Cornerstone® VALVE
SEVERE SERVICE ENGINEERING

Case Study: Rotary Control Valve

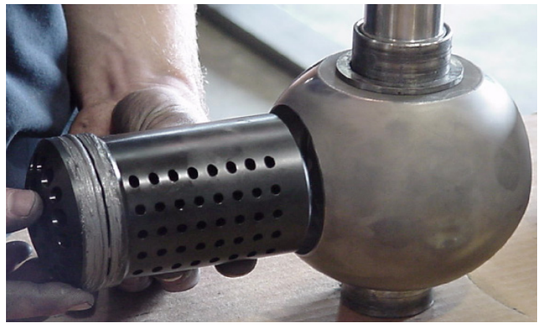
The Control D-Ball valve was developed in answer to a US Navy request for a quiet valve solution for covert submarine warfare. The Control D-Ball valve was so quiet, that it was immediately classified as confidential military technology and could not be introduced to the commercial market for 6 years! It is now installed on Next Generation Aircraft Carrier.

Rotary Control Valve

- Trunnion mounted
- Soft or Metal seated
- Sizes 2" to 36"
- Full or Reduced Port
- ANSI 150 - 4500
- API 2k - 15k
- -320° F to 1,500 °F, [-195°C to 815 °C]
- Any Metallurgy
- Choice of End Connections
- Leakage Class to customer specification
- Actuation to customer specification
- High capacity for given nominal valve size.
- High Rangeability
- Space - typically smaller space than globe.
- Simple packing arrangements.
- Durability - with the right design features:
  - One Piece ball/stem - no joint no hysteresis
  - Ease of automation
  - Bi - directional shutoff (if specified)
  - In - line serviceable option available
- Clean or loaded fluids.

Cornerstone has solutions for the following application areas:

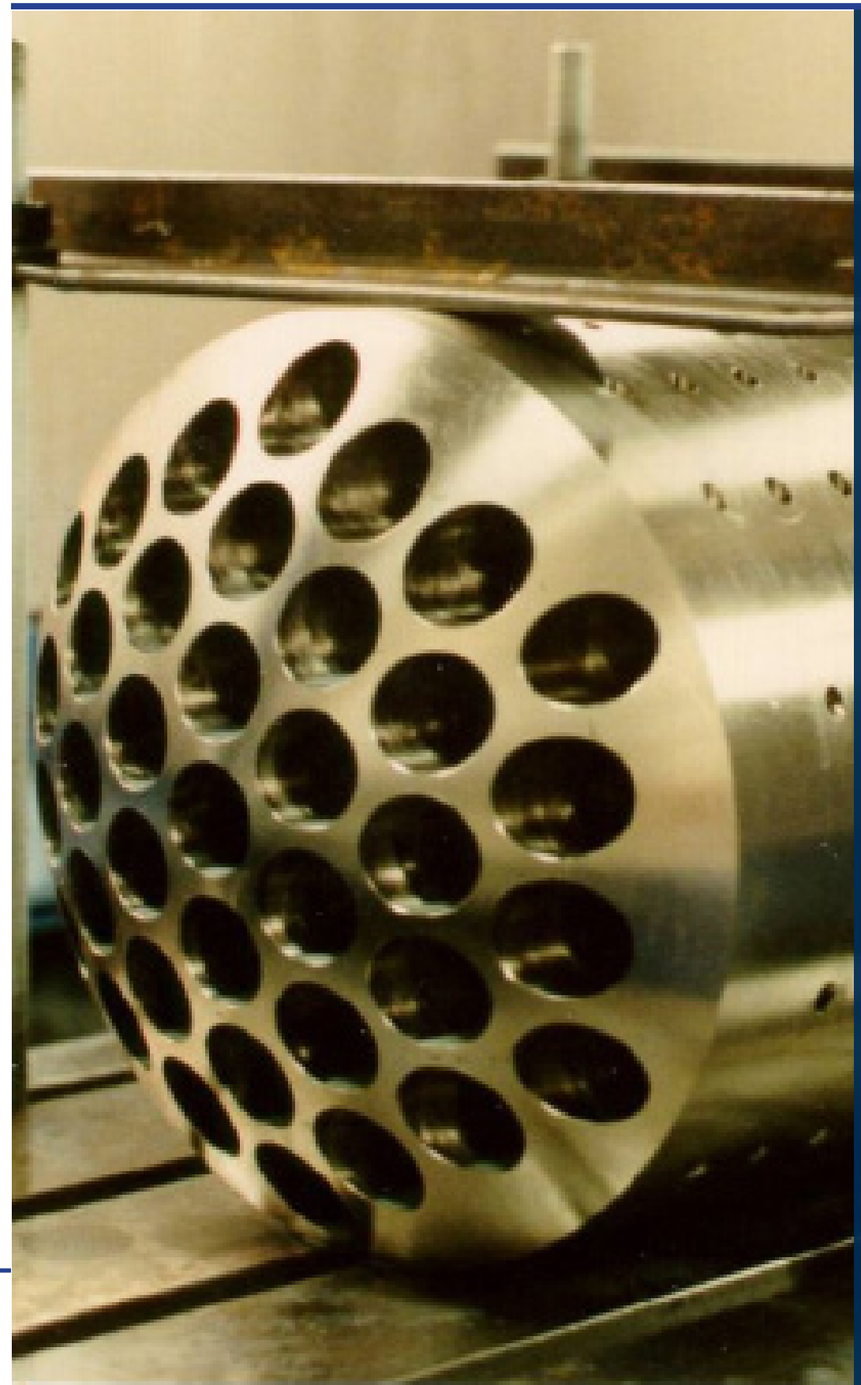
- Pump Discharge for loading and unloading
- Low noise applications (environmental)
- Compressor recycle and surge control
- Pressurization and depressurization
- Steam let-down and control
- Pulp and paper applications
- Anti-cavitation applications
- Boiler feed water control
- Gas to flare



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CORNERSTONE VALVE MADE IN TEXAS

Cornerstone® VALVE
SEVERE SERVICE ENGINEERING



ROTARY CONTROL VALVES

Patented D-BALL trim is ideal for:

PUMP DISCHARGE FOR LOADING & UNLOADING.

