



Manufacturing Cost Estimation

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Cost Estimates for Item; Special Anniversary Bottle Opener 12345rev1

Date; 21/05/08 **Quotation No;** 323

Comprising

1 Level 1 Sub Assemblies
4 Child Parts
To Estimate Level 3

Data supplied by Client

CAD model/2D drawing, Dimensioned
Volume Per Year
Basic Material Type
Technology Requirements
Manufacturing Location/Country

PPM Associates Ltd Standard Terms & Conditions Apply
The validity of the estimate is subject to the accuracy of the data supplied by the Client



Level 3 - Cost Estimate & Analysis Planning & Procurement

**Component
Part No**

**Special Anniversary Bottle Opener
12345 rev1**

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1. Executive Summary

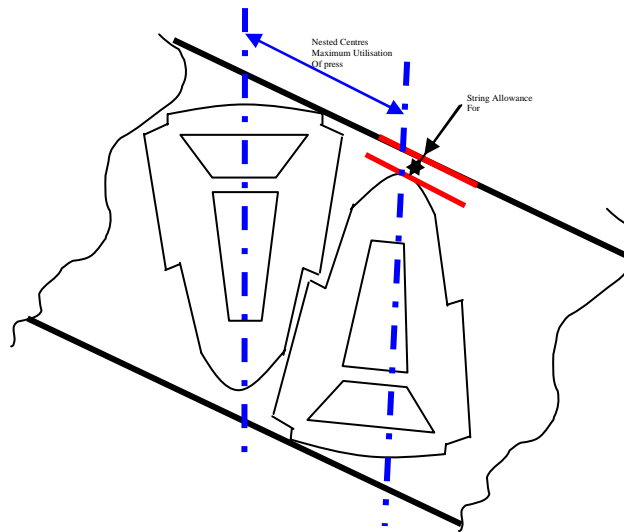
The following report outlines the findings of the technical cost appraisal undertaken by PPM Ltd.

The findings and detail have been calculated from the information supplied, allied to the understanding of component requirements by the relevant estimating engineer.

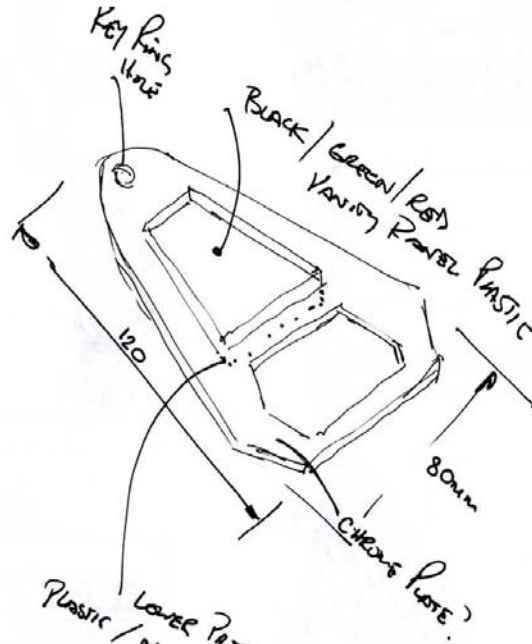
Three estimates have now been produced, from L1 Concept through L2 Gateway Review to the current L3 Planning & Procurement estimate.

- The final Level 3 estimate shows an ex works price of €0.810
- The component costs are as follows;
 - Vanity panel €0.2408
 - Pressure plate €0.262
 - Pressing €0.191
 - Mechanical fix €0.050
 - Final assy €0.066
- The expectation on accuracy is +/- 3% on current process assumptions.
- L2 estimates assumed that final assembly would be a manual operation, This had the problem that the line balancing showed a need even on three shifts to have a dwell time that was unacceptable. It was not possible to significantly improve the balance the operations to improve efficiency. The level 3 estimate has assumed a fully automated line.
- Manufacturing process has been optimised around a balance, automated line as the most economic route
- Tooling calculations show an investment of £1,008,000

- Material savings of 50% wrt L2 pressing estimates have been made by nesting the blanks as per sketch



