

NP83-Compatible Dry-Break Interlock Valve

NP83干式互锁阀白皮书

WHITE PAPER

Designed for liquid cooling mainline systems, this FD83-compatible dry-break interlock valve combines quick connection, mechanical interlock, low-spillage disconnection and reliable stainless-steel construction. It is intended for CDU, manifold, rack-level and containerized liquid cooling applications.



304 / 316 Stainless Steel



NPS 1-3 | DN25-DN80



Tri-Clamp / Threaded / Barbed



FD83-Style Interface Compatible



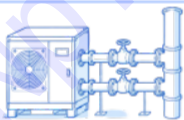
OEM / White Label Available



Product Overview & Applications

产品概述与应用场景

Nplus FD83-compatible dry-break interlock valves are designed for liquid-cooling mainline service where secure maintenance, quick connection and controlled low-spillage disconnection are required. The product family supports multiple interface styles for integration into modern cooling systems.



CDU Mainline

Secure and fast connection between CDU and facility piping.



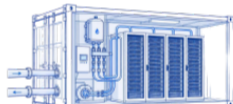
Manifold Inlet / Outlet

Reliable isolation and quick service access for manifold connections.



Rack-Level Liquid Cooling

Easy connection to rack-level cooling modules and distribution units.



Containerized Data Center

Ideal for prefabricated and containerized liquid cooling systems.

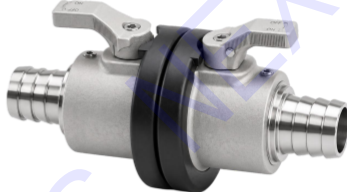
Product Family - Multiple Interface Options

Tri-Clamp Type

Threaded Type



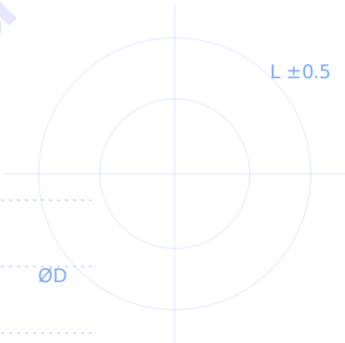
Barbed Type



Size	DN	Inner Diameter
NPS 1	DN25	20 mm
NPS 2	DN50	40 mm
NPS 3	DN80	76 mm

Core Advantages

- ✓ FD83-style interface compatibility
- ✓ Mechanical interlock protection
- ✓ Low-spillage dry-break disconnection
- ✓ Large-bore mainline flow path
- ✓ 304 / 316 stainless steel construction



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Product Highlights & Service Benefits

产品亮点与运维优势

The Nplus FD83-compatible dry-break interlock valve is designed for secure liquid-cooling mainline service. Its external architecture emphasizes safe handling, compact installation, low-spillage maintenance and reliable stainless-steel construction for modern data-center cooling systems.

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- 1 Dual Interlock Handles
- 2 Central Protective Collar
- 3 Compact Symmetrical Body
- 4 Dry-Break Service Interface
- 5 Tri-Clamp Ferrule Ends ØD
- 6 Matte Stainless Housing



Key Service Advantages

- ↔ Quick connection and controlled disconnection
- ▣ Mechanical interlock for safer maintenance
- Low-spillage servicing for liquid-cooling loops
- ↗ Compact profile for mainline integration
- ◇ 304 / 316 stainless steel body options
- ≈ Suitable for water and water-glycol systems

Body Material	304 / 316 Stainless Steel
Seal Material	EPDM / FKM
Working Medium	Water / Water-Glycol
Nominal Size	NPS 1-3
Connection Type	Tri-Clamp / Threaded / Barbed
Service Focus	Mainline Maintenance & Isolation

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Validation, Specifications & OEM Program

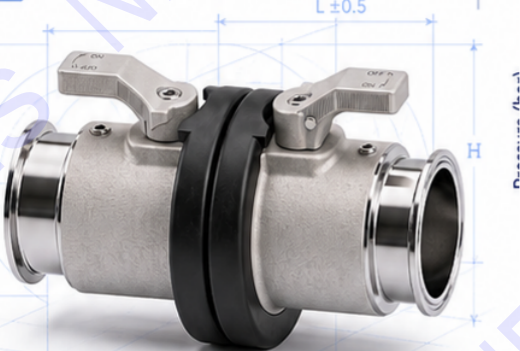
验证、规格与白牌方案

To support engineering review and overseas channel development, Nplus provides a structured validation framework, configurable product specifications and OEM / white-label support for liquid-cooling projects.

