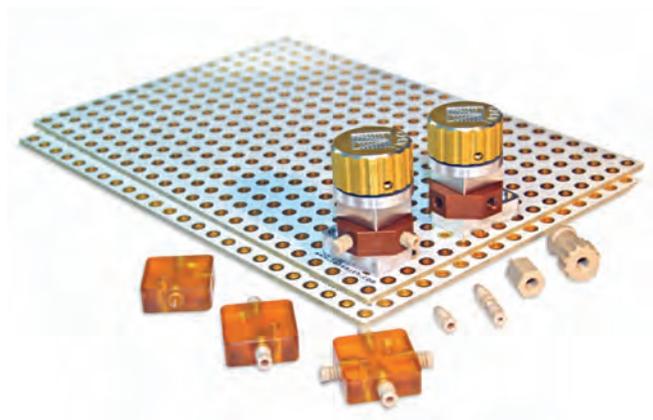


## CapTite™ Microfluidic Construction Kits



## KEY FEATURES

- Compact components for 360  $\mu\text{m}$ , 1/16, and 1/32 inch ID tubing
- Fast, breadboard-based design
- Leak-free high pressure setups

Routing fluids can be one of the most time-consuming tasks of microfluidics research. LabSmith's CapTite microminiature components take the pain out of constructing setups. Based on components developed by Sandia National Laboratories, these compact components for 360  $\mu\text{m}$  and 1/16 in tubing are designed for leak-free connectivity, even at high pressures.

CapTite components are extremely compact — a welcome relief from bulky, multi-piece fittings and components. Setups for tasks such as one-step separations can be built up in a fraction of the time and footprint of other fittings.

CapTite components let you create complex setups, including complete sample prep and analysis systems, that cannot be easily built using other methods. You can also add bonded-port connections to route fluids through and between chips securely: no more world-to-chip headaches!

All CapTite components are designed for low dead volumes and easy cleaning, enabling long life over multiple runs. Complete construction kits are available, with everything you need to build up experiment after experiment, for great value with little waste, at a fraction of the price of other components.

Fully inter-compatible CapTite products enable easy, breadboard-based, microfluidic system construction. Most components are available for either 360  $\mu\text{m}$  (0.014 in) capillary or 1/16 in (1.59 mm) tubing.

Complete Microfluidic Construction Kits include breadboard, interconnects, tubing, syringe adapter, and more. Choose from 360  $\mu\text{m}$  Single User, 360  $\mu\text{m}$  Capillary Interface, 360  $\mu\text{m}$  Chip Interface or 1/16 in Single User kits. These kits offer the best value for prototype and permanent construction of microfluidic setups.

## CapTite™ Microfluidic Construction Kits

ORDER #	QTY	MODEL	PRODUCT
<b>Single User Kit</b>			
PC2 72-0426		C360-KIT1	Microfluidic Construction Single User Kit for 360 $\mu\text{m}$ capillary tubing
<b>KIT COMPONENTS:</b>			
PC2 72-0431	75	C360-100	One-Piece Fitting
PC2 72-0433	10	C360-101	Plug
PC2 72-0438	5	C360-203	Tee Interconnect
PC2 72-0443	5	C360-204	Cross Interconnect
PC2 72-0449	10	C360-300	Luer-Lock Adapter
PC2 72-0448	25	C360-400	Bonded Port Connector
PC2 72-0445	2	C360-500	Selector Valve
PC2 72-0430	2	LS-600	Breadboard
<b>Interface Kit</b>			
PC2 72-0427		C360-KIT2	Microfluidic Construction Interface Kit for 360 $\mu\text{m}$ capillary tubing
<b>KIT COMPONENTS:</b>			
PC2 72-0431	50	C360-100	One-Piece Fitting
PC2 72-0433	5	C360-101	Plug
PC2 72-0438	5	C360-203	Tee Interconnect
PC2 72-0443	5	C360-204	Cross Interconnect
PC2 72-0449	10	C360-300	Luer-Lock Adapter
PC2 72-0445	2	C360-500	Selector Valve
PC2 72-0430	2	LS-600	Breadboard
<b>Chip Interface Kit for 360 <math>\mu\text{m}</math> Capillary Tubing</b>			
PC2 72-0428		C360-KIT3	Microfluidic Construction Chip Interface Kit for 360 $\mu\text{m}$ capillary tubing
<b>KIT COMPONENTS:</b>			
PC2 72-0431	60	C360-100	One-Piece Fitting
PC2 72-0433	5	C360-101	Plug
PC2 72-0449	5	C360-300	Luer-Lock Adapter
PC2 72-0448	50	C360-400	Bonded Port Connector
<b>Single User Kit for 1/16 Inch Tubing</b>			
PC2 72-0429		T116-KIT1	Microfluidic Construction Single User Kit for 1/16 in tubing
<b>KIT COMPONENTS:</b>			
PC2 72-0432	50	T116-100	One-Piece Fitting
PC2 72-0434	5	T116-101	Plug
PC2 72-0441	5	T116-203	Tee Interconnect
PC2 72-0444	5	T116-204	Cross Interconnect
PC2 72-0450	10	T116-300	Luer-Lock Adapter
PC2 72-0446	2	T116-500	Selector Valve
PC2 72-0430	2	LS-600	Breadboard

## CapTite™ Microfluidic Components

One-Piece Fitting



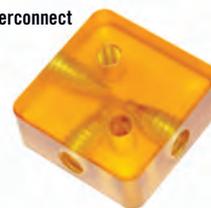
One-Piece Plug



Adapter



Interconnect



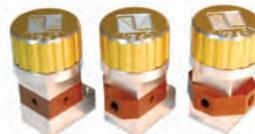
Bonded-port connectors



Luer-Lock™ Adapter



Multi-Port Selector Valve



Breadboard



Order #			Description
<b>360 µm Capillary</b>	<b>1/32" Tubing</b>	<b>1/16" Tubing</b>	
<b>One-Piece Fitting - Secure connections from tubing to other components. Material: PEEK™</b>			
PC2 72-0451	PC2 72-0452	PC2 72-0453	Set of 5
PC2 72-0454	PC2 72-0455	PC2 72-0456	Set of 25
<b>One-Piece Plug - Use in place of one-piece fittings to plug ports. Material: PEEK™</b>			
PC2 72-0457	PC2 72-0458	PC2 72-0459	Sets of 5
<b>Adapter - Two-piece fittings to adapt capillary or tubing sizes. Material: PEEK™</b>			
PC2 72-4691	PC2 72-4692	PC2 72-4693	Sets of 2
PC2 72-4694	PC2 72-4695	PC2 72-4696	Sets of 2
<b>Interconnect - Breadboard mountable connector joins up to four fluid lines with zero dead volume. Material: Ultem®</b>			
PC2 72-4995	PC2 72-4996	PC2 72-4997	Union (2 Unions & 4 one-piece fittings)
PC2 72-4998	PC2 72-4999	PC2 72-5000	Tee (2 Tees & 6 one-piece fittings)
PC2 72-5001	PC2 72-5002	PC2 72-5003	Cross (2 Crosses & 8 one-piece fittings)
PC2 72-5004	PC2 72-5005	PC2 72-5006	Elbow (2 Elbows & 4 one-piece fittings)
<b>Bonded-port connectors - Attach to chip to secure removable capillary. Material: Ultem®</b>			
PC2 72-5007	-	-	Set of 10 (10 one-piece fittings & epoxy)
PC2 72-5008	-	-	Set of 50 (connectors only)
<b>Luer-Lock™ Adapter - Includes 4 one-piece fittings. Material: PEEK™</b>			
PC2 72-4697	PC2 72-4698	PC2 72-4699	Sets of 4
<b>Multi-Port Selector Valve - 3-way, manual with "L" flow pattern. Includes 3 one-piece fittings</b>			
PC2 72-5009	PC2 72-5010	PC2 72-5011	
-	-	PC2 72-5012	
<b>Breadboard - 4 x 6 inches. Includes 2 breadboards, installation tools, and hardware for mounting valves and interconnects</b>			
PC2 72-5013	PC2 72-5013	PC2 72-5013	

