We Never Settle.

Redefing AI Cooling

VAV International Corp / VAV Cooling Corp
Suzhou Tangde Metal Technology Co., Ltd.

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- VAV Cooling : No. 10, Xinbeiyuan Rd, Zhongli Dist, Taoyuan City 320030, Taiwan
- Tangde : No.5 Kangbo Intelligent Manufacturing Industrial Park,Kangbo South Road, Guli Town, Changshu City, Jiangsu. PROC.

www.vav-cooling.com.tw

About Us

Driven by our passion for precision engineering and innovative design, we specialize in delivering advanced liquid cooling piping solutions, including stainless steel tubes, manifolds, and precision-welded assemblies for AI servers, industrial cooling systems and other high-reliability industrial piping applications.

In a world rapidly advancing toward electrification and intelligent infrastructure, efficient thermal management and fluid purity have become critical to system performance and reliability. Our expertise in tube forming, welding, and assembly enables us to provide robust flow solutions, as well as high-purity piping systems designed to meet stringent cleanliness and contamination control requirements.

From data centers and high-density computing environments to high-purity process systems and industrial applications, our solutions ensure stable flow performance, structural integrity, and long-term operational reliability—no matter the challenge.

Our Factory

Machining Workshop

Cleanliness test Lab

Welding Workshop

ISO Class 8 Clean room

Smart Warehouse

Packaging Workshop

Content

SS PIPE

Stainless Steel Pipes

We provide highly customized stainless steel tube solutions, combining stable material quality with flexible manufacturing capabilities to support reliable and scalable system designs.

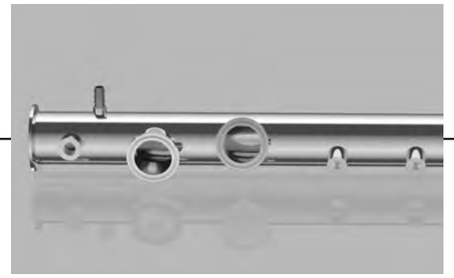
Product Specifications

Material	Stainless Steel 304/316(L)
Outer Diameter	1/2"-6" (12.7-304.8mm)
Wall Thickness	0.5-20mm
Internal Surface Roughness	Ra ≤ 0.8 μm
Maximum Allowable Operating Pressure @ 25	≤435 psi
Burst Pressure	≥1740 psi
Air Tightness Test Leak Rate	≤ 0.0086 mbar·L/s
Welding method	GTAW
Recommended Operating Temperature	-40 ~ 150 °C

From dimensional specifications to secondary processing, all products are manufactured under consistent quality standards and strict process control, serving liquid cooling systems and other high-reliability applications.

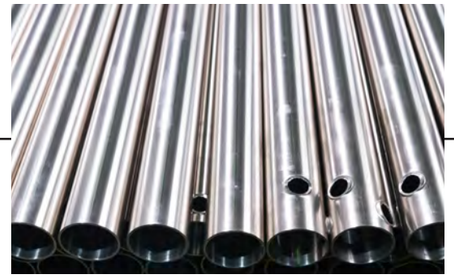
Manufacturing Process

Stainless Steel Pipes



Professional Detailing

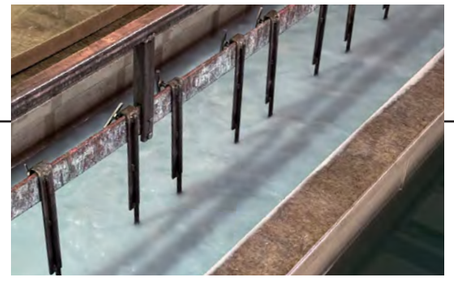
Material Inspection
ISO 9001 Suppliers



Pipes Forming
(Cutting / Collaring / Bending)

Collaring

Both same-diameter and different-diameter collaring processes are available to ensure an optimized welding interface and improved joint quality.



Surface Treatment
ASTM A967

GTAW (TIG)

Gas Tungsten Arc Welding (GTAW) enables precise control of heat input and weld quality.
This ensures strong, consistent joints with minimal defects in critical components.

Welding (GTAW)

ISO 3834
ISO 5817 – Level B

Machining /
Parts for Welded Assembly

Cleaning / Cleanliness test
ISO 16232 – Cleanliness of Fluid Circuit Components

Cleanliness is controlled in accordance with ISO 16232 to ensure particle-free internal flow paths.
This minimizes contamination risks and supports stable performance in liquid cooling systems.

