



FEATURE REPORTS

Control Valve Design

Summary: Until about 45 years ago, globe valves — with their massive body castings and rugged stem-guided valve plugs — prevailed across the chemical process industries (CPI). Yet despite their wide usage and decades of service, the valves of that era were quickly replaced by a new, efficient-in-design globe valve body that utilized interchangeable, drop-in trim packages to meet a wide range of control needs. This article answers the “what” and “why” questions about the changes in control valve design, and in doing so, offers readers a better understanding of what valve features are available and how they may apply to particular application needs.

Related equipment and services: Control valves

NEWSFRONT

Achema Review

Summary: This article will highlight a range of technology developments and industry trends presented at the June Achema CPI event in Frankfurt, Germany.

Related equipment and services: Products and services from Achema exhibitors, technologies from Achema presenters

Gaskets and Seals

Summary: Keeping vessels, flanges and other process equipment tightly sealed is not only critical for many processes (to prevent contamination, for example), but also for environmental and safety reasons. As new processes are developed for operation over broader temperature ranges or with more corrosive or hazardous reagents, seal and gasket manufacturers are continuously improving the characteristics and properties of their products. This month's Newsfront will present some of these new developments.

Related equipment and services: All types of gaskets, seals, O-rings, polymers and elastomers

Send editorial material for consideration to Joy LePree, Contributing Editor (jlepree@che.com)

FRACTIONATION COLUMN

Summary: This monthly column in *CE* is written by the technical director at Fractionation Research Inc., a consortium of end-users, engineering companies and distillation equipment providers that pool budgets on distillation research.

Related equipment and services: Distillation towers; trays and packings; tower-scanning equipment and services

FACTS AT YOUR FINGERTIPS

Heat-Transfer Fluids

Summary: This one-page reference will provide a refresher on the potential problems encountered with heat-transfer fluids in chemical processing.

Related equipment and services: Heat-exchanger systems and equipment, heat-transfer

ENGINEERING PRACTICE

Avoiding Water Hammer in Condensate Return Mains

Summary: This article provides a scientific basis for engineers who are troubleshooting a condensate return system in which there is water hammer to determine why it is happening. Likewise, it provides designers, for the first time, a basis for deciding if they can insert high pressure condensate into a pumper condensate return — something virtually every steam operation with a condensate return has considered.

Related equipment and services: Steam traps and other steam-handling equipment, valves, pumps, flash tanks and piping

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FOCUS

Pipes & Fittings

Summary: It is safe to say that all plants in the chemical process industries (CPI) have pipes and the associated fittings. This month's Focus Department will present some of the latest products introduced.

Related equipment and services: Pipes and piping systems, flanges, tools (welding, cutting, threading), couplings, nuts and bolts

Send editorial material for consideration to Gerald Ondrey, Senior Editor (gondrey@che.com)

Temperature Measurement

Summary: Temperature measurement and control are two of the most critical process parameters in any CPI process. This month's Focus will present the latest products and services for measuring and controlling temperature.

Related equipment and services: All types of temperature sensors (thermocouples, resistive, infrared and so on), temperature transmitters and controllers, heat-tracing systems, and associated equipment (thermowells, vessel ports, data loggers, and so on).

Send editorial material for consideration to Gerald Ondrey, Senior Editor (gondrey@che.com)

LOOK FOR THESE ARTICLES COMING IN THE SEPTEMBER ISSUE:

Feature Reports

Drying

Predictive & Preventive Maintenance

Equipment Focus

Flowmeters

Equipment Newsfront

Security

Facts at your Fingertips

Industrial Gases

SOLIDS PROCESSING

Useful Calculations for Solids Handling Operations

Summary: This article discusses commonly encountered calculations in solids-handling operations. Strategies are provided for carrying out calculations to support the modeling of pickup or saltation velocity in pneumatic conveying; the determination of conveying velocity in pressure or vacuum systems, pressure drop in bends, particle velocity in pneumatic conveying systems; assessment of drag coefficient for arbitrary shapes, and conversion between particle-size distributions and calculation of various average diameters, and more.

Related equipment and services: Solids-handling systems, mixers and blenders, weighing and conveying systems, dilute-phase and dense-phase pneumatic conveying systems, pressure conveying systems, vacuum conveying systems, piping components and systems