



**Series 32<sup>TO</sup> 38**  
**PNEUMATIC TUBINGS**

# TUBING GUIDELINES

There are 5 thermoplastic tubing compounds used for the majority of pneumatic lines: **POLYURETHANE, NYLON, POLYETHYLENE, PVC** and **PTFE**. All five offer distinct advantages. Selecting the one that best fits a particular job should be done only after all of the application requirements are carefully considered. Following are some guidelines that can be used to make the tubing selection process easier and more accurate.

## MEDIA

The material that will be passing through the tubing, or even coming into contact with it externally, must also be considered. Certain chemicals can have an adverse effect (swelling, deterioration, etc.) on tubing compounds, so it is important to select a tubing material that is compatible with the media being used. Varying temperatures, mixing chemicals and varying environmental conditions can significantly alter the performance of thermoplastic tubing.

## FLEXIBILITY AND KINK RESISTANCE

All thermoplastic tubing is flexible to a certain degree, but they are not all equally as flexible. In applications requiring a small bend radius or where there is a lot of motion, a more flexible tubing may be required. For stationary applications where movement is minimal or a higher working pressure is needed, a more rigid tubing would most likely be desired.

## WORKING PRESSURE

Working pressure is an important criterion (and often the first considered) in the tubing selection process. The working pressure of tubing is derived from its burst pressure at what is considered ambient or “normal room temperature”, about 20 °C, and then building in a “safety factor”. Maximum working pressure of a tube is the safe pressure rating that takes all operational criteria into consideration.

## FLOW

The amount of pressurised air that must be transported to the pneumatically operated mechanism is another criterion that must be taken into consideration when selecting tubing. As a result, the tubing must be properly sized to do its job effectively. A good rule of thumb is to use tubing that will provide flow that exceeds the requirement of the components (actuators, valves, cylinders, etc.) in the circuit. The type of fitting being used should also be taken into account when flow requirements are being determined. Since **Barbed Fittings** are installed **inside** the tubing, they represent a restriction to the flow. **Push-to-connect fittings**, on the other hand, grip the outside of the tubing, so they offer no flow restrictions. This can often result in the use of smaller diameter tubing, which means space and cost savings.









## WORKING TEMPERATURE

This is a temperature range for which a particular tubing can effectively be used. When considering temperature, it should be remembered that the higher the temperature, the lower the burst (and working) pressure. Since “working pressures” are calculated at ambient temperature, that figure will be reduced significantly as the temperature approaches the high end of the working temperature range.

## FITTING TYPE

There are three basic types of fittings used on thermoplastic tubing. They are categorized as **Push-to-connect fittings, Compression fittings** and **Barbed fittings**. Each fitting offers different features and benefits. It is very important that the tubing selected be compatible with the selected fitting type.

### TUBING SIZE • FULL SCALE CHART

TUBING SIZE DIAMETER								
<b>INCH</b>	1/8	5/32	1/4	5/16	3/8	1/2		
<b>MM</b>	3	4	6	8	10	12		



# NYLON 12 TUBINGS

## INCH AND METRIC TUBING



### FEATURES AND BENEFITS

- Good flexibility
- Super dimensional stability, ensuring perfect connection with push-to-connect fittings
- Excellent pressure rating
- Excellent resistance to crushing, abrasion and cracking
- Superior resistance to solvents, alkalis, oils, greases, petroleum products, fungus and molds
- Good resistance to vibration and movement
- Very low moisture absorption
- Broad temperature range

### APPLICATIONS

Pneumatic systems, vacuum, oils, coolants, water, paint supply lines

### MATERIALS

Tubing: Nylon 12

Available Colors: Translucent white, black, red and blue

### SPECIFICATIONS

Working Temperature Range: - 40 °C to 80 °C

Maximum Working Pressure (at 24 °C): 250 PSI

Vacuum Rating: Up to 28" Hg



### INCH SIZE



#### 100 FT POLYBAG

White	Black	Red	Blue	Tubing O.D. in	Tubing I.D. in
32.100	---	---	---	1/8	.080
32.110	32.110.01	32.110.05	32.110.07	5/32 (4mm)	.106
32.120	32.120.01	32.120.05	32.120.07	1/4	.180
32.130	32.130.01	32.130.05	32.130.07	5/16 (8mm)	.233
32.140	32.140.01	32.140.05	32.140.07	3/8	.275
32.150	32.150.01	---	---	1/2	.375

