

PROJECT PROFILE ON
AUTOMATIC MIST BASED SANITIZER DISPENSING
MACHINE

1. **Product** : **Automatic Mist based sanitizer
Dispensing Machine**
2. **NIC Code (1998)** : **26600**
3. **Production capacity** : **Qty. 28,800 Nos**
(Value Rs.14,40,00,000)
4. **Month & year
of Preparation** : **June 2020**
5. **Prepared by** : **MSME-Development Institute**
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I. INTRODUCTION

Corona Virus disease (Covid19) is wreaking havoc in the world. Ever since WHO announced it as a Pandemic disease and many cities are under lockdown, people are not able to step out of their homes and already thousands have lost their lives. As the global Covid-19 crisis continues to unfold, washing and sanitization of hands have become an absolute necessity in daily affairs. Automatic mist based sanitizer dispensing systems is very useful resource in the fight against corona virus. This contact less dispensing system helps to sanitize hands without getting in contact with the sanitizing surfaces and will help to reduce spread through cross contamination.

This contactless dispensing unit sprays alcohol based sanitizer when both hands are placed under it. The aerated mist based formula uses only 5- 6ml. of sanitizer ensuring optimum usage. It releases full cone spray mist for 12 seconds in single operation. Contactless technology works on Ultrasonic sensor to ensure zero touch, high operational precision to completely disinfect both hands at once. It could be wall mountable with LEDs displays to indicate on/off status and the progress of the process. The capacity tank ensures longer duration of usage thus eliminating hassle of refilling it frequently. The sanitizer container allows displaying the quantity in it.

2. MARKET

This dispenser is contactless and will spray sanitizer for sanitization of hands while entering into the buildings like Hospitals, Office complexes, shopping Malls, auditoriums , public places, apartments, schools, colleges, places of workshop, other public places etc. There are very few units manufacturing Automatic mist based sanitizer dispensing machine in India. In the present scenario, it is very much important to equip all public places with automatic sanitizer dispensing unit. Due to the spread of Covid-19, there is enough demand for this product.

3. BASIS & PRESUMPTIONS:

- The basis for calculation of production capacity has been taken on a single shift basis on 75% efficiency,
- The maximum capacity utilization on single shift basis, for 300 days in a year. During the first year and second year of operations, the capacity utilization is 60% and 80% respectively. The unit is expected to achieve full capacity utilization from the third year onwards,
- The salaries and wages, cost of raw materials, utilities, rent, etc. are based on the prevailing rates in and around Thrissur, Kerala. These cost factors are likely to vary with time and location,
- Interest on term loan and working capital has been taken @ 9% on an average. This rate may vary depending upon the policy of financial institutions/agencies from time to time
- The cost of the raw material, components, machinery and equipment's refer to a particular make/model and the prices are approximate,
- The break-even point percentage indicated is of full capacity utilization,
- The project preparation cost, etc. Whenever required may be considered under the pre-operative expense,
- The minimum essential machinery and testing equipments required for the project have been indicated. The unit may also utilize common facilities available at MSME Technology Centers, under the Ministry of MSME, Govt of India , CFCs set up under the MSE-CDP scheme of Govt of India in different clusters, DRDO, Electronics Test & Development Centers (ETDC) and Electronic Regional Test Laboratories (ERTLs), common facilities set up by state Governments and Ministry of Information Technology to manufacture products conforming to International standards. For the prototype development, facilities available under Technology Incubation centers may be utilized. The Maker village at Kochi in Kerala is a start up eco system for the Electronic based units. Medical Devices Incubation Facility at Sree Chitira Thirunal Institute, Thiruvananthapuram and DRDO may also be approached for the possible technical assistance.

4. IMPLEMENTATION S CHEDULE:

The major activities in the implementation of the project have been listed and the average time for implementation of the project is estimated as 4 months:

Sl.No	Name of activity	Period in months (Estimated)
1.	Preparation of project report	1
2.	Registration & other formalities	1
3.	Sanction of loan by financial institution	2
4.	Placement of orders	1
5.	Procurement	1
6.	Electrification & installation	1
7.	Procurement of raw materials	1
8.	Recruitment of technical personnel	1
9.	Trial operation	4 th Month
10.	Commercial operation	5 th month

Note: Many of the above activities shall be initiated concurrently,

When imported equipments are required, the implementation period of the project may vary

Procurement of raw materials may commence from the 4th month onwards.

5. TECHNICAL ASPECTS & SPECIFICATION :

The main part of this Automatic Mist based sanitizer Dispensing machine is a microcontroller based Electronic Circuit with an Electronic solenoid valve attached with Diaphragm pump and a Mist Atomizer

Technical Specifications for a specific capacity :

Sanitizer capacity	8 Liter
Electrical input	230 V AC
Power consumption	Idle : Less than 3VA When Spraying 24VA
Object detection range	25 cm
Mounting	Wall

6. PROCESS OF MANUFACTURE

The preassembled programmed microcontroller board and other Electromechanical components are mounted inside the back compartment of ABS cabinet, electrical wiring and mechanical fittings are made. Switches, LEDs etc are fixed to the front side enclosure. Place the sanitizer tank having the required capacity (8L in this case) in the front compartment of ABS enclosure. Fix the mist atomizer and Ultrasonic sensor in the lower portion of the unit. The Automatic Mist based sanitizer Dispensing machine is tested for required performance by adding alcohol based sanitizer in the container and proper power source.