## Barbed Tubing Connectors

### Tubing Connector Kits & Stopcocks

**H**arvard Apparatus offers a complete line of tubing connector kits to assist you in quickly and easily making connections between syringes and tubing and between tubing of similar and dissimilar sizes. Kit types include: barbed connector kits (small, medium and large), Kent® Systems Quick Disconnect Kits, Luer connector kits, a stopcock kit, a tubing clamp kit, fitting and tubing kit and a tubing manifold kit. Some kits are available in multiple material types where chemical compatibility may be a concern. Each kit is supplied in a convenient storage box and kit component are also sold separately. Our line of connectors grows continually. Visit our website for the latest offerings.



Luer and Barbed Connector Kits

### Kent® Systems Quick Disconnect Kits



These kits feature the Kent® Systems quick disconnect (KSQD) fittings. Fittings are available as either male or female KSQD. Fitting styles include integral male or female, swivel male (with or without lock), locking male fitting, male to female KSQD shut-off valve, male plug, male/female plug, male flush plug, female cap, male flush plug and the modular manifold. The modular manifold has three female and one male KSQD fittings. Modular manifolds can be interconnected with any fitting including other modular manifolds to quickly and easily interconnect a number of tubes of similar or dissimilar sizes. The unique barbs are sized to accommodate a range of tube sizes and tube types. Each kit is supplied in a convenient box. All kit components are also sold separately.

### Kent® Systems Quick Disconnect Kits Barb Size Chart

Barb No.	Barb OD	Barb Bore		Tube ID Range
		Lower	Upper	
004	0.102 in	0.06 in	0.063 in	0.078 in
007	0.129 in	0.076 in	0.078 in	0.109 in
013	0.164 in	0.096 in	0.094 in	0.141 in
025	0.208 in	0.122 in	0.125 in	0.188 in
035	0.264 in	0.155 in	0.156 in	0.234 in
055	0.335 in	0.197 in	0.188 in	0.297 in

Order #	Barb Size	Kit Size	Tube ID Range
PC2 72-1613	004, 007, 013	Small	1/16, 3/32 and 1/8 in
PC2 72-1614	025, 035, 055	Large	5/32, 3/16 and 1/4 in

## Barbed Tubing Connectors (continued)

### Barbed Connector Kits



These barbed connector kits come in three different sizes. Small and medium kits have 10 pieces of each component and large kits have 5 pieces of each component. Connectors join tubing of similar sizes while reducing adapters join tubing of different sizes. These kits are available in black nylon, polypropylene, and Kynar®, a chemically resistant autoclavable plastic. Each kit is supplied in a convenient box. All kit components are also sold separately.

### Barbed Tubing Connector Kits

ORDER #	PRODUCT	TUBE ID	MATERIAL
<b>PC2 72-1409</b>	<b>Small Black Nylon Barbed Connector Kit</b>		
<b>KIT COMPONENTS:</b>			
PC2 72-1475	Barbed Connector	1/16 to 1/16 in	Black Nylon
PC2 72-1476	Barbed Connector	3/32 to 3/32 in	Black Nylon
PC2 72-1477	Barbed Connector	1/8 to 1/8 in	Black Nylon
PC2 72-1478	Barbed Connector	1/16 to 3/32 in	Black Nylon
PC2 72-1479	Barbed Connector	1/16 to 1/8 in	Black Nylon
PC2 72-1480	Barbed Connector	3/32 to 1/8 in	Black Nylon
PC2 72-1481	L Barbed Connector	1/16 to 1/16 in	Black Nylon
PC2 72-1482	L Barbed Connector	3/32 to 3/32 in	Black Nylon
PC2 72-1483	L Barbed Connector	1/8 to 1/8 in	Black Nylon
PC2 72-1486	L Barbed Connector	3/32 to 1/8 in	Black Nylon
PC2 72-1487	T Barbed Connector	1/16 to 1/16 in	Black Nylon
PC2 72-1488	T Barbed Connector	3/32 to 3/32 in	Black Nylon
PC2 72-1489	T Barbed Connector	1/8 to 1/8 in	Black Nylon
PC2 72-1491	T Barbed Connector	1/16 to 1/8 in	Black Nylon
PC2 72-1492	T Barbed Connector	3/32 to 1/8 in	Black Nylon
PC2 72-1493	Y Barbed Connector	1/16 to 1/16 in	Black Nylon
PC2 72-1494	Y Barbed Connector	3/32 to 3/32 in	Black Nylon
PC2 72-1495	Y Barbed Connector	1/8 to 1/8 in	Black Nylon
PC2 72-1498	Barbed PLUG Connector	1/8 in	Black Nylon

### PC2 72-1410 Small Polypropylene Barbed Connector Kit

ORDER #	PRODUCT	TUBE ID	MATERIAL
<b>KIT COMPONENTS:</b>			
PC2 72-1499	Barbed Connector	1/16 to 1/16 in	Polypropylene
PC2 72-1500	Barbed Connector	3/32 to 3/32 in	Polypropylene
PC2 72-1501	Barbed Connector	1/8 to 1/8 in	Polypropylene
PC2 72-1502	Barbed Connector	1/16 to 3/32 in	Polypropylene
PC2 72-1503	Barbed Connector	1/16 to 1/8 in	Polypropylene
PC2 72-1504	Barbed Connector	3/32 to 1/8 in	Polypropylene
PC2 72-1505	L Barbed Connector	1/16 to 1/16 in	Polypropylene
PC2 72-1506	L Barbed Connector	3/32 to 3/32 in	Polypropylene
PC2 72-1507	L Barbed Connector	1/8 to 1/8 in	Polypropylene
PC2 72-1508	L Barbed Connector	1/16 to 3/32 in	Polypropylene
PC2 72-1509	L Barbed Connector	1/16 to 1/8 in	Polypropylene
PC2 72-1510	L Barbed Connector	3/32 to 1/8 in	Polypropylene
PC2 72-1511	T Barbed Connector	1/16 to 1/16 in	Polypropylene
PC2 72-1512	T Barbed Connector	3/32 to 3/32 in	Polypropylene
PC2 72-1513	T Barbed Connector	1/8 to 1/8 in	Polypropylene
PC2 72-1514	T Barbed Connector	1/16 to 3/32 in	Polypropylene
PC2 72-1515	T Barbed Connector	1/16 to 1/8 in	Polypropylene
PC2 72-1516	T Barbed Connector	3/32 to 1/8 in	Polypropylene
PC2 72-1517	Y Barbed Connector	1/16 to 1/16 in	Polypropylene
PC2 72-1518	Y Barbed Connector	3/32 to 3/32 in	Polypropylene
PC2 72-1519	Y Barbed Connector	1/8 to 1/8 in	Polypropylene
PC2 72-1520	Barbed PLUG Connector	1/16 in	Polypropylene
PC2 72-1521	Barbed PLUG Connector	3/32 in	Polypropylene
PC2 72-1522	Barbed PLUG Connector	1/8 in	Polypropylene

