VALVTECHNOLOGIES

NEXTECH™ "R" and "E" Series

Trunnion Mounted Metal Seated Ball Valve

NEXTECH™

Severe Service Trunnion, Metal Seated Ball Valve ANSI/ASME 300-900#, 2-24" (DN 50 - 500)

The Nextech™ valve was designed as a high-end, severe service solution for the process and specialty markets. Nextech™ also serves specialty applications to meet specific customer requirements. Utilizing the same coating and live-loading technology that built the V1 product line, but in a lower-torque, truly bi-directional package, Nextech™ is a super solution for tough, high-cycling applications.

Applications:

- **Refining:** Continuous catalyst regeneration (CCR) reforming (UOP and Axens), pressure swing absorption (PSA) skids, cumeme production, low pressure catalyst handling in hydrotreaters and hydrocrackers, gas drier (molecular sieve) applications, hydrogen or oxygen service
- **Chemical:** Unipol polyethylene (when metal seated), dow polypropylene, PSA skids, silicon processing, high-cycle lock-hopper valves
- **Gasification:** Lock-hoppers, black water, syngas isolation
- **Power:** Bi-directional, low-pressure applications such as soot-blowers and chemical handling
- **Specialty:** Corrosive applications where seat material should be different than body material, high cycle applications, polysilicon corrosive applications, bi-directional, double block and bleed

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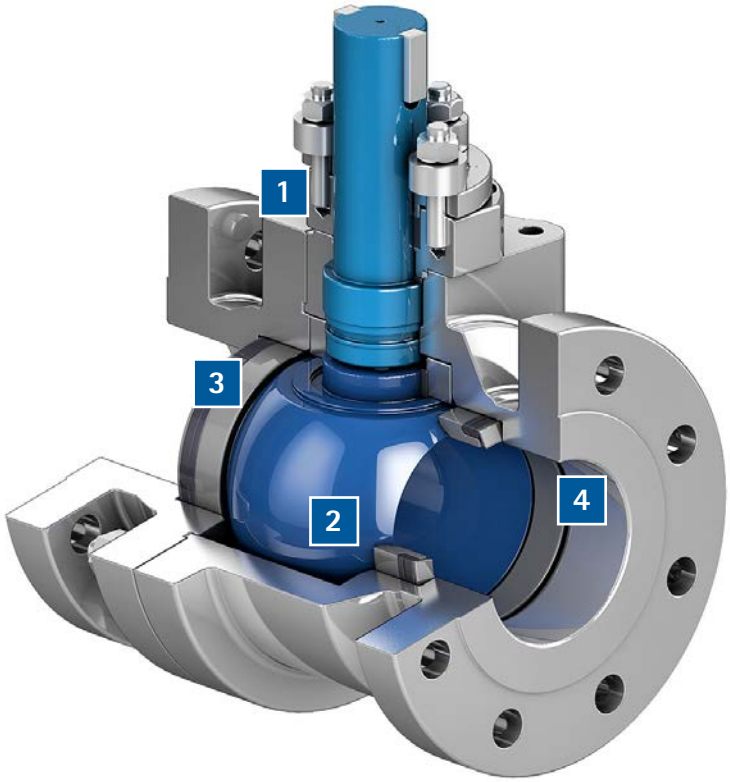
The Next Generation in Trunnion Technology



The Nextech™ trunnion design provides a severe service solution for tough, high cycling applications.

The standard seat design for all Nextech™ valves is single piston effect (SPE), or so called "self-relieving seat." When pressure builds up inside the body cavity and DP between body cavity and valve downstream is approximately 50-100 psi, the seat moves away from the ball, relieving the pressure.

1 Live Loaded Gland Area

The Nextech™ gland packing design features a four stud, live-loaded assembly designed for heavy industrial applications. The packing material is high purity Grafoil® surrounded by carbon fiber / Inconel anti-extrusion rings. The six bellville springs (per stud) provide constant load pressure through extreme thermal shocks and prevent wear leaks in high cycle service. This state-of-the-art system allows the Nextech™ to achieve a class "B" designation in ISO 15848 testing, a distinction usually reserved for low-temperature elastomer sealing systems.

