



# 300 Series Inverted Bucket Steam Traps

Forged Carbon Steel for Vertical Installation

For Pressures to 45 bar...Capacities to 9 000 kg/h

## Description

Armstrong offers its 300 Series forged carbon steel traps for vertical installation with a choice of screwed, socketweld or flanged connections.

A unique leverage system multiplies the force provided by the bucket to open the valve against system pressure. The mechanism is free-floating, and has no fixed pivots to create wear or friction.

Because the mechanism is located at the top of the trap, no dirt can collect on the orifice. Small particles of dirt are held in suspension until discharged by the full differential purging action when the bucket sinks, pulling the valve off the seat.

The discharge orifice is surrounded by a water seal, preventing live steam loss. Automatic air venting is provided by a small vent hole in the bucket, which provides continuous automatic air and CO<sub>2</sub> venting at steam temperature.

Inverted bucket traps drain continuously, allowing no condensate backup. They are also resistant to water hammer.

## For Superheat Service:

1. Don't oversize the orifice; a restricted orifice may be advisable.
2. Specify an extended inlet tube and a check valve.
3. Provide a drip leg of adequate diameter and length.
4. Provide a generous length (600-900 mm) of inlet piping, with the trap below the main.
5. Don't insulate the trap or the inlet piping.

## Connections

Screwed BSPT and NPT  
Socketweld  
Flanged DIN or ANSI (welded)

## Materials

Body: ASTM A105  
Models 312, 313, 316 are also available with forged stainless steel cap and bodies and all stainless steel internals

Internals: All stainless steel – 304 (larger sizes have cast iron bucket weights)

Valve and seat: Stainless Steel 17-4PH (<35 bar)  
Titanium (>35 bar)

## Options

- Stainless steel internal check valve with extended inlet tube
- Thermic vent bucket 17 bar maximum
- Scrub wire
- Large vent 17 bar maximum

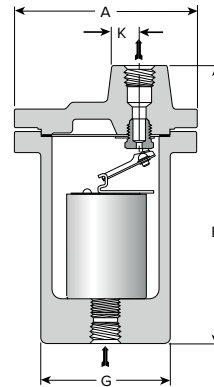
## Specification

Inverted bucket steam trap, type ... in forged carbon steel, with continuous air venting at steam temperature, free-floating stainless steel mechanism, and discharge orifice at the top of the trap. Maximum allowable back pressure 99% of inlet pressure.

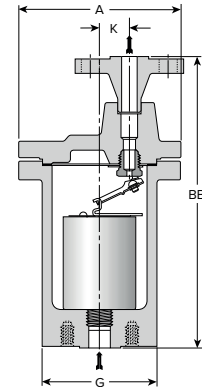
## How to Order

Specify:

- Model number
- Size and type of pipe connection. When flanges are required, specify type of flange in detail
- Maximum working pressure that will be encountered or orifice size
- Any options required



Model 300 Trap



Series 300 FW Trap

Table ST-94-1. Pressure-Temperature Rating for Forged Steel Traps

Model No.	Maximum Oper. Pr., Saturated Steam	Maximum Allowable Pressure (Vessel Design)† of Pressure - Containing Parts at Indicated Temperature			
		-28°C / +343°C	371°C	399°C	427°C
	bar	bar			
310	27,5	53	<b>53</b>	50	41
312	41,5	41	<b>41</b>	38,5	34,5
313	45	74	<b>74</b>	67	54
314	45	<b>78</b>	77	68	56
315	45	<b>70</b>	66,5	59	47,5
316	45	<b>76</b>	72	65	52

**Notes:** Maximum operating pressure to be marked on nameplate will be determined by actual orifice used. Maximum allowable pressures shown in boldface will be marked on nameplate, unless otherwise requested. Traps with flanges may have different pressure-temperature ratings. Maximum back pressure is 99% of inlet pressure.

Table ST-94-2. 300 Series Bottom Inlet, Top Outlet Trap (dimensions in mm)

Add suffix "CV" to trap number for internal check valve.