2. Product Data



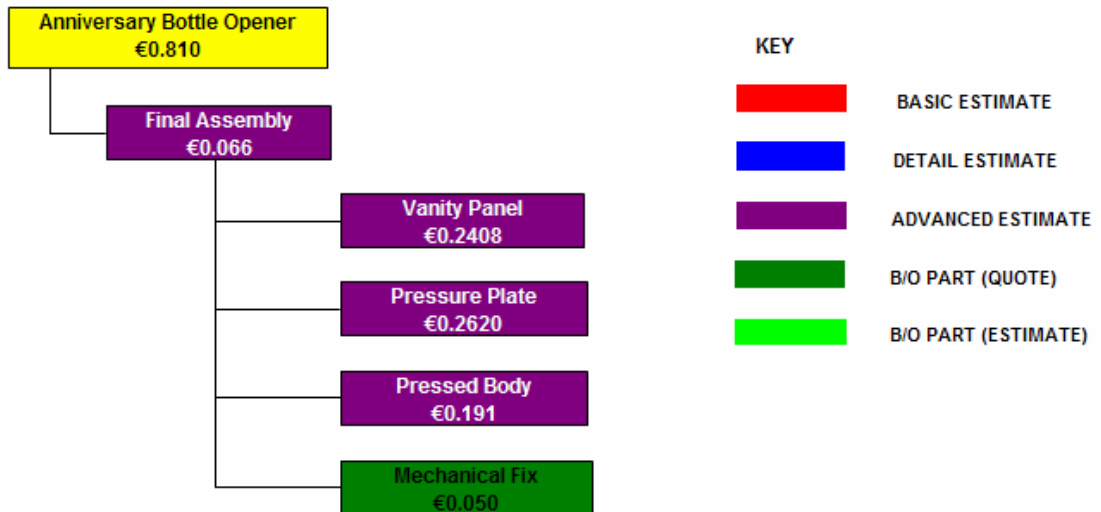
FORECAST = 1.5 million / YEAR 5 YEARS MAX!
MANUFACTURES = EUROPE.



3. Estimate Assumptions

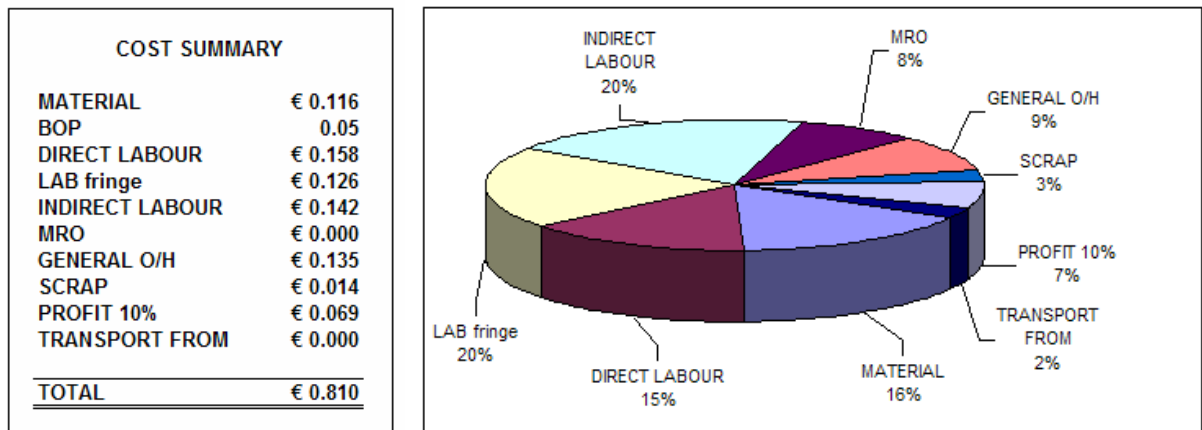
1. Volume Assumption	1,500,000 Per annum Batch Size 1 Month
2. Manufacturing Base	Europe (Germany)
3. Component Assumptions	CR4, Chrome Plated Coloured Panel, Plastic ABS Pressure Pad Nylon Unfilled Manual assembly, Balanced Line M4 Screw fix
4. General	Profit 10% Scrap 'Generic' 2% Optimisation of Process Appropriate general process tolerances applied Process analysis sheets attached Summary report on findings

