



# DeltaValve

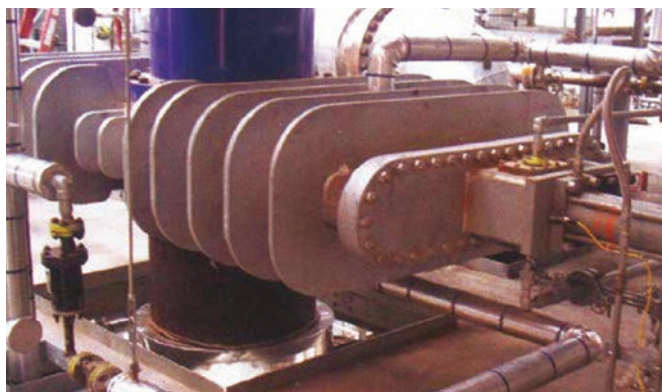
## THE VALUE OF A TRUSTED PARTNER

DeltaValve's extensive experience in designing and building engineered severe-service industrial valves and equipment for delayed cokers has made them a world-recognised industry leader. In 2001, DeltaValve designed, engineered, and installed the world's first fully automated, fully enclosed coke drum unheading device at the Chevron refinery in Salt Lake City, Utah. This valve revolutionised coke drum unheading by replacing traditionally unsafe and unreliable manual or semi-manual unheading equipment, with a fully automated system. The result has a safer working environment, reduced downtime and increased productivity.

Today we offer a full range of products for delayed coking including top and bottom coke drum unheading valves, isolation valves, hydraulic and electric actuation, controls and interlocks, auto-switch coke cutting tools and enclosures, and the retractable centre feed injection device. We listen to our customers and strive to provide innovative products that are designed and engineered to meet the critical service requirements of delayed coking.

DeltaValve is a trusted partner; delivering safe, reliable products while providing the best value for our customers. From the moment a customer contacts us, through delivery, installation and beyond, we're there to provide unparalleled products, service and support. We continually strive to make our products and services industry-standard.

### Top Unheading Valve with Blowout Diverter



## GREAT VALUE

DeltaValve unheading valves offer significant economic advantages over all other options. The patented single gate, double seat configuration was specifically designed for the severe service conditions of delayed coker unheading applications. The DeltaValve design is the smallest and lightest on the market today. This translates into significant savings throughout the purchase and installation process.

Additionally, current seating designs provide for ultralow steam consumption, reducing operational expenses. Furthermore, the design is comprised of only a few major parts, making repairs during turnarounds relatively simple and affordable. With over 11 years of installed, safe, efficient operation, the DeltaValve unheading valves have set the standard for cost effective automated unheading.

### Bottom Unheading Valve



## MAXIMUM COOKER SAFETY

DeltaValve continues to innovate and introduce new products into the delayed coking industry. In addition to bottom and top unheading valves, DeltaValve has recently introduced revolutionary electric actuator technology which promises to increase efficiency and reduce weight and ongoing costs of system maintenance and operation.

DeltaValve also has a growing line of DCU isolation valves and auto-switch coke cutting tools. Additionally, as the need to maximise coke-drum life has become a significant issue in recent years, DeltaValve has responded with the introduction of a Centre Feed Injection device. This technology is revolutionising coke-drum feeding. This device transforms side feed into centre feed, returning feed stream flow patterns back to that of bottom feed injection. Recent thermal and strain measurement data and subsequent calculations suggest a potentially significant increase in coke-drum life is possible when utilising centre feed technology as opposed to alternative feed methods.

