

Reliable Pressure Protection

That's Ready When You Need It



How the DBD6-30 series delivers proven relief valve performance with consistent availability

System pressure protection can't wait for lead times or special orders. When equipment needs safeguarding, the solution must be available, proven, and ready to install.

The Bosch Rexroth DBD 6-30 series addresses this fundamental requirement through standardized pressure relief valves that combine field-tested reliability with consistent stock availability. Whether you're protecting mobile equipment or industrial machinery, the right valve is ready when you need it.

WHY DIRECT OPERATION MATTERS

Pressure relief fundamentally requires one thing: when pressure exceeds safe limits, open a path to tank. The DBD series accomplishes this through direct-operated design where system pressure acts directly against a calibrated spring.

No pilot stages. No complex controls. Just mechanical reliability that works the same way every cycle.

What this means in practice:

- Predictable response – System pressure directly moves the valve element, eliminating pilot delays or staging complexity.
- Fewer variables – Mechanical operation means performance depends on spring calibration and seal integrity, not multi-stage coordination.
- Straightforward service – When adjustment or maintenance is needed, you're working with springs and seals, not debugging pilot circuits.
- Broad pressure range – Seven standard pressure ratings from 25 to 630 bar cover everything from low-pressure mobile systems to high-force industrial presses.

THE AVAILABILITY ADVANTAGE

Generic "available on request" specifications create planning problems. Production schedules wait. Emergency repairs extend downtime. Costs multiply when the right part isn't ready.

DBD valves reverse that equation through standardized configurations that distributors stock as standard items. Four sizes, seven pressure ratings, multiple mounting options—the combinations you actually need are ready to ship.

This availability translates to practical benefits:

- Faster commissioning – Design with confidence knowing components will arrive when needed, not weeks later.
- Reduced inventory burden – Stock one reliable valve family instead of maintaining emergency supplies of multiple alternatives.
- Simplified emergency response – When pressure protection fails, replacement arrives in days, not weeks.
- Predictable planning – Build production schedules around actual component availability, not hoped-for delivery dates.

BUILT FOR HIGH PRESSURE

Maximum pressure ratings tell only part of the story. The real question: does the valve maintain performance and reliability when actually operating at those pressures?

DBD valves handle up to 630 bar working pressure in the highest-rated configurations.

That's not theoretical maximum—it's proven operating capability backed by:

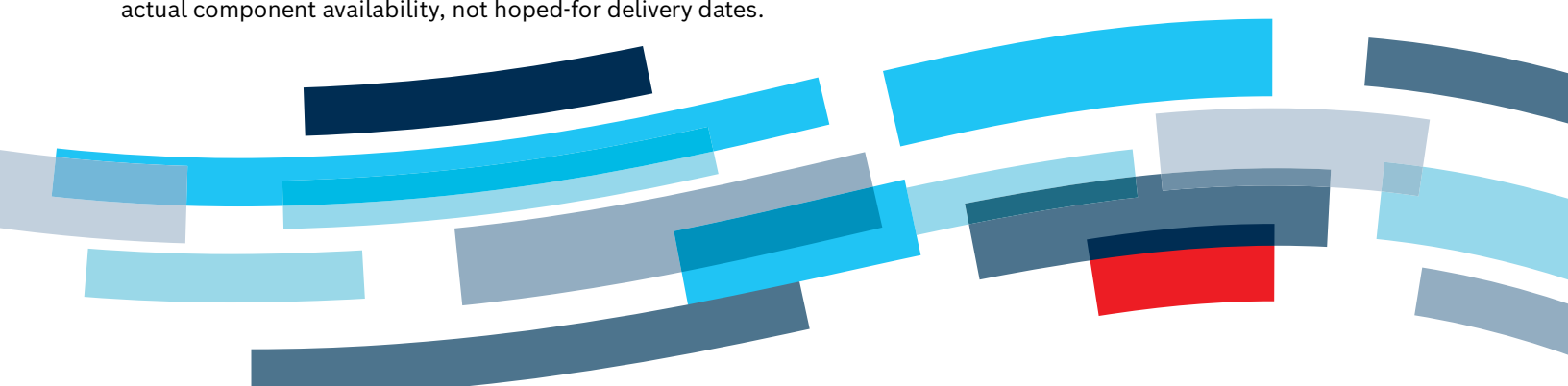
- Robust construction – Steel bodies and hardened valve elements resist stress from repeated high-pressure cycling.
- Proven sealing – O-ring and seal designs tested across millions of pressure cycles maintain integrity without degradation.
- Quality manufacturing – Precision machining ensures consistent spring response and sealing surface contact even under extreme loads.
- Field validation – Decades of installations in demanding applications prove the design handles real-world pressure conditions.
- For applications operating at 315 bar, 400 bar, or 630 bar, you're not pushing design limits—you're working within proven capability.

CORROSION PROTECTION THAT LASTS

Pressure relief valves often install in exposed locations where environmental conditions challenge component longevity. Condensation from temperature cycling. Salt spray in coastal or marine environments. Chemical exposure in processing facilities.

