TUBING

Medical Grade

Linear Low Density Polyethylene Tubing **PG-148**

Thermoplastic Elastomer Tubing (TPE) **PG-148**

Platinum-Cured Silicone Tubing **PG-149**

Pump Grade Platinum-Cured Silicone Tubing **PG-149**

Polyurethane Tubing **PG-149**

Polyvinyl Chloride (PVC) Tubing **PG-149**

Anti-Microbial Polyvinyl Chloride (PVC) Tubing **PG-149**

TUBING:
Linear Low Density Polyethylene

92 Durometer: This tubing has excellent mechanical and chemical resistance properties. Please use caution if your application involves possible bending or kinking the tubing. It is a semi-rigid material and will be permanently deformed if kinked or bent too tight.

Resin Grade & Technical Information: This tubing is extruded from Equistar® LLDPE, which is in compliance with all U.S. Food & Drug Administration regulations for food grade use under Title 21 CFR. It can be sterilized by gamma radiation or Ethylene Oxide (EtO) gas. Autoclaving is not recommended.

DIMENSION (ID X OD X LGTH)	NUMBER
1/16" X 1/10" X 100'	LLDPE02-1019C
1/16" X 1/10" X 1000'	LLDPE02-1019M
1/16" X 1/8" X 100'	LLDPE02-1031C
1/16" X 1/8" X 1000'	LLDPE02-1031M
3/32" X 5/32" X 100'	LLDPE02-2031C
3/32" X 5/32" X 1000'	LLDPE02-2031M
1/8" X 3/16" X 100'	LLDPE02-3031C
1/8" X 3/16" X 1000'	LLDPE02-3031M

TUBING:
Thermoplastic Elastomer (TPE)

65 Shore A: Our Biopharmaceutical-grade TPE tubing is sterile weldable, heat sealable, moldable, and offers excellent life in peristaltic pumps. It is ideal for use in single-use processes for sampling, filling, and storage tubing set assemblies.

Resin Grade & Technical Information: This tubing is made from FDA-approved ingredients, certified free of silicone oils and animal derived ingredients, and is sterilizable by autoclave or gamma irradiation. It meets various ISO and USP standards, including Class VI, as well as European Pharmacopoeia 3.2.2.1. It also offers excellent low absorption and permeability as compared to silicone tubing.

DIMENSION (ID X OD X LGTH)	NUMBER
1/8" X 1/4" X 50'	AF7500077
1/8" X 1/4" X 500'	AF7500077D
3/16" X 5/16" X 50'	AF7500155
1/4" X 7/16" X 50'	AF7500311
3/8" X 5/8" X 50'	AF7500506
1/2" X 3/4" X 50'	AF7500584
3/4" X 1" X 50'	AF7500753

TUBING:
Platinum-Cured Silicone

50 Shore A: Extruded from a low-volatile grade, platinum-cured compound, this tubing is ideal for critical applications in pharmaceutical, biotech, medical, food, and beverage industries.

Resin Grade & Technical Information: This tubing is extruded and packaged in a Class 7 (Class 10,000) ISO-certified clean room. It has undergone extensive physical, chemical, and biological testing and meets USP Class VI, FDA CFR 177.2600, ISO 10993, European Pharmacopoeia 3.1.9, and 3-A standards. It is certified free of animal-derived ingredients and is certified by the National Sanitation Foundation for use in food equipment materials (NSF-51). It offers a temperature range use of -100° F (-73.3° C) to 400° F (204.4° C) and is sterilizable by autoclave or gamma irradiation.

DIMENSION (ID X OD X LGTH)	NUMBER
1/16" X 1/8" X 50'	SILC7001098
1/16" X 3/16" X 500'	SILC7001422
5/64" X 9/64" X 50'	SILC7001280
1/8" X 1/4" X 500'	SILC7001424
1/8" X 1/4" X 50'	SILC7001657
5/32" X 9/32" X 100'	SILC7001839
1/4" X 3/8" X 50'	SILC7002203
3/8" X 5/8" X 50'	SILC7002593
1/2" X 3/4" X 50'	SILC7002775
3/4" X 1" X 50'	SILC7003139

TUBING:
Pump Grade Platinum-Cured Silicone

DIMENSION (ID X OD X LGTH)	NUMBER
1/16" X 3/16" X 500'	SILPG7021044
1/8" X 1/4" X 500'	SILPG7021043
3/16" X 3/8" X 250'	SILPG7021042
1/4" X 7/16" X 300'	SILPG7021041

TUBING:
Polyurethane

80 Durometer: This tubing is extremely kink resistant and highly resistant to abrasion and scuffing. It is widely accepted as a premium material for medical device use because of its flexible nature and easy sterilizability.

Resin Grade & Technical Information: This tubing is extruded from Lubrizol's® compound Pellethane PUR80A-MED, which has passed USP Class VI testing. It can be sterilized by gamma radiation or Ethylene Oxide (EtO) gas. Please do not autoclave this tubing, as it may alter the chemical nature of the resin.

DIMENSION (ID X OD X LGTH)	NUMBER
1/16" X 1/8" X 100'	UR00-1031C
1/16" X 1/8" X 1000'	UR00-1031M
3/32" X 3/16" X 100'	UR00-2047C
3/32" X 3/16" X 1000'	UR00-2047M

TUBING:
Polyvinyl Chloride (PVC)

75 Durometer: Our PVC tubing is a very cost effective product that can satisfy a broad array of end use applications. It is flexible in nature, optically clear, and easily sterilized.

Resin Grade & Technical Information: This tubing is extruded from Teknor® PVC80-NP resin, which is in compliance with all US Food & Drug Administration regulations for food grade use under Title 21 CFR. It is also certified USP Class VI. It can be sterilized by gamma radiation or Ethylene Oxide (EtO) gas. This tubing is not autoclavable.

DIMENSION (ID X OD X LGTH)	NUMBER
1/16" X 1/8" X 100'	PV02-1031C
1/16" X 1/8" X 1000'	PV02-1031M
3/32" X 3/16" X 100'	PV02-2047C
1/8" X 1/4" X 100'	PV02-3062C
1/8" X 1/4" X 1000'	PV02-3062M
3/16" X 5/16" X 100'	PV02-5062C
1/4" X 3/8" X 100'	PV02-6062C

TUBING:
Anti-Microbial Polyvinyl Chloride (PVC)

Ag-47 Clear Anti-Microbial: CLEARFLO Ag-47 is suitable for a wide variety of food contact applications and designed to protect your food or beverage product from harmful bacteria. It's manufactured from a clear flexible Shore A74 PVC compound with the addition of antimicrobial protection. The antimicrobial technology is especially effective where there is infrequent use of fluids in warm conditions.

Resin Grade & Technical Information: CLEARFLO Ag-47 offers antibacterial performance to ISO 22196:2011. Unlike some products CLEARFLO Ag-47 is 100% protected with the effective additive Silver-Magnesium-Aluminum-Phosphorus Complex. This is present throughout the tube and not only on the interior, offering you protection on all surfaces. The active ingredients in CLEARFLO Ag-47 will have no detrimental effect on yeasts used for brewing and will have no negative impact on the taste or flavor of products passed through it.

DIMENSION (ID X OD X LGTH)	NUMBER
3/16" X 5/16" X 100'	PVCA1190035
3/16" X 7/16" X 100'	PVCA1190049
1/4" X 3/8" X 100'	PVCA1190112
1/4" X 1/2" X 100'	PVCA1190126
5/16" X 7/16" X 100'	PVCA1190189
5/16" X 9/16" X 100'	PVCA1190203
3/8" X 1/2" X 100'	PVCA1190266
3/8" X 5/8" X 100'	PVCA1190280
1/2" X 5/8" X 100'	PVCA1190343
1/2" X 3/4" X 100'	PVCA1190357

OTHER
Components

Tapered Seal
PG-150

Clamps
PG-152

Injection Sites
PG-152

Spikes
PG-152

Designer Kits
PG-153

TSC Series
Tapered Seal

With TSC Series conical seal fittings, Nordson MEDICAL expands its range of products for small-bore connector applications in medical devices. TSC Series products offer the reliability, convenience and ease of use of luer fittings in a design that cannot be interconnected with conventional luers and avoid tubing misconnections. These luer alternatives are available in sizes to fit 1/8" (3.2 mm) and 3/16" (4.8 mm) ID flexible tubing.

