



Alloy Steel Construction  
Hardened Stainless Disc & Seat  
Pressures to 900 psig

**Series WD900S  
THERMODYNAMIC  
TRAP**

**Applications**

The WD900S Disc Trap is designed to automatically remove condensate at a temperature that is very close to that of the steam. Freeze-proof installations can be easily achieved because of the self-draining feature that is accomplished by installing the unit in a vertical orientation. (see back side of page)

Typical uses are:

- Superheated steam systems
- Industrial Processing Equipment
- High-Pressure Drips

**Features**

- Alloy steel (WC9) construction for high pressure & temperature with hardened 420 SST seating surfaces for long wear and corrosion resistance
- WD900S available in 1/2 & 3/4" FNPT and socket weld ends
- Excellent capability for handling superheat
- Works efficiently in any position
- Snap-opening provides purging action in unit being drained
- Optional insul-cover insulates against heat loss from adverse atmospheric conditions (rain, wind or snow), which could cause overcycling
- Compact for easy installation
- One moving part assures low-maintenance

**How It Works**

The Disc Trap uses the higher kinetic energy of flash steam over water to close the trap with static pressure. As condensate enters the trap, it simply lifts the disc and flows through the body port to trap outlet. When condensate temperature gets close to steam temperature, the condensate starts to flash over into steam after it enters the trap. This flash steam flows with a higher velocity (*under the disc*) lowering the pressure under the disc. The higher pressure on top of the disc snaps the disc down against the seat. When the flash steam trapped above the disc condenses, thus losing its energy, the system pressure below will take over to lift the disc off the seat and start the whole cycle over again.



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Manufacturers of:

**PRESSURE & TEMPERATURE REGULATORS - RELIEF VALVES - STEAM TRAPS - CLEAN STEAM PRODUCTS  
LIQUID DRAINERS - PRESSURE PUMPS - EJECTORS - SPECIALTY PRODUCTS**



ST-442  
1/01

# WD900S Thermodynamic Trap Specifications

## Maximum Operating Conditions

Maximum Operating Pressure (PMO)	900 psig
Maximum Operating Temperature (TMO)	842 °F
	at all operating pressures

## Design Pressure/Temperature Rating

Maximum Allowable Pressure (PMA)	900 psig
Maximum Allowable Temperature (TMA)	842 °F

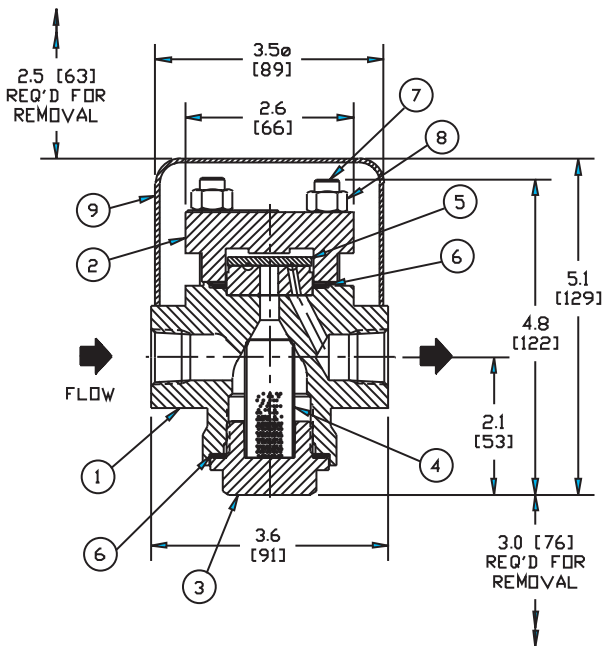
## Materials

1. Body ..... Alloy Steel, GR WC9
- Seat ..... 420 SS
2. Cover ..... Alloy Steel, GR WC9
3. Strainer Cap ..... Alloy Steel, GR WC9
4. Strainer ..... 300 Series SS
5. Disc ..... 420 SS
6. Gasket ..... 304 SS
7. Studs ..... SA-193, GR B7
8. Nuts ..... SA-194, GR 2H
9. Insulating Can ..... Alum.

## Capacities – Condensate in lbs/hr & Kg/hr

Differential Pressure (psi)	1/2" & 3/4" (lb/hr)	Differential Pressure (bar)	1/2" & 3/4" (kg/hr)
20	243	2	139
50	411	5	221
100	555	10	287
150	641	15	325
200	700	20	351
300	781	25	370
400	835	30	385
500	874	35	398
600	905	40	408
700	930	45	417
800	951	50	424
900	968	62	439

Note: Maximum back pressure not to exceed 80% of inlet pressure.



## How To Order

The correct trap selection is based on the following:

- Equipment capacity in lbs. of condensate/hr
- Pressure (*psig*) at inlet
- Connection size

CAUTION: DO NOT SELECT TRAP BY PIPE SIZE ALONE

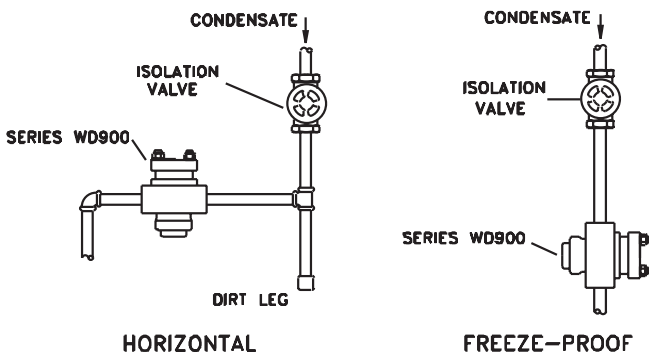
## Ordering Spare Parts

Disc	P/N 5
Cover	P/N 2
Insul-Cover	P/N 9

Note: State size of trap and part number when ordering.

Example: Disc P/N 2 for 1/2" WD-900.

## Typical Installations



## Freeze-Proof Installation

- Blow out piping thoroughly, removing all scale
- Install an isolation valve ahead of trap
- Inlet and outlet piping must be large enough to handle condensate flow
- Pipe must be sized to handle total discharge, if several traps discharge into one pipe
- Arrange piping to provide gravity flow to trap. Install trap vertically for downward discharge. Discharge piping must be self-draining.