

Pressurised Deaerator Head

Description

Spirax Sarco Deaerator Heads are designed for boiler feedwater treatment applications. They are recommended in order to reduce the cost or the impact of chemical treatment agents and to reduce the amount of dissolved oxygen and carbon dioxide.

Oxygen and carbon dioxide are the main causes of corrosion in feedpipes and boiler room fittings. Therefore, feedwater needs to be treated in order to avoid this risk. Dissolved oxygen may be eliminated by various methods, be they chemical or physical.

A pressurised deaerator, utilising a principle by which steam is injected against the flow of make-up water in a pressurised dome, is used to treat steam boiler feedwater. The oxygen content of water entering the tank is typically 8 to 10 mg/l. After treatment in the deaerator head, this content is less than 0.02 µg/l. The principle of separation by means of structured internals is well proven and gives excellent performance.

Principle of operation:

- Cold make-up water is injected into the top of the deaeration head to be atomised in the form of droplets in a steam atmosphere. This action results in a high percentage of gasses being extracted from the water.
- The water trickles down through the stainless steel structured internals, against the flow of steam injected through the bottom of the deaeration head and ensures the final traces of residual oxygen and carbon dioxide are removed.

Our pressurised deaerator systems are designed specifically in accordance with your operating conditions and required performance characteristics.

Versions available

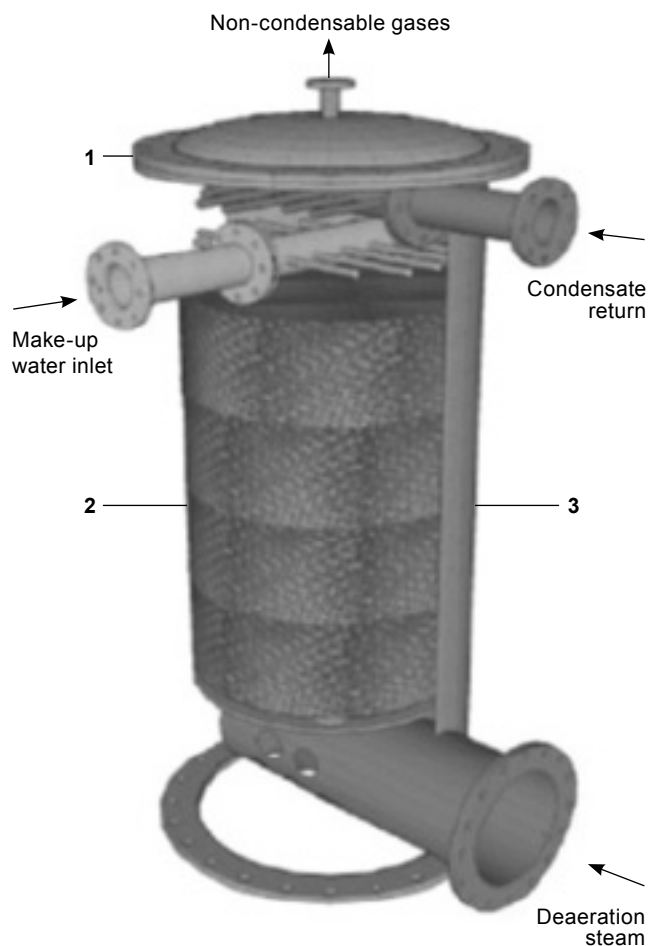
The deaerator head is available in 6 nominal diameters: 300 mm, 400 mm, 500 mm, 600 mm, 700 mm and 800 mm, with flanges to standard EN 1092. Material options include carbon steel, 304L and 316L stainless steel and will be dictated by the specifications provided and, in particular, the chloride make-up of the water.