Model No. Screwed or SW	310	312	313	314	315	316
Model No. Flanged	310-FW	312-FW	313-FW	314-FW	315-FW	316-FW
Pipe Connections	15 – 20	15 – 20 – 25	15 – 20 – 25	25 – 32	25 – 32 – 40	40 – 50
"A" Flange Diameter	114	171	203	219	248	302
"B" Face-to-Face (screwed & SW)	202	259	295	348	381	435
"BB" Face-to-Face (flanged PN100*)	282 – 287	307 – 314 – 320	343 – 349 – 355	409 – 411	442 – 444 – 446	499 – 505
"G" Body Outside Diameter	78	121	130	146	168	213
"K" $\varnothing$ Outlet to $\varnothing$ Inlet	14,3	31,7	36,5	36,5	44,4	54,0
Number of Bolts (junction cap - body)	6	6	8		9	10
Weight in kg (screwed & SW)	4,5	13,6	22,0	31,8	44,5	81,2
Weight in kg (flanged PN100*)	5,5 – 6,5	14,5 – 15,5 – 16	22,5 – 23,5 – 24	36,5 – 37,0	45,5 – 47,5 – 49	85,8 – 87,8

\* Other flange sizes, ratings and face-to-face dimensions are available on request.

Shade indicates products that are CE Marked according to the PED (2014/68/JE). All the other models comply with the Article 4.3 of the same directive.

+ May be derated depending on flange rating and type.

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

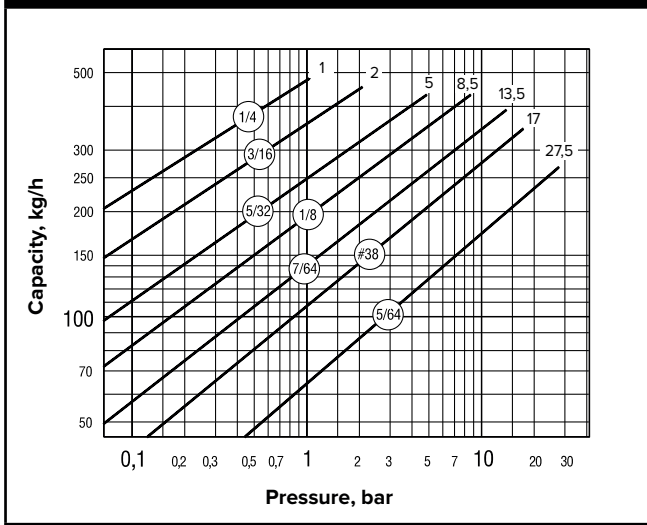
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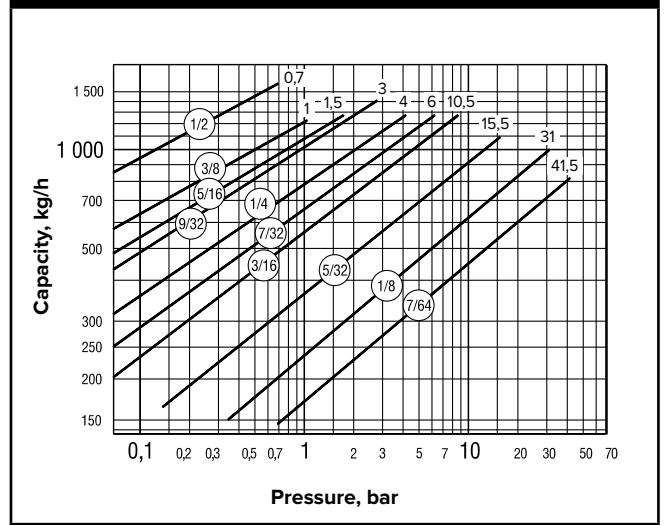


