

## Section E



**E**



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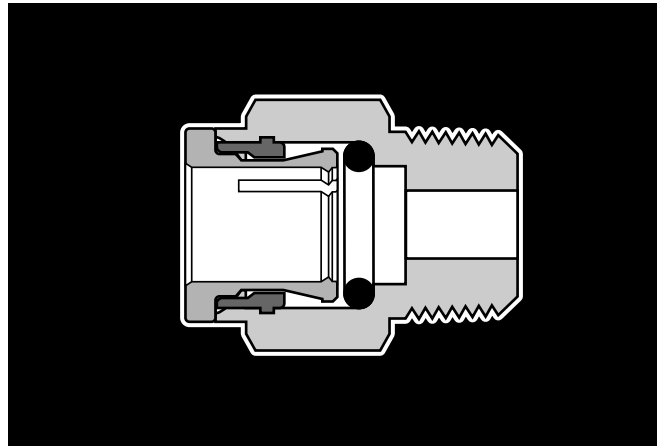
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### Advantages

Ready-to-use miniature one piece fitting for use with most thermoplastic and soft copper tubing. This fitting was designed to meet the needs of the motion control industry where fast assembly, disassembly and reassembly is important. No special tools needed for assembly; just insert the tubing until it bottoms. Microlok is designed to be used without a tube support to provide full flow through the tubing. The collet design of Microlok grips the tubing securely to provide tubing retention. The Microlok fitting comes in externally threaded hex and round straight fitting body styles and in a range of shaped configurations. Microlok straight fittings have a nickel plated brass body and shaped fittings have a composite body with nickel plated brass componentry. Microlok external pipe threads come with a pre-applied white acrylic sealant. Positional external pipe threaded ends are featured on shapes for installation in compact areas and for precise positioning. Microlok should not be used for live swivel applications.

### Materials

- Microlok Straights: CA360, CA345 (nickel plated)
- Microlok Shape Bodies: Reinforced Polyphenylene Oxide (PPO)
- O-Ring: Nitrile (other compounds available on request)
- Collet: Nickel Plated Brass

### Applications

Use with Series "U", "LU" and "HU" polyurethane tubing, series "E" polyethylene tubing or series "N" nylon tubing. Microlok was designed to meet the needs of the motion control industry. Consult the factory with any questions regarding special product applications. All applications should be carefully tested through the range of conditions which may be encountered prior to use.

### Working Pressure and Temperature Ranges

32° to +150°F at up to 150 PSI depending on tubing being used. Vacuum applications are dependent upon temperature and type of tubing used.

### Assembly Instructions

1. Cut thermoplastic tubing squarely, using tube cutter. Metal tubing should be cut squarely and free of burrs. Be certain the port or mating part is clean and free of debris.
2. Insert tubing into fitting until it bottoms. A slight twisting motion will ease the insertion. Pull on tubing to verify it is properly retained in the fitting.
3. To disassemble, simply push the collet against the body and remove tubing.

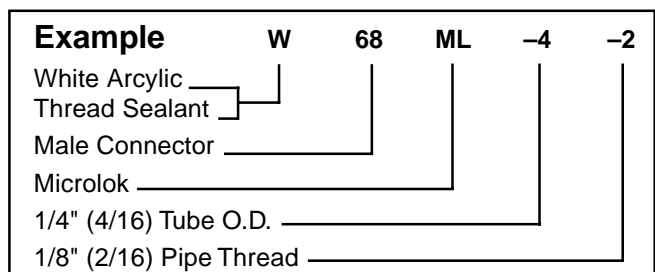
### Order

By part number and name.

### Nomenclature

Part numbers are constructed from symbols that identify the style and size of the fitting. The first series of numbers and letters identify the style and type fitting. The second series of numbers describe the size.

Note: 0 indicates 10-32 UNF Thread

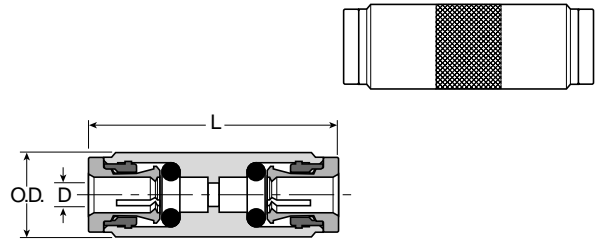


### Sizes

Tube sizes are determined by the number of sixteenths of an inch in the tube O.D..

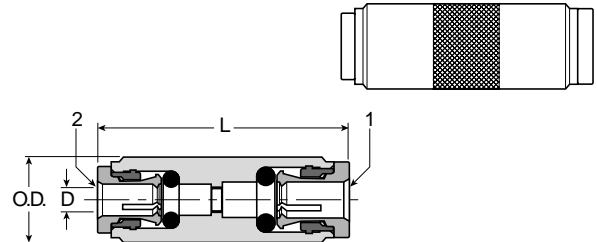
**Equal Union 62ML**

Part No.	Tube Size	O.D.	L	Flow Dia. D.
62ML-2	1/8	.34	1.02	.093
62ML-5/32	5/32	.38	1.03	.110
62ML-4	1/4	.47	1.10	.190
62ML-6	3/8	.63	1.32	.312
62ML-8	1/2	.75	1.43	.406



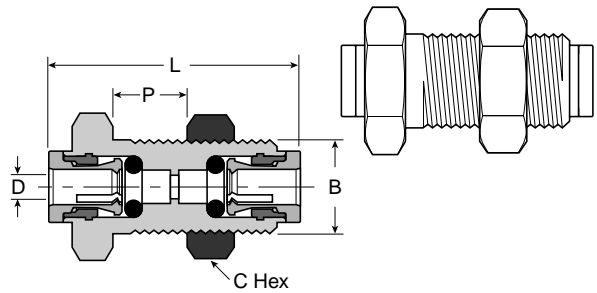
**Unequal Union 62ML**

Part No.	Tube Size 1	Tube Size 2	O.D.	L	Flow Dia. D.
62ML-5/32-2	5/32	1/8	.38	1.03	.093
62ML-4-2	1/4	1/8	.47	1.09	.093
62ML-4-5/32	1/4	5/32	.47	1.09	.110
62ML-4-6	1/4	3/8	.63	1.23	.190
62ML-6-8	3/8	1/2	.75	1.37	.312



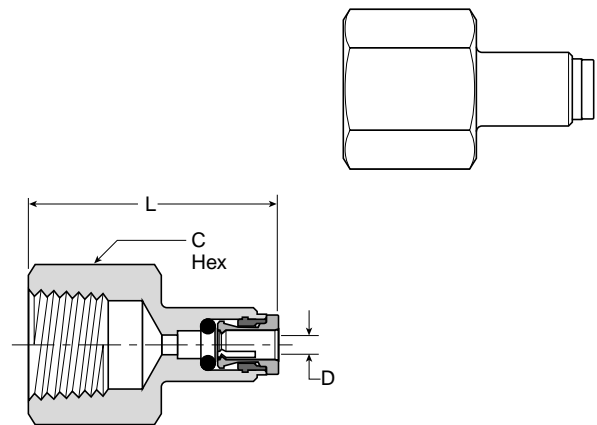
**Bulkhead Union 62MLBH**

Part No.	Tube Size	B	C Hex	P Max.	L	Flow Dia. D.
62MLBH-2	1/8	3/8	1/8	.51	1.02	.093
62MLBH-5/32	5/32	7/16	1/2	.51	1.03	.110
62MLBH-4	1/4	1/2	5/8	.55	1.10	.190
62MLBH-6	3/8	5/8	3/4	.55	1.32	.312
62MLBH-8	1/2	3/4	7/8	.60	1.43	.406



