Drum Unheading Technology to Enhance Safety and Productivity

Calgary, Canada
September 11 – 18, 2009
Agenda

- Z&J Company - since 1877
- Delayed Coker - Generic
- Z&J Product offering
- Double Disc – Single Disc…..
- Z&J Double Disc – Details and Features
- Actuation Options
- Final Considerations
Production Capabilities

Large Production Area & continued hiring of qualified Personnel
DC Product Offering

Isolation

Top Unheading

Spring Hangers

HPU

Bottom Unheading
Z&J’s Unique Technology

- What are the differences to conventional single plate sliding valves?
- What makes Z&J’s Unheading Technology so unique?
Z&J’s Unique Technology

- Double Disc - Triple Seal & Purge - 100% tight
- Circular discs
- Active seating force
- Scraper and guide plates avoid coke fines entering body
- No cooling water
- Manual or automated blocking pin

- Ability to throttle coke & water mixture
- Minimize maintenance downtime
- No need for capital spare parts
- Low steam consumption
Double Disc vs. Single Plate Slide Valve

Single Rectangular Plate
- Random temperature distribution
- Sensitive to distortion
- Resulting in leakage & excess steam consumption

Innovative Double Disc Design
- Round disc, more equal temperature distribution
- Limited distortion, less deformation
- 10 x less risk to leaks
- Best choice for DC applications
Robust Double Disc - Triple Seal Design

- Disc Carrier Throughway
- 2 Floating Discs
- Removable Seat Ring
- Wedge
- Detail A

Patented Design
Unique Technology

Inspection - Maintenance Position - TA

Minimize downtime & maintenance cost
No need to dismantle body for valve inspection and maintenance on upper seat and upper disc if needed
Unique Technology

Inspection - Maintenance Position - TA

Only 2 gaskets to replace
Unique Technology

Inspection - Maintenance Position - TA

No need to dismantle valve body
Easy access for inspection internals
No need for capital spares
Double Disc - Triple Seal

REMOVABLE UPPER SEAT RING

SCRAPER EDGE

GUIDE PLATE

SPRING LOADED SEAT

SEAL STEAM BETWEEN TWO SEATS

HARD - FACED SEAT

DISC

Patented Design
Double Disc - Triple Seal

REMOVABLE UPPER SEAT RING & DISC

Patented Design
Unique Technology

The only double block & purge

UNIQUE Z&J - DOUBLE DISC TRIPLE SEAL & PURGE

2 x 3 = 6… MEANING 100 % TIGHT!
Unique Technology

Active seating force

Helps sealing and avoids possible deformation

Controlled discharge
Unique Technology

Scraper & guide plates avoid coke fines to enter valve-body

Disc is maintained against seat / scraper at all times by means of pretensioned springs to avoid coke fines to enter valve-body
Unique Technology

Ability to throttle coke & water mixtures

Dewatering to optimize cycle time
Capable of crushing shot coke

ECONOMICS
BOOSTING CAPACITY
Z&J’s Unique Technology

- Actuator(s) outside of valve body
- 100% actuator redundancy
- Pneumatic driven emergency HPU cart
- Actuator options, customized to fit
- Solution to overcome weight aspect
- Revamp engineering, design and execution of lower drum section
Unique Technology
Actuator Options

ELECTRIC/HYDRAULIC
Single

HYDRAULIC Compact

HYDRAULIC Wide

MINIMIZE CAPEX – ACCOMODATE SPACE

9 m 8 m 7 m
Unique Technology

Comfort in freezing conditions
No cooling with glycol
Unique Technology

Actuator(s) outside of valve body

- No need to dismantle valve body
  Can be removed while DC unit in operation

- 100% Actuator redundancy
  Operates on one single actuator
  No need to keep spare actuator
  For single actuator, pneumatic back-up / HPU cart
Unique Technology

Manual or automated blocking pin
Unique Technology

Customized to fit

Extended unheading deck
Unique Technology

Customized to fit
Technology Solution

Solution to overcome weight aspect
Coker Upgrade: Engineering - Design - Execution Assistance

Supporting beams to reinforce structure
Spring hangers to minimize load on drum
Technology Solution

Coker Upgrade: Engineering - Design - Execution Assistance
Customized to fit

Tailor-made cones for revamps
Technology Solution

Coker Upgrade: Engineering - Design - Execution Assistance
Customized to fit

Tailor-made cones for revamps
Bottom Unheading - Inspection
Supervision Installation & Commissioning
Global Presence & Support
Delayed Coking
Unheading Technology

Thank You!

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