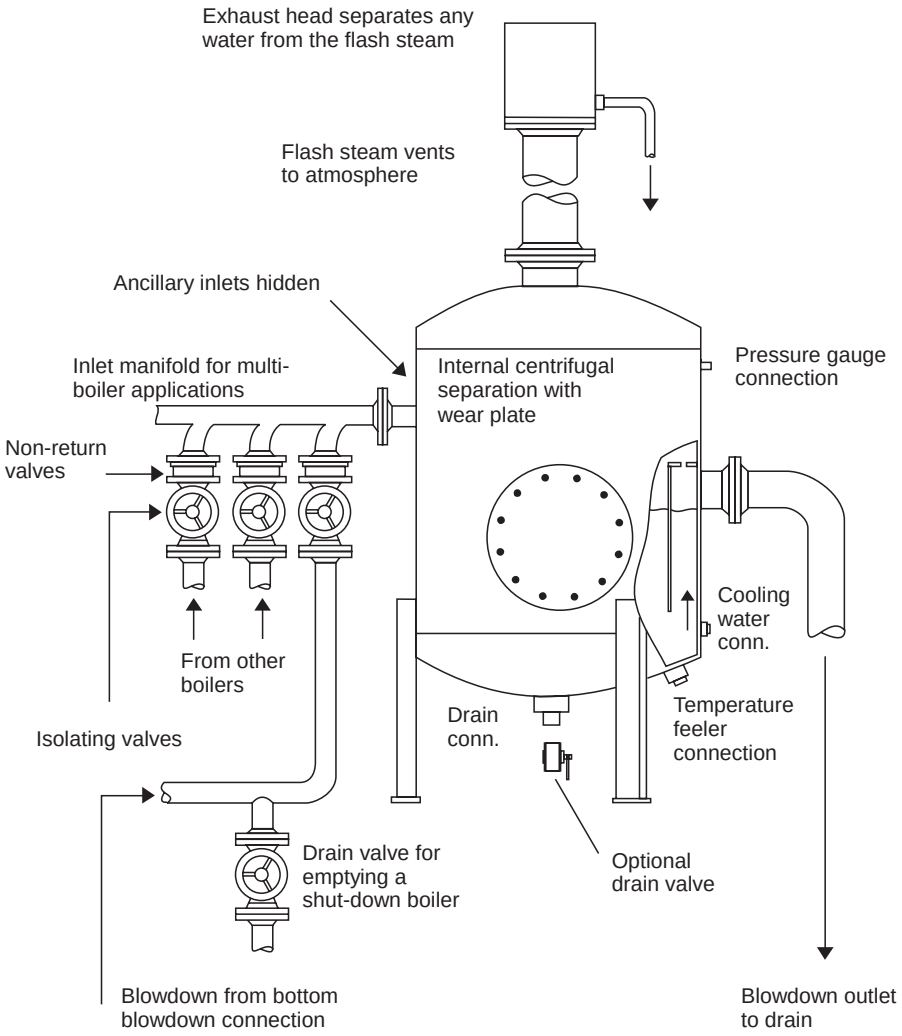


DESIGNED TO PD5500, CE MARKED.
THE HEALTH AND SAFETY EXECUTIVE GUIDANCE NOTE BG03 RECOMMENDS THAT BLOWDOWN RECEIVERS ARE USED FOR ALL NEW INSTALLATIONS INSTEAD OF BLOWDOWN PITS.

Purpose and Application

All steam boilers need to be blown down intermittently using the main bottom blowdown valve to:
Remove any precipitated solids and sludge.
Ensure that the valve works and does not block up. This is particularly important when continuous blowdown is also used on the boiler.

The best way of disposing of this blowdown is to pipe it to a blowdown receiver.

Compared with a blowdown pit, the blowdown receiver is:
A fraction of the cost and size.
Quick and easy to install, clean and simple to maintain.
Safe- no cover plate to lift or open area for staff to fall into.
Dissipates heat more readily.

The blowdown receiver is also designed to safely handle continuous blowdown, blowdown from level control chambers and level gauge glasses.

It can also accommodate other high pressure drains providing it has been sized to do so.

Design

The receiver has been specifically designed to offer an easy to install, low-maintenance solution for the replacement of all blowdown pits at a price which gives excellent value for money and long life. Main connections are flanged. Internal wear plate for long life.

Handhole or headhole provided. Designed and manufactured to

CE Marking ensures a free passport for the equipment to be sold and placed into service in any of the member states of the European Economic Area.
Third party inspections are not required unless specifically called for by the client.

PD 5500 and CE Marked in accordance with Module H1 of the Pressure Equipment Regulation 1999.
Design pressure 7 barg.
Design temperature 0°C - 171°C.
Hydraulically tested to between 11.9 barg and 13 barg depending on vessel type, although the normal working pressure is no more than 0 to 0.3 barg.

Normally supplied with one main inlet and two ancillary inlets. Other combinations can be accommodated.

Can be used for single or multi-boiler applications.

