



# Zero Base Budgeting in Automotive Part Cost

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## Abstract:

To survive and compete in today's globalized economy; manufacturing industry needs to make sure efficient and optimistic in the form of Budget. Finalizing and Allocating budget to each department in an industry is the most difficult task, as we live in highly customized world, customers demand increases day by day and changes and complexity comes in business environment which may directly affect the budget of project and indirectly effect on an industry's final budget and on profit. To solve this problem this paper is concentrate on Zero Base Budgeting (ZBB), which can reduce complexions comes in budget of project in manufacturing industry. The focus of ZBB on project budget is because of; a most important part of yearly Budget of company. In ZBB, budget expert can review the budget of each department to start budgeting from zero which includes capital expenditure, operating cost, sales, administrative cost, purchasing cost, and marketing cost, logistic and cost of goods sold. It is very difficult to any industry to clean out last year budget and start from zero, it takes a long time to applying ZBB but it can provide nice journey and clarity in costing for a year. To applying ZBB, budgeting expert can go through the method of zero line item budgeting and service level budgeting. The focus of this paper is what ZBB is? And how it is applicable for project budgeting in manufacturing industry. The result of this paper reaches that, ZBB produces Savings in an industry and Systematic methods to applying ZBB for project budget in manufacturing industry.

**Keywords:** ABC, ZBC, Part Cost, ZBB & ABB.

## 1. INTRODUCTION

In today's business environment, two factors have become common: change and complexity. The nature of business has incorporated these factors into our everyday lives. We work in an environment of constant change and increasing complexity, and must be competitive, productive, customer-focused, and profitable. Though world economies show some signs of emerging from recession, cost management remains a top priority and a key performance driver for most companies. Many businesses have weathered the downturn by addressing easily accessible cost reduction opportunities. The Change and complexity comes in project of manufacturing industry, after changing demands by the customer, the delay in project execution activities, communication gap within CFT, risk and uncertainties comes in project, changing rate of material and labor, change in overheads etc. These factors can directly effect on the cost of project and indirectly on the budget of an industry and funding for other department. So to reduce these complexions in budgeting organization has to concentrate on ZBB. For applying ZBB, budgeter has to be go to the root of each activity in each department and find out cost for each activity, risks and solutions for that activity and recovered cost for the solutions. To review all this cost, budgeter can take help of project manager and other members of project team as per hierarchy to start from zero and prepare budget by finding out activities in each division, risks & their solutions and costs. However, making significant and sustainable cost reductions without threatening performance and competitiveness is more difficult because many companies are unable to systematically identify and analyze the full range of activities undertaken by the business and the associated costs and business impacts. For that reason, there is increasing interest in the concept of zero based cost and activity levels, an approach in which costs are tackled at the root by re-examining each corporate activity as if it were brand-new. Although the concept of zero-based &

activity based costing is understood in theory. A structured and pragmatic approach to zero-based costing can help achieve sustainable cost reduction while protecting key activities. Even when business is good, no company consciously intends to be inefficient. But after two years of recession and a hesitant recovery, today's business environment leaves no room for error in cost. Demand lags in nearly all markets, placing unrelenting pressure on the top line, new competitors from emerging markets are entering global markets so it's very necessary to confirm our self for the price with cost of manufacturing because many time waste process of cost or extra process without cost in the company.

### Theory of Zero Base Budgeting

Zero-base budgeting (ZBB) is a budgeting process that asks managers to build a budget from the ground up, starting from zero. ZBB promises to move the organization away from incremental budgeting, where last year's budget is the starting point. Instead, the starting point becomes zero, with the implication that past patterns of spending are no longer taken as a given.<sup>1</sup> ZBB is a budgeting process that allocates funding based on program efficiency and necessity rather than budget history.<sup>2</sup> The manager requesting the budget is responsible for this justification. As a result, each company department begins from zero and prepares a series of budgets – one for each decision package under consideration.<sup>3</sup> To deliver on this promise, the organization is first divided up into “decision units” the lowest level at which budget decisions are made. A decision package includes a description of services and related costs. As well as the budget, each package contains a statement of the project goals, plans to achieve these goals, the expected benefits, and the consequent results of not approving this decision package. An option is chosen, and the others are discarded. This planning process requires the managers to take an updated view of their plans and consider the most suitable method to achieve their objectives.<sup>3</sup> More than one decision

package could be presented for each category.<sup>1</sup>

- **Base package:** This type of package meets only the most fundamental service needs of the decision unit's clientele and represents the minimum level of funding needed for the unit's services to remain viable. There could be multiple base packages, each addressing a different way to provide the base service. This represents an important departure from incremental budgeting in that an incremental budget never considers what the absolute minimum level of funding a program can survive on is. Rather, the current level of spending is usually considered a sort of de facto minimum.<sup>1</sup>

