

## IB18S Series

### Inverted Bucket Steam Trap with Strainer

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Bestobell's IB18S Series horizontal inverted bucket traps are ideal for general condensate removal service and feature a built-in strainer, heavy-duty cast iron body, and stainless steel bucket for long-term operation and reliability. For process, heating, and dripleg services with pressures to 250 psig (17.2 bar). Available in 1/2" through 1-1/4" sizes.

Inverted bucket steam traps utilize the difference between the density of gas and liquid. The bucket is submerged, once the trap has been primed after installation. When steam enters the trap, it collects in the inverted bucket causing it to become buoyant, and rise to close the discharge valve. When condensate enters the trap, and the steam condenses within the bucket, the weight of the bucket multiplied by the linkage's leverage, exceeds the differential pressure holding the valve to the seat and the bucket sinks. This opens the discharge valve to discharge accumulated air, CO<sub>2</sub>, other non-condensable gases and the condensate. As the condensate drains and steam enters the trap, the cycle repeats with the bucket filling with steam, rising to close the discharge valve.

- **Easy in-line inspection and maintenance** — simply remove the top for easy access to the trap internals for inspection or repair.
- **Unique linkage system** — multiplies the force exerted by the bucket for assisted opening against pressure for maximum flow capacities.
- **Hardened stainless steel valve and seat** — for minimal corrosion and increased operating life of the steam trap.
- **Built-in Strainer** — for protection of trap and valve mechanism and the reduction of required piping and fittings.

# Bestobell IB18S Series Inverted Bucket Traps

## Principle of Operation

Inverted bucket steam traps operate on the simple principle that steam, a gas, will provide buoyancy to an inverted bucket in water. The bucket, due to its weight, is submerged within a "prime" of water. The bucket pulls down on a lever system and holds the discharge valve open, allowing flow and discharge of condensate through the trap. When steam enters the trap, it collects in the inverted bucket causing it to become buoyant. The bucket floats upward closing the discharge valve through the linkage arrangement. When condensate again enters the trap, and as the steam under the bucket condenses, the weight of the bucket, multiplied by the linkage's leverage, exceeds the differential pressure holding the valve plug to the valve seat, and the bucket sinks. This opens the valve to discharge condensate and accumulated non-condensable gases. As the condensate drains and the steam enters the trap, the cycle repeats.

## Specifications

### Models:

- **IB18S:** horizontal type, side inlet, side outlet, with integral strainer

**Line Sizes:** 1/2", 3/4", 1", 1-1/4"

**End Connections:** threaded (NPT)

### Materials:

- Body & Cover: Cast Iron (ASTM A48, Cl. 30)
- Bucket & Linkage: Stainless Steel
- Valve & Seat: hardened Stainless Steel
- Body/Cover Gasket: Teflon®
- Strainer: Stainless Steel, 20 mesh

**Maximum Temperature:** 450°F

## Discharge Capacities

Capacities shown in **blue** represent condensate in lbs. per hour; kg/hr shown in ( ). 1 psi = 14.5 bar.

Size	Orifice #	Differential Pressure PSI																		
		1	5	10	15	20	25	30	40	50	60	70	80	100	125	150	180	200	225	250
1/2"	6	40	70	110	150	200	240	270	310	340	375	420	440	480	540	570				
		(18)	(32)	(50)	(68)	(91)	(109)	(122)	(141)	(154)	(170)	(191)	(200)	(218)	(245)	(259)				
3/4"	8	130	220	340	390	460	490	510	590	650	700	750	800	860	950					
		(59)	(100)	(154)	(177)	(209)	(222)	(231)	(268)	(295)	(318)	(341)	(363)	(391)	(432)					
1"	10	60	100	150	190	240	260	290	340	380	420	450	470	520	575	620	670	700	730	760
		(27)	(45)	(68)	(86)	(109)	(118)	(131)	(154)	(172)	(191)	(204)	(213)	(236)	(261)	(282)	(304)	(318)	(332)	(345)
1"	7	300	560	680	800	900	1000	1070	1220	1320	1440	1600	1650	1800	2000					
		(136)	(254)	(309)	(363)	(409)	(454)	(486)	(554)	(600)	(654)	(727)	(750)	(818)	(909)					
1-1/4"	16	130	240	340	370	420	470	520	590	650	700	760	810	900	1010	1100	1165	1230	1265	1300
		(59)	(109)	(154)	(168)	(191)	(213)	(236)	(268)	(295)	(318)	(345)	(368)	(409)	(459)	(500)	(529)	(559)	(575)	(591)
1-1/4"	12	600	1100	1300	1600	1800	1900	2000	2300	2600	2850	3050	3300	3600	3900					
		(272)	(500)	(591)	(727)	(818)	(863)	(909)	(1045)	(1182)	(1295)	(1368)	(1500)	(1636)	(1773)					
1-1/4"	12	400	700	950	1100	1300	1550	1700	1800	1900	2030	2150	2300	2500	2600	2800	3000	3200	3350	3500
		(182)	(318)	(432)	(500)	(591)	(704)	(772)	(818)	(863)	(923)	(977)	(1045)	(1136)	(1182)	(1272)	(1363)	(1454)	(1523)	(1591)

Select for application utilizing proper safety factors

## Pressure Ratings

Size	Standard Orifice	Product Designator	Max. ΔP	Max. Allowable Pressure
1/2"	6	B18S210-6	150	150
3/4"	6	B18S310-6	250	250
	8	B18S310-8	125	250
1"	7	B18S410-7	250	250
	10	B18S410-10	125	250
1-1/4"	12	B18S510-12	250	250
	16	B18S510-16	125	250

## Dimensions

Model Size	B18S 1/2"	B18S 3/4"	B18S 1"	B18S 1-1/4"
A	5.06 (128)	5.06 (128)	7.00 (178)	8.13 (206)
B	6.50 (165)	7.50 (191)	9.06 (230)	12.31 (313)
C	3.75 (95)	3.75 (95)	5.63 (143)	7.00 (178)
D	3.44 (87)	4.44 (113)	5.75 (146)	7.38 (187)
# Bolts	6	6	8	8
Weight Lbs (Kg)	7 (3.2)	8 (3.7)	22 (10)	32 (14.5)

Note: dimensions show in ( ) represent mm.