COST TREE



4. Cost Summary

<p>COMPONENT DESCRIPTION Bottle Opener</p>	<p>VOLUME : 1,500,000 Per Annum Made In Europe Ex Works Pricing</p>
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TOOLING SUMMARY SHEET

PART No	DESCRIPTION	OP No	Description	TOOLING COST	TOOL DESCRIPTION	JIG / FIXTURES and GAUGES	DESCRIPTION	TOTAL TOOL COST	GRAND TOTAL TOOL COST	
BO F Assy	Bottle Opener Final Assembly		Fully Automated Line		6 Metre electric transfer track 6 station auto feed and component carrier					
		10	Assembly Complex 6 station	€ 697,330	return		€ 0	€ 697,330		
		20	Bowel Feed		PP Moulding Orientation			€ 5,000 POKE /YOKE	€ 23,656	
		30	Bowel Feed		VP Moulding Orientation			€ 5,000 POKE /YOKE	€ 23,656	
		40	Bowel Feed		Pressing Orientation and			€ 5,000 POKE /YOKE	€ 23,656	
		50	Pick and Place Robot 1		€ 21,168	Orientation Robot		€ 0	€ 21,168	
		60	Pick and Place Robot 2		€ 21,168	Orientation Robot		€ 0	€ 21,168	
		70	Pick and Place Robot 3		€ 21,168	Roration in Fixture		€ 0	€ 21,168	
		80	Mechanical Fix					€ 20,000 POKE /YOKE	€ 20,000	
		90	Robot Pick and Place Pack.		€ 21,168	Robot Inspection		€ 5,000	Final Gauge	€ 26,168
BO F Assy	Bottle Opener Pressure Plate		MOULD		4 Ipression with 2 axis					
		10	INSPECTION	€ 30,000	slide bars Water cooled			€ 30,000		
20						Dimensions				
						€ 5,000	gauging	€ 5,000		
BO Con P	Bottle Opener Pressing	10	LOAD COIL , STRING AND START	€ 0			€ 0	€ 0		
		20	CONNECT SKELETON TO COIL	€ 0			€ 0	€ 0		
		30	FEED TO STOP	€ 0			€ 0	€ 0		
		40	MOVE ASSIDE AND CYCLE PRESS	€ 12,000	Transfer tool Station 1		€ 2,000	Dimension	€ 14,000	
		50	LOCATE TO NEXT STATION	€ 2,000	Transfer		€ 0		€ 2,000	
		60	MOVE ASSIDE AND CYCLE PRESS	€ 18,000	Station 2 Blank ,Raise		€ 2,000	Dimension	€ 20,000	
		70	MOVE FORWARD REMOVE COMPONENT	€ 1,500	Transfer		€ 0		€ 1,500	
		80	ASSIDE COMPONENT TO TOTE TIN	€ 2,000	Transfer		€ 0		€ 2,000	
		90	REMOVE SKELETON COIL TO SKIP	€ 0			€ 0		€ 0	
		100	BLOW CLEAN	€ 0			€ 0		€ 0	
		110	OIL BOLSTER	€ 0			€ 0		€ 0	
		120	S.M.E.D TOOL SETUP	€ 5,000	Bloster		€ 0		€ 5,000	
		130	AMORTISATION	€ 0			€ 0		€ 0	
		140	INSPECTION	€ 0			€ 0		€ 0	
		150	INSPECTION	€ 0			€ 5,000	Final Inspection gauges	€ 5,000	
		160	PACK	€ 0			€ 0		€ 0	
		170	Plate Complete	€ 1,000	Cleat hangers		€ 0		€ 1,000	
BO VP	Bottle Opener VANITY PANEL		CYCLE TIME MOULD SHUT		4 Ipression with 2 axis					
		10	TIME	€ 40,000	slide bars oil cooled			€ 40,000		
20	INSPECTION		€ 40,000	Chrome plated.		0		€ 40,000		
						Dimensional/				
						€ 5,000	visual	€ 5,000		
GRAND TOTAL PROJECT TOOLING									€ 1,008,470.00	



