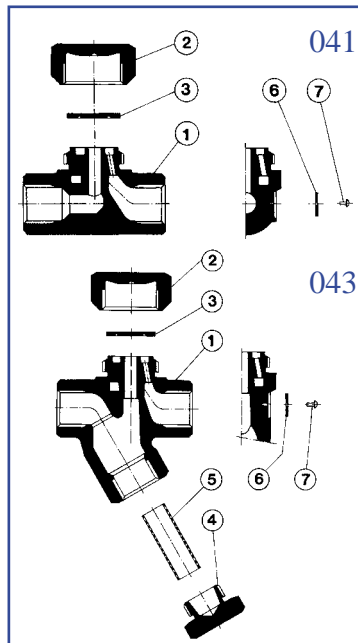


Model 041



Model 043



- For the extraction of steam condensates.
- For use in: steam piping, irons, laundries, tanks and vessels with condensate discharge, multiple plate presses, vulcanizing auto-claves, pressure reduction equipment, etc.

Specifications:

- Materials carefully selected for resistance to wear, extreme temperatures and corrosion. They can be fully recycled.
- Without joints.
- Simplicity of construction. One single moveable piece ensures minimum maintenance.
- Easy installation with possibility to be mounted in any position.
- Compact and robust. Reduced weight and size which facilitates storage.
- Internal design of the body is conceived to provide the capacities required in each case without over sizing.
- Characteristiques plate which enables identification of the working conditions and direction of flow.
- Discontinuous and intermittent discharge.
- Precision opening and closing, avoiding loss of steam.
- Silent, although allows acoustic verification of working.
- Remain unaffected by vibrations, water hammer, reheated steam, corrosive condensate, frosts, etc.
- Protective strainer for the closing surfaces with access cap for cleaning. (Mod. 043).
- Sealing surfaces treated and balanced, making them extremely tightness, even exceeding DIN-3230 requirements. Page 3.
- All steam traps undergo thorough testing.
- Each component is numbered, registered and inspected. If previously requested, the steam trap will be accompanied by certificates corresponding to materials, batch, test and performance.

IMPORTANT:

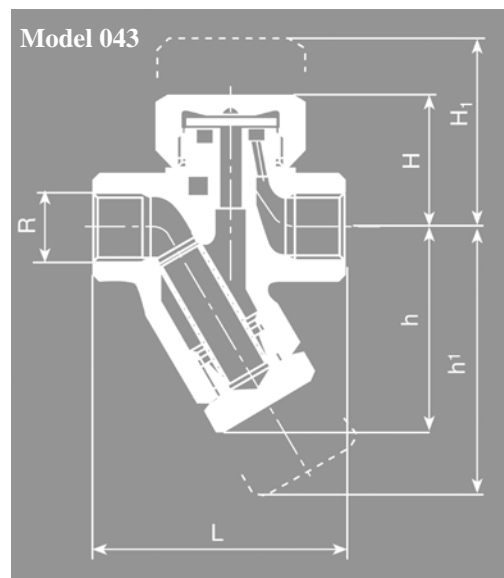
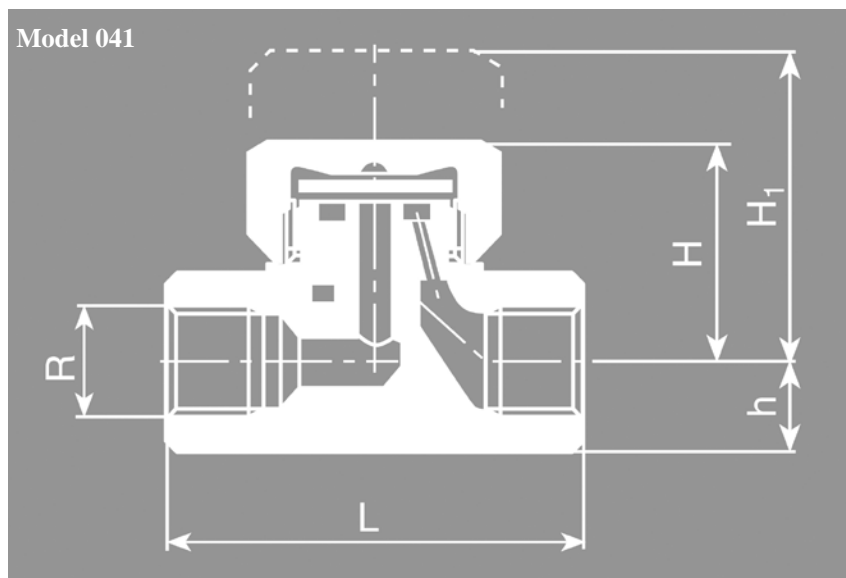
Depending on demand:

