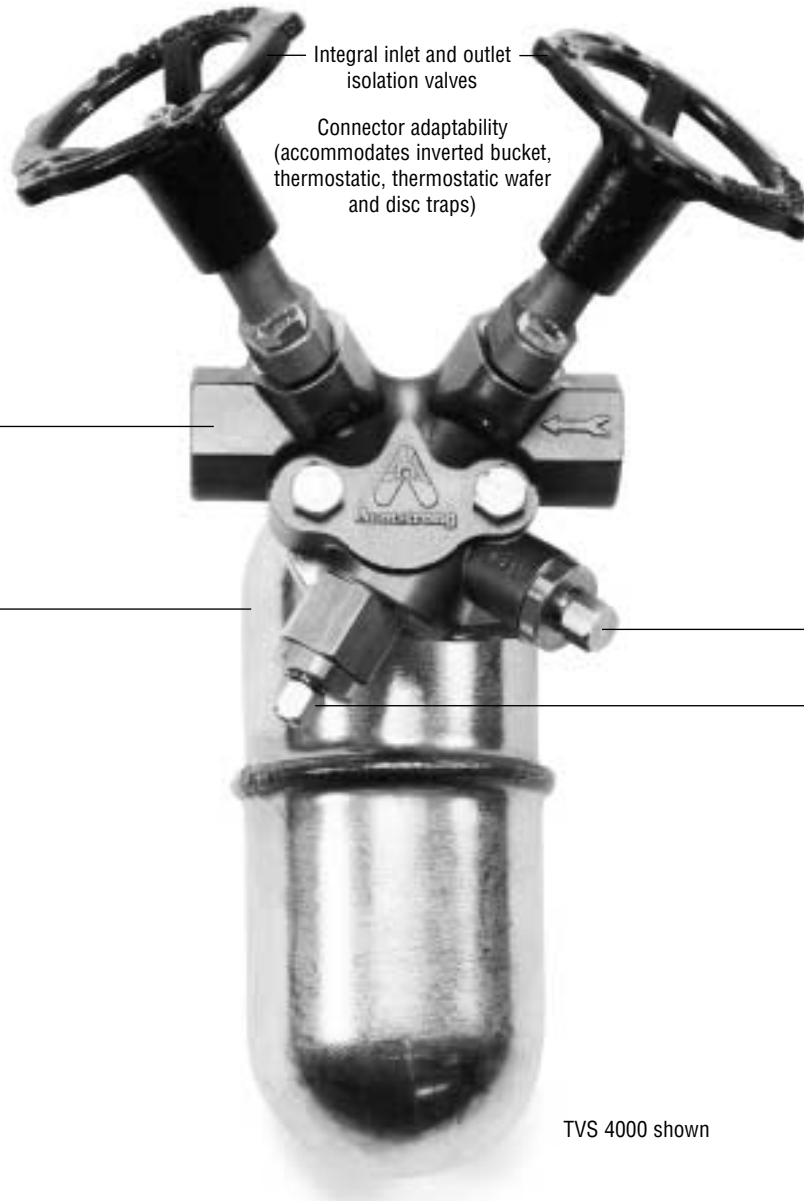




# Armstrong® TVS 4000 Series Stainless Steel Trap Valve Station

Steam Trapping and Steam Tracing Equipment



Integral inlet and outlet isolation valves

Connector adaptability (accommodates inverted bucket, thermostatic, thermostatic wafer and disc traps)

Connection flexibility (SW, NPT, BST options)

Inverted bucket trap efficiency in a sealed, tamperproof stainless steel package

Test valve used to test and evaluate trap operation

Strainer blowdown valve

**3-year guarantee**

TVS 4000 shown

## Trap Valve Station

• **Reduced costs**

TVS saves on these fronts: energy, installation and maintenance.

• **Integration of trap, four valves and strainer**

Inverted bucket long life and energy efficiency plus the savings and convenience of components merged into a single connector.

• **A full range of features**

TVS has test and strainer blowdown valves. When installed with Model 2011 and 2022 steam traps, it will also accommodate the Armstrong pop drain as well as TrapAlert™ and SteamEye®—remote steam trap monitoring and testing devices.