5a Final Assembly Operation

PART NUMBER	BO F Assy
DESCRIPTION OF PART	Bottle Opener Final Assembly
MATERIAL TYPE	
MATERIAL REF	
MATERIAL COST	
UNITS	
MATERIAL COST /PART	
VOLUME PER ANUM	
BATCH SIZE	
OPERATION DESCRIPTION	Assemble Complete

Commercial Summary	
MATERIAL	0.000
DIRECT LABOUR	0.007
LAB fringe	0.005
INDIRECT LABOUR	0.006
MRO	0.000
GENERAL O/H	0.040
SCRAP	0.001
PROFIT 10%	0.006
TRANSPORT FROM	0.000
TOTAL	0.066

OPERATION NUMBER	OPERATION DESCRIPTION	MACHINE REFERENCE	MACHINE DESCRIPTION	CYCLE TIME Mins	MACHINE RATE / HR	EFFICIENCY	SHIFT PATTERN	LABOUR GROUP	OPERATORS	SKILL LEVEL	Labour Cost	Labour Indirect	Fringe Labour	General Machine Cost	SCRAP RATE	PARTS PER OPERATION
10	Fully Automated Line Assembly process.	1331	6 STATION ROTARY INDEX ASSEMBLY FACILITY	0.05500	53	81%	triple	General assembly Medium	0.3	SKILLED	0.674	0.539	0.607	2.537	2%	1
20	Bowl Feed	1246	BOWL FEEDER - VIBRATING	0.05500	53	81%	triple	General assembly Medium	0	SKILLED	0.000	0.000	0.000	0.339	2%	1
30	Bowl Feed	1246	BOWL FEEDER - VIBRATING	0.05500	53	81%	triple	General assembly Medium	0	SKILLED	0.000	0.000	0.000	0.339	2%	1
40	Bowl Feed	1246	BOWL FEEDER - VIBRATING	0.05500	53	81%	triple	General assembly Medium	0	SKILLED	0.000	0.000	0.000	0.339	2%	1
50	Pick and Place Robot 1	1246	BOWL FEEDER - VIBRATING	0.05500	53	81%	triple	General assembly Medium	0	SKILLED	0.000	0.000	0.000	0.339	2%	1
60	Pick and Place Robot 2	945	CINNATTI MILACRON HYDRO INDUSTRIAL ROBOTS	0.05500	53	81%	triple	General assembly Medium	0	SKILLED	0.000	0.000	0.000	0.039	2%	1
70	Pick and Place Robot 3	945	CINNATTI MILACRON HYDRO INDUSTRIAL ROBOTS	0.05500	53	81%	triple	General assembly Medium	0	SKILLED	0.000	0.000	0.000	0.039	2%	1
80	Mechanical Fix	945	CINNATTI MILACRON HYDRO INDUSTRIAL ROBOTS	0.05500	53	81%	triple	General assembly Medium	0	SKILLED	0.000	0.000	0.000	0.039	2%	1
90	Robot Pick and Place Pack.	945	CINNATTI MILACRON HYDRO INDUSTRIAL ROBOTS	0.05500	53	81%	triple	General assembly Medium	0	SKILLED	0.000	0.000	0.000	0.039	2%	1
SUMMARY LINE											0.674	0.539	0.607	4.048		



5b Vanity Panel Moulding

PART NUMBER	BO VP
DESCRIPTION OF PART	Bottle Opener VANITY PANEL
MATERIAL TYPE	ABS Granules (Black)
MATERIAL REF	1291
MATERIAL COST	3552
UNITS	€ /T
MATERIAL COST /PART	0.013
VOLUME PER ANUM	1500000
BATCH SIZE	125000
OPERATION DESCRIPTION	Mould Complete

Commercial Summary	
MATERIAL	0.013
DIRECT LABOUR	0.066
LAB fringe	0.053
INDIRECT LABOUR	0.060
MRO	0.000
GENERAL O/H	0.023
SCRAP	0.004
PROFIT 10%	0.022
TRANSPORT FROM	0.000
TOTAL	0.2408