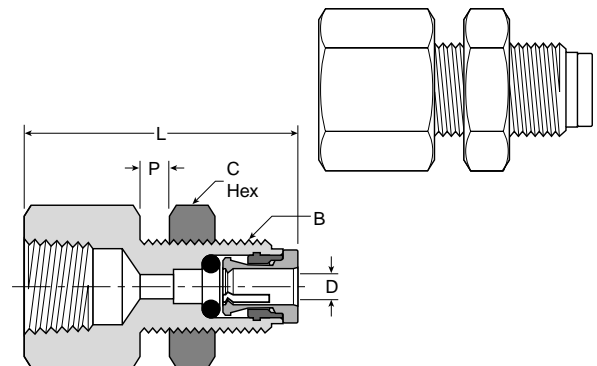
**Female Connector 66ML**

Part No.	Tube Size	Pipe Thread NPTF	C Hex	L	Flow Dia. D.
66ML-2-2	1/8	1/8	9/16	.99	.093
66ML-2-4	1/8	1/4	11/16	1.22	.093
66ML-5/32-2	5/32	1/8	9/16	.98	.110
66ML-5/32-4	5/32	1/4	11/16	1.19	.110
66ML-4-2	1/4	1/8	9/16	.99	.190
66ML-4-4	1/4	1/4	11/16	1.20	.190
66ML-4-6	1/4	3/8	13/16	1.24	.190
66ML-6-4	3/8	1/4	11/16	1.28	.312
66ML-6-6	3/8	3/8	13/16	1.28	.312
66ML-6-8	3/8	1/2	1	1.44	.312
66ML-8-6	1/2	3/8	13/16	1.35	.406
66ML-8-8	1/2	1/2	1	1.58	.406



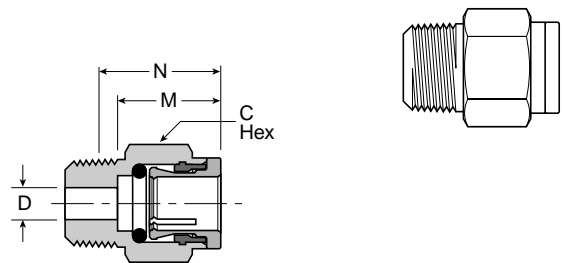
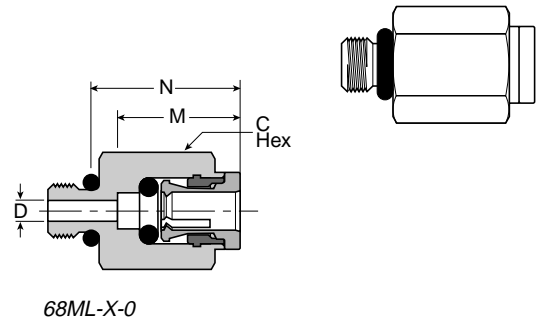
**Female Bulkhead 66MLBH**

Part No.	Tube Size	Pipe Thread NPTF	B Thread	C Hex	P Max.	L	Flow Dia. D.
66MLBH-2-4	1/8	1/4	3/8-24	11/16	.31	1.22	.093
66MLBH-5/32-2	5/32	1/8	7/16-24	9/16	.36	1.07	.110
66MLBH-5/32-4	5/32	1/4	7/16-24	9/16	.36	1.29	.110
66MLBH-4-2	1/4	1/8	1/2-24	9/16	.36	1.06	.190
66MLBH-4-4	1/4	1/4	1/2-24	11/16	.36	1.25	.190
66MLBH-6-6	3/8	3/8	5/8-18	13/16	.36	1.34	.312
66MLBH-8-6	1/2	3/8	3/4-16	13/16	.36	1.41	.406
66MLBH-8-8	1/2	1/2	3/4-16	1	.36	1.64	.406



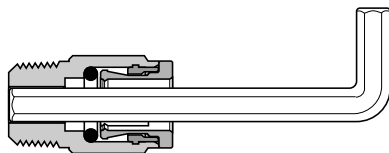
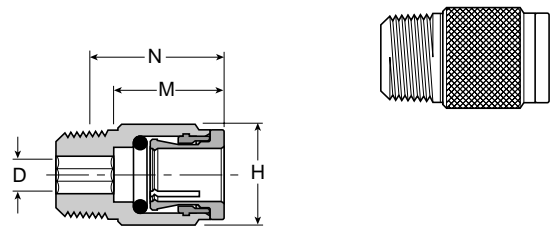
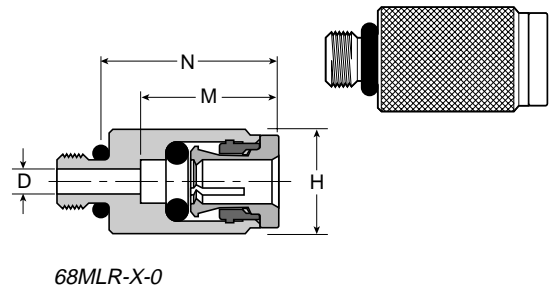
**Microlok Male Connector W68ML**

Part No.	Tube Size	Pipe Thread	C Hex	Assm. Ht.		Flow Dia. D
				N	M	
W68ML-2-1	1/8	1/16	3/8	.50	.49	.094
W68ML-2-2	1/8	1/8	7/16	.46	.49	.094
68ML-2-0	1/8	10-32	3/8	.58	.49	.078
W68ML-5/32-1	5/32	1/16	7/16	.53	.49	.094
W68ML-5/32-2	5/32	1/8	7/16	.33	.49	.110
W68ML-5/32-4	5/32	1/4	5/8	.45	.49	.110
68ML-5/32-0	5/32	10-32	7/16	.60	.49	.078
W68ML-4-1	1/4	1/16	7/16	.64	.52	.140
W68ML-4-2	1/4	1/8	1/2	.52	.52	.220
W68ML-4-4	1/4	1/4	5/8	.46	.52	.220
W68ML-4-6	1/4	3/8	11/16	.50	.52	.220
68ML-4-0	1/4	10-32	7/16	.60	.52	.078
W68ML-6-2	3/8	1/8	5/8	.81	.63	.220
W68ML-6-4	3/8	1/4	5/8	.73	.63	.312
W68ML-6-6	3/8	3/8	11/16	.54	.63	.312
W68ML-6-8	3/8	1/2	7/8	.63	.63	.312
W68ML-8-4	1/2	1/4	3/4	.94	.68	.314
W68ML-8-6	1/2	3/8	3/4	.78	.68	.440
W68ML-8-8	1/2	1/2	7/8	.63	.68	.440



**Microlok Round Body Male Connector W68MLR**

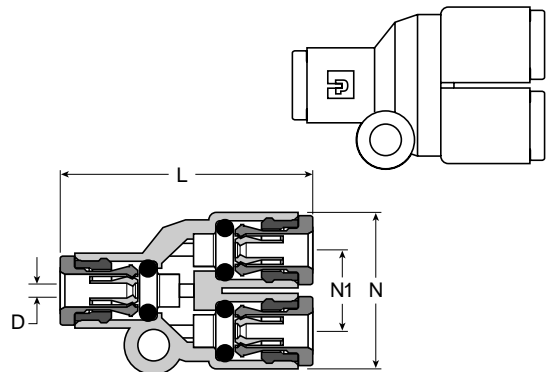
Part No.	Tube Size	Pipe Thread	Body Dia. H	Internal Hex	Assm. Ht.		Flow Dia. D
					N	M	
68MLR-2-0	1/8	10-32	.34	—	.57	.49	.078
W68MLR-5/32-1	5/32	1/16	.38	1/8	.55	.49	.126
W68MLR-5/32-2	5/32	1/8	.43	1/8	.56	.49	.126
68MLR-5/32-0	5/32	10-32	.38	—	.57	.49	.078
W68MLR-4-1	1/4	1/16	.47	5/32	.68	.52	.156
W68MLR-4-2	1/4	1/8	.47	3/16	.59	.52	.188
W68MLR-4-4	1/4	1/4	.59	3/16	.51	.52	.188
68MLR-4-0	1/4	10-32	.47	—	.58	.52	.094



5/32" and larger straight Microlok round body Male Connectors with Pipe Threads have an internal hex for the use of an Allen Key to allow the fitting to be mounted in any position. This also permits close porting not possible with a standard wrench.