### INCH SIZE



#### 330 FT REEL

White	Black	Red	Blue	Tubing O.D. in	Tubing I.D. in
32.300	---	---	---	1/8	.080
32.310	32.310.01	32.310.05	32.310.07	5/32 (4mm)	.106
32.320	32.320.01	32.320.05	32.320.07	1/4	.180
32.330	32.330.01	32.330.05	32.330.07	5/16 (8mm)	.233
32.340	32.340.01	32.340.05	32.340.07	3/8	.275
32.350	32.350.01	---	---	1/2	.375

### METRIC SIZE



#### 30 M POLYBAG

White	Black	Red	Blue	Tubing O.D. mm	Tubing I.D. mm
32.110	32.110.01	32.110.05	32.110.07	4 (5/32)	2.7
32.115	32.115.01	32.115.05	32.115.07	6	4.0
32.130	32.130.01	32.130.05	32.130.07	8 (5/16)	6.0
32.145	---	---	---	10	8.0
32.147	---	---	---	12	10.0

### METRIC SIZE



#### 100 M REEL

White	Black	Red	Blue	Tubing O.D. mm	Tubing I.D. mm
32.310	32.310.01	32.310.05	32.310.07	4 (5/32)	2.7
32.315	32.315.01	32.315.05	32.315.07	6	4.0
32.330	32.330.01	32.330.05	32.330.07	8 (5/16)	6.0
32.345	---	---	---	10	8.0
32.346	---	---	---	12	10.0

**SUPER FLEXIBLE LONGLIFE™  
NYLON.PU TUBINGS  
INCH AND METRIC TUBING**

**FEATURES AND BENEFITS**

- Economical
- Triple layer hose with two layers of polyamide 12 PHL and one middle layer of Ether-based polyurethane
- Excellent flexibility
- Very strong
- Super dimensional stability, ensuring perfect connection with push-to-connect fittings
- Excellent high pressure rating
- Excellent resistance to crushing, abrasion and cracking
- Very low moisture absorption

**APPLICATIONS**

Pneumatic systems, vacuum, oils, coolants, water, robotics

**MATERIALS**

**Inside and Outside Layers:** Nylon 12

**Middle Layer:** Ether-based polyurethane

**Available Colors:** Translucent white, black, red and blue

**SPECIFICATIONS**

**Working Temperature:** -40 °C to 70 °C

**Vacuum Rating:** Up to 28" Hg

**PNEUMATIC TUBINGS**



**INCH SIZE**



**100 FT POLYBAG**

White	Black	Red	Blue	Tubing O.D. in	Tubing I.D. in	Maximum Working Pressure (at 21 °C)
33.110	33.110.01	33.110.05	33.110.07	5/32	.106	362 PSI
33.120	33.120.01	33.120.05	33.120.07	1/4	.180	247 PSI
33.130	33.130.01	33.130.05	33.130.07	5/16	.236	217 PSI
33.140	33.140.01	33.140.05	33.140.07	3/8	.275	232 PSI
33.150	33.150.01	---	---	1/2	.375	218 PSI

**330 FT REEL**



33.310	33.310.01	33.310.05	33.310.07	5/32	.106	362 PSI
33.320	33.320.01	33.320.05	33.320.07	1/4	.180	247 PSI
33.330	33.330.01	33.330.05	33.330.07	5/16	.236	217 PSI
33.340	33.340.01	33.340.05	33.340.07	3/8	.275	232 PSI
33.350	33.350.01	---	---	1/2	.375	218 PSI

**METRIC SIZE**



**30 M POLYBAG**

Clear	Black	Red	Blue	Tubing O.D. mm	Tubing I.D. mm	Maximum Working Pressure (at 21 °C)
33.110	33.110.01	33.110.05	33.110.07	4	2.5	362 PSI
33.115	33.115.01	33.115.05	33.115.07	6	4.0	304 PSI
33.130	33.130.01	33.130.05	33.130.07	8	6.0	217 PSI
33.145	---	---	---	10	8.0	174 PSI
33.147	---	---	---	12	10	145 PSI

