ELEPHANT

Manufacturer of shut-off and control valves

TECHNICAL DATA SHEET

Thermodynamic condensate drain ELEPHANT STT2131M-F DN15-50 40 bar with filter, steel, flanged

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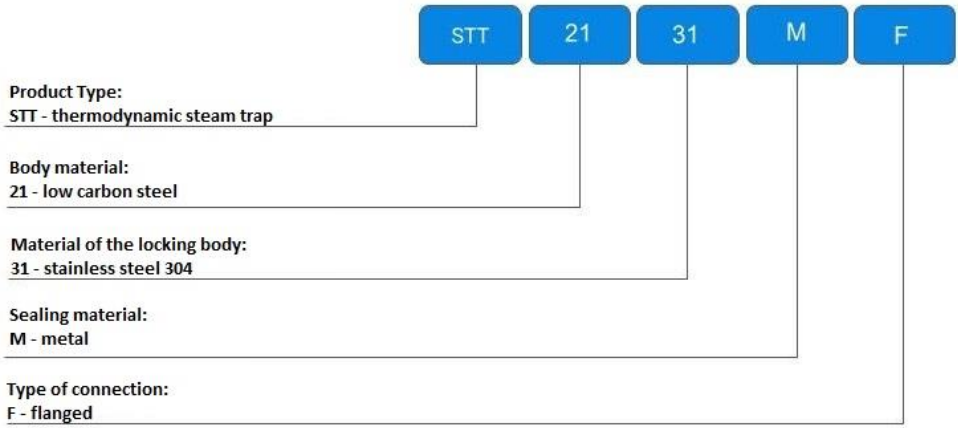
Carrer d'Aragó,264,3-1,08007 Barcelona, Spain

1. GENERAL PRODUCT INFORMATION

1.1. Product name: Thermodynamic condensate drain ELEPHANT STT2131M-F DN15-50 40 bar with filter, steel, flanged.
1.2. Purpose: The condensate drain is designed to release condensate, air and other non-condensable gases from the steam system, as well as to delay steam until its complete condensation.
1.3. Operating principle: The operating principle is based on the difference in velocity between steam and condensate. When condensate passes through, due to the low velocity, the disk rises and allows the condensate to pass through. When steam enters the thermodynamic condensate trap, the velocity increases, causing the static pressure to drop and the disk drops to the seat. The steam above the disk, due to the larger contact area, keeps the disk in the closed position. As the steam condenses, the pressure above the disk drops and the disk begins to rise again, allowing the condensate to pass through.

1.5. Deciphering of the designation:



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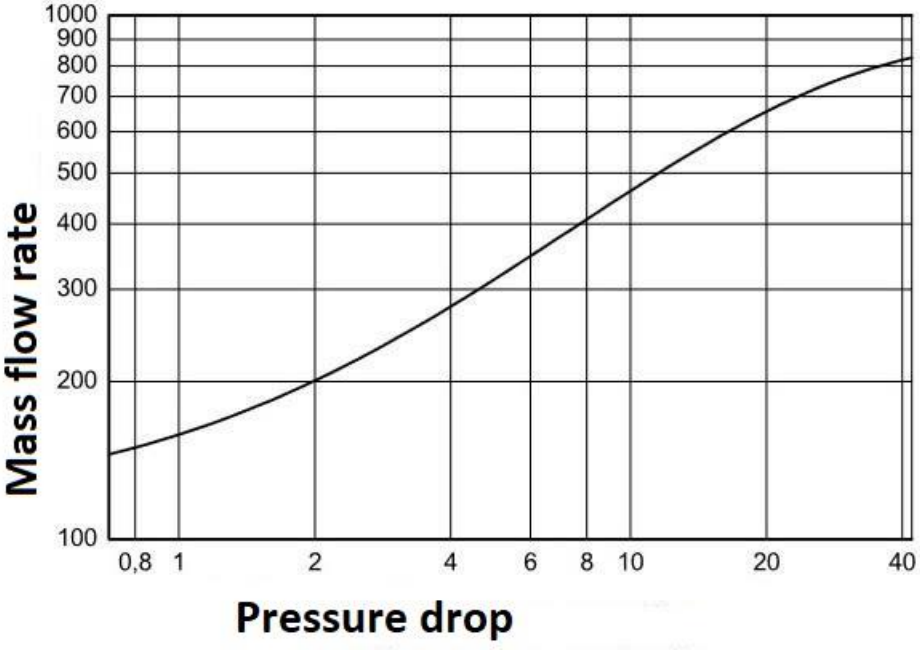
2. BASIC TECHNICAL DATA AND CHARACTERISTICS

