

Above Ambient Cooling Option—H1000 Series

Specifications

Introduction

Micromanipulator's H1000 Series Thermal Chuck System is an integrated system to maximize your options. Choose a Thermal Chuck *and* a Temperature Control System (operate either an AC or DC Heat Controller). Next choose desired heat exchanger (cooling to ambient or rapid cooling of the thermal chuck below the cool setpoint). Then choose the Cooling Option (either above ambient with user-supplied cooling water or rapid cool down to 0 degrees C). This specification sheet features the Above Ambient Cooling Option (part number C1000-V0-H) for use with a Heat Controller to rapidly cool down the thermal chuck when user-supplied cooling water is available.

The Model C1000-V0-H is the Cooling Option for use with a Heat Controller to rapidly cool down the thermal chuck when user-supplied cooling water is available.

The C1000-V0-H cooling option includes a *Cooling Module* for cooling ON/OFF control and utilizes a remote *Service Module* (SRV1) for all plumbing hookups including the water, drain and shop air supplied by the user.

Features

- The C1000-V0-H Cooling Module contains the display and control electronics for the cooling option and mounts within the space provided in the Heat Controller chassis.
- Power for the Cooling Module is supplied by the Heat Controller, either AC or DC, eliminating the need for a separate power cord.
- The Cooling Module allows the user to manually air-purge the thermal chuck as desired.
- The Cooling Module includes a built-in RS-422 interface. RS-232 and IEEE-488 interfaces are available options.
- Optional temperature control software enables programmable heat, cool and soak cycles and sequencing.
- The C1000-V0-H cooling option can cool the thermal chuck to the temperature of the facility supplied water.
- The C1000-V0-H cooling option provides on/off control of the cooling water and uses compressed air to automatically purge the thermal chuck when the cool "set point" temperature is reached^[1].
- The C1000-V0-H cooling option requires a H1000 Heat Controller to operate and is compatible with all H1000 Heat Controllers.
- The remote Service Module provides a convenient location for all service connections and eliminates the possibility of controller damage due to fluid leakage.
- The remote Service Module routes user-supplied cooling water to the cooling shield on the thermal chuck. The thermal chuck cooling shield reduces the risk of a burn injury while protecting the probe station hardware from heat radiation that can cause thermal stress of positioning components.
- All hoses feature self-sealing quick connect couplings for easy hookup without spillage problems associated with conventional hose fittings.

Specifications

Performance:

- Cooling control: On/Off
- Typical ramp rate from +400° to +25° C (with 20° C cooling water)
 - 6" (150mm) coaxial chuck: 6 minutes.
 - 8" (200mm) coaxial chuck: 14 minutes.

Physical data:

- Cooling Module: 4 lbs. (1.8 kg) 8.5" x 3.25" x 14" (21.5cm x 8.25cm x 35.5cm) high x deep x wide
- Service Module (SRV1): 5 lbs. (2.26 kg) 8.5" x 2.75" x 13.5" (21.5cm x 7cm x 34cm) wide x high x deep
- Hoses/Cable: 10' (47cm) long

Facility requirements:

Water:

20-65 psig @
8 gal/hour continuous
20 gal/hour when cooling

Shop air:

40-100 psig @ 1 SCFM

Open water drain:

Zero back pressure

Note: Purge air is vented into the drain

Accessories:

- RS-232 Interface: H1000-RS-232
- IEEE-488 Interface: H1000-IEEE
- Temperature Control Software: pTC

^[1] Setpoint control is not maintained (held) by the C1000-V0-H.



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