

IB32 Inverted Bucket Steam Trap Installation and Maintenance Instructions

Description

The Spirax Sarco IB32 range of inverted bucket steam traps is designed for installation in vertical pipework with the flow vertically upwards. With cast steel bodies and bolted cover, they are maintainable and offer a wide range of pressures. An optional integral check valve on the inlet is available.

Limiting conditions

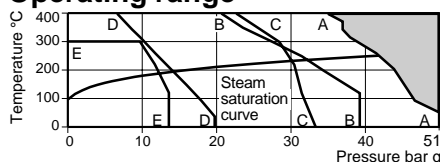
Maximum body design conditions depend on the orifice size and flange - see table below


PMA - Maximum allowable pressure 51 bar g
(739 psi g)

TMA - Maximum allowable temperature 400°C
(752°F)

Cold hydraulic test pressure 76 bar g
(1102 psi g)

Operating range



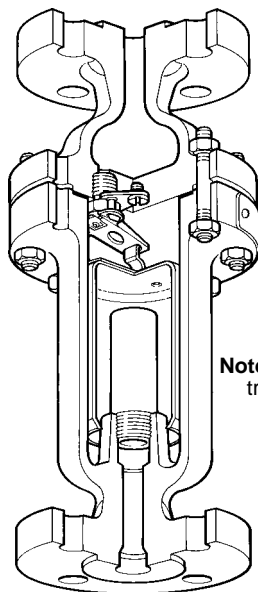
 The product must not be used in this region.

A - A ANSI 300 B - B PN40 C - C JIS/KS20 D - D ANSI 150 E - E JIS/KS10

Δ PMX - Maximum differential pressure										
Size	2	4	8.5	12.5	13.8	17	20	24	30	32
DN15	IB32/12	IB32/10	IB32/8	-	IB32/7	IB32/6	-	IB32/5	-	IB32/4
DN20	IB32/16	IB32/12	IB32/10	-	IB32/8	IB32/7	IB32/6.5	IB32/6	-	IB32/5
DN25	-	IB32/24	IB32/19	IB32/16	-	IB32/14	-	-	-	IB32/12
DN32	IB32/36	IB32/28	IB32/22	IB32/20	-	IB32/18	-	IB32/16	IB32/14	IB32/12
DN40	IB32/36	IB32/28	IB32/22	IB32/20	-	IB32/18	-	IB32/16	IB32/14	IB32/12
DN50	IB32/48	IB32/40	IB32/32	IB32/28	-	IB32/24	-	IB32/22	IB32/20	IB32/18

Note: The pressure limit on the flange specified should be greater than the pressure limit of the internal mechanism. The table below offers guidance.

Flange	Pressure (at saturation)	Mechanism available
ANSI 150	14.1 bar g	2, 4, 8.5 and 12.5 bar
ANSI 300	41.6 bar g	All versions
PN40	32.0 bar g	All versions
JIS/KS10	12.2 bar g	2, 4 and 8.5 bar
JIS/KS20	30.0 bar g	2, 4, 8.5, 12.5, 13.8, 17, 20 and 24 bar



Note: Flanged trap shown.

Installation

The inverted bucket steam trap must be installed with the body upright so that the bucket is rising and falling vertically. The inlet should be at the bottom with the trap installed below the drain point so that a water seal can be maintained around the open end of the bucket.

Inverted bucket steam traps do not permit rapid release of air. On process applications, in particular, this can lead to slow warm-up times and waterlogging of the steam space. A separate external air vent is therefore required in parallel to vent air efficiently. Any bypass should be positioned above the trap. If it is below, and is leaking or left open, the water seal could be blown away leading to steam wastage. Where inverted bucket steam traps are fitted in exposed conditions, the possibility of freezing damage can be reduced by thermal insulation. Ensure that you have the required tools available before undertaking installation. For large sizes, always use suitable lifting gear and ensure that the product is safely secured.

Maintenance

Before undertaking any maintenance on the inverted bucket steam trap, it must be isolated from both supply line and return line and any pressure allowed to safely normalise to atmosphere. The inverted bucket steam trap should then be allowed to cool. When re-assembling, ensure that all joint faces are clean and that new gaskets are always used. Ensure that you have all the required tools and

consumables available before undertaking any maintenance. Only use genuine Spirax Sarco replacement parts. Unwanted equipment should be disposed of in a safe manner.

How to fit valve and seat assembly



Isolate the inverted bucket steam trap and disconnect outlet connection. After undoing the nuts, remove cover with valve seat and bucket assembly from body. Unhook bucket from valve lever. Remove valve guide plate by undoing the two screws. Remove valve seat. The valve seat is spherically ground so that a seal is made at the sealing face. When fitting a new valve seat it is extremely important to ensure that the joint faces are clean, and STAG jointing compound should be applied to the threaded portion. Screw in new valve seat to torque figures shown. Fit new valve guide plate and lever, using new screws supplied. Tighten these after checking that the valve head is properly aligned to the valve seat orifice. Hook bucket onto valve lever. Using new gaskets, refit cover to torque figures shown and reconnect outlet pipework.

How to fit check valve assembly

Remove cover together with bucket and valve assembly. Remove check valve and adaptor (where fitted).

Note: The DN15, 20, 32 and 40 units have the check valve screwed directly into the body, whereas the DN25 and DN50 sizes use an adaptor between the body and check valve.

Recommended tightening torques

Item	 or mm		N m	(lbf/ft)
2	DN15	M8 x 1.25 x 55	16 - 20	12 - 15
	DN20	M10 x 1.5 x 65	30 - 35	22 - 26
	DN25	M12 x 1.75 x 90	40 - 45	30 - 33
	DN32, 40	M16 x 2 x 105	80 - 85	59 - 63
	DN50	M16 x 2 x 115	85 - 90	63 - 66
6	DN15, 20	2 BA x 5/16"	2.5 - 2.8	1.8 - 2.1
	DN25, 32, 40	1/4" WHIT x 1/2"	15 - 20	11 - 15
	DN50	5/16" WHIT x 1/2"	20 - 25	15 - 19
9	DN15	13 mm	50 - 55	37 - 40
	DN20	5/8"	50 - 55	37 - 40
	DN25	7/8"	80 - 88	59 - 65
	DN32, 40	1 1/4"	175 - 190	128 - 140
	DN50	1 1/2"	270 - 300	198 - 220
13	DN15	7/8"	200 - 220	147 - 162
	DN20, 25	1 1/8"	200 - 220	147 - 162
	DN32, 40, 50	50 mm	300 - 320	220 - 235
Bush	DN25	36 mm	200 - 220	147 - 162
	DN50	65 mm	300 - 320	220 - 235

Disposal of product

This product is recyclable. No ecological hazard is anticipated with the disposal of this product, providing due care is taken.

Spare parts

The spare parts available are shown in heavy outline. Parts shown in broken line are not supplied as spares.

Available spare

Valve and seat assembly	6 (2-off), 7, 9, (state pressure range) 10, 11
Bucket	5
Check valve assembly	13
Cover gasket (packet of 3)	8

How to order spares

Always order spares by using the description given in the column headed 'Available spare' and state the size and full definition of the trap, e.g. IB32/7.

Example: 1 - Valve and seat assembly for a DN32 Spirax Sarco steam trap type IB32/16.

Note:

A reducing bush is required for DN25 and DN50 sizes

