Tubing Specifications

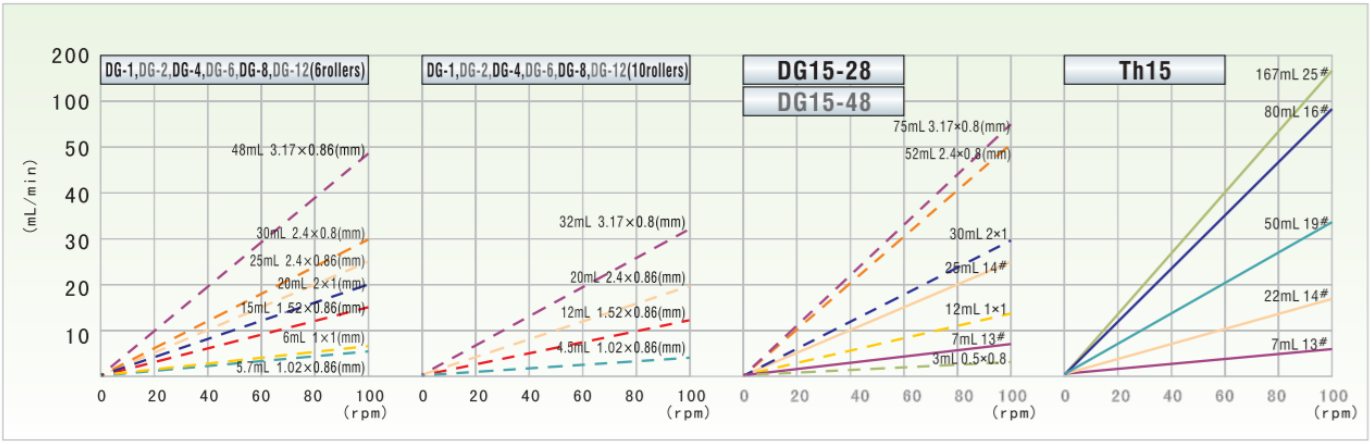
Micro Flow Rate Tubing											
Tubing Size		0.13x0.86	0.5x0.86	0.86x0.86	1.52x0.86	2.06x0.86	2.79x0.86	1x1	2x1	3x1	2.4x0.8
Tubing Cross Sections (1:1)											
Wall Thickness (mm)		0.86						1.0			0.8
Inside Diameter (mm)		0.13	0.5	0.86	1.52	2.06	2.79	1.0	2.0	3.0	2.4
Maximum Pressure (Mpa)	Continuous	0.1									
	Intermittent	0.1									

Basic Flow Rate Tubing												
Tubing Size		#13	#14	#19	#16	#25	#17	#18	#15	#24	#35	#36
Tubing Cross Sections (1:1)												
Wall Thickness (mm)		1.6							2.4			
Inside Diameter (mm)		0.8	1.6	2.4	3.1	4.8	6.4	7.9	4.8	6.4	7.9	9.6
Maximum Pressure (Mpa)	Continuous	0.17				0.14	0.1	0.07	0.17		0.14	
	Intermittent	0.27				0.24	0.14	0.1	0.27		0.24	

