



# TEMPERATURE CONTROL STEAM TRAP

## MODEL LEX3N-TZ STAINLESS STEEL

ADJUSTABLE THERMOSTATIC TRAP CONTROLS CONDENSATE DISCHARGE TEMPERATURE

### Features

**Compact, all stainless steel bimetal-operated thermostatic steam trap for accurate control of condensate discharge temperature. Ideal for use with steam tracers, tank heaters, space heaters and instrument tracer tubes.**

1. Maintains temperature at preset levels between 50 and 200 °C by adjusting the valve closing temperature.
2. Saves energy by utilizing the sensible heat in condensate.
3. Includes a built-in device for removing scale and build-up from the valve seat during operation.
4. Overexpansion mechanism prevents damage to the bimetal element and ensures long service life.
5. Rapid venting of initial air and fast discharge of cold condensate reduce start-up time.
6. Easy, inline access to internal parts simplifies cleaning and reduces maintenance costs.
7. Built-in screen ensures trouble-free operation.
8. Can be used as an automatic non-freeze valve.



### Specifications

| Model                                     | LEX3N-TZ                    | LEXW3N-TZ         |
|---|-----------------------------|-------------------|
| Connection                                | Screwed                     | Socket Welded     |
| Size                                      | 3/8", 1/2", 3/4", 1"        | DN 10, 15, 20, 25 |
| Condensate Temperature Setting Range (°C) | 50 - 200* (see table right) |                   |
| Maximum Operating Pressure (barg) PMO     | 46                          |                   |
| Minimum Operating Pressure (barg)         | 1                           |                   |
| Maximum Operating Temperature (°C) TMO    | 350                         |                   |

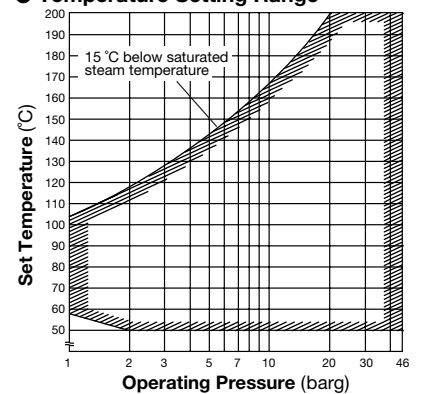
\* Set temperature should be more than 15 °C below the steam saturation temperature. 1 bar = 0.1 MPa

PRESSURE SHELL DESIGN CONDITIONS (NOT OPERATING CONDITIONS):  
 Maximum Allowable Pressure (barg) PMA: 63 Maximum Allowable Temperature (°C) TMA: 400



To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.

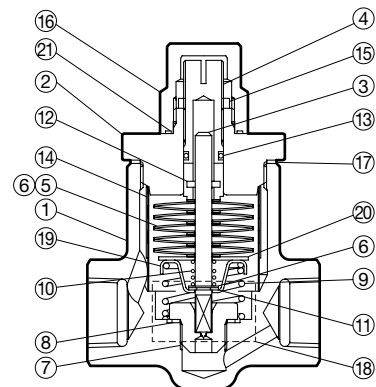
#### ● Temperature Setting Range



| No.             | Description           | Material*                   | DIN         | ASTM/AISI    |
|-----------------|-----------------------|-----------------------------|-------------|--------------|
| ①               | Body                  | Cast Stainless Steel SCS13A | 1.4308      | A351 Gr. CF8 |
| ②               | Cover                 | Stainless Steel SUS303      | 1.4305      | AISI303      |
| ③ <sup>R</sup>  | Valve Stem            | Stainless Steel SUS420J2    | 1.4031      | AISI420      |
| ④               | Adjusting Screw       | Stainless Steel SUS303      | 1.4305      | AISI303      |
| ⑤ <sup>R</sup>  | Bimetal Element       | Bimetal                     | —           | —            |
| ⑥ <sup>R</sup>  | Plain Washer          | Stainless Steel SUS304      | 1.4301      | AISI304      |
| ⑦ <sup>R</sup>  | Valve Seat            | Stainless Steel SUS303      | 1.4305      | AISI303      |
| ⑧ <sup>MR</sup> | Valve Seat Gasket     | Stainless Steel SUS316L     | 1.4404      | AISI316L     |
| ⑨ <sup>R</sup>  | Overexpansion Spring  | Stainless Steel SUS304      | 1.4301      | AISI304      |
| ⑩ <sup>R</sup>  | Return Spring         | Stainless Steel SUS304      | 1.4301      | AISI304      |
| ⑪ <sup>R</sup>  | Snap Ring             | Stainless Steel SUS304      | 1.4301      | AISI304      |
| ⑫ <sup>R</sup>  | Spring Pin            | Stainless Steel SUS304      | 1.4301      | AISI304      |
| ⑬ <sup>MR</sup> | Seal Ring             | Fluorine Rubber FPM         | FPM         | D2000HK      |
| ⑭ <sup>R</sup>  | Screen inside/outside | Stainless Steel SUS430/304  | 1.4016/4301 | AISI430/304  |
| ⑮               | Lock Nut              | Stainless Steel SUS304      | 1.4301      | AISI304      |
| ⑯               | Cap Nut               | Cast Stainless Steel SCS13A | 1.4308      | A351 Gr. CF8 |
| ⑰ <sup>MR</sup> | Cover Gasket          | Stainless Steel SUS316L     | 1.4404      | AISI316L     |
| ⑱               | Nameplate             | Stainless Steel SUS304      | 1.4301      | AISI304      |
| ⑲ <sup>R</sup>  | Spring Guide          | Stainless Steel SUS304      | 1.4301      | AISI304      |
| ⑳ <sup>R</sup>  | Thrust Plate          | Stainless Steel SUS304      | 1.4301      | AISI304      |
| ㉑ <sup>MR</sup> | Cap Nut Gasket        | Graphite                    | —           | —            |