Features & Benefits:

- Ergonomic grip
- Conical (tapered) seal
- 15% higher flow capacity than conventional luers
- Polypropylene resin
- Cannot interconnect with conventional luers taper fittings
- 500 Series single barbs

SMALL BORE CONNECTORS:
Male

TSC2M210 (-6005)
Male Taper Seal Non-Luer Connector to 200 Series Barb, 1/16" (1.6 mm) ID Tubing

TSC2M013 (-6005)
Male Taper Seal Non-Luer Connector to 500 Series Barb, 1/8" (3.2 mm) ID Tubing

TSC2M035 (-6005)
Male Taper Seal Non-Luer Connector to 500 Series Barb, 3/16" (4.8 mm) ID Tubing

SMALL BORE CONNECTORS:
Female

TSC2F210 (-6005)
Female Taper Seal Non-Luer Connector to 200 Series Barb, 1/16" (1.6 mm) ID Tubing

TSC2F007 (-6005)
Female Taper Seal Non-Luer Connector to 500 Series Barb, 3/32" (2.4 mm) ID Tubing

TSC2F013 (-6005)
Female Taper Seal Non-Luer Connector to 500 Series Barb, 1/8" (3.2 mm) ID Tubing

TSC2F035 (-6005)
Female Taper Seal Non-Luer Connector to 500 Series Barb, 3/16" (4.8 mm) ID Tubing

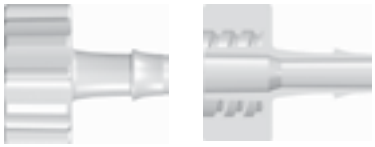
TSC2FB230 (-6005)
Female Taper Seal Non-Luer with 1/4-28 UNF Panel Mount to 200 Series Barb, 1/8" (3.2 mm) ID Tubing

SMALL BORE CONNECTORS:
Plugs and Caps

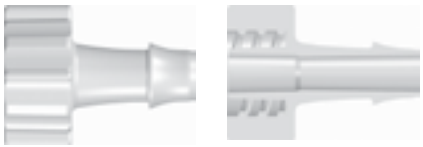
TSC2MP (-6005) 1,000 piece minimum
Male Taper Seal Non-Luer Plug with Tether Recess

LARGE BORE CONNECTORS:
Male

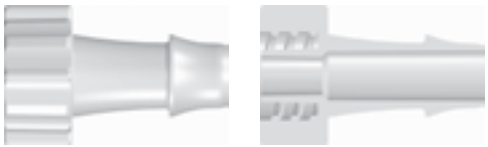
MLB035 (-1 -8012 -9)
Male Large Bore Non-Luer Connector to 500 Series Barb, 3/16" (4.8 mm) ID Tubing



MLB055 (-1 -8012 -9)
Male Large Bore Non-Luer Connector to 500 Series Barb, 1/4" (6.4 mm) ID Tubing



MLB065 (-1 -8012 -9)
Male Large Bore Non-Luer Connector to 500 Series Barb, 5/16" (8.0 mm) ID Tubing

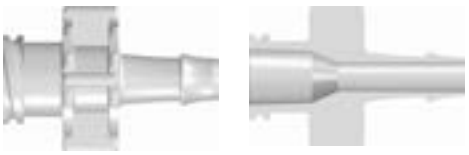


MLBC7 (-9002)
Male Large Bore Non-Luer Connector with Integral Lock Ring to Male Slip Luer (May be used with separate rotating lock ring; FSLLR)

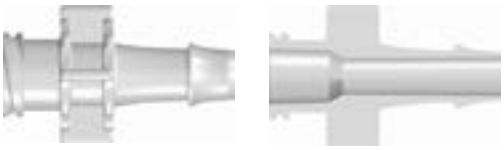
MLBC8 (-9002)
Male Large Bore Non-Luer Connector with Integral Lock Ring to Female Thread-Style Locking Luer

LARGE BORE CONNECTORS:
Female

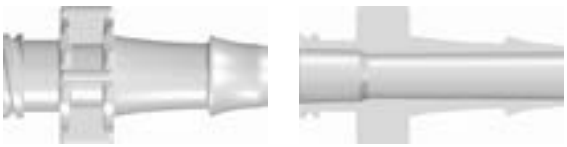
FLB035 (-1 -8012 -9)
Female Large Bore Non-Luer Connector to 500 Series Barb, 3/16" (4.8 mm) ID Tubing



FLB055 (-1 -2 -8012 -9)
Female Large Bore Non-Luer Connector to 500 Series Barb, 1/4" (6.4 mm) ID Tubing



FLB065 (-1 -8012 -9)
Female Large Bore Non-Luer Connector to 500 Series Barb, 5/16" (8.0 mm) ID Tubing



LARGE BORE CONNECTORS:
Plugs and Caps

FLBP (-1 -8012 -9)
Female Large Bore Non-Luer Cap

MLBP (-1 -2 -8012 -9 -9002)
Male Large Bore Non-Luer Plug

OTHER COMPONENTS:
Components

VPM2930601N (White ABS)
Tube Clamp with Split, 1/8" (3.2 mm) OD Tubing

VPS3901074N (Polyisoprene with ABS Acrylic Body)
IN-4000 Intermittent Injection Site to Male Luer Lock

VPM1060200N (Clear Low Density Polyethylene)
Long Spike Guard Closed at Tip

VPM0480201N (White Polyethylene)
Luer Tip Syringe Cap

VPB0850400N (Clear ABS)
Female Luer Thread Style Coupler

VPM1080303N (Blue Polyethylene)
Male Luer Integral Lock Ring Plug

VPS5069200N (White ABS Spike with Clear LDPE Guard)
Bag Spike with Vented Guard (Replaces VPS5069700N)

DESIGNER
Kits

Note: Due to our ever increasing product lines, kit contents are subject to change without notice. Kits may include one or more of each component in a variety of materials. Please see www.nordsonmedical.com for a complete list of all included parts.

ASSORTED DESIGNER KIT
(Part number - ASSORTED KIT-001)
Our Assorted Kit contains a variety of our popular components, including luers, tube-to-tube and threaded fittings.

LUER DESIGNER KIT (Part Number - LUER KIT-001)
Our Luer Kit contains male and female luers, luer plugs, couplers, tees, elbows as well as blood pressure cuff and monitor fittings. Luer tapers are made to ISO standards.

TUBE-TO-TUBE DESIGNER KIT
(Part Number - TUBE-TO-TUBE KIT-001)
Our Tube-to-Tube Kit contains a variety of fittings in different configurations - and one that is sure to work for your application. Some of the fittings contained in this kit include straight-thru connectors, tees, elbows, Ys, and press-in plugs.

XQ DESIGNER KIT (Part Number - XQ KIT-001)
Our XQ Kit contains an assortment of XQ Series Quick Connect Fittings (Quick Disconnect Couplings).

BLOOD PRESSURE DESIGNER KIT
(Part Number - BP KIT-001)
Our Blood Pressure Kit contains a variety of blood pressure fittings, including quick connect fittings, connectors, panel mounts and adaptors.

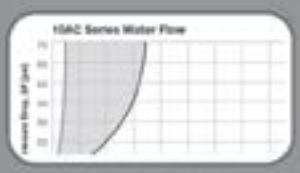
BIOPHARM DESIGNER KIT
(Part Number - BIOPHARM KIT-001)
Our Biopharm Designer Kit contains a variety of fittings that are commonly found within the BioPharm market. Some of the fittings contained in this kit include our larger fittings of Y's, T's, elbows, straight through and reducing connectors, sanitary fittings, clamps, quick connects and gaskets.

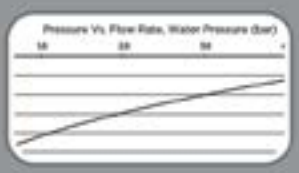
BUILD-A-PART DESIGNER KIT
(Part Number - KIT01-81 -KIT01-40)
Our Build-A-Part Kits are available in two different materials: White ABS or Polysulfone. Contained in these kits are luers, elbows, tees, and junction blocks.

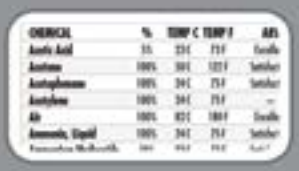
INK JET DESIGNER KIT (Part Number - INK JET KIT-001)
A cross section of many components designed and manufactured by Nordson MEDICAL. Includes luers, tube-to-tube and threaded fittings commonly used by Ink Jet Printer Manufacturers.

DIVERT™ STOPCOCKS DESIGNER KIT
(Part Number - STOPCOCK-KIT)
Our Stopcock Designer Kit contains an assortment of stopcocks, including 1-way, 3-way, and 4-way styles.

TECHNICAL
Information







A - Z

TECHNICAL:
Barb Dimensions

The **CLASSIC SERIES** is characterized by a longer barb that extends the sealing surface of the fitting. Tubing is expanded from 42% to 69% above its nominal ID.

Barb Size	Barb OD	Barb ID	Tube Internal Diameter		
			Dec.	Frac.	Metric
10	0.105	0.046	0.063	1/16"	1.6 mm
20	0.145	0.060	0.094	3/32"	2.4 mm
30	0.187	0.078	0.125	1/8"	3.2 mm
40	0.234	0.100	0.156	5/32"	4.0 mm
50	0.280	0.130	0.188	3/16"	4.8 mm
60	0.355	0.187	0.250	1/4"	6.4 mm

The **200 SERIES** offers outstanding performance characteristics when used with flexible tubing. Tubing is expanded by 50% above its nominal ID, permitting high-pressure capabilities.