- **Current service package:** This type describes what it takes to continue the level of service currently provided to the unit's clientele. The difference between the base package and the current service level may be expressed by multiple decision packages, with each package representing one aspect of what it takes to get from base funding to the current service level. There could also be different decision packages describing different means for achieving the same service level.<sup>1</sup>

- **Enhanced package:** This category addresses resource required to expand service beyond current levels. There could be any number of enhanced packages.<sup>1</sup>

Because of the detailed information required and because decision-packages are created for the lowest levels of budgetary decision making, ZBB requires greater involvement of mid-level and perhaps even line managers – an important difference between ZBB and many other budget processes.<sup>1</sup>

Because each division is creating between three and ten decision packages, along with the required supporting information for each, the documentation can be substantial.<sup>1</sup>

A zero-based budgeting system demands that the manager justify the entire budget in detail and explains why the company should spend the money in the manner proposed. This approach differs from traditional budgeting techniques as it emphasizes the analysis of alternatives. The implementation steps are<sup>3</sup>:

1. Managers first establish different decision packages associated with performing each work task, such as forecasting the costs and benefits of conducting a project or outsourcing it, or centralizing versus decentralizing operations.

2. The decision packages should be ranked in order of importance. Tradeoffs between respective packages should be considered. These allow managers to rank priorities and combine decision packages for old and new projects into one, and allow top management to evaluate and compare the needs of individual units or departments for financial resources allocation.

3. In addition, managers identify different levels for each alternative method of the proposed activity. A minimum level of spending, usually 75% of the current operating level, is established and then separate decision packages that consider the costs and benefits of additional levels of expenditure for that particular activity are developed. The setting of different levels enables managers to consider and evaluate the level of expenditure lower than the current operational level. This gives decision-makers the choice of eliminating the activity or allocating resources for the selected level by including changes in expenditure level and tradeoffs among departments.

### **Methods of Zero Base Budgeting:**

#### **Zero Line-Item Budgeting**

This method of budgeting does not start with last year's budget. Rather, departments are given a blank budget request form with zeros filled in for each line item, instead of last year's budget or actual expenditures as the starting point – hence, the label of zero-base is applied. Departments then

rebuild their budgets from the ground up, justifying each line item. Where possible, departments are asked to provide drivers of cost.<sup>1</sup>

### **Service Level Budgeting**

Service level budgeting emphasizes the decision-package feature of ZBB theory. The detailed estimate of inputs found in zero-line item budgeting receives less emphasis. Departments are responsible for developing decision-packages to represent the various services and projects they would like to fund. Because the department is the decision-unit (rather than divisions) it limited the total number of decision-packages produced and, therefore, the total amount of paperwork.

### **Project Costing**

The sum total of all funds required to complete a business purchase transaction, it includes Business purchase price, Working capital, closing costs, Professional fees such as those charged by the CPA and attorney, Lender fees, Business appraisal fees, Business license fees. Costing is system of computing cost of production or of running a business, by allocating expenditure to various stages of production or to different operations of a firm.

### **Costing Management**

Cost management is concerned with the process of planning and controlling the budget of a project or business. It includes activities such as planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget. Cost management covers the full life cycle of a project from the initial planning phase towards measuring the actual cost performance and project completion.<sup>4</sup> Manufacturing costing methods are accounting techniques that are used to help understand the value of inputs and outputs in a production process. By tracking and categorizing this information according to a rigorous accounting system, corporate management can determine with a high degree of accuracy the cost per unit of production and other key performance indicators. Management needs this information in order to make informed decisions about production levels, pricing, competitive strategy, future investment, and a host of other concerns. Such information is primarily necessary for internal use, or managerial accounting.

### **Costing Methods**

1. Job-order costing
2. Process job-order costing
3. Activity-based costing

Job Costing involves the calculation of costs involved in a construction "job" or the manufacturing of goods done in discrete batches. These costs are recorded in ledger accounts throughout the life of the job or batch and are then summarized in the final trial balance before the preparing of the job cost or batch manufacturing statement.