Bottom Unheading Valve Electric Actuator



Isolation Valve



Auto Switch Coke Cutting Tool



## AFTERMARKET/TURNAROUND SERVICES

Some of the many services available from DeltaValve:

- DeltaValve equipment installations
- Site acceptance tests
- Commissioning supervision
- Comprehensive site audits
- Turnaround planning and service
- Maintenance and repair
- Equipment re-builds
- Hydraulic flush services
- Electrical loop checks
- On-site training
- Bolt tensioning/torqueing
- Equipment storage



DeltaValve works with each refinery to determine a maintenance and turnaround schedule appropriate for their unique needs. In 2011, DeltaValve successfully managed coker unheading valve turnarounds for nine different refineries in three countries. During those turnarounds, approximately 30 unheading valves were maintained and quickly put back into service. DeltaValve, the only authorised source for spare parts and service for DeltaValve unheading valves and related equipment, is investing significant resources globally to serve each of our many customers' aftermarket support and field service needs.

DeltaValve's network of experienced technicians and engineers are on call to respond to any customer needs, anytime, anywhere. Our team of technical experts has quick access to all equipment drawings, bills of material and customer specifications. This information provides DeltaValve the unique capability to evaluate and troubleshoot issues and provide solutions in a timely and practical manner. Whether it's routine maintenance, or a major equipment turnaround, DeltaValve is your trained source for aftermarket and turnaround services.



Bottom Unheading Valve Install

## DELAYED COKING AUTO-SWITCH CUTTING/BORING TOOL

The innovative DeltaValve autoswitch coke cutting tool provides a high level of safety during de-coking operations by allowing the tool to remain in the drum during switching of cutting/boring modes. The autoswitch tool, in combination with the DeltaValve drill stem guide enclosure and the DeltaGuard® top unheading device, provide maximum coker safety on the top unheading deck by removing personnel from the top head environment.

Performance of the cutting nozzles are optimised for each pump pressure and drum diameter combination. Flow channels in the auto-switch tool are optimised to provide maximum cutting and boring forces at the nozzles jets. Switching is accomplished by remotely reducing the pressure to the tool and then restoring the pressure. The cutting/boring modes are distinguished by different steady state pressures displayed at the operator's panel by a visual indicator on the tool itself.

In addition to the internal process screen, all internal mechanisms are isolated from exposure to cutting water and coke fines for long-term reliability. No field lubrication is required facilitating maintenance free operation.

Drill string connections are available in Flange-Lok™, Unibolt, RTJ and engineered to order.

The auto-switch tool has successfully been tested for pressures up to 4500 psi and designed for up to 5500 psi.

## QUALITY

Customer satisfaction is critical to our success. DeltaValve provides its customers with the highest level of quality in products and services by complying with, and continually improving all aspects of our ISO 9001:2008 certified quality management system.

### Design Standards

DeltaValve unheading valves are designed per ASME and the Boiler and Pressure Vessel Code, Section VIII Div. I and II.

DeltaValve maintains the following stamps/design certifications:

- ASME
- "U" Stamp, Division I
- "R" Stamp
- National Board Registration

Unheading valves include but are not limited to the following certifications per international requirements:

- Pressure Equipment Directive (PED) (97/23/EC)
- Canadian Registration Number (CRN)
- GOST-R
- KHK

DeltaValve has experience installing equipment in Flameproof/Explosion Proof, Non-Incendive, Intrinsically Safe hazardous areas utilizing the following standards:

- IECEX
- NEMA
- UL
- ATEX
- CSA
- GOST
- InMetro
- PESO
- TIIS
- KOSHA
- JIS
- NEPSI

DeltaValve complies with international certifications and standards, and has unheading valves installed in over 100 refineries in approximately 20 countries around the world.

### Quality Assurance Documentation

- Quality assurance manual
- ISO 9001:2008 certificate
- Additional international certifications as required

## WE ARE EXPANDING BETTER TO SERVE YOU

Corporate Headquarters - Salt Lake City, Utah

Sales Office - Houston, Texas

Final Assembly and Testing - Channelview, Texas

Fabrication - Baytown, Texas

Aftermarket/Turnaround Services

Houston, Texas

Geismar and Sulfur, Louisiana

Barnesley, U.K

Other locations to be announced



For additional information  
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