7. PRODUCTION CAPACITY PER ANNUM

Quantity	: 28,800 Nos
Value	: Rs14,40,00,000/-

8. Motive power required : 8 KVA

9. POLLUTION CONTROL:

Government accords utmost importance to control environmental pollution. The small scale entrepreneurs should have an environmental friendly attitude and adopt pollution control measures by process modification and technology. The unit has to adhere the pollution control norms of central and state pollution control boards.

10. ENERGY CONSERVATION

With the growing energy needs and shortage coupled with rising energy cost, a greater thrust in energy efficiency in industrial sector has been given by the Govt. of India. The Energy Conservation Act, 2001 has been enacted which provides for efficient use of energy, its conservation and capacity building .

The following steps may help for conservation of electrical energy:

- Adoption of energy conserving technologies, production aids and testing Facility, Periodical maintenance of equipments etc
- Optimum use of electrical energy for heating during soldering process can be obtained by using efficient temperature controlled soldering and disordering stations

- Use of power factor correction capacitors. Proper selection and layout of lighting system; timely switching on-off of the equipments, lights & fans; use of LED lamps etc.

11. FINANCIAL SPECTS

A) Fixed Capital

i) Land and Building

Built up Area	300 sq.mts,
Office, stores	100 sq.mts.
Assembly and Testing	200 sq.mts.
Rent payable per annum	Rs. 3,00,000/-

ii) Machinery & Equipment's

Sl.No	Description	Unit (Nos.)	Cost (Rs.)
1	Digital Multi meter (3 ½ digit)	5	75,000
2.	Digital liquid flow meter	2	25,000
3.	Desktops i7 processor with 2TB HDD,8GB RAM and microcontroller programmer	4	3,00,000
4.	Drilling machine	4	40,000
5.	Tool Kit, Temp. controlled soldering stations and accessories	3	1,00,000
6.	Bench Grinder (portable)	1	10,000
	Total		5.50,000
7.	Electrification charges @10% cost of machinery and equipment		55,000
8.	Cost of office furniture/equipment		2,00,000
9.	Pre-operative expenses deposits and other miscellaneous expenses		6,00,000
	Total Fixed capital		14,05,000

B. WORKING CAPITAL

Recurring expenditure per month

i) Staff & Labour

Sl.No	Designation	No.of Persons	Salary (Rs.)	Total Salary (Rs.)
1.	Manager-cum technical Expert	1	40000	40,000
2.	Technical/sales staff	5	20000	1,00,000
3.	Semi Skilled worker	4	15000	60,000
4.	Accountants/Office Assistant	2	20000	40,000
5.	Assistant	2	10000	20,000
	Perquisites @ 15%			39,000
			Total	2,99,000

ii) Raw material / month(for 2400 units)

Sl.No	Particulars	Ind/Imp	Qty	Rate	Value (Rs.)
1.	Pre-assembled Electronic board with microcontroller.	Ind	2400	500	12,00,000
2.	ABS Enclosure with sanitizer container 8L	Ind	2400	900	21,60,000
3.	Ultrasonic sensor	Ind/Imp	2400	200	4,80,000
4.	Electronic Solenoid valve	Ind	2400	900	21,60,000
5.	Diaphragm pump	Ind	2400	700	16,80,000
6.	Mist atomizer	Ind/Imp	2400	750	18,00,000
7.	SMPS	Ind	2400	400	9,60,000
8.	Connecting wires and other components	Ind	LS		10,000
9.	Consumables, Solder, flux etc	Ind	LS		10,000
10	Packing cartons	Ind	2400	30	72,000
				Total	1,05,32,000

iii) Utilities / month

Sl.No	Particulars	Value (Rs.)
1.	Electric Power	18,000
2,	Water	2,000
	Total	20,000

iv) Other contingent expenses per month

Sl.No	Particulars	Value (Rs.)
1.	Rent	25,000
2.	Postage and Stationary	2,000
3.	Telephone/Internet charges	3,000

4.	Repair and maintenance	2,000
5.	Transport and Conveyance	30,000
6.	Advertisement and Publicity	50,000
7.	Insurance	2,000
8.	Miscellaneous expenditure	10,000
	Total	1,24,000

Total Recurring expenses per month	1,09,75,000
Working Capital (for 3 months)	3,29,25,000

Total Capital Investment		Rs
1.	Total Fixed Capital	14,05,000
2.	Working Capital for three months	3,29,25,000
	Total Capital Investment	3,43,30,000