- May be manufactured using other materials for specific working conditions (high temperatures, fluids, etc.).
- Other connections.
- Isolation covers to avoid losses through radiation caused mainly by bad weather.

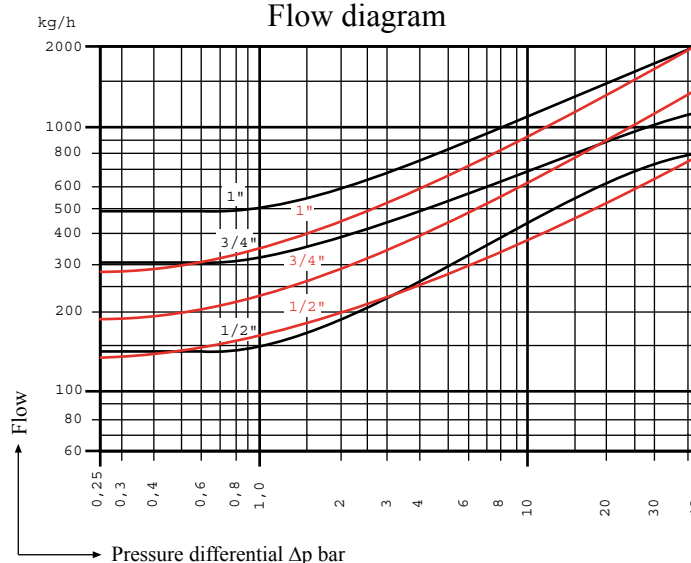
No.	Piece	Material
1	Body (Mod. 041)	Stainless steel (DIN-1.4021) (AISI-420)
1	Body (Mod. 043)	Stainless steel (DIN-1.4027) (ASTM A743CA40F)
2	Cover	Stainless steel (DIN-1.4305) (AISI-303)
3	Sealing disc	Stainless steel (DIN-1.4021) (AISI-420)
4	Cap	Stainless steel (DIN-1.4305) (AISI-303)
5	Strainer	Stainless steel (DIN-1.4301) (AISI-304)
6	Plate	Aluminium
7	Rivets	Carbon steel (DIN-1.1141 Ck-15)
R		1/2" to 1" (GAS, NPT or SW)
Operating conditions	Max. permissible pressure	PMA. 63 bar
	Max. working pressure	PMS. 42 bar
	Min. working pressure	PmS. 0,25 bar
	Max. permissible temp.	TMA. 400 °C
	Permissible back pressure	Until 80% inlet pressure

Model		041			043		
R1		1/2"	3/4"	1"	1/2"	3/4"	1"
Connections		Whitworth gas tight cylindrical female thread ISO 228/1 1978 (DIN-259)					
		NPT thread ANSI-B2.1					
		Socket welding ends SW ANSI-B16.11					
H		40,0	43,5	51,5	40,5	43,5	51,5
H1		55,0	58,5	70,5	55,5	58,5	70,5
h		16,0	19,0	22,5	64,0	67,5	70,0
h1		-	-	-	75,0	78,5	81,0
L		70,0	80,0	90,0	78,0	90,0	95,0
Weight (kg)		0,67	0,82	1,33	0,93	1,12	1,59
Code 2108-	GAS	041.9022	041.9342	041.9102	043.9022	043.9342	043.9102
	NPT	041.90221	041.93421	041.91021	043.90221	043.93421	043.91021
	SW (1)	041.90222	041.93422	041.91022	043.90222	043.93422	043.91022

(1) Previous consult with our technical department.



