

# STEAM TRAPS

## WSIB/WSIBH

### Inverted Bucket Steam Trap

Units: inches

Model	<b>WSIB, WSIBH</b>
Size	<b>1/2", 3/4"</b>
Connections	<b>NPT, SW</b>
Body Material	<b>Stainless Steel</b>
PMO Max. Operating Pressure	<b>450 PSIG*</b>
TMO Max. Operating Temperature	<b>750°F</b>
PMA Max. Allowable Pressure	<b>720 PSIG @ 100°F</b>
TMA Max. Allowable Temperature	<b>750°F @ 400 PSIG</b>

\*750°F @ operating pressures below 400 PSIG. See installation note regarding using trap in superheated applications.

### TYPICAL APPLICATIONS

**DRIP, TRACER:** The WSIB inverted bucket trap is primarily used in drip and tracer applications. Inverted bucket traps can handle superheated steam when a check valve is used. These traps are also used on unit heaters, laundry equipment, and other small process equipment where slow start-up due to poor air handling capability can be tolerated.

### HOW IT WORKS

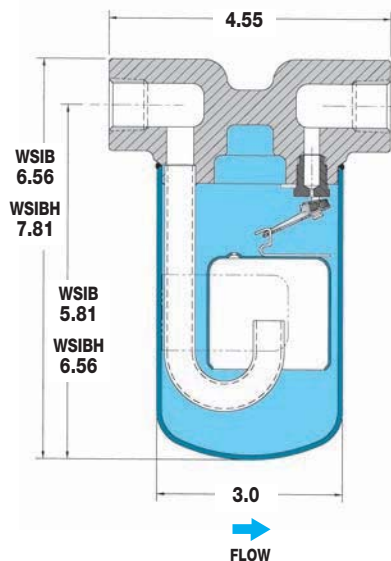
When there is condensate in the system, the inverted bucket inside the steam trap sits on the bottom of the trap due to its inherent weight. This allows condensate to enter the trap and to be discharged through the seat orifice located at the top. When steam enters the trap, the bucket floats to the surface and closes off the discharge valve containing the steam in the system. Eventually steam is bled off through a small hole in the top of the bucket causing the bucket to sink which repeats the cycle.

### FEATURES

- All stainless steel body
- Acceptable for superheated steam (with check valve installed at inlet)
- Water hammer resistant
- Valve & seat are at the top of the trap making it less sensitive to dirt
- All stainless steel internals with hardened valve & seat



**WSIB**  
Inverted Bucket  
Steam Trap



### SAMPLE SPECIFICATION

Steam trap shall be an all stainless steel module design inverted bucket type with a frictionless valve lever assembly.

### INSTALLATION & MAINTENANCE

Trap must be installed in upright position to function properly. Steam trap is non-repairable. If a new trap is required, remove and replace. With superheated steam, a check valve must be installed at inlet of trap. For full maintenance details, see Installation and Maintenance Manual.

### MATERIALS

Body	Stainless Steel GR CF3
Cover	304L Stainless Steel
Internals	300 Series Stainless Steel
Valve Plug & Seat	420F Stainless Steel

### CAPACITIES – Condensate (lbs/hr)

Model	Orifice Size	PMO (PSIG)	Differential Pressure (PSI)																			
			5	10	15	20	25	30	40	50	60	70	80	100	125	150	180	200	250	350	450	
WSIB-20	3/16"	20	450	560	640	690																
WSIB-80	1/8"	80	300	350	400	440	460	500	550	580	635	660	690									
WSIB-150	#38	150	210	250	280	300	320	350	380	400	420	450	470	500	550	570						
WSIB-450	.057	450	31	50	70	84	95	105	120	133	145	152	160	174	187	198	208	215	228	248	263	
WSIBH-15	1/4"	15	830	950	1060																	
WSIBH-30	3/16"	30	530	700	820	880	950	1000														
WSIBH-70	5/32"	70	380	500	560	620	680	710	770	840	90	950										
WSIBH-125	1/8"	125	285	375	440	485	530	560	620	670	720	780	800	860	950							
WSIBH-200	7/64"	200	205	265	315	350	385	410	465	500	580	590	620	650	700	810	840	860				
WSIBH-250	#38	250	155	205	240	270	295	320	360	400	500	530	550	580	630	660	690	710	760			
WSIBH-450	.057	450	31	50	70	84	95	105	120	133	145	152	160	174	187	198	208	215	228	248	263	

