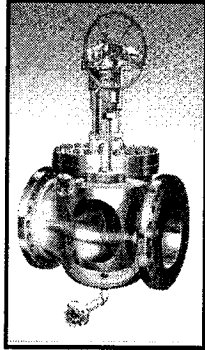


WEDGEPLUG VALVE

Non Lubricated



PACIFIC VALVES
Long Beach, California

May 17, 2001



CRANE

PACIFIC Valves - History

- "Pacific Valve and Pump Exchange" formed in 1934, Long Beach CA. USA
- 1942 Gate, Globe and Check Valve Range.
- 1955 HF ACID valve range introduced.
- 1971 Purchased by Clayton Mark Company
- 1975 Clayton Mark became Mark Controls Corporation
- May 1994 Mark Controls Corporation purchased by Crane Co.
- Nov. 1997 Crane Co. acquires Stockham Valves & Fittings.
- June 1999 Stockham Wedge Plug Valve relocated to PACIFIC VALVE, Long Beach, CA



CRANE

PACIFIC VALVES PRODUCT OVERVIEW

- **REFINING PRODUCTS**
- **Wedgeplug Valve**
 - Class 150 to 900
 - 1/2" to 30"
 - WCB, C5, C12, CF8M
 - Port Sizes - 70%, & 100%
 - Steam Jacketed Valves
- **HF Alkylation Valves**
 - WCB / Monel Trim, Solid Monel
 - API 600 / API 602 Bolted Bonnet, Gate, Globe & Check Valves
 - WCB, Alloys, Stainless Steels



CRANE

PACIFIC VALVES PRODUCT OVERVIEW

- **Power Generation Products**
 - Pressure Seal Bonnet; High Pressure, High Temp
 - Parallel Slide / Wedge Gate Design
 - T-Pattern / Y-Pattern Globe & Check Valves
 - WCB, WC6, WC9, C12, C12A, CF8M



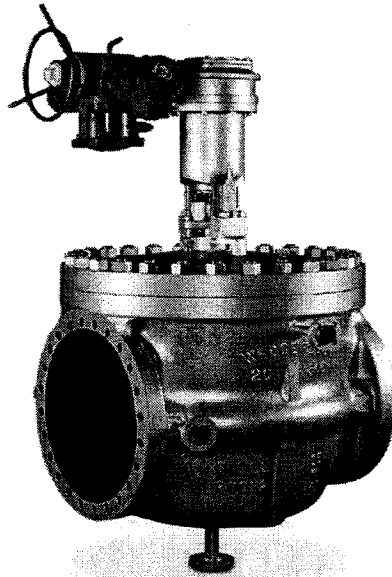
CRANE

Wedgeplug Valve - History

- 1920 - Wedgeplug designed by an FCC plant engineer, New Orleans, Louisiana.
- 1997 - CRANE Co. acquires Stockham Valves & Fittings.
- 1999 - Wedgeplug Valve re-located to CRANE PACIFIC VALVES, Long Beach operation.



CRANE



CRANE

Wedgeplug MAIN Applications

- Coking
- Fluid Catalytic Cracking
- Vis-Breaking Cracker
- Ethylene / Olefins
- Fueling - Clean Services



CRANE

Wedgeplug Areas of Applications

- Coking
 - Transfer Feed Lines
 - Fractionator Lines
 - Coke Drum Vapor Lines
 - Re-Cycle Lines
 - Isolation of Atmospheric Blow-down
- Ethylene / Olefins
 - Main Transfer Line Isolation
 - Fuel Oils Pumps
 - Quench Filter Oil Lines
 - Furnace Feed Lines
 - De-Coke Isolation
 - Cryogenic Storage Isolation Shut Off



CRANE

Wedgeplug Areas of Applications

- Fluid Cat. Cracking
 - Dry Catalyst storage hoppers
 - Dry Catalyst Transfer Lines
 - Super Heaters, Boilers & Exchangers
 - Main Slurry Pump Lines
 - Steam Generator lines
 - Reactor Transfer Lines
 - Reformer feed lines
 - Fractionator column bottoms
- Vis-Breaking
 - Furnace Cracking
 - Furnace Isolation / Quenching Pipeline
 - Soaker Cracking
 - Furnace Isolation / Quenching Pipeline
 - Filter Isolation below the main fractionator
 - Pair of Filters in parallel require frequent cleaning



CRANE

Wedgeplug OTHER Applications

- Slurries: Coal Slurry, Fluidized Iron Ore
- Molten Sulfur, Asphalt, Molten Coal Tar
- Chemical Processing
 - Phthalic Anhydride
 - Ethylene Di-Chloride
 - Vinyl Chloride
 - Polymers
- Pulp & Paper Mills
 - Bleaching, Liquors, Lime Mud, Chemical Recovery.



CRANE

Wedgeplug FEATURES & BENEFITS

- Metal to Metal Seating in Open & Closed Positions
- Purge Capability
- Flush Capability
- Double Block & Bleed
- Material Flexibility
- Lifting Plug Design
- Seated by Vertical Thrust
- Fire Safe
- Temperature Range
- Slurry Applications
- Seats Protected from Erosion & Corrosion, increases Valve Life
- Eliminates Fugitive Emissions.
- Cleans Seat area, Preventing Leakage created by Particulate Matter
- Positive Isolation upstream & down stream. One Valve does the job of Two.
- Combinations of Materials & Trims available to meet applications.
- Prevents wear due to Plug Rotation. Eliminates Galling.
- Not position seated, like Ball Valves
- Meets API 607, API 6FA & BS6522. Ensures Critical Safety in event of Fire Situation
- Cryogenic to 1650°F. One Valve design for ANY service, at ANY Temperature.
- Operates like a straight run of pipe, Seats are not exposed. Extends Valve Life.