### **Job costing vs. process costing**

Job costing (known by some as job order costing) is fundamental to managerial accounting. It differs from Process costing in that the flow of costs is tracked by job or batch instead of by process.

The distinction between job costing and process costing hinges on the nature of the product and, therefore, on the type of production process:

- Process costing is used when the products are more homogeneous in nature.

- Conversely, job costing systems assign costs to distinct production jobs that are significantly different. An average cost per unit of product is then calculated for each job.
- Process costing systems assign costs to one or more production processes. Because all units are identical or very similar, average costs for each unit of product are calculated by dividing the process costs by the number of units produced.
- Many businesses produce products with some unique features and some common processes. These businesses use costing systems that have both job and process costing features.

**Use of Job costing:**

In a job costing system, costs may be accumulated either by job or by batch. For a typical job, direct material, labor, subcontract costs, equipment, and other direct costs are tracked at their actual values.

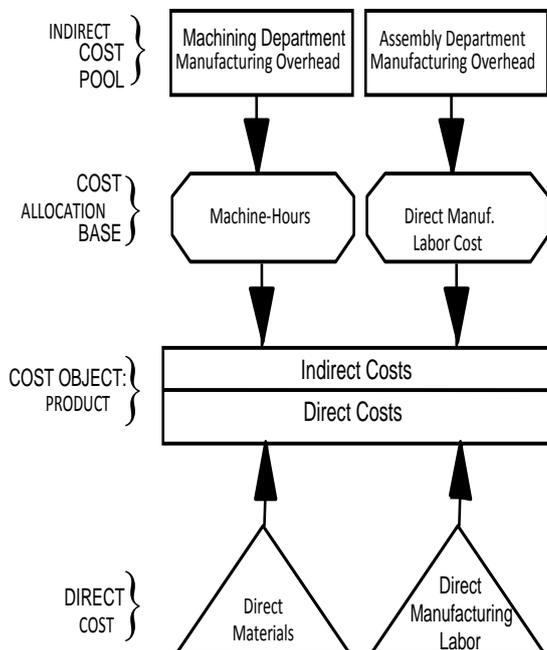
These are accrued until the job or batch is completed. Overhead or "burden" may be applied either by using a rate based on direct labor hours or by using some other Activity Based Costing (ABC) cost driver. In either case, once overhead/burden is added, the total cost for the job can be determined.

If the accountant is using a general ledger accounting system, which lacks true job costing functionality, the costs must be manually transferred out of Work in Process to Finished Goods (Cost of Goods Sold for service industries). Of course, in the days of computerized job costing software, journaling costs manually is an obsolete process. Such hand-journaling is mandatory for companies that continue to use general accounting software to do job costing. Enlightened accountants are moving forward and using job costing software, thereby improving cost control, reducing risk, and increasing the chance of profitability.

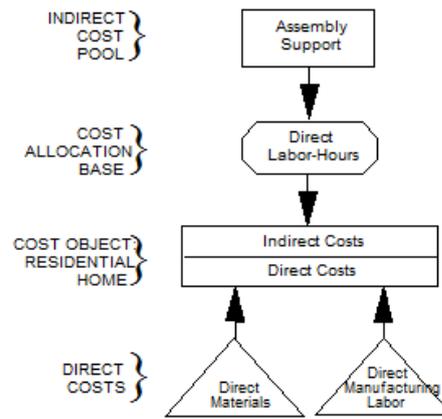
**Use of cost codes in budgeting**

In a true job cost accounting system, a Budget is set up in advance of the job. As actual costs are accrued, they are compared to budgeted costs, to determine variances for each phase of each job. Cost Codes are used for each phase, allowing "mini-budgets" to be generated and tracked. In the Job costing system consists of various cost drivers that drives job cost, moreover it.