# STEAM TRAPS

## IB Series

### Inverted Bucket Steam Traps

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Model	1031, 1032, 1033, 1034, 1031S, 1041, 1042, 1044, 1038S
Sizes	1/2", 3/4", 1", 1 1/4", 1 1/2"
Connections	NPT
Body Material	Cast Iron
Options	Internal check valve, air vent
PMO Max. Operating Pressure	250 PSIG
TMO Max. Operating Temperature	450°F
PMA Max. Allowable Pressure	250 PSIG up to 450°F
TMA Max. Allowable Temperature	450°F @ 250 PSIG

### TYPICAL APPLICATIONS

**DRIP, TRACER, PROCESS:** The **IB Series** inverted bucket traps are available in several sizes and capacity ranges. Inverted bucket traps can handle superheated steam when a check valve is used. The smaller traps are primarily used in drip and tracer applications. These traps are also used on unit heaters, laundry equipment, and other process equipment where slow start-up due to poor air handling capability can be tolerated. Larger sizes are used on process equipment; however, since bucket traps have limited air handling capability, F&T traps are the preferred choice.

### HOW IT WORKS

When there is condensate in the system, the inverted bucket inside the steam trap sits on the bottom of the trap due to its inherent weight. This allows condensate to enter the trap and to be discharged through the seat orifice located at the top. When steam enters the trap, the bucket floats to the surface and closes off the discharge valve containing the steam in the system. Eventually steam is bled off through a small hole in the top of the bucket causing the bucket to sink which repeats the cycle.

### FEATURES

- Water hammer resistant
- Suitable for superheated steam (use internal check valve option to eliminate loss of prime)
- In-line repairability is simplified by having all internals attached to the cover
- Valve & seat are at the top of the trap making it less sensitive to dirt
- All stainless steel internals with hardened valve & seat

### SAMPLE SPECIFICATION

The steam trap shall be of an inverted bucket trap design. Trap body and cover shall be of cast iron construction with all stainless steel internals and hardened seat and disc.

### MAINTENANCE

All working components can be replaced with the trap body remaining in-line. The repair kit for the traps contain a lever and seat assembly with gasket. With superheated steam, a check valve must be installed at inlet of trap. For full maintenance details see Installation and Maintenance Manual.



1031/1032/1033/1034  
(No Strainer)  
1031S  
(with Strainer)

1041/1042/1044/1038S  
(with Strainer)

### DIRECT REPLACEMENT FOR THE FOLLOWING ARMSTRONG MODELS

Watson Model	Armstrong Model
<b>(Without Integral Strainer)</b>	
1031	800
1032	811
1033	812
1034	813
<b>(Includes Integral Strainer)</b>	
1031S/1038S	N/A
1041	880
1042	881
1044	883

### OPTIONS

Blowdown valve connection available on 1041, 1042, 1044 & 1038S. Thermic vent to improve air handling capability. Internal check valve for superheated or condensate backflow applications.

### HOW TO SIZE/ORDER

From the capacity chart, select the model that can handle the working pressure of the system (PMO). Select the appropriate trap that will meet the capacity requirements at the differential pressure. Example:

Application: 1000 lbs/hr at 75 PSIG working pressure and 2 PSI differential pressure

Note: Specify Model, PMO and Connection Size

Size/Model: **IB-1034, 80 PSIG**, Specify pipe size (3/4", 1"), or **IB-1044, 80 PSIG**, Specify pipe size (3/4", 1")

