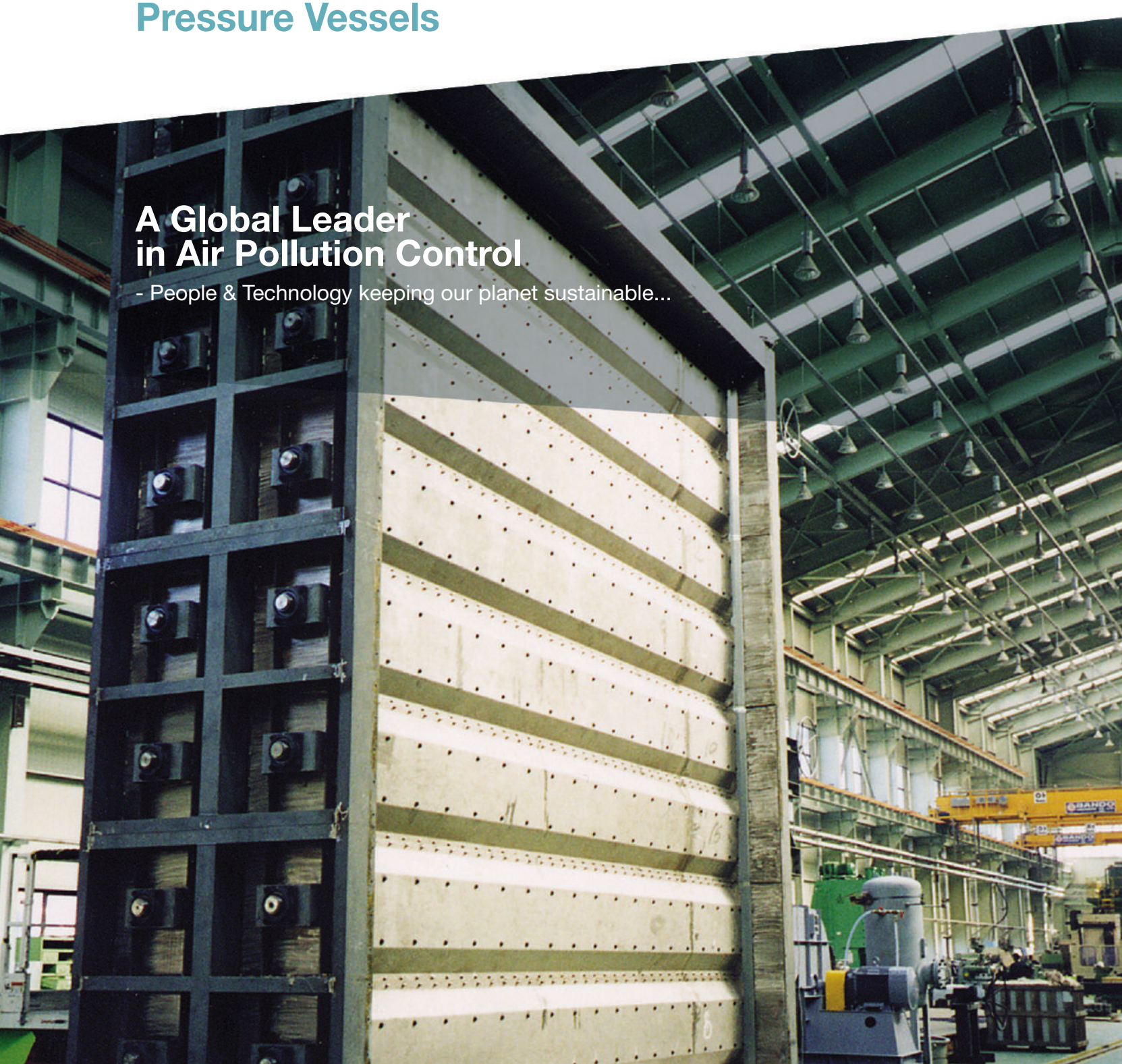
KC Cottrell

Dampers
Air Cooled Heat Exchangers
Pressure Vessels



A Global Leader in Air Pollution Control

- People & Technology keeping our planet sustainable...

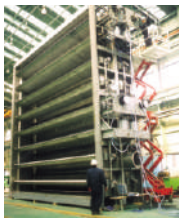
Dampers

1 Features

Dampers have a wide range of applications in manufacturing lines. For example, they are used to control the amount and direction of air flow in the duct line and to block isolate toxic gases. Dampers come in a variety of forms depending on the application.