OPERATION NUMBER	OPERATION DESCRIPTION	MACHINE REFERENCE	MACHINE DESCRIPTION	CYCLE TIME Mins	MACHINE RATE / HR	EFFICIENCY	SHIFT PATTERN	LABOUR GROUP	OPERATORS	SKILL LEVEL	Labour Cost	Labour Indirect	Fringe Labour	General Machine Cost	SCRAP RATE	PARTS PER OPERATION
10	CYCLE TIME MOULD SHUT TIME	1052	500/100 LK 50 STR 225mm PLTN 450x450mm SHT VOL 49-88cc	0.21157	48	81%	Triple	Plastic Mopulding Medium	1	SEMI SKILLED	5.235307	4.188246	4.711776	10.26543	2%	4
20	INSPECTION	574	INSPECTION BENCH	0.00131	42	90%	Triple	Plastic Mopulding Medium	1	Skilled	0.032405	0.025924	0.029164	10.26543	2%	1
30	PACKING	57	MANUAL BENCH 1.83x1.12 METRES	0.05500	43	90%	Triple	Plastic Mopulding Medium	1	SEMI SKILLED	1.360998	1.088799	1.224899	10.26543	2%	1
40	S.M.E.D Production set up of Die/Press	1052	500/100 LK 50 STR 225mm PLTN 450x450mm SHT VOL 49-88cc	0.00053	48	81%	Triple	Plastic Mopulding Medium	1	SEMI SKILLED	0.013066	0.010452	0.011759	0.843452	2%	1
SUMMARY LINE											6.642	5.313	5.978	31.640		



Vanity Panel Analysis

PART No:	BO VP L3
DESCRIPTION:	Bottle Opener Vanity Panel L3
ESTIMATOR:	
QUANTITY PER ANUM:	1500000
QUANTITY PER BATCH:	35714

MATERIAL ANALYSIS

MATERIAL SPECIFICATION	ABS GRANULAR INJECTION MOULD QUALITY
MATERIAL COST PER TONNE	£1,850.00
MATERIAL USAGE	0.01 Kg
COST OF MATERIAL	0.012645675 EURO

LABOUR ANALYSIS

SHIFT PATTERN	TRIPLE SHIFT
LABOUR TYPE	SEMI SKILLED
INDUSTRY TYPE	PLASTIC COMPONENTS MEDIUM
CURRENCY	EURO
LABOUR RATE	0.25 MIN
LABOUR RELATED RATE	0.45 MIN
TOTAL LABOUR VALUE PER HOUR @CURR	45.94 HOUR
MAXIMUM MINUTE VALUE ACCEPTABLE	#N/A MINS

MAXIMUM CYCLE TIME OPERATION	20	0.19233 MINS
MAXIMUM CYCLE OPERATION No		
DESCRIPTION OF OPERATION		CYCLE TIME MOULD SHUT TIME

MINIMUM CYCLE TIME OPERATION	60	0.0005 MINS
MINIMUM CYCLE OPERATION No		
DESCRIPTION OF OPERATION		S.M.E.D Production set up of Die/Press

TOTAL CYCLE TIME		0.244 MINS
TOTAL CYCLE TIME INC RA		0.268 MINS

AVERAGE ELEMENT EFFICIENCY		5 %
MAX ELEMENT EFFICIENCY vs. SHIFT		1.92 %
MIN ELEMENT EFFICIENCY vs. SHIFT		0.00 %

PROCESS ANALYSIS

COMPONENT TYPE	SIMPLE COMPONENT
MATERIAL TYPE	ABS GRANULAR INJECTION MOULD QUALITY
COST PER TONNE	0 PER TONNE
COMPONENT WEIGHT	0.0068355
IN PROCESS MATERIAL	0.000341775
WALL THICKNESS	4
VOLUME OF COMPONE	6.51
SPECIFIC GRAVITY	1.05
MATERIAL LOCKING RE	2.5 Kg/mm2

IMPRESSION SIZE	
LENGTH	48
WIDTH	27
HIGHT	6
NUMBLER OF IMPRESSI	4

CLAMPING DATA	
LOCKING AREA (ABSOL	0 mm2
LOCKING AREA (ABSTR	2196 mm2
LOCKING FORCE	5.49 TONNES

MACHINE TYPE	B-FIELD BK 1000 500/100 LK 50 STR 225mm
MACHINE REFERENCE N	1052

MANIPULATION INTO AND OUT OF DIE	0
CYCLE TIME MOULD SHUT TIME	46.16
INSERT ASSEMBLY TIME	0
CYCLE TIME FLOOR TO FLOOR	46.16