Standard zinc plating handles typical indoor industrial conditions. But when environment becomes a factor, DBD valves offer enhanced protection levels:

J3 Protection (240-hour salt spray resistance) suits humid environments, outdoor installations, or applications with regular condensation. Mobile equipment operating across climate zones. Industrial systems in non-climate-controlled facilities. Anywhere moisture creates ongoing corrosion risk.



3 Reliable Pressure Protection That's Ready When You Need It: How the DBD6-30 series delivers proven relief valve performance with consistent availability

J5 Protection (720-hour salt spray resistance) addresses severe corrosion environments: marine applications, coastal facilities, chemical processing areas, or offshore equipment. This enhanced protection extends service life where standard coatings fail within months.

The protection isn't cosmetic—it's functional reliability. Corrosion affects spring characteristics, sealing surfaces, and adjustment mechanisms. Protected valves maintain calibration and sealing integrity where unprotected alternatives degrade rapidly.

CONFIGURATION FLEXIBILITY

While standardization ensures availability, application requirements vary. DBD valves balance stock availability with configuration options:

Four sizes handle flows from 50 to 330 l/min, covering most mobile and industrial requirements without oversizing.

Seven pressure ratings (25, 50, 100, 200, 315, 400, 630 bar) let you match valve rating to operating pressure for optimal override characteristics.

Multiple mounting options:

- Screw-in cartridge for manifold integration
- Threaded connections for inline installation
- Subplate mounting for surface-mount applications

Adjustment types:

- Tool-adjustable with protective cap for tamper resistance
- Hand-adjustable for commissioning flexibility
- Lockable adjustment for safety-critical applications

Environmental protection levels:

- Standard for indoor industrial use
- J3 for humid/outdoor conditions
- J5 for severe corrosion environments

This flexibility doesn't compromise availability—common configurations stock as standard items while variations remain readily available.

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SIZING FOR YOUR SYSTEM

Proper valve selection balances three factors: pressure rating, flow capacity, and mounting configuration.

Pressure rating selection: Choose the rating closest to (but above) your target relief pressure. Operating a valve near its rated pressure minimizes override—the pressure increase

between initial opening and full flow. A 315 bar rated valve set at 280 bar performs better than a 630 bar valve set at 280 bar. Flow capacity: Size the valve to handle your system's maximum potential flow at relief conditions. Undersizing creates excessive pressure override. Oversizing increases cost without performance benefit.

Mounting type: Match your system architecture. Manifold-based designs benefit from cartridge versions. Standalone installations use threaded connections. Surface-mount applications require subplate configurations.



QUALITY YOU CAN COUNT ON

Reliability starts with quality manufacturing, but it extends to consistent performance across every valve.

Rexroth manufacturing standards ensure each valve meets specifications:

- Precision machining of valve bores and sealing surfaces
- Controlled spring calibration with verification testing
- Seal and O-ring inspection before assembly
- Functional pressure testing of completed valves

Consistent performance comes from controlled processes, not just good materials. When you install a DBD valve, it performs like every other valve with that part number—predictable, repeatable, reliable.

Decades of field experience validate the design. Millions of installations across industries prove these valves deliver long-term performance under real-world conditions.

- 4 Reliable Pressure Protection That's Ready When You Need It:
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REAL-WORLD APPLICATION

Mobile Equipment: Construction and agricultural machinery operate in harsh conditions—temperature extremes, vibration, contamination, and variable loading. DBD valves with J3 or J5 protection provide reliable pressure limiting without requiring climate-controlled environments.

Industrial Machinery: Manufacturing equipment, material handling systems, and processing machinery need predictable pressure protection without complex setup. Direct-operated DBD valves install quickly and maintain calibration across production cycles.

High-Pressure Systems: Presses, test equipment, and heavy forming operations demand reliable performance at 315+ bar. DBD valves in higher pressure ratings deliver proven protection without the cost and complexity of pilot-operated alternatives.

THE STOCKED SOLUTION

Perhaps the most valuable characteristic of DBD valves: they're ready when you need them. In an industry where lead times often stretch to weeks or months, having proven pressure relief available from stock changes project planning fundamentally.

- For equipment manufacturers: Design with confidence knowing components will arrive on schedule.
- For maintenance teams: Replace failed components in days, not weeks, minimizing production disruption.
- For distributors: Stock one reliable valve family that addresses most customer requirements.

Effective pressure relief doesn't require complexity. It requires reliable components that are available when needed, perform consistently across their operating range, and maintain integrity in actual field conditions.

The DBD 6-30 series delivers exactly that: direct-operated pressure relief valves combining proven Rexroth quality with the practical advantage of stock availability. From low-pressure mobile systems to high-force industrial equipment, the right valve is ready to protect your investment.

Ready to specify DBD valves for your application? Contact Bosch Rexroth to discuss pressure requirements, environmental conditions, and configuration options.

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