Nidec Corporation

December 3, 2025

Nidec Accelerates Liquid-Cooling Adoption for AI Generation Data Centers: Prototypes Project Deschutes CDU Based on Google OCP Specification

Nidec Corporation (hereafter "Nidec") today announced the development of a prototype Project Deschutes Coolant Distribution Unit (CDU) compliant with Google Open Compute Project (OCP) specification, initiated by Google LLC (hereafter "Google"). The prototype was exhibited at SC25 (Super Computing 2025), held in St. Louis, USA, in November 2025. It generated strong interest and was highly praised by industry stakeholders as a next-generation cooling solution designed to address the pressing industry challenge of increasing server heat density in data centers.

Nidec Exhibition Booth

Front

Product Appearance

The explosive growth in demand for generative AI in recent years has driven a rapid increase in data center construction. Concurrently, the Thermal Design Power (TDP) of installed GPUs and CPUs is continually escalating. However, conventional air-cooled data centers are rapidly approaching their thermal limits, making the widespread implementation of high-efficiency liquid-cooling solutions essential for future expansion. Against this backdrop, Google open-sourced the design specifications for a Project Deschutes CDU to its selected and certified vendors. This initiative aims to standardize liquid-cooling solutions, establish interoperability, and accelerate market adoption across data centers of all scales. To accelerate the adoption of liquid-cooling in data centers, Nidec is aggressively pursuing the development of a Project Deschutes CDU that adheres to these specifications, with the aim of bringing the product to market quickly.

Main Features;

1. High Performance Compliant with Project Deschutes CDU Specifications

Compliant with Project Deschutes CDU specifications, it achieves 2 MW class cooling capacity and 80 PSI high pressure to efficiently drive high-performance cold plates and meet extreme heat density requirements of the AI generation.

2. Industry-Leading Low Approach Temperature Design

An extremely low Approach Temperature[*1] design reduces the warm water temperature returning to the chiller, maximizing chiller efficiency and significantly cutting the overall power consumption and operational costs.

3. Noise-Free Cooling System that Preserves Power Quality

Incorporates an IEEE 519 Ultra-Low Harmonic Distortion (ULHD) VFD*2 to minimize total harmonic current distortion. This design ensures stable power quality, preventing interference with sensitive computing hardware.

Nidec is committed to aggressively accelerating the development of this Project Deschutes CDU toward its commercial release. Simultaneously, we will champion the standardization of data center technologies and actively engage with the OCP community to foster innovation. Through these initiatives, Nidec will solidify its role as a strategic partner and key provider of high-performance cooling solutions, enabling the continued growth of sustainable and efficient AI infrastructure globally.

*1 Approach Temperature;

The term refers to the metric indicating the temperature difference between the water supplied from the facility to the CDU (Coolant Distribution Unit) and the liquid supplied from the CDU to the AI server in a liquid-cooling system. A smaller temperature difference means that the heat exchange efficiency of the CDU is higher.

*2 IEEE 519 Ultra-Low Harmonic Distortion (ULHD) VFD (Variable Frequency Drive);

A drive device that suppresses high-frequency electrical noise generated during motor control.