CAMERON
A Schlumberger Company

ORBIT Rising Stem Ball Valves for Molecular Sieve Dryers

Low-maintenance, high-integrity, zero-leakage solutions


ORBIT

Content

ORBIT rising stem ball valves for molecular sieve dryers

Product History

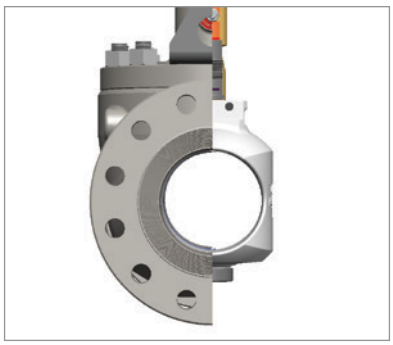
Cameron's ORBIT* rising stem ball valves have set the standard in molecular sieve switching valves for more than 40 years. With temperature cycling between 60 degF and 800 degF [15 degC and 427 degC] and tower changes three or four times every day, it takes a tough valve to survive in molecular sieve service.

Hot, abrasive carryover from molecular sieve beds will destroy the seals in ordinary valves, causing leakage and system shutdown. ORBIT valves thrive in these difficult conditions, lasting up to five times longer compared with conventional ball valves.

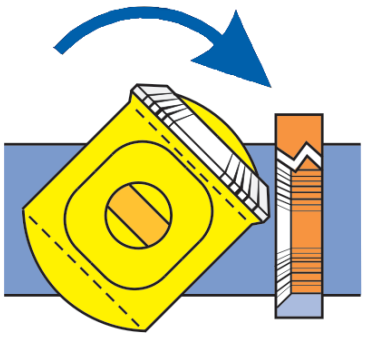
Utilizing tilt-and-turn operation and mechanical cam action of the seating surfaces during closure, ORBIT valves avoid the damage caused by scratching and tearing that affects other types of valves.

The unique operation of the ORBIT valve achieves continuous tight sealing—even when there is low differential pressure across the valve.

Because of their reliability in molecular sieve service, ORBIT valves are approved and used by leading dryer manufacturers and are specified by process gas plants and licensors' operations around the world.

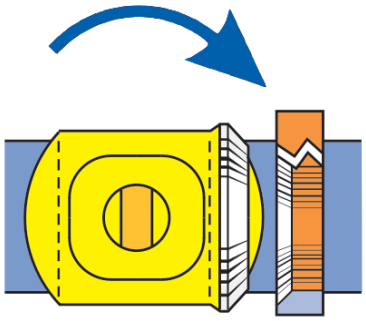


In the fully open position, there is unobstructed flow through the valve.



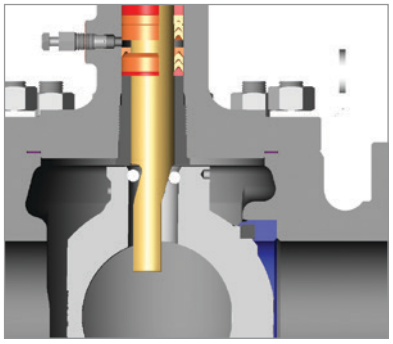
Top view

Precision dual-spiral grooves in the stem act against fixed guide pins, causing the stem and core to rotate.



