

High Temperature Dispensing Devices

MJ-SF & MJ-AL-HT

SF Type – Face Seal

MJ-SF style drop-on-demand single jet dispensing devices are suited for dispensing droplets of fluids such as adhesives, waxes, polymers and liquid metals at up to 240°C. An integrated orifice and wetted surfaces that are almost exclusively glass make MJ-SF devices extremely robust to aggressive materials.

Two fluid fitting styles are available: VCO and VCR. The VCO fitting is intended for use with the PH-04(a) and PH-05(a) high temperature printhead assemblies.

Custom, application-specific configurations can also be developed.



MJ-SF-01



MJ-SF-02



MJ-SF-04



MJ-AL-HT

AL Type – Luer Connection

The MJ-AL-HT style devices use the same Luer type connector stack as the MJ-AL-01 (with integrated filter) and MJ-AL-00 devices, but use materials that allow dispensing at temperatures up to 150°C. The high temperature actuator is longer than the one MJ-AL low temperature devices resulting in a longer overall length. The MJ-AL-HT devices are intended for use with the PH-41HT high temperature printhead.

For both types of devices, the integrated orifice extends from the housing, allowing visualization of both internal flow and drop formation. Orifice diameters of 20-80 μm are available, allowing customers to optimize their process by selecting drop volumes with a two order of magnitude range. Fluids with viscosity less than 20 cP and surface tension in the range 20-50 dynes/cm at the selected temperature can be dispensed.



Additional Information

Available at microfab.com

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

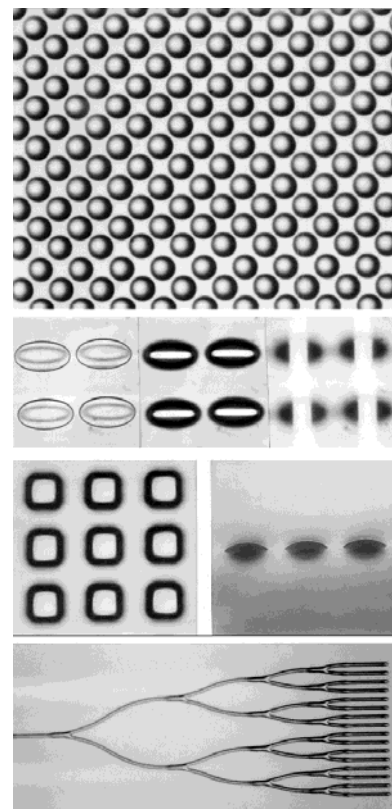
Ordering Information

- MJ-SF-01-xxx** High-temperature dispensing device with VCO fluid fitting, xxx denotes orifice diameter in microns. For PH-04 / PH-05 printheads.
- MJ-SF-02-xxx** High-temperature dispensing device with VCR fluid fitting, xxx denotes orifice diameter in microns.
- MJ-SF-04-xxx** High-temperature dispensing device with VCO fluid fitting, xxx denotes orifice diameter in microns. For PH-04a / PH-05a printheads.
- MJ-AL-HT-xxx** High-temperature dispensing device with Luer fluid fitting, xxx denotes orifice diameter in microns. For PH-41HT printhead.
- DLC** Diamond-Like Carbon coating on front face of orifice. Add -DLC designation to any MJ part number.



Support Equipment

- CT-M5-01** JetDrive™ V 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.
- CM-VS-03** Basic Optics System: CCD camera, power supply, lens, fine focus, mounting block
- Printhead Assemblies & Misc.** PH-04a, PH-05a, PH-41HT reservoirs, in-line filters; cleaning & retesting service.



Specifications

Standard orifice diameters	20-80 μm , 5 μm intervals
Standard orifice diameter tolerance	$\pm 1 \mu\text{m}$
MJ-SF-01, MJ-SF-04 Fitting	VCO
MJ-SF-02 Fitting	VCR
MJ-AL-HT Fitting	Luer
Electrical connector	Molex 50-57-9402 Molex 16-02-0097
Standard wire length	150 mm
Printheads for MJ-SF-04	PH-04a, PH-05a
Printhead for MJ-AL-HT	PH-41HT
Fluid viscosity	< 20 cP

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