

# ORBIT Valves for Mol Sieve Dryers

A low-maintenance, high-integrity, zero-leakage valve

TECHNOLOGY





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# ORBIT Valves for Mol Sieve Dryers

## PRODUCT HISTORY

Cameron's ORBIT® valves have set the standard in mol sieve switching valves for more than 40 years. With temperatures cycling between 60° F and 800° F (15° C and 427° C) and tower changes three or four times every day, it takes a tough valve to survive in mol sieve service.

Hot, abrasive carryover from mol sieve beds will destroy the seals in ordinary valves, causing leakage and system shutdown. Cameron's ORBIT valves thrive in these difficult conditions, lasting more than two to five times longer than conventional ball valves.

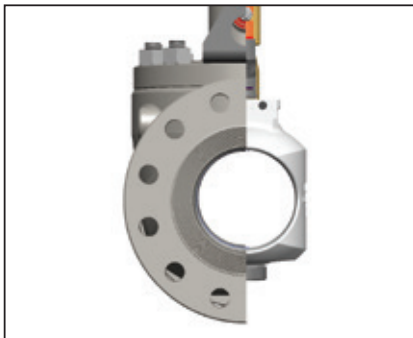
Utilizing tilt-and-turn operation and mechanical cam action of the seating surfaces during closure, ORBIT valves

avoid the damage caused by scratching and tearing that affects other types of valves.

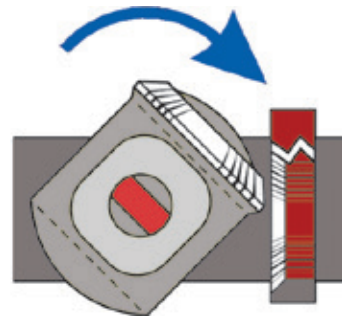
The unique operation of the ORBIT valve achieves tight sealing, again and again, even when there is low differential pressure across the valve.

ORBIT rising stem, top-entry valves are approved and used by leading dryer manufacturers because of their reliability in mol sieve service.

ORBIT valves are specified by process gas plants and licensors' operations worldwide.

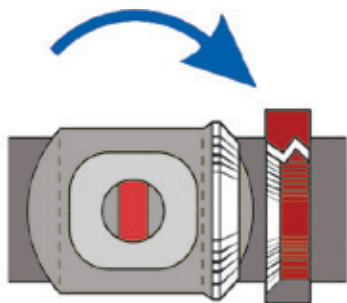


In the fully open position, there is unobstructed flow through the valve.