Barb Size	Barb OD	Barb ID	Tube Internal Diameter		
			Dec.	Frac.	Metric
210	0.094	0.047	0.063	1/16"	1.6 mm
220	0.141	0.070	0.094	3/32"	2.4 mm
230	0.188	0.094	0.125	1/8"	3.2 mm
240	0.234	0.117	0.156	5/32"	4.0 mm
250	0.282	0.141	0.188	3/16"	4.8 mm
260	0.375	0.188	0.250	1/4"	6.4 mm

The **300 SERIES** offers outstanding performance characteristics when used with flexible tubing. Tubing is expanded by 35% above its nominal ID, permitting high-pressure capabilities in the larger tube sizes.

Barb Size	Barb OD	Barb ID	Tube Internal Diameter		
			Dec.	Frac.	Metric
360	0.338	0.192	0.250	1/4"	6.4 mm

*Variations of barb IDs may exist. Please visit www.nordsonmedical.com to learn more about these alternatives. The data presented here is for reference only. It was compiled to provide our customers with a means of comparing the characteristics of components at the time of publication. The particular conditions of your use and application of our products are beyond our control. Thus, it is imperative that you test our products in your specific application to determine their suitability. All information is provided without implied or express warranty or guarantee by Nordson MEDICAL or other manufacturers. None of the information provided constitutes a recommendation or endorsement of any kind by Nordson MEDICAL.

The **400 SERIES** provides easy assembly while maintaining excellent pressure and tensile capabilities. Originally created for semi-rigid tubing, this series is preferred for applications where tensile/pressure properties are not highly critical, or when ease of assembly is desired. The 400 Series expands the tubing 25% above its nominal ID.

Barb Size	Barb OD	Barb ID	Tube Internal Diameter		
			Dec.	Frac.	Metric
410	0.078	0.046	0.063	1/16"	1.6 mm
420	0.117	0.068	0.094	3/32"	2.4 mm
430	0.156	0.092	0.125	1/8"	3.2 mm
440	0.206	0.125	0.156	5/32"	4.0 mm
445	0.213	0.125	0.170	-	4.3 mm
450	0.234	0.137	0.188	3/16"	4.8 mm
460	0.313	0.184	0.250	1/4"	6.4 mm

The **500 SERIES** profile is composed of blended radii, giving it the distinct look. Each barb is designed to accommodate a range of tube sizes and tube types. Consideration should be given to flow restriction, pressure capability, and the force required for assembly of the tube.

Barb Size	Barb OD	Barb ID*	Tube Internal Diameter		
			Dec.	Frac.	Metric
004	0.102	0.060	0.063	1/16"	1.6 mm
007	0.129	0.076	0.094	3/32"	2.4 mm
013	0.164	0.096	0.125	1/8"	3.2 mm
025	0.208	0.122	0.156	5/32"	4.0 mm
035	0.264	0.155	0.188	3/16"	4.8 mm
055	0.335	0.197	0.250	1/4"	6.4 mm
065	0.425	0.250	0.312	5/16"	8.0 mm
N070	0.483	0.262	0.375	3/8"	9.5 mm
L070	0.483	0.251	0.375	3/8"	9.5 mm
T070	0.483	0.290	0.375	3/8"	9.5 mm
Y070	0.483	0.290	0.375	3/8"	9.5 mm
N080	0.613	0.333	0.500	1/2"	12.7 mm
L080	0.613	0.319	0.500	1/2"	12.7 mm
T080	0.613	0.356	0.500	1/2"	12.7 mm
Y080	0.613	0.362	0.500	1/2"	12.7 mm
N090	0.718	0.390	0.625	5/8"	16.0 mm
L090	0.718	0.374	0.625	5/8"	16.0 mm
T090	0.718	0.374	0.625	5/8"	16.0 mm
Y090	0.718	0.390	0.625	5/8"	16.0 mm
N100	0.853	0.465	0.750	3/4"	19.0 mm
L100	0.853	0.443	0.750	3/4"	19.0 mm
T100	0.853	0.447	0.750	3/4"	19.0 mm
Y100	0.853	0.492	0.750	3/4"	19.0 mm
N110	1.125	0.623	1.000	1"	25.4 mm
L110	1.125	0.600	1.000	1"	25.4 mm
T110	1.125	0.600	1.000	1"	25.4 mm
Y110	1.125	0.623	1.000	1"	25.4 mm

The **600 SERIES** barbs are designed for use with silicone, C-Flex® and PVC tubing sizes commonly used in biopharm and other applications. Tubing is expanded from 18% to 34% above its nominal ID to maintain a low profile and ease of assembly, and the straight barb stem facilitates use of recommended cable tie retainers or hose clamps.

Barb Size	Barb OD	Barb ID*	Tube Internal Diameter		
			Dec.	Frac.	Metric
630	0.188	0.085	0.125	1/8"	3.2 mm
655	0.335	0.181	0.250	1/4"	6.4 mm
670	0.490	0.296	0.375	3/8"	9.5 mm
680	0.625	0.403	0.500	1/2"	12.7 mm
690	0.762	0.499	0.625	5/8"	16.0 mm
6100	0.900	0.615	0.750	3/4"	19.0 mm
6110	1.180	0.804	1.000	1"	25.4 mm

The **700 SERIES** barb is designed for use with Nordson MEDICAL's XQ Series quick connect fittings. This unique single barb is available in sizes to fit the 1/4" (6.4 mm), 5/16" (7.9 mm) and 3/8" (9.5 mm) ID tubing sizes and materials commonly used in disposable and reusable medical equipment. Reinforced PVC, unreinforced PVC and polyurethane tubing materials work well with this barb style.

Barb Size	Barb OD	Barb ID	Tube Internal Diameter		
			Dec.	Frac.	Metric
755	0.329	0.204	0.250	1/4"	6.4 mm
765	0.398	0.245	0.312	5/16"	7.9 mm
770	0.455	0.302	0.375	3/8"	9.5 mm

The **900 SERIES** offers outstanding performance characteristics when used with flexible tubing. Tubing is expanded from 8% to 17% above its nominal ID. This barb provides high flow efficiency and excellent tensile strength. A hose clamp is recommended for this series.

Barb Size	Barb OD	Barb ID	Tube Internal Diameter		
			Dec.	Frac.	Metric
970	0.437	0.269	0.375	3/8"	9.5 mm
975	0.573	0.358	0.500	1/2"	12.7 mm

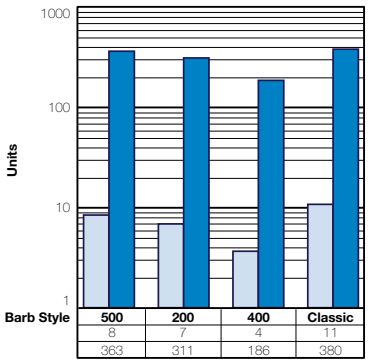
Tensile pull and burst tests were performed by an independent laboratory under controlled conditions to provide comparative performance data for the various barb styles and sizes offered by Nordson MEDICAL. Graph numbers 1 through 8 present the data from each of the tests for each barb size and each barb style connected to PVC tube.

The values shown are the means of a statistically significant sample quantity of each configuration. Nordson MEDICAL barbed fittings specifically designed for use with the tubing size indicated were used in these tests. No oversized barbs, solvents, adhesives, or secondary fasteners of any kind were used.

Tensile Pull Test: Tensile properties were measured to determine the force required to remove the barbed fitting from the tubing. Tensile specimens were mounted axially in a holding fixture and tested at a rate of 20 inches per minute. Failure mode was tubing separating from the barb.

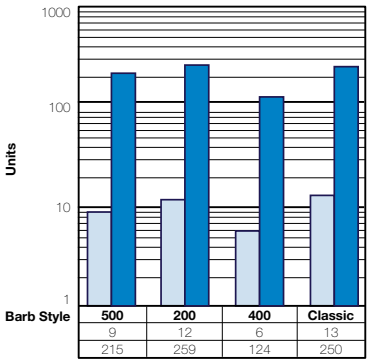
Hydrostatic Burst Test: Hydrostatic burst testing was performed in general accordance with ASTM D1599. Failure mode was either tubing separating from the barb, the tubing bursting, or a combination of the two.