Selection table

Model	Diameter mm	Maximum treated water flowrate (T/h) (This is the temperature after mixing the condensate return with the new make-up water) of:	
		< 50°C	50 - 105°C
DU3	300	6	7
DU4	400	8	10
DU5	500	12	15
DU6	600	16	20
DU7	700	20	25
DU8	800	30	35

Operating limits

MWP - Maximum working pressure	0.5 bar gauge
Operating pressure surge	~0.2 bar
Operating temperature	105 - 110°C
Inlet oxygen content	< 15 mg/l
Post-aeration oxygen content	0.02 µg/l
Capacity	< 100 m³
Heating medium	Steam
Deaeration fluid	Steam

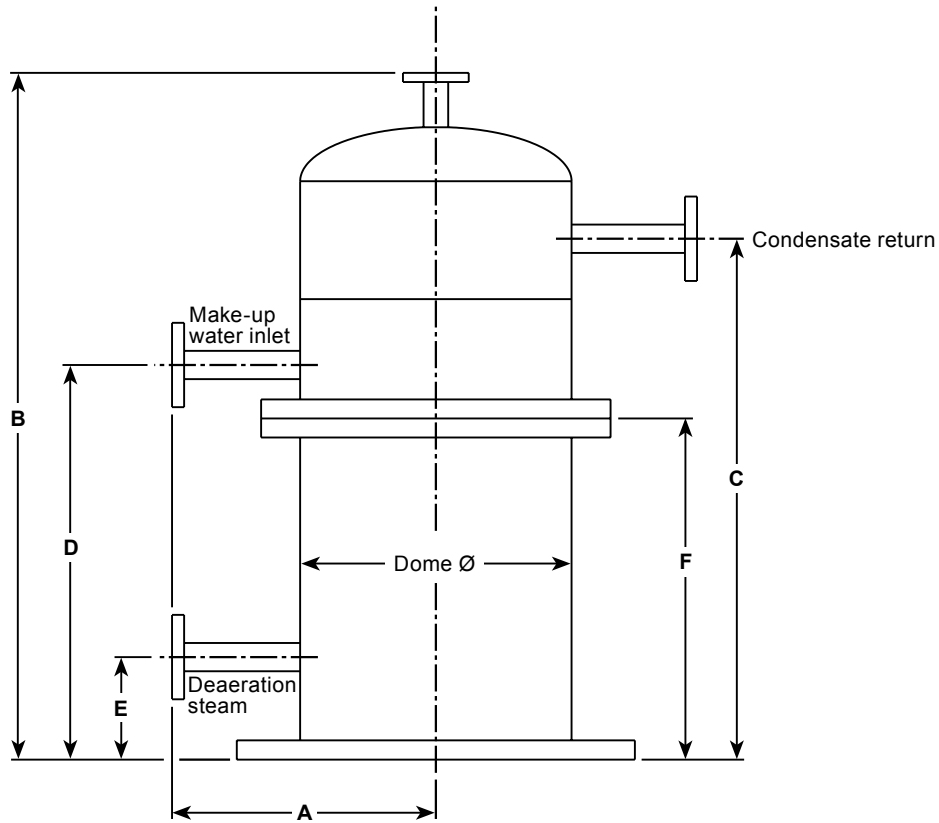


Construction

No.	Description	Material
1	Dispensing plate	1.4301 stainless steel
2	Structured internals	1.4301 stainless steel
3	Deaeration dome	S235 carbon steel 304L or 316L stainless steel

Dimensions (approximate) in mm

Model	Dome Ø	Water	Condensate	Steam	A	B	D	C	E	F
DU3	300	DN50	DN65	DN200	286	1854	1502	1616	236	1368
DU4	400	DN50	DN65	DN250	329	1925	1567	1672	269	1425
DU5	500	DN65	DN80	DN300	380	2041	1646	1765	300	1480
DU6	600	DN80	DN100	DN300	431	2096	1654	1795	300	1480
DU7	700	DN80	DN100	DN484	484	2152	1687	1838	318	1513
DU8	800	DN100	DN150	DN550	550	2323	1771	1962	347	1570



Documents and certificates

Deaerator head

- Calculation sheets
- Functional diagram
- As-built drawing (overall dimensions)

Tank

- As-built drawing
- Material certificate
- Welding certificate
- Test certificate