

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

PRODUCT OVERVIEW & ENGINEERING PHILOSOPHY

The Doebritz DBR-1237 Gravity Quick-Release Rotary Valve represents a paradigm shift in hygienic and heavy-duty powder handling. Designed as a multi-role airlock, feeder, and metering device, it is engineered for the most demanding applications in the Food, Pharmaceutical, Chemical, and New Energy sectors. Combining rapid cleanability with extreme pressure differential tolerance and ATEX compliance, the DBR-1237 is the premier choice for both gravity discharge and pneumatic conveying systems.



HOUSING & ROTOR METALLURGY

The DBR-1237 is constructed using a robust selection of materials to ensure longevity and compatibility with a wide range of media. The base housings are precision-cast from SUS304 or SUS316L stainless steel as standard, with carbon steel options available for non-corrosive applications. For abrasive or corrosive powders, the internal contact surfaces benefit from advanced coating technologies including Tungsten Carbide, Ceramic, and high-performance polymers. This ensures the valve maintains its critical clearances over extended production runs, reducing wear and maintaining air seal efficiency.

KEY FEATURES & OPERATIONAL ADVANTAGES

- **Rapid Tool-Less Disassembly:** Engineered for quick-release, the DBR-1237 requires no special tools for assembly or disassembly. This significantly reduces downtime, facilitating rapid manual cleaning, inspection, and maintenance, and allowing for swift product changeovers, critical for high-mix manufacturing environments.
- **Precision Air-Lock Sealing:** The rotor-to-housing clearance is meticulously controlled to a tolerance of 0.1 – 0.2 mm. This precision drastically reduces air leakage, providing stable pressure zones for pneumatic conveying and ensuring accurate, repeatable volumetric feeding. This design minimizes product degradation and reduces parasitic energy losses in the conveying

system.

- Hygienic Design & Cleanability: Designed to meet stringent GMP standards, the DBR-1237 eliminates dead zones and product traps. It supports multiple cleaning protocols including Quick-Release Manual Cleaning, Online WIP, and fully automated CIP cycles, ensuring compliance with the highest hygienic requirements and eliminating the risk of cross-contamination.

- Adaptable Safety Integrations: The DBR-1237 is fully configurable for explosive environments. It covers ZONE 20/21/22 for dust explosions and can be built to a 16bar pressure shock-resistant housing with flameproof isolation features, ensuring personnel and plant safety.

- Multi-Mode Control & Performance: The valve supports variable frequency drives and PLC automation, making it suitable for continuous volumetric feeding, precise batch metering, and recipe-based production. It functions flawlessly under positive pressure (up to 1 bar), negative pressure (down to -1 bar), and gravity-fed conditions.

COMPLIANCE & SAFETY STANDARDS

The DBR-1237 series is manufactured under strict quality control to guarantee

international industrial safety, hygiene, and performance standards.

- Dust Explosion Protection: Certified for ATEX Zone 20, 21, and 22 (EN 60079-10-2).
- Pressure Shock Resistance: Capable of 16 bar (232 psi) pressure shock-resistant housing for flameproof isolation.
- Machine Safety & EMC: CE (Machinery Directive 2006/42/EC) and EMC certifications.
- Hygienic Certification: Manufactured from FDA-compliant materials, suitable for GMP compliant installations.
- International Approval: TÜV certified quality management and product safety.

Parameter	Specification
Model Designation	DBR-1237
Construction Material (Standards)	SUS304, SUS316L, Carbon Steel (Painted/Nickel-plated)
Process Temperature (Material)	0°C to 120°C
Ambient Temperature	-15°C to 60°C
Pressure Range (Positive)	Low Pressure <0.4 bar ; High Pressure 0.4 – 1.0 bar
Pressure Range (Negative)	Low Pressure >-0.4 bar ; High Pressure -1.0 – -0.4 bar

Rotor-to-Housing Clearance	0.1 – 0.2 mm
Inlet/Outlet Flange	DN50, DN100, DN150, DN200, DN300, DN350 (HG20592 / DIN / ANSI compatible)
Explosion Protection	ATEX Zone 20, 21, 22 Certified
Explosion Pressure Shock Resistance	Up to 16 bar
Surface Finish (Internal)	Mirror Polish, Ra ≤ 0.4µm / 0.8µm / 1.6µm, or Coated
Typical Drive	VFD Speed Control with PLC Integration
Sealing System	Lip Seal with Air Purge (Airtight)
Clean-in-Place (CIP)	Supported (WIP, Manual, or Full CIP)

INDUSTRIAL DEPLOYMENT & APPLICATION MATRICES

The Doebritz DBR-1237 provides a turnkey solution for a diverse range of powdery and granular materials across major industries.

- Food & Confectionery: Ideal for coffee, flour, milk powder, spices, and chocolate, ensuring batch purity and sanitation. The quick-release design is particularly beneficial for high-turnover production lines.

- Pharmaceuticals: Excellent for active pharmaceutical ingredients (APIs), excipients like lactose and microcrystalline cellulose, and biologics. The product ensures low-shear handling and strict containment.
- Chemical & Petrochemical: Provides robust handling for carbon black, titanium dioxide, polyolefin resins (PE/PP), and PTA. Hardened coatings ensure longevity against highly abrasive materials.
- New Energy & Materials: Critical for high-purity lithium-ion battery components (cathode/anode materials), graphite, and silicon powder, ensuring precise feed rates for material synthesis.
- Agro-Chemicals: Handles fertilizers, granules, and herbicide powders with reliable sealing, preventing contamination in multi-product facilities.