**100 M REEL**



33.310	33.310.01	33.310.05	33.310.07	4	2.5	362 PSI
33.315	33.315.01	33.315.05	33.315.07	6	4.0	304 PSI
33.330	33.330.01	33.330.05	33.330.07	8	6.0	217 PSI
33.345	---	---	---	10	8.0	174 PSI
33.347	---	---	---	12	10	145 PSI

# LINEAR LOW DENSITY FOOD GRADE POLYETHYLENE (LLDPE) TUBINGS INCH TUBING



## FEATURES AND BENEFITS

- Materials comply with FDA specifications
- Manufactured from high quality resins
- LLDPE resin provides excellent environmental stress crack resistance
- Lightweight
- Good dimensional stability
- Very good resistance to most chemicals and solvents
- Excellent bending radius
- Very good puncture resistance
- Impermeable to gasses and moisture



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**PNEUMATIC TUBINGS**

## APPLICATIONS

For general low-pressure applications, pneumatic circuitry, air and liquid transfer, light vacuum lines, drain piping, food and beverages

## MATERIALS

**Tubing Linear:** Low density polyethylene (LLDPE)  
**Color:** Translucent white




## SPECIFICATIONS

**Working Temperature Range:** - 45 °C to 60 °C



## INCH SIZE




### 100 FT POLYBAG

Product No	 Tubing O.D. in	 Tubing I.D. in	 Maximum Working Pressure (at 20 °C)
34.120	1/4	.170	140 PSI
34.140	3/8	.250	125 PSI
34.150	1/2	.375	100 PSI



## INCH SIZE

### 500 FT REEL

Product No	 Tubing O.D. in	 Tubing I.D. in	 Maximum Working Pressure (at 20 °C)
34.520	1/4	.170	140 PSI
34.540	3/8	.250	125 PSI
34.550	1/2	.375	100 PSI

**TOPRING**

**LOW DENSITY  
POLYETHYLENE (LDPE)  
TUBINGS  
INCH TUBING**



**FEATURES AND BENEFITS**

- Economical
- Superior stress crack resistance
- Lightweight
- Manufactured from high quality resins
- Good dimensional stability
- Resistance to most chemicals and solvents



**APPLICATIONS**

For general low-pressure applications, pneumatic circuitry, air and liquid transfer, light vacuum lines and drain piping

**MATERIALS**

**Tubing:** Low density polyethylene (LDPE)  
**Color:** Translucent white

**SPECIFICATIONS**

**Working Temperature Range:** - 10 °C to 60 °C

**INCH SIZE**

**100 FT POLYBAG**

Product No	Tubing O.D. in	Tubing I.D. in	Maximum Working Pressure (at 20 °C)
34.170	1/4	.170	170 PSI
34.180	3/8	.250	189 PSI
34.185	1/2	.375	131 PSI



**INCH SIZE**

**500 FT REEL**

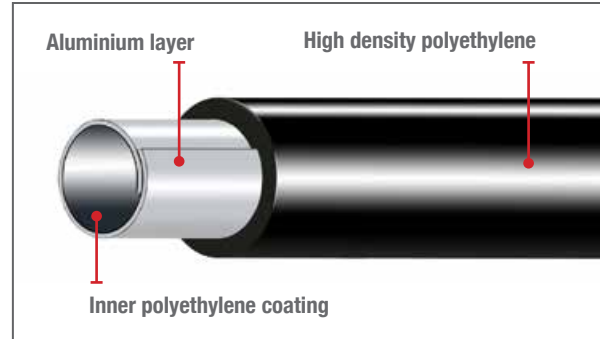
Product No	Tubing O.D. in	Tubing I.D. in	Maximum Working Pressure (at 20 °C)
34.570	1/4	.170	170 PSI
34.580	3/8	.250	189 PSI
34.585	1/2	.375	131 PSI

