

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

DOEBRITZ DBR-1237 GRAVITY ROTARY VALVE: OFFICIAL TECHNICAL OVERVIEW & DATASHEET

EXECUTIVE SUMMARY

The Doebritz DBR-1237 Quick-Release Rotary Valve is a precision-engineered component for powder and bulk solids handling systems. Designed for gravity discharge, pneumatic conveying, and metering applications, this valve integrates a rapid disassembly structure with precision airlock sealing. The DBR-1237 series is built to support high hygiene standards, abrasive material handling, and explosion-safety requirements across food, pharmaceutical, chemical, and new energy industries. This document provides a comprehensive technical specification and engineering reference for the DBR-1237 platform.



HOUSING & ROTOR METALLURGY

The DBR-1237 is available in multiple material grades to suit a wide range of process conditions and product contact requirements. The primary construction materials include austenitic stainless steels SUS304 and SUS316L, as well as painted and nickel-plated carbon steel. For applications involving high abrasion or corrosion, the valve is offered with advanced surface protection including tungsten carbide coatings, ceramic coatings, and high-performance polymer linings such as PE, PTFE, and PA. All internal surfaces are precision machined, with surface finishes ranging from a mirror polish to $Ra \leq 0.4, 0.8, \text{ or } 1.6 \mu\text{m}$ to ensure product release and cleanability.

KEY FEATURES

- **Rapid Disassembly & Cleanability:** The DBR-1237 features a tool-free quick-release mechanism that allows for rapid disassembly and assembly, enabling efficient manual cleaning, online CIP (Clean-in-Place), and WIP (Wash-in-Place) procedures. This design minimizes dead zones, eliminates product residue, and prevents cross-contamination, significantly reducing maintenance downtime between batches or product changeovers.

- **Precision Airlock Sealing:** The valve achieves an exceptionally low air leakage rate due to a precisely controlled rotor-to-housing clearance of 0.1 to 0.2 mm. This tight tolerance ensures stable pneumatic conveying system pressure, accurate volumetric metering, and reduced energy consumption. The shaft sealing is achieved through a lip seal design with an air purge connection for enhanced sealing integrity.

- **Comprehensive Material Compatibility:** The DBR-1237 is engineered to handle a diverse range of bulk materials, including food powders (flour, milk powder, spices, coffee), pharmaceutical compounds (antibiotics, vitamins, probiotics, vaccine powders), and chemical powders (carbon black, PE/PP pellets, lithium battery materials, pigments). Material selection can be optimized for each application to ensure longevity and product purity.

- **Integrated Safety & Compliance:** The valve is available in both ATEX-certified

explosion-proof configurations (Zone 20, 21, 22) and flameproof designs with a pressure rating of up to 16 bar. It meets the strict hygiene standards required for Class W, 10W, 30W, C, and D cleanroom environments, making it suitable for both pharmaceutical and food production lines. The DBR-1237 holds CE, TÜV, and Statement certifications, confirming its compliance with international safety, health, and environmental regulations.

- Versatile Drive & Control Options: The DBR-1237 supports variable frequency drive (VFD) speed control and can be fully integrated with PLC-based automation systems. This capability allows for precise flow rate adjustment, batch metering, recipe formulation, and automated batching processes, making the valve a key component for modern, data-driven production lines.

COMPLIANCE & SAFETY STANDARDS

The DBR-1237 is designed and manufactured to comply with a comprehensive set of international standards. It carries CE marking, TÜV certification, and Statement of Conformity, demonstrating adherence to the European Machinery Directive, ATEX directives for potentially explosive atmospheres, and relevant hygienic design guidelines. The explosion-proof variants are engineered to meet the requirements for Zone 20, 21, and 22 classified areas, with a maximum pressure shock resistance of 16 bar to contain internal deflagrations. The valve's

design supports cleanroom classifications up to Class C/D and ISO 14644-1 standards, ensuring suitability for pharmaceutical, biotech, and high-purity food applications.

TECHNICAL SPECIFICATIONS

The following section provides a detailed overview of the technical parameters for the Doebritz DBR-1237 Quick-Release Rotary Valve. All values are based on standard manufacturing specifications and are subject to verification for specific application conditions.

Parameter	Specification
Model	DBR-1237
Type	Quick-Release Gravity Rotary Valve
Main Materials	SUS304, SUS316L, Carbon Steel (painted/nickel-plated)
Coating/ Linings	Tungsten Carbide, Ceramic, PE, PTFE, PA
Surface Finish (Internal)	Mirror, Ra≤0.4/0.8/1.6 μm
Surface Finish (External)	Painted, Machined (<0.8 μm), Sandblasted, Shot-blasted
Rotor-to-Housing Clearance	0.1 - 0.2 mm

Shaft Seal Type	Lip Seal with Air Purge
Flange Standard	HG20592 (DN50, DN100, DN150, DN200, DN300, DN350)
Pressure Rating (Explosion-proof)	Up to 16 bar
ATEX Classification	Zone 20, 21, 22
Cleanroom Suitability	Class W, 10W, 30W, C, D
Ambient Temperature Range	-15°C to 60°C
Material Temperature Range	0°C to 120°C
Drive Options	VFD, PLC Control Integration
Cleaning Methods	Manual (Quick-disassembly), CIP, WIP
Certifications	CE, TÜV, Statement of Conformity

INDUSTRIAL DEPLOYMENT

The Doebritz DBR-1237 is deployed as a critical component in a wide array of industrial processes. In the food and beverage sector, it is used for handling ingredients such as flour, sugar, cocoa, and spices, where its hygienic design and quick-clean features are vital for product safety and operational efficiency. In the pharmaceutical industry, it handles potent active ingredients and excipients in cleanrooms, ensuring containment and preventing cross-contamination. Chemical and new material producers rely on its durable

construction and abrasion-resistant options to convey materials like carbon black, lithium-ion battery powders, and polymers. The valve's ability to function effectively as both a gravity-fed discharge unit and a metering feeder for pneumatic conveying lines makes it a versatile asset in any bulk solids handling plant.