## Barbed Tubing Connectors (continued)

### Barbed Tubing Connector Kits (Continued)

ORDER #	PRODUCT	TUBE ID	MATERIAL
<b>PC2 72-1411</b>	<b>Small Kynar® Barbed Connector Kit</b>		
<b>KIT COMPONENTS:</b>			
<b>PC2 72-1523</b>	Barbed Connector	1/16 to 1/16 in	Kynar®
<b>PC2 72-1524</b>	Barbed Connector	3/32 to 3/32 in	Kynar®
<b>PC2 72-1525</b>	Barbed Connector	1/8 to 1/8 in	Kynar®
<b>PC2 72-1526</b>	Barbed Connector	1/16 to 3/32 in	Kynar®
<b>PC2 72-1527</b>	Barbed Connector	1/16 to 1/8 in	Kynar®
<b>PC2 72-1528</b>	Barbed Connector	3/32 to 1/8 in	Kynar®
<b>PC2 72-1530</b>	L Barbed Connector	3/32 to 3/32 in	Kynar®
<b>PC2 72-1531</b>	L Barbed Connector	1/8 to 1/8 in	Kynar®
<b>PC2 72-1533</b>	L Barbed Connector	1/16 to 1/8 in	Kynar®
<b>PC2 72-1535</b>	T Barbed Connector	1/16 to 1/16 in	Kynar®
<b>PC2 72-1536</b>	T Barbed Connector	3/32 to 3/32 in	Kynar®
<b>PC2 72-1537</b>	T Barbed Connector	1/8 to 1/8 in	Kynar®
<b>PC2 72-1539</b>	T Barbed Connector	1/16 to 1/8 in	Kynar®
<b>PC2 72-1540</b>	T Barbed Connector	3/32 to 1/8 in	Kynar®
<b>PC2 72-1541</b>	Y Barbed Connector	1/16 to 1/16 in	Kynar®
<b>PC2 72-1542</b>	Y Barbed Connector	3/32 to 3/32 in	Kynar®
<b>PC2 72-1543</b>	Y Barbed Connector	1/8 to 1/8 in	Kynar®

### PC2 72-1412 Medium Black Nylon Barbed Connector Kit

<b>PC2 72-1412</b>	Complete Kit	1/4, 5/16 & 3/8 in	Black Nylon
<b>KIT COMPONENTS:</b>			
<b>PC2 72-1547</b>	Barbed Connector	1/4 to 1/4 in	Black Nylon
<b>PC2 72-1548</b>	Barbed Connector	5/16 to 5/16 in	Black Nylon
<b>PC2 72-1549</b>	Barbed Connector	3/8 to 3/8 in	Black Nylon
<b>PC2 72-1550</b>	Barbed Connector	1/4 to 5/16 in	Black Nylon
<b>PC2 72-1551</b>	Barbed Connector	1/4 to 3/8 in	Black Nylon
<b>PC2 72-1552</b>	Barbed Connector	5/16 to 3/8 in	Black Nylon
<b>PC2 72-1553</b>	L Barbed Connector	1/4 to 1/4 in	Black Nylon
<b>PC2 72-1554</b>	L Barbed Connector	5/16 to 5/16 in	Black Nylon
<b>PC2 72-1555</b>	L Barbed Connector	3/8 to 3/8 in	Black Nylon
<b>PC2 72-1556</b>	T Barbed Connector	1/4 to 1/4 in	Black Nylon
<b>PC2 72-1557</b>	T Barbed Connector	5/16 to 5/16 in	Black Nylon
<b>PC2 72-1558</b>	Y Barbed Connector	3/8 to 3/8 in	Black Nylon
<b>PC2 72-1559</b>	Y Barbed Connector	1/4 to 1/4 in	Black Nylon
<b>PC2 72-1560</b>	Y Barbed Connector	3/8 to 3/8 in	Black Nylon

### Barbed Tubing Connector Kits (Continued)

ORDER #	PRODUCT	TUBE ID	MATERIAL
<b>PC2 72-1413</b>	<b>Medium Polypropylene Barbed Connector Kit</b>		
<b>KIT COMPONENTS:</b>			
<b>PC2 72-1561</b>	Barbed Connector	1/4 to 1/4 in	Polypropylene
<b>PC2 72-1562</b>	Barbed Connector	5/16 to 5/16 in	Polypropylene
<b>PC2 72-1563</b>	Barbed Connector	3/8 to 3/8 in	Polypropylene
<b>PC2 72-1564</b>	Barbed Connector	1/4 to 5/16 in	Polypropylene
<b>PC2 72-1565</b>	Barbed Connector	1/4 to 3/8 in	Polypropylene
<b>PC2 72-1566</b>	Barbed Connector	5/16 to 3/8 in	Polypropylene
<b>PC2 72-1567</b>	L Barbed Connector	1/4 to 1/4 in	Polypropylene
<b>PC2 72-1568</b>	L Barbed Connector	5/16 to 5/16 in	Polypropylene
<b>PC2 72-1569</b>	L Barbed Connector	3/8 to 3/8 in	Polypropylene
<b>PC2 72-1570</b>	T Barbed Connector	1/4 to 1/4 in	Polypropylene
<b>PC2 72-1571</b>	T Barbed Connector	5/16 to 5/16 in	Polypropylene
<b>PC2 72-1572</b>	T Barbed Connector	3/8 to 3/8 in	Polypropylene
<b>PC2 72-1573</b>	Y Barbed Connector	1/4 to 1/4 in	Polypropylene
<b>PC2 72-1574</b>	Y Barbed Connector	3/8 to 3/8 in	Polypropylene

