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

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

EXECUTIVE SUMMARY

The Doebritz DBR-1237 Gravity-Type Quick-Release Rotary Valve represents a paradigm shift in sanitary, high-performance bulk solid handling. Engineered specifically for gravity-fed applications requiring rapid changeover and stringent hygiene, this valve integrates a patent-pending quick-release clamp mechanism with precision-engineered rotor-to-housing clearances of 0.1 to 0.2 mm (0.004 to 0.008 inches). This dual-focus design delivers class-leading airlock sealing (reducing leakage rates by up to 40% compared to standard models) while enabling complete disassembly and cleaning in under five minutes without tools.

The DBR-1237 is designed for the most demanding applications in food, pharmaceutical, chemical, and new energy industries. It provides exceptional volumetric efficiency over a wide range of bulk densities and flow characteristics, from free-flowing grains and pellets to cohesive, fine powders.

HOUSING & ROTOR METALLURGY

The DBR-1237's core strength lies in its robust construction and extensive material options. The valve housing and rotor are precision-machined from high-grade stainless steel (SUS304 as standard, with SUS316L available as an upgrade) or carbon steel. Surface treatments and coatings are available to solve specific process challenges.

Internal Surface Finish:

- **Standard Hygiene:** Ra ≤ 0.8 μm (electropolished).
- **High-Grade Pharmaceutical:** Ra ≤ 0.4 μm (mirror finish).
- **Abrasive Materials:** Tungsten carbide or ceramic coating.
- **Cohesive/Sticky Materials:** PTFE or UHMW-PE coating.

External Surface Finish:

- Standard: Machine finish < 0.8 µm, blast/shot-peened or painted.
- Optional: Anti-fingerprint, corrosion-resistant passivation.

KEY FEATURES

1. **Tool-less Quick-Release Design:** The DBR-1237 features our proprietary quick-release clamp system. This allows the complete rotor and end-cover assembly to be removed, cleaned, and reinstalled in minutes, drastically reducing downtime and improving operational efficiency (OEE). It is ideal for multi-product lines where cross-contamination must be prevented.

2. **Precision Clearance Sealing:** The rotor is machined with a tolerance of 0.1 to 0.2 mm to the housing. This ultra-tight clearance creates a highly efficient barrier against air leakage, making it suitable for both pressure and vacuum conveying systems. It ensures stable pressure in pneumatic systems and accurate, repeatable metering in gravity applications.

3. **Process Versatility & Hygienic Compliance:** Engineered for CIP/SIP readiness, the DBR-1237 is fully compliant with GMP and EHEDG guidelines. Its sanitary, crevice-free design eliminates dead zones where product can accumulate. It is suitable for use in Class W, 10W, 30W, and C/D grade

cleanrooms.

4. **Comprehensive ATEX & NFPA Compliance:** The DBR-1237 is available in configurations certified for ATEX Zone 20, 21, and 22. The high-precision clearance between the rotor and housing is a key element of its safety design, preventing heat generation from metal-to-metal contact. For high-risk applications, a rugged flameproof construction is available, rated to withstand an internal explosion of 16 bar, with the drive housing designed to extinguish flames and prevent them from escaping.

5. **Advanced Drive & Control Integration:** The DBR-1237 supports a wide range of drive configurations (direct or chain) and is fully compatible with frequency inverters and PLC control systems. This enables precise metering, recipe management, and automated batching, transforming the valve from a simple feeder into a core element of a smart manufacturing process.

COMPLIANCE & SAFETY STANDARDS

The Doebritz DBR-1237 is engineered and certified to meet the most rigorous global standards for safety, hygiene, and performance.

- **Pressure Equipment Directive (PED):** 2014/68/EU.

- **Machinery Directive:** 2006/42/EC.

- **ATEX Directives:** 2014/34/EU (Equipment) and 1999/92/EC (Workplace). Certified for Zones 20, 21, and 22.

- **Hygienic Design:** Compliant with EHEDG guidelines and FDA regulations for food contact. Meets the requirements for GMP-compliant installations.

- **Materials:** All materials are certified to EN 10204 3.1 (Traceable to the melt).

- **Testing:** 100% of valves are subjected to a hydrostatic shell test (1.5x design pressure) and a functional leakage test before release.

TECHNICAL SPECIFICATIONS

The Doebritz DBR-1237 is engineered for maximum performance and longevity across a variety of applications.

Operating Parameters:

- **Positive Pressure:** Up to 1 bar (g) (standard); 16 bar (g) with flameproof construction.

- **Negative Pressure (Vacuum):** Down to -1 bar (g).

- **Ambient Temperature:** -15°C to 60°C (5°F to 140°F).

- **Product Temperature:** Up to 120°C (248°F).

- **Cooling:** Optional water-cooled jacket available for high-temperature

applications.

