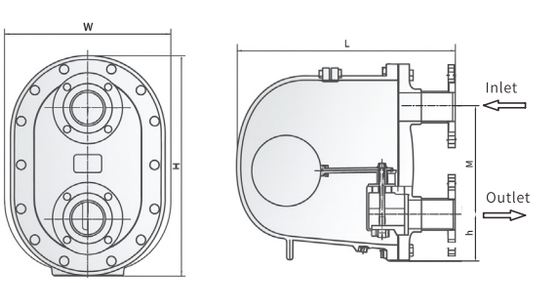
ST60.9 | Max Capacity = 140 T/h

Technical Parameters	
Nominal pressure	PN40
Max. allowable pressure (Shell)	39.2 Bar / 200°C
Max. allowable temperature (Shell)	450°C / 16.6 Bar
Factory steam action test	>3 times / 16 Bar

Technical Parameters	
Max. operating pressure	32 Bar
Max. operating temperature	350°C
Factory cold test pressure	60 Bar
Air test	20 Bar

Displacement Curve





Part Name	Material
Bonnet	WCB
Body	WCB
Seat	420
Disc	420
Other Internal Parts	304

Data Size Table

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

REQUEST FOR QUOTE

STEP 1
Find the model series

STEP 2
Define the specification/ valve code

STEP 3
Fill up ordering sheet (back of the brochure) or Scan the QR code below

STEP 4
Submit your order via our website or contact your local partner

STEP 5
Prepare for confirmation and delivery

*For further assistance with placing your order, please contact your local partner.
A sales engineer will be assigned to assist you.

Valve Coding Sheet
Ball Float Steam Trap

01	—	02	—	03	—	04	—	05	—	06
		A								

Body Material

Code	Material
C1	WCB
S1	SS304
S2	SS316

Internal Parts

Code	Material
A	SS304

Rating

Code	Rating
A	PN16
B	PN25
C	PN40
D	PN100

Size

Code	Size
A	½″
B	¾″
C	1″
D	1 ¼″
E	1 ½″
F	2″
G	2 ½″
H	3″
I	4″
J	6″

Connection

Code	Material
B	BSPT - Tappered
N	NPT
S	Socket Weld
F	Flanged End

Orifice

Code	Type
1	5 BAR
2	8 BAR
3	12 BAR
4	16 BAR
5	20 BAR
6	32 BAR

Your Valve Ordering Code:

ST60	—	01	02	03	04	05	06
			A				

Example:

ST60 Series - C1AAAB1.
WCB Body Material. SS304 Internal Parts. Pressure Rating of PN 16, ½ inch size. Connection Type of BSPT – Tappered. Orifice 5 BAR.

*For special material or customisation, please refer to our sales engineer.

SCAN FOR ONLINE ORDERING FORM

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