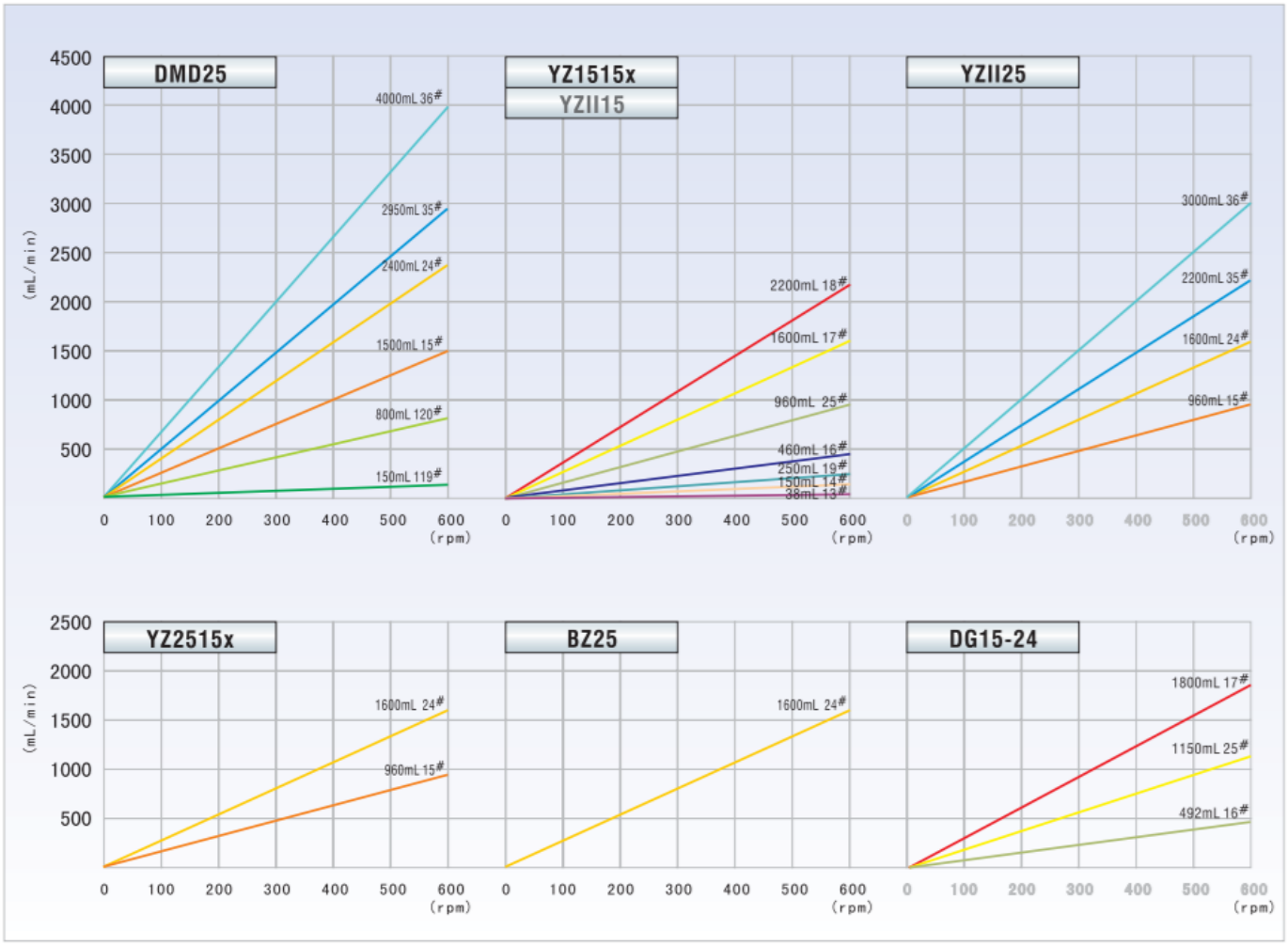
Industrial Flow Rate Tubing								
Tubing Size		#26	#73	#82	#86	#90	#88	#92
Tubing Cross Sections (1:1)								
Wall Thickness (mm)		3.3			6.3		4.8	
Inside Diameter (mm)		6.4	9.6	12.7	9.5	19	12.7	25.4
Maximum Pressure (Mpa)	Continuous	0.2			0.25			
	Intermittent	0.27			0.3			