LOW NOISE APPLICATIONS (ENVIRONMENTAL).

COMPRESSOR RECYCLE & SURGE CONTROL.

PRESSURIZATION & DE-PRESSURIZATION

STEAM LET DOWN & CONTROL.

PULP & PAPER APPLICATIONS.

ANTI - CAVITATION APPLICATIONS.

BOILER FEED WATER CONTROL.

GAS TO FLARE.

Rotary Control Valves

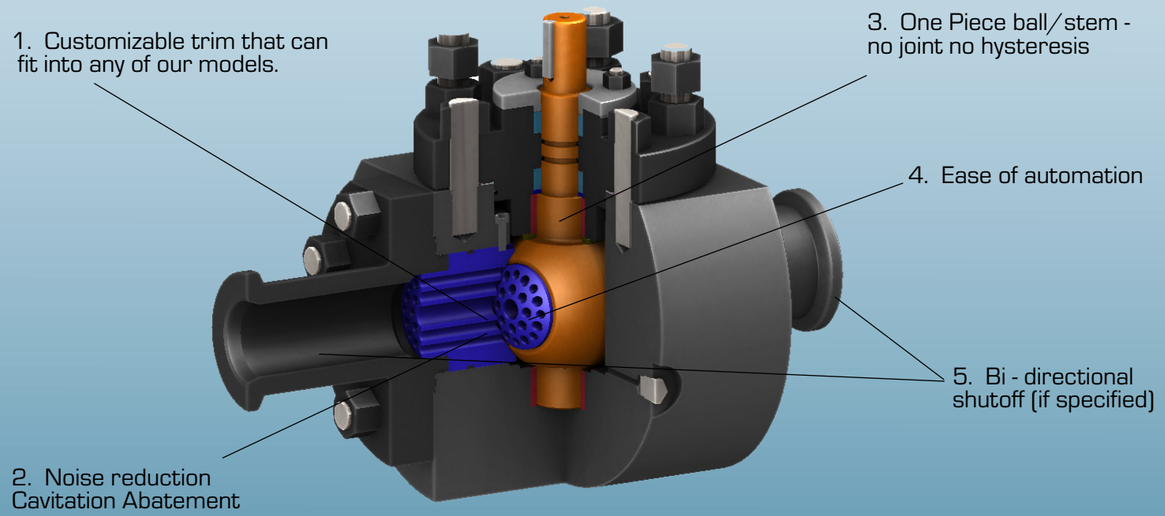
Cornerstone® VALVE
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Top Entry & End Entry

Sizes:	2” Thru 12” - FULL TRIM 2” Thru 36” - PARTIAL TRIM FULL OR REDUCED PORT
Ratings:	ANSI / ASME: 150 - 4500 API: 2000 - 15000
Design Standards:	API - 6D, B16.34, API - 6A
Temperature:	From minus 320 °F (CRYOGENIC) To 1500 °F (HIGH TEMPERATURE)
End Connections:	SW, BW, RF, RTJ, HUB END ASME B16.5 / ASME B16.25 / API - 6A
Leakage Class Options:	- API 6D - API 598 - Bubble Tight (Soft Seated) - ANSI/FCI 70.2 Class V & VI (Metal Seated) - API 6A, PSL - 1, 2, 3 & 3G
Actuation:	Manual, Pneumatic, Hydraulic, Electric

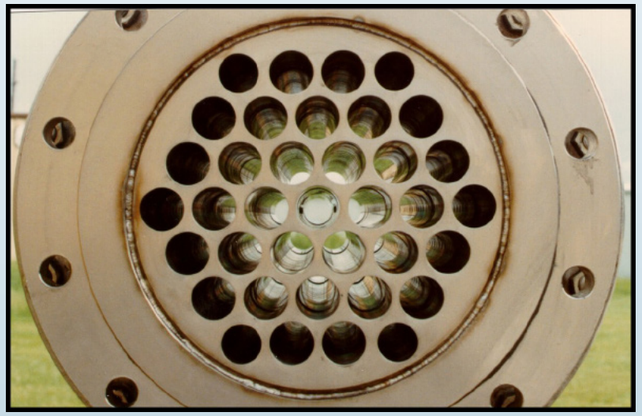


Standard Features



SOLVE YOUR FLOW, NOISE AND CAVITATION PROBLEMS AT THE SOURCE

THE D-BALL ADDRESSES NOISE AT THE SOURCE, REDUCING ADDED COSTS OF NOISE REDUCTION AND ALLOWING THE USE OF LESS COSTLY CONTROL COMPONENTS. AVAILABLE WITH INLET, OUTLET OR VARIABLE IMPEDANCE TRIMS.



Trim Sizing Data * Cv											
SIZE	2”	3”	4”	6”	8”	10”	12”	14”	16”	20”	24”
MAX	47	160	250	540	880	1510	2140	3160	4180	6600	9230

Case History in Steam Letdown Service

Valve Size:	3” - ANSI 600
P1	750 psig (51.6 barg)
T1	750 F
P2	35 psig (2.4 barg)
Flow Rate:	2,200 to 44,000 lbs per hour. (Avg 20,000)

Installed 1991 (June)

Over 2.5 + billion lbs of steam!

Still working - reference available on request!!

Previously installed cage guided stellite trim failed in 9 months!!!