# POLYETHYLENE AND ALUMINIUM TUBINGS (AL.PE™) POSITIONNABLE METRIC TUBING



## FEATURES AND BENEFITS

- Internal core in aluminium protected by polyethylene and external coating in high density black polyethylene
- Lightweight
- Excellent resistance to light and weather
- Good resistance to water, hydrocarbons and oil



## APPLICATIONS

AL.PE tubing can be shaped as desired and can maintain their shape

For pneumatic systems, robotics, motion control devices and automation

## MATERIALS

**Tubing :** High density polyethylene

**Internal core:** Aluminium with polyethylene coating

**Color:** Black

## SPECIFICATIONS

**Working Temperature Range:** - 30 °C to 70 °C



## METRIC SIZE

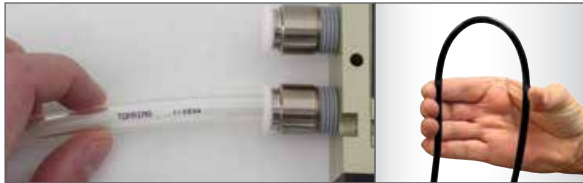
### 25 M POLYBAG

Product No	Tubing O.D. mm	Maximum Working Pressure (at 20 °C)
34.067	6	362 PSI
34.075	8	362 PSI
34.077	10	290 PSI
34.087	12	362 PSI



# POLYURETHANE TUBINGS

## INCH AND METRIC TUBING



### FEATURES AND BENEFITS

- Extremely kink-resistant - withstands abuse that would damage other Thermoplastic tubings
- Lightweight and tough: ideal for small spaces
- Excellent resistance to oils, greases, fuels, moisture and molds
- Great resistance to - UV, abrasion and cuts
- Extremely flexible (even more than Nylon tubing) offering excellent bending radius

### APPLICATIONS

Pneumatic systems, robotics, instrumentation, motion control devices and automation

### MATERIALS

Tubing: Ester-based polyurethane

Available Colors: Clear, black, red, blue and translucent blue

### SPECIFICATIONS

Working Temperature Range: -40 °C to 70 °C

Vacuum: Up to 28" Hg

### INCH SIZE

#### 100 FT POLYBAG



Clear	Black	Red	Blue	Translucent blue	Tubing O.D. in	Tubing I.D. in	Maximum Working Pressure (at 21 °C)
35.105	---	---	---	35.105.27	1/8	0.066	233 PSI
35.115	35.115.01	35.115.05	35.115.07	35.115.27	5/32	0.093	130 PSI
35.124	35.124.01	35.124.05	35.124.07	35.124.27	1/4	0.156	130 PSI
35.136	35.136.01	---	---	35.136.27	5/16	0.187	150 PSI
35.138	35.138.01	35.138.05	35.138.07	35.138.27	3/8	0.250	120 PSI
35.150	35.150.01	---	---	35.150.27	1/2	0.328	135 PSI

#### 330 FT REEL



35.305	---	---	---	35.305.27	1/8	0.066	233 PSI
35.315	35.315.01	35.315.05	35.315.07	35.315.27	5/32	0.093	130 PSI
35.324	35.324.01	35.324.05	35.324.07	35.324.27	1/4	0.156	130 PSI
35.336	35.336.01	---	---	35.336.27	5/16	0.187	150 PSI
35.338	35.338.01	35.338.05	35.338.07	35.338.27	3/8	0.250	120 PSI
35.350	35.350.01	---	---	35.350.27	1/2	0.328	135 PSI

### METRIC SIZE

#### 30 M POLYBAG



Clear	Black	Red	Blue	Translucent blue	Tubing O.D. mm	Tubing I.D. mm	Maximum Working Pressure (at 21 °C)
35.115	35.115.01	35.115.05	35.115.07	35.115.27	4	2.5	130 PSI
35.117	35.117.01	35.117.05	35.117.07	35.117.27	6	4.0	145 PSI
35.136	35.136.01	---	---	35.136.27	8	5.0	150 PSI
35.145	35.145.01	---	---	35.145.27	10	6.5	143 PSI
35.146	---	---	---	35.146.27	12	8.0	120 PSI

