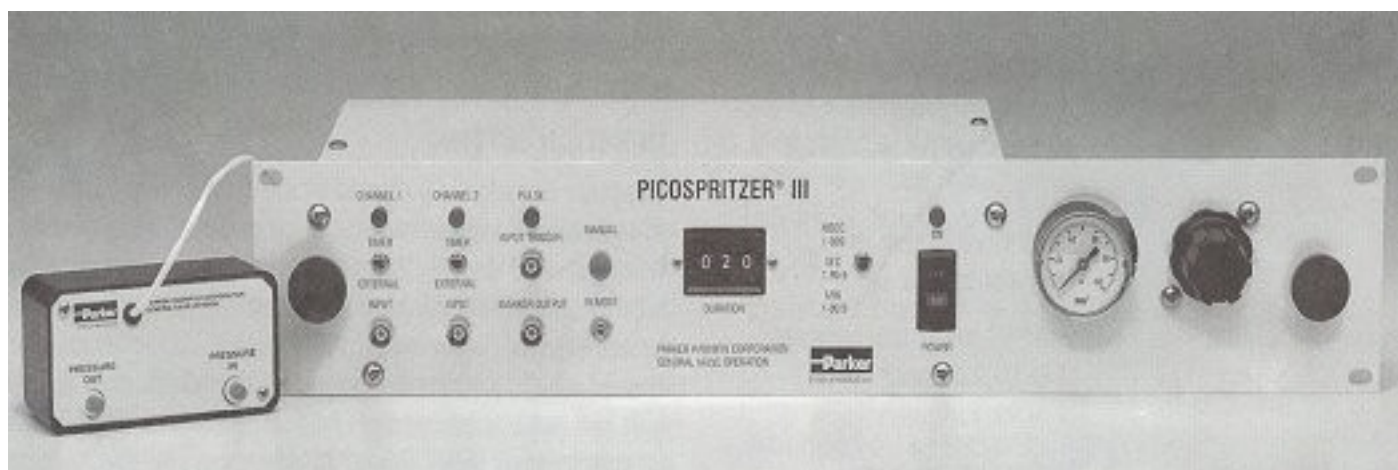


PICOSPRITZER® III

Pressure Systems for Ejection of Picolitre Volumes in Cell Research



The PicoSpritzer® III is a self-contained rack-mountable system which supplies repeatable pressure pulses. Intracellular applications range from femtolitre ejections of RNA into 50µm diameter cells, up to nanolitre ejections into oocytes. Extracellular applications range from delivery of picolitre volumes of neuroactive substances to neurons during intracellular recording up to chemical stimulus delivery to complete organisms.

The heart of the PicoSpritzer is its special high speed valve offering precise control of ejection volumes and millisecond range ejection times. Although volumes ejected are linear with both pressure and time the pulse duration has a greater dynamic range with more accurate and reproducible settings. This pulse duration is likely to be changed frequently during the course of an experiment while once established, pressure settings will be changed relatively little on a daily basis.

The pulse duration is controlled by a 3-digit thumbwheel switchable to read in milliseconds, seconds or minutes. A pulse may be initiated from a front panel button, a remote push-button, footswitch or external TTL pulse.

PICOSPRITZER MODELS

Picospritzer III is available as a single or two channel unit each of which can be triggered independently. Single channel models have built-in second channel expansion capability so can be converted to two channel simply by addition of a second valve box with tubing and connectors.

Single or two-channel PicoSpritzers can be converted to a Vacuum Loading PicoSpritzer by the addition of a special loading valve box. This uses both channels so a Vacuum Loading PicoSpritzer functions only as a single channel unit.

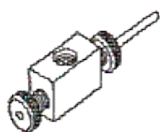
PRESSURE/VACUUM OPERATION

All PicoSpritzers require a source of clean dry compressed air or nitrogen for their operation. In vacuum versions the vacuum is generated by venturi effect and this is therefore dependent on pressure setting and duration.

