

# Steam traps for steam with thermal pilot



# TP

Steam traps

DIN PN 16 - 25 — DN 50 to 100 mm  
ANSI 125 - 150 — 2" to 4"

TP 11, 21

### Application

For drainage and deaeration of any heat exchangers. Specially developed for extremely high flows with low and medium pressures, as for example, in cooks, heaters, evaporators, etc.

### Main characteristics

- Automatic deaeration, initial and continuous;
- It works softly by the hydraulic damping;
- External device of setting for special cases;
- Insensitive to backpressure;
- Perfect and automatic operation in vacuum lines;
- Special thermal pilots for differential pressure below 1 kg/cm<sup>2</sup>.

### Presentation

Straight passage steam trap in flanged shell, composed of body (1), cover (2), simple regulator assembly (ND 2") or double (ND 2.1/2") and external setting device (4).

### Optionals

Stroke indicator (12), manometer or thermometer (connected in the positions A).

### Operation

The opening and closing of the steam trap of steam TP series are commanded by the thermal pilot of monoblock thermo-control (MTC)

these regulators are evaporation thermostats, that open in the presença of air and/or condensate due to these they have a lower temperature in relation to of the saturated steam and close before arrival of the alive steam.

### Measures and weights

Model	TP 11, 21			
Nominal (mm)	50	65	80	100
Diameter (pol)	2"	2.1/2"	3"	4"
Measures (mm)				
L	230	310	310	350
H	204	350	350	363
H <sub>1</sub>	—	180	180	188
H <sub>2</sub>	—	170	170	175
Approx weight kg				
TP 11 (125 lbs)	16	25	27	43
TP 21 (300 lbs)	17	28	31	56

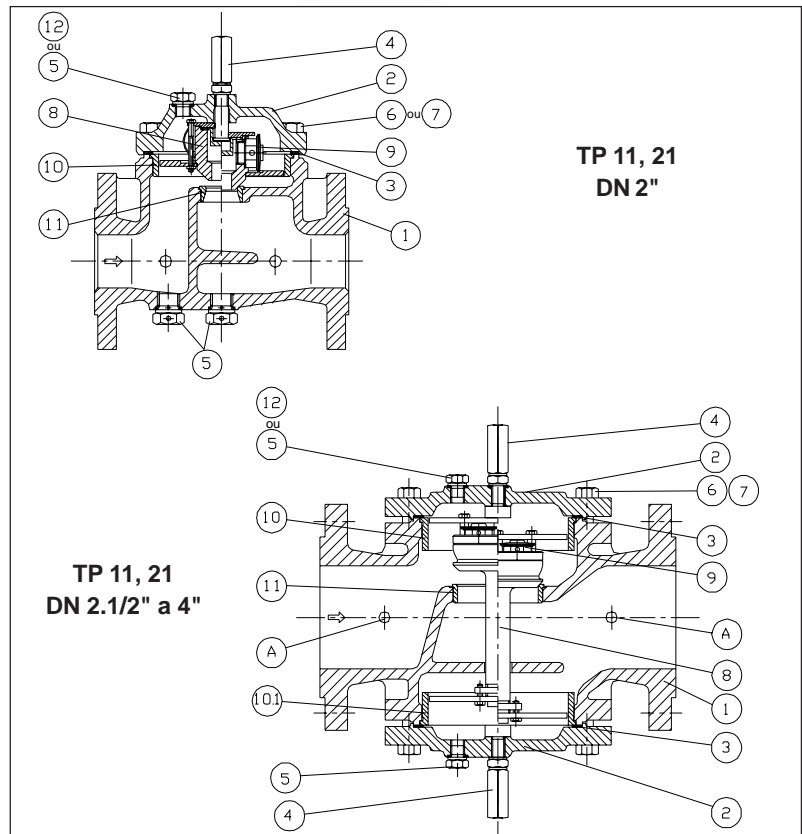
### Components

Nº	Description	TP 11, 21 2"	TP 11, 21 2.1/2" a 4"
1	Body	1	1
2	Upper cover	1	1
2.1	Under cover	-	1
3*	Upper gasket	1	1
3.1*	Under gasket	-	1
4	Upper ext. reg. screw	1	1
4.1	Under ext. reg. screw	-	1
5	Drainage plugs	3	2

\* Recommended spare parts

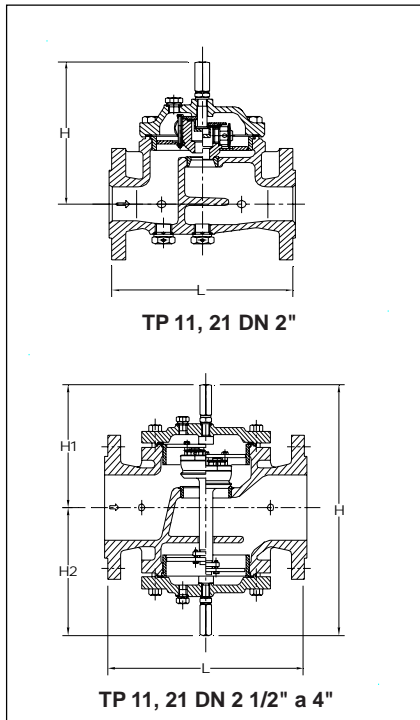
Nº	Descrição	TP 11, 21 2"	TP 11, 21 2.1/2" a 4"
6	Screw	4	8
7	Hexagonal nu	4	8
8	Complete regulator assembly	1	1
9*	Monoblock thermo-control (MTC)	3	4
10	Guide ring	1	1
10.1	Underr guide ring	-	1
11	Seat	1	1
12**	Stroke indicator	1	1