IB Series

Inverted Bucket Steam Traps

**CAPACITIES** – Condensate (lbs/hr)

Model	Pipe Size	Orifice Size	PMO (PSIG)	Differential Pressure (PSI)																		
				1/4	1/2	1	2	5	10	15	20	30	50	60	70	80	100	125	150	180	200	250
1031 1041 1031S*	1/2", 3/4"	3/16"	20	139	200	270	340	450	560	640	690											
	1/2", 3/4"	1/8"	80	75	115	150	190	300	350	400	440	500	580	635	660	690						
	1/2", 3/4"	7/64"	125	50	80	100	145	240	280	320	350	410	490	520	560	580	640	680				
	1/2", 3/4"	#38	150	35	50	75	105	150	250	280	300	350	400	420	450	470	500	550	570			
1032	1/2", 3/4", 1"	1/4"	15	191	300	450	590	830	950	1060												
	1/2", 3/4", 1"	3/16"	30	150	235	325	410	530	700	820	880	1000										
	1/2", 3/4", 1"	5/32"	70	85	145	220	275	380	500	560	620	710	840	900	950							
	1/2", 3/4", 1"	1/8"	125	70	110	160	210	285	375	440	485	560	670	720	780	800	860	950				
	1/2", 3/4", 1"	7/64"	200	45	75	110	145	205	265	315	350	410	500	550	580	620	650	700	810	840	860	
	1/2", 3/4", 1"	#38	250	15	40	80	105	155	205	240	270	320	400	500	530	550	580	630	660	690	710	760
1042	1/2", 3/4"	1/4"	15	191	300	450	590	830	950	1060												
	1/2", 3/4"	3/16"	30	150	235	325	410	530	700	820	880	1000										
	1/2", 3/4"	5/32"	70	85	145	220	275	380	500	560	620	710	840	900	950							
	1/2", 3/4"	1/8"	125	70	110	160	210	285	375	440	485	560	670	720	780	800	860	950				
	1/2", 3/4"	7/64"	200	45	75	110	145	205	265	315	350	410	500	550	580	620	650	700	810	840	860	
	1/2", 3/4"	#38	250	15	40	80	105	155	205	240	270	320	400	500	530	550	580	630	660	690	710	760
1033	1/2", 3/4"	5/16"	15	350	570	850	1140	1600	1900	2100												
	1/2", 3/4"	1/4"	30	270	400	640	810	1000	1300	1600	1800	2050										
	1/2", 3/4"	3/16"	70	195	300	480	610	750	950	1200	1375	1600	1900	2000	2200							
	1/2", 3/4"	5/32"	125	130	205	320	415	595	775	910	900	1100	1380	1480	1600	1650	1800	2000				
	1/2", 3/4"	1/8"	200	75	120	200	255	365	490	585	630	700	900	980	1080	1120	1220	1400	1500	1560	1600	
	1/2", 3/4"	7/64"	250	30	80	130	170	250	335	400	470	525	665	600	700	800	900	1000	1100	1180	1220	1300
1034 1044	3/4", 1"	1/2"	15	950	1410	1880	2300	2900	3500	3900												
	3/4", 1"	3/8"	30	600	960	1300	1640	2200	2800	3300	3500	4000										
	3/4", 1"	5/16"	60	490	800	1090	1400	1750	2200	2600	2900	3500	4100	4400								
	3/4", 1"	9/32"	80	330	580	720	1070	1450	1800	2100	2400	2800	3300	3600	3800	4000						
	3/4", 1"	1/4"	125	260	430	620	810	1150	1650	1800	1900	2200	2600	2800	3000	3200	3600	3900				
	3/4", 1"	7/32"	180	200	310	470	610	880	1170	1380	1510	1800	2100	2300	2500	2700	2900	3200	3500	3700		
	3/4", 1"	3/16"	250	170	250	380	490	700	940	1100	1250	1450	1700	1800	2000	2100	2300	2700	2800	3100	3200	3500
1038S	1 1/4", 1 1/2"	1/2"	15	1188	1763	2350	2875	3625	4375	4875												
	1 1/4", 1 1/2"	3/8"	30	760	1190	1625	2050	2750	3500	4125	4375	5125										
	1 1/4", 1 1/2"	5/16"	60	615	1000	1375	1750	2188	2750	3250	3625	4375	5125	5500								
	1 1/4", 1 1/2"	9/32"	80	420	720	900	1340	1810	2250	2625	3000	3500	4125	4500	4750	5000						
	1 1/4", 1 1/2"	1/4"	125	330	540	775	1010	1440	2063	2250	2375	2750	3250	3500	3750	4000	4500	4875				
	1 1/4", 1 1/2"	7/32"	180	250	390	590	760	1100	1470	1725	1890	2063	2375	2875	3125	3375	3625	4000	4375	4625		
	1 1/4", 1 1/2"	3/16"	250	210	320	470	610	875	1170	1380	1560	1800	2125	2250	2500	2625	2875	3375	3500	3875	4000	4375