Performance Test /
Final Inspection

Packaging

SS HOSE

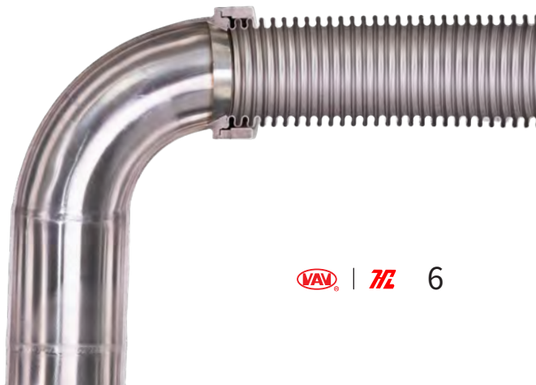
Corrugated Stainless Steel Hoses

Our corrugated stainless steel hoses combine the strength of metal piping with excellent flexibility.

The hoses offer reliable pressure performance, long fatigue life, and superior leak tightness, making them well suited for AI server liquid cooling systems and other high-reliability industrial piping applications.

Product Specifications

Material	Stainless Steel 304/316(L)
Nominal Diameter	DN3- DN200
Wall Thickness	0.1-1.5mm
Static Minimum Bending Radius	8–800 mm
Dynamic Minimum Bending Radius	20–1200 mm
Maximum Allowable Operating Pressure @ 25°C	≤290 psi
Burst Pressure	≥1160 psi
Bending Durability	≥10,000 cycles
Surface	Braided/Unbraided/Acetate taped
Welding Method	GTAW/ Laser
Recommended Operating Temperature	-40 ~ 150 °C

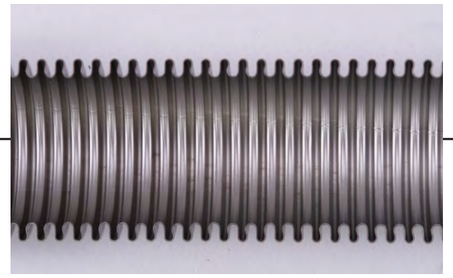


Manufacturing Process

Corrugated Stainless Steel Hoses

Material Inspection

Tube Drawing



Corrugated Forming

Multi-stage annular corrugation forming precisely shapes stainless steel tubes through controlled progressive deformation.This process ensures uniform geometry, minimizes wall thinning, and enhances fatigue performance for high-reliability applications.

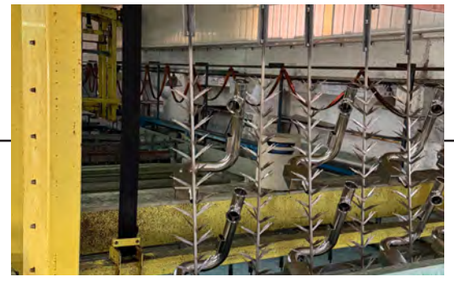
Solution annealing

Solution annealing ensures consistent material properties by effectively relieving residual stress and restoring ductility after cold working.

This process enhances corrosion resistance and enables stable, high-quality corrugation forming for reliable performance.

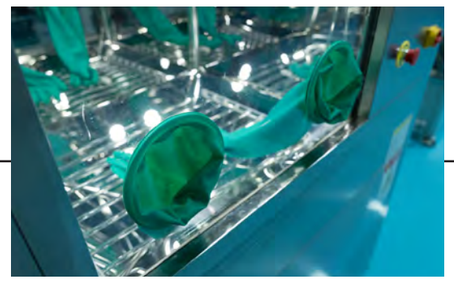
Welding (GTAW)

ISO 3834
ISO 5817 – Level B



Surface Treatment

ASTM A967



Cleaning / Cleanliness Test

ISO 16232 – Cleanliness of Components of Fluid Circuits

Performance Test / Final Inspection

ISO 10380 – Metallic Hose Assemblies (Testing Requirements)

Performance testing validates pressure capability, leak-tight integrity, and overall durability under simulated operating conditions.

This ensures consistent quality and long-term reliability in critical applications.

Packaging

CDM

Coolant Distribution Manifolds

Our coolant distribution manifolds (CDMs) are designed for high-density data centers and AI server liquid cooling systems, delivering stable, reliable, and scalable coolant distribution.

Through precision machining and welding processes, the manifolds achieve excellent leak tightness and long-term operational stability, meeting the stringent demands of next-generation high-power computing environments.

Product Specifications

Material	Stainless Steel 304/316(L)
Length	<2500mm
Maximum Allowable Operating Pressure @ 25°C	≤290 psi
Burst Pressure	≥870 psi
Number of Ports	Customized
Port Pitch	Customized
Port Size	Customized
Port Geometric Tolerance	Position ⌖ Ø 0.3mm Parallelism // 0.2 mm
Ports Welding method	Laser
Air Tightness Test Leak Rate	≤ 0.0086 mbar·L/s

With optimized multi-channel flow path designs, the manifolds ensure balanced coolant distribution across cooling loops, enhancing overall thermal efficiency. Highly customizable configurations allow flexible adaptation to various rack layouts and system requirements, enabling rapid deployment of efficient liquid cooling architectures.