• **Reduced design time**

Permits combining products with exact face-to-face dimensions.

• **Three-year guarantee**

The TVS 4000 is guaranteed for three years when it's used with an Armstrong stainless steel inverted bucket trap.

• **Easy, in-line reparability**

• **Installation versatility**

The connector design makes the TVS adaptable to any piping configuration.

• **Simplified trap testing**

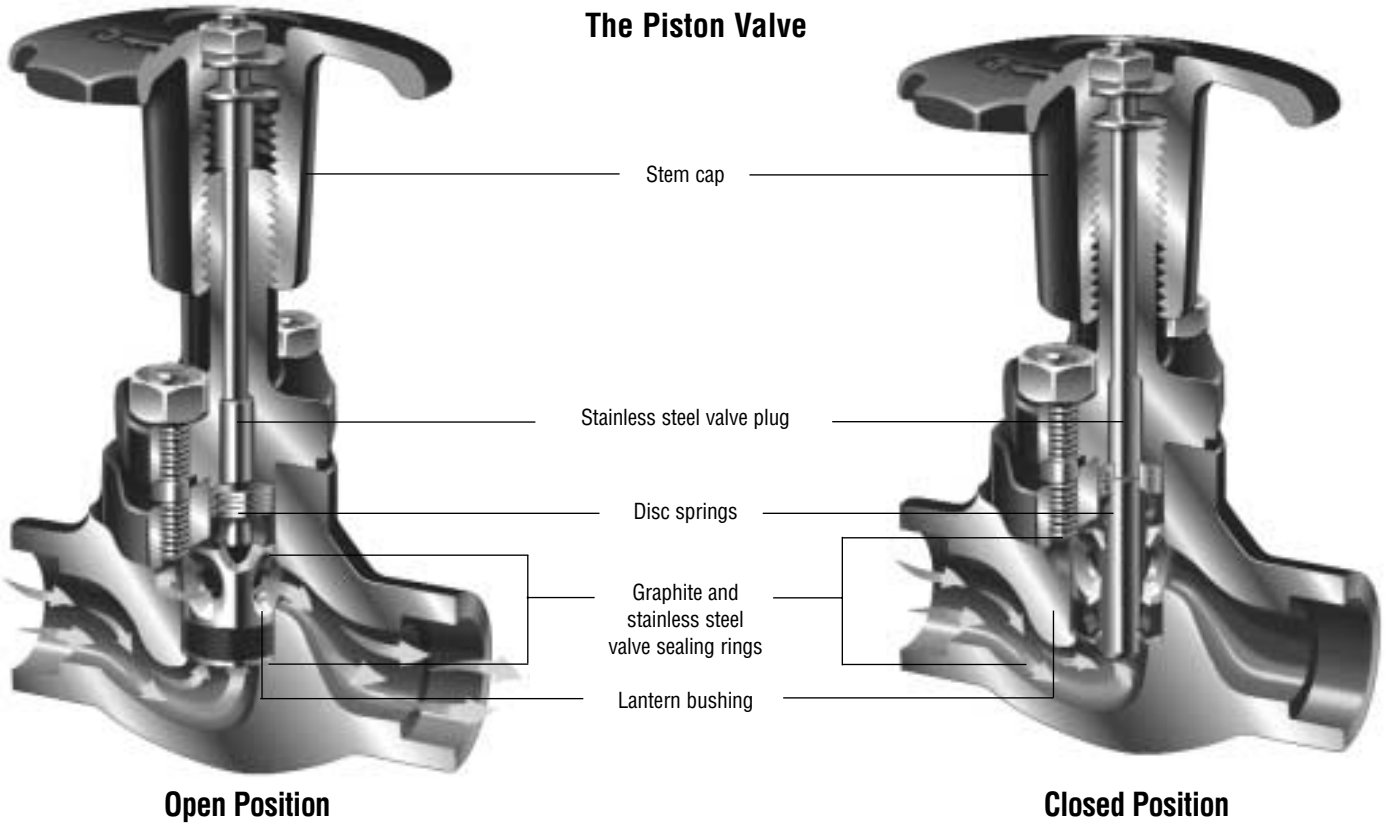
TVS enhances your capability to check trap operation and offers a built-in method to block and bleed traps.