Size	DN	Inner Diameter	Material	Connection	Application
NPS 1	DN25	20 mm	304 / 316	Tri-Clamp / Threaded / Barbed	Compact mainline
NPS 2	DN50	40 mm	304 / 316	Tri-Clamp / Threaded / Barbed	Standard mainline
NPS 3	DN80	76 mm	304 / 316	Tri-Clamp / Threaded / Barbed	High-flow mainline

Validation Framework

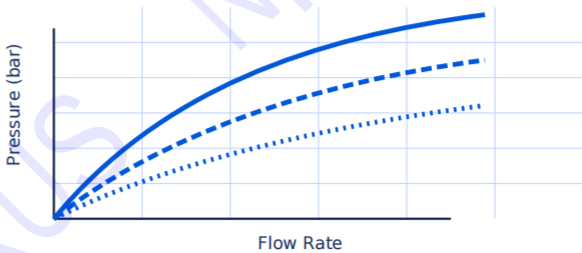
- Hydrostatic Pressure Test
- Pressure Hold & Leakage Test
- Pressure Drop / Flow Test
- Dry-Break Spillage Evaluation
- Interlock Torque Test
- Side Load Test
- Temperature Cycle Test



OEM / White Label Support

- No-logo white-label supply
- Custom laser marking
- Custom packaging and part number
- Customer-specific documentation
- Seal and connection customization

Performance Verification



Validated data and detailed test reports are available according to project stage and sample status.

Working Pressure & Temperature Range

工作压力与工作温度范围

Nplus FD83-compatible dry-break interlock valves are designed for reliable liquid-cooling mainline service. Pressure capability and temperature suitability are key factors for safe operation, maintenance planning and long-term system compatibility.



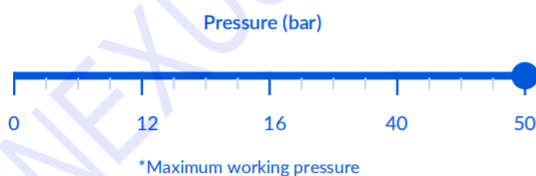
Working Pressure

工作压力

Up to 50 bar*

Designed for liquid-cooling mainline applications requiring secure isolation, controlled servicing and reliable pressure containment.

- ✓ Supports stable mainline operation
- ✓ Suitable for maintenance and isolation service
- ✓ Hydrostatic and leakage verification available



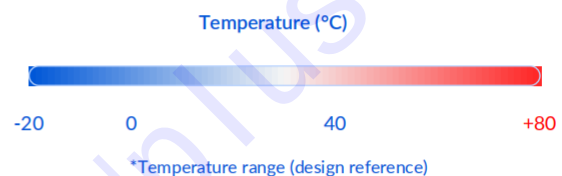
Working Temperature

工作温度

-20°C to +80°C*

Suitable for water and water-glycol cooling media across typical data-center liquid-cooling environments.

- ✓ Supports common liquid-cooling conditions
- ✓ Compatible with water / water-glycol systems
- ✓ Seal material selection available



Reference Notes



Working Medium:

Water / Water-Glycol



Seal Material:

