



Quality Crafted, Industry Trusted

FLUID SYSTEM SOLUTIONS

DATA CENTER LIQUID COOLING

Precision fluid-system solutions for next-generation data centers, AI and high-performance computing.



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BUILT FOR RELIABLE LIQUID COOLING

As data center cooling systems become more demanding, reliable fluid-handling components are essential for maintaining cooling performance, system integrity and long-term reliability.

COOLING DISTRIBUTION UNIT (CDU)

A critical interface between the **Facility Water System (FWS)** and the **Technology Cooling System (TCS)**, transferring heat between facility cooling infrastructure and the IT equipment cooling loop.



Minox provides a range of stainless steel components and customised assemblies that can be integrated across different points of the liquid-cooling infrastructure — from fixed piping and equipment connections to flexible hose assemblies and service interfaces.

BUILT AROUND FIVE CRITICAL CONSIDERATIONS FOR LIQUID COOLING

Material Compatibility

304L/316L stainless steel and selected sealing materials provide a robust material platform for liquid-cooling systems. Material selection is matched to the coolant, concentration, temperature, pressure and system requirements. Available sealing materials include EPDM, FKM and PTFE-based solutions, subject to application compatibility.

Leak Prevention

Connection integrity is critical in liquid cooling. Minox supports serviceable connection requirements, including clamp, SMS and DIN 11864 unions with gaskets and O-rings, as well as integration with quick-disconnect interfaces such as OCP-standard UQD, subject to system design.

Pressure

Components are selected and rated according to the required operating pressure, pressure drop and safety margin of each cooling loop. Minox supplies pressure-rated valves, tubes, fittings, connection and hoses assemblies, with ratings dependent on product, size, material and configuration.

Temperature

Components and sealing materials are selected according to the coolant temperature, operating range and thermal cycling requirements of the application. Material selection is confirmed based on the actual cooling medium and operating conditions.

Flow

Properly selected tube, fitting, valve, hose and filtration components help maintain the required flow rate while managing pressure drop and flow resistance throughout the cooling loop. Minox supports component selection based on the required flow rate, pressure drop, connection size and system configuration.

CDU COMPONENTS

Stainless Steel Valve Solutions

Minox provides stainless steel butterfly valves designed for clean and reliable isolation of cooling-water and coolant circuits in Data Center CDU systems.



EHEDG Certified Minox Butterfly Valves

EL Class I

Certified by the European Hygienic Engineering & Design Group (EHEDG) for compliance with stringent hygienic design requirement in closed-process systems, ensuring both cleanability and operational reliability in critical industries.

TYPES OF BUTTERFLY VALVES



MANUAL (Gripper)
12-position gripper handle



MANUAL (Pull)
3-position pull handle



ACTUATION
pneumatic or electric

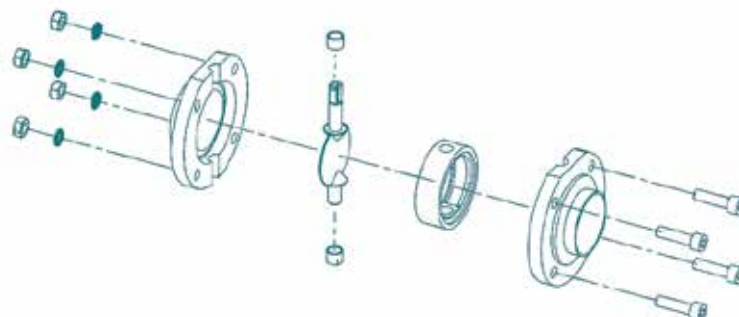


CONTROL HEAD CS10
digital 24V DC & AS-i version



SIZE AND MATERIAL

- Size: 1" ~ 4" / DN15 ~ DN200
- Connection: Weld End / Clamp End (other connection on request)
- Body Material: SS 304 / 304L / 316L
- Rubber Material: EPDM / Silicone / FKM



SERVICE & MAINTENANCE

Service kits and spare parts are available for easy maintenance

COMPLETE COMPONENT SOLUTIONS

For Liquid Cooling Infrastructure

A component portfolio designed around isolation, flow control, rigid connections, service points and sealing requirements.

