

# Addison Instrumentation

## Tube Fittings

### TUBING SELECTION & PREPARATION

Proper selection of tubing is key to the performance of the fitting. When selecting the proper wall thickness and material, all tubing should be compatible with the process fluid, temperature, application, flow and system pressure.

For proper sealing it is recommended that the tubing and fitting be of like material to allow for positive sealing ( i.e. stainless on stainless, brass on copper, steel on steel ). Galvanic corrosion could occur if the tubing and fitting are not of like material, with the exception of a brass fitting on copper tubing.

For best results, stainless steel tubing should be fully annealed with a maximum hardness of 90 Rb. While Monel Tubing should never exceed a maximum surface hardness of Rockwell B 75. Addison suggests using seamless tubing.

When using carbon steel, all tubing should be fully annealed and conform to ASTM-A-179 hardness specification of maximum 72 RB.

The tubing selected, whether metallic or nonmetallic should be compatible with the process fluid, temperature and applications. The wall thickness selections should be based on pressure and temperature conditions.

In general, all tubing should be free of draw marks, nicks, scratches, imperfections of any kind and be suitable for bending. Out of round tubing that does not easily go through fitting components should not be used. It is recommended that the charts be used for tube selection. Ideally, the tube end should be cut square so that when it bottoms out inside the fitting an extra seal is provided. Addison does not sell tubing, but recommends ordering tubing material to meet ASTM specification to ensure that it will be dimensionally, physically and chemically within precise limits. It is always recommended that you consult with your local Distributor or contact Addison directly if there is any doubt selecting tubing.

Tables 1 and 2 indicate the maximum working pressure of various tubing sizes and materials.

Table 1		316 or 304 STAINLESS STEEL ( Seamless )											
Tube O.D Size	WALL THICKNESS												
	.010	.012	.014	.016	.020	.028	.035	.049	.065	.083	.095	.109	.120
1/16	5600	6900	8200	9500	12100	16800							
1/8						8600	10900						
3/16						5500	7000	10300					
1/4						4000	5100	7500	10300				
5/16							4100	5900	8100				
3/8							3300	4800	6600				
1/2							2500	3500	4800	6300			
5/8								3000	4000	5200	6100		
3/4								2400	3300	4300	5000	5800	
1									2400	3200	3700	4200	4700

Table 2		MONEL 400 ( Seamless )									
Tube O.D Size	WALL THICKNESS										
	.010	.020	.028	.035	.049	.065	.083	.095	.109	.120	
1/16	5900	12600	17000								
1/8			8600	11000							
3/16			5500	7100	10300						
1/4			4000	5100	7500	10300					
5/16				4000	5900	8100					
3/8				3300	4800	6600					
1/2				2300	3300	4500	5900				
5/8					2800	3700	4900	5700			