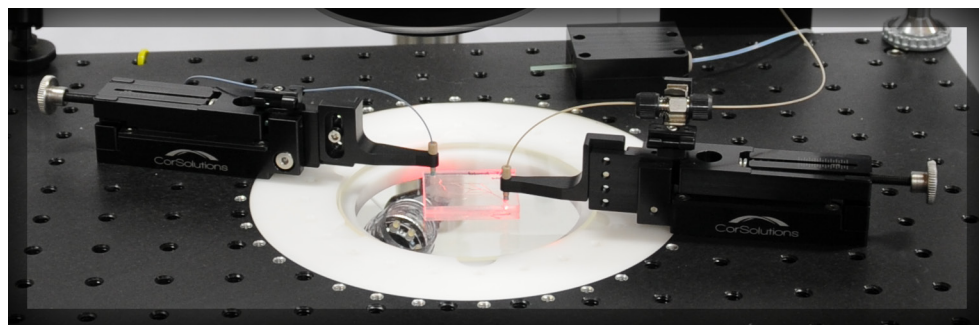




Fluidic Probes

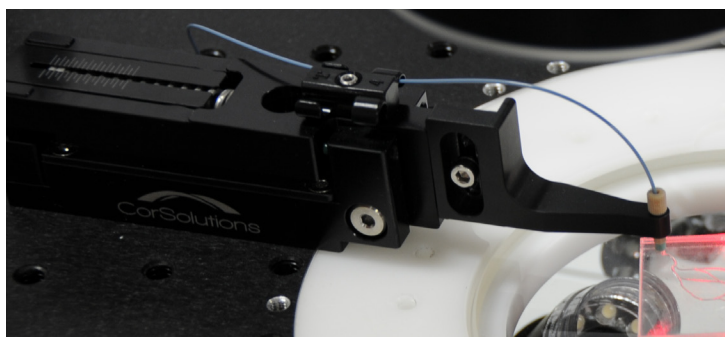
Fluidic probes allow for non-permanent, leak-tight, low-dead volume connections to be rapidly established on a microdevice made from any substrate material including PDMS, glass, silicon and plastics.



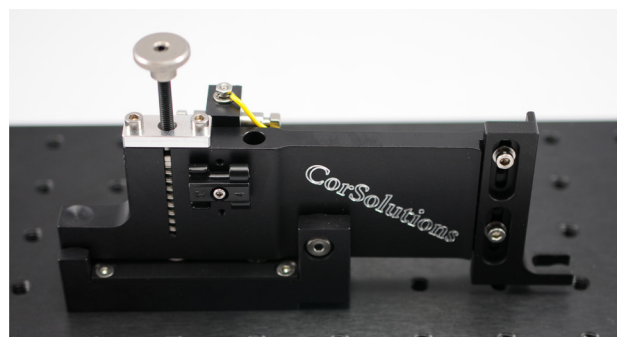
Struggling with Microfluidic Connections?

Making leak-tight, fluidic connections to microdevices can be very challenging. To date, the most common approach for making connections between fluidic sources and microdevices is by permanently adhering fittings to the devices, often through a heat curing process. This conventional process has many drawbacks including: the connections are permanent, it is a labor and time intensive process, the fittings are large, and it is only amenable to certain substrate materials. CorSolutions' connection technology offers non-permanent, rapidly-made connections with many advantages.

CorSolutions offers a low profile probe for standard applications, and a tall profile probe for use with devices that are greater than 1 in (2.5 cm) in thickness. Both of these probe types use exchangeable end attachments.



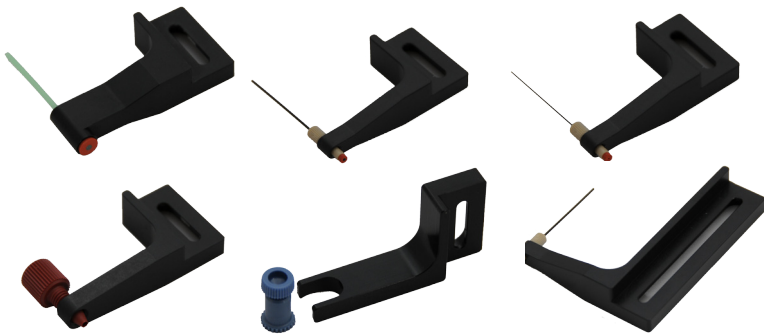
Low profile probes are used for standard applications.