INSERTS	0
No OF INSERTS	0
COST OF INSERTS	0



5cPressure Plate Moulding

PART NUMBER	BO F Assy
DESCRIPTION OF PART	Bottle Opener Pressure Plate
MATERIAL TYPE	Nylon
MATERIAL REF	1320
MATERIAL COST	3848
UNITS	€ /T
MATERIAL COST /PART	0.034
VOLUME PER ANUM	1500000
BATCH SIZE	125000
OPERATION DESCRIPTION	Mould complete

Commercial summary	
MATERIAL	0.034
DIRECT LABOUR	0.067
LAB fringe	0.053
INDIRECT LABOUR	0.060
MRO	0.000
GENERAL O/H	0.020
SCRAP	0.005
PROFIT 10%	0.024
TRANSPORT FROM	0.000
TOTAL	0.262

OPERATION NUMBER	OPERATION DESCRIPTION	MACHINE REFERENCE	MACHINE DESCRIPTION	CYCLE TIME Mins	MACHINE RATE / HR	EFFICIENCY	SHIFT PATTERN	LABOUR GROUP	OPERATORS	SKILL LEVEL	Labour Cost	Labour Indirect	Fringe Labour	General Machine Cost	SCRAP RATE	PARTS PER OPERATION
10	CYCLE TIME MOULD SHUT TIME	1052	500/100 LK 50 STR 225mm PLTN 450x450mm SHT VOL 49-88cc	0.18141	51	81%	Triple	Plastic Mopulding Medium	0.5	SEMI SKILLED	5.074274	4.059419	4.566846	1.8622342	2%	
20	INSPECTION	574	INSPECTION BENCH	0.00131	46	90%	Triple	Plastic Mopulding Medium		Skilled	0.036629	0.029304	0.032966	0.0011045	2%	
30	PACKING	57	MANUAL BENCH 1.83x1.12 METRES	0.05500	46	90%	Triple	Plastic Mopulding Medium	1	SEMI SKILLED	1.538436	1.230749	1.384592	0.0882539	2%	
40	S.M.E.D Production set up of Die/Press	1052	500/100 LK 50 STR 225mm PLTN 450x450mm SHT VOL 49-88cc	0.00053	51	81%	Triple	Plastic Mopulding Medium	1	SEMI SKILLED	0.014769	0.011815	0.013292	0.0054201	2%	
SUMMARY LINE											6.664	5.331	5.998	1.957		



Pressure Plate Analysis

PART No:	BO PP L3
DESCRIPTION:	Bottle Opener Pressure Plate L3
ESTIMATOR:	
QUANTITY PER ANUM:	1500000
QUANTITY PER BATCH:	35714

MATERIAL ANALYSIS

MATERIAL SPECIFICATION	NYLON UNFILLED MLG POWDER
MATERIAL COST PER TONNE	£3,848.00
MATERIAL USAGE	0.01 Kg
COST OF MATERIAL	0.03393936 EURO

LABOUR ANALYSIS

SHIFT PATTERN	TRIPLE SHIFT
LABOUR TYPE	SEMI SKILLED
INDUSTRY TYPE	PLASTIC COMPONENTS MEDIUM
CURRENCY	EURO
LABOUR RATE	0.28 MIN
LABOUR RELATED RATE	0.47 MIN
TOTAL LABOUR VALUE PER HOUR @C	49.43 HOUR
MAXIMUM MINUTE VALUE ACCEPTA	#N/A MINS

MAXIMUM CYCLE TIME OPERATION	0.16492 MINS
MAXIMUM CYCLE OPERATION No	20
DESCRIPTION OF OPERATION	CYCLE TIME MOULD SHUT TIME
MINIMUM CYCLE TIME OPERATION	0.0005 MINS
MINIMUM CYCLE OPERATION No	60
DESCRIPTION OF OPERATION	S.M.E.D Production set up of Die/Press
TOTAL CYCLE TIME	0.217 MINS
TOTAL CYCLE TIME INC RA	0.238 MINS
AVERAGE ELEMENT EFFICIENCY	6 %
MAX ELEMENT EFFICIENCY vs. SHIFT	1.65 %
MIN ELEMENT EFFICIENCY vs. SHIFT	0.00 %