Steam Trapping and  
Steam Tracing Equipment

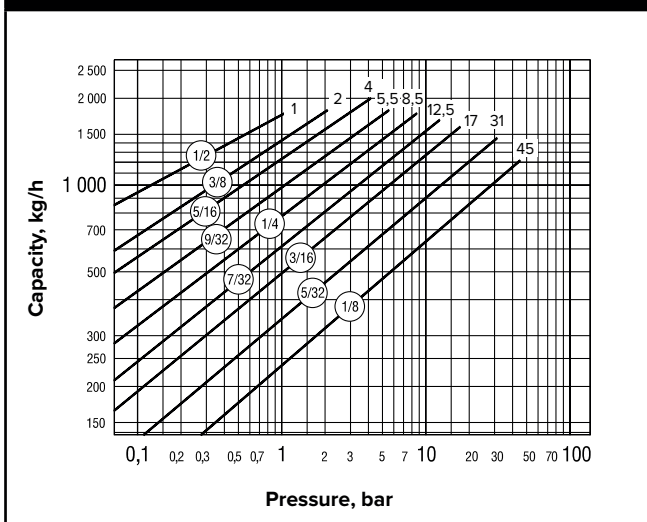
**Table ST-95-1. Model 310 Capacity**



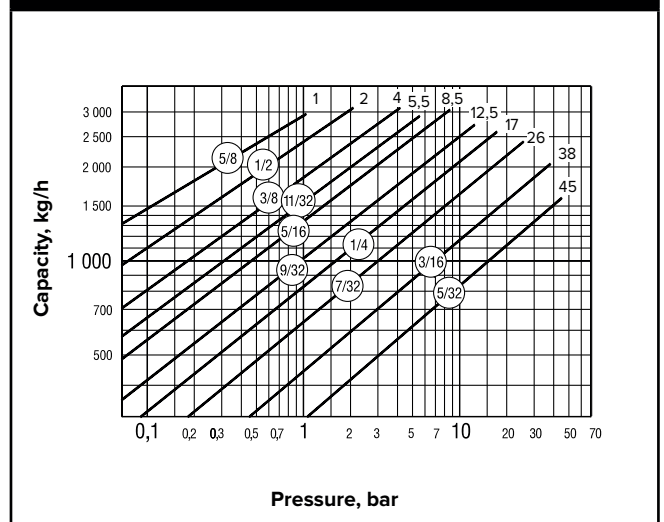
**Table ST-95-2. Model 312 Capacity**



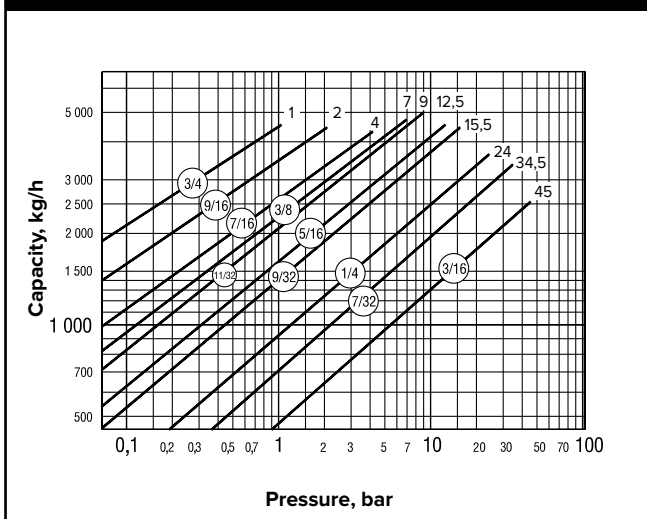
**Table ST-95-3. Model 313 Capacity**



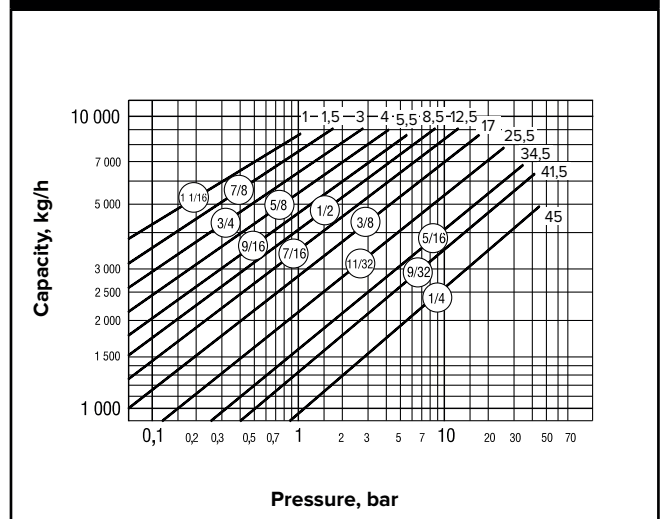
**Table ST-95-4. Model 314 Capacity**



**Table ST-95-5. Model 315 Capacity**



**Table ST-95-6. Model 316 Capacity**



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