EPDM / FKM



Final values subject to product validation and configuration

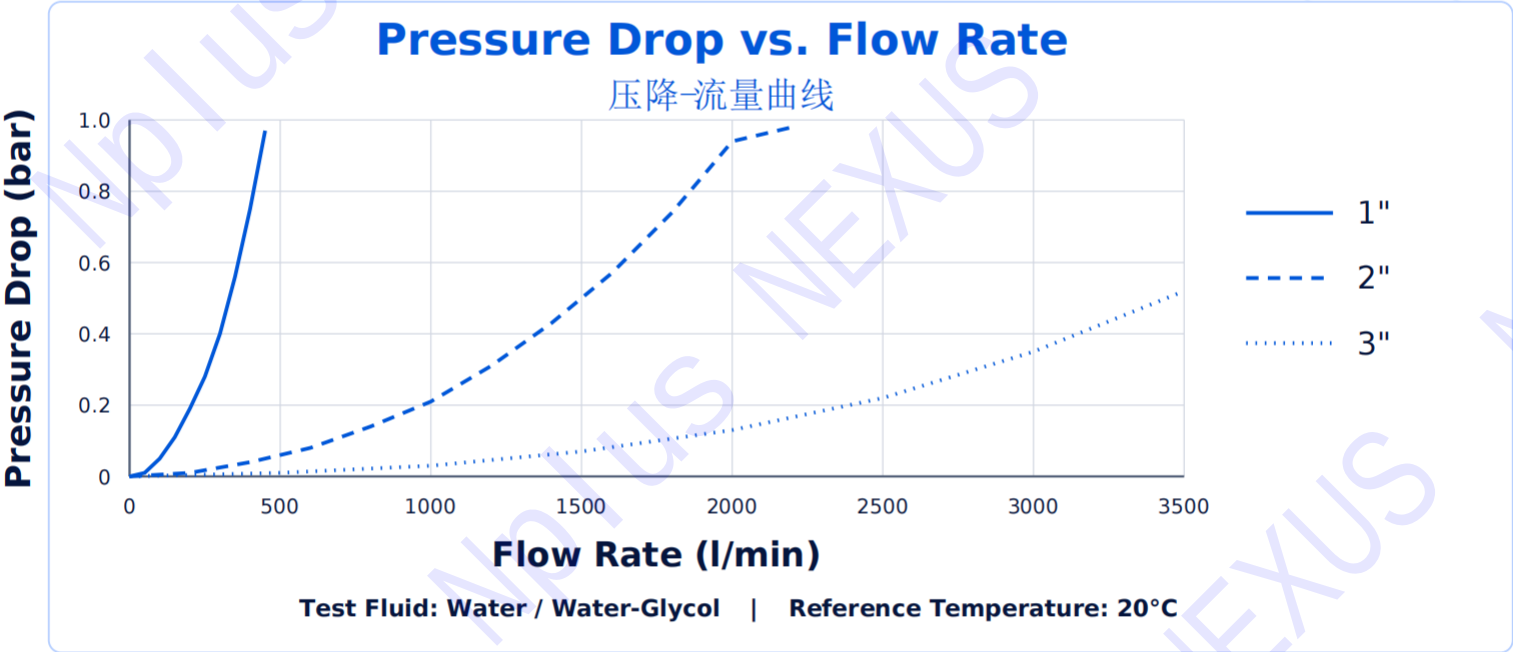
*Maximum working pressure and temperature range are design references. Actual performance may vary based on configuration, materials and validation results.



Performance Data & Technical Specifications

性能参数与技术规格

The following reference data summarize the nominal flow performance and pressure-related specifications of Nplus FD83-compatible dry-break interlock ball valves. Values are provided for product literature reference and may vary depending on size, connection type, sealing material and validation conditions.



Size	DN	ID (mm)	Max. Working Pressure	Min. Burst Pressure	Rated Flow (lpm)	Rated Flow (gpm)	Fluid Spillage (cc.max)	Cv
1"	DN25	20	16 bar / 232 psi	48 bar / 696 psi	216	57	2.8	34
2"	DN50	40	16 bar / 232 psi	48 bar / 696 psi	899	238	11.7	143
3"	DN80	76	16 bar / 232 psi	48 bar / 696 psi	3240	856	42.0	520

Reference Notes



Working Medium:
Water / Water-Glycol



Seal Material:
EPDM / FKM



Reference values for product literature; final data subject to validation and configuration.

The above data are reference values for product literature and may vary depending on configuration, medium, seal material and test conditions.