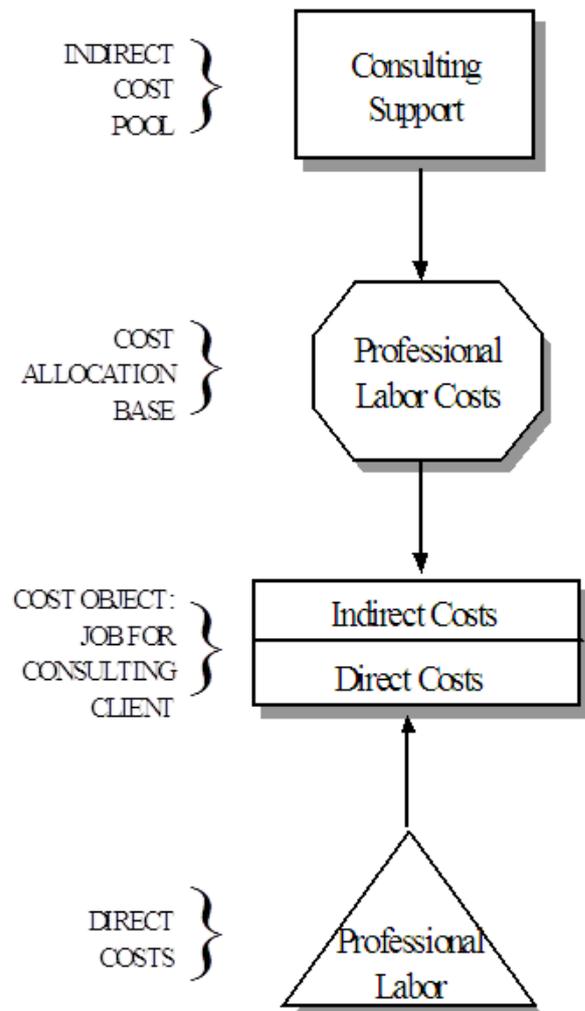
**Product costing system**



**General job-costing system**



**Welding job-costing system**



**Research Methodology**

A good research technique and research methodology has to be used in paper so as to fulfill the analysis of project cost. Statistics require volume of data to analyses and interpret the results to arrive at meaningful conclusions. Data may be collected through secondary source or primary source. When the secondary data cannot be collected, primary data should be collected. Primary data could be through direct interview or line inspection or process inspection methods for the both ZBC. To analyze any company's manufacturing cost performance, have to study company's overall process and

operations related to part or product with different departments.

**Source and methods of data collection:**

The Manager at this stage should clearly know the sources of data for his work, could use both primary (Interaction with staff or in-charge of line for the product) as well as secondary data (Line inspection and observations). While the former refers to the data collected for the first time by the manager himself from the informants or the sample respondents or by inspecting the line and process sequence of part or product specifically for work. The latter means the data already collected, published or unpublished and available for use but before going for costing sheet, once clarification with consulate guide. If the choice is for using secondary data, then the manager should always identify the authentic sources and then collect data from them. Whatever be the source of data, the manager should plan the collection of data and then execute the plan properly. The quality of data collected will ultimately decide the findings of the research work or cost of the product and so the manager should arrange for surprise checks and controls over the collection of field data with specific target. Should cross check the data collected and take steps to rectify any defects in the data from raw material to finished product with.

**Primary Data:**

The primary data of product or part have to be collected by manager through interaction with staff of different departments with specific product or operations on activity based. This is the first hand information. There are several methods in which the data is compiled the activity. Some of these methods are very popular while the others are rarely used depending upon the need or circumstance with zero based costing sheet. For this project work interview technique is used as primary source of data through interviews the information regarding various raw material details, operations, transpirations, inventory & different processes is collected for the product on activity based. Also the requirements regarding the project work are collected from discussions with the Head of the departments.

**Secondary Data:**

Secondary data refers to use of information already collected and published or unpublished. Such a source is used to save time and cost in compiling the data relating to the past process sheet (ZBC). Further there is no possibility of collecting any data of the past for the first time but activity to be checked as as per primary data (ABC). So this source is used for collecting the historical and present operation or process data. The secondary data collected for the current product cost work is through the following sources such as related zero based & activity based of the company which is mainly about the information of the product with operation and cost information.

**Data Presentation, Analysis and Interpretation**

**Data Presentation:**

In the company environmental at all the levels, effective record keeping is very essential. This is more so at the primary level which is the foundation of other levels. Keeping records is not an end in itself, rather it is a means to an end. The end is to generate or procure relevant data to be processed into information on which effective administrative management decisions are based. In this information data, effective cost process information of product, using manual and computerized techniques, is a necessity. Effective

Manufacturing cost Information System (MIS) ensures adequate capture, processing, storing, retrieving and communicating relevant and timely information to management and the general process on which action for the current and future developmental activities could be based.

