

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

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

EXECUTIVE SUMMARY

The Doebritz DBR-1237 is a precision-engineered, quick-release rotary valve purpose-built for gravity-fed and pneumatic conveying applications requiring stringent hygiene, rapid maintenance, and certified explosion protection. This platform integrates a tool-less, rapid-disassembly housing with a precision-machined rotor (clearance 0.1--0.2 mm) to deliver superior airlock sealing, minimizing system leakage and energy loss. Engineered for the food, pharmaceutical, chemical, and new energy material sectors, the DBR-1237 offers full compliance with ATEX (Zone 20/21/22), CE, and TÜV standards, ensuring safe operation in the most demanding industrial environments.



HOUSING & ROTOR METALLURGY

The DBR-1237 is manufactured from a comprehensive selection of materials to suit diverse process media. Standard construction utilizes SUS304 or SUS316L stainless steel for superior corrosion resistance and sanitary compliance. For abrasive or corrosive applications, the housing and rotor can be specified with advanced coatings including Tungsten Carbide, Ceramic, or high-performance polymers (PE, PTFE, PA). Carbon steel variants with painted or nickel-plated finishes are also available for general-purpose duties. All internal surfaces are precision-finished, with options ranging from a mirror polish ($Ra \leq 0.4 \mu m$) to controlled roughness ($Ra \leq 1.6 \mu m$) to optimize material flow and cleanability.

KEY FEATURES

- Rapid Disassembly: Patented quick-release clamps enable complete

disassembly and reassembly without specialized tools, reducing maintenance downtime by up to 70% and facilitating manual, CIP, or WIP cleaning protocols.

- Precision Airtight Sealing: Maintains a critical rotor-to-housing radial clearance of 0.1--0.2 mm, significantly reducing air and gas leakage across the full pressure spectrum, enhancing pneumatic conveying efficiency and metering accuracy.

- Advanced Shaft Sealing: Features a robust lip seal with air-purge capability, preventing contamination of the bearing housing and ensuring long-term reliability. Optional packing seal configurations are available.

- VFD & PLC Ready: Designed for variable frequency drive operation and seamless integration with plant-wide PLC control systems, enabling precise volumetric feeding, batch metering, and automated recipe management.

- Certified Safety: Available with ATEX certification for Zone 20, 21, and 22 (dust) environments. The flameproof variant is pressure-rated to 16 bar, ensuring operational integrity under potential deflagration conditions.

COMPLIANCE & SAFETY STANDARDS

The DBR-1237 series is designed and manufactured in accordance with the following international standards and directives:

- ATEX Directive (2014/34/EU): Certified for use in Zone 20, 21, and 22 explosive dust atmospheres.

- CE Marking: Complies with all applicable European health, safety, and environmental protection directives.
- TÜV Certification: Independent verification of quality, safety, and reliability.
- FDA Compliance: Suitable grades of stainless steel and polymers for food and pharmaceutical contact.
- EAC (Customs Union) Certification: Available upon request.
- NFPA 69: Complies with standard for explosion prevention systems (where applicable).

TECHNICAL SPECIFICATIONS

Parameter	Specification
Capacity / Volume (per revolution)	0.5 to 100 Liters/rev (depending on rotor size)
Flange Standard & Size	HG20592, DN50 to DN350 (customizable to DIN/ANSI standards)
Drive Configuration	Direct Drive (IEC motor) / Chain Drive / VFD-ready
Rotor-to-Housing Clearance	0.1 mm to 0.2 mm (standard)
Pressure Rating (Standard)	-0.4 bar to 1.0 bar
Pressure Rating (Flameproof)	Up to 16 bar
Temperature Range (Ambient)	-15°C to 60°C

Temperature Range (Media)	0°C to 120°C (up to 200°C with cooling jacket)
Body Materials	SUS304, SUS316L, Carbon Steel (painted/Ni-plated)
Internal Coatings (Optional)	Tungsten Carbide, Ceramic, PE, PTFE, PA
Surface Finish (Internal)	Mirror ($R_a \leq 0.4 \mu\text{m}$) to machined ($R_a \leq 1.6 \mu\text{m}$)
Shaft Sealing	Lip seal with air purge (standard) / Packing seal (optional)
Explosion Protection	ATEX Zone 20, 21, 22 (flameproof variant available)
Cleaning Options	Manual (quick-release), CIP, WIP + manual inspection
Certifications	CE, TÜV, ATEX (Zone 20/21/22), FDA-compliant materials

Industrial Deployment: The DBR-1237 is the preferred airlock solution across a broad spectrum of industries. In food processing, it handles coffee, flour, milk powder, spices, and starch. Pharmaceutical applications include antibiotic powders, vitamin blends, lactose, and lyophilized vaccine powders. In the

chemical and new materials sectors, the valve excels in conveying carbon black, PE/PP pellets, lithium battery cathode/anode materials, titanium dioxide, and fine pigments. The quick-release design and hygienic finishes make it particularly suitable for applications requiring frequent product changeovers and rigorous cleanability.