\* 1031S only available @ PMO = 125 PSIG.

# STEAM TRAPS

## IB Series

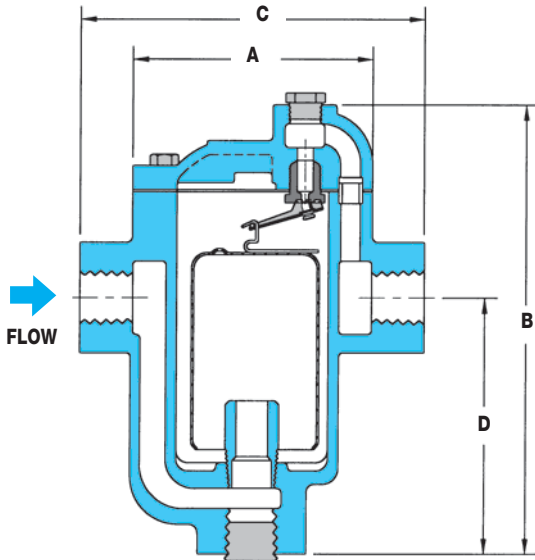
### Inverted Bucket Steam Traps

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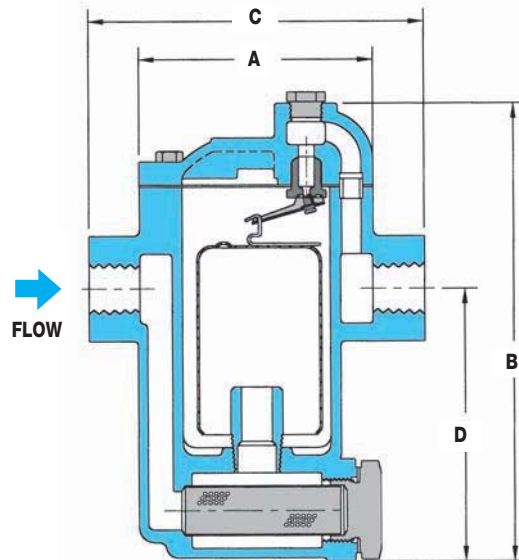
#### MATERIALS

Body & Cover	Cast Iron, ASTM A-278 Class 30
Nuts & Bolts	High-Tensile Steel
Gasket	Non-Asbestos Fiber
Bucket	Stainless Steel
Lever & Seat Assembly	Stainless Steel
Valve & Seat	Hardened Stainless Steel
Integral Strainer*	Stainless Steel

\* 1031S, 1038S, 1041, 1042, 1044 models only.



1031/1031S/1032/1033/1034  
without Strainer (except 1031S)



1041/1042/1044/1038S  
with Strainer

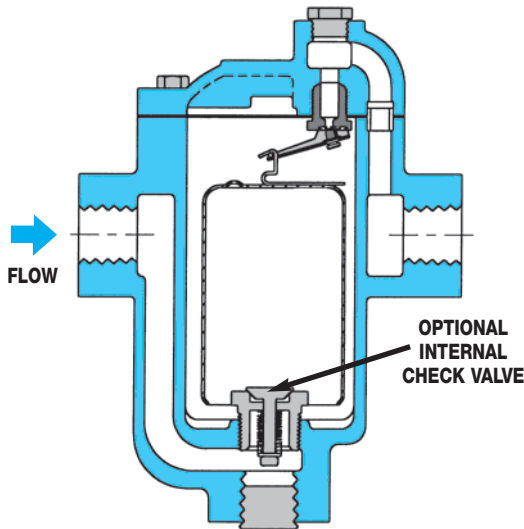
#### DIMENSIONS & WEIGHTS – inches/pounds