Financial analysis

Cost of production/annum		Rs
1.	Total recurring cost per year	13,17,00,000
2.	Depreciation on machinery and equipment's @ 10% per year	55,000
3.	Depreciation on furniture/office equipment's @ 20% per year	40,000
4.	Interest on capital investment @ 9%	3,08,970
	Total	13,21,03,970

Total Turn over per annum

Automatic Mist based sanitizer

Dispensing machine - 28800 @ Rs.5000 = Rs14,44,00,000/-

Profit per year = (Turnover – Cost of production) = Rs1,22,96,030/-

Percentage of profit on sales = $\frac{\text{Profit per year} \times 100}{\text{Total turnover}} = 8.5 \%$

Percentage of profit on Capital investment = $\frac{\text{Profit per year} \times 100}{\text{Total capital investment}} = 35\%$

Break Even Analysis

Annual Fixed Cost		Rs
1.	Rent	3,00,000

2.	Depreciation on machinery and equipment's @ 10% per year	55,000
3.	Depreciation on furniture/office equipment @ 20% per year	40,000
4.	40% of salaries	14,35,200
5.	40% of other contingent expenses (excluding rent & insurance)	4,65,600
6.	Interest on capital investment	3,08,970
7.	Insurance	24,000
	Total fixed cost	26,28,770

$$\text{Break Even Point} = \frac{\text{Fixed Cost} \times 100}{\text{Fixed cost} + \text{Profit}} = 18 \%$$

Additional Information:

1. The project profile is prepared based on a particular technology and capacity . The profile may be modified/tailored to suit the technology, capacity , individual entrepreneurship qualities/capacity, production programme and also to suit the locational characteristics, wherever applicable,
2. The technology in this sector is undergoing rapid strides of charge and there is a need for regular monitoring of the national and international technology scenario. The unit, may therefore, keep abreast with new technologies in order to keep them in pace with the developments for global competition,
3. Quality today is not only confined to the product or service alone. It also extends to the process and environment in which they are generated. ZED maturity model is a holistic standard for the over all standards of the unit to take the product acceptability at international level. The unit may therefore adopt ZED standards to face the global competition.
4. The margin money recommended is 25% of the working capital at an average.
However the percentage of margin money vary as per bank's discretion.

**DRDO developed technology for Automatic Mist Based Sanitizer Dispensing Unit.
Contact address for the Technology transfer.**

1, **Director**
Centre for Fire, Explosive & Environment Safety (CFEES)
Ministry of Defence
Brig. S.K. Mazumdar Marg
Timarpur, Delhi-110054

E mail.director@cfees.drdo.in
Ph : 01123907101

2. **Director**
Terminal Ballistics Research Laboratory
Sector-30
Chandigarh-160003

E Mail.director@tbrl.drdo.in
Ph.01722657659

NAMES & ADDRESSES OF MACHINE & EQUIPMENT SUPPLIERS

Sl.No	Manufacture /Supplier	Item
1.	M/s.Radiant Technologies 501, M. V. House, Shahibaug, Ahmedabad - 380 004. Gujarat - India. Phone : +91(79)25622088 E-mail : info@radiantautomation.com Web : www.radiantautomation.com	Ultrasonic Sensors
2.	M/s. Reynold Automations 11,Shakti Park apartment Behind ABS Tower Old Padra Road, Vadodara-390015,91(265) 234 0910 E-Mail: info@reynoldautomation.com	Flow meter and Industrial sensors
3.	M/s. Global Lube Syatems No.245,Tirumalai Nagar Chennai -600054 91 99419 99658 / 99401 31249 globallubesystems@gmail.com	Diaphragm pump
4.	M/s.JMC pneumatic & Automation Kalamassery,Cochin,Kerala	Solenoid Valve
5.	M/s.Sprytech House plot - A- 132 Sprytech circle,Wagle indl.Estate, Thane (W)-400604	Solenoid Valve
6.	M/s.Crystal Impex	ABS Enclosure

	Plot No. 27, Pocket N Bawana Industrial Area New Delhi- 110039, Delhi, India 080487709399	
7.	M/s.Shree Aqua Care No. 1, Kandasamy Nagar, 10th Street, Mettukuppam Main Road, Maduravoyal, Chennai-600095, Tamil Nadu, India	ABS Enclosure
8.	M/s.Kamtronics technology private limited Corporate Office : Plot No. 10, 1st Floor, DLF Industrial Area, Behind Moti Nagar Metro Station, New Delhi - 110015, India Phone :08037301645	Ultrasonic sensors
9.	M/s.Robo Kraft Tech 862,1st Floor,E & F Block Panchamantra road, Kavempunagar,Mysore-570023	Office automation
TEST EQUIPMENTS		
1.	Kamal Electronics 14, Lakshmi Building,J.C Road, Bangalore 560002	Test equipment's
2.	Aplab Limited XL 1/583,II Floor,Krishna Nivas Adv.Eashwara Iyer Road, Kochi 682 035 Phone 0484 2361623 Email aplabkochi@vsnl.net	Test equipment's
3.	Guru Agencies, M.G Road, Ernamkulam, Kerala.	Test equipment's