This paper is focused on the techniques of presenting otherwise unwieldy and cumbersome data in concise and meaningful forms, for proper interpretation and analysis of the existing situation.. Data refer to raw, unprocessed facts or uninterrupted observation, which may take the form of words, numbers or characters in which process are involved for manufacturing of products. The singular form of data is datum. Information on the other hand, refers to processed or analyzed data that meaningfully in form the activity about a product or process and as such empowers efficient action to words cost. The need to process data into information and present the information in a form that can be easily understood and utilized the manufacturing process. It helps to know the manufacturing loss or profit after the data analysis. The collected data of product, present in the specific format of the company (Both ZBC & ABC. The specific format of data presentation helps for analysis of data.

**Data Analysis:**

Data analysis is a body of methods that help to describe facts, detect patterns, develop explanations, and test hypotheses of any process or product. The data analysis sheet and formats are given below and after the analysis of data to be used for calculation. The results are verified by the head of costing department.

**Costing Sheet:**

Costing sheet helps to analysis of data to know the cost or rate of the product.

ABC INDUSTRIES					
PART NO.:				Date & Dwg Rev:	
PART NAME :				Contact Person :	
PROJECT NAME					
Raw Material Cost					
SN	DESCRIPTION				
1	RM SPECIFICATION	:	Grade	Thk	
2	SHEET SIZE	:	Length	width	Thk
3	SHEET WEIGHT	:	L*W*T*Density (7.85)/1000000		
4	BLANK SIZE	:	As Per Part Size or Product		
5	WEIGHT OF BLANK	:	L*W*T*Density/1000000		
6	RAW MATERIAL RATE	:	Specified by Market or Customer		
7	NO. PCS PER BLANK	:	As Per Part Size or Product		
8	NO. PCS PER SHEET	:	Depends upon No.Pcs Per Blank		
9	GROSS WEIGHT /PC	:	L*W*T*Density (7.85)/1000000(Blank)		
10	GROSS MATERIAL COST	:	Gross Weight X Raw Material		
11	SCRAP GENERATED PER PC	:	Gross Weight – Finished Weight		
12	SCRAP RATE	:	Specified by Market or Customer		
13	SCRAP RECOVERY PER PC	:	Generated Per Piece X Scrap Rate		
14	FINISH WEIGHT	:	Actual Weight (Dwg) or (Gross Weight -Scrape weight)		
15	NET RAW MATERIAL COST	:	Finish weight *Raw Material Rate		
CONVERSION COST					
DESCRIPTION					
SN	Operation	Validity	UOM	Rate	Total Rate
1	Depends on Product	Qty	Man/Machine/Manual		Validity*Rate

Assembly Cost Sheet:

Costing of Assy.Details										
Item No.	Item Description	Qty/Assy.	Raw Mat. Cost per item	Net RMC	Mfg Cost per item	Net Mfg Cost	Fin. Weight per item	Net weight (kg)	Surface Area	Net Surface Area
	Assy...Sub Parts Details									
<b>TOTAL</b>										

Assembly Cost Details							
Sr.No.	Operation	Yes/No	Basis	Machine	Rate	Times	Cost
1	Locating & Clamping in fixture						
2	Tack welding						
3	Full welding						
4	Dressing deburring						
5	Black Painting						
6	Yellow/Green Passivation						
7	Retapping						
8	Inspection & Handling						
<b>TOTAL</b>							-

Overhead Cost Sheet:

Overheads Details				
Sr.No.	Description	Basis	Percent	Cost
1	ICC	Raw Material + Bought Out	Specified By Customer	
2	Rejection	Raw Mat. + Mfg + Assembly	Specified During Process	
3	Manufacturing Overheads	Manufacturing Assembly	+	
4	Profit	Raw Mat+Mfg+Assy+Bought	Specified MD or Owner	
5	Rejection Recovery	Finished Weight		
8	Packaging	Raw Mat. + Mfg + Assembly		
<b>TOTAL</b>				-
9	Local Transport		Mutual Understanding	

Net Selling Price:

Net Selling Price = Raw Material Cost + Conversation Cost + Assy. Cost + Overhead Cost

(Sample of ABC costing sheet is attached for Assy Centre Bearing X member for NJT project)

