

Nanojet Microdispenser System

Nanojet Control Unit



ADVANTAGES

- minimum single volume 300 nl
- maximum repetition frequency 100 Hz
- contact-less dispensing
- laminar jet
- high resistance against aggressive fluids
- range of nozzle diameter

Technology

Nanojet dispenser heads feature a miniaturized solenoid valve and a glass capillary nozzle through which the liquid is emitted. The liquid is transported from the reservoir to the dosing head by means of gas pressure.

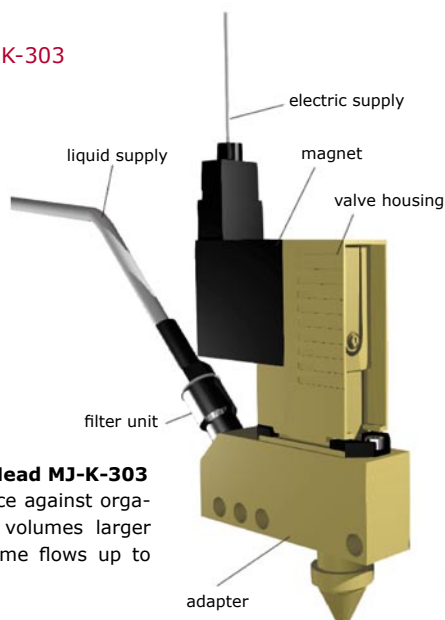
The special nozzle shape provides laminar liquid flow, which prevents liquid from atomizing, thus ensuring that liquid is restricted to the target area. The possible nozzle diameters range from 50 μm up to 500 μm .

The dispenser volume depends on gas pressure, solenoid valve opening time, nozzle diameter and liquid viscosity.

Electronic control of the valve in combination with the pressure control ensures a precisely dispensed volume.

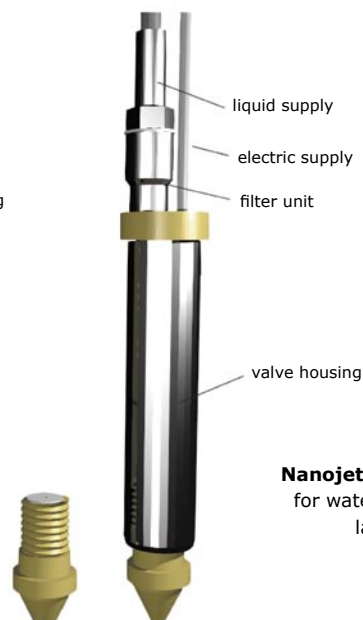
Here the work pressure is adjusted between 500 and 3500 hPa with a variation of 1 %. The valve opening time can either be set between 3 ms to 2 s or via trigger input. A serial port is optional available. For functional testing a toggle switch allows the manual opening of the valve. The small dimensions of the heads are particularly advantageous for integration in existing systems. For adaptation of the Nanojet systems to the various fluids two different series of valves are available:

Dispenser Head MJ-K-303



Nanojet Dispenser Head MJ-K-303 with a higher resistance against organic fluids. Dispensed volumes larger than 300 nl and volume flows up to 2 ml/s are possible.

Dispenser Head MJ-K-103



Nanojet Dispenser Head MJ-K-103 for watery fluids. Dispensed volumes larger than 100 nl and volume flows up to 2 ml/s.

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TECHNICAL DATA

	Dispenser Head MJ-K-303 (higher resistance)	Dispenser Head MJ-K-103 (watery fluids)
Permissible liquid viscosity	0.4 ... 20 mPas *	0.4 ... 50 mPas *
Nozzle diameter	50 ... 500 µm *	50 ... 500 µm *
Permissible particle size	< 5 µm	< 5 µm
Ambient temperature	room temperature ... 55 °C	room temperature ... 60 °C
Dispensing volume	single volumes 300 nl *	single volumes 50 nl *
Average speed of emission	approx. 10 m/s	approx. 10 m/s
Maximum working pressure	3500 hPa * (depending on device features)	700 / 3500 hPa * (depending on device features)
Relative scatter of dosed volume	approx. 3 % *	approx. 3 % *
Maximum repetition frequency	approx. 16 Hz * (depending on device features)	approx. 100 Hz * (depending on device features)
Minimum opening time	10 ms *	3 ms *
Maximum opening time	1.98 s at trigger mode	1.98 s at trigger mode
Dimensions	w: 52 mm / h: 58 mm / d: 11 mm	Ø: 10 mm / h: 53 mm
Voltage	12 VDC	12 VDC
Operating Life	10 x 10 ⁶ doses	> 50 x 10 ⁶ doses
Control Unit (MJ-E-101-42, MJ-E-130, MJ-E-...)		
Operating modes	<ul style="list-style-type: none"> • test function: manual signal release (trigger or gate mode) • trigger mode: opening duration = adjusted at the preselector • gate mode: opening duration = length of the external signal 	
Displays	<ul style="list-style-type: none"> • operating mode are signalized by LEDs / selectors for opening duration • valve state on/off • work pressure 	
Connections	<ul style="list-style-type: none"> • power supply 15 W, 100 ... 250 VAC (50 ... 60 Hz) • compressed air supply 4000 ... 8000 hPa • work pressure exit • dosing head • ext. trigger input 	
Dimensions	42TE housing, > 3 dosing heads 84TE housing	
Weight	4.9 kg	
Basic Components		
MJ-K-103 + MJ-D-103-C	micro dispenser head (watery fluids), solenoid valve, replacement nozzle	
MJ-K-303 + MJ-D-301	micro dispenser head (higer resistance), connection part, replacement nozzle	
MJ-E-101-42	42TE housing with main power supply, pressure connection and prefilter	
MJ-E-...	dispenser drive unit	
MJ-E-130	pressure control unit	
MJ-V-...	storage bin, optionally with 4 ml, 8 ml, 12 ml or 250 ml	

* depending on liquid in use

subject to change without prior notice
MJ_SYSTEM_EN_0714