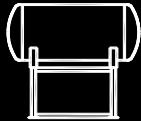


Standard
Deaerating
Units

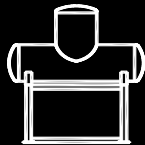


KANSAS CITY DEAERATOR



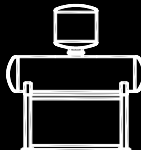
HS Series

Up to 350,000 #/hr
Low Headroom



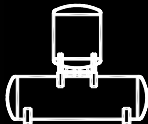
TC Series

Up to 250,000 #/hr
Tray Unit
Meets HEI



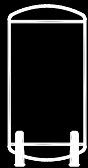
BDS Series

Up to 250,000 #/hr
Tray Unit
Meets HEI



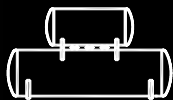
DS Series

Up to 800,000 #/hr
Tray Unit
Meets HEI



VS & VT Series

Up to 800,000 #/hr
Tray Unit
Minimal Plan Area
Meets HEI

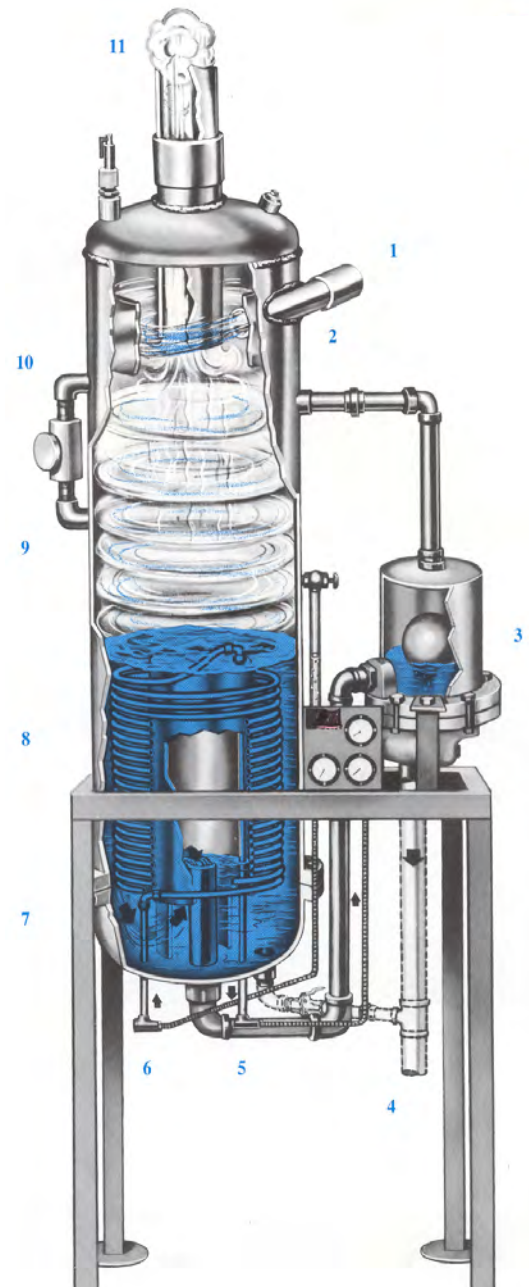


HH Series

Up to 16,000,000 #/hr
Tray Unit-Meets HEI

CBHR – Continuous Blowdown w/Heat Recovery Principles of Operation

1. **TANGENTIAL INLET** imparts high velocity spinning action to liquid
2. **STAINLESS STEEL** wear Plate at point of impingement prevents erosion of separator wall
3. **FLOAT TRAP** for continuous discharge of cooled water to drain
4. **COOLED BLOWDOWN** to drain (100 - 110°)
5. **BOILER MAKE-UP** exits heated by continuous blowdown at no extra cost
6. **COLD WATER** boiler make-up enters system
7. **SLUDGE AREA** no pockets or baffles in heat exchanger area for sludge to deposit and reduce heat recovery efficiency or to clog the flow area
8. **SPIRAL COIL HEAT EXCHANGER** designed to provide maximum heat transfer
9. **HIGH VELOCITY CENTRIFUGAL ACTION** drives liquid and solids to outside – only clean dry steam releases into central vortex area and up into steam outlet
10. **LOW PRESSURE VORTEX AREA** expedites instant flashing of all steam to outlet
11. **STEAM OUTLET** clean dry steam 97% quality to deaerator



CBHR SPECIFICATION

Furnish and install as shown on drawings, a Kansas City Deaerator Continuous Blowdown w/Heat Recovery MODEL NO. (CBHR) _____ as manufactured by Kansas City Deaerator Company, Inc.