Table 1

Nominal diameter DN, mm	15-50
Working pressure PN, bar	40
Type of condensate drain	thermodynamic
Working medium	water vapor
Nominal temperature of working medium, ºC	260
Maximum permissible temperature of working medium, ºC	350
Direction of medium flow	arrow on the body
Connection to the pipeline	flanged
Location on the pipeline	horizontally
Minimum pressure drop across the condensate drain for normal operation, bar	0,2
Limitations	the maximum pressure downstream of the condensate drain should be no more than 80% of the pressure upstream of the condensate drain
Service life, years	10



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3. BASIC MATERIALS OF PARTS AND DESCRIPTION OF WORK

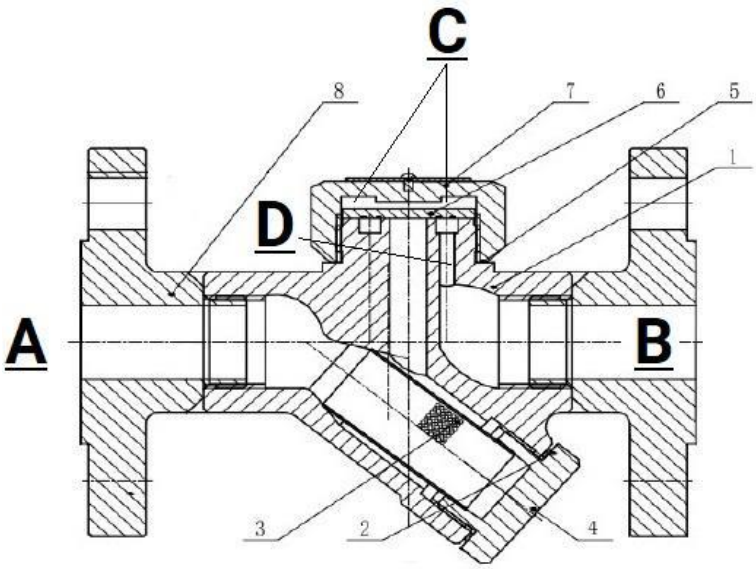

Table 2

No.	Part name	Material
1	Body	steel EN-1.0619
2	Seal	PTFE
3	Filter	stainless steel AISI 304
4	Plug	steel EN-1.0619
5	Seal	PTFE
6	Disk	stainless steel AISI 304
7	Cover	steel EN-1.0619
8	Flange	A105 steel

The top of the body 1 has an annular groove (C) which forms the valve seat. The surfaces of the seat and disk 6 are carefully ground so that the disk fits snugly against the seat surface, providing closure between the inlet (A) and outlet (B) ports.

During start-up, air and cold condensate pass through the inlet port. The disk 6 rises and rests against the cover 7. Air and condensate flow out through the annular groove and are discharged through the outlet port (D).

As the temperature rises, some of the condensate boils as it passes through the gap between the disk and seat. Since the vapor has a lower density than water, its velocity is much higher with a corresponding drop in pressure. The static pressure under the disk drops and the disk is pressed against the seat. The disk remains pressed against the seat until the vapor under the disk condenses due to heat transfer from the cover 7, at which time the pressure above the disk drops and the disk can again be raised by the inlet pressure.