### PC2 72-1414 Medium Kynar® Barbed Connector Kit

<b>KIT COMPONENTS:</b>			
<b>PC2 72-1575</b>	Barbed Connector	1/4 to 1/4 in	Kynar®
<b>PC2 72-1576</b>	Barbed Connector	5/16 to 5/16 in	Kynar®
<b>PC2 72-1577</b>	Barbed Connector	3/8 to 3/8 in	Kynar®
<b>PC2 72-1578</b>	Barbed Connector	1/4 to 5/16 in	Kynar®
<b>PC2 72-1579</b>	Barbed Connector	1/4 to 3/8 in	Kynar®
<b>PC2 72-1580</b>	Barbed Connector	5/16 to 3/8 in	Kynar®
<b>PC2 72-1581</b>	L Barbed Connector	1/4 to 1/4 in	Kynar®
<b>PC2 72-1582</b>	L Barbed Connector	5/16 to 5/16 in	Kynar®
<b>PC2 72-1583</b>	L Barbed Connector	3/8 to 3/8 in	Kynar®
<b>PC2 72-1584</b>	T Barbed Connector	1/4 to 1/4 in	Kynar®
<b>PC2 72-1585</b>	T Barbed Connector	5/16 to 5/16 in	Kynar®
<b>PC2 72-1586</b>	T Barbed Connector	3/8 to 3/8 in	Kynar®
<b>PC2 72-1587</b>	Y Barbed Connector	1/4 to 1/4 in	Kynar®
<b>PC2 72-1588</b>	Y Barbed Connector	3/8 to 3/8 in	Kynar®

## Barbed Tubing Connectors (continued)



### Barbed Tubing Connector Kits (Continued)

ORDER #	PRODUCT	TUBE ID	MATERIAL
<b>PC2 72-1415</b>	<b>Large Black Nylon Barbed Connector Kit</b>		
<b>KIT COMPONENTS:</b>			
PC2 72-1589	Barbed Connector	1/2 to 1/2 in	Black Nylon
PC2 72-1590	Barbed Connector	5/8 to 5/8 in	Black Nylon
PC2 72-1591	L Barbed Connector	1/2 to 1/2 in	Black Nylon
PC2 72-1592	L Barbed Connector	5/8 to 5/8 in	Black Nylon
PC2 72-1593	T Barbed Connector	1/2 to 1/2 in	Black Nylon
PC2 72-1594	T Barbed Connector	5/8 to 5/8 in	Black Nylon
PC2 72-1595	Y Barbed Connector	1/2 to 5/8 in	Black Nylon
PC2 72-1596	Y Barbed Connector	1/2 to 1/2 in	Black Nylon

### PC2 72-1416 Large Polypropylene Barbed Connector Kit

<b>KIT COMPONENTS:</b>			
PC2 72-1597	Barbed Connector	1/2 to 1/2 in	Polypropylene
PC2 72-1598	Barbed Connector	5/8 to 5/8 in	Polypropylene
PC2 72-1599	L Barbed Connector	1/2 to 1/2 in	Polypropylene
PC2 72-1600	L Barbed Connector	5/8 to 5/8 in	Polypropylene
PC2 72-1601	T Barbed Connector	1/2 to 1/2 in	Polypropylene
PC2 72-1602	T Barbed Connector	5/8 to 5/8 in	Polypropylene
PC2 72-1603	Y Barbed Connector	1/2 to 5/8 in	Polypropylene
PC2 72-1604	Y Barbed Connector	1/2 to 1/2 in	Polypropylene

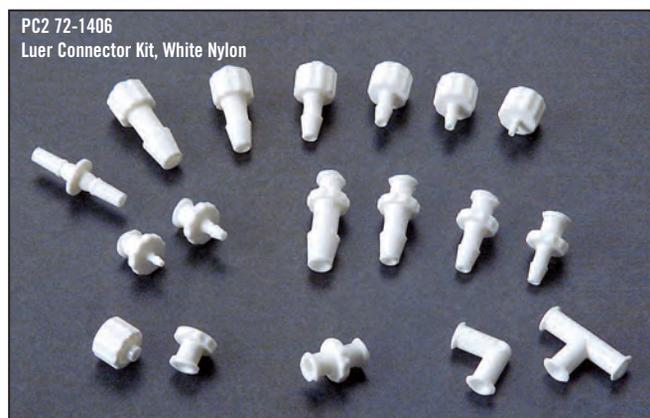


### PC2 72-1417 Large Kynar® Barbed Connector Kit

<b>KIT COMPONENTS:</b>			
PC2 72-1605	Barbed Connector	1/2 to 1/2 in	Kynar®
PC2 72-1606	Barbed Connector	5/8 to 5/8 in	Kynar®
PC2 72-1607	L Barbed Connector	1/2 to 1/2 in	Kynar®
PC2 72-1608	L Barbed Connector	5/8 to 5/8 in	Kynar®
PC2 72-1609	T Barbed Connector	1/2 to 1/2 in	Kynar®
PC2 72-1610	T Barbed Connector	5/8 to 5/8 in	Kynar®
PC2 72-1611	Y Barbed Connector	1/2 to 5/8 in	Kynar®
PC2 72-1612	Y Barbed Connector	1/2 to 1/2 in	Kynar®

## Barbed Tubing Connectors (continued)

### Luer to Tube Kits



The Luer Connector Kits contain a selection of Luer fittings to interconnect Luer connectors (e.g. syringes, stopcocks and needles) with one another and with tubing. These kits are available in white nylon, polypropylene and Kynar®, a chemically resistant autoclavable plastic. Each kit is supplied in a convenient box. All kit components are also sold separately.

The Male Luer Taper kits contain a selection of Male Luer Taper fittings to barbed connectors as well as Male Luer Taper to Male Luer Taper fittings. These kits also contain color coded rotating Luer lock rings that securely snap onto the Male Luer Taper side of each connector. These kits are available in white nylon, polypropylene and Kynar®, a chemically resistant autoclavable plastic. Each kit is supplied in a convenient box. All kit components are also sold separately.

Luer to Tube Kits			
ORDER #	PRODUCT	TUBE ID	MATERIAL
<b>PC2 72-1406</b>	<b>White Nylon Luer Connector Kit</b>		
<b>KIT COMPONENTS:</b>			
<b>PC2 72-1418</b>	Barbed Connector	FLL to 1/16 in	White Nylon
<b>PC2 72-1419</b>	Barbed Connector	FLL to 3/32 in	White Nylon
<b>PC2 72-1420</b>	Barbed Connector	FLL to 1/8 in	White Nylon
<b>PC2 72-1421</b>	Barbed Connector	FLL to 5/32 in	White Nylon
<b>PC2 72-1422</b>	Barbed Connector	FLL to 3/16 in	White Nylon
<b>PC2 72-1423</b>	Barbed Connector	FLL to 1/4 in	White Nylon
<b>PC2 72-1424</b>	Barbed Connector	FLL to 1/16 in	White Nylon
<b>PC2 72-1425</b>	Barbed Connector	FLL to 3/32 in	White Nylon
<b>PC2 72-1426</b>	Barbed Connector	FLL to 1/8 in	White Nylon
<b>PC2 72-1427</b>	Barbed Connector	FLL to 5/32 in	White Nylon
<b>PC2 72-1428</b>	Barbed Connector	FLL to 3/16 in	White Nylon
<b>PC2 72-1429</b>	Barbed Connector	FLL to 1/4 in	White Nylon
<b>PC2 72-1430</b>	Cap Connector	MLL	White Nylon
<b>PC2 72-1431</b>	Cap Connector	FLL	White Nylon
<b>PC2 72-2735</b>	Coupler with Threaded FLL Connection	FLL to MLL	White Nylon
<b>PC2 72-1433</b>	Connector	MLT to MLT	White Nylon
<b>PC2 72-1434</b>	Connector	FLL to FLL	White Nylon
<b>PC2 72-1435</b>	Elbow Connector	FLL to FLL	White Nylon
<b>PC2 72-1436</b>	T Connector	3-Way FLL	White Nylon