Flow Rates vs Speed Curve

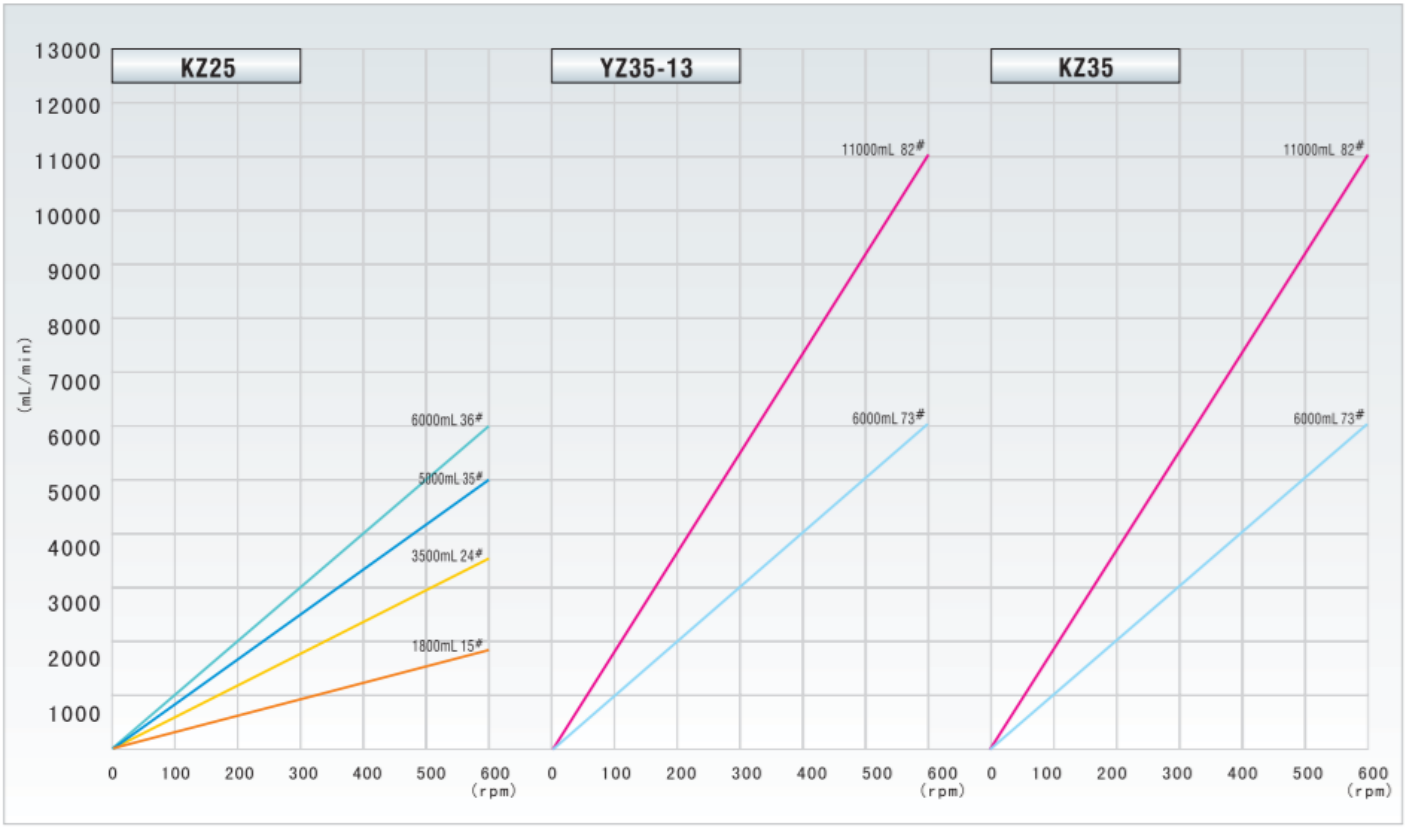
- **Micro Flow Rate Tubing**



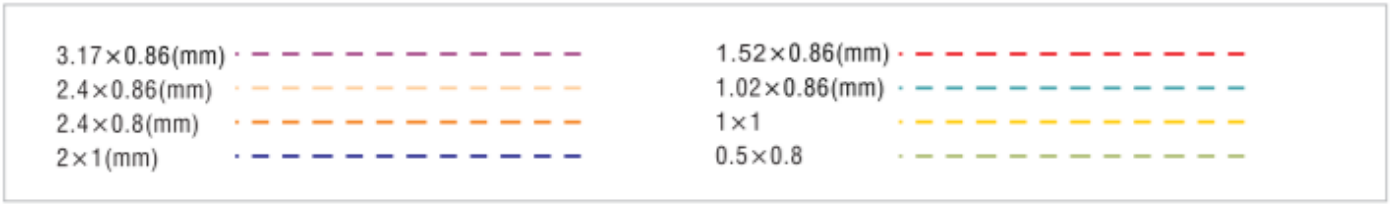
- **Basic Flow Rate Tubing**

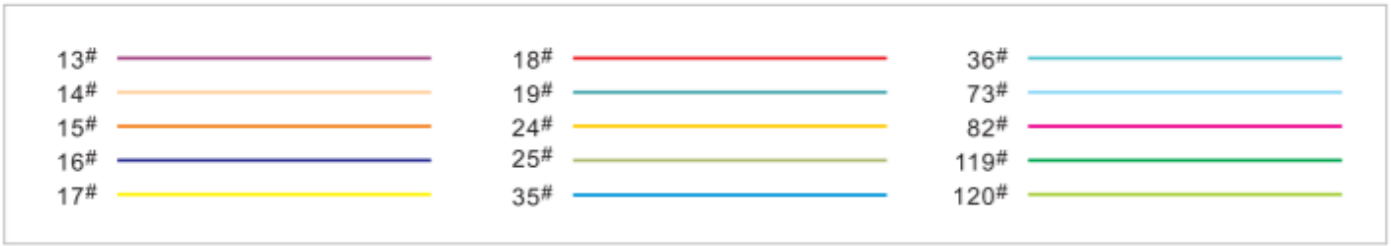


- **Industrial Flow Rate Tubing**



Different colors represent different types of tubing.





