

PRESSURE COOKERS

1. INTRODUCTION:

Pressure cooking is the process of cooking food, in a sealed vessel, known as a pressure cooker, where in steam is generated from water added and certain steam pressure is allowed to build. As steam pressure cooks food faster and better than conventional cooking methods, it saves time and energy. After use, the steam pressure is slowly released through vent through safe release valves etc. so that the vessel can be opened safely.

2. PRODUCT & ITS APPLICATION:

Modern Portable pressure cookers consist of all or most of these basic component parts, depending on the manufacturer and model of pressure cooker:

- Metal pressure container body, with handles, on both ends, for safe carrying
- Lid to enclose the cooker provided with handle, with locking system that locks with pan.
- Gasket Also known as a "sealing ring", which seals the cooker pan and lid airtight.
- Steam Pressure Regulator Valve (Called Whistle) either a dead weight or spring type device that maintains the pressure level in the pan and releases when it exceeds the prescribed limit.
- Safety Valves These are devices on the lid to avoid over-pressure and/or over-temperature and help to provide safe release of pressure in cooker and prevent accidents.

Accessories

- Metal divider with indentation to keeping the containers above liquid
- Containers for separating different foods in the steamer

Modern pressure cookers typically have two or three redundant safety systems viz valves, gasket release and blow off valve etc safety features. Pressure cookers are typically made of aluminum or stainless steel. Higher-quality stainless steel pressure cookers are made with heavy, three-layer, or Aluminum/ copper-clad bottoms (heat spreader) for uniform heating. Gasket or sealing ring is normally made from either viton rubber or silicone.

Capacity

Pressure cookers are available in different capacities for cooking larger or smaller amounts, with 1, 1.5, 2, 2.5, 3, 4, 5 and maximum 6 liters' capacity being common. Higher capacity is not preferred as that fall under Indian boiler act and requires many safety approvals.

3. DESIRED QUALIFICATIONS FOR PROMOTER:

Any graduate with experience preferably with manufacturing and mechanical engineering background.

4. INDUSTRY OUTLOOK/TREND

Pressure cooker is the first kitchen appliance that enabled fast and easy cooking of food with energy efficiency. Pressure cooker has become an essential/ must have appliance in view of saving of time and energy in addition to other cooking and food quality aspects.

India Kitchen Appliances market of which pressure cooker is a dominant segment, recorded strong growth, with a CAGR of over 13% during review period of 2011-16. It is interesting to highlight that towns with population of less than one million alone has led to 10% annual growth. The market is forecast to advance with a double digit CAGR of 15.41% during estimated period of 2017-22 and projected to reach over USD 7 billion by 2022.

Market size of the domestic Pressure cooker industry stands at Rs 13 billion in value terms. In the overall market, organized segment accounts for 50%. while SME sector still offers large volumes. Key players in organized market include TTK Prestige, Hawkins, United, Pigeon, Butterfly, etc. TTK enjoys a leadership position in Southern India, where it has 80% market share.

5. MARKET POTENTIAL AND MARKETING ISSUES. IF ANY:

The penetration of cookers in urban / rural India stands at 80% and 25% respectively. Unorganized players command a significant portion of the category – about 50% of the pressure cooker and 60% of the nonstick cookware segment is unorganized. Outer-lid cookers dominate market share in Southern and Western India, even as inner-lid cookers are preferred in Northern and Eastern India. In terms of pricing, the unorganized segment sells cookers 20% to 50% cheaper to organized players.

Almost each house hold and restaurants /hotels etc. require one or more cookers. Besides there is a specific life cycle for this appliance requiring replacement every 6 – 7 years. Therefore there is new and replacement demand in domestic market. Besides there is very good export demand in developed as well as developing markets that can be met by good quality manufacturers.

6. RAW MATERIAL REQUIREMENTS:

The main materials are aluminum and stainless sheets of required thicknesses. The bought out parts may include, pressure valves/ whistle, safety valves, rivets/ fasteners, gaskets and Bakelite handles. Other materials may include, surface treatment and polishing consumables.

7. MANUFACTURING PROCESS:

Aluminum pressure cookers parts like pan or body and lids manufacturing are the main critical components that ensure quality. The steps involved are:

- Inspection and quality control / testing of metal sheets.
- Circle cutting from sheet in hydraulic punching press as per pan and lid dimensions. Similarly, the containers and metal divider plates are made by pressing.
- Multistage deep drawing of circles in to pan and lid as per design with close tolerances. Each piece is inspected for the quality.

- Shearing / nibbling followed by slotting/ machining to form final body and lid profile to get precise locking profile. These are then stamped, polished, or anodized and the samples are drawn for final product pressure testing. These products have to adhere to IS 2347 and relevant quality and material specifications.