### Luer to Tube Kits (Continued)

ORDER #	PRODUCT	TUBE ID	MATERIAL
<b>PC2 72-1407</b>	<b>Polypropylene Luer Connector Kit</b>		
<b>KIT COMPONENTS:</b>			
<b>PC2 72-1437</b>	Barbed Connector	FLL to 1/16	Polypropylene
<b>PC2 72-1438</b>	Barbed Connector	FLL to 3/32	Polypropylene
<b>PC2 72-1439</b>	Barbed Connector	FLL to 1/8	Polypropylene
<b>PC2 72-1440</b>	Barbed Connector	FLL to 5/32	Polypropylene
<b>PC2 72-1441</b>	Barbed Connector	FLL to 3/16	Polypropylene
<b>PC2 72-1442</b>	Barbed Connector	FLL to 1/4	Polypropylene
<b>PC2 72-1443</b>	Barbed Connector	MLL to 1/16	Polypropylene
<b>PC2 72-1444</b>	Barbed Connector	MLL to 3/32	Polypropylene
<b>PC2 72-1445</b>	Barbed Connector	MLL to 1/8	Polypropylene
<b>PC2 72-1446</b>	Barbed Connector	MLL to 5/32	Polypropylene
<b>PC2 72-1447</b>	Barbed Connector	MLL to 3/16	Polypropylene
<b>PC2 72-1448</b>	Barbed Connector	MLL to 1/4	Polypropylene
<b>PC2 72-1449</b>	Cap Connector	MLL	Polypropylene
<b>PC2 72-1450</b>	Cap Connector	FLL	Polypropylene
<b>PC2 72-2736</b>	Coupler w/ Threaded FLL Connection	FLL to MLL	Polypropylene
<b>PC2 72-1452</b>	Connector	MLT to MLT	Polypropylene
<b>PC2 72-1453</b>	Connector	FLL to FLL	Polypropylene
<b>PC2 72-1454</b>	Elbow Connector	FLL to FLL	Polypropylene
<b>PC2 72-1455</b>	T Connector	3-Way FLL	Polypropylene

### PC2 72-1408 Kynar® Luer Connector Kit

KIT COMPONENTS:			
<b>PC2 72-1456</b>	Barbed Connector	FLL to 1/16	Kynar®
<b>PC2 72-1457</b>	Barbed Connector	FLL to 3/32	Kynar®
<b>PC2 72-1458</b>	Barbed Connector	FLL to 1/8	Kynar®
<b>PC2 72-1462</b>	Barbed Connector	MLL to 1/16	Kynar®
<b>PC2 72-1464</b>	Barbed Connector	MLL to 1/8	Kynar®
<b>PC2 72-1465</b>	Barbed Connector	MLL to 5/32	Kynar®
<b>PC2 72-1466</b>	Barbed Connector	MLL to 3/16	Kynar®
<b>PC2 72-1467</b>	Barbed Connector	MLL to 1/4	Kynar®
<b>PC2 72-1468</b>	Cap Connector	MLL	Kynar®
<b>PC2 72-1469</b>	Cap Connector	FLL	Kynar®
<b>PC2 72-2737</b>	Coupler w/Threaded FLL Connection	FLL to MLL	Kynar®
<b>PC2 72-1471</b>	Connector	MLT to MLT	Kynar®
<b>PC2 72-1472</b>	Connector	FLL to FLL	Kynar®

## Barbed Tubing Connectors (continued)

### Luer to Tube Kits (Continued)

ORDER #	PRODUCT	TUBE ID	MATERIAL
<b>PC2 72-2738</b>	<b>White Nylon Male Luer Taper Kit</b>		
<b>KIT COMPONENTS:</b>			
PC2 72-2731	Snap Luer Lock Ring	Male	Red Nylon
PC2 72-2732	Snap Luer Lock Ring	Male	Green Nylon
PC2 72-2733	Snap Luer Lock Ring	Male	Polypropylene
PC2 72-2695	Barbed Connector	MLT to 1/16 in	White Nylon
PC2 72-2696	Barbed Connector	MLT to 3/32 in	White Nylon
PC2 72-2741	Luer Coupler	Male	White Nylon
PC2 72-2697	Barbed Connector	MLT to 1/8 in	White Nylon
PC2 72-2698	Barbed Connector	MLT to 5/32 in	White Nylon
PC2 72-2699	Barbed Connector	MLT to 3/16 in	White Nylon
PC2 72-2700	Barbed Connector	MLT to 1/4 in	White Nylon
PC2 72-2701	Barbed Connector	MLT to 1/16 in	White Nylon
PC2 72-2747	T-Connector	FLL/MLT/MLT	White Nylon
PC2 72-2702	Barbed Connector	MLT to 3/32 in	White Nylon
PC2 72-2703	Barbed Connector	MLT to 1/8 in	White Nylon
PC2 72-2704	Barbed Connector	MLT to 5/32 in	White Nylon
PC2 72-2705	Barbed Connector	MLT to 1/8 in	White Nylon
PC2 72-2706	Barbed Connector	MLT to 1/4 in	White Nylon
PC2 72-2744	T-Connector	FLL/MLT/FLL	White Nylon

### PC2 72-2739 Polypropylene Male Luer Taper Kit

ORDER #	PRODUCT	TUBE ID	MATERIAL
<b>KIT COMPONENTS:</b>			
PC2 72-2731	Snap Luer Lock Ring	Male	Red Nylon
PC2 72-2732	Snap Luer Lock Ring	Male	Green Nylon
PC2 72-2733	Snap Luer Lock Ring	Male	Polypropylene
PC2 72-2707	Barbed Connector	MLT to 1/16 in	Polypropylene
PC2 72-2708	Barbed Connector	MLT to 3/32 in	Polypropylene
PC2 72-2742	Luer Coupler	Male	Polypropylene
PC2 72-2709	Barbed Connector	MLT to 1/8 in	Polypropylene
PC2 72-2710	Barbed Connector	MLT to 5/32 in	Polypropylene
PC2 72-2711	Barbed Connector	MLT to 3/16 in	Polypropylene
PC2 72-2712	Barbed Connector	MLT to 1/4 in	Polypropylene
PC2 72-2713	Barbed Connector	MLT to 1/16 in	Polypropylene
PC2 72-2748	T-Connector	FLL/MLT/MLT	Polypropylene
PC2 72-2714	Barbed Connector	MLT to 3/32 in	Polypropylene
PC2 72-2715	Barbed Connector	MLT to 1/8 in	Polypropylene
PC2 72-2716	Barbed Connector	MLT to 5/32 in	Polypropylene
PC2 72-2717	Barbed Connector	MLT to 3/16 in	Polypropylene
PC2 72-2718	Barbed Connector	MLT to 1/4 in	Polypropylene
PC2 72-2745	T-Connector	FLL/MLT/FLL	Polypropylene

