

TEMP: 225 ± 10C			PHASE 1				PHASE 2				PHASE 3	PHASE 4			PHASE 5	PHASE 6	
Pipe Details (e _n = Wall Thickness)			Bead Up Pressure (BAR)			Minimum Bead up Size	Heat Soak See Note <i>b</i>			Maximum Heater Removal Time	Maximum Pressure Up Time	Weld Pressure (BAR)			Minimim Cool Time Under Pressure (See Note c)	Additional Cool Time out of Machine (See Note <i>d</i>)	
			ADD DRAG (see note <i>a</i>)				0 - DRAG ONLY					ADD DRAG					
			P1			t1	P2	t2			t3	t4	P3			t5 / P3	
D _n	SDR	e _n	Min	Tgt	Max	mm	BAR	Min	Tgt	Max			Min	Tgt	Max		
50	41	1.2	1	1	1	1	0 - DRAG ONLY	0m 15s	0m 16s	0m 18s	5s	4.5s	1	1	1	0h 4m	<i>d</i>
	33	1.5	1	1	1	1		0m 18s	0m 20s	0m 23s	5s	4.5s	1	1	1	0h 5m	<i>d</i>
	26	1.9	1	1	1	1		0m 23s	0m 26s	0m 29s	5s	4.5s	1	1	1	0h 5m	<i>d</i>
	21	2.4	1	1	1	1		0m 29s	0m 32s	0m 36s	5s	4.5s	1	1	1	0h 5m	<i>d</i>
	17	2.9	1	1	1	1		0m 35s	0m 40s	0m 44s	5s	4.5s	1	1	1	0h 6m	<i>d</i>
	13.6	3.7	1	1	2	1		0m 44s	0m 50s	0m 55s	5s	4.5s	1	1	2	0h 7m	<i>d</i>
	11	4.5	2	2	2	1		0m 55s	1m 1s	1m 8s	6s	4.5s	2	2	2	0h 8m	<i>d</i>
	9	5.6	2	2	2	2		1m 7s	1m 15s	1m 23s	6s	4.5s	2	2	2	0h 9m	<i>d</i>
	7.4	6.8	2	2	3	2		1m 21s	1m 31s	1m 41s	6s	4.5s	2	2	3	0h 10m	<i>d</i>
63	41	1.5	1	1	1	1	0 - DRAG ONLY	0m 18s	0m 21s	0m 23s	5s	4.9s	1	1	1	0h 5m	<i>d</i>
	33	1.9	1	1	1	1		0m 23s	0m 26s	0m 29s	5s	4.9s	1	1	1	0h 5m	<i>d</i>
	26	2.4	1	1	1	1		0m 29s	0m 33s	0m 36s	5s	4.9s	1	1	1	0h 5m	<i>d</i>
	21	3.0	1	2	2	1		0m 36s	0m 41s	0m 45s	5s	4.9s	1	2	2	0h 6m	<i>d</i>
	17	3.7	2	2	2	1		0m 44s	0m 50s	0m 56s	5s	4.9s	2	2	2	0h 7m	<i>d</i>
	13.6	4.6	2	2	3	1		0m 56s	1m 3s	1m 9s	6s	4.9s	2	2	3	0h 8m	<i>d</i>
	11	5.7	2	3	3	2		1m 9s	1m 17s	1m 26s	6s	4.9s	2	3	3	0h 9m	<i>d</i>
	9	7.0	3	3	4	2		1m 24s	1m 35s	1m 45s	6s	4.9s	3	3	4	0h 10m	<i>d</i>
	7.4	8.5	3	4	4	2		1m 42s	1m 55s	2m 8s	8s	4.9s	3	4	4	0h 12m	<i>d</i>
75	41	1.8	1	1	1	1	0 - DRAG ONLY	0m 22s	0m 25s	0m 27s	5s	5.3s	1	1	1	0h 5m	<i>d</i>
	33	2.3	1	1	2	1		0m 27s	0m 31s	0m 34s	5s	5.3s	1	1	2	0h 5m	<i>d</i>
	26	2.9	2	2	2	1		0m 35s	0m 39s	0m 43s	5s	5.3s	2	2	2	0h 6m	<i>d</i>
	21	3.6	2	2	2	1		0m 43s	0m 48s	0m 54s	5s	5.3s	2	2	2	0h 7m	<i>d</i>