**Union Y Connector 362ML**

Part No.	Tube Size	Mounting Hole Dia.	L	N	N1	Flow Dia. D
362ML-5/32	5/32	.13	1.08	.71	.38	.080
362ML-4	1/4	.13	1.23	.90	.48	.130

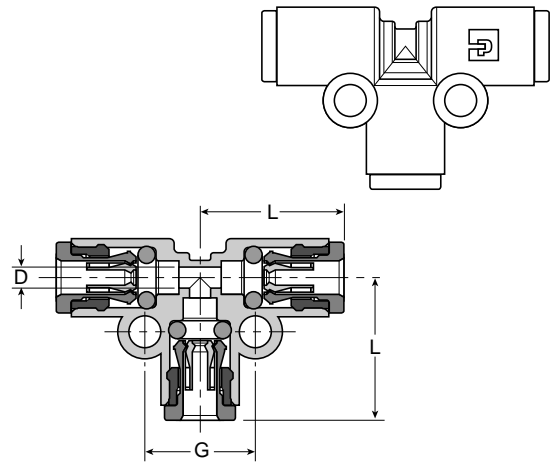


**Union Tee 364ML**

Composite Body

Part No.	Tube Size	Mounting Hole Dia.	L	G	Flow Dia. D
364ML-2	1/8	.13	.56	.43	.081
364ML-5/32	5/32	.13	.58	.46	.110
364ML-4	1/4	.13	.67	.53	.190
364ML-6*	3/8	—	.96	—	.250
364ML-8*	1/2	—	1.11	—	.370

\* 3/8 & 1/2 have no mounting hole

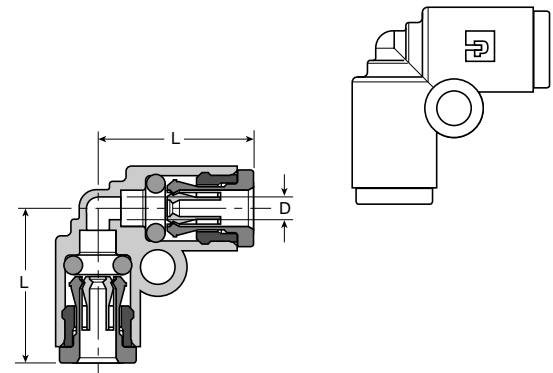


**Union Elbow 365ML**

Composite Body

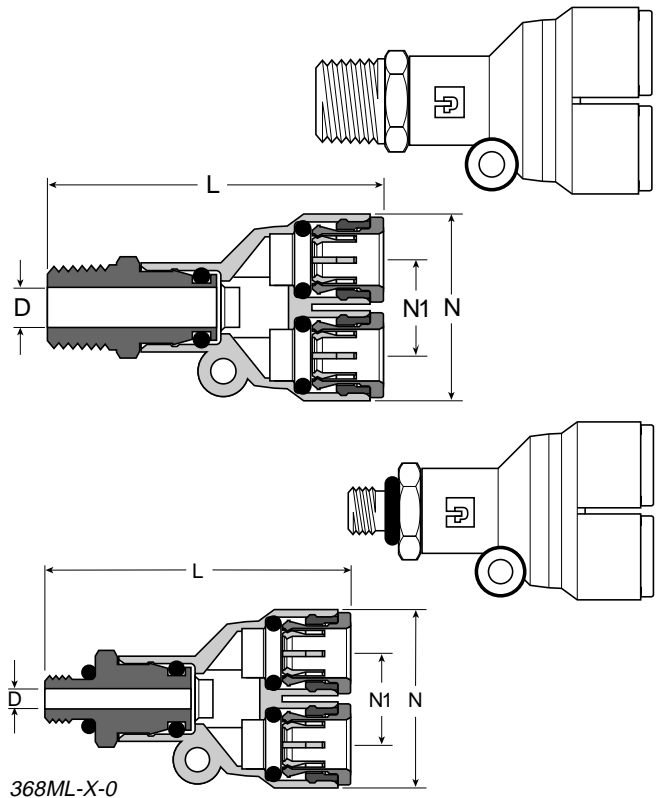
Part No.	Tube Size	Mounting Hole Dia.	L	Flow Dia. D
365ML-2	1/8	.13	.56	.081
365ML-5/32	5/32	.13	.58	.110
365ML-4	1/4	.13	.67	.190
365ML-6*	3/8	—	.96	.250
365ML-8*	1/2	—	1.09	.370

\* 3/8 & 1/2 have no mounting hole



**Union Y Male Connector 368ML**

Part No.	Tube Size	Pipe Thread	Mounting Hole Dia.	L	N	N1	Flow Dia. D
368ML-2-0	1/8	10-32	.13	1.28	.64	.33	.060
W368ML-2-1	1/8	1/16	.13	1.42	.64	.33	.060
W368ML-2-2	1/8	1/8	.13	1.42	.64	.33	.060
368ML-5/32-0	5/32	10-32	.13	1.35	.71	.38	.078
W368ML-5/32-1	5/32	1/16	.13	1.48	.71	.38	.080
W368ML-5/32-2	5/32	1/8	.13	1.48	.71	.38	.080
368ML-4-0	1/4	10-32	.13	1.48	.90	.47	.078
W368ML-4-1	1/4	1/16	.13	1.62	.90	.47	.130
W368ML-4-2	1/4	1/8	.13	1.62	.90	.47	.130
W368ML-4-4	1/4	1/4	.13	1.96	.90	.47	.130



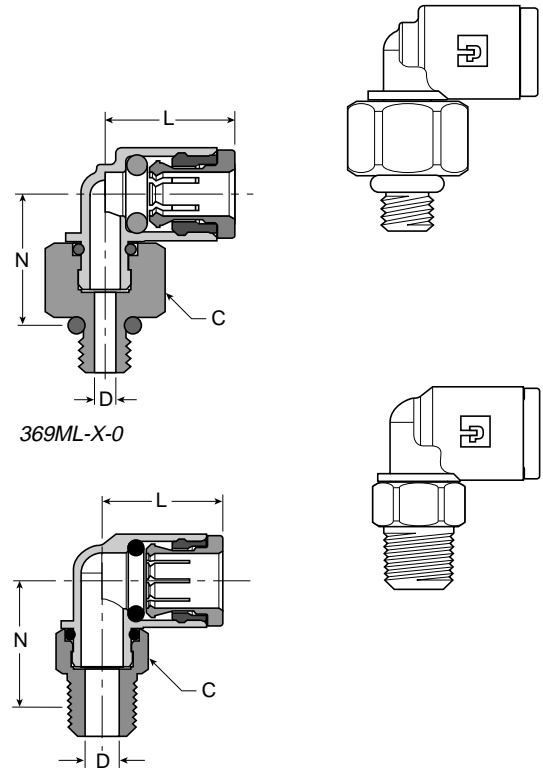
368ML-X-0



**Male Elbow Swivel 90° W369ML**

Composite Body

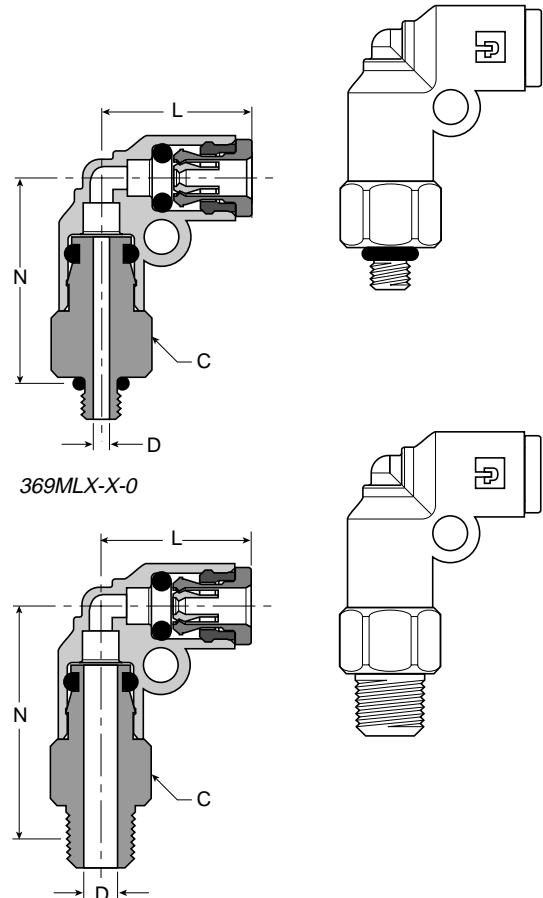
Part No.	Tube Size	Pipe Thread	C Hex	L	Ht. N	Assm. Flow	
						Dia	D
369ML-2-0	1/8	10-32	3/8	.56	.45	.078	
W369ML-2-1	1/8	1/16	3/8	.56	.48	.110	
W369ML-2-2	1/8	1/8	7/16	.56	.40	.110	
W369ML-2-4	1/8	1/4	9/16	.46	.54	.110	
369ML-5/32-0	5/32	10-32	3/8	.58	.45	.078	
W369ML-5/32-1	5/32	1/16	3/8	.58	.48	.110	
W369ML-5/32-2	5/32	1/8	7/16	.58	.40	.110	
W369ML-5/32-4	5/32	1/4	5/8	.58	.49	.110	
369ML-4-0	1/4	10-32	3/8	.67	.54	.078	
W369ML-4-1	1/4	1/16	3/8	.67	.57	.156	
W369ML-4-2	1/4	1/8	7/16	.67	.49	.195	
W369ML-4-4	1/4	1/4	9/16	.67	.57	.195	
W369ML-4-6	1/4	3/8	11/16	.55	.68	.195	
W369ML-6-2	3/8	1/8	3/4	.96	.87	.220	
W369ML-6-4	3/8	1/4	3/4	.96	.87	.250	
W369ML-6-6	3/8	3/8	3/4	.96	.93	.250	
W369ML-6-8	3/8	1/2	7/8	.96	1.04	.250	
W369ML-8-4	1/2	1/4	15/16	1.09	1.04	.313	
W369ML-8-6	1/2	3/8	15/16	1.09	1.05	.375	
W369ML-8-8	1/2	1/2	1	1.09	1.12	.376	



