

# Liquid switching times in milliseconds without moving sewer pipes



## Perfusion Pencil® Multi-Barrel Manifold Tip

- **Rapid solution change with micro-liter dead volume**  
No piezo or stepper motor translation. No clumsy rotating valves.
- **Single-cell and patch delivery**  
For mounting on any micromanipulator. Easy to connect and clean.
- **Vacuum cross-contamination prevention**  
Use one tube to vacuum the tip volume clear between solution changes.

## Perfusion Pencil® Ordering Information

Part No.	Product Description	Price
04-04-[x]	Multi-barrel Perfusion Pencil® - 4-into-1 with 100, 250 or 360 µm i.d. tip	\$ 225
04-08-[x]	Multi-barrel Perfusion Pencil® - 8-into-1 with tip	\$ 225
04-16-[x]	Multi-barrel Perfusion Pencil® - 16-into-1 with tip	\$ 350
04-[x]	Replacement removable tips	\$ 30
	[x] = specify -100, -250, or -360 µm i.d. removable tip or [ZDV] for new Zero Dead Volume Pencil (see ThermoClamp page)	

U.S./Canada prices shown. International prices add 15%. Email or visit web store for latest prices.

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## Pencil Tip Cross Section



4 to 16 micro-bore tubes into  
1 outflow

## 360 Micron Removable Tip

Flow rates (±0.05):

Gravity 1.15 ml/min  
2 psi 3.98 ml/min  
8 psi 10.66 ml/min

## 250 Micron Removable Tip



Flow rates (±0.05):

Gravity .35 ml/min  
2 psi 1.66 ml/min  
8 psi 5.16 ml/min

## 100 Micron Removable Tip



Flow rates:

Gravity zero flow  
2 psi 0.07 ml/min  
8 psi 0.25 ml/min

100, 250 and 360 micron internal diameter removable delivery tips available

All tubing  
now Teflon  
lined

**AutoMate Scientific®**  
READY FOR RESEARCH.™