Flow diagram

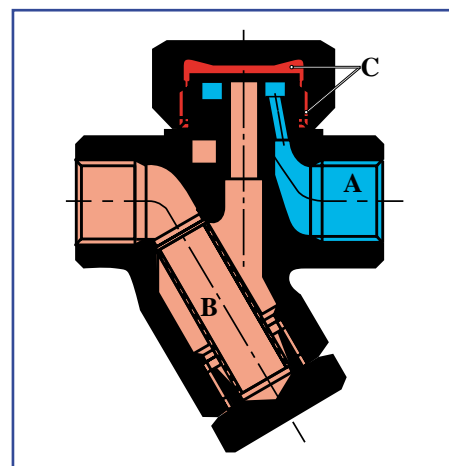
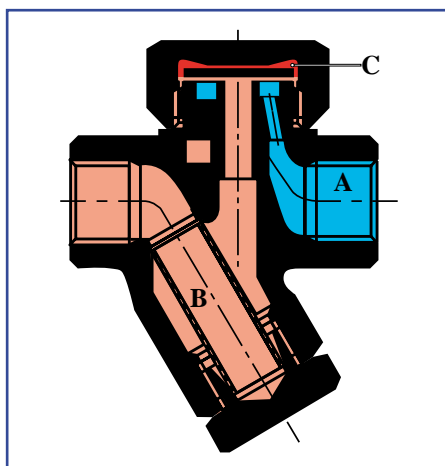
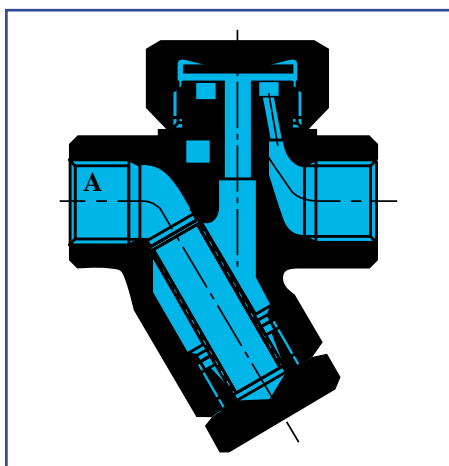


— Model 041
— Model 043

- A** Condensate and air.
- B** Low pressure steam.
- C** High pressure steam.

Operation:

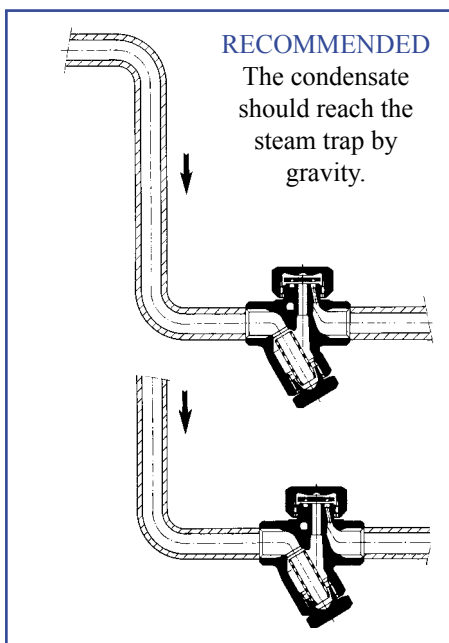
The operation of a thermodynamic steam trap is based on the Bernoulli principle: "In a fluid in motion, the sum of the static and dynamic pressures remains constant at all points, such that an increase in one results in a decrease in the other".



The input pressure acts on the sealing disc which allows the immediate discharge of the condensate and air at the temperature of the steam.