PART NO.:		CM0008262			
PART NAME :		Centre Bearing Cross Member			
SN	DESCRIPTION				
1	RM SPECIFICATION	:	Fe410	6	MM
2	SHEET SIZE	:	2400	X	1250 X 6.00
3	SHEET WEIGHT	:	141.30		
4	BLANK SIZE	:	792	X	468 X 6.00
	WEIGHT OF				
5	BLANK	:	17.438	Kg	
6	RAW MATERIAL RATE	:	39.90	Rs.	Nov 12 Base
	NO. PCS PER				
7	BLANK	:	1	Nos	
	NO. PCS PER				
8	SHEET GROSS WEIGHT	:	6	Nos	
	/PC	:	23.550	Kg	
9	GROSS MATERIAL COST	:	939.65	Rs.	
11	SCRAP GENERATED PER PC	:	7.51	Kg	
12	SCRAP RATE	:	21.75	Rs. / Kg	Nov 12 Base
13	SCRAP RECOVERY PER PC	:	163.34	Rs.	
14	FINISH WEIGHT	:	16.040	Kg	Area 0.681
15	NET RAW MATERIAL COST	:	776.30	Rs.....	(A)
CONVERSION COST					
SN	DESCRIPTION				
1	Shearing	23.550	0.50	11.78	Rs.
2	Cross Shearing	23.550	0.25	5.89	Rs.
3	Notch & Pierce Form	500T		5.69	Rs. New tool
4		500T		5.69	Rs. New tool
5					
6					
7					
8					
9					
<b>TOTAL</b>			<b>29.04</b>	<b>Rs.....</b>	<b>(B)</b>
<b>TOTAL (A) + (B)</b>			<b>805.35</b>	<b>Rs.....</b>	<b>(C)</b>

PART NO.:		CM0008258/59			
PART NAME :		End Gusset LH/RH			
SN	DESCRIPTION				
1	RM SPECIFICATION	:	Fe 410	8	MM
2	SHEET SIZE	:	1950	X	1250 X 8.00
3	SHEET WEIGHT	:	153.08		
4	BLANK SIZE	:	398	X	638.24 X 8.00
	WEIGHT OF				
5	BLANK	:	15.952	Kg	
6	RAW MATERIAL RATE	:	39.90	Rs.	Nov 12 Base
	NO. PCS PER				
7	BLANK	:	1	Nos	
	NO. PCS PER				
8	SHEET GROSS WEIGHT	:	9	Nos	
	/PC	:	17.008	Kg	
9	GROSS MATERIAL COST	:	678.63	Rs.	
11	SCRAP GENERATED PER PC	:	5.57	Kg	
12	SCRAP RATE	:	21.75	Rs. / Kg	Nov 12 Base
13	SCRAP RECOVERY PER PC	:	121.11	Rs.	
14	FINISH WEIGHT	:	11.440	Kg	Area 0.364
15	NET RAW MATERIAL COST	:	557.52	Rs.....	(A)
CONVERSION COST					
SN	DESCRIPTION				
1	Shearing	17.008	0.50	8.50	Rs.
2	Cross Shearing	17.008	0.25	4.25	Rs.
3	Trim & Slot	500T		5.69	Rs. Existing Tool
4	Pierce	500T		5.69	Rs. New Tool
5	Form	500T		5.69	Rs. New Tool
<b>TOTAL</b>			<b>29.83</b>	<b>Rs.....</b>	<b>(B)</b>
<b>TOTAL (A) + (B)</b>			<b>587.35</b>	<b>Rs.....</b>	<b>(C)</b>

PART NO.:		CM0008661	
PART NAME :		Stiffener	
S N	DESCRIPTION		
1	RM SPECIFICATION	Fe 410	5 MM
2	SHEET SIZE	2500	X 1250 X 5.00
3	SHEET WEIGHT	122.66	
4	BLANK SIZE	307.5	X 219 X 5.00
5	WEIGHT OF BLANK	2.643	Kg
6	RAW MATERIAL RATE	39.90	Rs. Nov 12 Base
7	NO. PCS PER BLANK	1	Nos
8	NO. PCS PER SHEET	44	Nos
9	GROSS WEIGHT /PC	2.788	Kg
10	GROSS MATERIAL COST	111.23	Rs.
11	SCRAP GENERATED PER PC	1.01	Kg
12	SCRAP RATE	21.75	Rs./Kg Nov 12 Base
13	SCRAP RECOVERY PER PC	21.92	Rs.
14	FINISH WEIGHT	1.780	Kg Area 0.09
15	NET RAW MATERIAL COST	89.31	Rs..... (A)
CONVERSION COST			
S N	DESCRIPTION		
1	Shearing	2.788	0.50 1.39 Rs.
2	Cross Shearing	2.788	0.25 0.70 Rs.
3	Notch I	150T	0.71 Rs. Existing
4	Notch II	150T	0.71 Rs. Existing
5	Pierce	100T	0.56 Rs. Existing
TOTAL		4.07	Rs..... (B)
TOTAL (A) + (B)		93.38	Rs..... (C)

