At Kansas City Deaerator Co., Service and Experience are One In The Same

Key to Kansas City Deaerator Company's profile is our wealth of experience. Since the mid 1970s, our personnel have designed hundreds of deaerators for utility and industrial applications. As a result, our team of professionals has earned respect among peers and customers alike. In fact, our team was central to the development of the 1992 improved edition of the Heat Exchange Institute (HEI) Standards for Deaerators.

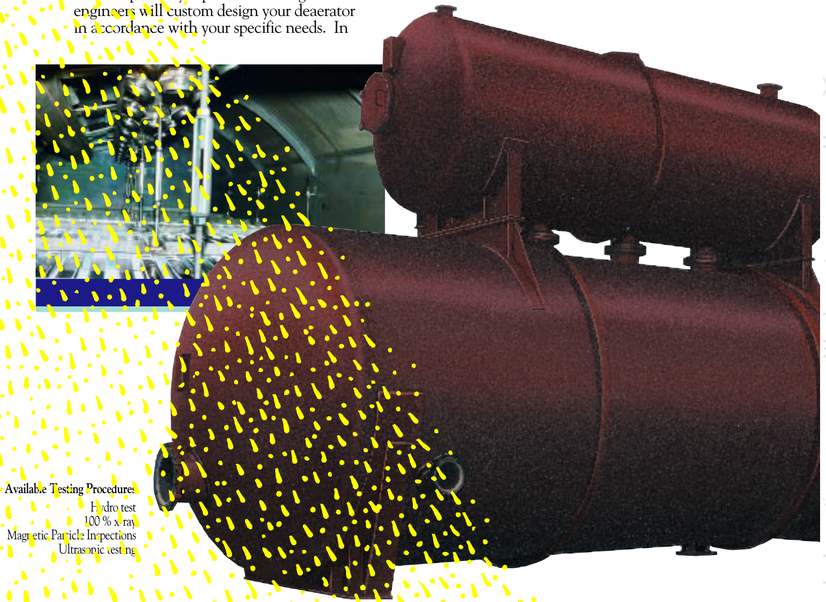
We are committed to 100 percent customer satisfaction. This begins with detailed proposals, accurate engineering submittals, complete drawing packages, and continues with thorough preshipment inspections and on-time deliveries.

Our speciality is problem solving. Our engineers will custom design your deaerator in accordance with your specific needs. In addition, our field service engineers are available for on-site service within 24 hours of request to repair or service your existing deaerator.

Assuring Quality, Safety At Every Turn

Kansas City Deaerator Co. relies on the latest technology to provide quality design, fabrication and document control. With sophisticated computer programs for vessel calculations, nozzle load calculations, heat balances, ratings and CAD drawings, we'll take you from conception to start-up — error free — consistently.

Likewise, when specified, our work is performed, in strict accordance with ASME codes, NACE and HEI standards to assure not only quality, but long-term safety and reliability. To assure quality upon completion, our units are typically inspected by three to five inspectors prior to shipment.



Available Testing Procedures:
Hydro test
100 % x-ray
Magnetic Particle Inspections
Ultrasonic testing

Users

Abitibi Consolidated
ADM
AES
Air Products & Chemicals
Agrico Chemical
ALCOA
Aleppo Thermal Power
Amoco
Ansaldo
Ashland Petroleum
AT&T
Athabasca Oil Sands
Atofina
BASF
Bajio Power
Bonneville Pacific
BP Amoco
Brighton Beach Power, Ltd.
Calpine
CNF Constructors
Cogen Partners of America
Consolidated Paper
CSW
Dow USA
East Kentucky Power
Falcon Seaboard
Fina Oil & Chemical
Ford Motor Co.
General Elecric
Gulf States Utilities
GWF Power Systems
Hanfeng Power
Houston Light & Power
Huameng Nantong Power
Hutchinson Utility
James River Paper
Kansas Power & Light
Kuwait Petrochemical
Las Vegas Cogen
Louisiana Pacific
Luberff II
Mass Power Cogen
Maui Electric
Melaka Conversion
Midwest Power
Milford Cogen
Monsanto Enviro-Chem
National Power Corp. of the Philippines
Neenah Paper
Niagara Mohawk
Nova Chemical
Orlando Utilities
Osborne Cogen
Plains Electric
Port Arthur Refinery
Ryegate Power
Saltend Cogeneration
Samalayuca II
Scott Paper
Semass
Shoaiba Power
Shurtan Gas Chemical
Tennessee Eastman Co.
Texaco
Transfield Power
Union Carbide
Unocal
Weyerhauser
Willamette Industries
Wisconsin Electric Power Co.