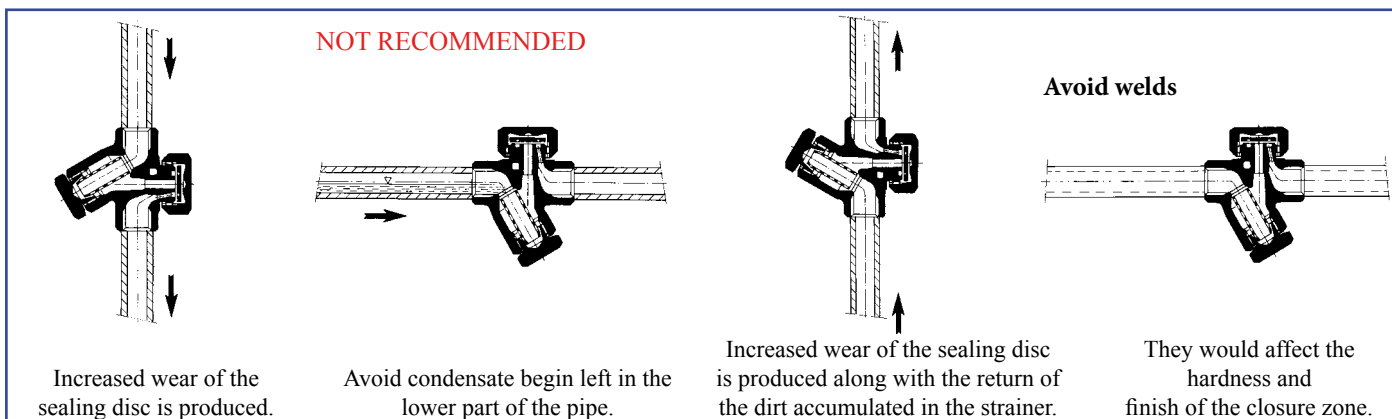
Subsequently the steam enters the steam trap. The high speed produced by the expansion of the steam creates a zone of low pressure in the inverse side of the sealing disc. The flow is deviated to the reverse of the sealing disc and creates a zone of high pressure by recompression. The sealing disc begins to descend.

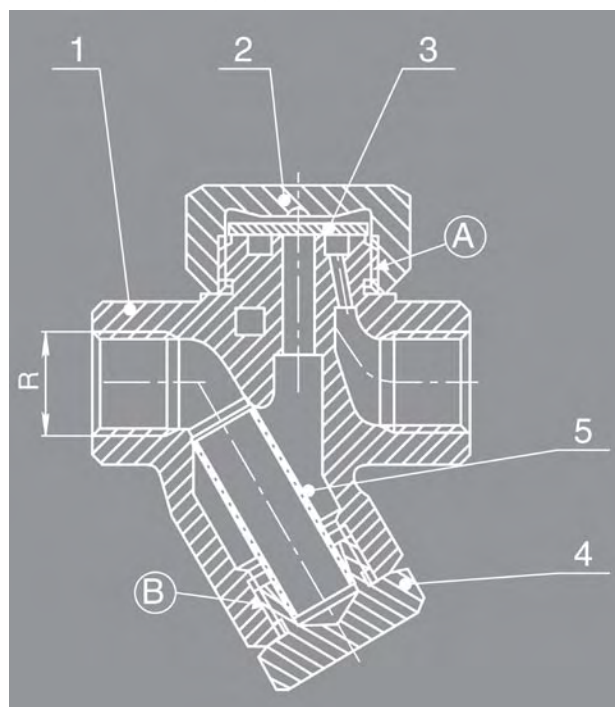
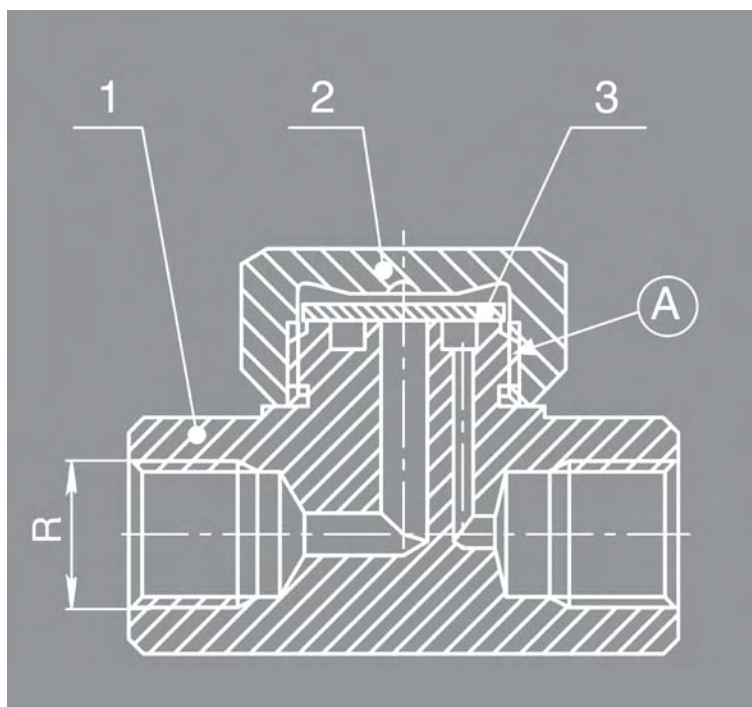
When the high pressure acts on the whole surface of the sealing disc it exerts a force greater than the input pressure. The steam trap closes. The subsequent presence of condensate on the input causes the cycle to be repeated.