\*\* Optionals on request



### Technical competence, materials and connections

Model	TP 11	TP 21			
Nominal Diameter (mm)	50 65	80 100			
(pol)	2" 2.1/2"	3" 4"			
Maximum service pressure (bar man.)	13	21			
Maximum correspondent temp. (°C)	240	240			
Maximum differential pressure (bar)	10	14			
Materials	Nº	Description		Specification	
	1	Body	ASTM A 126 B	ASTM A 216 WCB	
	2	Cover	ASTM A 126 B	ASTM A 216 WCB	
	3	Gaskets	Hydraulic cardboard		
	4	Ext. regul screw.	AISI 304		
	5	Plugs	SAE 1020		
	6	Screws	DIN 933 Qual. 8.8		
	7	Nuts	DIN 555 Qual. 8		
	8	Comkplete regul. assembly	Aço inoxidável		
9	Monobloc Thermo-control (MTC)	Stainless steel			
Conections	Flange DIN	PN 10/16	PN 10/16 or 25/40		
	Flange ANSI	(B 16.1) 125	(B 16.5) 150 or 300		



**Flow chart**

The chart indicates the maximum flows of cold water and hot condensate according to original setting of factory. These capacities can be influenced by several service conditions, depending on the pressure upstream, that nor always corresponds to the nominal pressure of the boiler and of occasional backpressures established by the condensate discharge, resulting in a variable differential pressure. If there is an elevation of the condensate, don't disdain the backpressure about 1 bar for each 7 m high of elevation.

**Curve 1**

The steam trap can drain this amount of condensate without banking up. The temperature of the condensate is at the most 5°C below the bloiling temperature ( $\Delta t = 5 \text{ }^\circ\text{C}$ ).

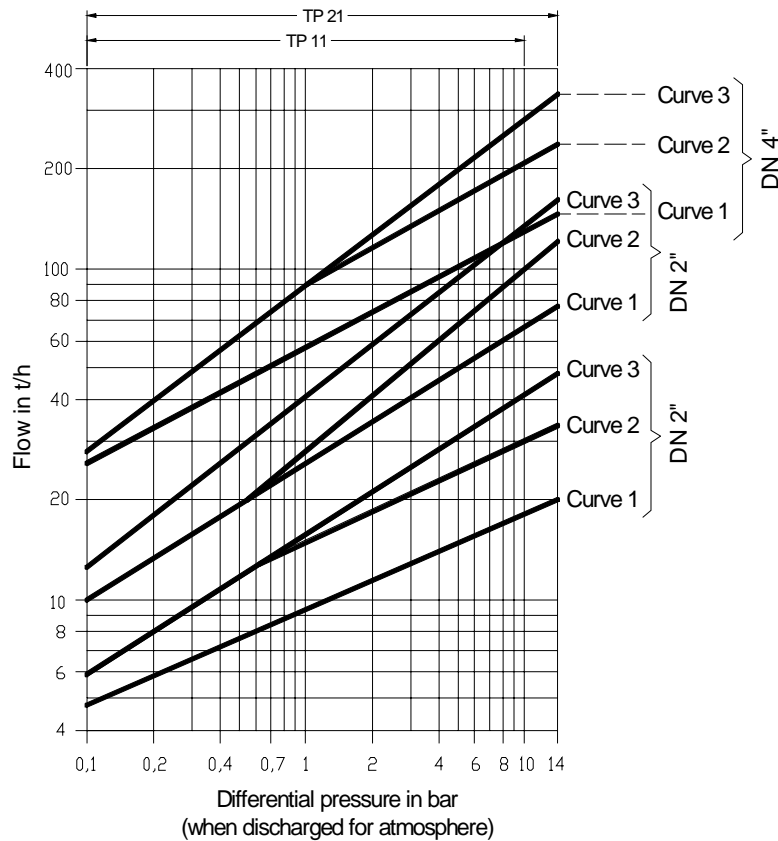
Example (DN 4"):  
 Service pressure 5 bar  
 (DN 4")Backpressure 1 bar  
 Differential pressure 4 bar  
 Flow of the hot condensate ( $\Delta t = 5 \text{ }^\circ\text{C}$ ) 92 t/h

**Curve 2**

It indicates the discharge capacity of the condensate with cooling of 30°C as occur, for example, at the beginning of operation ( $\Delta t = 30 \text{ }^\circ\text{C}$ ).

Example ND 4"):  
 Differential pressure 4 bar  
 Flow of the cold condensate ( $\Delta t = 30 \text{ }^\circ\text{C}$ ) 148 t/h

**Capacity chart**



**Curve 3**

It indicates the discharge capacity of the cold condensate at 20°C as occur for example, at the beginning of operation.

Example (DN 4"):  
 Differential pressure 4 bar  
 Flow of the cold condensate 180 t/h

**Data for sizing**

- ASCA will make pleasure the sizing. For this purpose must be supplied:
- Service pressure;
  - Backpressure;
  - Flow of the condensate to be blowndown;
  - Type of forecasted connection;
  - Steam trap nominal diameter;
  - Type of heat exchanger and location of the steam trap in relation to the same.

**Standard specification**

- Thermal-thermodynamics steam traps for steam
- Model TP .....from ASCA
- According to prospect PR-01.30.10-I
- Flanged connections.....
- As per norm .....
- Pressure class .....
- Nominal diameter .....
- Optionals.....

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