Performance of Barb to Tube Connections - ☐ Tensile Pull Test (lbs) - ■ Hydrostatic Burst Test (psi)



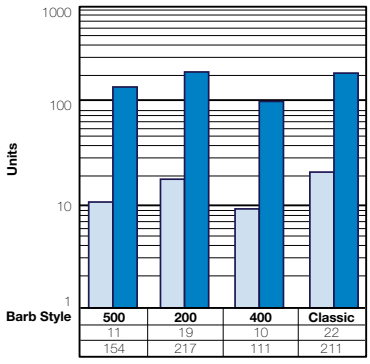
Barb Style	500	200	400	Classic
	8	7	4	11
	363	311	186	380

Graph 1: 1/16" Barb Performance



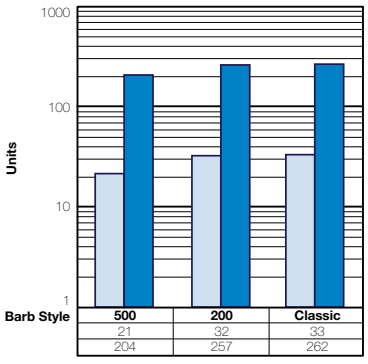
Barb Style	500	200	400	Classic
	9	12	6	13
	215	259	124	250

Graph 2: 3/32" Barb Performance



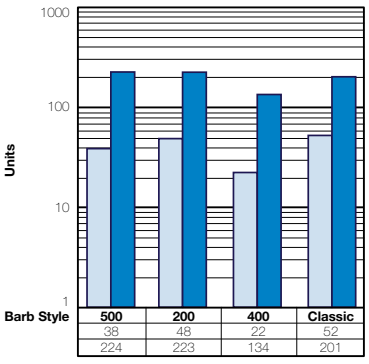
Barb Style	500	200	400	Classic
	11	19	10	22
	154	217	111	211

Graph 3: 1/8" Barb Performance



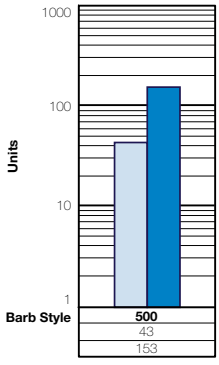
Barb Style	500	200	Classic
	21	32	33
	204	257	262

Graph 4: 5/32" Barb Performance



Barb Style	500	200	400	Classic
	38	48	22	52
	224	223	134	201

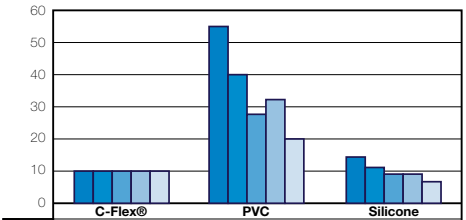
Graph 5: 3/16" Barb Performance



Barb Style	500
	43
	153

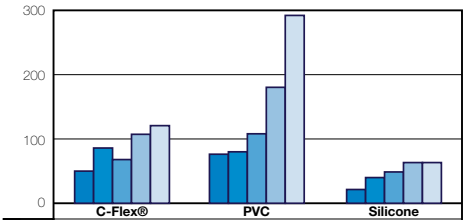
Graph 6: 1/4" Barb Performance

600 Series Leak Tests



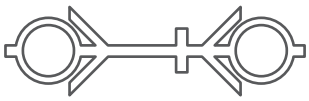
	C-Flex®	PVC	Silicone
3/8"	10	55	14
1/2"	10	40	11
5/8"	10	28	9
3/4"	10	32	9
1"	10	20	7

600 Series Tensile Pull Tests

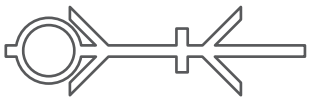


	C-Flex®	PVC	Silicone
3/8"	49	80	27
1/2"	89	81	43
5/8"	63	105	49
3/4"	106	179	64
1"	121	295	64