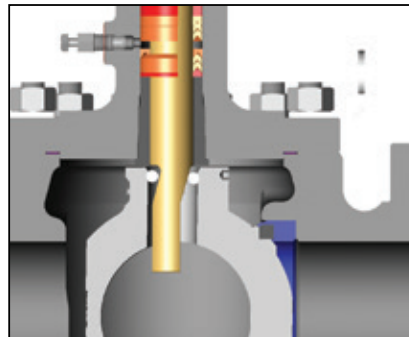
Top View

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



Top View

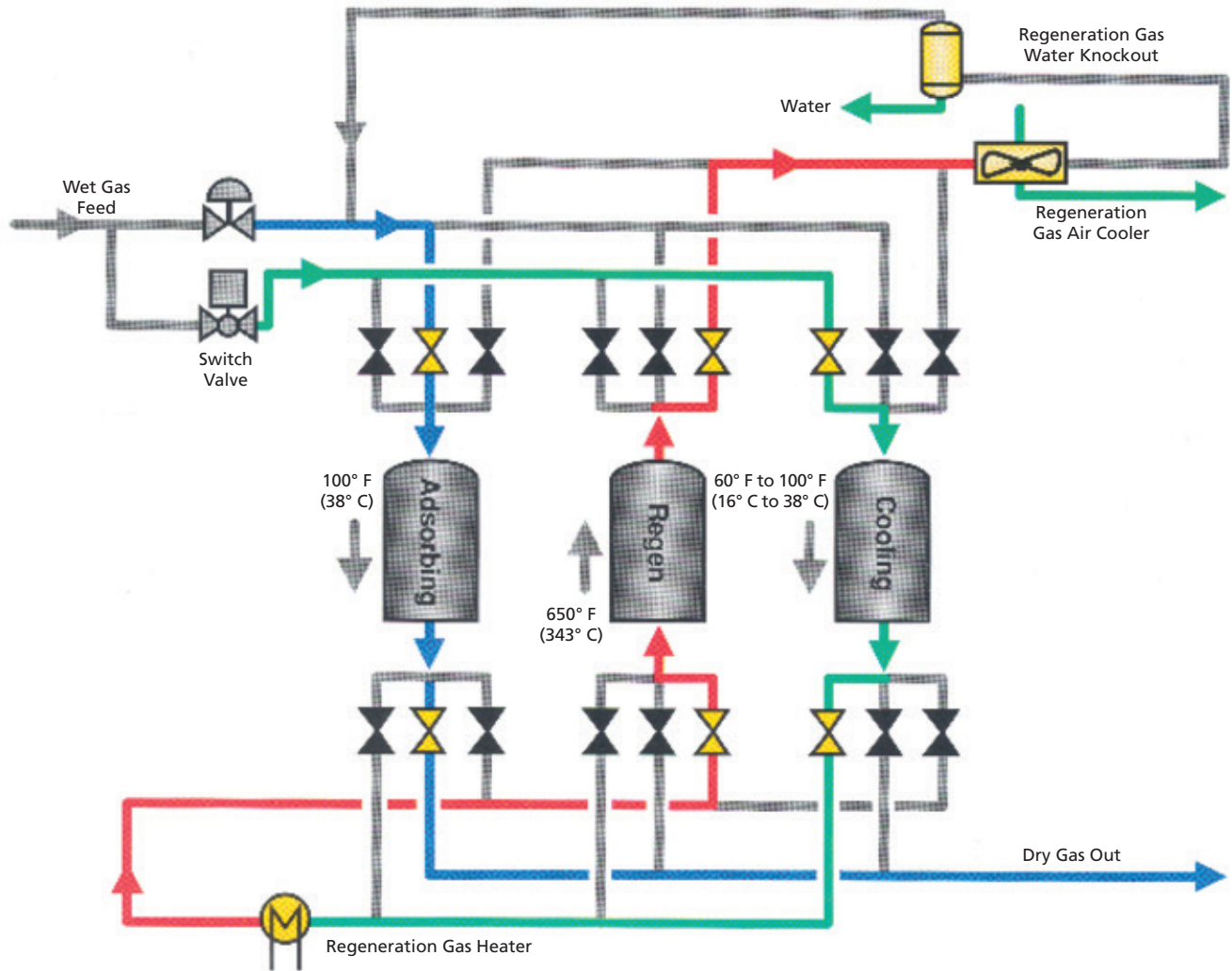
Continued closing action rotates the core and stem a full 90 degrees without the core touching the seat.



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

# SCHEMATIC

Schematic of Mol Sieve Dryer System Using ORBIT Sequence Switching Valves



**Typical Challenge**  
Wet gas leaking through ordinary valves will cause dryer efficiency to decline.

↓

**CAMERON'S SOLUTION**  
ORBIT valves are cammed positively closed, eliminating wet gas leakage.

**Typical Challenge**  
Leaking valves can prolong the regeneration time and waste energy.

↓

**CAMERON'S SOLUTION**  
The ORBIT valve design eliminates rubbing between seat sealing surfaces, ensuring zero leakage and conserving energy.

**Typical Challenge**  
Daily operation in hot, abrasive service can create high maintenance costs.

↓

**CAMERON'S SOLUTION**  
ORBIT valves provide reliable long life in hot, abrasive service, with reduced maintenance.

Specify ORBIT rising stem, top-entry valves for mol sieve service.

## SINGLE-SOURCE RESPONSIBILITY

Cameron carries single-source responsibility for the total valve/actuator package.



### Specifications and Compliance

- API 6D/ASME B16.34
- ISO 9001:2008
- PED 97/23/EC
- ATEX Directive 94/9/EC
- ISO Rate "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 Actuators

Cameron's ORBIT sequence switching valves can be either manual or power operated.

ORBIT pneumatic actuators have a performance record to match the long life and low maintenance of the ORBIT valves that they control.

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

### OS&Y Bonnet Design with Graphite Packing Metal Seat

- 800° F (427° C)
- Full and reduced port sizes from 1" through 24" (25 mm through 600 mm)
- ASME/ANSI Classes 150 through 2500

# CAMSERV™ Services for Valves and Actuation

WE BUILD IT. WE BACK IT.



## Global Network and Local Support

Cameron is well-positioned to deliver total aftermarket support, quickly and efficiently, with unmatched OEM expertise. Our highly skilled engineers and technicians are available around the clock, seven days a week 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 (TVC) Programs

Customized asset management plans that optimize uptime, availability and dedicated services.

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



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Learn more about ORBIT at:  
[www.c-a-m.com/valves](http://www.c-a-m.com/valves)



**HSE Policy Statement**

At Cameron, we are committed ethically, financially and personally to a working environment where no one gets hurt and nothing gets harmed.