

Pre-fabricated polymer skid solution

Delivering precision and efficiency for liquid-cooled AI infrastructure

GF supports Giga Computing's technical study in its Advanced Cooling Lab with a pre-fabricated polymer piping solution

Fully pre-assembled PP-H skid with Quick Connect Valve 700, actuators, and instrumentation ensures plug-and-play deployment

Integrating engineering expertise and pre-fabrication for HPC data centers



Giga Computing, a subsidiary of GIGABYTE, is conducting a technical study to evaluate advanced liquid-cooled AI infrastructure solutions. To support this initiative, GF delivered a fully pre-fabricated PP-H skid assembly to Giga Computing's test lab in Taipei, enabling the evaluation of reliable and scalable fluid-handling solution for high-performance computing environments.

Project background

The study examines the rapid integration of Giga Computing's GIGAPOD modular AI cluster and GIGABYTE POD Manager with GF's turnkey piping system, and assesses the benefits of such a pre-assembled system in high-density liquid-cooled environments – covering ultra-short installation timelines as well as product reliability under prolonged, demanding operating conditions.

Selected technical solution

GF's turn-key skid package is fully pre-fabricated and factory-tested, allowing immediate integration into the cooling loop. The skid incorporates PROGEF PP-H piping, Quick Connect 700 valves, actuators, and instrumentation for automated flow and fluid-quality control. PP-H was selected for its material advantages in demanding thermal environments. The material provides approximately 30 percent better insulation performance than metal piping, supporting stable coolant temperatures during high-density operation. Its smooth internal surfaces help maintain coolant purity and reduce pressure loss, while corrosion-free operation ensures long-term chemical stability in glycol-water blends. PP-H also offers up to 80 percent lower embodied carbon and is up to 60 percent lighter than metal systems, improving handling safety and installation efficiency.

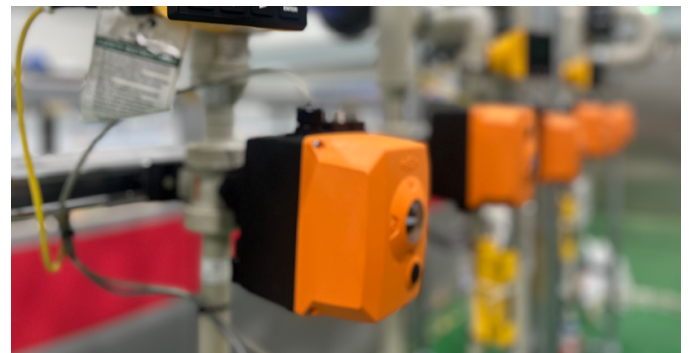
Achieved improvement

The combination of engineered polymer components and pre-fabricated delivery supports both performance and operational reliability. The system ensures long-term chemical stability, smooth internal surfaces help maintain coolant purity, and its low weight improves handling and system design flexibility. Meanwhile, the pre-assembled skid model offers proven installation predictability, shortens project timelines, and ensures high weld quality, critical advantages for AI-focused development environments.

Together, Giga Computing and GF demonstrate how engineered polymer solutions and pre-fabrication can accelerate the development of next-generation AI cooling infrastructure ready for scale.



The dual ball valve Quick Connect Valve 700 enables fast and easy connection of the racks with the distribution system.



Pre-fabricated PROGEF PP-H spools installed in the liquid-to-rack distribution system during Giga Computing's D2C cooling PoC.

Customer benefits

- **Faster on-site installation through lightweight, pre-fabricated pipe spools**
- **Environmental Product Declaration and up to 80% lower embodied carbon than metal, supporting more sustainable infrastructure**
- **~30% better insulation performance, reducing thermal losses and improving cooling efficiency**
- **Extremely smooth internal surfaces, supporting coolant purity and stable long-term flow**
- **Corrosion-free operation for an expected service life of 25 years**

Where next?



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