**Extended Male Elbow Swivel W369MLX**

Part No.	Tube Size	Pipe Thread	Mounting Hole Dia.	C Hex	L	Assm. Flow	
						Ht. N	Flow Dia D
369MLX-2-0	1/8	10-32	.13	3/8	.56	.84	.078
W369MLX-2-1	1/8	1/16	.13	3/8	.56	.85	.081
W369MLX-2-2	1/8	1/8	.13	7/16	.56	.77	.081
369MLX-5/32-0	5/32	10-32	.13	3/8	.58	.86	.078
W369MLX-5/32-1	5/32	1/16	.13	3/8	.58	.86	.106
W39MLX-5/32-2	5/32	1/8	.13	7/16	.58	.78	.106
W369MLX-5/32-4	5/32	1/4	.13	9/16	.58	.86	.106
369MLX-4-0	1/4	10-32	.13	3/8	.70	1.00	.078
W369MLX-4-1	1/4	1/16	.13	3/8	.67	1.05	.156
W369MLX-4-2	1/4	1/8	.13	7/16	.67	.93	.190
W369MLX-4-4	1/4	1/4	.13	9/16	.67	1.00	.190
W369MLX-6-4*	3/8	1/4	—	3/4	.96	1.62	.250
W369MLX-6-6*	3/8	3/8	—	3/4	.96	1.62	.250
W369MLX-6-8*	3/8	1/2	—	7/8	.96	1.79	.250
W369MLX-8-4*	1/2	1/4	—	15/16	1.09	1.79	.313
W369MLX-8-6*	1/2	3/8	—	15/16	1.09	1.95	.375
W369MLX-8-8*	1/2	1/2	—	1	1.09	2.02	.376

\* 3/8 & 1/2 have no mounting hole

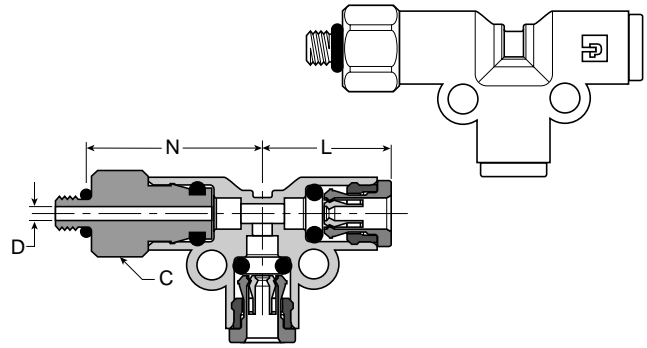


**Male Run Tee Swivel W371ML**

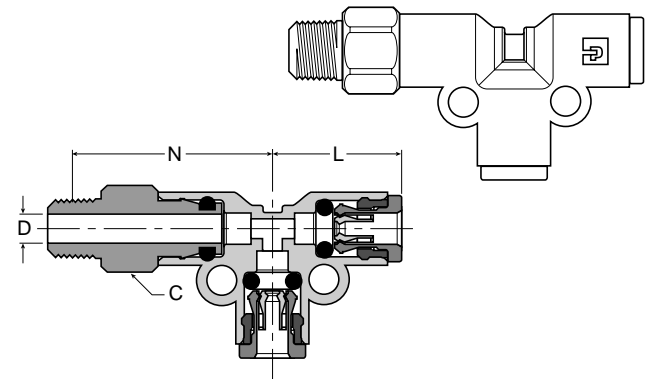
Composite Body

Part No.	Tube Size	Pipe Thread	Mounting Hole Dia.	C Hex	Assm.			Flow Dia D
					L	N	Ht.	
371ML-2-0	1/8	10-32	.13	3/8	.56	.85	.078	
W371ML-2-1	1/8	1/16	.13	3/8	.56	.85	.081	
W371ML-2-2	1/8	1/8	.13	7/16	.56	.77	.081	
371ML-5/32-0	5/32	10-32	.13	3/8	.58	.85	.078	
W371ML-5/32-1	5/32	1/16	.13	3/8	.58	.86	.106	
W371ML-5/32-2	5/32	1/8	.13	7/16	.58	.78	.106	
371ML-4-0*	1/4	10-32	—	3/8	.67	1.00	.078	
W371ML-4-1*	1/4	1/16	—	3/8	.67	1.05	.156	
W371ML-4-2*	1/4	1/8	—	7/16	.67	.93	.190	
W371ML-4-4*	1/4	1/4	—	9/16	.67	1.00	.190	
W371ML-6-4*	3/8	1/4	—	3/4	.96	.97	.250	
W371ML-6-6*	3/8	3/8	—	3/4	.96	.94	.250	
W371ML-6-8*	3/8	1/2	—	7/8	.96	1.05	.250	
W371ML-8-4*	1/2	1/4	—	15/16	1.11	1.07	.313	
W371ML-8-6*	1/2	3/8	—	15/16	1.11	1.08	.375	
W371ML-8-8*	1/2	1/2	—	1	1.11	1.15	.376	