PART NO.:		CM0008260	
PART NAME :		Rib	
S N	DESCRIPTION		
1	RM SPECIFICATION	Fe410	7 MM
2	SHEET SIZE	2400	X 1250 X 7.00
3	SHEET WEIGHT	164.85	
4	BLANK SIZE	240	X 140 X 7.00
5	WEIGHT OF BLANK	1.846	Kg
6	RAW MATERIAL RATE	39.90	Rs. Nov 12 Base
7	NO. PCS PER BLANK	1	Nos
8	NO. PCS PER SHEET	80	Nos
9	GROSS WEIGHT /PC	2.061	Kg
10	GROSS MATERIAL COST	82.22	Rs.
11	SCRAP GENERATED PER PC	0.90	Kg
12	SCRAP RATE	21.75	Rs./Kg Nov 12 Base
13	SCRAP RECOVERY PER PC	19.59	Rs.
14	FINISH WEIGHT	1.160	Kg Area 0.04
15	NET RAW MATERIAL COST	62.63	Rs..... (A)
CONVERSION COST			
S N	DESCRIPTION		
1	Shearing X	2.061	0.50 1.03 Rs.
2	Cross Shearing	0.25	0.00 Rs.
3	Blank	150T	0.71 Rs.
4	Bending	150T	0.71 Rs.
TOTAL		2.46	Rs..... (B)
TOTAL (A) + (B)		65.08	Rs..... (C)

Raw Material Rates				
Grade	Material	Rate/kg	Scrap rate	Offcut rate
D513	Sheet	35.03	16.75	22.50
DD1079	Sheet	32.08	16.75	22.50
E 34	Sheet	32.89	16.75	22.50
E 38	Sheet	33.40	16.75	22.50
EDD513	Sheet	37.32	16.75	22.50
FE410	Sheet	31.98	16.75	22.50
SS MATERIALS				
x12er12(SS)	Sheet	180.00	14.25	7.50
SS .8 THK	Sheet	121.66	20.00	30.00
SS .8 THK I	Sheet	143.18	20.00	30.00
SS 1 THK	Sheet	121.66	20.00	30.00
SS 1 THK I	Sheet	143.18	20.00	30.00
SS 1.6 T	Sheet	121.66	20.00	30.00
SS 1.6 T I	Sheet	143.18	20.00	30.00
SS 2 THK	Sheet	111.00	20.00	30.00
SS 2 THK I	Sheet	130.64	20.00	30.00
SS1.2 THK	Sheet	122.70	20.00	30.00
SS1.2 THK I	Sheet	143.18	20.00	30.00
SS1.25 THK	Sheet	122.70	20.00	30.00
SS1.25 THK I	Sheet	143.18	20.00	30.00
ST 42	Sheet	18.00		
ALUMINIUM RATES				
ALMS SHT	Sheet	44.87		
AL .8 THK	sheet	50.00	10.00	15.00
AL 1 THK	sheet	50.00	10.00	15.00
AL 1.6 T	sheet	50.00	10.00	15.00
AL 2 THK	sheet	50.00	10.00	15.00

**Pressing Rate:**

Customer specified maximum pressing rates with specification for the all supplier.

PRESSING RATES				
Material/ M/c. Desc.	Conversion	Rate	SCRAP	OFFCUT
25 T	Press	0.10		
50 T	Press	0.13		
75 T	Press	0.15		
100 T	Press	0.28		
150 T	Press	0.48		
200 T	Press	0.75		
250 T	Press	1.00		
300 T	Press	1.10		
315 T	Press	1.25		
350 T	Press	1.45		
500 T SB	Press	2.05	Small Bed(1000-1500)	
500 T 2000	Press	5.25	Medium bed	
500 T 2500	Press	7.50	(L-R 2000-2500)	Big Bed
500 T 3000 BB hyd.	Press	9.50	(L-R 2500-3000)	
500 T 4000	Press	15.00	(L-R 3000-4000)	
500 T SB	Press	2.05		
500T2500C	Press	4.31		
500T3000C	Press	5.46		
600T	Press	8.00		
650T	Press	8.00		
750T	Press	9.50		
800T	Press	10.00		
1000T	Press	12.00		
1250T	Press	14.00	25 for Ganaga	
1600T	Press	40.00	40 for Ganaga	