CRANE

Purging and Flushing

- Purge creates protective critical area free of material accumulation
- Flushing keeps valve seats clean

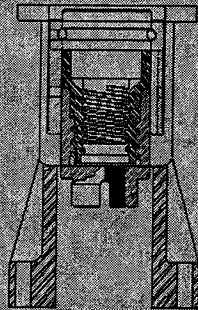
Purge Supplied

- Steam, Air, Nitrogen or Compatible Liquids
 - Steam purge must be applied at 25 psig min / 50 psig max, above line pressure
 - Air or Nitrogen purge must be applied at 25 psig min / 50 psig max, above line pressure
 - Liquid purge must be applied at 5 PSIG min/ 10 max, above line pressure
 - Heavy viscous material required differential pressure up to 100 psi.
- Consult Pacific Valves for process specific purging and flushing recommendations.

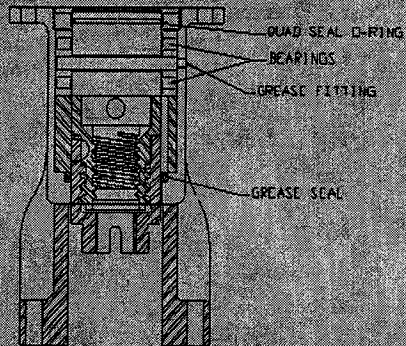


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OLD OPERATOR Vs. NEW



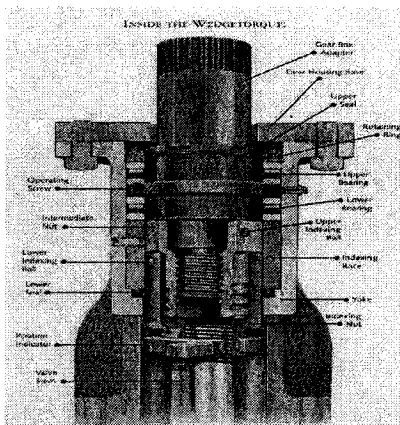
GROUP 4 (OLD STYLE)



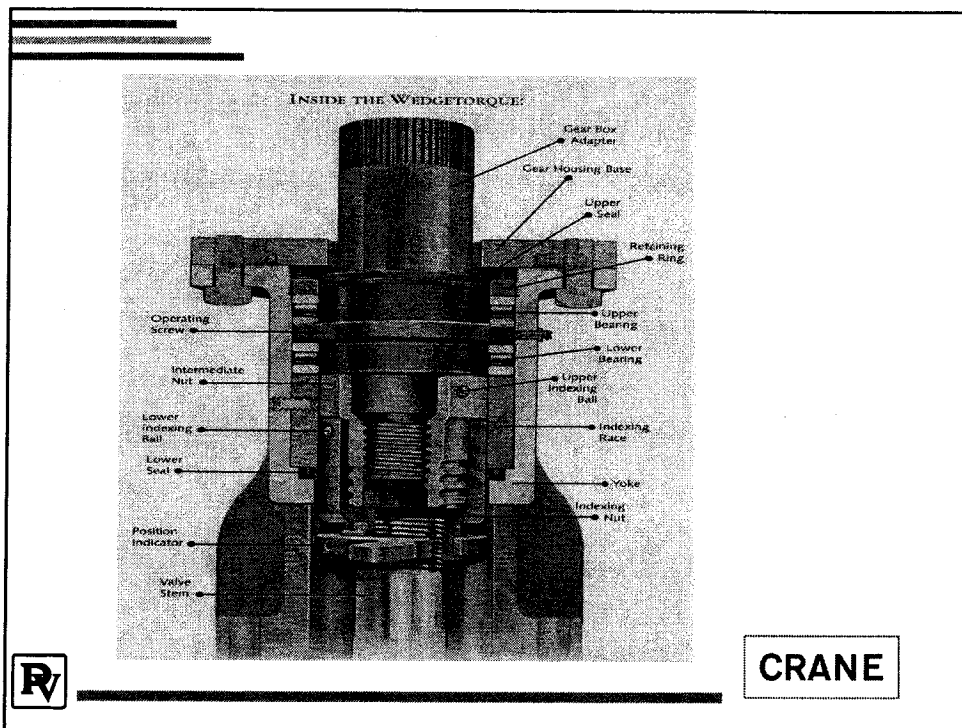
GROUP 4 (NEW STYLE)

WedgeTorque Operator

- Improvements:
 - Eliminated all Iron Parts
 - Standard C5 Yoke material
 - Upper O-Ring & Lower Grease Seal
 - Increase Strength
 - Fits Existing Valves
 - Upper & Lower Thrust Bearings



CRANE



Automation Wedgeplug

- Electric Actuator
- Air Motor
- Hydraulic
- Pneumatic
- Electro/Hydraulic
- Mechanical Interlock

CRANE

WEDGEPLUG VALVE

PACIFIC VALVES

Long Beach, California

THANK YOU



CRANE