

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

EXECUTIVE SUMMARY

The Doebritz DBR-1237 Gravity Quick-Release Rotary Valve represents a paradigm shift in precision powder handling, engineered for applications demanding both stringent hygiene and uncompromised operational safety. This equipment serves as a critical interface between material storage and downstream processes, delivering exceptional airlock integrity, rapid maintenance accessibility, and full compatibility with explosive atmospheres and high-purity production environments. This document provides a comprehensive engineering overview, detailed technical specifications, and performance parameters for the DBR-1237, establishing it as the premier solution for modern bulk solids processing.



HOUSING & ROTOR METALLURGY

The DBR-1237 platform is built upon a foundation of rugged, corrosion-resistant materials. The housing and rotor are precision-crafted from a selection of high-grade alloys, including SUS304 and SUS316L stainless steel, as well as carbon steel with various protective finishes. For handling extremely abrasive or chemically aggressive materials, the unit features advanced coating technologies. Rotor and internal surfaces can be armored with tungsten carbide, ceramic, or high-performance polymer coatings (PE, PTFE, PA). This comprehensive material portfolio ensures the valve's longevity and performance integrity across the most demanding industrial applications.

KEY FEATURES

- **Rapid Maintenance & Hygienic Design:** The patented quick-release mechanism enables tool-less disassembly, drastically reducing downtime for product changeovers and cleaning cycles. The design supports manual cleaning, as well as online Clean-In-Place (CIP) and Wash-In-Place (WIP) protocols, which, when coupled with a mirror-finish interior ($Ra \leq 0.4 \mu m$), eliminates dead zones and prevents cross-contamination. This makes the DBR-1237 ideal for GMP-compliant production in the food, pharmaceutical, and biotechnology sectors.
- **Precision Airtight Sealing:** The DBR-1237 achieves unparalleled airlock performance through an exceptionally tight rotor-to-housing clearance of just 0.1 to 0.2 mm. This precision drastically reduces air leakage, optimizing the efficiency of pneumatic conveying systems and enabling accurate volumetric metering. The advanced shaft sealing system, featuring a lip seal with air purge, ensures robust, long-lasting protection against fugitive dust emissions.
- **Adaptive & Intelligent Control:** The DBR-1237 is designed to be a smart component of a larger automated system. Its variable frequency drive (VFD) compatibility allows for precise speed modulation and flow control, enabling sophisticated batch metering, recipe formulation, and fully automated PLC-controlled production lines. This level of control provides superior consistency in downstream processes and reduces material waste.
- **Multi-Pressure Conveying Capabilities:** Engineered for versatility, the DBR-1237 is perfectly suited for both pressure and vacuum conveying systems.

It effectively manages positive pressure differentials up to 1 bar for dense-phase conveying and negative pressures down to -1 bar for vacuum conveying. It is equally effective in simple gravity-fed discharge applications, providing reliable, no-leak material handling.

COMPLIANCE & SAFETY STANDARDS

The Doebritz DBR-1237 is designed with a comprehensive, proactive approach to safety and regulatory compliance. The unit is CE and TÜV certified, confirming its adherence to the highest European and international standards for machinery safety. For operations in potentially explosive atmospheres, the DBR-1237 can be fully configured to meet ATEX requirements for zones 20, 21, and 22, featuring an explosion-proof motor and an explosion-isolated housing variant capable of withstanding pressures up to 16 bar. Furthermore, the valve is available in configurations suitable for cleanroom environments, meeting the stringent particulate and microbial standards of Class W, 10W, 30W, C, and D cleanrooms.

TECHNICAL SPECIFICATIONS

Parameter	Specification
Material of Construction	SUS304, SUS316L, Carbon Steel

	(Painted/Nickel-Plated), with Tungsten Carbide, Ceramic, or Polymer Coatings
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)
Positive Pressure Range	Low-pressure <0.4 bar; High-pressure 0.4 - 1 bar (VFD Control)
Negative Pressure Range	Low-pressure > -0.4 bar; High-pressure -1 to -0.4 bar (VFD Control)
Explosion Protection	ATEX Zones 20, 21, 22; Explosion-isolated up to 16 bar
Cleanroom Compatibility	Class W, 10W, 30W, C, and D
Operating Temperature	Ambient: -15 to 60° C; Material: 0 to 120°C
Cooling System	Optional Water Jacket
Cleanability	Quick-Release Manual Cleaning, CIP (Clean-In-Place), WIP (Wash-In-Place)
Control & Metering	VFD Speed Control, PLC Integration, Batch & Recipe Metering
Internal Surface Finish	Mirror Finish, Ra ≤ 0.4/0.8/1.6 µm
Certifications	CE, TÜV, ATEX, NFPA

Speed Control	Variable Frequency Drive (VFD)
Motor Type	Standard or Explosion-Proof (ATEX)
Inlet/Outlet Configuration	Square/round flanged connections
Sealing System	Packing seal, Lip seal air-tight seal