#### 100 M REEL



35.315	35.315.01	35.315.05	35.315.07	35.315.27	4	2.5	130 PSI
35.317	35.317.01	35.317.05	35.317.07	35.317.27	6	4.0	145 PSI
35.336	35.336.01	---	---	35.336.27	8	5.0	150 PSI
35.345	35.345.01	---	---	35.345.27	10	6.5	143 PSI
35.346	---	---	---	35.346.27	12	8.0	120 PSI

# FLUOROPOLYMER TUBINGS (PTFE)

## INCH AND METRIC TUBING



### FEATURES AND BENEFITS

- Materials comply with FDA specifications
- Excellent resistance to chemical products
- Extremely inert and stable up to a temperature of 260 °C (500 °F)
- Ideal dielectric properties
- Virtually unaffected by oxygen, ozone and UV rays
- Lowest coefficient of friction of all polymers
- Fireproof to UL94 V0

### APPLICATIONS

Fluoropolymer materials are known for their outstanding properties under a variety of applications

They are used where high temperatures in combination with aggressive medias or critical environments require an excellent tubing

### MATERIALS

**Tubing:** Fluoropolymer

**Color:** Translucent white

### SPECIFICATIONS

**Working Temperature Range:** -60 °C to 260 °C



### INCH SIZE

#### 164 FT POLYBAG

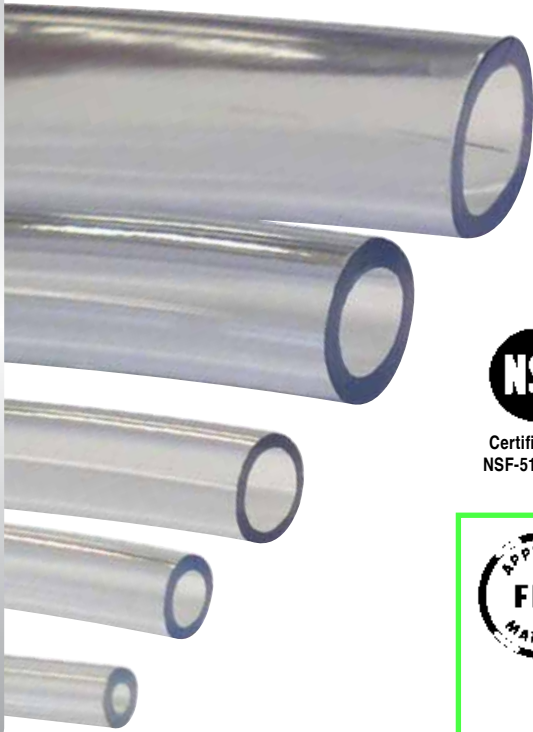
Product No	Tubing O.D. in	Tubing I.D. in	Maximum Working Pressure (at 23 °C)
37.210	5/32	.080	290 PSI
37.220	1/4	.125	290 PSI
37.230	5/16	.240	145 PSI
37.240	3/8	.240	188 PSI

### METRIC SIZE

#### 50 M POLYBAG

Product No	Tubing O.D. mm	Tubing I.D. mm	Maximum Working Pressure (at 23 °C)
37.210	4	2	290 PSI
37.215	6	4	188 PSI
37.230	8	6	145 PSI

**CLEAR VINYL TUBING**  
**INCH TUBING**



**PNEUMATIC TUBINGS**

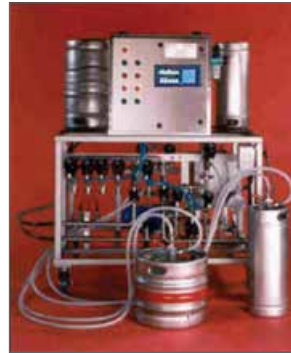


Certified under  
NSF-51 standard



**FEATURES AND BENEFITS**

- Complies with food and beverage industry standards NSF-51 certified material
- Materials comply with FDA specifications
- Materials comply with RoHS specifications
- More flexible than Nylon and Polyethylene
- Lightweight
- Crystal-clear appearance
- Glass-smooth interior to reduce sediment buildup
- Non-reinforced
- Non-toxic blue tint to enhance clarity
- Resistant to many chemicals and solvents
- Self-extinguishing