• **Elimination of potential leak points**

# TVS Series Stainless Steel Trap Valve Station



Steam Trapping and  
Steam Tracing Equipment



- **Dual sealing action**

The piston valve is a seatless valve that includes two graphite and stainless steel valve sealing rings that seal the stem and function as a valve seat. This combination provides long-term protection against leaks to the atmosphere and downstream piping.

- **Self-cleaning action**

Stainless steel piston slides without rotating between the two valve sealing rings, preventing dirt from damaging the sealing surfaces.

- **Sealing integrity**

Flexible disc springs automatically provide leak tightness by exerting pressure which keeps the upper and lower valve sealing rings compressed at all times. Sealing tightness is assured by the compression of the sealing rings against the piston and the valve body. This

combination of disc springs and dual valve seal rings protects against expansion and contraction due to heating and cooling. This assures dependable operation, even after years of service.

- **Protected valve stem**

The valve stem and sealing surfaces are completely protected from dirt and corrosion by the stem cap, whether in an open or closed position.

- **In-line reparability**

All valve components may be easily replaced in-line.

- **Long-term operation**

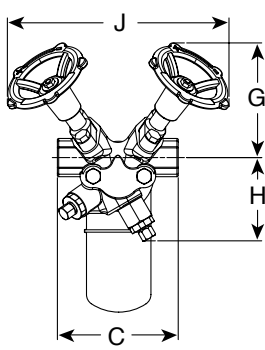
Piston valve design assures actuation even after many years without operation.



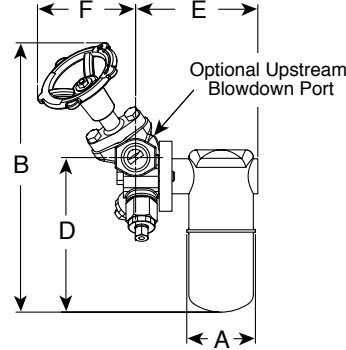
# TVS 4000 Series Stainless Steel Trap Valve Station

For Pressures to 650 psig (45 bar)...Capacities to 1,300 lb/hr (590 kg/hr) (Using 2000 Series Inverted Bucket Steam Traps)

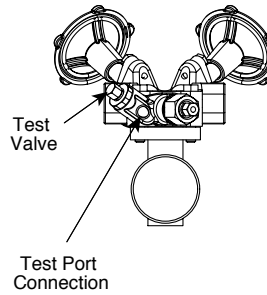
Steam Trapping and Steam Tracing Equipment



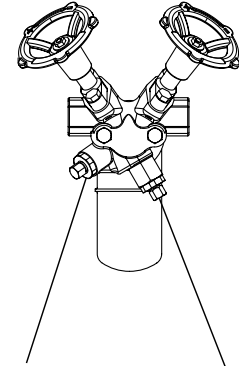
**Model TVS 4000 With 2000 Series SS Trap**  
Front View



**Model TVS 4000 With 2000 Series SS Trap**  
Side View



**Model TVS 4000 With 2000 Series SS Trap**  
Bottom View



**Test Valve**  
Used to test and evaluate trap operation

**Strainer Blowdown Valve**

Same principle. Different package with two piston-style isolation valves, test valve and integral stainless steel strainer with blowdown valve. Now the energy-saving performance and reliability of the inverted bucket steam trap are available in a versatile new package. You'll still enjoy all the familiar benefits. And the same efficient condensate drainage from virtually every kind of steam-using equipment. What you'll find new are all the benefits of a piston valve integrated into the same space-saving package.