	17	4.4	2	3	3	1		0m 53s	0m 60s	1m 6s	5s	5.3s	2	3	3	0h 7m	<i>d</i>
	13.6	5.5	3	3	4	2		1m 6s	1m 14s	1m 23s	6s	5.3s	3	3	4	0h 9m	<i>d</i>
	11	6.8	3	4	4	2		1m 22s	1m 32s	1m 42s	6s	5.3s	3	4	4	0h 10m	<i>d</i>
	9	8.3	4	5	5	2		1m 40s	1m 53s	2m 5s	8s	5.3s	4	5	5	0h 11m	<i>d</i>
	7.4	10.1	5	6	6	2		2m 2s	2m 17s	2m 32s	8s	5.3s	5	6	6	0h 13m	<i>d</i>
90	41	2.2	1	2	2	1	0 - DRAG ONLY	0m 26s	0m 30s	0m 33s	5s	5.7s	1	2	2	0h 5m	<i>d</i>
	33	2.7	2	2	2	1		0m 33s	0m 37s	0m 41s	5s	5.7s	2	2	2	0h 6m	<i>d</i>
	26	3.5	2	3	3	1		0m 42s	0m 47s	0m 52s	5s	5.7s	2	3	3	0h 6m	<i>d</i>
	21	4.3	3	3	3	1		0m 51s	0m 58s	1m 4s	5s	5.7s	3	3	3	0h 7m	<i>d</i>
	17	5.3	3	4	4	2		1m 4s	1m 11s	1m 19s	6s	5.7s	3	4	4	0h 8m	<i>d</i>
	13.6	6.6	4	5	5	2		1m 19s	1m 29s	1m 39s	6s	5.7s	4	5	5	0h 10m	<i>d</i>
	11	8.2	5	6	6	2		1m 38s	1m 50s	2m 3s	8s	5.7s	5	6	6	0h 11m	<i>d</i>
	9	10.0	6	7	8	2		2m 0s	2m 15s	2m 30s	8s	5.7s	6	7	8	0h 13m	<i>d</i>
	7.4	12.2	7	8	9	2		2m 26s	2m 44s	3m 2s	10s	5.7s	7	8	9	0h 15m	<i>d</i>

TEMP: 225 ± 10C			PHASE 1				PHASE 2				PHASE 3	PHASE 4			PHASE 5	PHASE 6	
Pipe Details (e _n = Wall Thickness)			Bead Up Pressure (BAR)			Minimum Bead up Size	Heat Soak See Note <i>b</i>			Maximum Heater Removal Time	Maximum Pressure Up Time	Weld Pressure (BAR)			Minimim Cool Time Under Pressure (See Note c)	Additional Cool Time out of Machine (See Note <i>d</i>)	
			ADD DRAG (see note <i>a</i>)				0 - DRAG ONLY					ADD DRAG					
			P1			t1	P2	t2			t3	t4	P3			t5 / P3	
D _n	SDR	e _n	Min	Tgt	Max	mm	BAR	Min	Tgt	Max			Min	Tgt	Max		
110	41	2.7	2	2	3	1	0 - DRAG ONLY	0m 32s	0m 36s	0m 40s	5s	6.3s	2	2	3	0h 6m	<i>d</i>
	33	3.3	3	3	3	1		0m 40s	0m 45s	0m 50s	5s	6.3s	3	3	3	0h 6m	<i>d</i>
	26	4.2	3	4	4	1		0m 51s	0m 57s	1m 3s	5s	6.3s	3	4	4	0h 7m	<i>d</i>
	21	5.2	4	5	5	2		1m 3s	1m 11s	1m 19s	6s	6.3s	4	5	5	0h 8m	<i>d</i>
	17	6.5	5	6	6	2		1m 18s	1m 27s	1m 37s	6s	6.3s	5	6	6	0h 9m	<i>d</i>
	13.6	8.1	6	7	8	2		1m 37s	1m 49s	2m 1s	8s	6.3s	6	7	8	0h 11m	<i>d</i>
	11	10.0	8	9	10	2		2m 0s	2m 15s	2m 30s	8s	6.3s	8	9	10	0h 13m	<i>d</i>
	9	12.2	9	10	11	2		2m 27s	2m 45s	3m 3s	10s	6.3s	9	10	11	0h 15m	<i>d</i>
