

# Doebritz Flour Quick-release rotary valve - Official Technical Overview & Datasheet

## DOEBRITZ FLOUR QUICK-RELEASE ROTARY VALVE

## OFFICIAL TECHNICAL OVERVIEW & DATASHEET

### EXECUTIVE SUMMARY

The Doebritz Flour Quick-release rotary valve (model series DBR-1237) is a hygienic, high-efficiency airlock and discharge device engineered specifically for flour and fine powder handling in food-grade pneumatic conveying and gravity chute systems. This valve combines rapid tool-less disassembly, precision rotor-to-housing clearance control (0.1–0.2 mm), and full compliance with food safety and ATEX regulations. It is designed to minimize air leakage, prevent cross-contamination, and support CIP/WIP cleaning protocols, making it an ideal component for flour mills, bakeries, and food ingredient processing lines.



## HOUSING & ROTOR METALLURGY

The valve body and rotor are manufactured from SUS304 or SUS316L stainless steel as standard, with optional carbon steel (painted or nickel-plated) for non-food applications. For abrasive flours or high-wear environments, internal surfaces can be coated with tungsten carbide, ceramic, or high-molecular-weight polymers (PE, PTFE, PA). All product-contact surfaces are polished to  $Ra \leq 0.8 \mu\text{m}$  (mirror finish available at  $Ra \leq 0.4 \mu\text{m}$ ) to prevent flour adhesion and facilitate cleaning. The valve features a quick-release clamp mechanism that requires no specialized tools, enabling full disassembly in under five minutes.

## KEY FEATURES

- Quick-release disassembly: No special tools required; supports manual, CIP, or WIP cleaning routines.
- Precision sealing clearance: Rotor-to-housing gap of 0.1–0.2 mm, reducing air leakage and preserving pneumatic conveying efficiency.
- Hygienic design: Compliant with food-grade requirements; internal mirror polishing ( $R_a \leq 0.4 \mu\text{m}$ ) available.
- ATEX-ready: Configurable for Zone 20/21/22 dust explosion environments; explosion-proof version rated for 16 bar pressure resistance.
- Flexible drive options: Supports VFD speed control, PLC integration for batch or recipe metering, and automated batching systems.
- Wide pressure range: Suitable for positive pressure (<0.4 bar low-pressure; 0.4–1 bar high-pressure with VFD) and negative pressure (>-0.4 bar low; -1 to -0.4 bar high with VFD) pneumatic conveying, as well as gravity chute applications.

## COMPLIANCE & SAFETY STANDARDS

- CE certified
- TÜV certified
- Statement certification (EU industrial safety & hygiene)
- ATEX compatible (Zone 20/21/22)
- Suitable for cleanroom classes: Class W, Class 10W, Class 30W, Class C, Class D
- Flange standard: HG20592 (DN50 to DN350)

## TECHNICAL SPECIFICATIONS

Material options: SUS304, SUS316L, carbon steel painted, carbon steel nickel-plated, stainless steel with tungsten carbide/ceramic/polymer coating,

PE, PTFE, PA

Rotor-to-housing clearance: 0.1–0.2 mm

Shaft seal: Lip seal with air-tight (purging) or packing seal

Operating temperature (ambient): -15°C to 60°C

Operating temperature (material): 0°C to 120°C

Optional cooling: Water cooling jacket

Port sizes: DN50, DN100, DN150, DN200, DN300, DN350

Surface finish (external): Carbon steel painted, sandblasted, shot blasted, anti-fingerprint, machined finish <0.8 µm

Surface finish (internal): Mirror, Ra ≤ 0.4/0.8/1.6 µm, carbide/ceramic/polymer coating

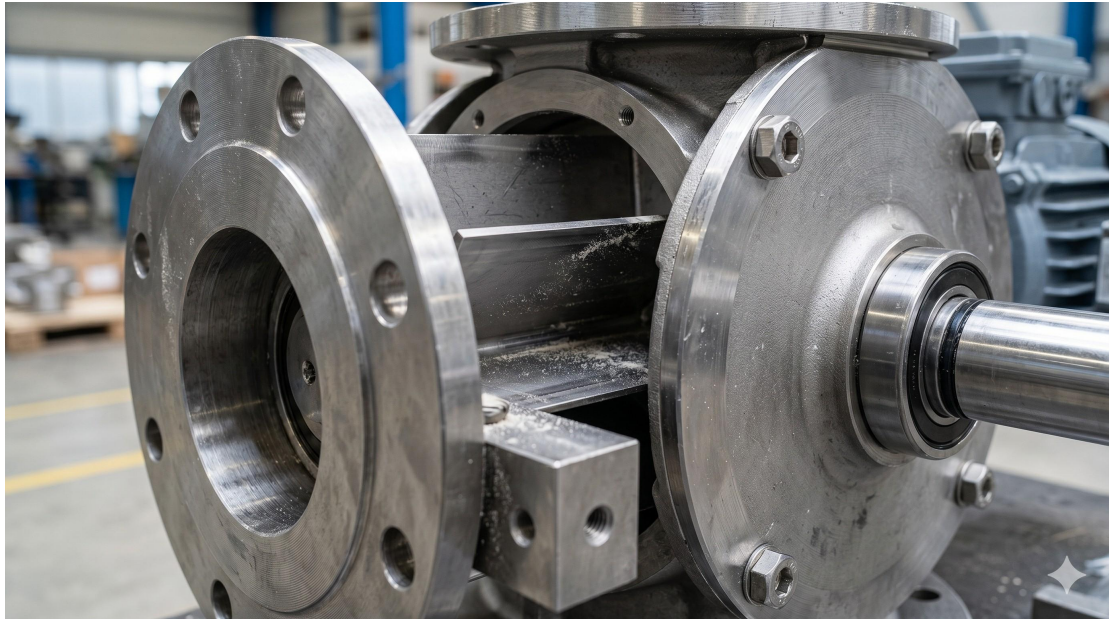
Cleaning modes: Manual after quick-release, online CIP, online WIP plus manual review

Parameter	Specification
Capacity (volumetric per revolution)	2.5 to 100 Liters/rev (depending on DN size and rotor design)

Flange Standard	HG20592 (DN50 to DN350); others available on request
Drive Configuration	Chain drive or direct drive with VFD/PLC interface
Max pressure rating (explosion-proof version)	16 bar
Cleanability	Quick-release manual, CIP, or WIP
ATEX classification	Zone 20/21/22 (dust)

## INDUSTRIAL DEPLOYMENT

The Doebritz Flour Quick-release rotary valve is widely deployed in flour mills, bakeries, premix plants, and food ingredient handling systems. It reliably conveys and meters wheat flour, whole wheat flour, rye flour, corn flour, rice flour, gluten, starch, and additive premixes. In high-care zones, the 316L mirror-polished variant with CIP capability supports GMP and HACCP requirements. For explosion-susceptible environments (grain dust), the ATEX-certified version with 16-bar pressure containment and precision clearance (0.1 mm) provides safe operation.



For detailed selection, dimensional drawings, or integration support, consult the Doebritz engineering team.