PROCESS ANALYSIS

COMPONENT TYPE	SIMPLE COMPONENT
MATERIAL TYPE	NYLON UNFILLED MLG POWDER
COST PER TONNE	3848 PER TONNE
COMPONENT WEIGHT	0.00882
IN PROCESS MATERIAL LOSS	0.000441
WALL THICKNESS	4
VOLUME OF COMPONENT	8.4
SPECIFIC GRAVITY	1.05
MATERIAL LOCKING REQUIREMENT	2.7 Kg/mm2
IMPRESSION SIZE	
LENGTH	50
WIDTH	30
HEIGHT	6
NUMBER OF IMPRESSIONS	4
CLAMPING DATA	
LOCKING AREA (ABSOLUTE)	0 mm2
LOCKING AREA (ABSTRACT)	2460 mm2
LOCKING FORCE	6.642 TONNES
MACHINE TYPE	B-FIELD BK 1000 500/100 LK 50 STR 225mm
MACHINE REFERENC	1052
MANIPULATION INTO AND OUT OF DI	0
CYCLE TIME MOULD SHUT TIME	39.58
INSERT ASSEMBLY TIME	0
CYCLE TIME FLOOR TO FLOOR	39.58
INSERTS	0
No OF INSERTS	0
COST OF INSERTS	0



5d Opener Pressing

PART NUMBER	BO Con P
DESCRIPTION OF PART	Bottle Opener Pressing
MATERIAL TYPE	CR 4
MATERIAL REF	9
MATERIAL COST	764
UNITS	€ / T
MATERIAL COST /PART	0.069
VOLUME PER ANUM	1500000
BATCH SIZE	125000
OPERATION DESCRIPTION	Press and Plate Complete

Commercial Summary	
MATERIAL	0.069
DIRECT LABOUR	0.018
LAB fringe	0.014
INDIRECT LABOUR	0.016
MRO	0.000
GENERAL O/H	0.052
SCRAP	0.003
PROFIT 10%	0.017
TRANSPORT FROM	0.000
TOTAL	0.191

OPERATION NUMBER	OPERATION DESCRIPTION	MACHINE REFERENCE	MACHINE DESCRIPTION	CYCLE TIME Mins	MACHINE RATE / HR	EFFICIENCY	SHIFT PATTERN	LABOUR GROUP	OPERATORS	SKILL LEVEL	Labour Cost	Labour Indirect	Fringe Labour	General Machine Cost	SCR RATIO
10	LOAD COIL , STRING AND START	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00056	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.01684	0.013472	0.015156	0.01230715	
20	CONNECT SKELETON TO COIL	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00032	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.009576	0.007661	0.008618	0.00699813	
30	FEED TO STOP	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00014	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.004256	0.003405	0.00383	0.00311028	
40	MOVE ASSIDE AND CYCLE PRESS	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.03575	60	72%	Triple	PRESS WORK MEDIUM		SEMI	1.07831	0.862648	0.970479	0.78804683	
50	LOCATE TO NEXT STATION	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00084	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.025343	0.020274	0.022808	0.01852092	
60	MOVE ASSIDE AND CYCLE PRESS	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.01788	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.539155	0.431324	0.485239	0.39402342	
70	MOVE FORWARD REMOVE CDMPONENT	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00029	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.008743	0.006994	0.007869	0.00638944	
80	ASSIDE COMPONENT TO TOTE TIN	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00002	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.000487	0.000389	0.000438	0.00035563	
90	REMOVE SKELETON COIL TO SKIP	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00001	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.000243	0.000195	0.000219	0.00017782	
100	BLOW CLEAN	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00002	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.000487	0.000389	0.000438	0.00035563	
110	OIL BOLSTER	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00001	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.000243	0.000195	0.000219	0.00017782	
120	S.M.E.D TOOL SETUP AMORTISATION	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00018	60	72%	Triple	PRESS WORK MEDIUM		SEMI	0.005309	0.004247	0.004778	0.00387962	
130	INSPECTION	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00000	60	72%	Triple	PRESS WORK MEDIUM		SEMI	7.96E-07	6.37E-07	7.17E-07	5.8194E-07	
140	PACK	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00000	60	72%	Triple	PRESS WORK MEDIUM		SEMI	7.96E-07	6.37E-07	7.17E-07	5.8194E-07	
150	INSPECTION	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00000	60	72%	Triple	PRESS WORK MEDIUM		SEMI	6.83E-06	5.46E-06	6.14E-06	4.9882E-06	
160	PACK	383	150T BED 23*X32" MAX SHUT HT 14.75 STR 4	0.00000	60	72%	Triple	PRESS WORK MEDIUM		SEMI	6.83E-06	5.46E-06	6.14E-06	4.9882E-06	
170	Plate Complete	473	SMALL STEEL PARTS - INTERIOR	0.00367	699	90%	Triple	PRESS WORK MEDIUM		SEMI	0.110596	0.088477	0.099536	3.98863093	
SUMMARY LINE											1.800	1.440	1.620	5.223	