CONVERSION RATES				
Material/ M/c. Desc.	Conversion	Rate	SCRAP	OFFCUT
PB upto 600 mm	press brake	0.6/st.		
upto 2500 mm	press brake	1.5/st.		
above 2500 mm	press brake	2.5/st.		
FLARING	press operation	1.00		
Profile cut upto 10 mm	profile cutting	1.20/ft.		
PFL CUT11	profile cutting	1.35/ft.		
PFL CUT12	profile cutting	1.5/ft.		
PFL CUT13	profile cutting	1.65/ft.		
PFL CUT14	profile cutting	1.80/ft.		
Deburring	Finished wt	0.4/kg		
Handling	Input Wt	0.5/kg		
Draw mat application	Input Wt	0.275/lg.		
Oiling	Input Wt	0.4/lg.		
Inspection	Finished wt	0.4/kg		

Material/ M/c. Desc.	Conversion	Rate	SCRAP	OFFCUT
NUT M4	Nut	1.04/pc.		
NUT M5	Nut	0.98/pc.		
NUT M6	Nut	0.98/pc.		
NUT M8	Nut	1.15/pc.		
NUT M10	Nut	1.50/pc.		
NUT M12	Nut	1.61/pc.		
NUT M16	Nut	3.80/pc.		

**Annexure Raw Material Rates:**

The raw material rates usually specified by the customer or the as per rates available in present market. The raw material rates always vary with time

#### Shearing & Cross Shearing Rate:

Customer specified maximum welding rates for the all supplier.

SHEARING & X SHEARING				
Material/ M/c. Desc.	Conversion	Rate	SCRAP	OFFCUT
UPTO 3 mm	0.35	0.53		
SHG 4	0.4	0.60		
5 mm & Above 5 mm	0.5	0.75		

#### Welding Rates:

Customer specified maximum welding rates for the all supplier.

WELDING RATES		
Type of Weld	Uom.	Rate
CO2 weld upto 3 mm	per foot	4.00
CO2 weld upto 4 mm	per foot	4.75
CO2 weld upto 5 mm	per foot	5.50
SPECIAL W	weld nut special	2.17
Spot weld	per spot	0.15
Arc weld MS/SS	welding	50.90
Arc weld SS/SS	welding	35.35
Brazing	welding (brazing)	5.25/ft.
Projection Weld	welding (projection)	0.15/spot
Seam Welding	Per foot	5.00
Tack weld MS/SS	per tack	0.85
Tack weld SS/SS	per tack	0.60
Tack weld MS/MS	per tack	0.10

Using these costing sheets and systems we can calculate Cost of project in manufacturing industry. It helps manager to prepare project budget and submit to budgeting expert to prepare zero base budgeting for project in manufacturing industry.

#### Improvement Needed in ZBB for Manufacturing cost calculations:

1) Combined operations with single stroke rate in ZBC but due to manufacturing technical issues both strokes are different in activity.

Example: Piercing and notching operations are combined in ZBC but due to manufacturing technical reasons both process are support in activity: Discussion with customer for revised PO rate.

2) No rework process cost in ZBC but for each part consuming more than min Rs: 8.00+ 20

Example: Grinding and buffing for scoring mark with heavy burr on part: Increase the conversation rate based on utilizations of man power with consumables (Revised cost sheet and PO rate).

3) The prototype process of drilling and other manual process are still continues in regular production but ZBB costing having the process of stroke rates.

Example: RUPD of AMW

4) No proper guidelines available for shop floor for production as per cost: Availability of operation and machine wise cost sheet for production.

5) After prototype and before production costing to review dons using activity based costing.

## II. CONCLUSIONS

Zero Based Budgeting requires a project's existence to be justified in each financial year, as opposed to simply basing

budgeting decisions on a previous year's allocation. It provides systematic method to combine cost of project and helps in to prepare budget of industry. It is lengthy process but provide nice journey of budgeting over a year and giving clarity in costing at each stage. In manufacturing industry, it is needed to overcome on improvement at the time of applying Zero Base Budgeting on project budget. After considering all risk and uncertainties and their solutions in ZBB, it provides all the information needed for applying it on project budget. It is easy to use find out product cost by using Zero line item budgeting and use of decision packages for service level budgeting. By using both the method project budget is calculated and submitted to the budget expert to add other business cost in it. Decision packages helps to reduce the cost of activities and increase profitability level of project. ZBB is Managerial process of costing; it helps in cost management and provides clarity in costing which makes easy to track cost of project.

## III. REFERENCES

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