VALVES

Stainless steel valves for isolation and flow control within cooling systems.

- Butterfly valves
- Ball valves
- Check valves / Non return valves
- Seat valves
- Flow control valves
- Pressure relief valves



TUBES & FITTINGS

Stainless steel tubing and fittings for rigid liquid cooling connections.

- According to A269, A270, A632, 3A-standard
- Elbows, tees, manifold tees, reducers, tube end caps and pipe hangers
- Weld end / clamp ends
- Customize fittings available on request



UNIONS & CONNECTIONS

Reliable connections for equipment, piping and service points.

- Clamp union
- SMS union
- DIN 11864-1 Screw Connection
- DIN 11864-2 Flange Connection
- DIN 11864-3 Clamp Connection



GASKETS & O-RINGS

Sealing solutions selected according to fluid, temperature and application requirements.

- EPDM
- FKM
- Tuf-Flex®
- Tuf-Steel®
- GYLON BIO-PRO®



SEALING MATERIAL REFERENCE

EPDM	Water / Glycol-based Coolant	-34 to +140°C -29 to +280°F
FKM	Higher Temperature / Chemical Compatibility	-20 to +200°C -4 to +392°F
Tuf-Flex®	Chemical Barrier+ Elastomer Memory	PTFE /EPDM -29 to +149°C -20 to +300°F PTFE /FKM -29 to +204°C -20 to +400°F
Tuf-Steel®	Excellent Expansion/ Contraction Stability	-195 to +288°C -325 to +550°F
GYLON BIO-PRO®	Chemical Resistance / Low Cold-flow	-210 to +260°C -346 to +500°F

FILTRATION & MESH COMPONENTS

Filters & Strainers

Stainless steel filtration and mesh components designed to support fluid cleanliness, system protection and reliable liquid-cooling performance.



Angle Filter



Inline Filter



Double Connection Filter



Screen Gasket



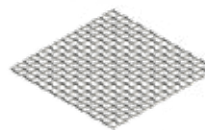
Cone Strainer



Perforated Plate



Sintered Wire Mesh



Wire Mesh



Wedge Screen

FLEXIBLE HOSE SOLUTIONS

Your specification. Our configuration.

Liquid cooling systems require flexible connections that can accommodate equipment layout, installation requirements and movement between components.



1

SIZE

Select the required hose diameter.

2

LENGTH

Specify the required assembly length.

3

HOSE MATERIAL

Select the appropriate material according to cooling medium and operating conditions.

4

CONNECTION

Choose the required connection type and size.

5

END CONFIGURATION

Configure both ends according to the equipment and piping interface.

TYPES OF HOSE OPTIONS



M5810
EPDM Suction &
Discharge Hose



RF-RT
Smooth Bore FEP
Lined EPDM Covered
Hose



304 & 316
Stainless Steel
Corrugated Hose



SS 304
Braided Smooth
PTFE Hose



PFA Tubing

Pressure | Temperature | Flexibility | Coolant Compatibility | Connection | Size | Length

QUALITY YOU CAN TRACE

Liquid cooling infrastructure requires consistent product quality, reliable documentation and controlled supply.

ISO 9001:2015 Certified Quality Management System

Supports consistent quality, controlled processes and reliable documentation.

Materials & Heat Number Traceability

Minox provides quality-controlled stainless steel components with material & heat number traceability and EN 10204 3.1 Material Certificates for applicable products, supporting project and customer requirements.

Design & Development Support

Our in-house Design & Development team supports feasibility studies, application engineering and customised assemblies.



REGIONAL SUPPORT / CONTACT

YOUR REGIONAL LIQUID COOLING PARTNER

Minox supports customers across Southeast Asia with regional sales, technical support and supply capabilities.



Malaysia



Singapore



Indonesia



Thailand



Vietnam



Philippines



Taiwan



Contact us
www.minox.biz



Minox Valves and Fittings Sdn. Bhd.

(A Wholly-Owned Subsidiary of Minox International Group Berhad)

+603-8063 7450 / +603-8063 7470

info_mas@minox.biz

No. 3, Jalan Industri PBP 11, Taman Industri Pusat Bandar Puchong, 47100 Puchong, Selangor, Malaysia