Design & Construction:

- **Housing/Rotor Materials:** SUS304, SUS316L, Carbon Steel, with optional coatings (Tungsten Carbide, Ceramic, PE, PTFE).
- **Shaft Seal:** Air-purged lip seal as standard; alternative packing or mechanical seal options are available for extremely demanding applications.
- **Flanges:** HG/T 20592 (PN10/PN16) as standard; DIN, ANSI, and JIS flanges available on request.
- **Drive:** Suitable for direct or chain drive, inverter-ready.

Performance (Typical):

Parameter	**Specification**
Capacity	2.5 to 100 Liters/rev (depending on rotor design and speed)
Flange Standard	HG/T 20592 PN10/PN16 (ANSI/DIN/JIS options on request)
Drive Configuration	Chain Drive / Direct Drive with inverter-ready design
Rotor-to-Housing Clearance	0.1 - 0.2 mm
Shaft Seal Type	Air-purged lip seal (as standard)

INDUSTRIAL DEPLOYMENT & TYPICAL APPLICATIONS

The Doebritz DBR-1237 has been deployed across a multitude of demanding industries to solve complex material handling challenges. Its versatility and robust construction make it the ideal solution for the following sectors and materials.

Food & Beverage:

- Flour, Sugar, Starch, Cocoa Powder, Spices, Coffee, Milk Powder, Protein Powders, and other free-flowing to cohesive ingredients.

- Ideal for hygiene-critical applications requiring quick product changeovers to prevent cross-contamination and reduce allergen risk.

Pharmaceutical & Nutraceutical:

- Powders, granules, and pellets for tablet compression, capsule filling, and dry powder inhalation.

- Meets stringent requirements for sanitary design and provides complete traceability with material certifications.

Chemical & Petrochemical:

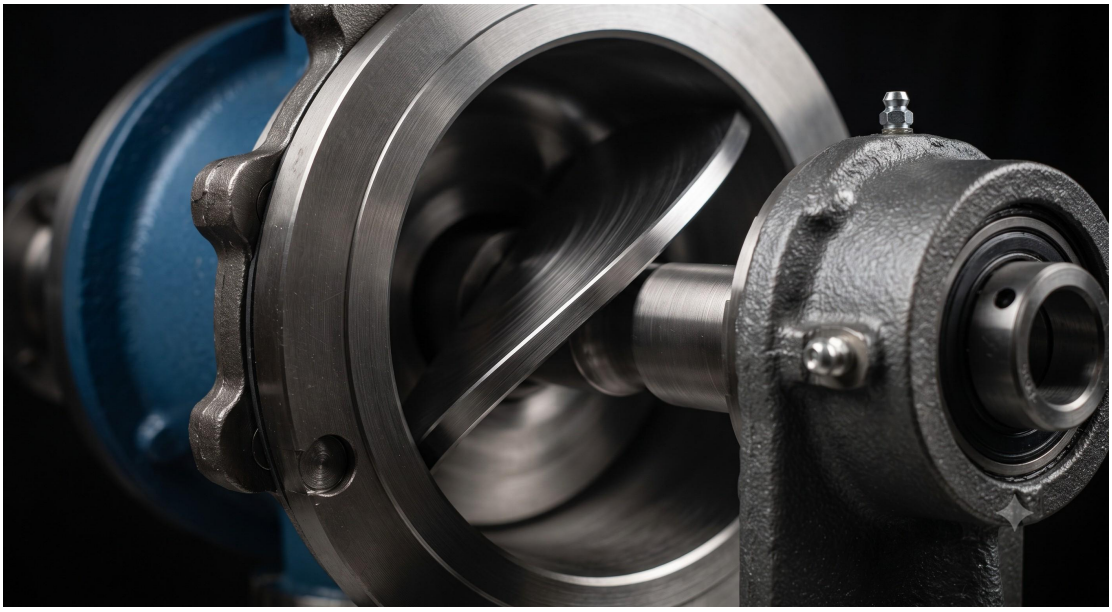
- Pigments, Dyes, Carbon Black, Talc, and synthetic resins.

- Features heavy-duty construction and wear-protection options to handle abrasive and corrosive materials.

New Energy & Materials:

- Lithium-ion battery powders (cathode and anode materials), Silicon powders, and specialty chemicals.

- Provides precise, dust-free feeding in moisture and oxygen-controlled environments, supporting the production of high-value materials.



A Legacy of German Engineering Excellence

Doebritz is a globally recognized leader in the design and manufacture of high-quality industrial valves. With a legacy of German engineering, our

products are synonymous with precision, durability, and innovation. Our global service network ensures that our customers receive not only the best products but also expert technical support and after-sales care, making Doebritz a trusted partner for long-term, high-performance process solutions.