ATMOSPHERIC SEMI-DEAERATORS
ADG

DESCRIPTION

The ADCATherm ADG series atmospheric semi-deaerators are designed to heat boiler feed water and to reduce oxygen and carbon dioxide (oxygen values in the feed water of less than 1,6 mg/L can be achieved). Remaining oxygen can be completely removed using oxygen scavenging chemicals.
The complete system consists of a storage vessel, a deaeration head section and a vent.

OPERATION

Hot return condensate is injected in the bottom of the storage vessel using an adequate sparger pipe and softened make-up water is introduced in the deaerator head to be heated by a contact cascade flash steam heating system (counter-current flow) coming from the vessel. A part of the dissolved gases is liberated from the water at this point, and then to the atmosphere, through the flash steam vent line.
The semi-deaerated water then falls to the storage vessel below, where a steam injection system will provide an additional deaeration.
The complete unit is supplied, including all the necessary instrumentation for temperature and level control, to be described in our offer, depending on the operation conditions (see Table 1).

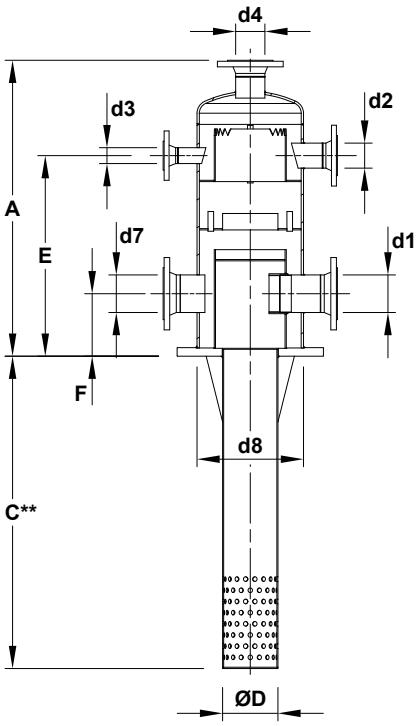
MAIN FEATURES

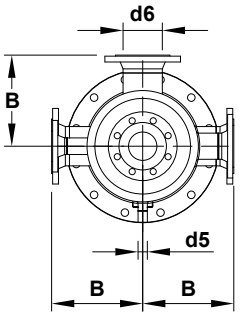
Prevents energy wasting.
All internals in stainless steel.
Easy to install.
Can be installed on new or existing systems.
Reduces the flow of flash steam from the vessel venting pipe.
Long life expectancy.

OPTIONS:	Complete stainless steel construction. Complete system including all the necessary components. Vent condenser for energy recovery.
USE:	Steam boiler feed water.
AVAILABLE MODELS:	ADGS – carbon steel body with stainless steel immersion tubes. ADGSS – complete stainless steel construction.
SIZES:	ADG150, ADG200, ADG250, ADG300 and ADG400.
CONNECTIONS:	Flanged EN 1092-1 or ASME B16.5. ISO or NPT threaded sockets. Others on request.
INSTALLATION:	Deaerator head – vertical installation. Storage vessel – cylindrical horizontal design. Final dimensions and connections according to the drawing supplied after order confirmation.

LIMITING CONDITIONS	
PS – Maximum allowable pressure	0,5 bar
TS – Maximum allowable temperature	120 ºC

Minimum operating temperature: -10 ºC.
Design code: AD-Merkblatt.
Remark: Other conditions and CE marking on request.





DIMENSIONS (mm)															
SIZE	**A**	**B**	**C**	**ØD**	**d1**	**d2**	**d3**	**d4**	**d5**	**d6 ***	**d7 ***	**d8**	**E**	**F**	**WGT. (kg)**
ADG150	610	184	**	80	DN 50	DN 25	DN 25	DN 40	1/2"	DN 50	DN 50	157	400	125	***
ADG200	670	210	**	120	DN 80	DN 32	DN 25	DN 50	1/2"	DN 65	DN 65	195	425	160	***
ADG250	860	237	**	140	DN 100	DN 50	DN 25	DN 65	1/2"	DN 80	DN 80	242	580	190	***
ADG300	900	265	**	170	DN 100/150	DN 65	DN 40	DN 80	1/2"	DN 100	DN 100	269	610	190	***
ADG400	780	510	**	220	DN 150	DN 80	DN 40	DN 100	1/2"	DN 125	DN 125	360	490	180	***

d1 – hot condensate inlet; d2 – cold make-up water; d3 – recirculating pump connection; d4 – vent; d5 – pressure gauge connection; d6 – cold condensate return; d7 – flash steam; d8 – feedwater tank connection.
* Optional; ** Dimensions on request (standard; 950, 1200, 1600, 2100 mm); *** Weight to be confirmed.

