



ALLWEILER NB / NI SERIES

CENTRIFUGAL PUMP PLATFORMS FOR SINGLE-PHASE LIQUID COOLING APPLICATIONS

Mechanically Sealed Pump Solutions For CDU And Cooling Loop Integration

Modern AI infrastructure places increasing demands on liquid-cooling systems. Reliable coolant circulation is essential for thermal performance, energy efficiency, system availability and long-term scalability.

The ALLWEILER NB / NI Series provides proven centrifugal pump platforms for single-phase liquid-cooling applications using water, demineralized water, water-glycol mixtures and selected engineered cooling fluids.

The NB Series serves as a robust end-suction pump platform for broad hydraulic coverage and flexible system integration. The NI Series offers an inline configuration where installation space, vertical arrangement or reduced footprint are key design parameters.



Designed for Evolving Cooling Architectures

Liquid-cooling system designs are developing rapidly. Instead of offering a one-size-fits-all pump concept, ALLWEILER works with OEMs and system designers to align pump selection, motor concepts, connection interfaces and installation requirements with the specific needs of the application.

Where application requirements and projected volumes justify it, ALLWEILER can adapt pump housing interfaces and connection dimensions to support customer-specific installation footprints and cooling system architectures.

Engineering Flexibility

ALLWEILER is willing and able to adapt pump, motor, interface and installation concepts to the needs of emerging liquid-cooling architectures.

Key Value Propositions

Proven Industrial Reliability

Designed for continuous-duty operation in demanding industrial environments where uptime and long service life are critical.

Hydraulic Flexibility

Broad hydraulic coverage enables application-specific pump selection based on required flow rate, head, fluid properties and operating conditions.

NB or NI Installation Concept

NB provides an end-suction configuration for broad flexibility. NI provides an inline configuration where installation space and system footprint are strongly limited.

Flexible Connection Interfaces

Connection concepts can be adapted to customer requirements, including Victaulic-style interfaces commonly used in liquid-cooling infrastructure.

Customer-Specific Motor Concepts

Customer-preferred motor suppliers and alternative drive concepts can be evaluated, including externally sourced liquid-cooled motor solutions.

Application-Specific Housing Adaptation

Thanks to in-house casting capabilities, housing interfaces and connection dimensions can be adapted when project requirements and volumes justify dedicated design work.

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TECHNICAL OVERVIEW AND APPLICATION FIT

Typical Liquid-Cooling Applications

Coolant Distribution Units, CDUs • Primary and secondary cooling loops • Rack-level and row-level liquid-cooling systems • Facility-side cooling circuits • Modular cooling skids • Auxiliary cooling systems

Platform Overview

Platform	Configuration	Best Fit
NB Series	End-suction centrifugal pump	Broad hydraulic flexibility, service accessibility, general CDU and cooling-loop applications
NI Series	Inline centrifugal pump	Space-constrained layouts, vertical installation concepts, reduced piping footprint

Technical Overview

Parameter	NB Series	NI Series
Pump Type	End-suction centrifugal pump	Inline centrifugal pump
Max. Flow	480 m³/h (2,113 GPM)	460 m³/h (2,025 GPM)
Max. Head/Pressure	145 m (212 psi)	140 m (204 psi)
Max. Nominal Pressure	PN16	PN16
Max. Temperature	140 °C	140 °C
Materials for Liquid Cooling	ASTM A536 Grade 60-40-18 (EN-GJS-400-15) Ductile Iron ASTM C95500 (EN CC333G) Nickel Aluminum Bronze ASTM A351 CF8M (EN 1.4408) Stainless Steel	
Suitable Fluids	Water, demineralized water, water-glycol mixtures and selected engineered cooling fluids	

Efficiency and Operating Point

Pump efficiency depends on the selected hydraulic size, duty point, fluid properties and system requirements. Detailed performance and efficiency data can be provided once target flow rate, head, coolant specification and operating conditions are defined.

Why NB / NI for Liquid Cooling?

The ALLWEILER NB / NI Series is suited for liquid-cooling applications where reliable continuous operation, hydraulic flexibility and OEM-specific integration are key requirements. With end-suction and inline configurations available, the platform supports different CDU and cooling-loop architectures, from broad hydraulic applications to space-constrained system layouts.

For OEMs developing next-generation liquid-cooling systems, ALLWEILER offers more than standard pump selection. Pump housings, interfaces, motor concepts and installation requirements can be evaluated and adapted to support the specific needs of the cooling architecture.