If there is no condensate, when the condensate trap is opened, a small amount of high-pressure steam will enter the chamber and the disk will be pressed against the seat very quickly.

An integrated filter prevents the small outlet channel D from being blocked and also prevents foreign particles from getting under the disk.

Thermodynamic condensate drains discharge condensate in portions. The number of actuations per minute depends on the steam pressure and the amount of condensate produced.

During normal operation, the number of actuations should not exceed 2-4 times per minute. The condensate is discharged at a temperature a few degrees below the saturation temperature of the steam at the given pressure..

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4. WEIGHT AND DIMENSIONAL PARAMETERS

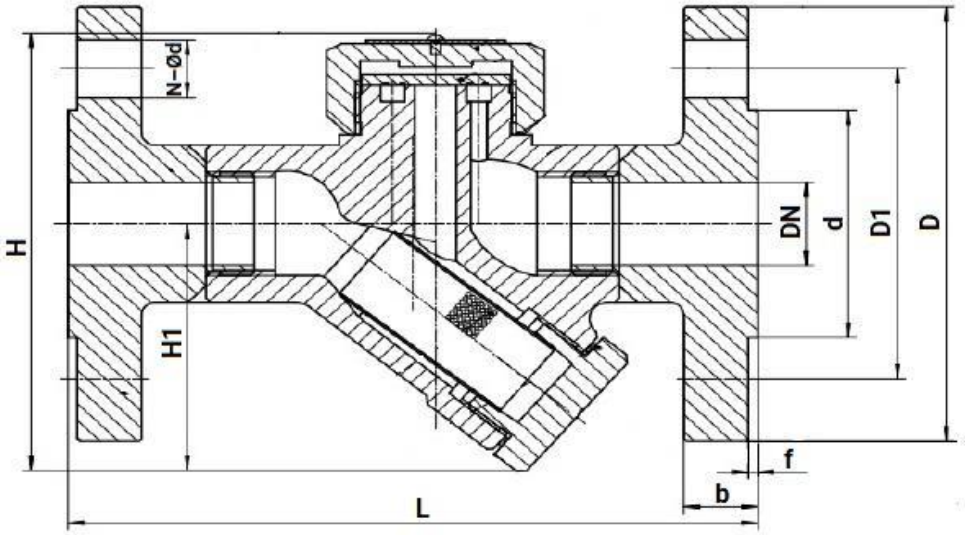

Table 3

DN	L	H	H1	D	D1	d	f	b	N – Ød	Weight, kg
15	150	93	53	95	65	45	2	14	4 – Ø14	2,4
20	150	105	60	105	75	58	2	16	4 – Ø14	3,0
25	160	115	67	115	85	68	2	16	4 – Ø14	3,5
32	230	147	77	140	100	78	2	18	4 – Ø18	4,2
40	230	147	77	150	110	88	2	18	4 – Ø18	6,0
50	230	165	89	165	125	102	2	18	4 – Ø18	8,3

5. OPERATING INSTRUCTIONS

5.1 Condensate traps ELEPHANT KSTF do not require special maintenance. The scope and intervals of maintenance are determined by the operating organization, based on the operating conditions.
5.2 It is necessary to provide installation of appropriate shut-off valves, providing reliable disconnection of the necessary section of the pipeline for carrying out any works on it.
5.3 When traps are used in new systems that have not been flushed, it may be necessary to inspect and clean the trap. Before starting maintenance, isolate the section of piping with the trap and depressurize to zero. Allow the trap to cool down. When reassembling, make sure that all mating surfaces are clean.
5.4 Maintenance and repairs can be carried out without removing the trap from the pipeline, provided the necessary precautions are observed. Prior to installation, disassembly and maintenance work, disconnect the trap from steam and condensate sources and depressurize the system.
5.5. When operating the traps, the company's operating procedures should be followed.