Engineers

Bantrel, Inc.
Bibb & Associates
Bechtel Corporation
Black & Veatch
Burns & McDonnell
Burns & Roe
Chiyoda Corporation
Ebasco Services
Energy Services, Inc.
Enron Power
Fluor Daniel
Harris Group
HDR Engineering
Howe-Baker Engineers, Ltd.
IHI Inc.
Kawasaki Heavy Industries, Inc.
Kellogg, Brown and Root
NLK Consultants
Parsons Main, Inc.
The Pritchard Corporation
Stone & Webster
United Engineers & Constructors
Zurn/NEPCO

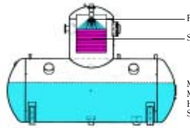
OEMS

Aalborg Boiler
Alstom Power
Cerrey SA
Deltak Corporation
Ecolaire Corporation
Foster Wheeler Energy Corp.
Foster Wheeler Ltd.
GEA
Nooter/Eriksen Cogeneration Systems, Inc.
Sino-Thai Construction
Transfield Power Technology
Yuba
Zurn

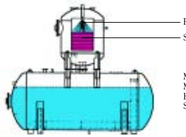
HEAT EXCHANGE INSTITUTE INCORPORATED HEI

Kansas City Deaerator COMPANY

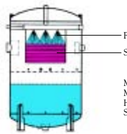
Spray Tray



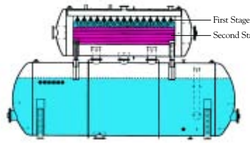
Model TC: Tank Car
Max. Capacity: 250,000 #/hr.
Height: 10'-13'
Shipment: 1 piece



Model DS: Double Shell
Max. Capacity: 800,000 #/hr.
Height: 14'-20'
Shipment: 2 pieces

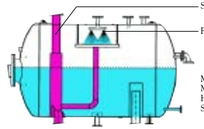


Model VT: Vertical Tray
Max. Capacity: 800,000 #/hr.
Height: 7'-50'
Shipment: 1 piece



Model HH: Horizontal Deaerator
Max. Capacity: 16,000,000 #/hr.
Height: 18'-24'
Shipment: 2 pieces

Spray Scrubber



Model HS: Horizontal Spray
Max. Capacity: 800,000 #/hr.
Height: 4'-13'
Shipment: 1 piece

6731 West 121st Street
Overland Park, KS 66209
(913) 338-2111 Fax: (913) 338-2144
email: info@deaerator.com
website: www.deaerator.com

September 2003

Henry's Law of Partial Pressures Formed the Foundation for Designing Deaerators.

But Here's What Henry Didn't Tell Us....

Kansas City Deaerator COMPANY

How To Make A Deaerator Last!

Henry's Law: $P_a = X_a H_a(T)$:

"The solubility of any gas dissolved in liquid is directly proportional to the partial pressure of that gas above the liquid."

It was 1801 when William Henry first developed the basic equation on which the Principles of Deaeration are based. But Henry didn't develop the technology to make deaerators last.

Kansas City Deaerator Co. is Building On the Cornerstone of Experience.

Kansas City Deaerator Co. has mastered the technology to design and build quality deaerators. In fact, our rise to become a leading supplier of deaerators for the utility, cogeneration and industrial market is based on sound engineering and service.

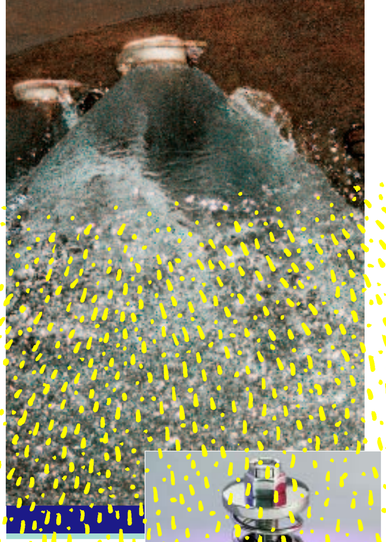
From Section VIII Utility Deaerators to Section I Integral HRSG Deaerators, our ability to eliminate typical operational and maintenance problems represents the best of the industry's knowledge and technology.

