



# MicroGrind

Plant Name enter here

	Base Case	Plant Response
On average, how many impressions do you get out of a set of anvils?	850,000	850,000
Estimated impressions with the SUN MicroGrind	1,000,000	1,000,000
What is your cost for an anvil set?	\$1,000	\$1,000
On average, how many impressions do you run before rotating anvils?	150,000	150,000
How many minutes does it take for you to change anvils?	50	50
How many persons do you use to change anvils?	2	2
What is the machine's average feeds per run hour?	7,000	7000
What is the "loaded" labor rate per hour for this machine?	\$30.00	\$30.00
How many people crew this machine?	2.0	2.0
What is the average run hours per shift for the machine?	5.0	5.0
How many shifts per day is the machine operated?	2.0	2.0
How many days per year is does the machine operate?	260	260
What is the average selling price per 1000 sq ft?	\$60.00	\$60.00
What is the assumed profit margin?	20.0%	20.0%
What is the average sq ft per sheet?	10.0	10.0

Savings at a Glance		
Savings Opportunity	Annual Savings Base Case	Annual Savings Your Machine
Extend Anvil Life -Number of Sets/Year	\$3,212	\$3,212
Labor Savings - Hours of Rotations Eliminated	\$6,067	\$6,067
Productivity Gain - Square Footage	\$84,933	\$84,933
Transferring Orders from Platen to Rotary	NA	NA
Quality Improvement	\$57,330	\$57,330
Total Annual Savings	\$151,542	\$151,542
PAYBACK PERIOD (Months)		7.5

Estimated Installed Cost Provided by Sun Automation Representative	\$95,000
--	----------

SUN AUTOMATION REPRESENTATIVE

DATE:



## MicroGrind

### Return on Investments

Savings Opportunitites	Base Case	Plant System	<i>MicroGrind using Base Case Values</i>	<i>MicroGrind Improvements vs Base Case</i>	<i>MicroGrind Improvements vs Plant System</i>	Savings Base Case	Plant Opportunity	Formula	
Extend Anvil Life - Number of Sets/Year	21.41	21.41	18.20	3.21	3.21	\$3,212	\$3,212	Feeds/hr x run hr/shift x shift/day x days/year divided by impressions/set	
Labor Savings - Hours of Rotations Eliminated	101.11	101.11	0.00	101.11	101.11	\$6,067	\$6,067	Rotations x min/rotation divided by 60 x number of anvil sets x labor cost/hour	
Productivity Gain - Square Footage	182,000,000	182,000,000	189,077,778	7,077,778	7,077,778	\$84,933	\$84,933	Sqft/sheet x feeds/hour x hours saved x selling price/sqft x assumed margin %	
Transferring Orders from Platen to Rotary (Labor Hours)	See Rotary vs Platen TAB for Calculation					NA	NA	Labor Savings Rotary vs Platen x number of orders transferred	
Quality Impact	See Quality Focus TAB for Calculation					\$57,330	\$57,330		
					<b>Total Saving</b>	<b>\$151,542</b>	<b>\$151,542</b>	<b>Per Rotary</b>	
					<b>Installed Cost</b>	<b>\$95,000</b>	<b>\$95,000</b>	<b>Per Rotary</b>	
						Gross Annual Payback Percentage	160%	160%	Total Savings divided by Installed Cost -See Comment
						Installed Cost	\$95,000	\$95,000	
						Total Savings	\$151,542	\$151,542	Installed Cost*12 months divided by Total Savings
						Pay Back Calculation	7.5	7.5	

	Base Case	Plant Specifics
Impressions per set of anvil covers	850,000	850,000
Impressions per set with MicroGrind	1,000,000	1,000,000
Cost per Anvil Set	\$1,000.00	\$1,000.00
Impress/Rotation	150,000	150,000
Minutes/Rotation	50	50
Number of persons to Rotate Sets	2	2
Feeds/Hour	7,000	7,000
Run Hours/Shift	5	5
Shifts/day	2	2
Days/yr	260	260
Labor \$shift hr	\$30.00	\$30.00
Crew Size	2.0	2.0
Selling Price/1000sqft	\$60	\$60
Selling Price/sqft	\$0.06	\$0.06
Assumed Profit Margin	20.0%	20.0%
Average sqft/sheet	10.00	10.00



## Moving Orders from Platen to Rotary

Enter Plant Specifics Below (light yellow cells)				
	Platen Base Case	Rotary Base Case	Platen Plant Specifics	Rotary Plant Specifics
Do you operate a Platen Die Cutter (Y or N)?			n	
Do you print the orders "inline" (Y or N)?			n	
Average Order Size	12,596	6,892	12,596	6,892
Setup Minutes (for separate print)	20		20	
Setup Minutes Crew for Printing (if printed separately on press)	36.9	32.9	36.9	32.9
Crew Size	2.0	2.0	2.0	2.0
Feeds/Hour (Printed separately on press)	4500		4500	
Feeds/Hour	1,981	7,000	1,981	7,000
Hours per shift	5	5	5	5
Average Downtime Percent (Set up time not included)	30.0%	30.0%	30.0%	30.0%
Average Time/ order (when printed separately)	10.1		10.1	
Average time/ order Avail Run+ Setup Hrs/Shift	6.97	1.53	6.97	1.53
Shifts/day	2	2	2	2
Days/yr	260	260	260	260
Calculated Orders/ Year (when printed separately)	180.1		180.1	
Calculated Orders per Year	261.0	1187.3	261.0	1187.3
Percent of orders that could move to rotary	100%	100%	100%	
Labor \$/shift hr	\$30.00	\$30.00	\$30.00	\$30.00
Selling Price/1000sqft	\$60	\$60	\$60	\$60
Selling Price/sqft	\$0.06	\$0.06	\$0.06	\$0.06
Assumed Profit Margin	20.0%	20.0%	20.0%	20.0%
Average sqft/sheet	9.00	13.70	9.00	10.00