2 Carbide Sealing Surfaces

The sealing surfaces are coated with tungsten carbide using the HVOF process. These surfaces have a hardness of 70-72Rc to allow long periods of operation in the most severe conditions. Other ceramet coatings are available depending on application. The ball and seats are "mate" lapped using diamond compound to achieve tight shut-off.

3 High Integrity Seat Surfaces

To prevent leaks around the seats, ValvTechnologies has developed an innovative double seal design for high temperature operation and/or high cycling applications. In low temperature, high cycling service, a secondary elastomer seal is installed on the seat perimeter. The seating system along with the diamond-lapped carbide seat surface provides sealing to tight shut-off standards using ANSI/ASME B16.34, FCI 70.2 and API 598 testing procedures.

4 Solids Resistance

In addition to the carbide coatings which will allow the valve to function in highly abrasive applications, the individual valve parts have additional seals to prevent interference from solids in the system. This provides for outstanding performance in catalyst systems, streams with solids contamination and polymers.

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NEXTECH™ Key Design Features and Benefits

Nextech™ Features and Benefits	
Features	**Benefits**
Guaranteed tight shut-off	Enhanced process safety and repeatable sealing allows operation under process excursions
True metal-to-metal sealing without using secondary elastomeric seals	Inherent fire safety
Solid-proofed by design	Process reliability
RAM® coating technology	Extended life
Grafoil seals	Reduced maintenance costs
Double block and bleed capability	Enhanced process safety
High cycling capability	Process reliability
Bi-directional sealing by design	Enhanced process safety, lower maintenance, less downtime
Single-piece anti blow-out stem design	Enhanced process safety
Impervious to high thermal cycling	Enhanced process safety
Certified to use in SIL-3 loop in single-valve and SIL-4 loop in two-valve with minimum MTBF 1,280 years	Enhanced process safety
Live-load stem packing (four bolts design)	Lower emissions
Stem fugitive emissions per ISO 15848-1 Class B	Lower emissions and enhanced process safety
Fire safe certification: API-607	Enhanced process safety