PC2 72-1406  
Luer Connector Kit, White Nylon



### Luer to Tube Kits (Continued)

ORDER #	PRODUCT	TUBE ID	MATERIAL
<b>PC2 72-2740</b>	<b>Polycarbonate Male Luer Taper Kit</b>		
<b>KIT COMPONENTS:</b>			
PC2 72-2731	Snap Luer Lock Ring	Male	Red Nylon
PC2 72-2732	Snap Luer Lock Ring	Male	Green Nylon
PC2 72-2734	Snap Luer Lock Ring	Male	Polycarbonate
PC2 72-2719	Barbed Connector	MLT to 1/16 in	Polycarbonate
PC2 72-2720	Barbed Connector	MLT to 3/32 in	Polycarbonate
PC2 72-2743	Luer Coupler	Male	Polycarbonate
PC2 72-2721	Barbed Connector	MLT to 1/8 in	Polycarbonate
PC2 72-2722	Barbed Connector	MLT to 5/32 in	Polycarbonate
PC2 72-2723	Barbed Connector	MLT to 3/16 in	Polycarbonate
PC2 72-2724	Barbed Connector	MLT to 1/4 in	Polycarbonate
PC2 72-2725	Barbed Connector	MLT to 1/16 in	Polycarbonate
PC2 72-2749	T-Connector	FLL/MLT/MLT	Polycarbonate
PC2 72-2726	Barbed Connector	MLT to 3/32 in	Polycarbonate
PC2 72-2727	Barbed Connector	MLT to 1/8 in	Polycarbonate
PC2 72-2728	Barbed Connector	MLT to 5/32 in	Polycarbonate
PC2 72-2729	Barbed Connector	MLT to 3/16 in	Polycarbonate
PC2 72-2730	Barbed Connector	MLT to 1/4 in	Polycarbonate
PC2 72-2746	T-Connector	FLL/MLT/FLL	Polycarbonate

## Kits and Valves

### Flow Control Pinch Valves



The Flow Control Pinch Valves work with tubing from 5/32 inch OD to 3/8 inch OD. The micrometer dial offers easy resetting of clamping distance. These valves are made of Delrin® and Acetal.

Order #	Clamp Size	Tubing Clamp Range
PC2 72-2694	Small	5/32 to 1/4 in OD Tubing
PC2 72-8140	Medium	5/32 to 3/8 in OD Tubing

### Tubing Clamp Kits



The clamps in the Tubing Clamp Kit feature a simple-to-use ratcheting design which provides positive and secure clamping of tubing to barbed and non-barbed connectors. Thirteen different clamps provide clamping for tubing sizes from 1/16 inch OD to 1.5 inches OD. This kit is supplied in a convenient box containing 5 of each clamp size.

Order #	Product
PC2 72-1668	Tubing Clamp Kit

## Kits and Valves (continued)

### Tubing Manifold Kit



The Tubing Manifold Kit contains several varieties of tubing manifolds for tube to tube connections. Many are compatible with MLT (male Luer taper) fittings. This kit is supplied in a convenient box. All kit components are also sold separately.

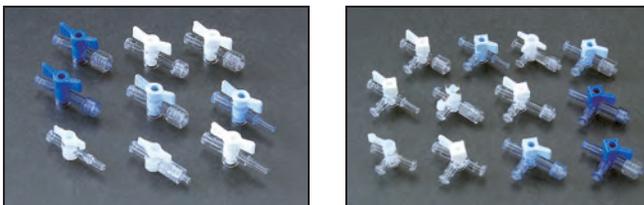
#### Tubing Manifold Kit

ORDER #	PRODUCT
PC2 72-7481	Tubing Manifold Kit

#### KIT COMPONENTS:

PC2 72-2665	Multiport Adapter 3 to 1 Modified Y Connector, 0.214" OD ports
PC2 72-2666	3-Way Y Connector FLL/FLL/FLL/MLL (ROTATING)
PC2 72-2672	Multiport Adapter 3 to 1 Modified Y Connector, 0.161" ID ports
PC2 72-2673	Y Connector FLL/FLL/MLL (Rotating)
PC2 72-2668	Multiport Adapter 3 to 1 Parallel Tube Connector, 0.154" ID x 0.215" OD ports
PC2 72-2675	Multiport Adapter 3 to 1 Parallel Tube Connector, 0.267" ID x 8.6mm OD ports
PC2 72-2667	Multiport Adapter 3 to 1 Parallel Tube Connector, 0.142" to 0.158" ID ports
PC2 72-7479	Multiport Adapter 2 to 1 Parallel Tube Connector, 0.142" to 0.158" ID ports
PC2 72-7480	Multiport Adapter 2 to 1 Parallel Tube Connector, 0.161" ID ports
PC2 72-2677	Multiport Adapter 6 to 1 Parallel Tube Connector, 0.161" ID ports

### Luer Stopcock Kit



The Luer Stopcock Kit includes a collection of 1-, 3- and 4-way stopcocks. Fittings include MLL (male Luer lock), FLL (female Luer lock) and Male Luer Slip. Some stopcocks have high pressure capabilities. This kit is supplied in a convenient box. All kit components are also sold separately.

#### Luer Stopcock Kit

ORDER #	PRODUCT
PC2 72-1664	Luer Stopcock Kit

#### KIT COMPONENTS:

PC2 72-8327	One Way Stopcock (200 psi), FLL/Male Luer Slip
PC2 72-2647	One Way Stopcock (500 psi), FLL/MLL (Non-Rotating)
PC2 72-2648	3-Way Stopcock (1050 psi), FLL/FLL/MLL (Rotating)
PC2 72-2649	3-Way Stopcock (200 psi), FLL/FLL/MLL (Non-Rotating)
PC2 72-2650	One Way Stopcock (1050 psi), FLL/MLL (Non-Rotating)
PC2 72-8326	One Way Stopcock (200 psi), FLL/MLL (Rotating)
PC2 72-8328	4-Way Stopcock, FLL/FLL/Male Luer Slip
PC2 72-2693	3-Way Stopcock (200 psi), FLL/FLL/Male Luer Slip
PC2 72-2654	4-Way Stopcock, FLL/FLL/MLL (Rotating)
PC2 72-2655	One Way Stopcock (1050 psi), FLL/MLL (Rotating)
PC2 72-2656	3-Way Stopcock, FLL/FLL/MLL (Rotating)
PC2 72-2657	One Way Stopcock (500 psi), FLL/MLL (Rotating)
PC2 72-2658	3-Way Stopcock (1050 psi), FLL/FLL/MLL (Non-Rotating)
PC2 72-2659	3-Way Stopcock, FLL/FLL/FLL
PC2 72-2660	3-Way Stopcock (500 psi), FLL/FLL/MLL (Non-Rotating)
PC2 72-2661	4-Way Stopcock, FLL/FLL/MLL (Rotating)
PC2 72-2662	3-Way Stopcock (200 psi), FLL/FLL/MLL (Rotating)
PC2 72-2663	One Way Stopcock, FLL/MLL (Rotating)
PC2 72-9473	3-Way Stopcock, FLL/FLL/MLL (Non-Rotating)

## Kits and Valves (continued)

### Sterile Stopcocks



#### KEY FEATURES

- Low torque, smooth turning construction
- Unique threaded female Luer connection
- 1-, 3-, and 4-way stopcocks
- Available with extension tube sets

Stopcocks provide safe and simple interconnection of your tubing and syringe lines no matter what the application. Whether it is complex control of fluid infusions from a syringe or interconnection of pressure transducers and fluid injections lines in an isolated heart preparation, we have a wide selection of Luer stopcocks to suit virtually every need. These stopcocks are available in 1-, 3-, and 4-way valve styles and come with or without extension tube sets. Each product found in the list below is sterile, packaged individually and supplied in a box of 50.