Model	A	B	C	D	Weight (lbs)
1031	3.75	5.875	5.00	2.75	5
1031S*	3.75	5.875	5.00	2.75	5
1032	3.75	6.875	5.00	4.25	6
1033	5.625	9.06	6.50	5.375	15
1034	7.00	11.75	7.75	7.03	27
1041*	3.75	6.06	5.00	3.43	5
1042*	3.75	7.06	5.00	4.43	6
1044*	7.00	12.375	7.125	7.375	30
1038S*	7.00	12.375	7.125	7.375	30

\* With Integral Strainer

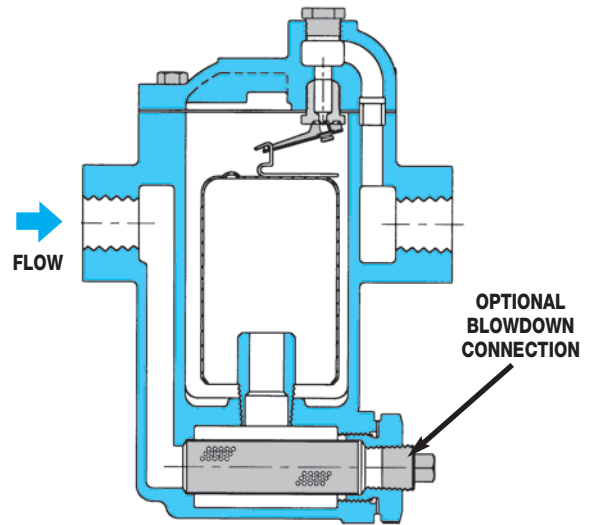
## IB Series

### Inverted Bucket Steam Traps



#### CHECK VALVE OPTION

The optional internal check valve allows the bucket trap to retain its prime even when exposed to superheated steam. Under vacuum conditions it will also stop condensate from back-flowing from the condensate return line into the steam system.



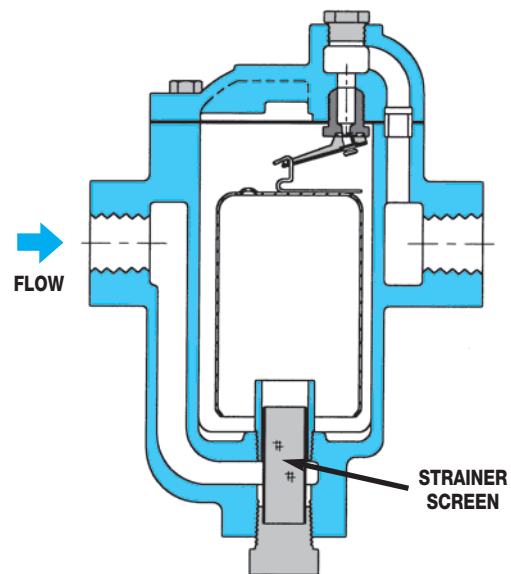
#### BLOWDOWN CONNECTION OPTION

A blowdown valve connection is available as an option on the **1041**, **1042**, **1044**, and **1038S** models. This simplifies maintenance by allowing the strainer to be cleaned without removal. User to supply blowdown valve.

#### REPLACEMENT KITS

A replacement kit containing the lever and seat assembly is a more economical option than replacing the entire steam trap. Also available are replacement screens, gaskets and buckets.

When ordering replacement lever and seat assemblies specify model and operating pressure. Reference price sheet for exact cross-reference to Armstrong PCA (Pressure Change Assembly) Kits.



#### 1031S

The **1031S** is equipped with a small protection screen to guard against dirt in the steam system. It is a more economical alternative than the 1041 which has a full-port strainer. Specifically designed for use in laundries. Available in 125 PSIG rating only.