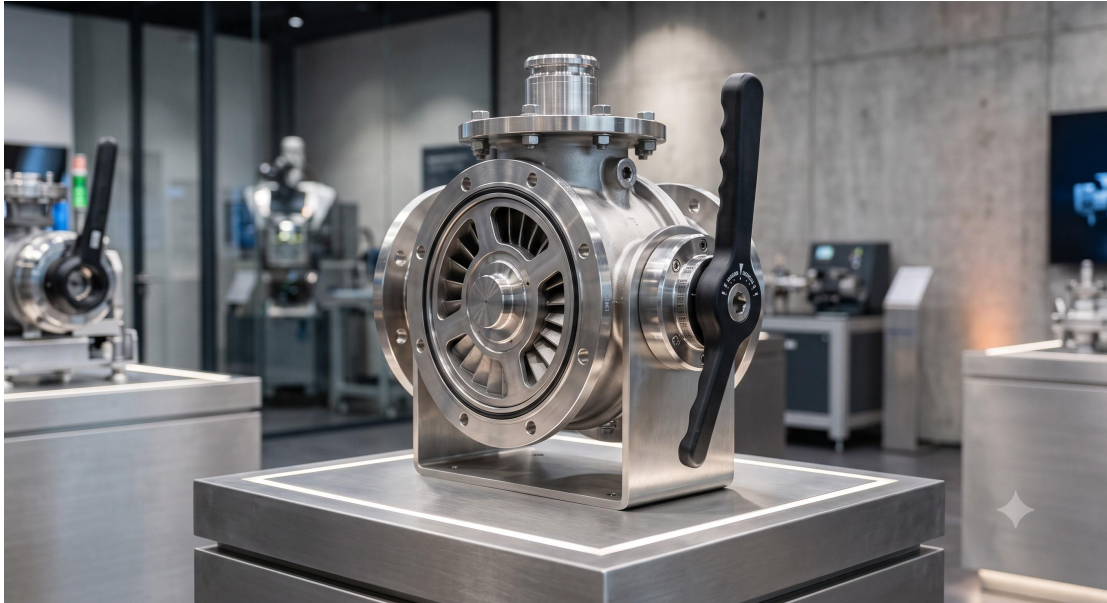


# Doebritz DBR-1237 Gravity Quick-Release Rotary Valve - Official Technical Overview & Datasheet

## DOEBRITZ DBR-1237 GRAVITY QUICK-RELEASE ROTARY VALVE OFFICIAL TECHNICAL OVERVIEW & DATASHEET

### 1. PRODUCT IDENTIFICATION & POSITIONING

The Doebritz DBR-1237 Gravity Quick-Release Rotary Valve is a precision-engineered material handling component designed for high-efficiency gravity discharge, precise airlock sealing, and rapid sanitation in powder and bulk solids processing. This equipment serves as a critical interface between storage vessels and downstream pneumatic conveying or mechanical handling systems, ensuring consistent volumetric feeding while maintaining system pressure integrity .



## 2. INTERNAL AIRLOCK TOPOLOGY & OPERATING PRINCIPLE

The DBR-1237 employs a star-type rotor configuration with precision-machined vanes operating within a close-tolerance housing. The rotor-to-housing clearance is maintained at a stringent 0.15mm - 0.2mm, establishing one of the highest standards for dynamic air tightness in the powder handling industry . This ultra-tight clearance effectively eliminates static leakage at silo outlets and prevents blowback air from disrupting upstream processes during positive pressure conveying. The rotor geometry is optimized for gravity-fed material flow, ensuring complete filling of rotor pockets and consistent volumetric discharge across varying material characteristics.

## 3. WEAR DEFENSE MECHANISMS & MATERIAL METALLURGY

The DBR-1237 is constructed from premium stainless steel (SUS304 / SUS316L) as standard, with the internal surfaces precision-polished to a hygienic finish of  $Ra < 0.8$  to prevent material adhesion and cross-contamination . For abrasive or corrosive applications, the product contact surfaces can be upgraded with advanced wear-defense coatings including tungsten carbide, ceramic, or specialized polymer materials. The housing and end covers are engineered to withstand internal explosion pressures exceeding 10 bar, ensuring robust containment under fault conditions . The external bearing configuration isolates bearing assemblies from the material flow path, preventing powder ingress and eliminating bearing seizure .

#### 4. OPERATIONAL ADVANTAGES & KEY FEATURES

- **RAPID MAINTENANCE ACCESS:** The quick-release design enables complete disassembly and reassembly by a single operator using one standard adjustable wrench. The entire breakdown and cleaning process can be completed in approximately 10 minutes, dramatically reducing downtime .
- **HYGIENIC COMPLIANCE:** Internal surfaces are polished to  $Ra < 0.8$ , preventing material buildup and eliminating dead zones. The valve is fully compatible with Clean-in-Place (CIP) and Wash-in-Place (WIP) systems, with an internal geometry that facilitates automated cleaning with minimal manual inspection .

- PROCESS STABILITY: Precision-engineered rotor and housing maintain stable pressure differentials, with rated working pressure from -0.5 bar to 2 bar and operating temperature range of -10 to 150°C .