Order #	Product
PC2 72-2626	1-Way MLL to FLL Stopcock, with Port Covers
PC2 72-2627	1-Way FLL to MLT Stopcock, with Port Covers
PC2 72-2628	Multipath* Stopcock, 2 x FLT, Injection Site, 20 inch Ext. Tube
PC2 72-2630	3-Way Stopcock, FLL to MLT, No Port Covers
PC2 72-2631	3-Way Stopcock, FLL to MLT with Port Covers
PC2 72-2632	3-Way Stopcock FLL to 20 inch Ext. Tube Set
PC2 72-2633	3-Way Stopcock FLL to 33 inch Ext. Tube Set
PC2 72-2634	Double 3-Way Stopcock, FLL to MLL with Port Covers
PC2 72-2635	3-Way, FLL to MLL with Port Covers
PC2 72-2637	4-Way, FLL to 20 inch Ext. Tube Set
PC2 72-2638	4-Way, FLL to MLL with Port Covers

**Abbreviations:** MLT (Male Luer Taper); FLT (Female Luer Taper); FLL (Female Luer Lock); MLL (Male Luer Lock)

Note: All 3-Way and 4-Way Stopcocks feature FLL side ports. All extension tubes terminate in a MLT fitting with port cover.

\*Special 3-Way valve, rotating valve selects side port for infusion.

### Spring-Clip Stopcocks



#### KEY FEATURES

- Made from chrome-plated brass
- Unique spring-clip holds key in position
- Easy interface with other Luer fittings
- Autoclavable

#### Spring-Clip Stopcocks

ORDER #	B-D SPRING CLIP EQUIV.	TYPE	DESCRIPTION
PC2 59-8121	3138	3-Way	FLL to MLT, Right Side - FLL
PC2 59-8122	3161	3-Way	FLL to MLT, Right Side - Hose Barb <sup>3</sup>
PC2 59-8123	3150	3-Way	FLL to MLL, Right Side - Hose Barb <sup>3</sup>
PC2 59-8124	3156	3-Way	FLL to MLL, Right Side - FLL
PC2 59-8125 <sup>1</sup>	3192	3-Way	FLL to MLT, Left Side - FLL
PC2 59-8126 <sup>2</sup>	3135	1-Way	FLL to MLT
PC2 59-8127 <sup>1</sup>	3152	1-Way	FLL to MLL

<sup>1</sup>Product not pictured

<sup>2</sup>FLL (Female Luer Lock); MLT (Male Luer Taper)

<sup>3</sup>Barb size from 3.2 to 9.5 mm

## Micro Tubing and Connector Kit, Syringe Needles

### Parts and Accessories

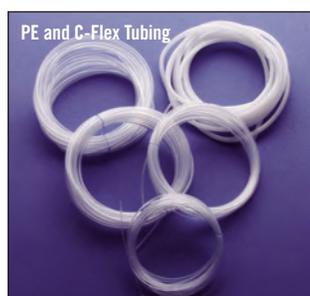
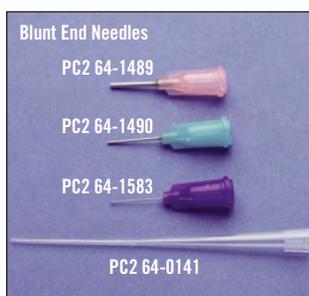
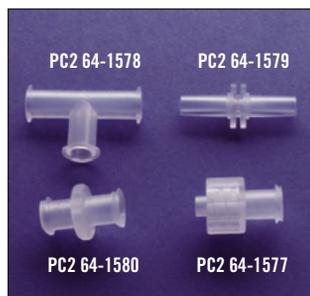
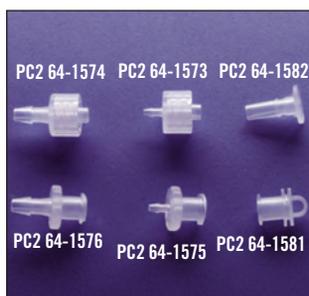


The kit is comprised of barbed and Luer fittings, blunt end needles, and an assortment of PE and C-Flex tubing. All barbed and Luer fittings are made from polypropylene and include tube to tube, reducing, Y-, T-, Luer-to-Luer, and Luer-to-barb adapters.

Comes in a convenient plastic storage box.

Order #	Model	Product
PC2 64-1565	KIT-1	Fitting and Tubing Kit

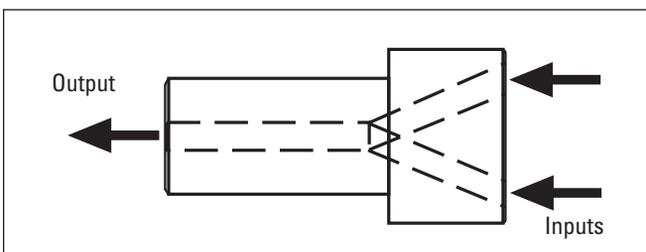
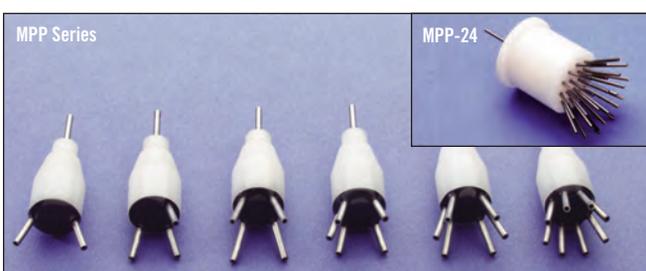
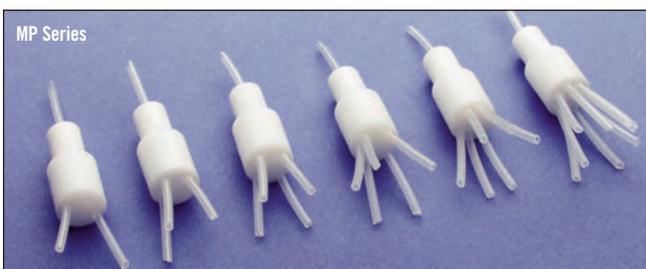
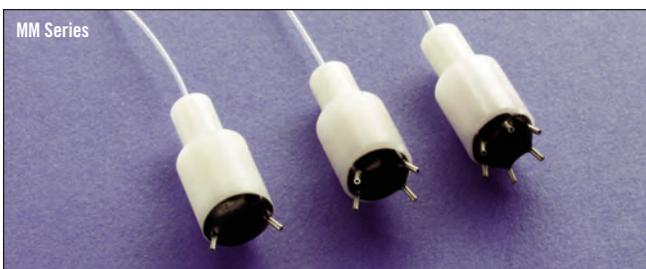
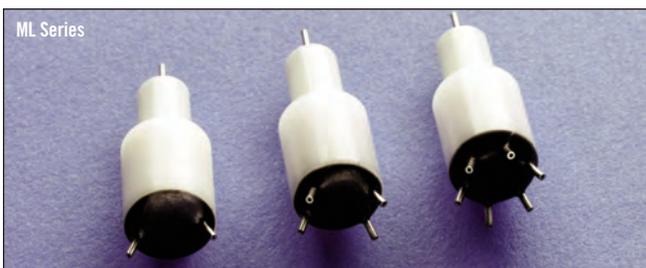
Components listed at right are included in the tubing and connector kit. Components also sold separately.



