



Thermal deaerator – standard modules up to 40 m³/hour

Reliable and efficient deaerator suitable for steam boilers supplied complete with armature. Optional insulation available.

Application

A thermal deaerator is used for reducing the oxygen contents of steam boiler feed water. Without proper treatment, feed water for steam boilers typically has a high oxygen content of 8-10 mg/l, which causes critical corrosion in the system.

In general

When the feed water is heated, dissolved gases, such as oxygen, CO₂ and nitrogen are released. If the temperature is raised sufficiently, the gases are practically insoluble. Since steam boiler operation demands a high and constant

temperature the thermal deaerator works at an excess pressure of 0.2 bar, corresponding to a boiling point of 104 °C which in turn promotes discharging of the dissolved gases before the feed water enters the steam boiler.

Theory of operation

The condensate and the make-up water is mixed so that a temperature of 60 - 70°C is reached before it is led to the top of the deaerator. A nozzle vaporizes the water in such a way that the gases can escape the layer that surrounds every single water molecule. Steam

is led to the bottom of the deaerator through a pressure-reducing valve and steam injectors create the necessary turbulence in the water for an efficient deaeration. The excess gases are allowed to escape through a vent with a restriction.

For more information

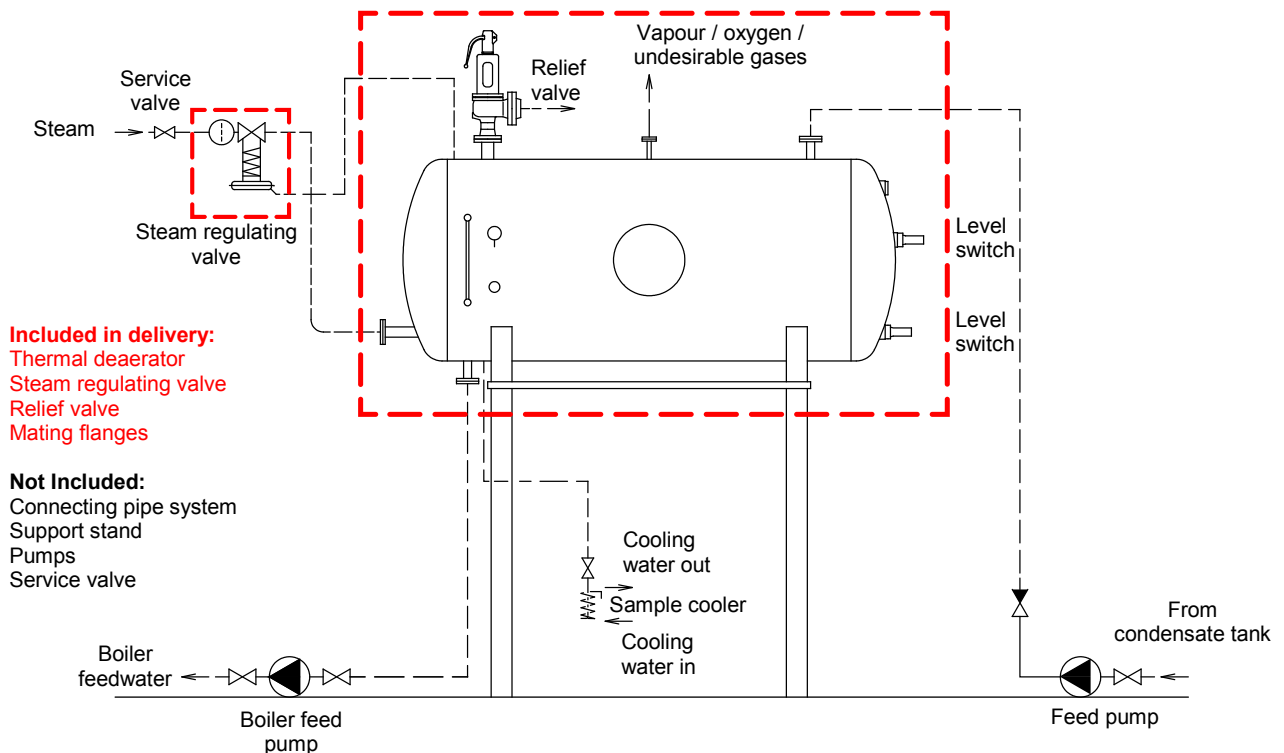
Please contact your local EUROWATER sales office. See also page two of this document.





Thermal deaerator

G15C-42A-UK4



Plant design

A EUROWATER thermal deaerator is constructed according to CE regulations and is supplied with armature, which comprises steam pressure reducing valve and relief valve, level control, water level indicator, thermometer and pressure gauge. The deaerator tank is made of steel with a coating that protects against corrosion. Optionally, the deaerator can be supplied insulated with 100 mm mineral wool covered by aluminium plate.

Specifications

Module [m ³]	Total tank volume [litre]	Water volume ¹⁾ [litre]	Weight with water [kg]	Weight without water [kg]	Steam requirements ²⁾ [kg/h]
TA 2C	1,450	725	1,900	450	162
TA 3C	2,050	1,025	2,600	550	243
TA 4C	2,700	1,350	3,400	700	324
TA 6C	3,850	1,925	4,700	850	486
TA 8C	4,950	2,475	5,900	950	648
TA 10C	6,100	3,050	7,400	1,300	810
TA 12C	7,400	3,700	8,800	1,400	972
TA 15C	9,100	4,550	10,700	1,600	1,215
TA 20C	11,550	5,775	13,400	1,850	1,620
TA 25C	14,400	7,200	17,100	2,700	2,025
TA 30C	19,400	9,700	22,600	3,200	2,430
TA 40C	23,150	11,575	26,700	3,550	3,240

¹⁾ The figures show the water volume when the level switch is placed in the centre as standard. The level switch can, however, be moved to other positions – please ask your local EUROWATER sales office for further details.

²⁾ The table indicates the theoretical steam requirement (175°C at 8 bar excess pressure) for heating of make-up water (60°) to operating temperature (104°C). Process time is about 20 min.