	7.4	14.9	11	12	13	2		2m 58s	3m 21s	3m 43s	10s	6.3s	11	12	13	0h 18m	<i>d</i>
125	41	3.0	3	3	4	1	0 - DRAG ONLY	0m 37s	0m 41s	0m 46s	5s	6.8s	3	3	4	0h 6m	<i>d</i>
	33	3.8	3	4	4	1		0m 45s	0m 51s	0m 57s	5s	6.8s	3	4	4	0h 7m	<i>d</i>
	26	4.8	4	5	6	1		0m 58s	1m 5s	1m 12s	6s	6.8s	4	5	6	0h 8m	<i>d</i>
	21	6.0	5	6	7	2		1m 11s	1m 20s	1m 29s	6s	6.8s	5	6	7	0h 9m	<i>d</i>
	17	7.4	7	7	8	2		1m 28s	1m 39s	1m 50s	8s	6.8s	7	7	8	0h 10m	<i>d</i>
	13.6	9.2	8	9	10	2		1m 50s	2m 4s	2m 18s	8s	6.8s	8	9	10	0h 12m	<i>d</i>
	11	11.4	10	11	12	2		2m 16s	2m 33s	2m 50s	8s	6.8s	10	11	12	0h 14m	<i>d</i>
	9	13.9	12	13	15	2		2m 47s	3m 8s	3m 28s	10s	6.8s	12	13	15	0h 17m	<i>d</i>
	7.4	16.9	14	16	17	3		3m 23s	3m 48s	4m 13s	10s	6.8s	14	16	17	0h 20m	<i>d</i>
140	41	3.4	4	4	4	1	0 - DRAG ONLY	0m 41s	0m 46s	0m 51s	5s	7.2s	4	4	4	0h 6m	<i>d</i>
	33	4.2	4	5	5	1		0m 51s	0m 57s	1m 4s	5s	7.2s	4	5	5	0h 7m	<i>d</i>
	26	5.4	5	6	7	2		1m 5s	1m 13s	1m 21s	6s	7.2s	5	6	7	0h 8m	<i>d</i>
	21	6.7	7	8	8	2		1m 20s	1m 30s	1m 40s	6s	7.2s	7	8	8	0h 10m	<i>d</i>
	17	8.2	8	9	10	2		1m 39s	1m 51s	2m 4s	8s	7.2s	8	9	10	0h 11m	<i>d</i>
	13.6	10.3	10	11	13	2		2m 4s	2m 19s	2m 34s	8s	7.2s	10	11	13	0h 13m	<i>d</i>
	11	12.7	12	14	15	2		2m 33s	2m 52s	3m 11s	10s	7.2s	12	14	15	0h 16m	<i>d</i>
	9	15.6	15	16	18	3		3m 7s	3m 30s	3m 53s	10s	7.2s	15	16	18	0h 19m	<i>d</i>
	7.4	18.9	17	20	22	3		3m 47s	4m 15s	4m 44s	10s	7.2s	17	20	22	0h 16m	<i>d</i>
160	41	3.9	5	5	6	1	0 - DRAG ONLY	0m 47s	0m 53s	0m 59s	5s	7.8s	5	5	6	0h 7m	<i>d</i>
	33	4.8	6	6	7	1		0m 58s	1m 5s	1m 13s	6s	7.8s	6	6	7	0h 8m	<i>d</i>
	26	6.2	7	8	9	2		1m 14s	1m 23s	1m 32s	6s	7.8s	7	8	9	0h 9m	<i>d</i>
	21	7.6	9	10	11	2		1m 31s	1m 43s	1m 54s	8s	7.8s	9	10	11	0h 11m	<i>d</i>
	17	9.4	11	12	13	2		1m 53s	2m 7s	2m 21s	8s	7.8s	11	12	13	0h 12m	<i>d</i>
	13.6	11.8	13	15	17	2		2m 21s	2m 39s	2m 56s	8s	7.8s	13	15	17	0h 15m	<i>d</i>
	11	14.5	16	18	20	2		2m 55s	3m 16s	3m 38s	10s	7.8s	16	18	20	0h 18m	<i>d</i>
	9	17.8	19	22	24	3		3m 33s	4m 0s	4m 27s	10s	7.8s	19	22	24	0h 21m	<i>d</i>
	7.4	21.6	22	25	28	3		4m 19s	4m 52s	5m 24s	12s	7.8s	22	25	28	0h 17m	<i>d</i>