Manufacturing Process

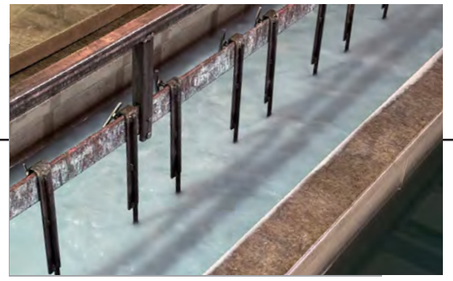
Coolant Distribution Manifolds

Material Inspection

Tube / Bar Machining

CNC machining

Ensures high precision and consistency through advanced machining processes. Delivers tight tolerances and superior surface quality for critical components.



Surface Treatment

ASTM A967

Heat Treatment

Digitally Controlled Laser Welding

Delivers high-precision and consistent weld quality through advanced digital control. Ensures excellent repeatability and structural integrity for critical liquid cooling components.

Welding / Brazing

ISO 3834

ISO 5817 – Level B

Reshaping/ Machining

Cleaning / Cleanliness Test

ISO 16232 – Cleanliness of Components of Fluid Circuits

Performance Test / Final Inspection

Packaging

MCCP

Microchannel Cold Plates

The micro-channel cold plate features a high-density micro-channel structure that significantly enhances heat transfer efficiency, rapidly removing heat generated by high-power components.

Product Specifications

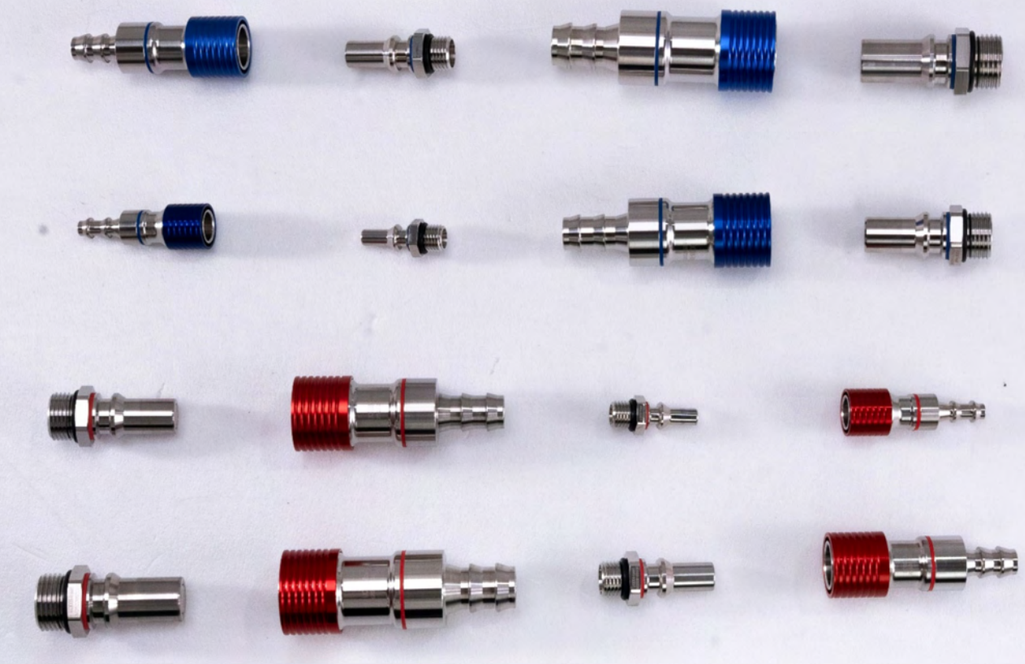
Material	Copper C1100/C1010/C1020
Dimensions	Customized
Channel Width	≤ 0.03mm
Fin Thickness	≤ 0.03mm
Maximum Allowable Operating Pressure @ 25°C	≤218 psi
Burst Pressure	≥725 psi
Pressure Drop	≤ 20 kPa @ 5 L/min
Recommended Operating Temperature	-40 ~ 120 °C

Ultra-Fine Microchannel Precision

Microchannel and fin structures down to 0.03 mm for superior thermal performance.

UQD

Universal Quick Disconnect



The universal quick disconnect (UQD) couplings are designed for high-density liquid cooling systems, featuring a quick-connect mechanism for fast installation and removal, significantly reducing maintenance and service time. The couplings provide excellent sealing performance and pressure resistance, ensuring leak-free operation over extended service life.

Product Specifications

Material	Stainless Steel 316
Nominal Diameter	DN2 / DN4 / DN6 / DN8
Termination	Thread, Barb
Cv	0.35-5.0
Minimum Flow Rating	2.73 L/min - 21.37 L/min
Maximum Allowable Operating Pressure @ 25°C	≤232 psi
Burst Pressure	≥580 psi
Durability	≥ 6,000 cycles
Recommended Operating Temperature	-40 ~ 150 °C

Proprietary quick disconnect solutions covering UQD, UQDB, and LQD configurations for diverse liquid cooling applications.

CONTACT US

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