Cornerstone® VALVE
SEVERE SERVICE ENGINEERING

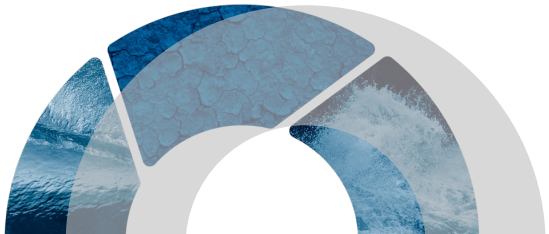
Severe Service Applications

The following is a list of applications where products have been produced to meet specific customer requests.

For ease of understanding, these lists are divided into general application categories.

Oil & Gas – Upstream

- ✓ High pressure (to 2OK psig)
- ✓ Loaded fluids such as oil/gas with sand
- ✓ Sour service (H2S)
- ✓ Subsea, topsides, platform valves
- ✓ Deep water applications
- ✓ Corrosive services - high salt entrainment, well head fluids
- ✓ Fluid control (on-off AND pressure control)
- ✓ Pollution prevention (liquids, gas, noise)
- ✓ Blowdown applications
- ✓ Gas/oil/liquids - separation including gas fractions
- ✓ Cryogenic applications
- ✓ Wellhead fluids injection



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Oil & Mid-Stream Gas & Oil

Processing, e.g., fire prevention & life safety

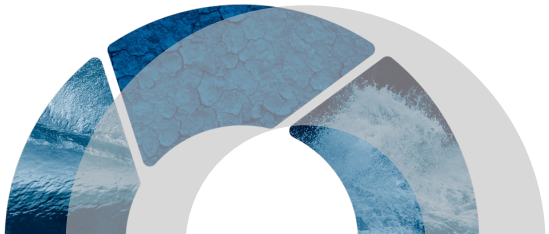
- ✓ Plastics manufacturing
- ✓ Plastics transport
- ✓ Fire safety assurance & testing
- ✓ Specific product development
- ✓ Gas dehydration switching
- ✓ Anhydrous ammonia pipeline valves
- ✓ Aractionator bottoms pump isolation
- ✓ Gas off & gas to flare
- ✓ High pressure H-Oil valves & H2 injection (up to 950F and 2900 psig)
- ✓ High temp catalyst switching (refining, disposal)
- ✓ Reforming switching valves (H2 + AIO2 at 850F)
- ✓ Heavy crude systems with related processes including delayed cokers and Flexicoking
- ✓ Furnace isolation
- ✓ Ship loading/unloading
- ✓ Salt dome caverns - brackish water, gas storage
- ✓ Gas-to-oil process valves
- ✓ Pipeline ON-OFF and blowdown
- ✓ Compressor Recycle & Surge Control
- ✓ High cycle product letdown valves

Ore Handling and Processing

- ✓ Valves for processing iron ore (1250F in H2 atmosphere)
- ✓ Copper ore tram,port - slurry pipeline
- ✓ Pressure reducing stations - orifice plate isolation
- ✓ Coal slurry pipeline
- ✓ Separators
- ✓ Lock-hopper inlet & outlet valves
- ✓ Coal gasification
- ✓ Oil shale retorting

Pulp and Paper

- ✓ Virtually all valves used in both continuous & batch digesters
- ✓ Pulp stock, steam, black liquor, sand separators, 2-way and 3-way
- ✓ Batch digester inlet valves with for batch automation with full automation
- ✓ Blow-down valves - for both batch & continuous digesters.
- ✓ Steam control & condensate control
- ✓ Gas off
- ✓ Steam & paper machine head-box control



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Maritime

- ✓ Ship loading control valves
- ✓ Special products handling such as Cryogenic (LNG)
- ✓ Steam and condensate

Custom applications for US Navy - Classified!

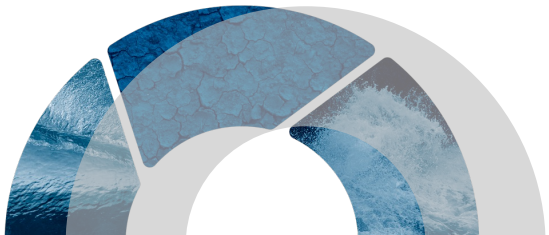
- ✓ Improvements in Navy Standard designs
- ✓ Special flow control technology
- ✓ Special safety related technology
- ✓ Numbers of R&D programs
- ✓ ROM desalination control valves
- ✓ Quiet Valve technology

Space Launch Facilities

- ✓ Quick opening valves for energizing systems to protect from Blast & Vibration - (Sole sourced since 1989!)
- ✓ Current valve R&D projects for space applications Aircraft launch steam control systems

Power

- ✓ Top entry in-line serviceable valves for high pressure
- ✓ Steam, condensate
- ✓ Peaking Power Plants
- ✓ Hydroelectric turbine block and control
- ✓ Gas yard control valves
- ✓ Nuclear, fossil/natural gas fired systems
- ✓ Gas feed
- ✓ Attemperator block
- ✓ Boiler feed (BFP)



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