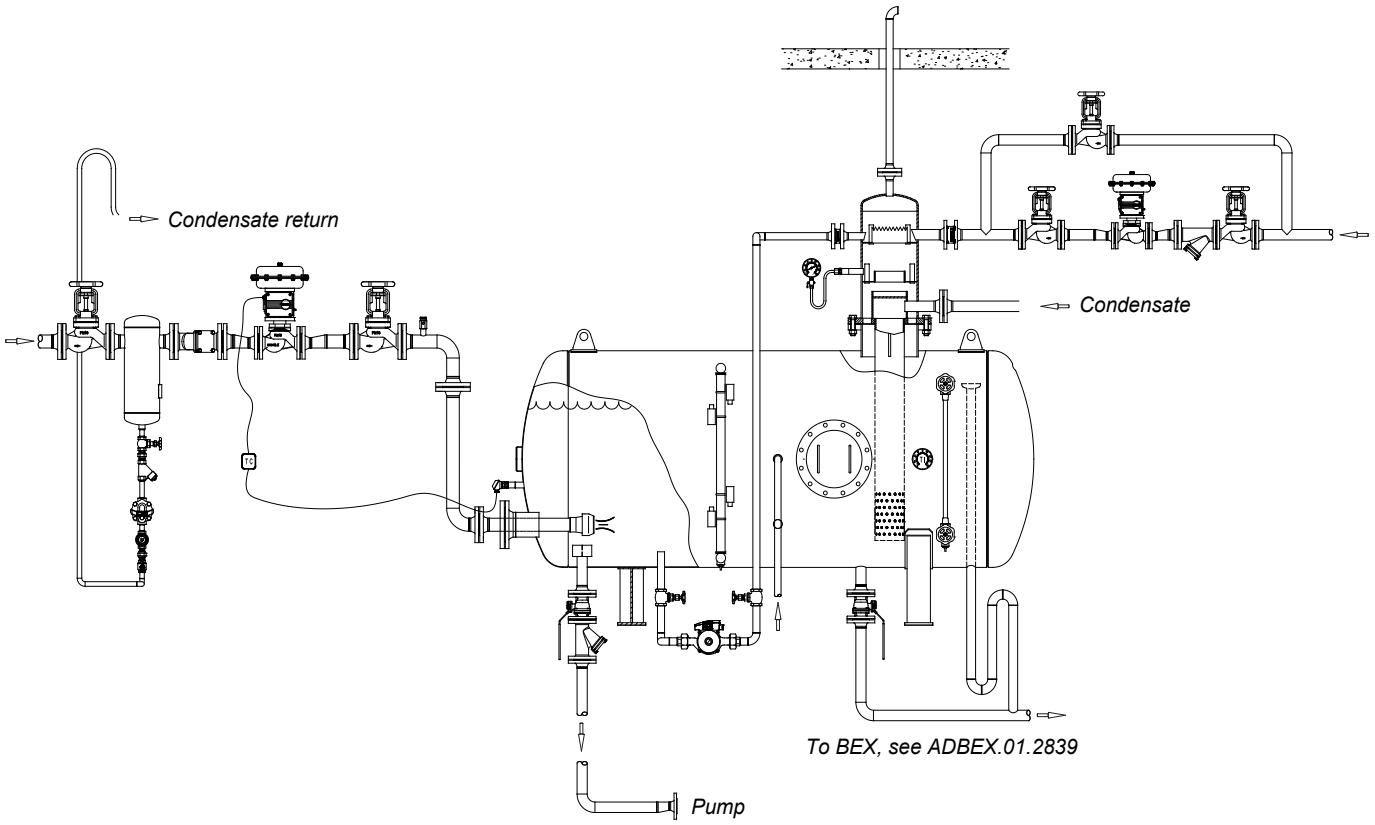
SELECTION TABLE					
SIZE	**ADG150**	**ADG200**	**ADG250**	**ADG300**	**ADG400**
MAXIMUM STEAM GENERATION (kg/h)	5000	10000	20000	30000	50000

THERMAL DEAERATOR DATA INQUIRY	
Make-up water pressure	bar
Make-up water temperature	ºC
Make-up water flow rate	kg/h
Condensate return pressure	bar
Condensate temperature	ºC
Condensate flow rate	kg/h
Saturated heating steam pressure	bar
Feed water tank required capacity	m3
Maximum deaerated water flow required	kg/h