\* 1/4, 3/8 & 1/2 have no mounting hole



371ML-X-0

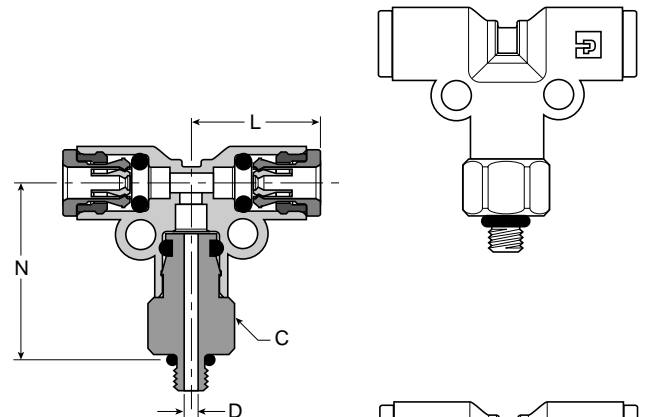


**Male Branch Tee Swivel W372ML**

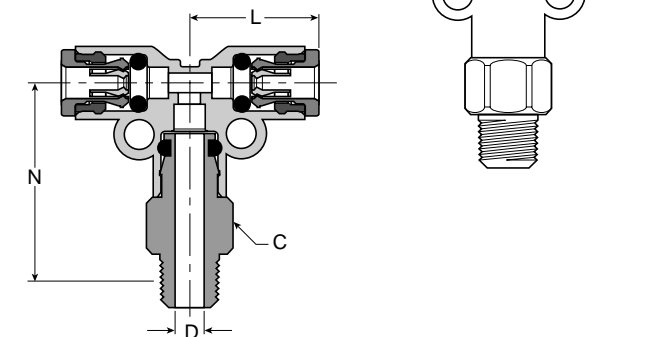
Composite Body

Part No.	Tube Size	Pipe Thread	Mounting Hole Dia.	C Hex	Assm.			Flow Dia D
					L	N	Ht.	
372ML-2-0	1/8	10-32	.13	3/8	.56	.85	.078	
W372ML-2-1	1/8	1/16	.13	3/8	.56	.85	.081	
W372ML-2-2	1/8	1/8	.13	7/16	.56	.77	.081	
372ML-5/32-0	5/32	10-32	.13	3/8	.58	.85	.078	
W372ML-5/32-1	5/32	1/16	.13	3/8	.58	.86	.106	
W372ML-5/32-2	5/32	1/8	.13	7/16	.58	.78	.106	
372ML-4-0*	1/4	10-32	—	3/8	.67	1.00	.078	
W372ML-4-1*	1/4	1/16	—	3/8	.67	1.05	.156	
W372ML-4-2*	1/4	1/8	—	7/16	.67	.93	.190	
W372ML-4-4*	1/4	1/4	—	9/16	.67	1.00	.190	
W372ML-6-2*	3/8	1/8	—	3/4	.96	.91	.220	
W372ML-6-4*	3/8	1/4	—	3/4	.96	1.00	.250	
W372ML-6-6*	3/8	3/8	—	3/4	.96	.97	.250	
W372ML-6-8*	3/8	1/2	—	7/8	.96	1.08	.250	
W372ML-8-4*	1/2	1/4	—	15/16	1.11	1.04	.313	
W372ML-8-6*	1/2	3/8	—	15/16	1.11	1.05	.375	
W372ML-8-8*	1/2	1/2	—	1	1.11	1.12	.376	

\* 1/4, 3/8 & 1/2 have no mounting hole



372ML-X-0



**Advantages**

Chemical resistant, flexible, low cost, eight colors, five tube sizes and choice of reel lengths.

**Construction**

Flexible polyethylene thermoplastic tubing is extruded from high molecular weight resin for increased dimensional stability, uniformity and long-term strength. Its resistance to environmental stress cracking greatly exceeds that of ordinary polyethylene tubing as measured by ASTM D-1693, (10% IGEPAL).

**Applications & Approvals**

Polyethylene tubing is available in black as well as seven coding colors as recommended by the Instrument Society of America. Black (EB) tubing contains an ultra-violet inhibitor which is recommended for use in sunlit areas. Ingredients of natural and color tubing (except black) listed below meet FDA requirements for food contact applications. All tubing conforms to ASTM D-1248, Type I, Class A, Category 4, Grade E5.

**Temperature Range**

Suggested operating temperature range is -80°F to + 150°F (-62°C to +66°C).

**Fitting**

**Recommendation**

- Brass fittings

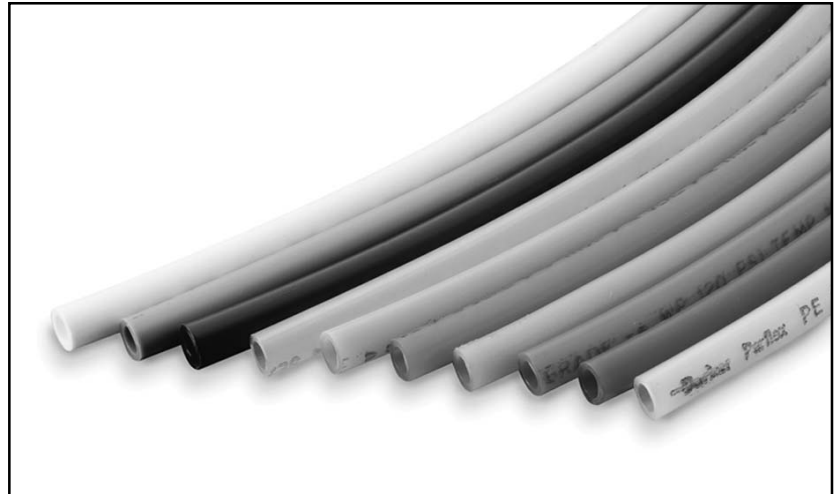
**Nomenclature**

Part numbers are constructed from symbols that identify the style and size of the fitting. Letters identify style and material. Numbers identify size in 1/16's of an inch.

**Example:**

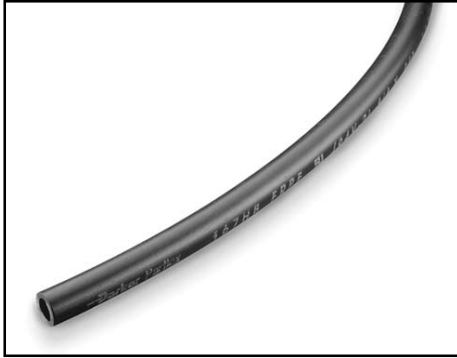
E - 6 4 - Y - 0500

Polyethylene	_____
3/8" (6/16) Tube O.D.	_____
1/4" (4/16) Tube I.D.	_____
Color, Yellow	_____
Reel Footage	_____



**Instrument Grade Tubing E**

Part Number	Color	O.D.	I.D.	Wall	Reel Length Feet	Working Pressure	Min. Burst	Min. Bend Radius	Weight Per 100 Feet
						psi at 73°F	psi at 73°F	Inches	Feet
E-43-0100	Natural	1/4	.170	.040	100	120	625	1	1.1
E-43-0500	Natural	1/4	.170	.040	500	120	625	1	1.1
E-43-1000	Natural	1/4	.170	.040	1000	120	625	1	1.1
EB-43-0100	Black	1/4	.170	.040	100	120	625	1	1.1
EB-43-0500	Black	1/4	.170	.040	500	120	625	1	1.1
EB-43-1000	Black	1/4	.170	.040	1000	120	625	1	1.1
E-43-R-0100	Red	1/4	.170	.040	100	120	625	1	1.1
E-43-R-0500	Red	1/4	.170	.040	500	120	625	1	1.1
E-43-B-0100	Blue	1/4	.170	.040	100	120	625	1	1.1
E-43-B-0500	Blue	1/4	.170	.040	500	120	625	1	1.1
E-43-O-0500	Orange	1/4	.170	.040	500	120	625	1	1.1
E-43-Y-0500	Yellow	1/4	.170	.040	500	120	625	1	1.1
E-43-P-0500	Purple	1/4	.170	.040	500	120	625	1	1.1
E-43-G-0500	Green	1/4	.170	.040	500	120	625	1	1.1
E-53-0500	Natural	5/16	.187	.062	500	145	800	1-1/8	2.1
EB-53-0500	Black	5/16	.187	.062	500	145	800	1-1/8	2.1
E-64-0100	Natural	3/8	.250	.062	100	125	675	1-1/4	2.5
E-64-0500	Natural	3/8	.250	.062	500	125	675	1-1/4	2.5
EB-64-0100	Black	3/8	.250	.062	100	125	675	1-1/4	2.5
EB-64-0500	Black	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-R-0500	Red	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-B-0500	Blue	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-O-0500	Orange	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-Y-0500	Yellow	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-P-0500	Purple	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-G-0500	Green	3/8	.250	.062	500	125	675	1-1/4	2.5
E-86-0100	Natural	1/2	.375	.062	100	90	425	2-1/2	3.6
EB-86-0100	Black	1/2	.375	.062	100	90	425	2-1/2	3.6
E-108-0100	Natural	5/8	.500	.062	100	70	325	4	4.6
EB-108-0100	Black	5/8	.500	.062	Coil	70	325	4	4.6



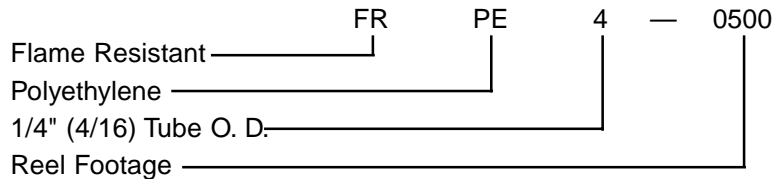
### Temperature Range

Suggested operating temperature range is -85°F to +150°F (-65°C to + 66°C).

### Nomenclature

Order by tubing part number and name.