Blowdown receivers can also be constructed to category 2 and 1 if required. Please consult us.

Operation

The short burst of intermittent blowdown enters the blowdown receiver through the central inlet and is then turned through 90° to meet the stainless steel wear plate. The pressure drop from the boiler pressure to the near atmospheric pressure of the blowdown receiver allows the blowdown to expand and a proportion flashes off into steam. The centrifugal action due to the tangential flow and the volume of the receiver separate the flash steam which is vented to atmosphere through the exhaust head.

The remaining liquid or residual blowdown, is held in the lower part of the receiver and displaces colder residual blowdown from previous blowdowns, to drain.

The drain valve is normally closed, and is only opened for emptying the receiver or removing any accumulated sludge.

When the intermittent blowdown is likely to be frequent or when continuous blowdown discharges directly into the receiver, the natural heat loss will be insufficient to prevent hot water entering the drains.

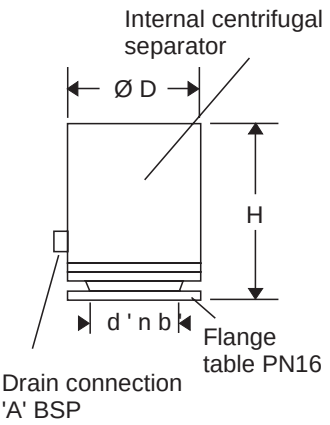
Under these conditions we recommend that a cooling water system is used which injects cooling water into the receiver when the temperature of the residual blowdown flowing to drain exceeds a preset maximum, generally 43°C or as required by Local Authority regulations.

Equipment Details

Exhaust head and separator

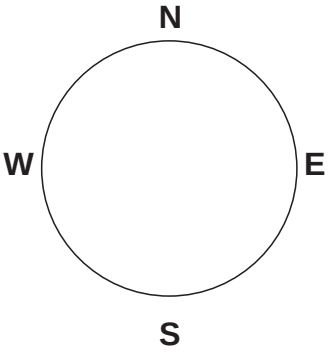
Exhaust head type	EH2	EH3	EH4	EH5	EH6	EH8	EH10	EH12	EH16
A screwed	1"	1"	1"	1¼"	1¼"	1¼"	1½"	2"	2"
d 'n.b.'	50	80	100	125	150	200	250	300	400
D dia.	160	168	183	273	273	348	418	508	628
H	278	278	363	438	438	523	575	733	848

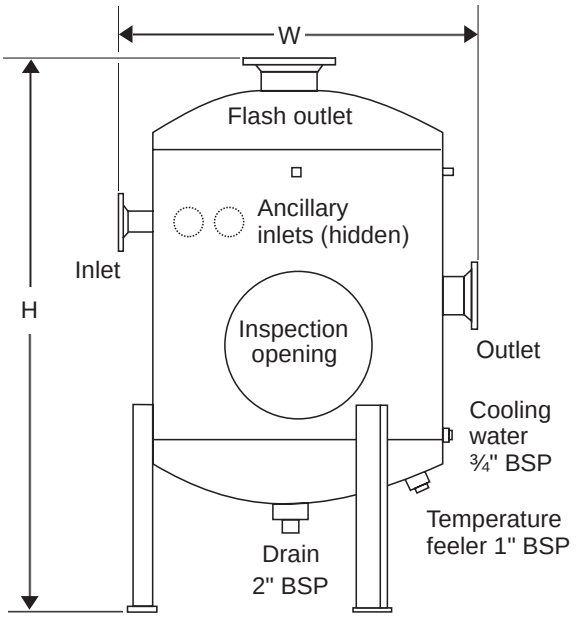
All dimensions in mm.
Note: EH2 also available screwed 2" BSP.
Internal centrifugal separator, separates entrained water from the flash steam. Fits on top of the vent pipe supplied by others.



Sizing and selection

We will be pleased to survey your boilerhouse to select the ideal equipment for your application and provide a detailed quotation.
We will need to know:
1. The number of boilers.
2. The boiler pressures.
3. The blowdown valve size and flange table and the blowdown line size.
4. The approximate length of the blowdown line if it is less than 7.5 metres (25').
5. Orientation of;
   Inlet,
   Outlet,
   Inspection opening.





The blowdown receiver connection sizes are selected by Gestra to suit the application. Flanges to BS4504 PN16 as standard.
Blowdown receivers are constructed as pressure vessels from carbon steel with internal centrifugal separation and a wear plate of stainless steel. All receivers are hydraulically tested. Two additional inlets for continuous blowdown or other high pressure drains are provided. Connections are fitted as standard for the cooling water system. Standard finish is two coats of red oxide paint. Other finishes are available on request.
Standard inlet connections are 2" NB for the main inlet and two off 1"NB for the ancillary inlets. Other sizes can be provided if required.

Approximate dimensions and weights (for guide only).