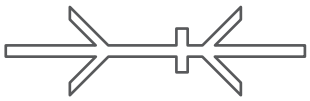
Valved Socket & Plug



Valved & Non-Valved Coupling Set

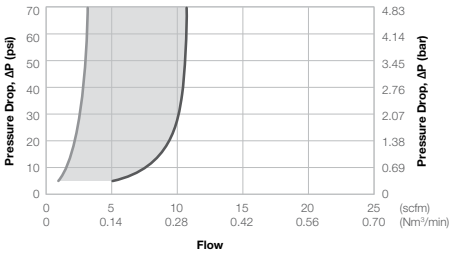


Non-Valved Socket & Plug

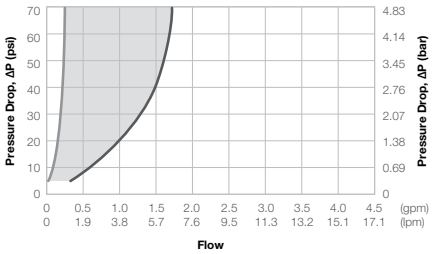


10 SERIES - 1/16" Flow Size

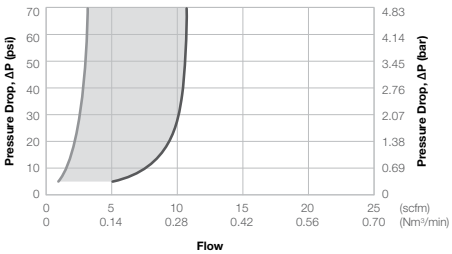
10AC Series Air Flow



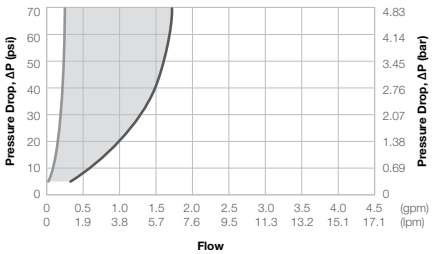
10AC Series Water Flow



10PP Series Air Flow

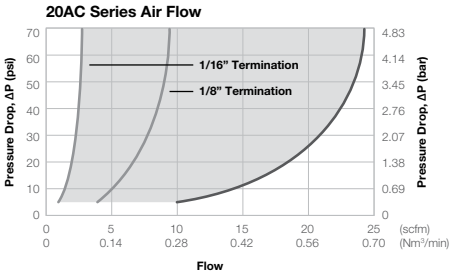


10PP Series Water Flow

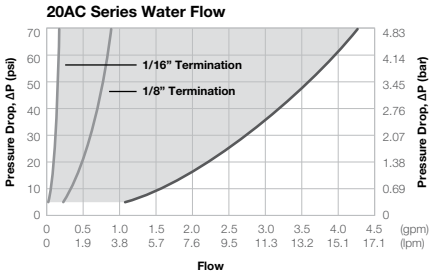


20 SERIES - 1/8" Flow Size

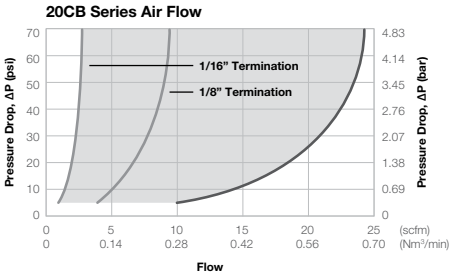
20AC Series Air Flow



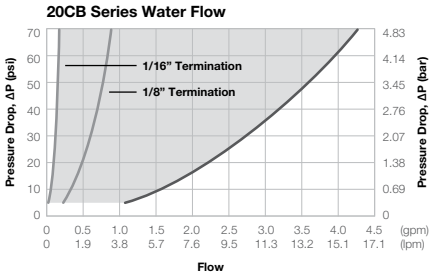
20AC Series Water Flow



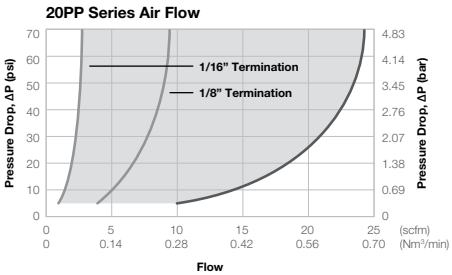
20CB Series Air Flow



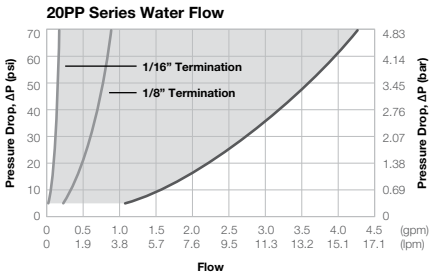
20CB Series Water Flow



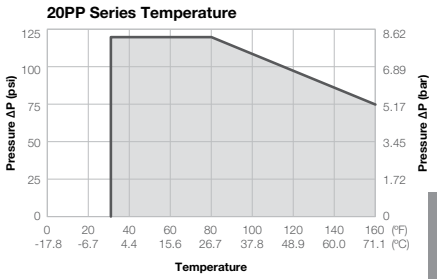
20PP Series Air Flow



20PP Series Water Flow

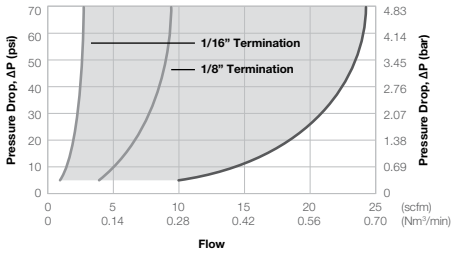


20PP Series Temperature

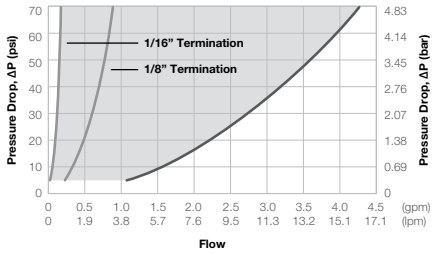


30 SERIES - 1/8" Flow Size

30AC Series Air Flow

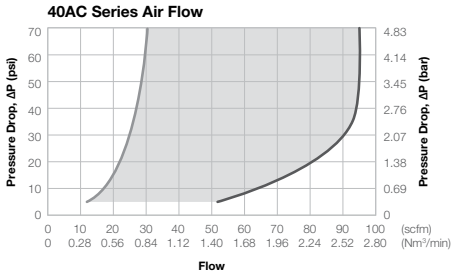


30AC Series Water Flow

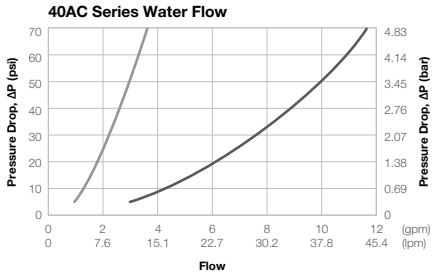


40 SERIES - 1/4" Flow Size

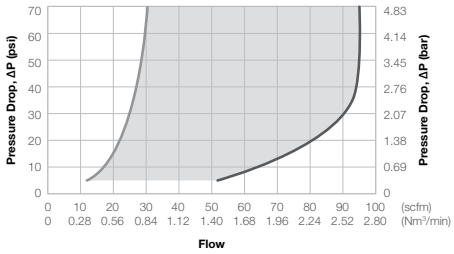
40AC Series Air Flow



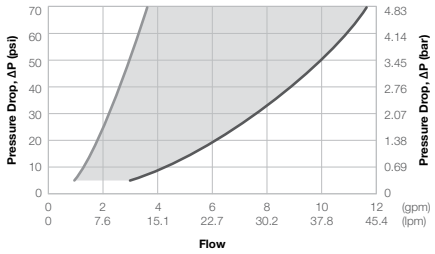
40AC Series Water Flow



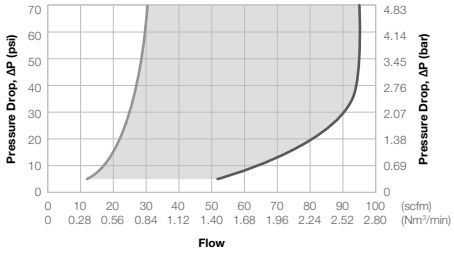
40CB Series Air Flow



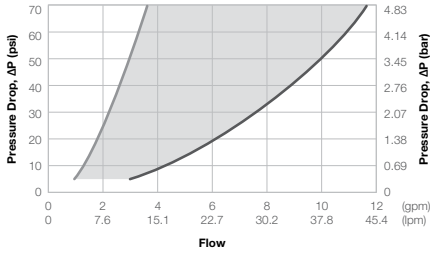
40CB Series Water Flow



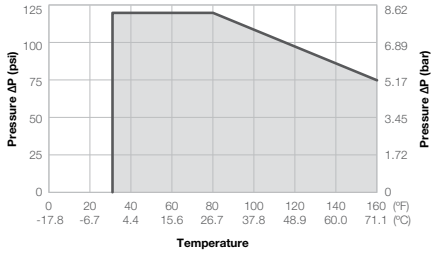
40PP Series Air Flow



40PP Series Water Flow

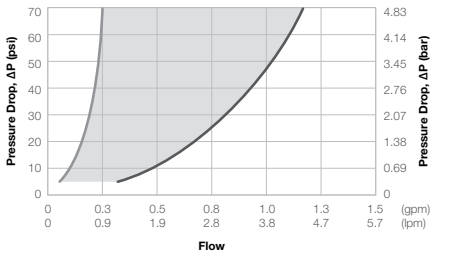


40PP Series Temperature

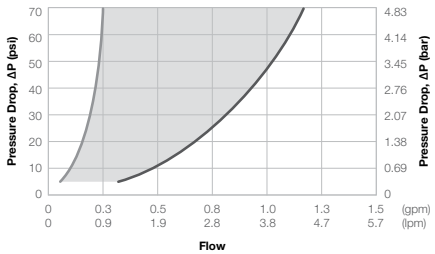


42 SERIES - 3/32" Flow Size

42AB Series Water Flow

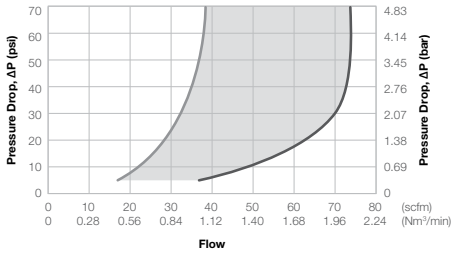


42AC Series Water Flow

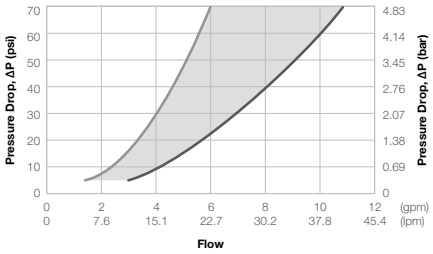


50 SERIES - 1/4" Flow Size

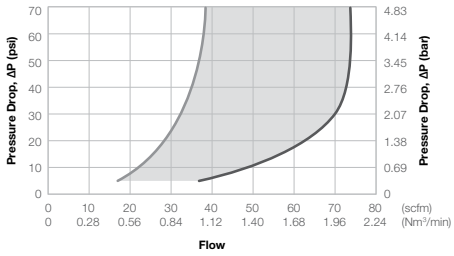
50AC Series Air Flow



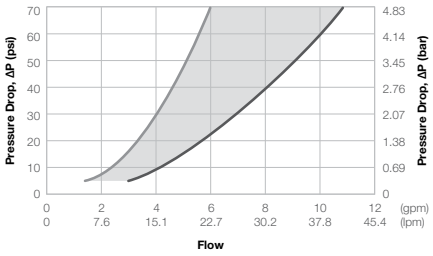
50AC Series Water Flow



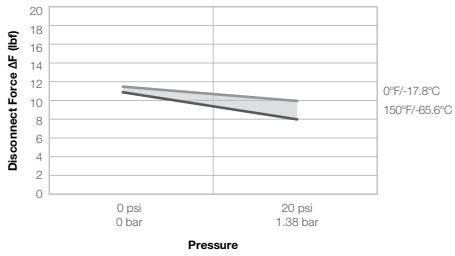
50BAC Series Air Flow



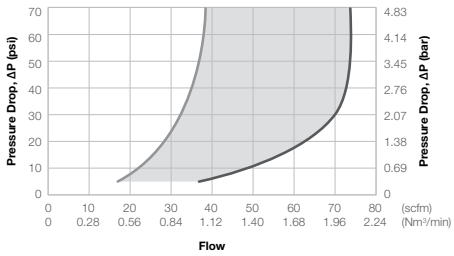
50BAC Series Water Flow



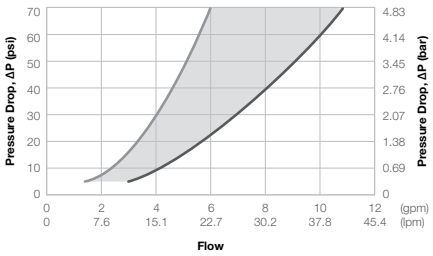
50BAC Disconnect Force



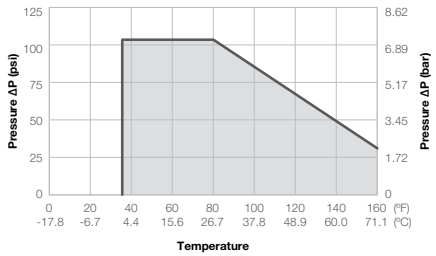
50PP Series Air Flow



50PP Series Water Flow

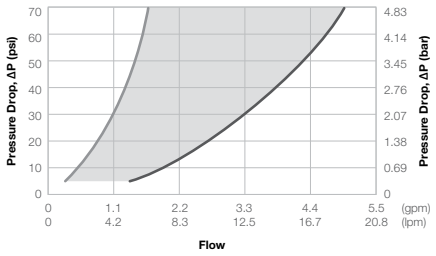


50PP Series Temperature

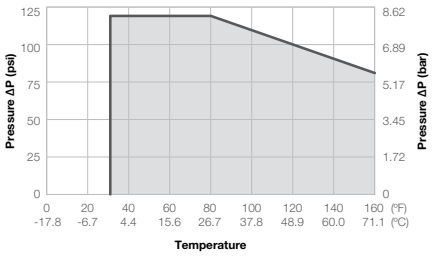


55 SERIES - 1/8" - 1/4" Flow Size

