

Tube O.D.		Tube Gauge			Tube I.D.		Min. Expansion		Max. Expansion		Tube Sheet Thickness				Mandrel	Mandrel Square	
											1/2" to 1 1/2"		1 1/4" to 2 1/4"				
											12.7 to 38.1 mm		31.7 to 57.1 mm			Tool No.	Roll No.
3/4	19	10	0.134	3.40	0.482	12.24	0.471	11.96	0.536	13.61	811	R-5	812	R-5-A	M-5	3/8	9.5
		11	.0120	3.05	0.510	12.95	0.499	12.67	0.564	14.33	815	R-6	816	R-6-A	M-6	3/8	9.5
		12	.0109	2.77	0.532	13.51	0.522	13.26	0.582	14.78	819	R-7	820	R-7-A	M-6	3/8	9.5
		13	0.095	2.41	0.560	14.22	0.550	13.97	0.615	15.62	821	R-8	822	R-8-A	M-8	3/8	9.5
		14	0.083	2.11	0.584	14.83	0.574	14.58	0.639	16.23	823	R-9	824	R-9-A	M-8	3/8	9.5
		15	0.072	1.83	0.606	15.39	0.596	15.14	0.661	16.79	825	R-10	826	R-10-A	M-8	3/8	9.5
		16	0.065	1.65	0.620	15.75	0.605	15.37	0.685	17.40	827	R-10	828	R-10-A	M-9	3/8	9.5
		17	0.058	1.47	0.634	16.10	0.619	15.72	0.699	17.75	829	R-11	830	R-11-A	M-9	3/8	9.5
		18	0.049	1.24	0.652	16.56	0.619	15.72	0.699	17.75	829	R-11	830	R-11-A	M-9	3/8	9.5
		19	0.042	1.07	0.666	16.92	0.642	16.31	0.722	18.34	831	R-12	832	R-12-A	M-9	3/8	9.5
		20	0.035	0.89	0.680	17.27	0.642	16.31	0.722	18.34	831	R-12	832	R-12-A	M-9	3/8	9.5
		21	0.032	0.81	0.686	17.42	0.624	16.31	0.722	18.34	831	R-12	832	R-12-A	M-9	3/8	9.5
22	0.028	0.71	0.694	17.63	0.624	16.31	0.722	18.34	831	R-12	832	R-12-A	M-9	3/8	9.5		