BASE CASE			
	Platen Printing Separate	Platen Inline Printing or No Print	Rotary
Shifts/Day	2	2	2
Work Days /Year	260	260	260
Labor Cost	\$30.00	\$30.00	\$30.00
Average Order (# of Sheets)	12,596	12,596	6,892
Printing			
Crew Size	2	See die cut	See die cut
Set Up Time (minutes)	20		
Run Speed (sheets per hour)	4500		
Run Time	2.80		
Total Time	3.13		
Labor Hrs	6.26		
Labor Cost	\$187.95		
Die Cutting			
Crew Size	2.0	2.0	2.0
Set Up Time (minutes)	36.9	36.9	32.9
Run Speed (sheets per hour)	1,981	1,981	7,000
Run Time	6.36	6.36	0.98
Total Time (Run + Setup)	6.97	6.97	1.53
Labor Hrs	13.9	13.9	3.1
Labor Cost	\$418.40	\$418.40	\$91.97
Total Labor Hours	20.2	13.9	3.1
Total Labor Cost	\$606.35	\$418.40	\$91.97
Total Orders/Year	180.1	261.0	1187.3
Annual Savings (100% of orders moved to rotary)	\$92,636	\$85,195	

PLANT SPECIFICS			
	Platen Printing Separate	Platen Inline Printing	Rotary
Shifts/Day	2	2	2
Work Days /Year	260	260	260
Labor Cost	\$30.00	\$30.00	\$30.00
Average Order (# of Sheets)	12,596	12,596	6,892
Printing			
Crew Size	2	See die cut	See die cut
Set Up Time (minutes)	20		
Run Speed (sheets per hour)	4500		
Run Time	2.80		
Total Time	3.13		
Labor Hrs	6.26		
Labor Cost	\$187.95		
Die Cutting			
Crew Size	2.0	2.0	2.0
Set Up Time (minutes)	36.9	36.9	32.9
Run Speed (sheets per hour)	1,981	1,981	7,000
Run Time	6.36	6.36	0.98
Total Time	6.97	6.97	1.53
Labor Hrs	13.9	13.9	3.1
Labor Cost	\$418.40	\$418.40	\$91.97
Total Labor Hours	20.2	13.9	3.1
Total Labor Cost	\$606.35	\$418.40	\$91.97
Total Orders/Year	180.1	261.0	1187.3
Annual Savings (100% of orders moved to rotary)	\$92,636	\$85,195	
Annual Savings (if only a percentage of orders are transferred)	\$92,636	\$85,195	



## *Without MicroGrind*

Quality Impact					
Savings Opportunities	Base Case	Plant System	<i>Base Case "Lost Costs" (Does not Include return shipping)</i>	<i>Plant Specific "Lost Costs" (Does not Include return shipping)</i>	Formula
Annual Rotary Product Return MSF	910	910	\$22,750	\$22,750	Feeds/hr x run hr/shift x shift/day x days/year x square ft. per sheet divided 1000 x Cull Percent x calculated cost per MSF {Selling Price/ (1 + profit margin)}
Annual Blanks/Boxes Sorted (assuming all returns are sorted)	91,000	91,000	\$2,730	\$2,730	Number of Blanks to Sort/sort rate per hour x labor rate/hour (Assuming all Returns Sorted)
Re-Run "Culled" Blanks/Boxes	45,500	45,500	\$22,750	\$22,750	Re-run blanks x sq ft per blank / 1000 x calculated cost per MSF {Selling Price/ (1 + profit margin)}
Lost MSF Profit (Volume/Capacity Lost due to Re-run and Cull)	910	910	\$9,100	\$9,100	Volume Culled plus Volume Re-run x the profit \$ expected per MSF
<b>Total Dollar Impact</b>			<b>\$57,330</b>	<b>\$57,330</b>	

	Base Case	Plant Specifics	
Rotary Percent Returns	0.50%	0.50%	NOTE: Please insert the values for the base case and plant specifics in the light yellow cells to the left
Percent of Returned blanks/boxes that are "Culled"	50%	50%	
Number of blanks/boxes sorted per hour	1,000	1,000	
Feeds/Hour	7,000	7,000	These Plant Specific elements are taken from the "Base Case Plant Details" tab while the Base Case Elements come from the "Savings Calculation" tab
Run Hours/Shift	5	5	
Shifts/day	2	2	
Days/yr	260	260	
Labor \$/shift hr	\$30.00	\$30.00	
Crew Size	2.0	2.0	
Selling Price/1000sqft	\$60	\$60	
Selling Price/sqft	\$0.06	\$0.06	
Assumed Profit Margin	20.0%	20.0%	
Average sqft/sheet	10.00	10.00	

### Other ROI Considerations

- > Ability to move platen jobs to rotary
- > Reduction in wear on cutting dies due to less impression
- > Contribution from the ability to remove ink from covers
- > Contribution from scrapped sheets (returned or poorly made boxes)
- > Increased business due to ability to make an accurate box
- > Increased business due to ability to run non-cracking scores
- > Increased business due to ability to improve productivity
- > Increased contribution to the plant P&L statement
- > Operator/Crew friendly system and controls (easy to use)
- > Improves nicks for better Bld. Breaker operation

**Note: If a plant uses a MicroGrind it will eliminate returns and impress your customers!**