

COST PER DISC CALCULATION

Turn-key facility w. new CD replication line and pre-owned 5-color printer and QC.

October 1, 2003

Machine type:	Singulus Skyline Starline	Year	2003
Injection moulding machine(s)	1 Netstal Discjet	Item Number	
Printer	5-color off line	Year	1998

Number of molding machines:	1
currency	US\$
exchange rate	



1 EQUIPMENT PRODUCTIVITY

1.1 Cycle time	3.40 sec.
1.2 Up time (excluding print setup and stamper exchange)	0.97
1.3 Yield (inclusive of printing)	0.95

2 PRODUCTION SCHEDULE

Working Hours per Day	24
Working Days per Week	6
Working Weeks per Year	50
Working Hours per Year	7200
Average Order Size	2000 CD
Down time per order change (stamper exchange)	6 min

3 PRODUCTION OUTPUT PER MACHINE

Time required per order (inclusive of equipment uptime and yield consideration)	129 min
Daily Production per molding machine (inclusive of equipment uptime and yield consideration)	22,328 CD
Weekly Production per molding machine (inclusive of equipment uptime and yield consideration)	133,966 CD
Annual Production per molding machine (inclusive of equipment uptime and yield consideration)	6,698,304 CD
Total Annual Production for: 1 molding machine(s)	6,698,304 CD

INVESTMENT COSTS

Investment for Replication line w. PC Dryer and chiller	350,000
Investment for 5-color screen printer (e.g. Hanky CD 5000 VE, 1998)	75,000
Investment for print screen preparation equipment	14,000
Investment for CD Analyzer, e.g. pre-owned CD Associates with 4 test players	24,000
Down Payment	-
Total amount financed	463,000
Interest Rate	9.0%
Depreciation time	5 years
Monthly Payment (approximated)	\$9,611.00
Capital Costs p.a. (approximated)	\$115,332

4 ANNUAL COSTS

4.1 Personnel

hourly labor rate for well qualified replication line and printer operator	\$18.00
lines per operator (maximum 2 double lines of this type per operator)	1
hourly labor rate per line	\$18.00
working hours per year for replication line operator(s)	7,200
working hours per year printer operator (same operator)	4,000

4.2 Annual operator costs \$201,600

4.3 Consumables

	per CD	p.a.	US\$/Unit	US\$ p.a.
Polycarbonate PC - in Kg	0.016	107172.86	2.60	278,649
Al-Targets	0.0000044	29.77	40.00	1,191
Argon gas - in bottles		1 25.00	120.00	3,000

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Spin coating lacquer - in Kg	0.0016	670.32	10.00	6,703
Printing Ink - in Kg	0.0002	1339.66	25.00	33,492
Annual Consumables Cost				323,035

1 Target=	225,000	CD
1kg Lacquer=	8,000	CD
1kg Poly Carbonate=	60	CD
1 kg Printing Ink=	5,000	CD

1 bottle Argon gas (lasts 2 weeks of production for 1 line)

4.4 Utilities for all Equipment

Incl. PC drying	per hour	p.a.	US\$/unit	US\$ p.a.
Electricity in kWh* * *	70	504,000	0.08	40,320
Compressed air - in m3	42	302,400	0.020	6,048
total				46,368

*Includes PC drying and refrigeration for cooling water.

** Lower Utility consumption during temporary production stop (e.g. holidays, weekends) not considered.

4.4 Stamper

Total discs produced	6,698,304
Average Order size	2,000
Total Orders per year	3,349
Ratio of new orders to total orders	0.50
New Stampers required	1,675
Cost per New Stamper	\$ 130.00
Total Cost p. a. for New Stamper	\$ 217,695

includes courier charges



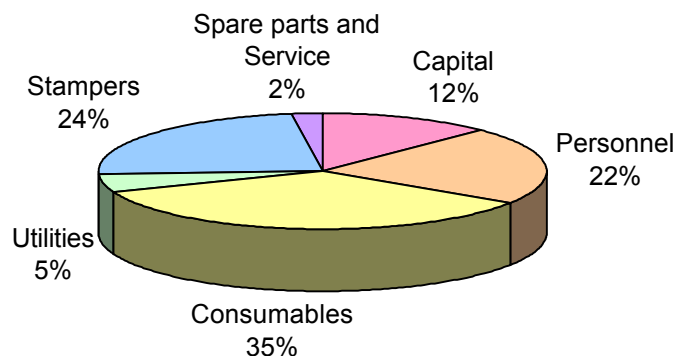
\$ 217,695

4.5 Spare Parts and Technical Support

Technical Service (averaged over 5 years)	\$ 5,000
Spare parts inclusive of mold polishing (averaged over 5 years)	\$ 15,000
Total	\$ 20,000

- 5 **Analysis of cost for:** Singulus Skyline Starline
Number of molding machines: 1
Printing 5-color off line

Annual spending:	Share:	US\$
Capital	12%	115,332
Personnel	22%	201,600
Consumables	35%	323,035
Utilities	5%	46,368
Stampers	24%	217,695
Spare parts and Service	2%	20,000
		924,030



6 COST PER CD

total annual costs	\$ 924,030
annual production of good CD's	6,698,304 CD
manufacturing costs per replicated CD	\$ 0.1379

Initial Capital Investment: \$ 463,000.00