### Materials—TVS 4000 Connector

Connector	ASTM A351 Gr. CF8M
Strainer Screen	Stainless steel
Screen Retainer	Stainless steel
Gasket	Stainless steel
Retainer Unit	Stainless steel
Test Valve	Stainless steel
Blowdown Valve	Stainless steel

### Isolation Valve Components

Handwheel	Cast iron
Nut	Stainless steel
Stem, Washers	Stainless steel
Bonnet	ASTM A351 Gr. CF8M
Bonnet, Bolts	Stainless steel Gr. A2
Valve Plug	Stainless steel
Disc Springs	Stainless steel
Valve Sealing Rings	Graphite and stainless steel
Lantern Bushing	Stainless steel
Valve Washers	Stainless steel

### Materials—Series 2000 Traps

Body:	ASTM A240 Gr. 304L
Internals:	All stainless steel—304
Valve and seat:	Hardened chrome steel

For a fully detailed certified drawing, refer to CD #1232.

### TVS 4000 Series With 2000 Series Inverted Bucket Steam Trap

Model No.	2010		2011		2022	
	in	mm	in	mm	in	mm
Pipe Connections	1/2, 3/4	15, 20	1/2, 3/4	15, 20	1/2, 3/4	15, 20
"A" Trap Diameter	2-11/16	68	2-11/16	68	3-7/8	98
"B" Height (Valve Open)	8	203	10-1/2	268	12-1/2	318
"C" Face to Face	4-3/4	120	4-3/4	120	4-3/4	120
"D" Connection $\varnothing$ to Bottom	4-3/4	120	6	154	8	203
"E" Connection $\varnothing$ to Outside of Trap	4-1/2	114	4-13/16	122	5-7/8	149
"F" Connection $\varnothing$ to Front of Handwheel (Valve Open)	3-1/2	89	3-7/8	98	3-7/8	98
"G" Connection $\varnothing$ to Top of Handwheel (Valve Open)	3-1/4	83	4-1/2	114	4-1/2	114
"H" Connection $\varnothing$ to Bottom of Connector	1-7/8	47	3-1/4	83	3-1/4	83
"J" Width Across Handwheels (Valve Open)	9-1/4	235	8-3/4	222	8-3/4	222
Test Port Connection	1/4 NPT	6	1/4 NPT	6	1/4 NPT	6
Weight lb (kg)	9	4	9-1/2	4.3	12	5.4
Maximum Operating Pressure (Trap)	200 psi (14 bar)		400 psi (28 bar)		650 psig (45 bar)	
Maximum Allowable Pressure (Trap)	400 psi (28 bar) @ 750°F (399°C)				650 psig @ 600°F (45 bar @ 315°C)	

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

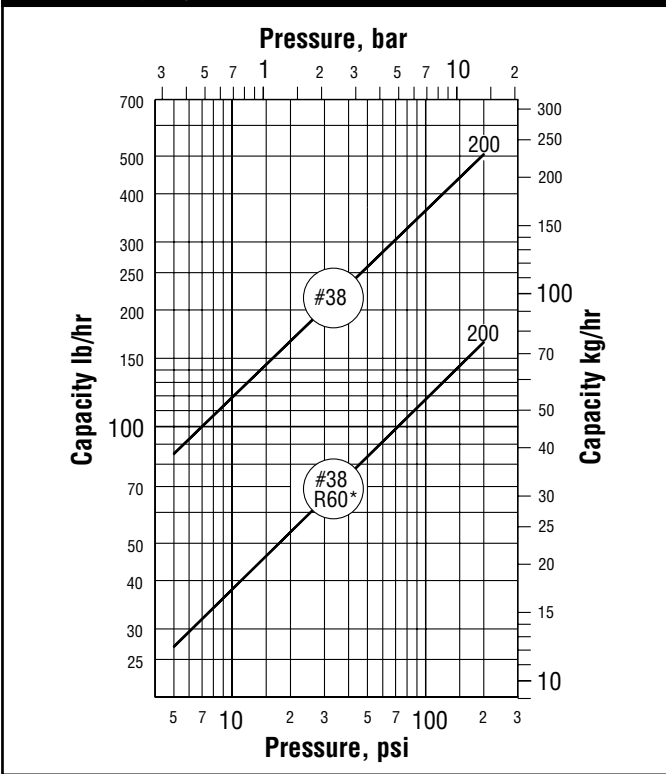
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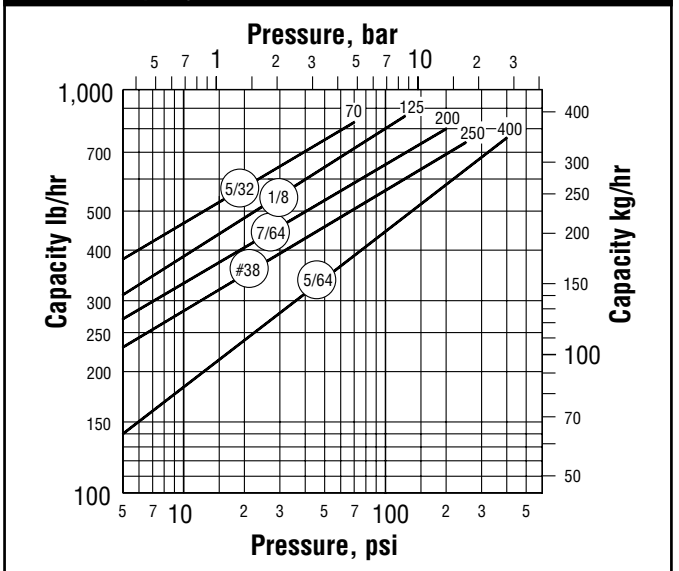