The Flash Economizer shall be capable of handling _____ #/hr. continuous blowdown and _____ gpm make-up at the boiler operating pressure/pressures of _____ psig. flashing to low pressure deaerator, feedwater heater or other low pressure user at _____ psig.

The Flash Economizer shall consist of the following components and accessories:

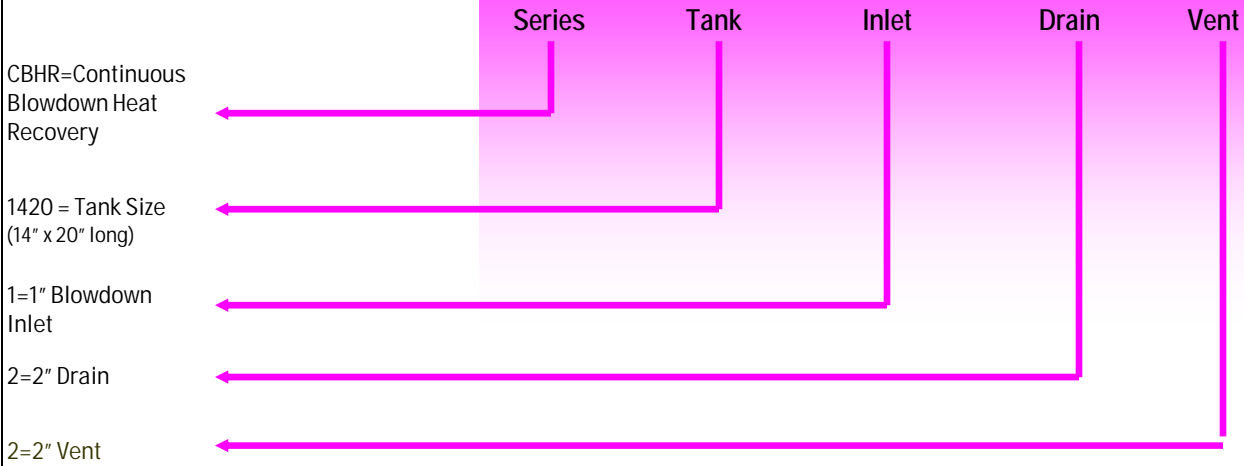
1. Vertical Flash Separator section with threaded connections for tangential inlet with stainless steel wear plate, blowdown drain recovered steam vent, and tank cleanout connections as well as couplings as required for accessories.
2. Vertical coil-type heat exchanger made of (copper or stainless steel) with steel threaded connections for make-up inlet, outlet, and openings for remote thermometer bulbs.
3. Flanged bottom section with drop out coil design for easy cleaning and maintenance.
4. Balanced float trap with all working parts constructed of stainless steel with removable seats, located externally and back vented to maintain a constant level in the flash separator.
5. Thermometer gauge panel showing temperatures of the make-up inlet, make-up outlet, and blowdown water to drain.
6. A safety relief valve set at 150 psig, a Michigan site level gauge, and tank clean out valve.
7. Optional Accessories shall include a high level alarm switch, multi-boiler manifold, flow control or blowdown valves, pressure gauge, and sample cooler with piping.

All the above components shall be mounted on a table base with four angle iron floor supports and pads in such a manner that will allow gravity flow of blowdown water through the system. The finished system shall be painted with a blue enamel exterior.

The equipment shall be designed and constructed in accordance with the latest ASME Code Sec. VIII, Div. 1. requirements for a unfired pressure vessel for 150 psig MAWP.

