



### Mid-South Control Line

Theoretical Mechanical Calculations  
Other alloys and sizes available upon request.



Size/Type		Welded						
OD	WT	Alloy	Min Tensile Strength (psi)	Min Yield Strength (psi)	Theoretical Collapse Pressure <sup>1</sup> (psi)	Theoretical Burst Pressure <sup>2</sup> (psi)	Theoretical Working Pressure <sup>3</sup> (psi)	Recommended Test Pressure (psi)
0.250	0.035	316L	75000	30000	6600	21100	6300	7700
		825	85000	35000	7700	24000	7400	8900
		825 E*	95000	60000	13200	26800	12700	15300
		625	120000	60000	13200	33800	12700	15300
		2205	95000	70000	15400	26800	14800	17800
0.250	0.049	316L	75000	30000	8700	30700	9200	11100
		825	85000	35000	10100	34800	10800	13000
		825 E*	95000	60000	17400	38900	18400	22200
		625	120000	60000	17400	49100	18400	22200
0.250	0.065	2205	95000	70000	20300	38900	21500	25000
		316L	75000	30000	10700	41900	12600	15100
		825	85000	35000	12500	47400	14700	17700
0.250	0.083	825 E*	95000	60000	21500	53000	25200	25000
		625	120000	60000	21500	67000	25200	25000
		2205	95000	70000	25000	53000	29400	25000
		316L	75000	30000	12500	54000	16200	19500
0.375	0.035	825 E*	85000	35000	14600	61300	18900	22800
		825 E	95000	60000	25100	68500	32500	25000
		625	120000	60000	25100	86500	32500	25000
		2205	95000	70000	29300	68500	37900	25000
0.375	0.049	316L	75000	30000	4600	13600	4100	5000
		825	85000	35000	5300	15400	4700	5800
		825 E*	95000	60000	9200	17200	8200	9900
		625	120000	60000	9200	21800	8200	9900
0.375	0.065	2205	95000	70000	10700	17200	9500	11500
		316L	75000	30000	6200	19600	5900	7100
		825	85000	35000	7200	22200	6800	8300
		825 E*	95000	60000	12400	24800	11800	14200
0.375	0.083	625	120000	60000	12400	31400	11800	14200
		2205	95000	70000	14500	24800	13700	16500
		316L	75000	30000	7800	26800	8000	9700
		825	85000	35000	9200	30300	9400	11300
0.500	0.035	825 E*	95000	60000	15700	33900	16100	19400
		625	120000	60000	15700	42800	16100	19400
		2205	95000	70000	18400	33900	18800	22600
		316L	75000	30000	9500	35100	10500	12700
0.500	0.049	825	85000	35000	11100	39800	12300	14800
		825 E*	95000	60000	19100	44500	21100	25000
		625	120000	60000	19100	56200	21100	25000
		2205	95000	70000	22300	44500	24600	25000
0.500	0.065	316L	75000	30000	3500	10000	3000	3700
		825	85000	35000	4100	11300	3500	4300
		825 E*	95000	60000	7000	12700	6000	7300
		625	120000	60000	7000	16000	6000	7300
0.500	0.083	2205	95000	70000	8200	12700	7000	8500
		316L	75000	30000	4800	14300	4300	5200
		825	85000	35000	5600	16200	5000	6100
		825 E*	95000	60000	9600	18200	8600	10400
0.500	0.035	625	120000	60000	9600	23000	8600	10400
		2205	95000	70000	11200	18200	10000	12100
		316L	75000	30000	6100	19500	5800	7100
		825	85000	35000	7200	22100	6800	8300
0.500	0.049	825 E*	95000	60000	12300	24700	11700	14100
		625	120000	60000	12300	31200	11700	14100
		2205	95000	70000	14400	24700	13700	16500
		316L	75000	30000	7600	25500	7600	9300
0.500	0.065	825	85000	35000	8800	28900	8900	10800
		825 E*	95000	60000	15200	32300	15300	18500
		625	120000	60000	15200	40800	15300	18500
		2205	95000	70000	17700	32300	17900	21500

<sup>1</sup>Theoretical Collapse pressure based on nominal OD, minimum wall thickness, and minimum yield strength, API 5C3 Formula

<sup>2</sup>Theoretical Burst & Yield pressures based on nominal OD, minimum wall thickness, and minimum mechanical properties, utilizing LAME Formula

<sup>3</sup>Theoretical working pressure utilizes a 1.33 S.F. from Theoretical Yield Pressure (= Yield Pressure / 1.33)

<sup>4</sup>MSEL Recommended Test Pressure = 90% of Theoretical Yield Pressure (= Yield Pressure x 0.9)

825 E\* - "Enhanced" properties with increased yield strengths. No orbital welds at final size.

Test pressures above 25ksi are available upon request.