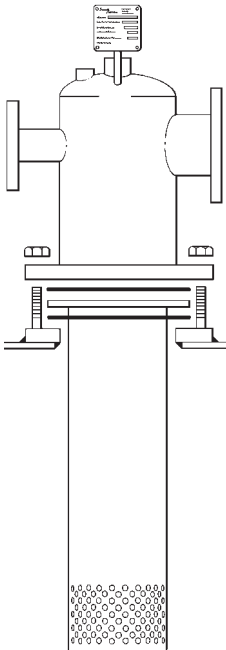

Flash Condensing De-aerator Heads
Installation and Maintenance Instructions



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1. Description

Safety

Your attention is drawn to Safety Information Sheet IM-GCM-10, a copy of which is supplied with each order.

The Spirax Sarco flash condensing de-aerator head is normally mounted on top of a boiler feed tank. It mixes incoming cold make-up water, condensate and flash steam, and distributes the resulting heated water into the tank, providing an economical method of using heat which might otherwise be wasted.

The unit consists of two parts:-

- A mixing unit, which is bolted to the top of the tank.
- An immersion tube, which distributes the water evenly into the tank. It is sandwiched between the tank flange and the mixing unit using two gaskets.

2. Operation

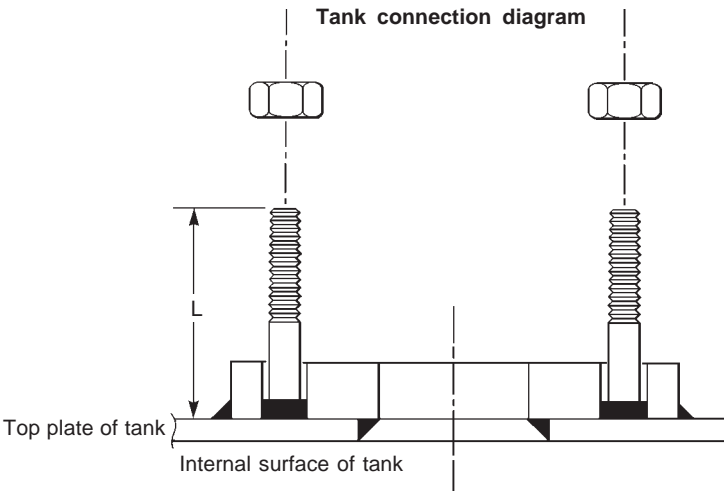
Fluids, (e.g. flash steam from blowdown systems, condensate return) enter the mixing unit and circulate, thoroughly mixing with the cold make-up water, condensing any steam, and liberating dissolved gases. The cold make-up connection has a spray screen to promote thorough mixing. An air vent allows the liberated gases to escape. The mixed fluids pass round a baffle where mixing is completed, and enter the tank through a series of holes in the immersion tube.

The de-aerator head is designed to be reasonably quiet and free of excessive vibration. If problems are experienced do not operate the de-aerator head until the cause has been investigated.

Preparation

Tanks purchased from Spirax Sarco will normally have a de-aerator head mounting flange and studs already fitted. For other tanks, the recommended flange/fastener arrangement is shown below:-

1. Weld a slip-on plate flange (raised or flat face) directly to the top of the tank.
2. Position the flange with bolt holes off-centre.



Flange/mixing unit size	Stud/nut size	Stud length (L)	Quantity
DH150	M20	8	85 mm
DH200	M20	12	90 mm
DH250	M24	12	100 mm
DH300	M24	12	110 mm
DH400	M27	16	120 mm

Note:- If you have a sectional or plastic tank it may be necessary to consult the manufacturer.

Pipework

- The system must be designed so there are no loads on the mixing unit connections.
- Pipework should be the same nominal size as the connections.
- Suitable expansion loops and supports must be incorporated.

A check valve such as a DCV2 or screwed mushroom type is recommended in the cold make up and condensate return pipelines only, as near to the mixing unit as possible.

