

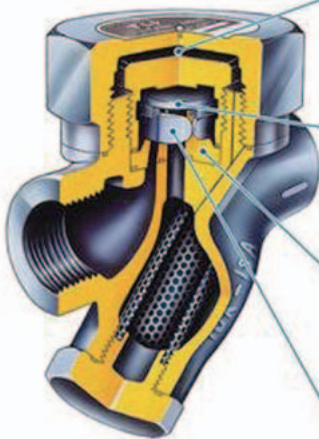
# A3N – The World’s First Steam Jacketed Thermodynamic Steam Trap

- Extremely versatile in all weather conditions, applications, and specifications

## Main Features

- **Jacketed Pressure Chamber:** Radiant heat loss causes no-load actuation, which wastes steam and accelerates the wear of both the disc and the seat. Steam/air jacketing insulates the pressure chamber to minimize wasteful cycles and reduce wear.
- **Hardened and Lapped Disc and Valve Seat:** Unique hardened and mirror-polished disc and valve seat minimize age-related wear for a tight seal, thus providing durability and an extended service life.
- **Built-In Bimetal Air Vent Ring:** The built-in bimetal air vent forces the valve open at start-up, releasing air and cold condensate to start equipment faster.

### ■ Features



#### ■ Jacketed Pressure Chamber Saves Steam

When a disc trap cools in bad weather, the valve opens even if there isn't condensate to discharge. Steam/air jacketing provides insulation to minimize wasteful cycles.

#### ■ Hardened and Lapped Disc and Valve Seat Extend Service Life

When the disc wears out, the trap fails and leaks. Unique hardened and mirror-polished disc and valve seat minimize age-related wear for a tight seal and long life.

#### ■ Inline-replaceable Module Reduces Maintenance


When conventional disc traps fail, they need to be replaced requiring piping work. TLV disc traps have a module that can be replaced inline to lower maintenance work and costs.

#### ■ Bimetal Air Vent Ring Increases Productivity

Air generated when equipment starts up needs to escape from the system. The built-in bimetal air vent forces the valve open at start-up releasing air and cold condensate to start equipment faster.

### ■ Also Available

**Forged Steel P46SRN for High-pressure Applications (up to 4.6 MPaG)**



### Reduce Steam Loss in Any Weather



### Minimize Valve Wear and Unnecessary Cycling



### Shorten Equipment Start-Up Time



## Technology/Product Overview





### Principle of operation

At start-up, the bimetal ring holds the disc up until air and cold condensate have been discharged. Entering hot condensate expands the bimetal and frees the disc, which suctions it onto the seat. The pressure in the pressure chamber forces the disc down, closing the valve tightly. Steam/air jacketing insulates the pressure chamber from the radiant heat loss that could cause no-load actuation from the drop in pressure.

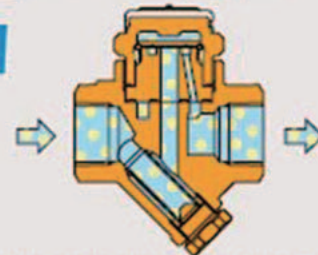
Condensate enters and lowers the steam pressure in the pressure chamber, allowing the inlet pressure to push the disc up and discharge the condensate. Entering flash steam then closes the trap.

### Thermodyne traps with bimetal air vent ring

#### How they operate

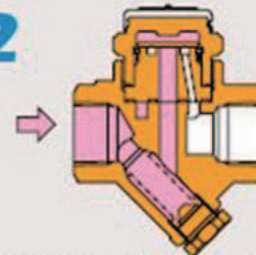
 Cold condensate	 Air
 Hot condensate	 Steam

1



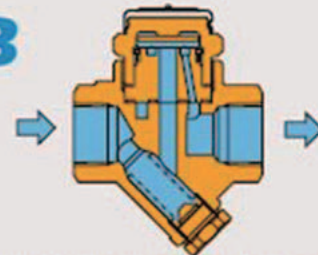
At start-up, the bimetal ring holds the disc up until air and cold condensate have been discharged.

2



Entering hot condensate expands the bimetal and frees the disc. Steam flow creates a low-pressure region under the disc, which suctions it onto the seat. Also, pressure in the pressure chamber forces the disc down, closing the valve tightly. An air or steam jacket insulates the pressure chamber from the radiant heat loss that could cause no-load actuation from the drop in pressure.

3



Condensate enters and lowers the steam pressure in the pressure chamber, allowing the inlet pressure to push the disc up and discharge the condensate. Entering flash steam then closes the trap, as in (2).

## Benefits

### 1. Energy conservation

Steam loss is prevented by the insulation provided by the steam/air jacketing. The lapped disc ensures a tight seal and prevents any occurrence of steam leakage.

### 2. Long service life

Hardened and lapped disc and valve seat provide an extended service life.

### 3. Increase in productivity

A shorter start-up time.

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