Order #	Product
PC2 64-1566	Tube Fitting Barb 1/8" to 1/16", pkg. of 10
PC2 64-1567	Tube Fitting Barb 1/16" to 1/16", pkg. of 10
PC2 64-1568	Tube Fitting Barb 1/8" to 1/8", pkg. of 10
PC2 64-1569	Tube Fitting Tee Barb 1/16", pkg. of 10
PC2 64-1570	Tube Fitting Tee Barb 1/8", pkg. of 10
PC2 64-1571	Tube Fitting Y Barb 1/16", pkg. of 10
PC2 64-1572	Tube Fitting Y Barb 1/8", pkg. of 10
PC2 64-1573	Tube Fitting Barb 1/16" to Luer Male, pkg. of 10
PC2 64-1574	Tube Fitting Barb 1/8" to Luer Male, pkg. of 10
PC2 64-1575	Tube Fitting Barb 1/16" to Luer Female, pkg. of 10
PC2 64-1576	Tube Fitting Barb 1/8" to Luer Female, pkg. of 10
PC2 64-1577	Tube Fitting Luer Male to Luer Female, pkg. of 10
PC2 64-1578	Tube Fitting Luer Tee Female, pkg. of 10
PC2 64-1579	Tube Fitting Luer Male to Luer Male, pkg. of 10
PC2 64-1580	Tube Fitting Luer Female to Luer Female, pkg. of 10
PC2 64-1581	Tube Fitting Luer Female Plug, pkg. of 10
PC2 64-1582	Tube Fitting Luer Male Plug, pkg. of 10
PC2 64-0141	LPE-50, Luer to PE-50 tubing adapter, pkg. of 8
PC2 64-0166	CFL-6, C-Flex tubing (1/32" ID x 6 ft) 3/32 OD mm, 6 ft
<b>BLUNT NEEDLE PLASTIC HUB</b>	
PC2 64-1489	SN-18, 18G, 0.5", pkg. of 12
PC2 64-1490	SN-23, 23G, 0.5", pkg. of 12
PC2 64-1583	SN-30, 30G, 0.5", pkg. of 12
PC2 64-1869	SN-20, 20G, 0.5", Pkg. of 12
<b>POLYETHYLENE TUBING</b>	
PC2 64-0750	PE-10/10., 0.28 ID x 0.61 OD mm, 3.1 m (10 ft) long
PC2 64-0752	PE-50/10., 0.58 ID x 0.97 OD mm, 3.1 (10 ft) long
PC2 64-0754	PE-90/10., 0.86 ID x 1.27 OD mm, 3.1 m (10 ft) long
PC2 64-0755	PE-160/10., 1.14 ID x 1.57 OD mm, 3.1 m (10 ft) long

## ML, MM, MP and MPP Series

### Manifolds and Flow Control Hardware



#### ML, MM, MP and MPP Series Material and Size Chart

	ML Series	MM Series	MP Series	MPP Series
<b>MATERIAL</b>	Delrin™	Delrin™	PTFE	Delrin™
<b>LARGE DIAMETER</b>	8.0 mm	8.0 mm	9.4 mm	9.4 mm
<b>SMALL DIAMETER</b>	4.7 mm	4.7 mm	6.3 mm	4.7 mm
<b>BODY LENGTH</b>	18 mm	18 mm	22 mm	21 mm
<b>INPUT TUBING</b>	PE-50	PE-50	PE-160	PE-160
<b>OUTPUT TUBING</b>	PE-50	PE-10	PE-160	PE-160

### Multi-in or multi-out manifolds for fluid management

Harvard Apparatus manifolds can be used in any application where from 2 to 8 perfusion lines are required to be connected to a chamber or other device. Manifold inputs converge to the common output with minimum dead space. Designed for use with polyethylene (PE) tubing, manifolds can be used with any other tubing of similar dimensions. When connected to a chamber via a short length of tubing, very rapid solution changes are possible.

#### ML and MM Series

These miniature manifolds are useful for applications involving small volumes or slow flow rates. Small diameter tubing is used with these models; PE-50 tubing for the input ports, and PE-10 or PE-50 tubing for the MM or ML series output ports, respectively.

#### MP Series

MP series manifolds are recommended low pressure (< 25 psi) systems. Input and output tubing are inserted with a friction fit. Manifolds should be ordered with inputs to match the number of solutions to be connected. Pin plugs to block unused inputs are also supplied. MP series manifolds are used with PE-160 tubing.

#### MPP Series

These manifolds are suitable for systems in which solutions are pumped or at pressures < 25 psi. Input and output ports are 18 gauge stainless steel hypodermic tubing. PE-160 tubing slides over these ports to make a snug fit.

Order #	Model	Product
PC2 64-0200	ML-2	Miniature Manifold, 2 ports
PC2 64-0201	ML-4	Miniature Manifold, 4 ports
PC2 64-0202	ML-6	Miniature Manifold, 6 ports
PC2 64-0199	ML-8	Miniature Manifold, 8 ports
PC2 64-0203	MM-2	Miniature Manifold, 2 ports
PC2 64-0204	MM-4	Miniature Manifold, 4 ports
PC2 64-0205	MM-6	Miniature Manifold, 6 ports
PC2 64-0206	MP-2	MP Manifold, 2 ports
PC2 64-0207	MP-3	MP Manifold, 3 ports
PC2 64-0208	MP-4	MP Manifold, 4 ports
PC2 64-0209	MP-5	MP Manifold, 5 ports
PC2 64-0210	MP-6	MP Manifold, 6 ports
PC2 64-0211	MP-8	MP Manifold, 8 ports
PC2 64-0212	MPP-2	MPP Manifold, 2 ports
PC2 64-0213	MPP-3	MPP Manifold, 3 ports
PC2 64-0214	MPP-4	MPP Manifold, 4 ports
PC2 64-0215	MPP-5	MPP Manifold, 5 ports
PC2 64-0216	MPP-6	MPP Manifold, 6 ports
PC2 64-0217	MPP-8	MPP Manifold, 8 ports
PC2 64-0339	MPP-24	MPP Manifold, 24 ports

All manifolds can be easily disassembled for cleaning.