

Tymac Process Control Cost Justification

(Figures are for a smaller-sized die casting machine, using zinc, to make staplers)

	Units	w/o Controls	Results as of Dec 17	Potential Results
SALES FACTORS				
Machine Time	\$/hour	\$120	\$120	\$120
Material Markup	% of actual	192.9%	192.9%	192.9%
COST FACTORS				
Cycle Rate	cycles/hour	280.0	355.0	410.0
Cavities	#/die	1	1	1
Production Rate	parts/hour	280	355	410
Sched. Run Time	% of shift	90%	90%	90%
Die Changes	#/week	1	1	1
Average Die Change	hours	8	8	8
Average Downtime	hours/week	4	4	4
Shifts	#/week	10	10	10
Shift Length	hours	8	8	8
Avg. Mach. Util.	%	75.0	75.0	75.0
Yearly Production	weeks	50	50	50
Total Scrap Rate	%	46.0%	16.0%	5.5%
Start-up Shots	# cycles	20	20	20
Start-ups	#/week	20	20	20
Average Die Cost	\$	\$40,000	\$40,000	\$40,000
Average Die Life	# shots	3,000,000	3,450,000	3,540,000
Melting Cost	\$/pound	.12	.11	.11
Metal Cost	\$/pound	.62	.62	.62
Re-Melt Loss	%	9.0%	9.0%	9.0%
Metal density	#/cubic in.	.25	.25	.25
DCM Value	\$	100,000	100,000	100,000
DCM Life	years	10	10	10
DCM Size	tons	125	125	125
Machine hour rate	\$/hour	\$50.00	\$50.00	\$50.00
Labor	\$/hour	\$15.75	\$15.75	\$15.75
Average Shot Wt., spec.	pounds	1.45	1.45	1.45
Average Part Wt., spec.	pounds/piece	0.74	0.74	0.74
Avg. Total Proj. Area	square in.	100	100	100
Part Projected Area,ea.	square in.	70	70	70
Avg. Flash	inches	0.005	0.000	0.000
Average Part Wt.	lbs/piece	0.82	0.74	0.74
Flash Recovery	%	10.0	10.0	10.0
Running time	hours/year	3000	3000	3000
Cost of machine depr.	\$/hour	\$3.33	\$3.33	\$3.33
Gross production	parts/week	16,800	21,300	24,600
Less start-up shots	parts/week	16,400	20,900	24,200
Net (less scrap shots)	parts/week	8,856	17,556	22,869
Die amortization	\$/part	0.0253	0.0141	0.0122
Machine & labor cost	\$/part	0.4752	0.2397	0.1840
Melt cost	\$/part	0.3301	0.1984	0.1759
Re-melt loss cost	\$/part	0.0726	0.0173	0.0061
Flash cost	\$/part	0.0228	0.0000	0.0000
Part material cost	\$/part	0.5084	0.4588	0.4588
Payback Assuming Die Caster Owns Die				
Total Part Cost	\$/part	\$1.4343	\$0.9283	\$0.8370
Savings	\$/part	\$0.0000	\$0.5061	\$0.5973
Sales Price (incl. die)	\$/part	\$1.4343	\$1.4343	\$1.4343
Volume	parts/year	442,800	877,800	1,143,450
Gross Profit (less depr.)		\$1.00	\$444,226	\$682,979
Gross Profit (%)		0.0%	35.3%	41.6%
Profit Increase (savings)			\$444,227	\$682,980