# **D**ampers **Air Cooled Heat Exchangers Pressure Vessels**



FAX +82.31.674.9670

KC Cottrell Co., Ltd. **Head Office** 160-1 Donggyo-dong, Mapo-gu, Seoul, 121-817, Korea TEL +82.2.320.6114 FAX +82.2.320.6100 www.kc-cottrell.com Factory 253 Singi-ri, Seoun-myeon, Anseong-si, Gyeonggi-do, 456-853, Korea TEL +82.31.674.9660

KC Cottrell China Co., Ltd. No.9576 Donghuancheng Rd., Changchun Economy & Development Zone, Changchun City, Jilin Province, 130033. P.R. China TEL +86.431.8587.7500 FAX +86.431.8587.7522 www.cckc.com.cn

KC Cottrell Vietnam Co., Ltd. Floor 6, VINAFCO building, No. 36 Pham Hung street, Tu Liem District. Ha Noi. Viet Nam TEL +84.4.768.9904/5 FAX +84.4.768.9902

KC Cottrell Co., Ltd. Taiwan Branch 15F-7, No.77, Sec.1, Shintai 5th Rd., Shijr City, (Far East World Center) Taipei, 221 Taiwan TEL +886.2.2698.8139 FAX +886.2.2698.8179

KC Cottrell Co., Ltd. Beijing Branch Room1002 Tianheng Bldg, No. 46 Dongzhimenwai Rd., DongchengQu, Beijing, 100027, P.R.China TEL +86.10.8460.8738/9 FAX +86.10.8460.8732



Lodge Cottrell Ltd. 21 George St, Birmingham, B3 1QQ, England TEL +44.121.214.1300 FAX +44.121.200.2555 www.lodgecottrell.com

Lodge Cottrell Inc. 2319 Timberloch Place, Suite E, The Woodlands, TX, 77380, USA TEL +1.281.465.9498 FAX +1.281.465.9366 www.lodgecottrell.com

Lodge Cottrell India Pvt. Ltd. 7F Park Centra Tower-B, 32nd Milestone, NH8, Sec.30, Gurgaon Haryana 122001, India TEL +91.124.331.5278 FAX +91.124.331.5277





## **D**ampers

## **Air Cooled Heat Exchangers**

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.

## Types of **Z** 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

**Guillotine Dampers** 

Suitable for intermittent operations

A drawback is low operating speed

Horizontal, vertical or lateral installation

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



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

Stack Isolation Dampers

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



#### **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





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

**Radial Vane Dampers** 

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

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. Aircooled heat exchangers are available in forced-draft, induced-draft, and A-frame models.

#### **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.

#### **Types**

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

#### A Global Leader in Air Pollution Control

- People & Technology Keeping Our Planet Sustainable.

Heat exchanger is device that transfers heat between liquids. It is indispensable in



Steam Condense



• Air Cooler



 CVD Reactor Featuring Pressure Vessel Technology

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