

Low Temperature Dispensing Devices

Product Description

MJ-A style drop-on-demand single jet dispensing devices are suited for dispensing droplets of aqueous and solvent-based fluids at up to 50°C. An integrated orifice and wetted surfaces that are almost exclusively glass make MJ-A devices extremely robust to aggressive fluids. Orifice diameters of 20-80 μm are available, allowing customers to optimize their process by selecting drop volumes within a two order of magnitude range. Fluids with viscosity less than 20 cPs and surface tension in the range 20-70 dynes/cm can be dispensed.

Three fluid fitting styles are available: barbed, threaded, and Luer. The threaded fitting is intended for use with PTFE tubing. The Luer fitting contains an integrated, removable filter.

The integrated orifice extends from the housing, allowing visualization of both internal flow and drop formation. The orifice can optionally be protected from damage by metal extensions on two sides.

Custom, application-specific configurations can also be developed.



MJ-AT-01



MJ-ATP-01



MJ-AB-01



MJ-ABP-01



MJ-ABL-01



MJ-AL-01

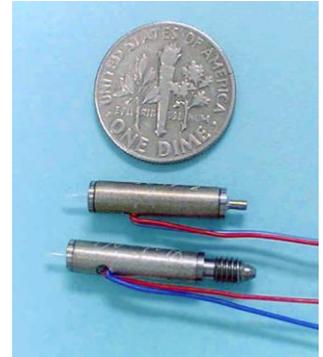
Additional Information

Available at microfab.com

- Drawings with dimensions
- Equipment selection guide
- Integration Guide
- Cleaning Guide

Ordering Information

- MJ-AB-01-xxx** Low-temperature dispensing device with barb fluid fitting, xxx denotes orifice diameter in microns. MJ-ABL (large) for 80-120 μm orifice diameters.
- MJ-ABP-01-xxx** Low-temperature dispensing device with barb fluid fitting & protected tip, xxx denotes orifice diameter in microns.
- MJ-AT-01-xxx** Low-temperature dispensing device with MINSTAC threaded fluid fitting, xxx denotes orifice diameter in microns.
- MJ-ATP-01-xxx** Low-temperature dispensing device with MINSTAC threaded fluid fitting & protected tip, xxx denotes orifice diameter in microns.
- TA-10711** Tubing assembly for AT and ATP devices: Minstac union, 20cm length of Teflon tubing (0.75mm ID, 1.5mm OD), Minstac to Luer adapter.
- MJ-AL-01-xxx** Low-temperature device with Luer fluid fitting, xxx denotes orifice diameter in microns. Includes 5 μm stainless steel mesh filter element.
- DLC** Diamond-Like Carbon coating on front face of orifice. Add -DLC designation to any MJ part number.



Support Equipment

- CT-M3-02** JetDrive™ III controller, including command set and Windows based stand-alone control program, JetServer™. Includes built in strobe delay & level 02 firmware (complex waveforms).
- CT-PT-21** Pressure / Thermal Controller with one manual pneumatic channel.
- CT-PT-A1** Electronic Pressure Controller and Pressure Mode Selector, single channel.
- CM-VS-03** Basic Optics System: CCD camera, power supply, lens, fine focus, mounting block.
- Printhead Assemblies & Misc.** PH-43, PH-46, PH 47, PH-41; tubing assemblies, reservoirs, in-line filters; cleaning & retesting service.



Compatible Materials

Organic Solvents	alcohols, ketones, aliphatics, aromatics, dipolar solvents
Aqueous Buffers	nucleic acids, proteins, cells
Other Biologicals	amino acids, lipids, biodegradable polymers
Electronic Materials	fluxes, photoresists, epoxies, polyimides, electroactive polymers, cyanoacrylates, organometallics
Particle Suspensions	pigments, latex spheres, metal nanoparticles, Teflon, phosphors, ferrites, zeolys
Other	sol-gels, thermoplastics, thermosets, acrylics, >1M salt solutions, photographic developer, fuels, aqueous adhesives, odorants

Specifications

Standard orifice diameters	20-80 μm , 5 μm intervals, 80-120 μm for MJ-ABL
Standard orifice diameter tolerance	$\pm 1 \mu\text{m}$
Barb fitting	For 1 mm ID tubing
Threaded fitting	MINSTAC, 0.138-40 UNF 2A, 5 turns
MJ-AL, o-rings for filter	EPDM, Buna, or Viton
MJ-AL, filter	5 μm stainless steel mesh
Electrical connector	Molex 50-57-9402 Molex 16-02-0097
Standard wire length	200 mm
Printheads for MJ-AB, MJ-ABP	PH-43
Printheads for MJ-AT, MJ-ATP	PH-46, PH-47, PH-43
Printhead for MJ-AL	PH-41
Fluid viscosity	< 20 cPs
Fluid surface tension	20-70 dynes/cm
Fluid pH	2-11