Table 1

TYPICAL INSTALLATION

SEMI-DEAERATOR SYSTEM WITH COLD MAKE-UP WATER



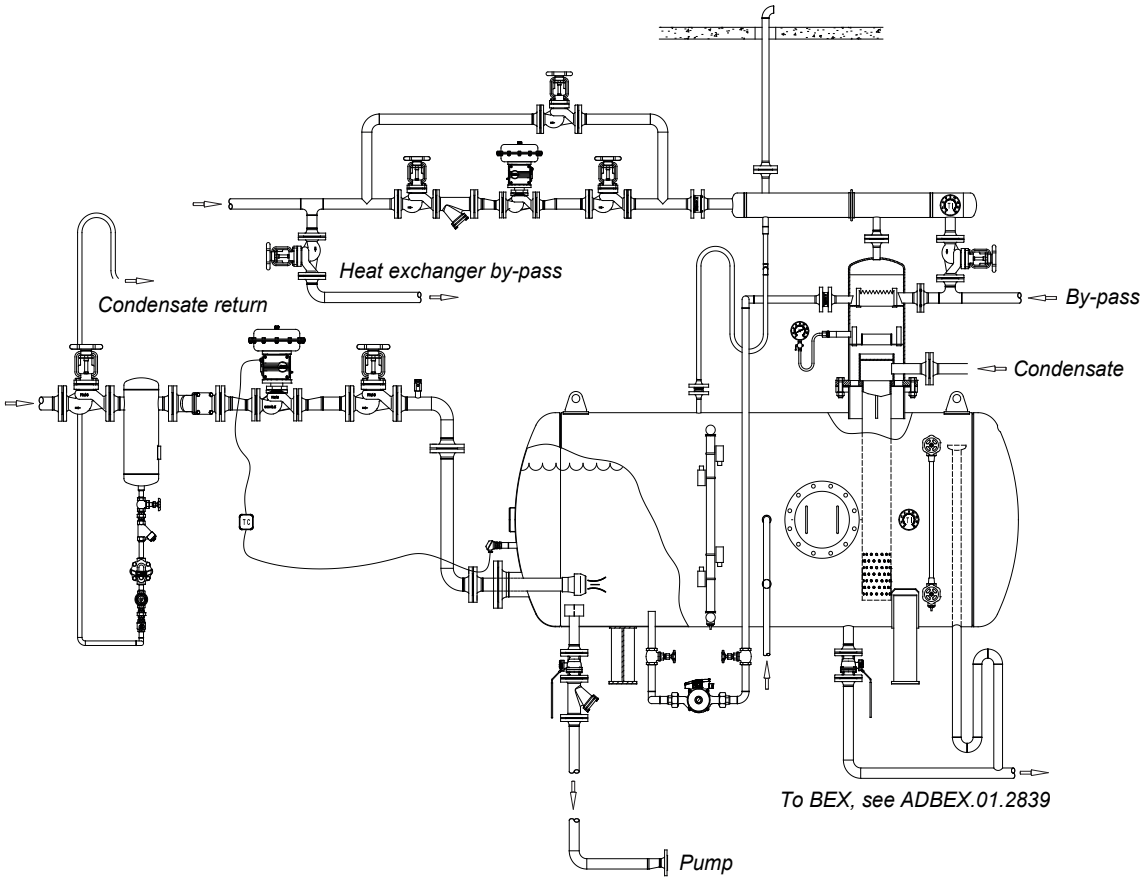
Atmospheric deaerator provides an economic system to preheat boiler feed water and remove dissolved gases.

The steam injector can be supplied with flanges and pipe, ready to adapt to existing vessels.

The feed water is re-circulated using a low power re-circulating pump which improves thermal efficiency by reducing the temperature stratification.

For more detailed information please see assembly drawing ADADGV.01.2844.

SEMI-DEAERATOR SYSTEM WITH VENT CONDENSER



Atmospheric deaerator including ADCATherm STS series complete stainless steel heat exchanger. Make-up water crossing the heat exchanger will condense the flash steam, preventing energy waste and providing better performance for the whole system.

The steam injector can be supplied with flanges and pipe, ready to adapt to existing vessels.

The feed water is re-circulated using a low power re-circulating pump which improves thermal efficiency by reducing the temperature stratification.

For more detailed information please see assembly drawing ADADGV.02.2845.