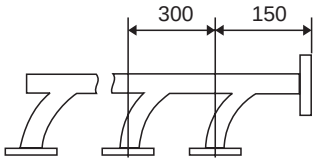
Receiver type		BR11	BR12	BR13	BR14	BR15	BR16	BR17	BR18	BR19	BR20	BR21	BR22	BR23
Dimensions, mm														
	W	505	605	710	810	960	1085	1265	1420	1570	1725	2030	2200	2640
	H	1490	1690	1710	1725	1790	1770	1870	1940	2170	2225	2470	2640	2570
Vessel, n.b.	mm	305	405	510	610	760	885	1065	1220	1370	1525	1830	2000	2440
Weight kg	Empty	150	170	210	260	340	410	510	600	710	800	1020	1290	1520
	Completely full	240	290	420	590	870	1170	1590	2060	2630	3160	4640	6370	8560
Standing water volume in litres		31	66	103	143	224	331	474	570	785	1020	1620	2330	3220

A GA drawing can be issued after receipt of order.

Ancillary Equipment Details

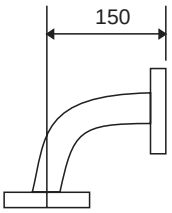
Inlet manifold

Allows any number of boilers to be connected to a single blowdown receiver. Constructed with swept bends and hydraulically tested. Simplifies the site installation.



Inlet bend

For single boiler applications.



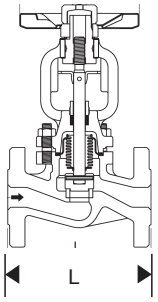
Pressure gauge and fittings

Robust, heavy-duty pressure gauge 100mm (4") dial with dual calibration in bar and psi. Direct mounting 3/8" BSP. Range 0-2.5 bar (0-36 psi). Complete with steel U syphon for side mounting, screwed 3/8" BSP and brass cock screwed 3/8" BSP.

Isolating valves type GAV56F

Robust cast steel valves for boiler and blowdown receiver isolation and for draining a shut-down boiler.

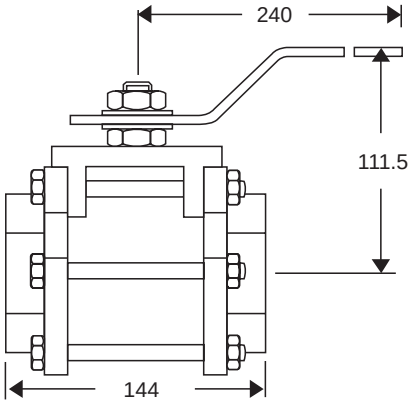
Flanged to BS4504 PN40 as standard but also suitable for PN16



Size mm	15	20	25	32	40	50	65	80
L	130	150	160	180	200	230	290	310

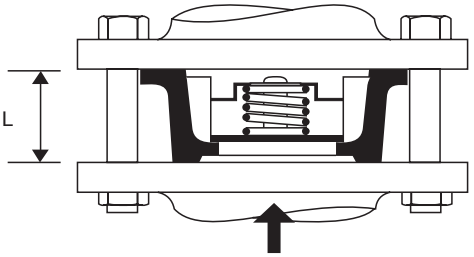
Drain valves type AW44 size 2" BSP

Full-bore screwed ball valve for draining water and sludge from the bottom of the blowdown receiver.



Non-return valves type RK86

Prevents blowdown entering the blowdown line of another boiler. Wafer-pattern valve for fitting between flanges to BS4504 PN10-40.

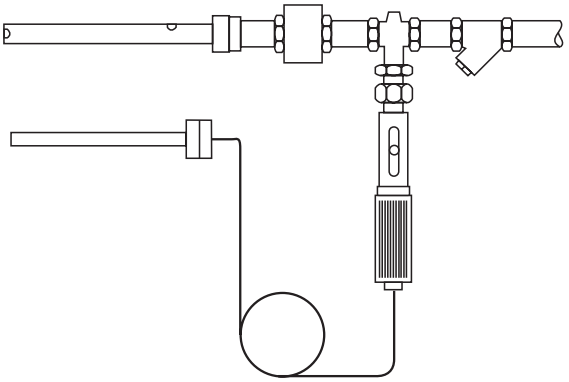


Size mm	15	20	25	32	40	50	65	80
L	16	19	22	28	32	40	46	50

Cooling Water System

A cooling water system is recommended when blowdown is likely to be frequent, resulting in hot water entering the drains.

The cooling water system consists of strainer, control valve, thermostat, non-return valve and cooling water sparge pipe.



Installation and maintenance

Guidance note PM60 from the Health and Safety Executive should be consulted and examination and maintenance carried out in accordance with Paragraphs 44 to 46.

Prior to installation of the blowdown receiver it must be checked that the concrete plinth will support the completely full weight of the receiver selected.

Holes are provided in the feet of the support legs for fixing of securing bolts.

Consideration must be given to support of the vent pipe by guy wires or brackets to adjacent walls where necessary.

When siting the receiver ensure that the inspection opening is accessible and that the exhaust head is not positioned where flash steam can be a danger.

In urban locations there may be a requirement for a silencer instead of the standard exhaust head.

Please consult us for details.

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