6. INSTALLATION

6.1 Installation, operation and maintenance of condensate traps may be performed by personnel who have studied the product design, safety rules, requirements of this TP and have skills in working with condensate traps.
6.2 Before installing the condensate trap it is necessary to clean the pipeline from impurities by blowing out. All filters, if installed upstream of the traps, should also be purged.
6.3 The surfaces of both flanges must be clean when the trap is installed.
6.4 If there is a possibility of the system being pressurized above the pressure limit of the trap, it must be ensured that a safety valve is in place.
6.5 When draining to the atmosphere, it should be ensured that the condensate will be discharged to a safe place.
6.6 The condensate drain should be installed in such a way that the direction of the medium flow coincides with the direction of the arrow on the housing.

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7. TRANSPORTATION AND STORAGE CONDITIONS

7.1. Transportation and storage conditions - in the packaging of the manufacturer according to the conditions established at the enterprise.
7.2. It is allowed to transport condensate traps without packaging, provided that protection from shock loads and other mechanical influences is provided.
7.3 Condensate traps, which are in long-term storage, are subjected to periodic inspection at least once a year. At violation of preservation to make preservation again. Conservation lubricant should be applied on degreased clean and dry surface of parts. Degreasing should be performed with a clean rag soaked in gasoline.

8. UTILIZATION

8.1. The product is disposed of in accordance with the procedure established at the enterprise (remelting, burial, resale).
8.2. Before the valve is sent for disposal, the residues of the working medium shall be removed from the valve. Methods of removal of the working medium and decontamination of the valve must be approved in accordance with the established procedure at the enterprise operating the product.

9. WARRANTY OBLIGATIONS

9.1. Warranty period - 12 months from the date of commissioning, but not more than 18 months from the date of sale.
9.2. The warranty applies to equipment installed and used in accordance with the installation instructions and product specifications described in this data sheet.
9.3. The manufacturer guarantees compliance of the product with safety requirements, provided that the consumer complies with the rules of transport, storage, installation and operation.
9.4. The warranty covers all defects caused by the fault of the manufacturer.
9.5. The warranty does not apply:

- parts and materials of the product subject to wear and tear;
- for cases of damage caused by:
  - modifications to the original design of the product;
  - violation of general installation recommendations;
  - faults caused by improper maintenance and storage; improper operation and use of the equipment.

10. WARRANTY TERMS

10.1. Claims to the quality of the goods may be made during the warranty period.
10.2. Defective products are repaired or exchanged for new ones free of charge during the warranty period. ELEPHANT decides whether to replace or repair the product. The replaced product or its parts resulting from the repair shall become the property of 'ELEPHANT'.
10.3. Costs related to dismantling, installation and transport of the defective product during the warranty period shall not be reimbursed to the Buyer.
10.4. If the claim is unfounded, the Buyer shall pay the costs of diagnostics and expertise of the product.
10.5. Products are accepted for warranty repair (as well as for return) fully assembled.

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WARRANTY CARD №____

No.	Product Name	Packs

Name and address of the trading organisation

_____

Date of sale _____ Seller's signature _____

Stamp or seal of the trading organisation Acceptance stamp

I agree with the terms and conditions of the warranty:
Buyer _____ (signature)

Warranty period - 12 months from the date of commissioning, but not more than 18 months from the date of sale.

For warranty repairs, complaints and product quality claims, please contact ELEPHANT at: Carrer d'Aragó,264,3-1,08007 Barcelona, Spain E-mail address: sales@valveelephant.com.

When making a complaint about the quality of goods, the buyer shall present the following documents:
1. A free-form application, which shall specify:
   - name of the organisation or full name of the buyer, actual address, contact telephone numbers;
   - name and address of the organisation that carried out the installation;
   - basic parameters of the system in which the product was used;
   - a brief description of the defect.
2. Document confirming the purchase of the product (delivery note, receipt)..
3. Act of hydraulic test of the system in which the product was installed.
4. This completed warranty card.

A note on the return or exchange of goods _____

Date: «___»_____202__г. Caption _____