55GP Series Water Flow

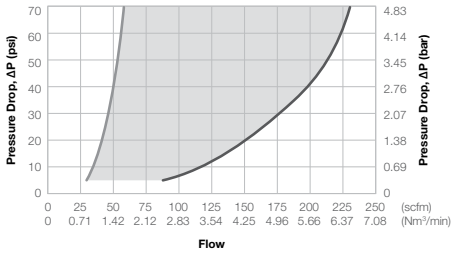


55GP Series Pressure Range

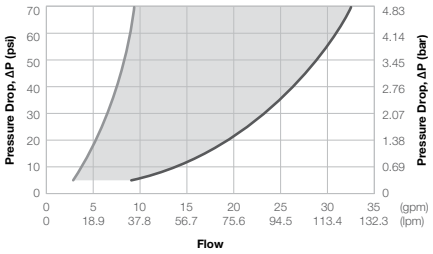


60 SERIES - 3/8" Flow Size

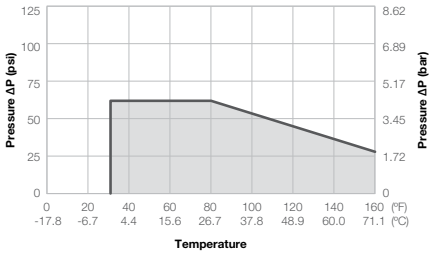
60PP Series Air Flow



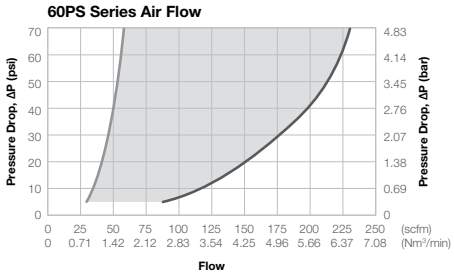
60PP Series Water Flow



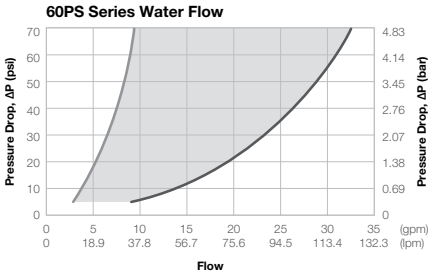
60PP Series Temperature



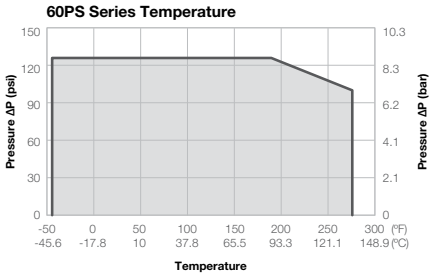
60PS Series Air Flow



60PS Series Water Flow

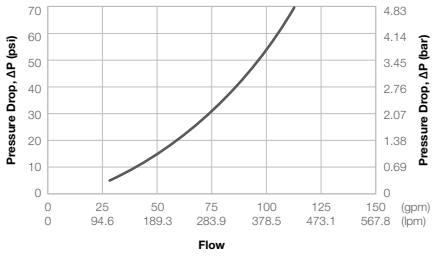


60PS Series Temperature



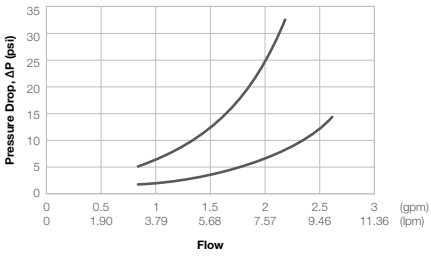
65 SERIES - 1/2" Flow Size

65PS Series Water Flow



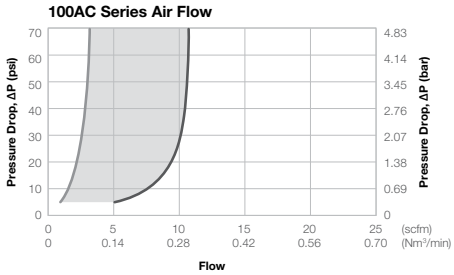
70 SERIES - 1/4" Flow Size

70GP Series Water Flow

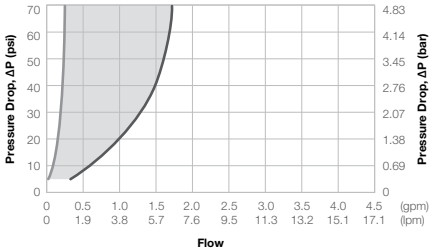


100 SERIES - 1/16" Flow Size

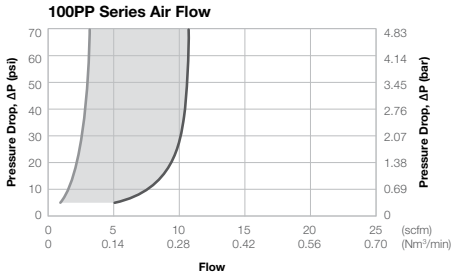
100AC Series Air Flow



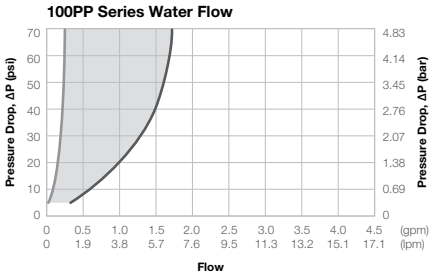
100AC Series Water Flow



100PP Series Air Flow



100PP Series Water Flow



Maximum cycles ——— 50,000 connect-disconnect cycles

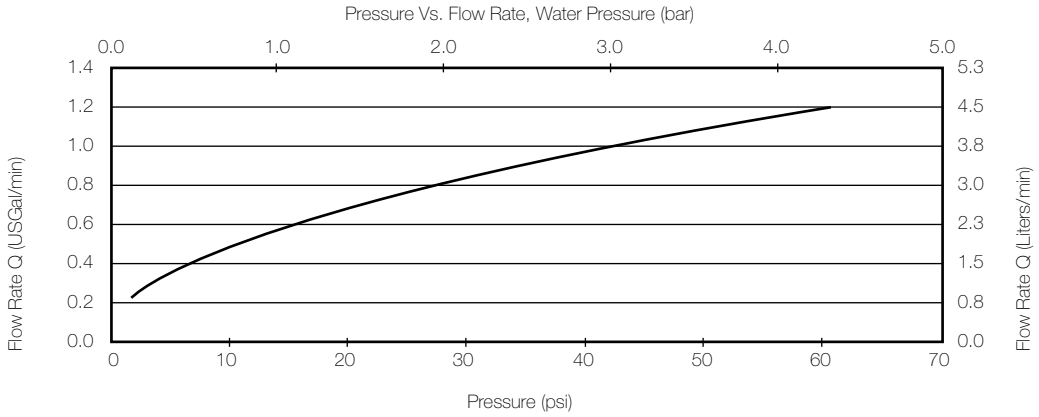
Maximum axial tensile resistance ——— 20 lbf.

Maximum working pressure ——— 60 psi, 4.14 bar

Maximum leak resistance ——— < .007 psi / 0.05 kPa / sec.

Minimum Fitting ID ——— .113" / 2.9 mm

Minimum Cv ——— .39



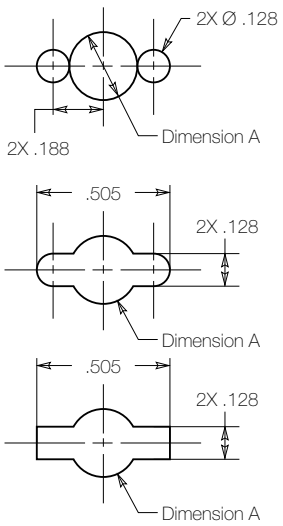
Panel-mounted female luers, in both FTLLB (thread style) and FTLB (lug style) series, are shown beginning on page 20. When used with our CCLR lock rings or CCR color coding rings and LNS lock nuts (see pages 21, 37), color coding of connections is easy.

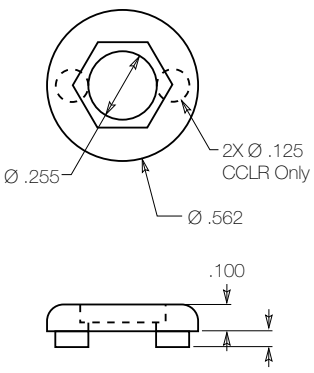
The information provided here will help you mount the panel mount luers. Please note that they are intended for panel thickness of 1/16" to 1/8" (1.5 to 3 mm).

FTLLB series shown with MLSL luer, FSLLR lock ring, CCLR color coding lock ring, and LNS lock nut.

Threaded Panel Openings: Tap the panel with threads from tube fittings, panel mounts or BPMBs and use a CCR color coded ring. In this case, the fitting tightened into the panel prevents fitting rotation. Use an LNS lock nut for additional security; tighten snug plus 1/4 turn only.

Non-Threaded Panel Openings: Use any one of the three panel patterns shown below with a CCLR lock ring and LNS lock nut. Together, the panel opening and CCLR prevent the panel mount fitting from rotating. Tighten LNS snug plus 1/4 turn only.