The finished components are polished and assembled with handles, gasket, safety valve and pressure valve – whistle to get final product – pressure cookers. These are then inspected and packaged for dispatch.

8. MANPOWER REQUIREMENT:

The unit shall require highly skilled service persons. The unit can start from 21 employees initially and increase to 45 or more depending on business volume.

Sr. No	Type of Employees	Monthly Salary	No of Employees				
			Year 1	Year 2	Year 3	Year 4	Year 5
1	Skilled Operators	18000	6	8	10	12	12
2	Semi-Skilled/ Helpers	7000	12	12	18	20	24
3	Supervisor/ Manager	30000	1	1	1	1	1
4	Accounts/ Marketing	16000	1	2	3	3	3
5	Other Staff	7000	1	3	5	5	5
	TOTAL		21	26	37	41	45

9. IMPLEMENTATION SCHEDULE:

The unit can be implemented within 6 months from the serious initiation of project work.

Sr. No	Activities	Time Required in Months
1	Acquisition of Premises	2
2	Construction (if Applicable)	2
3	Procurement and Installation of Plant and Machinery	2
4	Arrangement of Finance	2
5	Manpower Recruitment and start up	2
	Total Time Required (Some Activities run concurrently)	6

10. COST OF PROJECT:

The unit will require total project cost of Rs 159.57 lakhs as shown below:

Sr. No	Particulars	In Lakhs
1	Land	20.00
2	Building	35.00
3	Plant and Machinery	56.10
4	Fixtures and Electrical Installation	7.20
5	Other Assets/ Preliminary and Preoperative Expenses	2.50
6	Margin for working Capital	38.77
	TOTAL PROJECT COST	159.57

11. MEANS OF FINANCE:

The project will require promoter to invest about Rs 68.97 lakhs and seek bank loans of Rs 90.60 lakhs based on 70% loan on fixed assets.

Sr. No	Particulars	In Lakhs
1	Promoters Contribution	68.97
2	Loan Finance	90.60
	TOTAL:	159.57

12. WORKING CAPITAL REQUIREMENTS:

Working capital requirements are calculated as below:

Sr. No	Particulars	Gross Amount	Margin %	Margin Amount	Bank Finance
1	Inventories	23.06	40	9.22	13.83
2	Receivables	30.14	50	15.07	15.07
3	Overheads	5.26	100	5.26	0.00

4	Creditors	23.06	40	9.22	13.83
	TOTAL	81.51		38.77	42.74

13. LIST OF MACHINERY REQUIRED:

Sr. No	Particulars	UOM	Quantity	Rate	Total Value
	Main Machines/ Equipment				
1	Circle cutting Hydraulic Press	Nos	1	800000	800000
2	Hydraulic Deep Drawing Press with Multistage Dies	Nos	2	1600000	3200000
3	Punching/ Nibbling Power Press	Nos	1	240000	240000
4	Riveting Machine	Nos	1	25000	25000
5	Polishing Machine	Nos	4	40000	160000
6	Surface treatment tank		1	120000	120000
7	Profile cutting Machine	Nos	1	150000	150000
8	Lathe 6' ft. bed	Nos	1	75000	75000
9	Milling machine	Nos	1	250000	250000
10	Pillar drilling machine	Nos	1	80000	80000
	Subtotal:				5100000
	Tools and Ancillaries				
1	Misc. equipment Dies tools etc.	LS	1	450000	450000
2	Hand Tools and gauges	LS	1	60000	60000
	Subtotal:				510000
Sr. No	Particulars	UOM	Quantity	Rate	Total Value
Sr. No	Particulars	UOM	Quantity	Rate	Total Value
	Fixtures and Elect Installation				
	Storage and transport bins and trolleys	LS	1	100000	100000
	Office Furniture	LS	1	40000	40000
	Telephones/ Computer	LS	2	40000	80000
	Electrical Installation	LS	1	500000	500000
	Subtotal:				720000

	Other Assets/ Preliminary and Preoperative Expenses	LS	1	250000	250000
	TOTAL PLANT MACHINERY COST				6580000

All the machines and equipments are available from local manufacturers. The entrepreneur needs to ensure proper selection of product mix and proper type of dies and tooling to have modern and flexible utensil designs. It may be worthwhile to look at reconditioned imported machines, dies and toolings. Some of the machinery and dies and toolings suppliers are listed here below:

1. Amritsar Machine Tools
Plot No. 542, Part - A, M. I. E.,
Bahadurgarh-124507, Haryana, India
2. Arpan Machine Tools
No. 12/3, Atika Industrial Area, Near Jaydev Foundry
Atika Industrial Area, Rajkot- 360002 Gujarat, India
3. RAJESH MACHINE TOOLS PVT. LTD.
New Nehrunagar Main Road, 2 - Kailashpati Society, Plot No. 7, Dhebar Road
(South), "ATIKA" Industrial Area,, Rajkot, Gujarat, India
<http://www.rajeshpowerpressindia.com>
4. ATLAS MACHINES (INDIA)
20, AMBALAL DOHI MARG, (HAMMAM ST.),
FORT, MUMBAI, Maharashtra, India
<http://www.atlasmachinesindia.com>
5. Pacific Engineering Corporation
A-297, MIDC-Mahape, Near Mahape Bus Depot,
Anthony Garage, Thane-Belapur Road, MahapeMidc,
Navi Mumbai-400710, Maharashtra, India

6. Other well-known machine manufacturers who can be searched from internet are:
Batliboi Ltd., Bharat Fritz Werner, HMT Machine Tools, Praga Tools, Toolcraft Systems

14. PROFITABILITY CALCULATIONS:

Sr. No	Particulars	UOM	Year Wise estimates				
			Year 1	Year 2	Year 3	Year 4	Year 5
1	Capacity Utilization	%	40	50	60	70	80
2	Sales	Rs Lakhs	180.85	226.06	271.27	316.49	361.70
3	Raw Materials & Other Direct Inputs	Rs Lakhs	138.34	172.92	207.51	242.09	276.68
4	Gross Margin	Rs. Lakhs	42.51	53.14	63.77	74.39	85.02
5	Overheads Except Interest	Rs. Lakhs	18.85	18.85	18.85	18.85	18.85
6	Interest	Rs. Lakhs	12.68	12.68	12.68	12.68	12.68
7	Depreciation	Rs. Lakhs	10.08	10.08	10.08	10.08	10.08
8	Net Profit Before Tax	Rs. Lakhs	0.90	11.53	22.15	32.78	43.41

The basis of profitability calculation:

- The Unit will have capacity of 50000 nos of cookers consisting smaller sizes of one liters up to 5 liters, with small and medium sizes forming the bulk of production. The running sizes / types/ designs will be selected. The bulk /Distributor sales prices of Aluminum utensils range from Rs 300 to Rs2500 per unit. The Aluminum sheets / circles used for utensils cost range from Rs 175 to Rs 215 per Kg. The material requirements are considered with wastage/ scrap of 12 % of finished products and scrap to be sold at @ Rs 90 ~ 110 per Kg. and the income of same is added. Energy Costs are considered at Rs 7 per Kwh. The depreciation of plant is taken at 10 % and Interest costs are taken at 14 -15 % depending on type of industry.

14. BREAK EVEN ANALYSIS

The project is can reach break-even capacity at 39.16 % of the installed capacity as depicted here below:

Sr. No	Particulars	UOM	Value
1	Sales at Full Capacity	Rs. Lakhs	452.12
2	Variable Costs	Rs. Lakhs	345.85
3	Fixed Cost incl. Interest	Rs. Lakhs	41.61
4	Break Even Capacity	% of Inst Capacity	39.16

16. STATUTORY/ GOVERNMENT APPROVALS

The unit shall need industrial unit registration of state. The industry registration and approval for factory plan, safety for Fire requirement, registration as per Labour laws ESI, PF etc shall be required as per rules and applicability. Before starting the unit will also need GST registration for procurement of materials as also for sale of goods. There are no pollution control requirements, while unit will have to ensure solid waste/ scrap disposal in proper manner. Entrepreneur may contact State Pollution Control Board where ever it is applicable.

17. BACKWARD AND FORWARD INTEGRATION

The machines and equipments offer scope for diversification in to producing other consumer durable/ kitchen wares and industrial parts/ components by using the spare capacities and machine capabilities which may be attempted. As such there is not much scope for organic backward or forward integration.

18. TRAINING CENTERS/COURSES

There are no specific training centers for design or production technology. However the dies and Tools development courses run by several centers of excellence viz CIPET centers, Indo German Tool Room at Ahmedabad, Rajkot, Chennai, and CTTC Bhubaneshwaretc shall be helpful.

The most important scope of learning is in new product design and development by associating with institutes like NID etc. Entrepreneur may also study the new product designs,

product range, features and specifications of leading Brands / competitors across the world by scanning the Internet and downloading data. Viz. North American, Europe, China etc markets.

Udyamimitra portal (link : www.udyamimitra.in) can also be accessed for hand-holding services viz. application filling / project report preparation, EDP, financial Training, Skill Development, mentoring etc.

Entrepreneurship program helps to run business successfully is also available from Institutes like Entrepreneurship Development Institute of India (EDII) and its affiliates all over India.

Disclaimer:

Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.