#### Example:



### Construction & Approvals

Flame resistant polyethylene is manufactured from a distinctively formulated compound which meets the UL94 V-2 flame classification. It also meets the flame spread, fuel contribution and smoke density requirements of the ASTM E84-81a tunnel test.

### Applications

Parker series FRPE tubing is the preferred product for pneumatic control applications in the heating- ventilating- air conditioning-energy conservation industry. It is also suitable for use in petrochemical plants, petroleum refineries, pulp and paper mills, mines, steel mills and other industries where protection against intermittent flame and hot sparks is necessary.

### Flame resistant tubing FRPE

Part No.	Color	O.D.	I.D.	Wall	Reel Length Feet	Working Pressure		Min. Bend Radius Inches	Min. Weight Per 100 Feet
						psi at 73°F	psi at 73°F		
FRPE2.5-0500	Black	5/32	.096	.030	500	180	900	1/2	.56
FRPE4-0250	Black	1/4	.170	.040	250	130	650	3/4	1.20
FRPE4-0500	Black	1/4	.170	.040	500	130	650	3/4	1.20
FRPE4-1000	Black	1/4	.170	.040	1000	130	650	3/4	1.20
FRPE6-0250	Black	3/8	.250	.062	250	180	900	1-1/2	2.90
FRPE6-0500	Black	3/8	.250	.062	500	180	900	1-1/2	2.90
FRPE8-0250	Black	1/2	.375	.062	250	130	650	1-3/4	4.00



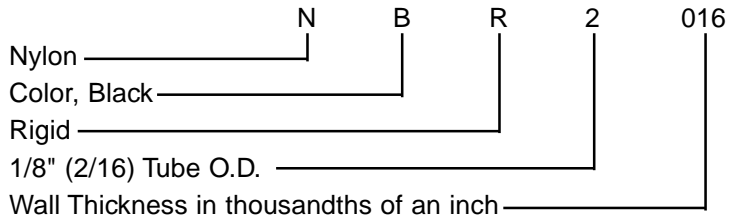




## Nomenclature

Order by tubing part number and name.

### Example:



## Advantages

Series NR semi-rigid nylon tubing offers better chemical resistance than series N, good resistance to high ambient temperature and low moisture absorption. NR has a high tensile strength which will give excellent coupling retention in high pressure, temperature and vibration environments.

## Construction

Parker series NR tubing is manufactured from a semi-rigid nylon II material. The tubing does not contain plasticizers.

## Applications & Approvals

NR tubing is specified for machine tool lubricating systems, marine control systems, process lines for chemicals and oils and other applications requiring a high quality nylon tube.

## Temperature Range

The recommended operating temperature range for service at rated pressures with compatible fluids is -60°F to +200°F (-51°C to +93°C).

## Fitting Recommendations

- FT fittings
- Brass fittings

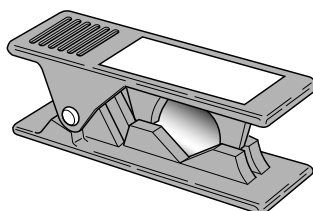
## Semi-rigid High Strength Tubing NR

Nylon Part No.	Color	Nom. Tube O.D.	Nom. Tube I.D.	Average Wall Thick.	*Min. Burst Pressure at 73°F	Min. Bend Radius	Std. Reel Length	Std. Reels per Carton
					psi	Inches	Feet	
NNR-2-017	Natural	1/8	.091	.017	1700	1/2	500	1
NBR-2-017	Black	1/8	.091	.017	1700	1/2	500	1
NNR-2-026	Natural	1/8	.073	.026	2500	3/8	500	1
NBR-2-026	Black	1/8	.073	.026	2500	3/8	500	1
NNR-3-024	Natural	3/16	.140	.024	1700	3/4	500	1
NBR-3-024	Black	3/16	.140	.024	1700	3/4	500	1
NNR-3-039	Natural	3/16	.110	.039	2500	5/8	500	1
NBR-3-039	Black	3/16	.110	.039	2500	5/8	500	1
NNR-4-035	Natural	1/4	.180	.035	1700	1	250	1
NBR-4-035	Black	1/4	.180	.035	1700	1	250	1
NNR-4-050	Natural	1/4	.150	.050	2500	7/8	250	1
NBR-4-050	Black	1/4	.150	.050	2500	7/8	250	1
NNR-5-040	Natural	5/16	.233	.040	1700	1-1/2	250	1
NBR-5-040	Black	5/16	.233	.040	1700	1-1/2	250	1
NNR-6-048	Natural	3/8	.279	.048	1700	1-3/4	250	1
NBR-6-048	Black	3/8	.279	.048	1700	1-3/4	250	1
NNR-6-075	Natural	3/8	.225	.075	2500	1-1/2	250	1
NBR-6-075	Black	3/8	.225	.075	2500	1-1/2	250	1
NNR-8-062	Natural	1/2	.376	.062	1500	2-3/8	250	1
NBR-8-062	Black	1/2	.376	.062	1500	2-3/8	250	1
NNR-8-075	Natural	1/2	.350	.075	2200	2-1/2	250	1
NBR-8-075	Black	1/2	.350	.075	2200	2-1/2	250	1

\*Suggested working pressure is 1/4 of burst pressure.

## Plastic Tube Cutter PTC

Part No. PTC-001



An easy to handle razor/edged tube cutter, closes automatically, assuring clean and square cuts.

May be used with polyethylene, polypropylene, nylon and other plastic tubing.

## How To Use

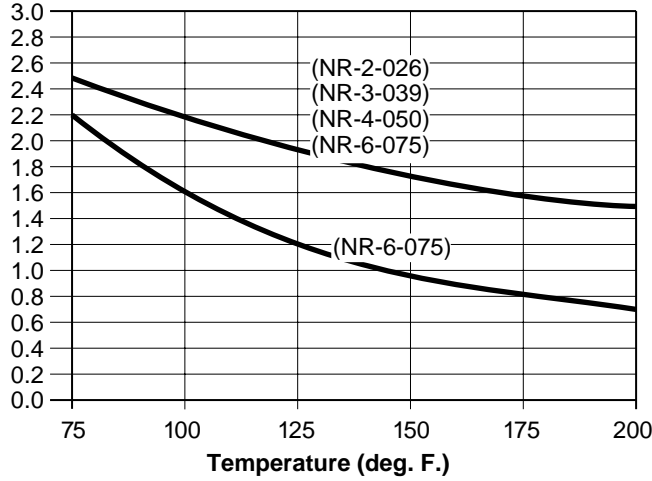
Insert plastic tube to desired length, allow tube cutter to close, then apply pressure until tube snaps off.



### Nylon Semi-Rigid Tubing

NR Series (NNR, NBR)  
 1/8 thru 1/2 O.D.

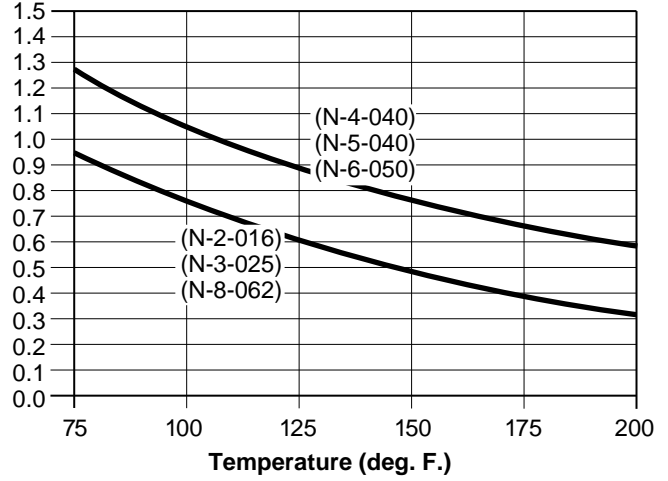
**Burst Pressure (psig) (Thousands)**



### Nylon Flexible Tubing

N Series  
 1/8 thru 1/2 O.D.