Cold make up

The cold make up connection is fitted with a removable spray screen which diffuses and redirects the flow at 90° to the pipeline. To avoid the possibility of spray from the cold make-up entering adjacent connections and creating a reverse flow under low condensate or flash steam flows, fit a loop or 'swan neck' to any adjacent connection not fitted with a check valve.

Flash steam connection

Do not fit a check valve.

Ensure the pipeline is installed above the mixing unit and drops vertically to the inlet connection from the loop.

Recirculating feedwater spray

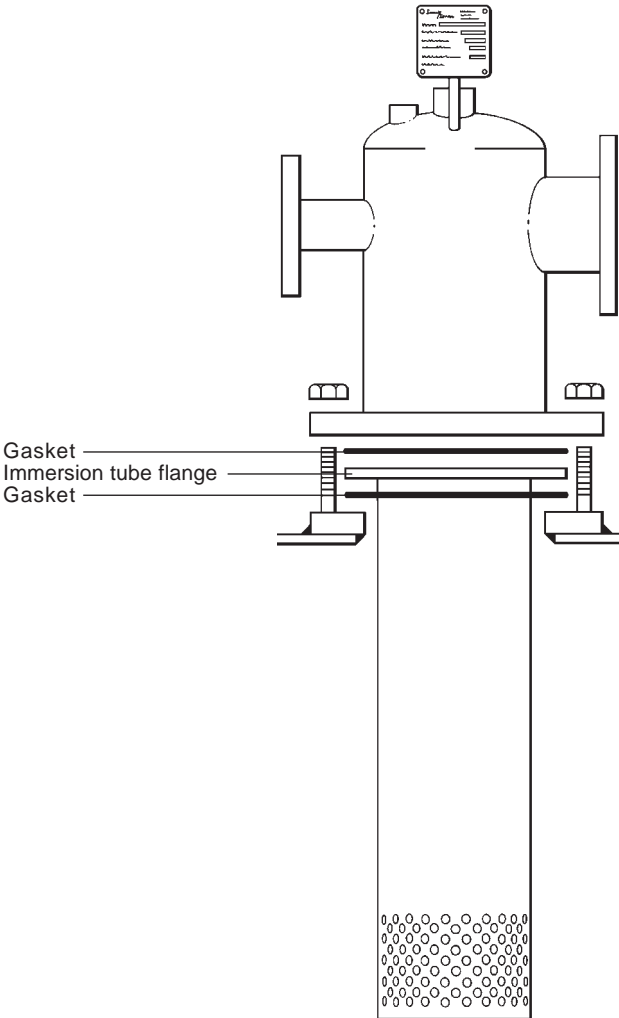
Installed in the central socket in the top of the mixing unit to condense flash steam. See other literature for further details of operation.

Air vent/vacuum breaker

- These can be fitted to one connection using a tee-piece.
- Fit the air vent horizontally.
- Fit the vacuum breaker vertically.
- We recommend stainless steel or brass/bronze fittings.
- It is not normally necessary to pipe the discharge away.

3. Installation

- Ensure the tank connection is as shown in the diagram on page 2.
 - Remove all packing and blanking plugs from the mixing unit connections. Any connections which are not to be used must be properly blanked off or capped.
 - Place one gasket on the tank flange, within the circle of studs.
 - Insert the immersion tube.
 - Place second gasket on face of immersion tube.
 - Lower mixing unit onto the studs.
- Ensure the connections are aligned correctly.



Lagging:- Fit lagging to the whole of the mixing unit to minimise heat loss.

CAUTION:- Use only chloride-free lagging material. Leaching of chlorides from lagging onto moist/wet stainless steel has been known to cause stress corrosion cracking.

4. Maintenance

The de-aerator head needs no routine maintenance.

At every major boiler inspection, (normally every 12 months):-

-Remove the spray screen (through the pipework connection) and clean it.

-Clean and inspect the de-aerator head.

-Replace both gaskets whenever the mixing unit is removed.

5. Available spares

Spare gaskets are available - two are needed per unit. State flange size and flange type when ordering.