Installation:

- Verify that the fluid circulates in the direction indicated by the arrow on the characteristics plate.
- Avoid excessive losses of load on the input, and counterpressures on the output by generously sizing the piping. The conductors should have at least the same internal diameter as the steam trap.
- In model 041, it is essential to locate an additional strainer before the steam trap.
- If a sight glass is installed after the steam trap leave about 50 cm between them.
- Each consumption point should have its own steam trap. A common steam trap will give rise to problems.
- The discharge of the steam trap to a condensate tank requires:
 1. A tank with a larger diameter than the steam trap or the sum of the nominal cross sections of the steam trap connected to it.
 2. The steam trap that operate at different pressures must discharge to different tanks.
 3. The input of condensate to the tank must be done through its upper side.





Start-up:

- 1- On start up avoid air reaching the steam trap at high speed as it could block it.
- 2- The steam trap will remain open if the compression exceeds 80% of the input pressure.

Assembly and disassembly:

- 1- Unscrew cover (2).
- 2- Take out the sealing disc (3).
- 3- Unscrew the cap (4).
- 4- Extract the strainer (5).
- 5- Locate the sealing disc (3), with the slots facing the seating in the body (1).
- 6- Put on the cover (2) after greasing the screw threads A and B with molybdenum bisulphate or other lubricant which is resistant to high temperatures. Tighten up to the recommended torque.
- 7- Clean the strainer thoroughly (5) and insert into the body (1).
- 8- Screw on the cap (4) greasing the screw threads as in point 6.

Torques for room temperature 20 °C

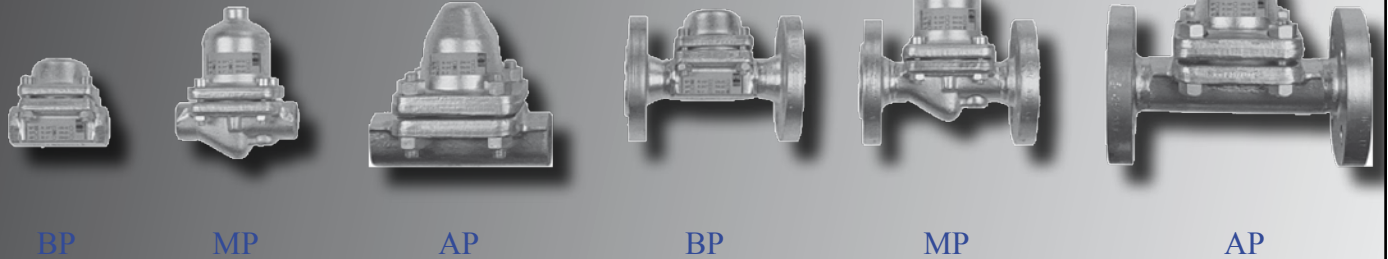
No. piece	Piece	R	Nm
2	Cover	1/2" and 3/4"	100
2	Cover	1"	150
4	Cap	1/2" to 1"	100