Model Number Selection

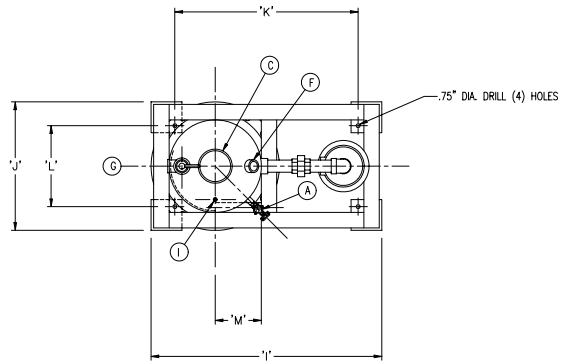
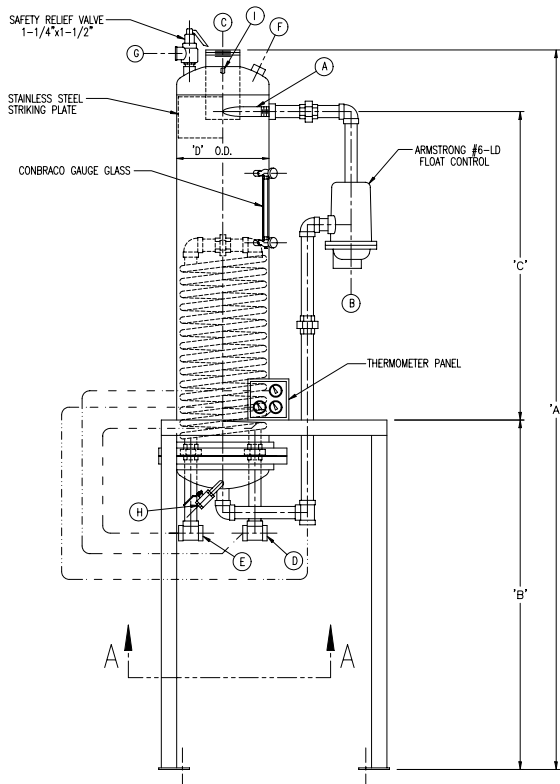
CONTINUOUS BLOWDOWN HEAT RECOVERY



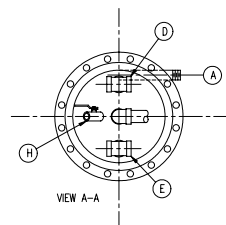
EXAMPLE: SERIES TANK INLET DRAIN VENT

CBHR **1420** **-- 1** **-- 2** **-- 2**

Typical Arrangement



NOZZLE SCHEDULE	NOM.	MATERIAL SPECIFICATIONS	
A. BLOWDOWN INLET	"E" SCH.80 NPTM	HEADS 18" O.D.x.313" H/C	SA 516-70
B. CONDENSATE OUTLET	"G" NPTF	SHELL 18" O.D.x.313"	SA 53-B
C. STEAM VENT	"F" SCH.40 NPTM	PIPE SCH.40 & SCH.80	SA 53-B & 106-B
D. MAKE-UP IN	"H" NPTF	FLANGES 150# R.F.S.O.	SA 105
E. MAKE-UP OUT	"H" NPTF	COUPLINGS 3000# NPTF	SA 105
F. INSPECTION PORT	1-1/2" 3000# NPTF	STRIKING PLATE 16 GA. S.S.	SA 240-304
G. RELIEF VALVE OUTLET	1-1/2" NPTF	FRAME & SUPPORTS 3"x3"x.25"	SA 36
H. CLEAN/DRAIN	3/4" NPTF	FLOOR PADS 6"x6"x.25"	SA 516-70
I. PRESSURE GAUGE CONN.	1/4" 3000# NPTF	COILS STAINLESS STEEL OR COPPER	
		FINISH INTERNATIONAL BLUE ENAMEL	



NOTES:

- * FLASH ECONOMIZER IS DESIGNED, CONSTRUCTED, AND STAMPED IN ACCORDANCE WITH ASME CODE SECTION VIII, DIV. 1, FOR A MAWP OF 150 PSIG @ 450 °F.
- * HYDROTESTED AT 195 PSIG.

SELECTION CHART

CBHR MODEL	BLOW DOWN	MAKE UP	A	B	C	D	E	F	G	H	I	J	K	L	M
CBHR3-15	3	15	97	46	40	10.75	1.5	2.5	1	1	37.25	17.75	28.00	8.50	9.0
CBHR6-30	6	30	111	53	46	12.75	1.5	3	1	1.25	35.00	19.00	27.00	11.00	9.0
CBHR10-50	10	50	106	51	43	16.00	1.5	4	2	1.5	41.50	23.50	32.25	14.25	9.0
CBHR20-100	20	100	140	68	60	18.00	1.5	6	2	2	45.00	25.00	35.75	15.75	9.0
CBHR30-150	30	150	132.5	67	51.25	24.00	1.5	6	2	2.5	51.00	33.00	41.75	23.75	9.0