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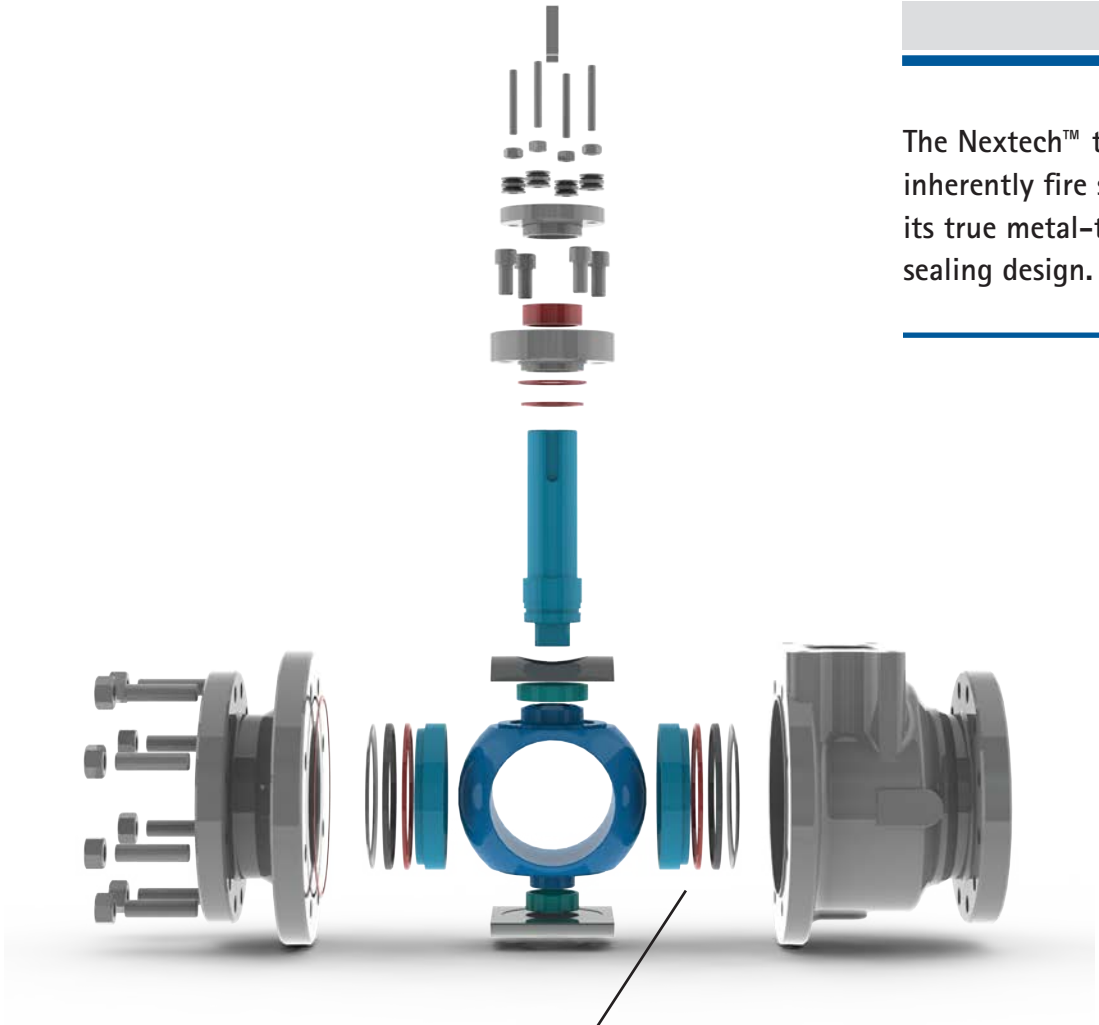
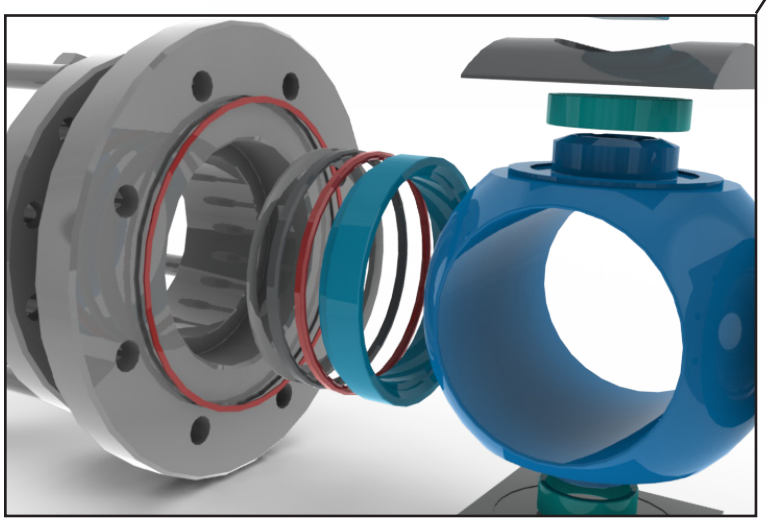
NEXTECH™ Key Design Features

The Nextech™ trunnion is inherently fire safe due to its true metal-to-metal sealing design.





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NEXTECH™ – "R" Series

ValvTechnologies is committed to excellence in the design, manufacturing, service and testing of all its severe service isolation valves, while providing absolute tight shut-off solutions to meet and exceed customer expectations.

Nextech™ "R" Series is produced to lower costs and is stocked and ready to ship within weeks.

The Nextech™ "R" Series (regular series) valves are a low-cost valve ready for immediate delivery. Engineered with the same quality standards of all ValvTechnologies products, the Nextech™ "R" Series valve has been mass-produced to lower costs and is stocked and ready to ship. While the "R" Series is our base stock model, there is nothing basic about its design and performance. This valve design represents the state-of-the-art in severe service metal seated ball valve technology. It has all the features and benefits of the "E" Series design, but with limited metallurgical and testing options in order to provide this to the market at the lowest cost possible. This valve is offered in full port sizes 2-6" (DN 50-150), in ANSI 300-600# and 8" (DN 200) in ANSI 300#.

