

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 cp 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

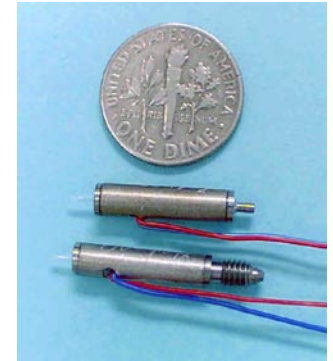
- [High resolution version of above figure.](#)
- Drawings with dimensions: [MJ-AT](#), [MJ-ATP](#), [MJ-AB](#), [MJ-ABL](#), [MJ-ABP](#), and [MJ-AL](#).
- [Integration Guide](#) and [Cleaning Guide](#)

Support Equipment

- Printhead Assemblies: [PH-03](#), [PH-46](#), [PH-47](#), [PH-41](#).
- [Drive electronics](#).
- [Pressure & Temperature controllers](#).
- [Optics](#).

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.



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 particles, Teflon, phosphors, ferrites, zeolys
Other	sol-gels, thermoplastics, thermosets, acrylics, >1M salt solutions, photographic developer, fuels, aqueous adhesives, odorants
* note: compatibility excludes O-rings	

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
Luer fitting, o-rings for filter	EPDM, Buna, or Viton,
Luer fitting, filter	5 μm stainless steel mesh
Electrical connector	Molex 50-57-9402 Molex 16-02-0097
Standard wire length	150 mm
Printheads for MJ-AB, MJ-ABP	PH-03
Printheads for MJ-AT, MJ-ATP	PH-46, PH-47
Printhead for MJ-AL	PH-41
Fluid viscosity	< 20 cp
Fluid surface tension	20-70 dyne/cm
Fluid pH	2-11