Maintenance:

- Before carrying out any maintenance work: Depressurize the steam trap and the input pipe.
- The strainer (5) should be cleaned regularly.
- The sealing disc (3) and the body seat (1) can be rectified and lapped as long as the quantity of material removed, with respect to the original thickness, does not exceed 0.25 mm.
- The sealing disc (3) is rectified and lapped on both sides. The slotted side must be facing the body in order that, through the turbulence generated, a delay in the closure of the steam trap is achieved meaning that the discharge of the condensate is at a temperature close to that of the steam.

Model 143 threaded

Model 144 flanged



- For the extraction of steam condensates.
- Applicable in: steam piping, heat exchangers,... the chemical and petrochemical industries,... etc.

Specifications:

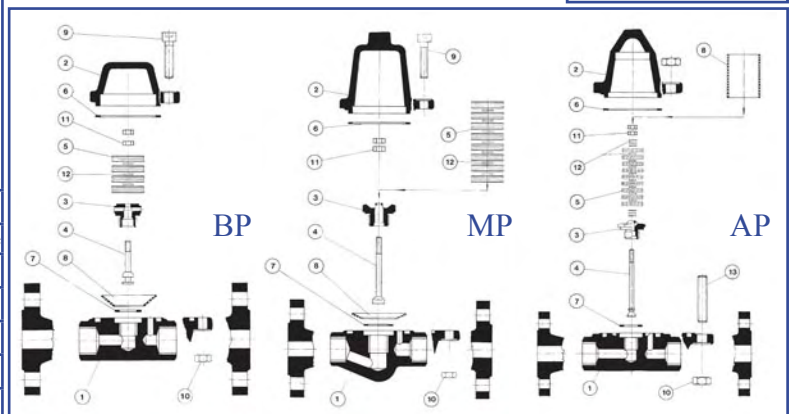
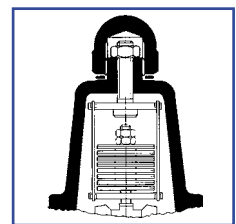
- Materials carefully selected for resistance to wear, extreme temperatures and corrosion.
- Simplicity of construction. A single moveable piece together with a bimetallic strip, highly resistant to corrosion to ensure minimum maintenance.
- Easy installation, can be mounted in any position, although we recommend horizontal mounting.
- Compact and robust. Reduced weight and size which facilitates storage.
- Internal design of the body is conceived to provide the capacities required in each case without over sizing.
- Great discharge capacity.
- The purger also acts as a deaerator and check valve.
- Precision opening and closing, avoiding loss of steam.
- Silent.
- Inseparable bimetallic strip, made from a single piece, with sides of different expansion mean a high degree of sensitivity of operation.
- Are unaffected by vibrations, water hammer, reheated steam, corrosive condensate, frosts, etc.
- Large surface area filter to protect closure areas.
- Sealing surfaces treated and balanced, making them extremely tightness, even exceeding DIN-3230 requirements. Page 3.
- All steam traps undergo thorough testing.
- All components are numbered, registered and checked. If requested in advance, material, casting, test and efficiency certificates will be enclosed with the steam trap.