NEXTECH™ "R" Series – Trim		
Part EX: 2", 300lb ANSI	"CR" Trim N5CR-RF-FP-B020-001AF-001	"22" Trim N522-RF-FP-B020-001AF-001
Valve body	Cast carbon steel – dual certified to ASTM A216/A352 WCC / LCC	Cast 316 stainless steel – A351 Gr. CF8M
Ball and seats	316SS with HVOF tungsten carbide coating	316SS with HVOF tungsten carbide coating
Stem	316SS boronized	316SS boronized
Bellville springs	Inconel 718	Inconel 718
Gland	316SS with QPQ treatment	316SS with QPQ treatment
Stem bearing	Nitronic 60	Nitronic 60
Packing	Grafoil / Inconel	Grafoil / Inconel
Live load system	17.7 ph	17.7 ph
Body seal	Grafoil	Grafoil
Bolting	SA-193 B7/SA-194 2H	SA-193 B8M/SA-194 8M

Valves with 316SS trim, balls for 6" bore valves and above will be centrifugally cast (CF8M).

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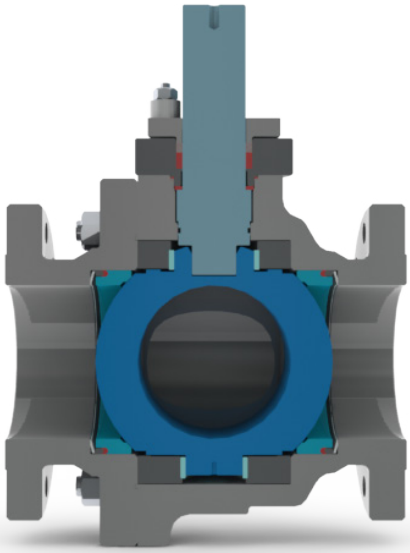
NEXTECH™ - "E" Series

The Nextech™ "E" Series (enhanced series) represents a true engineered to spec, specialty valve with materials selected to meet the needs of the most demanding applications. These valves are designed and configured to handle corrosive, high temperature and high solids applications requiring tight shut-off. The Nextech™ "E" Series are zero leakage valves offered between 2-24" in ANSI 300#, 600# and 900#.

Below is a general comparison chart detailing the components and variations of the Nextech™ "R" and "E" Series valves.

NEXTECH™ Series (ANSI 300-600#)		
"E" vs "R" Series Comparison		
	"R" Series	"E" Series
Sealing	ANSI Class V	Absolute tight shut-off
Ball and seat coatings	RAM 21	Per application requirement
Stem and bearing coatings	316SS boronized	Per application requirement
Bellville springs	Inconel 718	Inconel 718
Gland load springs	17.7 pH	Inconel 718
Body and bonnet seals	Low density	High density
Body material	WCC/LCC and CF8M	Per application requirement
Warranty	One year parts and workmanship	Two years parts and workmanship
Delivery	Two-four weeks	20-30 weeks
Options	None	• Helium testing to Class VI • Reduced port • Special materials • Limited operational warranty • Cladding and overlays

"R" Series - Stocked item, ready for delivery.
"E" Series - Specialty item, requiring additional materials and/or engineering.



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NEXTECH™ "R" and "E" Series

Trunnion, Metal Seated Ball Valve

ValvTechnologies, Inc. is a global leader in the design and manufacturing of flow control devices. Founded in 1987 and headquartered in Houston, Texas, ValvTechnologies remains focused on helping customers meet their daily production and process challenges safely and efficiently.

Having built a global reputation for superior quality and dependability across every industry, ValvTechnologies has served with products designed to fulfill the requirements of standard applications to the most sophisticated, severe-service processes. ValvTechnologies meets the demands for total flow control solutions, whether one valve at a time, or system-wide.

Bringing together the best people and the latest in technological design and manufacturing processes, ValvTechnologies has created an atmosphere where quality and dependability are built into every product, start to finish.

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CERTIFIED TO ISO 9001™

Spec 6D-0433
Spec 6A-0591

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