SPECIFICATIONS

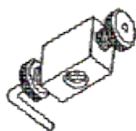
Useful Pressure Range	10-100 PSI, self-bleeding pressure regulator. (Lower pressure ranges available)
Maximum Inlet Pressure	150 PSI. Do not use oxygen or combustible gas.
Pulse Durations	2 to 999 ms, 1ms intervals .1 to 99.9 seconds .1 to 99.9 minutes
Pulse Initiation	Push button on panel, external stimulator, or remote pushbutton / footswitch
Time Mark	5-volt TTL from channel one
Power Requirements	Universal 90-250 V.A.C. 50-60Hz

Pipette holders:



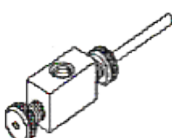
P/N 050-00XX-110-1*

Standard straight holder with a .080 inch diameter by 1.5 inch long mounting rod.



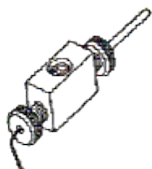
P/N 50-00XX-120-1*

Standard holder with the .080 inch diameter mounting rod bent 90° at the midpoint.



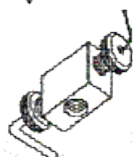
P/N 50-00XX-130-1*

Standard straight holder with a .186 inch diameter by 3.5 inch long mounting rod.



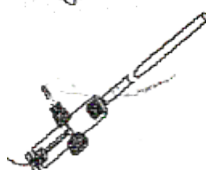
P/N 50-00XX-210-1*

Straight recording holder with a .080 inch diameter by 1.5 inch long mounting rod. Recording is accomplished through the mounting rod.



P/N 50-00XX-220-1*

Recording holder with a .080 inch diameter mounting rod bent 90° at the midpoint. Recording is accomplished through the mounting rod.



P/N 50-00XX-230-1*

Straight recording holder with a .186 inch diameter by 3.5 inch long mounting rod. Recording is accomplished through a separate .080 inch diameter pin.

* Pipette holders (and gaskets) are available for pipettes from 1.0mm to 2.0mm in 0.2mm increments (plus 1.5mm). The two XX's in the part number should be replaced by the pipette glass size in 10ths of millimetres. For example, part number 050-0012-130-1 would be for 1.2mm outer diameter pipettes.

ORDERING INFORMATION	
All PicoSpritzer III models are supplied with appropriate valve box/boxes, connection cables and tubing to connect the valve box to the front panel regulator and to the pipette holder. 3.5m (12ft) of ¼" o.d. tubing is supplied to connect the regulator assembly to the compressed gas supply. 2-channel PicoSpritzers include a tee-piece fitting to split the gas supply between the two valve boxes.	
Single Channel PicoSpritzer III	Accessories/Spares for pipette holders see details above
051-0500-900 0-100 psi	052-0100-010-1 Upgrade kit, includes second valve box and tubing to convert single to two channel
051-0560-900 0-60 psi	
051-0530-900 0-30 psi	
051-0510-900 0-10 psi	0852-0410-4021 Vacuum loading valve box and cable assembly. Converts one or two channel PicoSpritzer to Vacuum loading
Two Channel PicoSpritzer III	
052-0500-900 0-100 psi	050-0000-801-1 Footpedal switch and cable
052-0560-900 0-60 psi	050-0000-800-1 Pushbutton switch and cable
052-0530-900 0-30 psi	035-0125-062-72 Tubing assembly 7/8" o.d. with connectors (valve box to pipette)
052-0510-900 0-10 psi	
	033-0062-032-36 Tubing assembly 1/16" o.d. with connectors (valve box to pipette)
Vacuum Loading PicoSpritzer III	
052-400-900 0-100 psi	25-001-09 Kit of parts to connect valve box to 2.0mm o.d. / 0.9mm i.d. Teflon Tubing (e.g. Narishige CT-1)
052-460-900 0-60 psi	
052-430-900 0-30 psi	
052-410-900 0-10 psi	

Info:



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