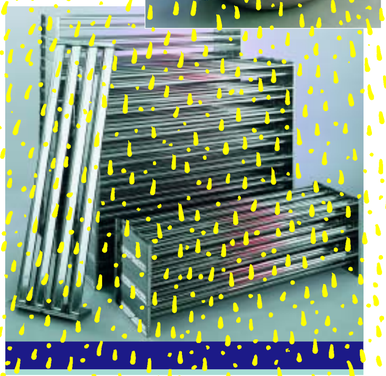
Reliability As The Basis Of Design

In response to the demand for a more reliable deaerator, Kansas City Deaerator Co. has developed an innovative **Header Design**. This new design provides greater durability and extended life with improved operational features and ease of maintenance. In addition, this new design utilizes an improved fabrication process which allows for stricter quality control and ensures that our deaerators will be in service long after others have been replaced.

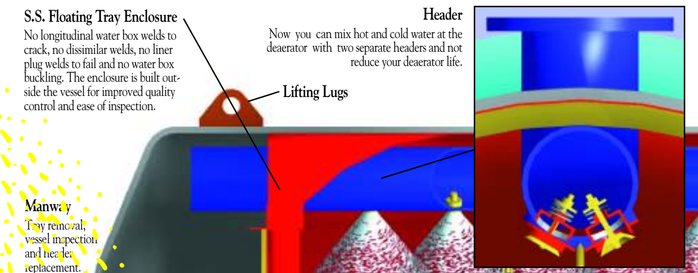
Our quality **Spray Valves** are investment cast of type 316 S.S., hydraulically balanced and provided with Teflon stem guides for extended life and quiet operation. These rugged valves are designed to handle flow fluctuations from 0% to 200% of design.

Kansas City Deaerator Co. **Trays** are stamped and riveted as recommended by the HEI Standard. Our 16 ga., 430 S.S. trays are the most rugged available in the industry and have been utilized successfully by central station utilities for over 30 years. Our tray locking tabs and compression tray hold-down system will resist deaerator transient loads and reduce tray damage under upset conditions.





Not All Deaerators Are Created Equal



S.S. Floating Tray Enclosure
No longitudinal water box welds to crack, no dissimilar welds, no liner plug welds to fail and no water box buckling. The enclosure is built outside the vessel for improved quality control and ease of inspection.

Lifting Lugs

Header
Now you can mix hot and cold water at the deaerator with two separate headers and not reduce your deaerator life.

Spray Valves

Inlet
Sized per strict velocity control criteria

Vent
Located at the highest point in the vessel and above the header, eliminating vent pipe cracks and "water out the vent". Drier steam is vented due to the turning action around the header.

Relief valve
Sized per HEI or customer request.

Equalizing Doors
Designed to compensate for tray pressure drop and load swings.

Manway
Tray removal, vessel inspection and header replacement.

Header Replacement
Complete header can be replaced during outages, quickly and without expensive code welds.

Counterflow design
The cleanest, hottest steam scrubs the final traces of oxygen from the cleanest, hottest water exiting the tray bank to assure proper deaeration and heating. Steam travels upward, countercurrent to the inlet water. **All oxygen removed is completely contained** in the stainless steel tray enclosure and not exposed to the carbon steel shell.

S.S. Steam Baffle

Vacuum Rings
As required by code

Grating Support
Stabilization of tray during upset conditions.

Equalizer
Generously sized for low pressure drops and deaerator pressure fluctuations with antiflash baffles

Downcomers
Equipped with vortex breakers and antiflash baffles for upset conditions and tray protection.

Trays
Rugged construction for long life.

Tray hold-downs
No more tray upsets due to inadequate tray hold-down troughs. Our **compression** hold-down system locks the trays in place and will not loosen, allowing trays to dump.