

WATER PUMPS

STANDARD
YEAR OF PREPARATION
March '07

- : @ 37460 6005
- : There is no IS Number Available
- : Branch Small Industries Service Institute, Dimapur, Nagaland.

INTRODUCTION:

Automobile Water Pumps are an important element in the cooling system of the engine which helps to circulate the cooling water through the engine block, engine head and radiator and this completes the process of cooling the engine system.

MARKET:

The item has a very good scope not only as OE but also in the spare parts market. Its normal average life is around 30,000 KM or about one to one and a half years.

BASIS AND PRESUMPTIONS:

01. 75% efficiency and 8 hours per shift.
02. 2 to 3 years approximately, for achieving full capacity utilisation.
03. The cost of machinery and equipment in this project is for specific brand only.

IMPLEMENTATION SCHEDULE:

The implementation of the project from conception to commercial production depends on the interest of the individual entrepreneur. The time for purchase/delivery of machinery and equipment from the date of placing the order may take 6 to 8 months and similarly for getting clearance from DIC for SSI Registration, Licence from Corporation/Panchayat Union, Sales Tax Department etc. it may take one to two years.

PROCESS OF MANUFACTURER:

The pump body and impeller are cast in the foundry division of the unit. The body, impeller and shaft are machined in the machine shop. Like sealed bearings and water seals are bought out and assembled.

REQUIREMENTS FOR MATERIALS:

Proper care and check is necessary to ensure supply of right material and purchased components. In the plant, proper facilities for fabrication and machining of components, for inspection and other tools and gauges are to be provided.

ANNUAL CAPACITY PER ANNUM:

This project envisages manufacture of 50,000 pumps per year on a basis.

ASPECTS:

RENTAL:

Land and Building:

Workshop area covering working shed, stores and office - 400 sq.meters rented @ 20/- per sq.m. per month

Rs. 16,000-00
per mensem.

MACHINERY AND EQUIPMENT (ALL INDIGENOUS):

<u>Sl. No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Value (Rs)</u>
01.	Bar chuck Capstan Lathe-Herbert 4D-capacity 60mm bar with complete accessories and electricals with 7.5 HP Motor	One	3,64,140-00
02.	Bar chuck Capstan Lathe Bar capacity 25mm with 2 HP Motor	One	2,37,720-00
03.	Cylindrical Grinding machine capacity dia 200mmx60mm between centres with 6.75 HP Motor	One	2,44,020-00
04.	Centre Lathe 165 mm centre height 1000 mm between centres with complete accessories and electricals with 2 HP Motor	One	13,230-00
05.	Pedestal Milling machine 25mm dia with 1 HP Motor	One	22,680-00
06.	Pedestal Milling machine 12.5mm dia with 1 HP Motor	One	8,570-00
07.	BF Bench Grinder 250mm wheel size with 1 HP Motor	One	4,515-00
			<u>8,96,175-00</u>

MANUFACTURING (20%)
EXCLUDED):

Designation (P/M)	No.	Salary (Rs)	Rs.
Manager-cum-Accountant	1	3,000-00	3,000-00
Clerk-cum-Typist	1	1,500-00	1,500-00
Peon	1	1,000-00	1,000-00
Watchman	2	1,000-00	2,000-00
Engineers	1	7,000-00	7,000-00
Supervisors	1	6,000-00	6,000-00
Skilled workers	5	1,800-00	9,000-00
Semi-skilled workers	5	1,400-00	7,000-00
Helpers	4	875-00	3,500-00
		Total	40,000-00

RAW MATERIALS: (P/M)

Aluminium ingots 4.75 tonnes @ 70,000-00 per tone	3,32,500-00
En 8 & M.S. Rounds ~ 2 tonnes @ 15,000-00	34,000-00
Sealed bearings, water seals and screw @ 100-00 per piece per pump	<u>4,75,000-00</u>
UTILITIES PER MONTH	<u>8,41,500-00</u>
Power 30 HP and water charges 6000 units	<u>3,000-00</u>

OTHER EXPENDITURE:

Rent	10,000-00
Repair & Maintenance	5,000-00
Advertisement & Transport	8,000-00
Postage and Stationery	2,500-00
Miscellaneous	<u>2,500-00</u>
	<u>28,000-00</u>

WORKING CAPITAL PER MONTH

9,09,500-00

TOTAL CAPITAL INVESTMENT:

Block Capital	14,51,823-00
Working Capital 3 months	27,28,500-00
Total	<u>41,80,323-00</u>
Gov	41,79,400-00

8,96,175-00

B/F.

Hand cutting Band saw 200mm capacity with 1 HP Motor

One

25,830-00

Press No. 6

One

9,660-00

Lathe Press

Two

4,830-00

Total

9,36,495-00

ST @ 3%

74,918-00

SC @ 10%

7,492-00

Total

10,18,906-00

FOUNDRY & GRAVITY
CASTING UNIT:

01. Cold out Furnace-150 Kg. capacity oil fired with motor, blower, burner complete with pre-heater, filter, pipeline and accessories.

1,07,785-00

02. Overhead oil tank-fabricator with settl 1.5 Meters cube-installation at 5 meters height

12,600-00

03. Air compressor 8 psi 40 CFT with 0.75 HP Motor

7,140-00

04. Die heating equipment, spray gun, gas cylinder, etc.

8,400-00

1,35,923-00

ST @ 3%

10,874-00

SC @ 10%

1,087-00

Total

1,47,884-00

Testing Equipment, Measuring Instruments

42,000-00

Pollution Control Arrangements

21,000-00

Power connection, Erection and Installation @ 10%

1,16,679-00

Jigs, Fixtures and toolings etc.

73,500-00

Office equipment, work tables, and furniture

20,000-00

Total

2,73,179-00

Pre-operative expenses @ 5%

21,854-00

Total Block Capital

14,61,823-00

Depreciation on machinery and equipments @ 10%	1,09,14,000-00
Depreciation on jigs, fixtures, etc. @ 25%	1,07,242-00
Depreciation on office equipments, etc. @ 20%	34,125-00
Interest on capital outlay @ 16.5%	4,000-00
	<u>69,14,16-00</u>
Say	1,17,50,783-00
Rs.	<u>1,17,51,000-00</u>

PER YEAR:

Cost of sale of 50,000 pumps per year	
Capital B. $5,01,000 \times 100$	
Cost out.	41,50,000
Rate of return	1,12,50,000-00
	12%

BREAK EVEN ANALYSIS:

FIXED COSTS:

Depreciation on machinery, tools furniture etc.	1,45,567-00
Interest on total investment	90,000-00
Salary and Wages	6,91,416-00
Other expenses excluding rent	1,98,000-00
	<u>1,34,400-00</u>
Total	12,59,183-00
Say	12,59,100-00
Break even point = FC/(FC + Profit)	$\frac{12,59,100 \times 100}{17,60,700}$
	71%

LIST OF MACHINERY SUPPLIERS:

- 1. M/s. Baidyal & Co., 55, Armenian Street, Madras-600 001.
- 2. M/s. Anglo-Siam Co., 143, Agastya Nalok Street, Madras-600 001.
- 3. M/s. Ford Herbert & Co. 751, Anna Salai, Madras-600 002.
- 4. M/s. Sankar Machine Tools Ltd., 1, Salt Street, Madras-600 006.
- 5. M/s. Raja Machine Tools, 91, Thambu Chetty Street, Madras-600 001.