Top view

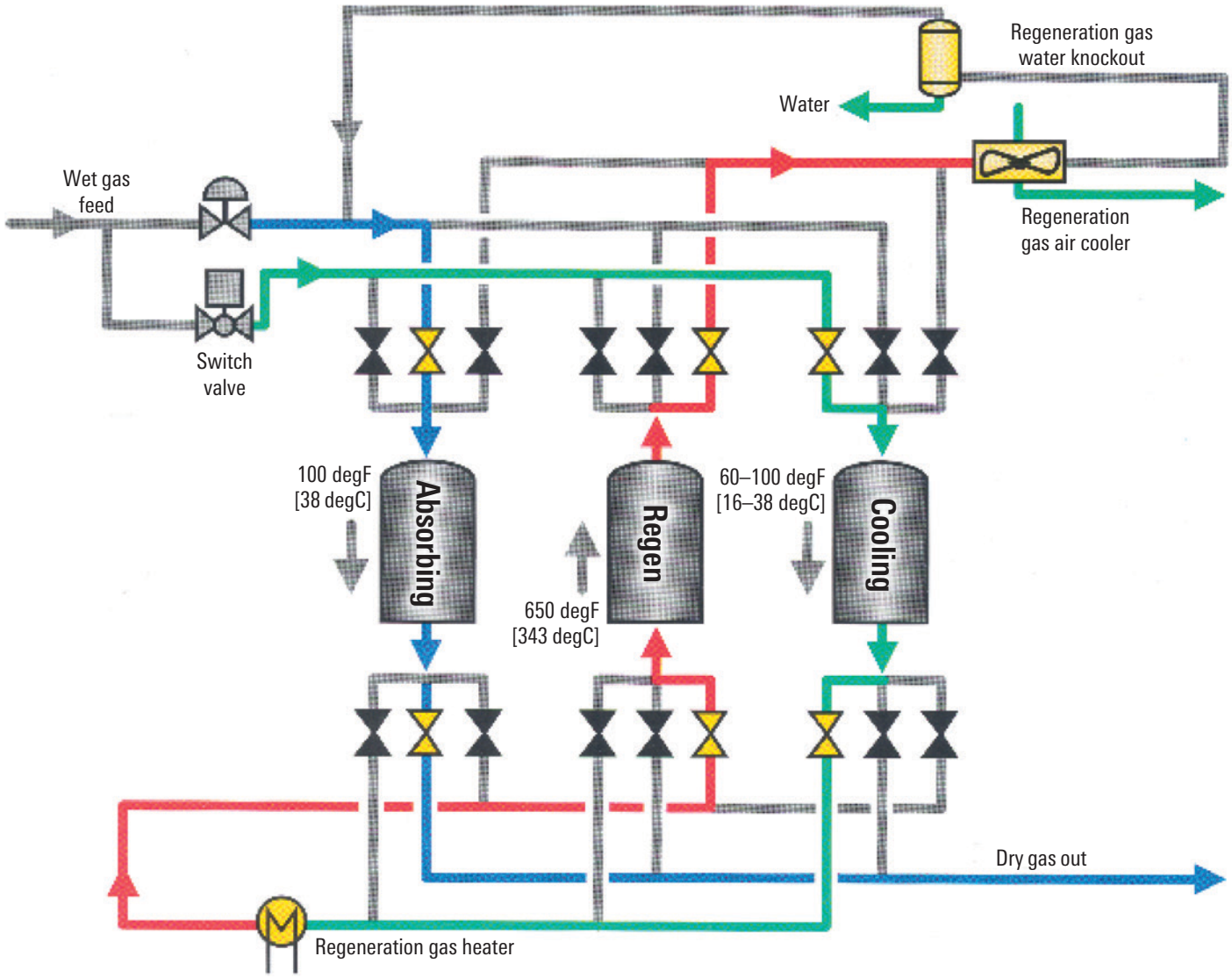
Continued closing action rotates the core and stem a full 90° without the core touching the seat.



Final closing action mechanically cams the stem down, pressing the core firmly against the seat.

Schematic

Molecular sieve dryer system using ORBIT valves



Typical Challenge	Typical Challenge	Typical Challenge
Wet gas leaking through ordinary valves will cause dryer efficiency to decline.	Leaking valves can prolong the regeneration time and waste energy.	Daily operation in hot, abrasive service can create high maintenance costs.
Cameron Solution	**Cameron Solution**	**Cameron Solution**
ORBIT valves are cammed positively closed, eliminating wet gas leakage.	The ORBIT valve design eliminates rubbing between seat sealing surfaces, ensuring zero leakage and conserving energy.	ORBIT valves provide reliable long life in hot, abrasive service with reduced maintenance.

When ordering, specify ORBIT rising stem ball valves for molecular sieve service.

Single-Source Responsibility

Cameron carries single-source responsibility for the total package.

ORBIT valve actuators

Our sequence switching valves can be either manual or power operated. The pneumatic actuators have a performance record to match the long life and low maintenance of the ORBIT valves that they control.

ORBIT valve actuators can be easily retrofitted to manual ORBIT valves in the field without removing the valve from the line.

Outside stem and yoke (OS&Y) bonnet design with graphite packing metal seat

- 800 degF [427 degC]
- Full and reduced port sizes from 1 in through 24 in [25 mm through 600 mm]
- ASME/ANSI Classes 150–2500

Specifications and compliance

- API 6D/ASME B16.34
- ISO 9001:2008
- PED 97/23/EC
- ATEX directive 94/9/EC
- ISO rating of “A” zero leakage
- ISO 15848-1 and API 622 (fugitive-emission-type testing)
- Shell GSI SPE 77/300 TAT qualified
- Shell TAMAP two-star rating
- SIL 3 rating

ORBIT rising stem ball valve.

Services for Valves and Actuation

We build it. We back it.

Cameron is well positioned to quickly and efficiently deliver total aftermarket support with unmatched OEM expertise. Our highly skilled engineers and technicians are available around the clock to respond to customer queries, troubleshoot problems, and offer reliable solutions.

Easily accessible parts and spare valves

- OEM spare valves, actuators, and parts (including non-Cameron brands)
- Handling, storage, packaging, and delivery
- Dedicated stocking program

Comprehensive aftermarket services portfolio

- Parts and spare valves
- Repair
- Field services
- Preventative maintenance
- Equipment testing and diagnostics
- Remanufacturing
- Asset preservation
- Customer property management
- Training and recertification services
- Warranty

Customized total valve care programs

- Engineering consultancy
- Site management
- Flange management
- Startup and commissioning
- Spare parts and asset management
- Operational support

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products.slb.com/orbit

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