Steam Trapping and  
Steam Tracing Equipment

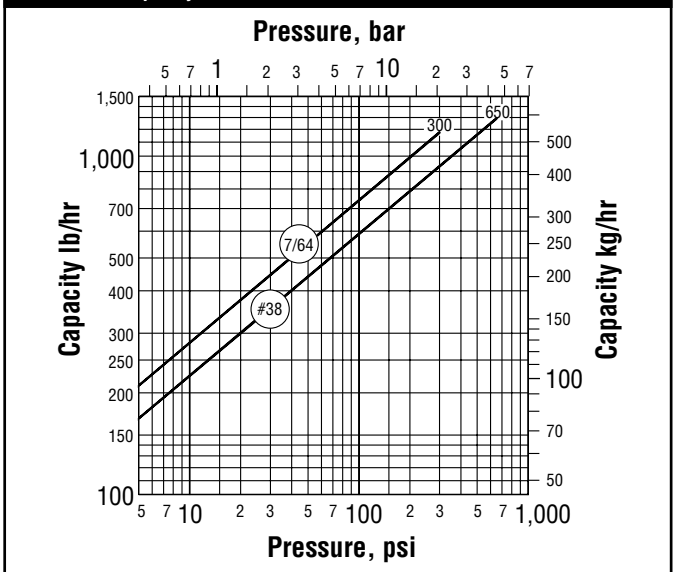
**Model 2010 Capacity**



**Model 2011 Capacity**



**Model 2022 Capacity**



\*NOTE: Because the orifice is located at the top, inverted bucket steam traps handle dirt and scale better than other types of traps. However, in applications where extremely dirty conditions exist, care should be exercised in the use of all types of restricted-orifice, reduced-capacity traps.

## Options

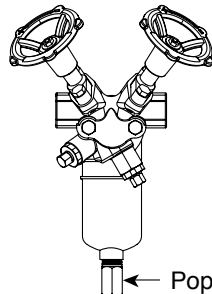
### Insu-Pak™

Now you can insulate the in-line traps in your plant without complicating regular trap maintenance. Insu-Pak, a simple reusable insulation package, cuts the time and cost of in-field installation because it goes on in a snap. And it comes off just as easily. The Insu-Pak can prevent trap freeze-up when used with a properly designed condensate manifold. Designed for use with Model 2010 and Model 2011 traps.



### Pop Drain

Simple but effective against freeze-up. Properly installed and maintained at low points in your system, the simple, pressure-actuated pop drain opens for condensate drainage at 5 psig (0.35 bar) for Models 2011 and 2022.



**Probe Connections** are available for trap monitoring on Models 2011 and 2022.

← Pop Drain

## How to Order

Model	Connection	Type of Connection Inlet/Outlet	Flow Direction	Trap Type
TVS 4000	1/2"	NPT	R = Right to Left	Inverted Bucket
	3/4"	SW	L = Left to Right	Disc
		BSPT		Thermostatic Wafer
				Thermostatic