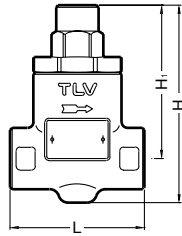
\* Equivalent materials

Replacement kits available: (M) maintenance parts, (R) repair parts



**Dimensions**

● **LEX3N-TZ**  
Screwed

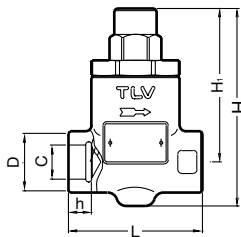


**LEX3N-TZ** Screwed\* (mm)

| Size | L  | H   | H <sub>1</sub> | Weight (kg) |
|------|----|-----|----------------|-------------|
| 3/8" | 70 | 103 | 80             | 0.8         |
| 1/2" |    |     |                |             |
| 3/4" | 80 | 113 | 90             | 1.3         |
| 1"   |    |     |                | 1.2         |

\* BSP DIN 2999, other standards available

● **LEXW3N-TZ**  
Socket Welded



**LEXW3N-TZ** Socket Welded\* (mm)

| DN | L  | H   | H <sub>1</sub> | φD | φC    | h  | Weight (kg) |
|----|----|-----|----------------|----|-------|----|-------------|
| 10 | 70 | 103 | 80             | 30 | 17.55 | 12 | 0.8         |
| 15 |    |     |                |    | 21.70 |    |             |
| 20 | 80 | 113 | 90             | 44 | 27.05 | 14 | 1.3         |
| 25 |    |     |                |    | 33.80 |    | 1.2         |

\* ASME B16.11, other standards available

**Sizing Charts**

**Estimation of discharge capacity.**

Example: The flow rate of condensate discharging from 9 barg to atmosphere at 110 °C from a trap set to 120 °C is determined as follows:

**Step 1: Use the discharge capacity graph.**

From the 110 °C condensate temperature on the horizontal axis, follow a vertical line until it intersects the 120 °C set temperature curve (point A).

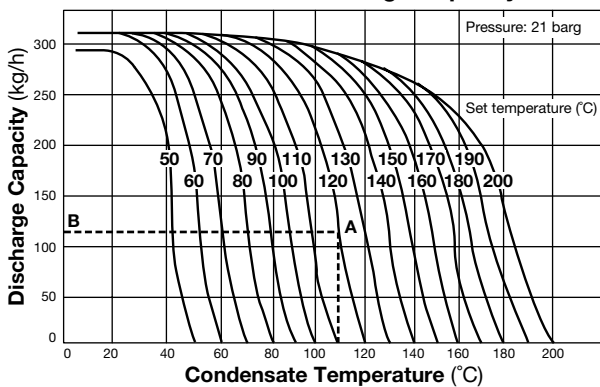
From A, follow a horizontal line across to the vertical axis (point B), and read the discharge capacity, 120 kg/h.

**Step 2: Use the correction graph.**

Because the discharge capacity graph is based on a steam pressure of 21 barg, a correction factor must be used to adjust the discharge capacity value to the actual pressure differential at the trap.

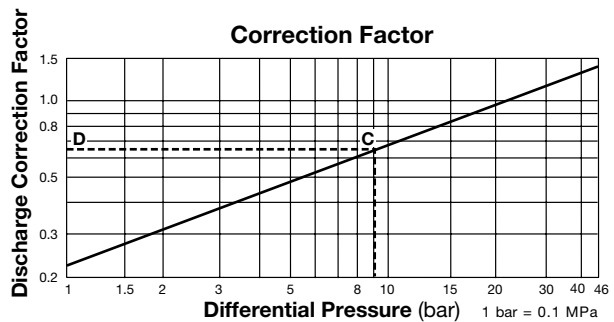
Read up from 9 bar on the horizontal axis to the diagonal line (point C), then across to the correction factor (point D), 0.64. Multiply the discharge capacity obtained in step 1 by the correction factor to get the actual discharge capacity: 120 kg/h x 0.64 = 76.8 kg/h.

**Condensate Discharge Capacity**



Recommended safety factor: at least 2.

**Correction Factor**



Differential pressure is the difference between the inlet and outlet pressure of the trap.

Manufacturer

**TLV**® CO., LTD.  
Kakogawa, Japan  
is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001/ISO 14001