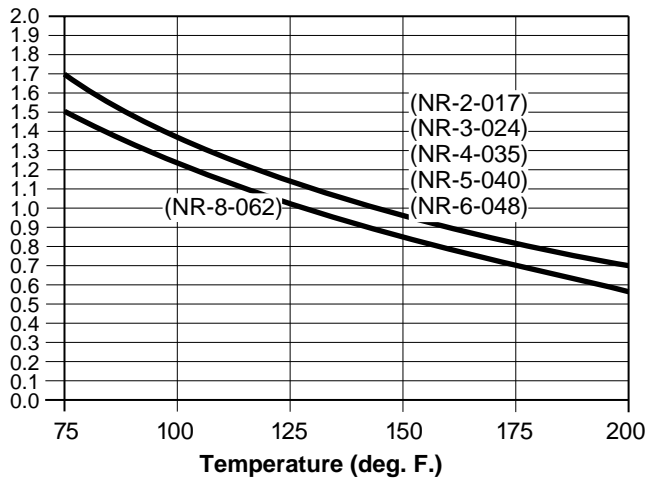
**Burst Pressure (psig) (Thousands)**



### Nylon Semi-Rigid Tubing

NR Series (NNR, NBR)  
 1/8 thru 1/2 O.D.

**Burst Pressure (psig) (Thousands)**

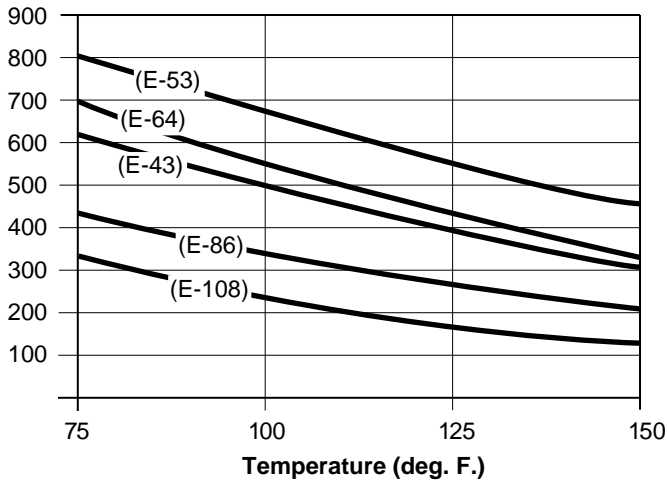


Suggested working pressures are 1/4 of burst pressure at system operating temperature.

### Polyethylene Tubing

Laboratory Grade E Series  
 1/4 thru 5/8 O.D.

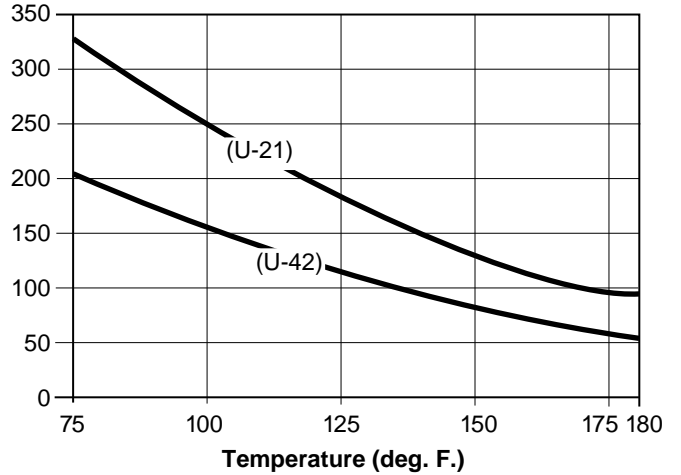
**Minimum  
 Burst  
 Pressure**



### Polyethylene Tubing

"U" Series  
 1/8 thru 1/4 O.D.  
 Polyether Base

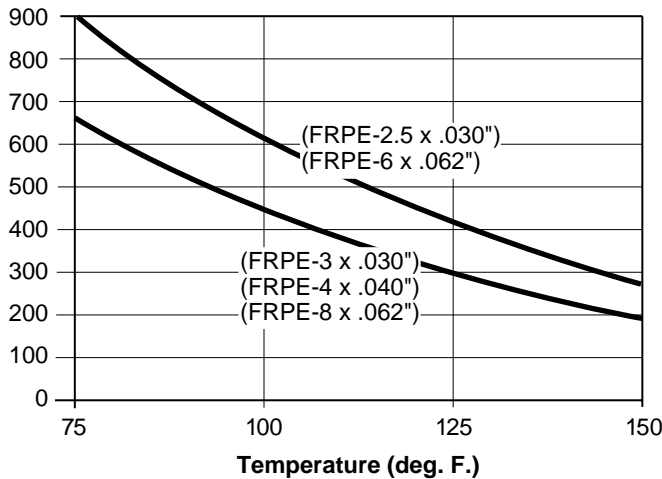
**Minimum  
 Burst  
 Pressure**



### Polyethylene Tubing

Flame Resistant FRPE Series  
 5/32 thru 1/2 O.D.

**Minimum  
 Burst  
 Pressure**



Suggested working pressures are 1/4 of burst pressure at system operating temperature.



	All Brass Body Fittings (Except Prestolok) Rating	Prestolok Fitting Rating		All Brass Body Fittings (Except Prestolok) Rating	Prestolok Fitting Rating
Acetic Acid	4	4	Citric Acid	3	3
Acetic Anhydride	4	4	Coffee	1	4
Acetone	1	4	Copper Chloride	4	4
Alum	4	4	Copper Sulfate	4	4
Aluminum Chloride	4	4	Corn Oil	2	2
Aluminum Sulfate	4	4	Cottonseed Oil	2	2
Ammonium Hydroxide	4	4	Creosote	2	2
Ammonium Chloride	4	4	Crude Oil	3	3
Ammonium Nitrate	4	4	Ethers	1	4
Ammonium Sulfate	4	4	Ethyl Acetate	2	4
Amyl Acetate	2	4	Ethyl Chloride	3	3
Aniline	3	4	Ethylene Glycol	2	2
Aniline Dyes	3	4	Ferric Chloride	4	4
Asphalt	1	2	Formaldehyde	3	3
Barium Chloride	4	4	Furfural	3	4
Beer	2	4	Gelatine	1	1
Beet Sugar Syrups	2	2	Glucose	1	1
Benzoic Acid	2	4	Glycerine	1	1
Black Liquor, Sulfate Process	4	4	Hydrobromic Acid	4	4
Bleaching Powder, Wet	4	4	Hydrochloric Acid	4	4
Borax	1	2	Hydrocyanic Acid	4	4
Bordeaux Mixture	2	2	Hydrofluoric Acid	4	4
Boric Acid	2	2	Hydrofluosilicic Acid	4	4
Bromine, Dry	1	4	Hydrogen Peroxide	3	4
Bromine, Moist	4	4	Hydrogen Sulfide, Moist	3	4
Butyric Acid	3	4	Lacquers	1	4
Calcium Bisulfite	4	4	Lacquer Solvents	1	4
Calcium Chloride	4	4	Lactic Acid Cold	3	3
Calcium Hydroxide	2	2	Lime	1	1
Calcium Hypochlorite	4	4	Lime-Sulfur	2	4
Cane Sugar Syrups	2	2	Linseed Oil	2	2
Carbolic Acid	2	4	Magnesium Chloride	4	4
Carbon Dioxide, Dry	1	1	Magnesium Hydroxide	1	2
Carbon Dioxide, Moist	3	3	Magnesium Sulfate	3	3
Carbon Disulfide	1	4	Methyl Chloride, Dry	1	4
Carbon Tetrachloride, Moist	4	4	Milk	2	4
Castor Oil	1	1	Nitric Acid	4	4
Chlorine, Dry	1	4	Nitrogen	1	1
Chlorine, Moist	4	4	Oleic Acid	3	3
Chloroacetic Acid	4	4	Oxalic Acid	3	3
Chloroform, Dry	1	4	Palmitic Acid	3	3