Fully Assembled Panel-Mounted Luer

CHEMICAL	%	TEMP C	TEMP F	ABS	ACETAL	PVDF	NYLON	POLYCARBONATE	POLYPROPYLENE	POLYSULFONE
Acetic Acid	5%	23 C	73 F	Excellent	Unsatisfactory	Excellent	Satisfactory	Satisfactory	Excellent	Excellent
Acetone	100%	50 C	122 F	Unsatisfactory	Unsatisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Excellent	Unsatisfactory
Acetophenone	100%	24 C	75 F	Satisfactory	—	Unsatisfactory	Excellent	—	Satisfactory	—
Acetylene	100%	24 C	75 F	—	—	Excellent	Excellent	—	—	—
Air	100%	82 C	180 F	Excellent	Excellent	Excellent	Excellent	—	—	Excellent
Ammonia, Liquid	100%	24 C	75 F	Satisfactory	—	Unsatisfactory	Satisfactory	Unsatisfactory	Excellent	Excellent
Ammonium Hydroxide	10%	23 C	73 F	Satisfactory	—	Excellent	Excellent	Unsatisfactory	Excellent	Excellent
Ammonium Hydroxide	10%	70 C	158 F	Unsatisfactory	—	Excellent	Unsatisfactory	Unsatisfactory	Excellent	Excellent
Barium Sulfide	100%	24 C	75 F	Excellent	Excellent	Excellent	Satisfactory	—	Excellent	—
Benzene	100%	23 C	73 F	Satisfactory	Excellent	Excellent	Excellent	Unsatisfactory	Satisfactory	Unsatisfactory
Bleach	100%	23 C	73 F	—	Unsatisfactory	Excellent	Satisfactory	Unsatisfactory	Satisfactory	Excellent
Boric Acid	7%	35 C	95 F	Excellent	Excellent	Excellent	Unsatisfactory	Excellent	Excellent	—
Calcium Carbonate	Sat. sol.	24 C	75 F	Excellent	—	Excellent	—	—	Excellent	—
Carbon Dioxide	100%	50 C	122 F	Satisfactory	Excellent	Excellent	Excellent	—	Excellent	—
Carbon Monoxide	100%	50 C	122 F	Satisfactory	—	Excellent	Excellent	—	Excellent	—
Carbon Tetrachloride	100%	50 C	122 F	Unsatisfactory	—	Excellent	Excellent	Unsatisfactory	Unsatisfactory	Unsatisfactory
Chlorine Water	Dilute	23 C	73 F	Unsatisfactory	—	Excellent	Satisfactory	Unsatisfactory	Unsatisfactory	Satisfactory
Chlorine Water	Concen.	23 C	73 F	Unsatisfactory	—	Excellent	Unsatisfactory	Unsatisfactory	Unsatisfactory	Unsatisfactory
Chlorobenzene	100%	23 C	73 F	Satisfactory	—	Excellent	Excellent	Unsatisfactory	Unsatisfactory	Unsatisfactory
Chlorofluorocarbon 11	100%	24 C	75 F	—	—	Excellent	Excellent	Satisfactory	—	Excellent
Chloroform	100%	23 C	73 F	Unsatisfactory	Satisfactory	Excellent	Satisfactory	Unsatisfactory	Unsatisfactory	Unsatisfactory
Cyclohexanone	100%	24 C	75 F	Unsatisfactory	—	Excellent	Excellent	Unsatisfactory	Satisfactory	Unsatisfactory
Dichlorethylene	100%	23 C	73 F	—	—	Excellent	Satisfactory	—	Excellent	Unsatisfactory
Ethanol	95%	50 C	122 F	Satisfactory	—	Excellent	Excellent	Satisfactory	Excellent	Satisfactory
Ethyl Acetate	95%	50 C	122 F	Satisfactory	—	Unsatisfactory	Excellent	Unsatisfactory	Satisfactory	Unsatisfactory
Ethylene Glycol	100%	23 C	73 F	Excellent	Satisfactory	Excellent	Excellent	Satisfactory	Excellent	Excellent
Ethylene Oxide	100%	24 C	75 F	Unsatisfactory	—	Excellent	Satisfactory	Satisfactory	Satisfactory	Excellent
Ethylene Oxide	100%	79 C	175 F	Unsatisfactory	—	Excellent	Unsatisfactory	Satisfactory	Unsatisfactory	Excellent
Fatty Acids	—	—	—	—	Excellent	Excellent	—	Satisfactory	Excellent	—
Fluorine	100%	23 C	73 F	Unsatisfactory	—	Excellent	Unsatisfactory	—	—	—
Formaldehyde	37%	24 C	75 F	Unsatisfactory	Excellent	Excellent	—	Unsatisfactory	Excellent	Unsatisfactory
Gasoline	100%	85 C	185 F	Excellent	Satisfactory	Excellent	Excellent	Unsatisfactory	Satisfactory	Satisfactory
Glucose	Concen.	24 C	75 F	Excellent	—	Excellent	—	—	Excellent	—
Glycerin	100%	24 C	75 F	Excellent	—	Excellent	—	Excellent	Excellent	Excellent
Hydrochloric Acid	2%	23 C	73 F	Excellent	Satisfactory	Excellent	Excellent	Excellent	Excellent	Excellent
Hydrochloric Acid	10%	25 C	77 F	Excellent	Satisfactory	Excellent	Unsatisfactory	Excellent	Excellent	Excellent
Hydrofluoric Acid	10%	23 C	73 F	Satisfactory	—	Excellent	Unsatisfactory	—	Excellent	Excellent
Hydrogen Peroxide	1%	24 C	75 F	Excellent	Unsatisfactory	Excellent	Satisfactory	Excellent	Excellent	Excellent
Hydrogen Peroxide	5%	43 C	110 F	Satisfactory	Unsatisfactory	Excellent	Unsatisfactory	Excellent	Satisfactory	Excellent
Isopropanol	70%	23 C	73 F	—	Excellent	Excellent	Excellent	Call*	Excellent	Satisfactory
Kerosene	100%	85 C	185 F	Satisfactory	—	Excellent	Excellent	Satisfactory	Satisfactory	Satisfactory
Methyl Ethyl Ketone	100%	50 C	122 F	Unsatisfactory	—	Unsatisfactory	Excellent	Unsatisfactory	Satisfactory	Unsatisfactory
Methylene Chloride	100%	23 C	73 F	Unsatisfactory	—	Excellent	Satisfactory	Unsatisfactory	Excellent	Unsatisfactory
Methanol	100%	23 C	73 F	Unsatisfactory	—	Excellent	Excellent	Satisfactory	Excellent	Satisfactory
Nitric Acid	10%	23 C	73 F	Satisfactory	—	Excellent	Unsatisfactory	Unsatisfactory	Excellent	Satisfactory
Oxygen	100%	24 C	75 F	—	—	Excellent	Satisfactory	—	—	—
Ozone	100%	43 C	110 F	Satisfactory	—	Satisfactory	Unsatisfactory	Unsatisfactory	—	—
Phenol	90%	23 C	73 F	Unsatisfactory	Unsatisfactory	Excellent	Unsatisfactory	—	Excellent	—
Phosphoric Acid	5%	98 C	208 F	Satisfactory	Unsatisfactory	Excellent	Unsatisfactory	Unsatisfactory	Excellent	Excellent
Propane	100%	23 C	73 F	Satisfactory	—	Excellent	Excellent	—	—	—
Sodium Bicarbonate	Concen.	24 C	75 F	Excellent	Excellent	Excellent	Excellent	—	Excellent	Excellent
Sodium Chloride	10%	23 C	73 F	Excellent	—	Excellent	Excellent	—	Excellent	Excellent
Sodium Chloride	Sat. sol.	24 C	75 F	Excellent	—	Excellent	Excellent	—	Excellent	Excellent
Sodium Hydroxide	10%	70 C	158 F	Satisfactory	—	Excellent	Satisfactory	—	Excellent	Excellent
Steam	—	120 C	248 F	Unsatisfactory	—	Excellent	Unsatisfactory	Unsatisfactory	Satisfactory	Excellent
Sulfuric Acid	30%	23 C	73 F	Satisfactory	Unsatisfactory	Excellent	Unsatisfactory	Excellent	Excellent	Excellent
Tetrahydrofuran	100%	23 C	73 F	Satisfactory	—	Unsatisfactory	Excellent	—	Unsatisfactory	—
Toluene	100%	50 C	122 F	Satisfactory	Unsatisfactory	Excellent	Excellent	Unsatisfactory	Unsatisfactory	Unsatisfactory
Trichloroethylene	100%	23 C	73 F	Satisfactory	—	Excellent	Satisfactory	Unsatisfactory	Unsatisfactory	Unsatisfactory
Water	100%	79 C	175 F	Excellent	—	Excellent	Excellent	Unsatisfactory	Excellent	Excellent

* Call Nordson MEDICAL technical support to review your application and the concentration of Isopropanol that will be used.

