AI DATACENTRE
LIQUID COOLING SYSTEM

With high-performance valve solutions for advanced liquid cooling systems, AVK supports modern AI data centers through reliability, efficiency and scalable supply capability. Designed for demanding cooling environments, AVK solutions help operators achieve sustainable, energy efficient and high-performance infrastructure for the AI era.

Driven by high-density AI computing power and national green low-carbon policies, new large and mega datacentres are required to strictly control PUE ≤ 1.25, while national hub node datacentres must meet PUE ≤ 1.2. Traditional air cooling can no longer satisfy the heat dissipation demand of high-density AI computing power nor meet low PUE targets, making liquid cooling the mainstream technical solution for efficient heat dissipation and energy consumption reduction.

As a critical part of heat dissipation and transfer, secondary liquid cooling systems impose stringent requirements on valves in terms of long-term reliability, zero-leakage sealing, fat free high cleanliness and coolant compatibility.

To meet these demands, AVK operates an in-house clean workshop to ensure full-process fat free control with 100% factory inspection. In addition, projects are generally faced with the dual pressures of extremely short delivery schedules and large-volume stable supply.

With proven liquid cooling valve solutions, professional material adaptation capability, comprehensive supply chain management, high production efficiency and a fast delivery system, AVK has become the preferred valve supplier for secondary liquid cooling loops in large-scale AI datacentres. Having successfully delivered more than 10,000 butterfly valves and 5,000 customized ball valves, AVK Shanghai continues to support the dual demands of high-density computing heat dissipation and green low-carbon construction.

Application
Secondary Side Liquid Cooling Loop

Challenge
- Ultra-high heat density heat dissipation demand of AI server cabinets
- Zero leakage and fat free requirements for liquid loops
- Long-term compatibility with 25% glycol coolant and excellent corrosion resistance
- Heavy pressure for large-quantity, high-quality and consistent product supply

Solution
- S76 stainless steel centric butterfly valves with FKM liner
- S3150 customized flanged stainless steel ball valves





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