**APPLICATIONS**

Low pressure air lines, water, light vacuum lines and drain lines

**MATERIALS**

**Tubing:** Quality PVC resin

**Color:** Clear

**SPECIFICATIONS**

**Working Temperature Range:** -5 °C to 65 °C

**Durometer:** 73 Shore A



**INCH DIAMETER**

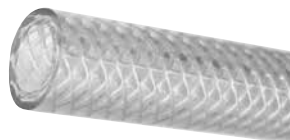
**100 FT CARTON**

Product No	Tube I.D. in	Tube O.D. in	Max. Working Pressure (at 21 °C)
38.050	0.125	1/4	65 PSI
38.075	0.187	5/16	55 PSI
38.100	0.250	3/8	55 PSI
38.250	0.250	1/2	60 PSI
38.200	0.312	7/16	50 PSI
38.300	0.375	1/2	45 PSI
38.350	0.375	5/8	55 PSI
38.400	0.500	5/8	30 PSI
38.450	0.500	3/4	45 PSI
38.525	0.625	7/8	40 PSI
38.600	0.750	1	35 PSI
38.700	1.00	1-1/4	25 PSI

Larger sizes available upon request

**NYFLEX**

For reinforced  
PVC air hoses,  
please refer  
to Series 73



## MINIATURE TUBE CUTTER

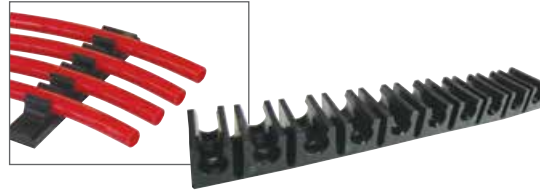
- Allows quick, clean and square cuts on nylon, polyethylene and polyurethane pipe of 1/8 in through 3/4 in O.D. size
- Safety spring keeps the blade closed after use, preventing blade deterioration
- Body made of Polymer



Product No	Description
36.005	Miniature tubing cutter

## TUBE RACKS

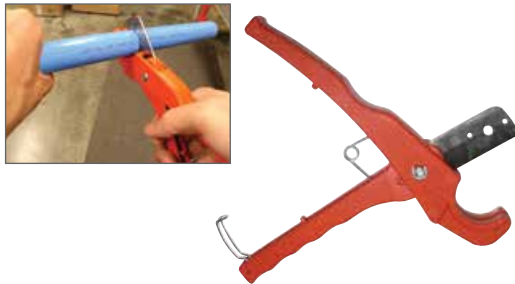
- Keeps tubes separate
- 1/4 in O.D. model has countersunk holes for # 4 screws. Channel designed to be cut to length to accommodate from 1 to 10 tubes.
- 3/8 in and 1/2 in O.D. models have screw attachment holes at each end



Product No	Description	
	Tubing O.D	Tubing capacity
36.915	1/4	10
36.920	3/8	7
36.925	1/2	6

## PIPE CUTTER

- Provides a straight, even, accurate cut on any pipe or hose up to 38 mm (1-1/2 in O.D.)
- Ergonomically designed handle
- Spring controlled cutting tension
- Handle lock
- Replaceable hardened Steel blade



Product No	Description
36.100	Pipe cutter
36.105	Replacement blades (2)

## RATCHET PIPE CUTTER

- Allows effortless a straight, even, accurate cut of plastic piping or hoses up to 41 mm (1-5/8 in O.D.)
- Ratchet type cutting mechanism
- Handle lock ergonomically designed
- Quick replaceable hardened steel blade



Product No	Description
36.200	Ratchet pipe cutter
36.205	Replacement blades (2)

## RECHARGEABLE BATTERY-OPERATED PIPE CUTTER

- Can cut plastic piping, nylon, PVC, rubber or hoses pipes with a diameter up to 42 mm (1-21/32 in)
- Comes with rapid retraction device (full retraction in 0.5 seconds)
- Stops cutting automatically once the piping or hoses pipe is cut
- Two safety mechanisms prevent it from turning on unintentionally when in transport or when not being used
- Rechargeable battery



Product No	Description
36.020	Pipe cutter