Pressing Analysis

PART No: BO PP L3
 DESCRIPTION: Bottle Opener Pressing
 ESTIMATOR:
 QUANTITY PER ANUM: 1500000
 QUANTITY PER BATCH: 35714

MATERIAL ANALYSIS

MATERIAL SPECIFICA: CR4 FF
 MATERIAL COST PER T £794.76
 MATERIAL USAGE 0.07 Kg
 COST OF MATERIAL 0.069270964 EURO

LABOUR ANALYSIS

SHIFT PATTERN TRIPLE SHIFT
 LABOUR TYPE SEMI SKILLED
 INDUSTRY TYPE FORGE / PRESS / STAMPING MEDIUM
 CURRENCY EURO
 LABOUR RATE 0.30 MIN
 LABOUR RELATED RA 0.47 MIN
 TOTAL LABOUR VALU 97.24 HOUR
 MAXIMUM MINUTE V. #N/A MINS

MAXIMUM CYCLE TIM 0.03250 MINS
 MAXIMUM CYCLE OPE 40

DESCRIPTION OF OPER MOVE ASSIDE AND CYCLE PRESS

MINIMUM CYCLE TIM 0.0000 MINS
 MINIMUM CYCLE OPE 130
 DESCRIPTION OF OPER INSPECTION

TOTAL CYCLE TIME 0.054 MINS
 TOTAL CYCLE TIME IN 0.060 MINS

AVERAGE ELEMENT EF %
 MAX ELEMENT EFFICIE 0.33 %
 MIN ELEMENT EFFICIE 0.00 %

PROCESS ANALYSIS

PROCESS TYPE COIL

SUGGESTED COIL

OUTER DIA 1500MM
 INNER DIA 500MM
 COMP WEIGHT 0.0871596

MATERIALS DATA

COMP WIDTH 94
 COMP LENGTH 68
 COMP WEIGHT 0.0871596
 COIL WEIGHT 875.16 kg
 COIL LENGTH 820.5 Mtrs
 COMPS IN COIL 8728
 SCRAP as AS % OF COIL 15%
 PRESS NUMBER 38300%

TONAGE REQUIRED 134.2868 TONNES

PRESS DESCRIPTION 150T BED 23"X32" MAX SHUT HT 14.75 STR 4
 PRESS No 383
 BATCH RUN 125000
 SHIFT PATTERN TRIPLE

COMPONENT EFFICIEN 85%
 (FROM NESTED BLANK)
 PROCESS EFFICIENCY 100%
 (NESTED vs. PROCESS VOL)

MATERIAL ANALYSIS

CR4 FF
 QUALITY 59.2
 QUANTITY 17.76
 NON-STD 7.4
 THKNSS 32.56
 CUT TO LEN 29.6
 OIL 7.4
 FULL METAL WRAP 10.36
 TRANS 13.32
 TOTAL COST PER TONNE 794.76

MACHINE COSTS OVER HEAD RATES

Single Shift 4.3056
 Double Shift 2.4219
 Triple Shift 1.7784
 Associated Machine Effi: 62%