Material - Manufacturer & Grade	VP Code	Regulatory Compliance of Base Resin*	RoHS Compliant	BPA Free	DEHP Free	Animal Derivative Free*
ABS (Lace White) - INEOS Lustran 348-000000	**-81**	USP Class VI Certified; ISO 10993 Part I Compliant	Yes	Yes	Yes	No
ABS, MABS (Methyl Methacrylate) - BASF Terlux 2802 HD	**SCV Series**	USP Class VI Certified	Yes	Yes	Yes	No
ABS, MABS (Methyl Methacrylate) - BASF Terlux 2802 TR	**-8003**	General Purpose	Yes	Yes	Yes	No
ABS (Sno White) - INEOS Lustran 348-012002	**-8012**	USP Class VI Certified; ISO 10993 Part I Compliant	Yes	Yes	Yes	No
Acetal - DuPont Delrin 500P	**-10**	21 CFR 177.2480 FDA Approved	Yes	Yes	Yes	No
Acetal Copolymer - BASF Ultraform N 23020 003	**-1006, -1007**	21 CFR 177.2470 FDA Approved	Yes	Yes	Yes	No
Acrylic - Cyro Cyrolite Med 2	**-50**	USP Class VI Certified; ISO 10993 Compliant; 21 CFR 177.1010 FDA Approved	Yes	Yes	Yes	Yes
Nylon (PA 66) - DuPont Zytel 101F	**-0, -1, -2, -3, -4, -5, -06, -07, -08B, -8, -8B, -CM030**	21 CFR 177.1500 FDA Approved	Yes	Yes	Yes	No
Nylon (PA 66) - DuPont Zytel SC310 NC010	**-U1, -U5, -U01, -U05**	USP Class VI Certified; ISO 10993 Compliant; 21 CFR 177.1500 FDA Approved	Yes	Yes	Yes	No
Nylon (Glass Reinforced) - DuPont Zytel FGFE5171	**-U71, -U75**	USP Class VI Certified; ISO 10993 Compliant; 21 CFR 177.1500 FDA Approved	Yes	Yes	Yes	No
Nylon (Glass Reinforced) - DuPont Zytel 70G33L	**-7, -72**	21 CFR 177.1500 FDA Approved	Yes	Yes	Yes	No
Polycarbonate (Clear) - Bayer Makrolon 2558 550115	**-9**	USP Class VI Certified; ISO 10993 Compliant; 21 CFR 177.1580 FDA Approved	Yes	No	Yes	No
Polycarbonate (Clear) - Bayer Makrolon Rx 1805 451118	**-9010, SCV Series**	USP Class VI Certified; ISO 10993 Compliant	Yes	No	Yes	Yes
Polycarbonate (Tinted) - Sabic Lexan HPS1	**-9024**	USP Class VI Certified, ISO 10993 Compliant	Yes	No	Yes	No
Polycarbonate (Tinted) - Styron Calibre Megarad 2081-15	**-9002, DCV Series**	ISO 10993 Compliant	Yes	No	Yes	No
Polyethylene - LyondellBasell Purell PE 1840 H	**SCV Series**	Please call for details	Yes	Yes	Yes	Yes
Polyethylene - Trilliant HC5420-0002 LL Natural Resin	**-VP1**	USP Class VI Certified	Yes	Yes	Yes	Yes
Polypropylene - Flint Hills P5M6K-080	**-6005, -6006**	USP Class VI Certified; 21 CFR 177.1520 FDA Approved	Yes	Yes	Yes	Yes
Polysulfone - Solvay Udel P1700 CL2611	**-40**	USP Class VI Certified; ISO 10993 Compliant; 21 CFR 177.1655 FDA Approved	Yes	Yes	Yes	Yes
PVDF - Arkema Kynar 1000 HD	**-J1A**	USP Class VI Certified; 21 CFR 177.2510 FDA Approved	Yes	Yes	Yes	Yes
SAN - BASF 388S TR 77770	**SCV Series**	ISO 10993 Compliant	Yes	Yes	Yes	No
Silicone - Wacker Elastosil LR 3003	**SCV Series**	USP Class VI Certified	Yes	Yes	Yes	Yes

***As determined by resin manufacturer**

Material - Manufacturer & Grade	VP Code	Gamma Radiation Sterilization*	Ethylene Oxide Sterilization	Autoclave Sterilization
ABS (Lace White) - INEOS Lustran 348-000000	**-81**	Compatible up to 5 Mrads	Good	Not suitable due to low heat deflection temperatures
ABS, MABS (Methyl Methacrylate) - BASF Terlux 2802 TR/HD	**-8003, SCV Series**	Withstands up to 5 Mrad doses without yellowing	Good	Poor; components may distort due to low heat deflection temperatures
ABS (Sno White) - INEOS Lustran 348-012002	**-8012**	Compatible up to 5 Mrads	Good	Not suitable due to low heat deflection temperatures
Acetal - DuPont Delrin 500P	**-10**	Compatible up to 1 Mrad	Excellent	Very good
Acetal Copolymer - BASF Ultraform N 2320 003	**-1006, -1007**	Compatible up to 1.5 Mrads	Excellent	Very good
Acrylic - Cyro Cyrolite Med 2	**-50**	Very good up to commonly used doses (6 Mrads)	Excellent	Not recommended
Nylon (PA 66) - DuPont Zytel 101F	**-0, -1, -2, -3, -4, -5, -06, -07**	Very good; may discolor to brownish hue	Very good; some suceptibility to oxidizing agents	Very good; product may swell slightly due to water absorption
Nylon (PA 66) - DuPont Zytel SC310 NC010	**-U1, U5, -U01, -U05**	Very good; may discolor to brownish hue	Very good; some suceptibility to oxidizing agents	Very good; product may swell slightly due to water absorption
Nylon (Glass Reinforced) - DuPont Zytel FGFE5171	**-U71, -U75**	Very good; may discolor to brownish hue	Very good; some suceptibility to oxidizing agents	Excellent
Nylon (Glass Reinforced) - DuPont Zytel 70G33L	**-72**	Very good; may discolor to brownish hue	Very good; some suceptibility to oxidizing agents	Excellent
Polycarbonate (Clear) - Bayer Makrolon 2558 550115	**-9**	Compatible up to 10 Mrads with minor loss of physical properties; will discolor to yellow-green hue	Highly compatible	Poor; may craze or stress crack due to molding stresses
Polycarbonate (Clear) - Bayer Makrolon Rx 1805 451118	**-9010, SCV Series**	Compatible up to 10 Mrads with minor loss of physical properties; may discolor slightly dependent upon dose/number of cycles	Highly compatible	Poor; may craze or stress crack due to molding stresses
Polycarbonate (Tinted) - Sabic Lexan HPS1	**-9024**	Highly compatible with reduced color shift when compared to unstabilized polycarbonate resins	Highly compatible	Not recommended
Polycarbonate (Tinted) - Styron Calibre Megarad 2081-15	**-9002, DCV Series**	Excellent up to 10 Mrads with minor loss of physical properties; light violet hue turns clear upon sterilization	Highly compatible	Not recommended
Polyethylene - LyondellBasell Purell PE 1840 H	**SCV Series**	Compatible up to 5 Mrads	Highly compatible	Not recommended
Polyethylene - Trilliant HC5420-0002 LL Natural Resin	**-VP1**	Highly compatible	Highly compatible	Not recommended
Polypropylene - Flint Hills P5M6K-080	**-6005, -6006, -6012**	Very good to commonly used sterilization doses (6 Mrads)	Highly compatible	Limited to 121°C for 20 minutes due to low heat deflection temperatures
Polysulfone - Solvay Udel P1700 CL2611	**-40**	Highly compatible; will discolor to brownish hue	Excellent	Excellent
PVDF - Arkema Kynar 1000 HD	**-J1A**	Highly compatible; will discolor to brownish hue	Excellent	Highly compatible
SAN - BASF 388S TR 77770	**SCV Series**	Compatible up to 5 Mrads	Good	Not suitable due to low heat deflection temperatures
Silicone - Wacker Elastosil LR 3003	**SCV Series**	Compatible up to 5 Mrads	Highly compatible	Very good

***1 Megarad (Mrad) = 10 kiloGrays (kGy)**

Property	ASTM Test Method	PVDF	Polycarb	Radiation Stable PC	Polypro	Nylona	GF Nylona	ABS	MABS	Polysulfone	Acetal
Tensile Strength	D638	5,400	10,000	9,800	—	12,000	27,000	4,800	—	—	—
Elongation at Break, %	D638	100-400	120	150	375	300	3	50	12	50-100	40
Tensile Yield Strength, psi	D638	6,500	9,200	9,800	4,400	12,000	—	5,700	6,960	10,200	9,900
Flexural Modulus, kpsi	D790	360	330	350	170	410	1,300	330	—	390	450
Rockwell Hardness D	D785	—	R118	R118	R80-102	R121	—	R107	—	—	R122
Rockwell Hardness M	—	—	M75	M72	—	M79	M101	—	—	M69	M89
Shore Hardness D	D2240	D76-80	—	—	—	—	—	—	—	—	—
Coef. of Linear 10-5 in/in/°F	D696	7.6	3.9	3.8	—	4	1.3	5.5	—	3.1	—
Deflection Temp°F @264psi	D648	244	266	252	—	194	480	173	194	345	216
Deflection Temp°F @66psi	D648	—	273	—	190	455	—	—	201	358	332
Water Absorption, %, 24 h	D570	0.015	0.15	0.15	0	1.2	0.7	0.25-0.40	0.7	0.3	0.4
Izod Impact, (Notched) ft-lb/in	D256	3.1	16.0	14.0	0.5	1.0	2.2	6.0	1.31	1.3	—

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1,827,467
1,817,921
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2,535,232
2,535,234

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