IMPORTANT:

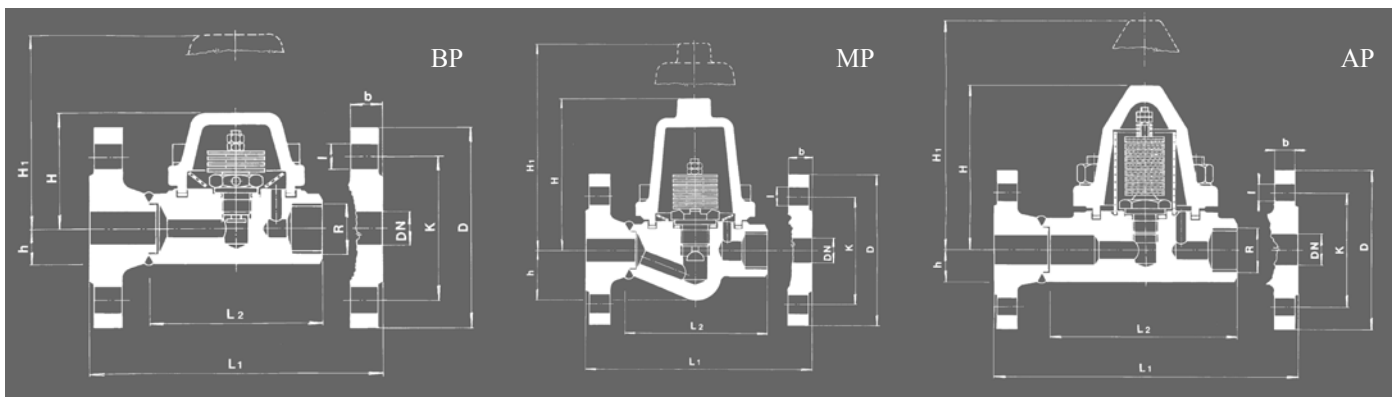
Depending demand:

- Other connections:
 - Thread NPT ANSI-B2.1.
 - BW or SW ANSI-B 16.11.
 - ASA ANSI-150, 300 or 600 Lbs. flanges.
- Model BP and MP with external on-line adjustment mechanism.

No.	Piece	Material		
		Carbon steel		
1	Body	Carbon steel (DIN-1.0460 C22.8) (1)		
2	Cover	Carbon steel (DIN-1.0460 C22.8) (1)		
3	Seating	Stainless steel (DIN-1.4305) (AISI-303)		
4	Plug	Stainless steel (DIN-1.4112) (AISI-440 B)		
5	Bimetall	RGR		
6	Joint	Graphite		
7	Joint	Copper		
8	Filter	Stainless steel (DIN-1.4301) (AISI-304)		
9	Screw	Carbon steel (DIN-1.1191 Ck-45)		
10	Nut	Carbon steel (DIN-1.1141 Ck-15)		
11	Nut	Stainless steel (DIN-1.4305) (AISI-303)		
12	Washer	Stainless steel (DIN-1.4305) (AISI-303)		
13	Stud	Carbon steel (DIN-1.1191 Ck-45)		
Type		BP	MP	AP
		Low pressure	Medium press.	High pressure
R		1/2" and 3/4"	1/2" and 3/4"	1/2" to 1"
DN		15 to 25	15 to 25	15 and 25
PN		40	40	100
Max. pressure (bar)		17	23	80
Max. temperature (°C)		400	400	450