- VERIFIED EXPLOSION PROTECTION: TÜV-certified with Statement of Explosion Protection, meeting EN 1127-1:2019, EN ISO 80079-36:2016, and EN ISO 80079-37:2016 standards. Certified for Gas: II 2/- G Ex h IIB T5 Gb and Dust: II 2/- D Ex h IIB T100°C Db, covering Zone 20/21/22 hazardous areas .

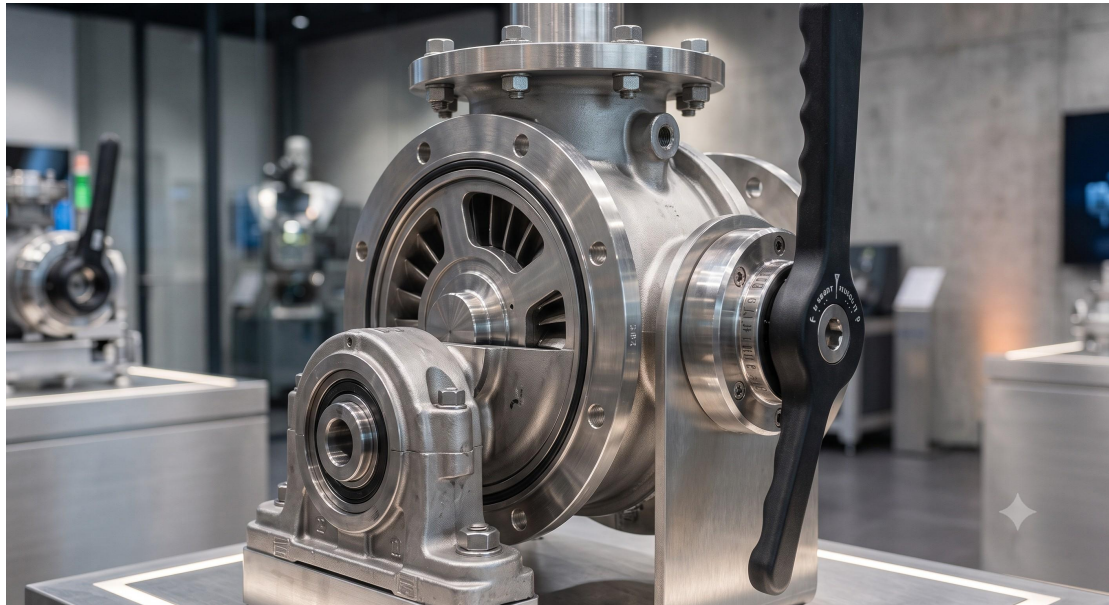
## 5. SPECIFICATION MATRIX & PERFORMANCE PARAMETERS

| Parameter                  | Specification                            |
|----------------------------|------------------------------------------|
| Capacity Range             | Up to 634 L/min                          |
| Rotor-to-Housing Clearance | 0.15mm - 0.2mm                           |
| Working Pressure Range     | -0.5 bar to 2 bar                        |
| Working Temperature Range  | -10°C to 150°C                           |
| Flange Standard            | DIN PN10 / ANSI 150# compliant / HG20592 |
| Drive Configuration        | Direct Drive or Chain Drive              |
| Materials of Construction  | SUS304 / SUS316L Stainless Steel         |
| Surface Finish (Internal)  | Ra < 0.8 µm mirror polish                |

|                |                                          |
|----------------|------------------------------------------|
| Sealing System | Double sealing / Lip seal air-tight seal |
| Certifications | TÜV, CE, ATEX Zone 20/21/22              |

## 6. INDUSTRIAL DEPLOYMENT & APPLICATION SCENARIOS

The DBR-1237 is deployed across multiple industrial sectors where gravity discharge, airlock integrity, and hygienic processing are critical. Typical applications include silo discharge and feeding into pneumatic conveying lines, dust collection system airlocks, and metering into packaging lines . The valve is suitable for handling a wide spectrum of materials including food powders (flour,奶粉, starch, spices), pharmaceuticals (antibiotic powders, vitamin blends, lactose), chemicals (resins, pigments, additives), and specialty materials such as lithium battery precursors. The ability to specify materials of construction and surface finishes ensures compatibility with FDA, GMP, and other regulatory requirements .



## 7. CERTIFICATIONS & COMPLIANCE REGISTER

- TÜV Statement of Explosion Protection with referenced standards EN 1127-1:2019, EN ISO 80079-36:2016, and EN ISO 80079-37:2016
- CE Marking
- Hygienic design compliant with GMP and EHEDG guidelines
- ATEX conformity for Zone 20/21/22

## 8. INTEGRATION & ENGINEERING SUPPORT

Doebritz provides comprehensive engineering support including full CAD model availability, flange mating details (DIN PN10 / ANSI 150# standard), drive configurations (direct drive or chain drive), and customized power supply specifications. Field application engineering consultation is available to ensure

optimal selection of materials, clearances, and coatings for specific material characteristics and process conditions.