2 Types of Dampers

KC Cottrell produces seven types of dampers: louver, guillotine, diverter, wafer (butterfly), poppet, radial vane, and stack damper. Depending on their operating method, dampers can be classified into isolation type and modulation type. They can also be categorized into zero leakage damper and low leakage damper depending on the allowed leakage rate.

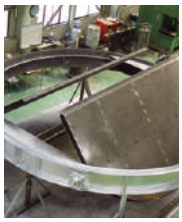


Louver Dampers
Controls the amount of airflow into a duct
Manual and automatic operation
Can be used for operation at high speeds
Applicable for low leakage and zero leakage

Guillotine Dampers
Suitable for intermittent operations
A drawback is low operating speed
Horizontal, vertical or lateral installation

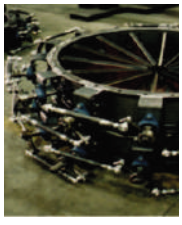
Diverter Dampers
Main application is HRSG
Flow rate inside the damper can be set to 45m/sec
More economical than using two damper sets
Operation possible at high temperatures

Wafer Dampers
Mainly used in circular duct lines
Economical and appropriate for low pressure conditions
Double & single wafer are available depending on the leakage rate



Stack Isolation Dampers
Used in stacks
Suitable for protecting equipment or blocking rain during downtime

Tandem Dampers
Zero Leakage Type that has similar function with Double Louver Damper
Decrease in cost due to lower Damper Size and Weight



Radial Vane Dampers
Installed before or after the fan
Used for speed and flow rate control

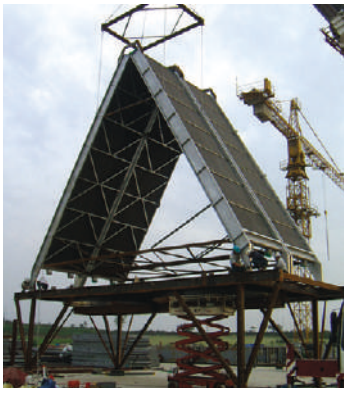
PoPPet Dampers
Used for explosion prevention in times of emergency in production lines
Applicable for high speed operation

Air Cooled Heat Exchangers

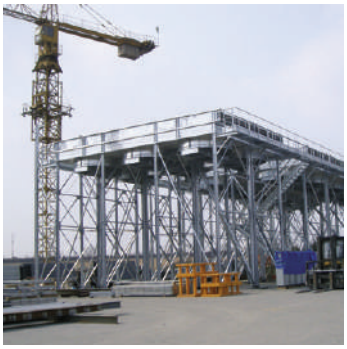
Heat exchanger is device that transfers heat between liquids. It is indispensable in petrochemical plants, oil refining plants, and power plants. KC Cottrell produces an air-cooled heat exchanger (ACHE). The ACHE is an environmentally friendly device that resolves problems associated with water-cooled heat exchanger, which include erosion, water supply needs, and ocean warming (when seawater is used for cooling). It is particularly well suited for arid regions such as the Middle East where there is a shortage of industrial use water.

Manufacturing processes and power plants had used water as the cooling agent. However, water-cooled systems are becoming less practical and many plants are increasingly using air as the coolant which has higher accessibility all parts of the world.

Air-cooled heat exchanger uses air as the cooling agent. A fin is attached to the exterior of a tube having an enlarged heat transfer surface, and air is forced to pass through the fin tube. Air-cooled heat exchangers are available in forced-draft, induced-draft, and A-frame models.



• Steam Condenser



• Air Cooler

Advantages

- Extrusion type fin is attached to the tube exterior to enhance heat transfer
- Compact size and cost savings
- Eco-friendly system

Pressure Vessels

Pressure vessels are designed to enable gas, liquid or a mixture to withstand pressure that is lower or higher than atmospheric pressure generated during storage, reaction or separation processes.

• CVD Reactor Featuring Pressure Vessel Technology

• UN Vessel (Top), Gas Scrubber (Bottom)

Types

- Drums, Columns & Towers
- Reactors
- Storage & Receiver
- Shell & Tube Type Heat Exchangers
- Head box of Air Cooled Heat Exchangers

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