Tall profile probes are for use with devices greater than 1 in (2.5 cm) in thickness.

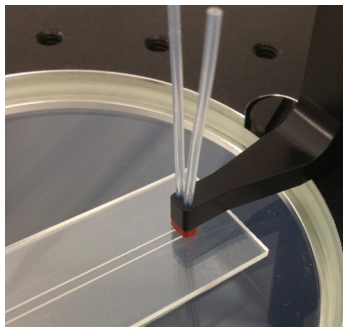
This technology allows for rapid, nonpermanent, low or high pressure, leak-tight connections to be made to microchips in a highly reproducible manner, at any location on the microchip surface. These probes can be used for the final performance assessment of the finished microdevice product, or for the manufacturing of the microchip as the probes can be used to deliver chemistries, treatments, or wash solvents.

A variety of end attachments are available including those for 1/16" tubing, 1/32" tubing, medical tubing, 360 micron fused silica capillary, and 10-32 threads. Attachments for needle piercing and electrical measurements are also available. Additionally attachments are offered for high density connections, and custom end attachments are also available. These end attachments can be easily exchanged on the probes.

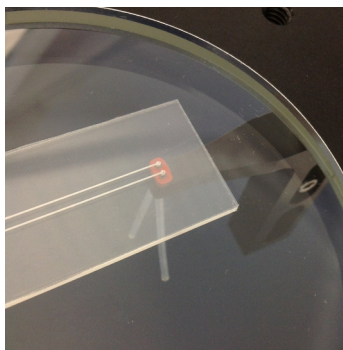


End attachments connect to the probe and are easily exchangeable. A variety of different attachments for various tubing and fittings are available.

High Density Connections



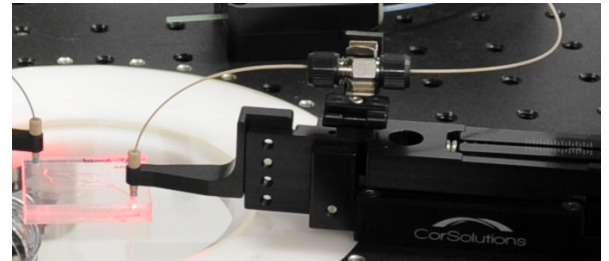
Top-view of high density connections. Here two connections, spaced 2 mm apart, are made with a single probe. The port size is 500 microns.



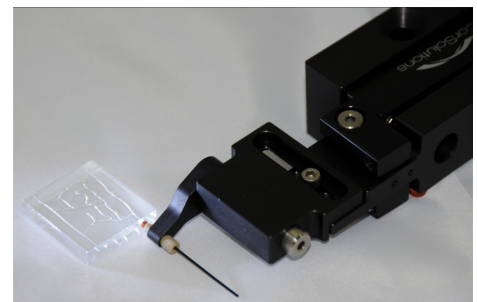
Underside-view of the same high density connections shown above.

Fluidic Probe Advantages

- Rapidly-made, user-friendly connections
- Allows for tighter density of microchip ports
- Compatible with a wide variety of fittings or adapters
- Compatible with any tubing material
- As the approach does not use adhesion, fittings are reusable
- Connections are compatible with all substrate materials including PDMS, glass, silicon and plastics
- Connections are non-permanent
- Connections remain leak-tight at greater than 500 psi
- Highly reproducible connections
- Can seal at any location on the surface or side of the device
- Top-side and back-side alignment
- Connections are lower dead-volume than conventional approaches
- Can be used for final performance assessment, and for chemistry treatment of devices during fabrication
- Compatible with CorSolutions' evacuation technology for bubble-free filling of microdevices



A voltage application clamp attaches to a fluid probe, allowing for an electrical potential to be applied to a fluid stream.



Probes can also be used to seal to ports on the edges of a chip.