Tubing Selection Guide

Formulation	Tygon® 3350	Tygon® R-3603	Norprene® Chemical	PharMed®	Norprene® A-60-F
Application	Pharmaceutical, cosmetic, medical and auto analysis application.	General laboratory, food and beverage, biopharmaceutical, and analytical instruments.	Excellent for chemical processing and general industrial application.	Cell and tissue culture work and pharmaceutical uses. Also, suitable for light sensitive samples.	Idea for food, dairy and beverage industry.
Advantages	Ultra-smooth and mitigate bacterial growth. Good for mild to medium concentration basis, salts and alcohol; Non-toxic and odorless; Transparent	Low gas permeability and good for viscous fluids.	Norprene thermoplastic elastomer outer jacket with chemical inert Tygon 2075 inner bore for excellent chemical resistance.	Nontoxic and non-hemolytic; Opaque to UV and visible light to prevent light sensitive fluids. Heat sealable and formable. Low gas permeability.	Heat, ozone and UV resistant. Acid and alkali resistant.
Color	Transparent	Transparent	Opaque	Opaque	Opaque
Temperature range	-75 to 450 °F (- 60 to 232°C)	-58 to 165 °F (-50 to 74 °C)	-76 to 165 °F (-60 to 74 °C)	-60 to 270 °F (-59 to 135 °C)	-60 to 275 °F (-51 to 135 °C)
Meet classifications	FDA 21CFR177.2600 USP Class VI EP 3.1.9 Exceeds 3A standards manufactured according to GMP	FDA 21 CFR 175.300	N/A	N/A	FDA 21 CFR177.2600 NSF listed (standard 51) manufactured according to GMP
Cleaning and sterilization	Ethylene oxide (ETO), gamma irradiation or autoclave for 30 min, 14.7 PSI (1 Bar)	Ethylene oxide (ETO) or autoclave at 121 °C and 14.7 PSI for 30 mins.	Ethylene oxide (ETO), autoclave or gamma irradiation up to 25Mrad.	Ethylene oxide (ETO), autoclave or gamma irradiation.	Autoclave
Formulation	Norprene ®A-60-G	Tygon ® F-404-A	Tygon ® LFL	Tygon ® 2475	Viton
Application	Situations requiring excellent chemical, heat, zone and UV resistance	Fuels and industrial lubricants, such as gasoline, heating oils, glycol-based coolants etc.	General laboratory use	Sensitive fluid transfer applications requiring high purity	Acid and solvent transfer and high temperature
Advantages	Suitable for vacuum/pressure applications. Offers long life with good flow consistency. Heat and ambient ozone resistant.	Resist embrittlement and swelling, ozone and UV	Nonaging and nonoxidizing. Chemical resistance and low gas permeability. Good for viscous fluids	Plasticizer free and smooth inner surface (prevent particulate buildup and bacterial growth). Nontoxic	Excellent resistance to corrosives, solvents, and oils at high temperature. Low gas permeability
Color	Black	Translucent yellow	Clear	Transparent	Opaque, black
Temperature range	-60 to 270 °F (- 59 to 135°C)	-35 to 165 °F (-37 to 74 °C)	-58 to 165 °F (-50 to 74 °C)	-94 to 125 °F (-70 to 52 °C)	-25 to 400 °F (-32 to 205 °C)
Meet classifications	N/A	NSF 5 and 3A sanitary standards	UPS Class V, FDA 21 CFR 175.300	FDA 21 CFR 177.1520 USP 23 Class VI manufactured according to GMP	N/A
Cleaning and sterilization	Autoclave only	Not recommended	Ethylene oxide (ETO), and autoclave at 250 °F (121 °C) and 14.7 PSI for 30 mins	Ethylene oxide (ETO) or gamma irradiation.	Not recommended