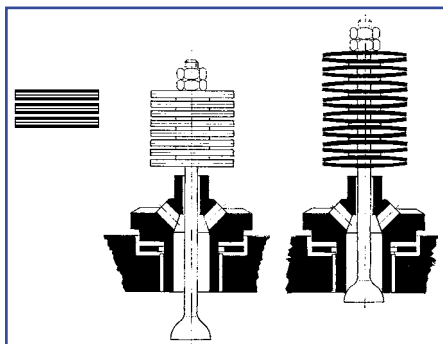
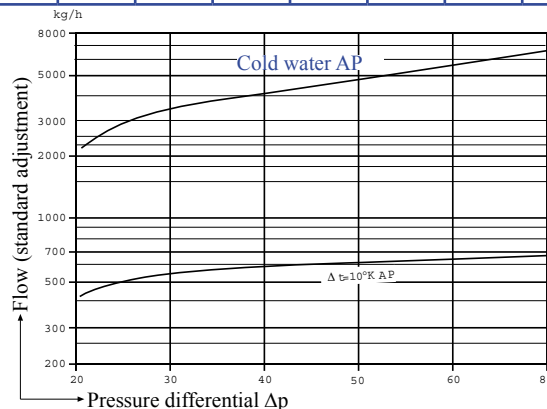
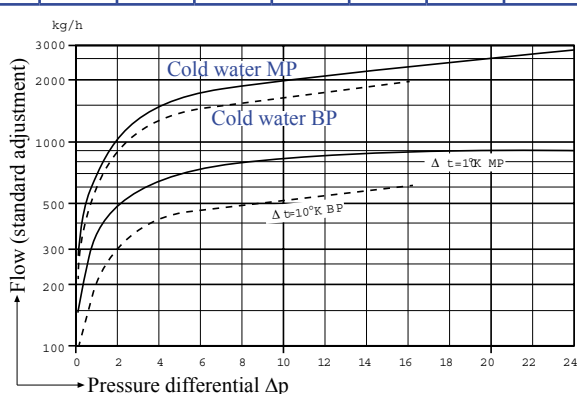


(1) Type AP in Carbon steel (DIN-1.5415 15Mo3).



Type	Low pressure BP					Medium pressure MP					High pressure AP				
	R	1/2"	3/4"	-	-	-	1/2"	3/4"	-	-	-	1/2"	3/4"	1"	-
Connection	Whitworth gas-tight cylindrical female thread ISO 228/1 1978 (DIN-259)														
DN	-	-	15	20	25	-	-	15	20	25	-	-	-	15	25
Connection	Flange PN-40 DIN-2544/2545										Flange PN-100 DIN-2547/2548				
H	56	56	56	56	56	115	115	115	115	115	120	120	120	120	120
H1	91	91	91	91	91	165	165	165	165	165	210	210	210	210	210
h	24,0	24,0	-	-	-	26,0	26,0	-	-	-	25,0	25,0	25,0	-	-
L1	-	-	150	150	160	-	-	150	150	160	-	-	-	230	230
L2	90	90	-	-	-	110	110	-	-	-	160	160	160	-	-
D	-	-	95	105	115	-	-	95	105	115	-	-	-	105	140
K	-	-	65	75	85	-	-	65	75	85	-	-	-	75	100
I	-	-	14	14	14	-	-	14	14	14	-	-	-	14	18
b	-	-	16	18	18	-	-	16	18	18	-	-	-	20	24
No. DRILLS	-	-	4	4	4	-	-	4	4	4	-	-	-	4	4
Weight (kg)	1,60	1,50	3,00	3,50	4,00	2,60	2,50	4,00	4,50	5,00	6,00	6,00	6,00	9,00	11,00
Code 2108-	143.8024	143.8344	144.8024	144.8344	144.8104	143.80241	143.83441	144.80241	144.83441	144.81041	143.0024	143.0344	143.0104	144.0024	144.0104

Flow diagram:



Operation:

The operating principle of the bimetallic steam trap is based on the combination in a column of double sided bimetallic discs made up of one single bimetallic strip, where each face has a different coefficient of expansion.

The bimetallic strips are piled up in pairs, with the sides having the same coefficient of expansion (side without the marking) placed against each other.

In the presence of cold water the bimetallic strips remain flat. As the temperature increases the discs change shape, becoming convex, and displacing the plug against the seating. The maximum convexity, which coincides with a fully tight shut off is obtained just at the point when the condensate turns to steam.

It is important to remember that the distance between the plug and the seating when cold is that which determines the flow when in service.