1 — SATISFACTORY

2 — FAIR

3 — RECOMMEND TESTING

4 — UNSATISFACTORY

	All Brass Body Fittings (Except Prestolok) Rating	Prestolok Fitting Rating		All Brass Body Fittings (Except Prestolok) Rating	Prestolok Fitting Rating
Phosphoric Acid	4	4	Sodium Sulfite	4	4
Potassium Chloride	4	4	Sodium Thiosulfate	2	2
Potassium Cyanide	4	4	Steam	3	4
Potassium Dichromate, Acid	4	4	Stearic Acid	3	3
Potassium Hydroxide	3	3	Sulfur, Dry	1	4
Potassium Sulfate	2	2	Sulfur Chloride, Dry	1	4
Sea Water	3	3	Sulfur Dioxide, Dry	1	4
Soap Solutions	2	2	Sulfur Dioxide, Moist	4	4
Sodium Bicarbonate	3	3	Sulfur Trioxide, Dry	1	4
Sodium Bisulfate	4	4	Sulfuric Acid	4	4
Sodium Bisulfite	4	4	Sulfurous Acid	4	4
Sodium Carbonate	2	2	Tar	2	2
Sodium Chloride	4	4	Tartaric Acid	3	3
Sodium Cyanide	4	4	Toluene	1	4
Sodium Hydroxide	3	3	Trichloroacetic Acid	4	4
Sodium Hypochlorite	4	4	Trichlorethylene, Dry	1	3
Sodium Nitrate	3	3	Trichlorethylene, Moist	3	3
Sodium Peroxide	4	4	Vinegar	4	4
Sodium Phosphate	2	2	Zinc Chloride	4	4
Sodium Silicate	2	2	Zinc Sulfate	4	4

1 — SATISFACTORY

2 — FAIR

3 — RECOMMEND TESTING

4 — UNSATISFACTORY

This brass compatibility chart is a ready reference for brass fittings with various media. It is intended as a guide to chemical compatibility and has been compiled from the best available sources. Many factors (concentration, temperature, intermittent or continuous exposure, etc.) have a bearing upon the suitability of any material and, therefore, no guarantee, expressed or implied, is made to compatibility in any specific set of circumstances.

E

Media	E	FRPE	N	NR	Media	E	FRPE	N	NR
	"E" Series Polyethylene	Flame Resistant Polyethylene	Nylon "N"	Nylon "NR"		"E" Series Polyethylene	Flame Resistant Polyethylene	Nylon "N"	Nylon "NR"
Acetaldehyde	L	—	L	G	Glucose	G	G	G	G
Acetates	G	—	L	G	Glycerine	G	G	G	G
Acetic Acid	L	—	L	G	Hydriodic Acid	L	—	P	L
Acetic Anhydride	L	—	P	L	Hydrochloric Acid (Conc.)	L	—	L	L
Acetone	G	L	L	G	Hydrochloric Acid (Med. Conc.)	L	—	L	G
Acetyl Bromide	L	—	L	—	Hydrofluoric Acid	L	—	P	P
Acetyl Chloride	L	—	L	—	Hydrogen Peroxide (Conc.)	L	—	L	G
Air	G	G	G	G	Hydrogen Peroxide (Dil.)	L	—	L	G
Alcohols	G	G	G	G	Hydrogen Sulfide	G	—	G	G
Aluminum Salts	G	G	G	G	Iodine	L	—	G	G
Ammonia	G	L	G	G	Kerosene	L	—	G	G
Amyl Acetate	G	—	L	G	Ketones	G	—	G	G
Aniline	L	—	L	L	Lacquer Solvent	L	—	L	L
Animal Oils	L	—	G	G	Lactic Acid	G	—	G	G
Arsenic Salts	G	G	G	G	Lead Acetate	G	—	G	G
Aromatic Hydrocarbons	P	P	L	G	Linseed Oil	L	—	G	G
Barium Salts	G	G	G	G	Magnesium Salts	G	—	G	G
Benzaldehyde	P	P	L	G	Naphtha	L	G	G	G
Benzene (Benzol)	P	P	L	G	Natural Gas	L	—	G	G
Benzyl Alcohol	P	P	L	L	Nickel Salts	G	—	G	G
Bleaching Liquors	G	—	L	L	Nitric Acid (Conc.)	P	G	P	P
Boric Acid Solutions	G	G	G	G	Nitric Acid (Dil.)	P	P	L	L
Bromine	L	—	L	P	Nitrobenzene	P	P	L	L
Butane	L	—	P	G	Nitrogen Oxides	L	—	L	L
Butanol	G	G	G	G	Nitrous Acid	L	—	L	L
Butyl Acetate	G	G	G	G	Oils (Animal and Mineral)	L	—	G	G
Calcium Salts	G	G	G	G	Oils (Vegetable)	L	—	L	G
Carbon Dioxide	G	G	G	G	Oxygen	G	G	G	G
Carbon Disulfide	L	—	L	G	Perchloric Acid	P	P	P	P
Carbon Tetrachloride	P	P	L	L	Phenol	P	P	P	P
Caustic Potash	G	—	G	G	Potassium Salts	G	G	G	G
Caustic Soda	G	—	G	G	Pyridine	L	—	L	L
Chloracetic Acid	L	—	L	L	Silver Nitrate	G	G	G	G
Chlorine (Dry)	L	—	L	P	Soap Solutions	G	G	G	G
Chlorine (Wet)	L	—	L	P	Sodium Salts	G	G	G	G
Chlorobenzene	P	P	L	L	Stearic Acid	L	—	G	G
Chloroform	P	P	L	L	Sulfur Chloride	L	—	L	L
Chromic Acid	L	—	P	P	Sulfuric Acid (Conc.)	P	P	P	P
Copper Salts	G	G	G	G	Sulfuric Acid (Dil.)	P	P	G	L
Cresol	P	P	L	P	Sulfurous Acid	P	P	L	L
Cyclohexanone	L	—	L	G	Tannic Acid	G	—	G	G
Ethers	L	—	L	G	Tanning Extracts	G	—	G	G
Ethyl Acetate	G	—	L	G	Titanium Salts	G	G	G	G
Ethyl Alcohol	G	G	L	G	Toluene (Toluol)	P	P	L	G
Ethylamine	L	—	L	L	Trichloroacetic Acid	L	—	P	P
Ethyl Bromide	P	P	L	L	Trichlorethylene	P	P	G	L
Ethyl Chloride	P	P	L	L	Turpentine	L	—	G	G
Fatty Acids	L	P	G	G	Urea	G	—	G	G
Ferric Salts	G	—	G	G	Uric Acid	G	—	G	G
Formaldehyde	G	—	L	G	Water	G	G	G	G
Formic Acid	L	G	L	P	Xylene (Xylol)	P	P	L	G
Freon	L	—	L	G	Zinc Chloride	G	—	G	G
Gasoline	P	P	G	G					

**Ratings Code (1)**

G — Good to excellent. Little or no swelling, tensile or surface changes. Preferred choice.

L — Marginal or conditional. Noticeable effects but not necessarily indicating lack of serviceability. Further testing suggested for specific application. Very long term effects such as stiffening or potential for crazing should be evaluated.

P — Poor or unsatisfactory. Not recommended without extensive and realistic testing.

— — Not tested.

**NOTE:** For Footnotes (1), (2), (3), (4), (5), (6), & (7), See Page 19.

## Footnotes for Chemical Compatibility Guides for Thermoplastic Fittings, Tubing and Hose

- (1) The Chemical Compatibility Guides are simplified rating tabulations based on immersion tests at 75°F. Higher temperatures tend to reduce ratings. **Since final selection depends on pressure, media and ambient temperature and other factors not known to The Company, no performance guarantee is expressed or implied.** Ratings do not imply compliance with specialized codes such as FDA, NSF, AGA or UL and do not cover possible fluid discoloration, taste or odor effects. For conveying foodstuffs use FDA sanctioned materials, and for potable water use NSF approved materials. For chemicals not listed, or for advice on particular applications, please consult the supplier.
- (2) Hose applications for these fluids must take into account legal and insurance regulations. This does not imply AGA or UL compliance.
- (3) Satisfactory at some concentrations and temperatures, unsatisfactory in others.
- (4) For high pressure gases, the cover should be pinpricked and the pressure must not be released quickly. Chain or restrain the hose to prevent personal injury in the event of damage or failure.
- (5) Chemical compatibility **does not** imply low permeation rates. Consult the supplier for a recommendation for your specific requirements.
- (6) Does not imply NSF or FDA compliance.
- (7) Chemical compatibility does not imply acceptability for use in **airless paint spray** applications. These applications require a special **conductive** hose.



**Notes**

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