

Government of Nepal  
Ministry of Physical Infrastructure and Transport  
Department of Roads  
**Mechanical Branch**  
Chakupat, Lalitpur

**Guideline for Estimating Equipment Ownership  
and Operating Costs**



**Date of Amendment: 2077.12.32 (BS)**



## Department of Roads Norms/Rate of Plant and Machinery

SN	Equipments	Activity/ Usages	Ownership Cost (NRs/Hr)	Servicing (NRs/Hr)	Maintenance (NRs/Hr)	Fuel/Electricity Demand			Crew, hr		Assistant,hr
						Fuel (L/hr)	Electricity (Units/hr)	Fuel Oil (Heating) (L/hr)	Skilled	Helper/Unskilled	
1	Air compressor /compressor with pneumatic breaker	General	192	42	50	5.73			0.125		
2	Asphalt Plant (Batch mix HMP/Drum mix plant/Hot Mix Plant )	Asphalt/DBM Production	693	108	173	6.91	15.00	200.00	0.125		0.250
3	Batching Plant	Concrete Production	352	44	88	6.14	25.00		0.125		0.250
4	Bentonite pump	Drilled Hole Stabilization	26	3	8		2.00				
5	Bitumen boiler	Bitumen Heating	40	3	8	1.96		5.00			
6	Bitumen pressure distributor/Bitumen Distributor/ Bitumen Sprayer	Bitumen Spray	443	63	176	10.24		3.00	0.125		0.125
7	Chip spreader	Surface Dressing/Chips Seal/Otta Seal	196	30	64	7.06			0.125		0.125
8	Cold mix plant	Cold Mix Asphalt/Premix	375	50	75	3.89	20.00		0.125		
9	Concrete Pump	Concreting	80	5	10	3.06			0.125		0.125
10	Crane	Lifting	820	145	338	10.13			0.125		0.125
11	Crane (3 T)	Lifting	599	106	170	6.75			0.125		0.125
12	Crane 15 t capacity	Lifting	1,147	163	431	14.63			0.125		0.125
13	Crane with grab bucket/dredger crane	Dredging	1,000	120	200	8.96			0.125		0.125
14	Dozer	Earthwork	1,300	330	550	14.14			0.125		
15	Drilling machine with bit and accessories	Earth Hole Drilling	126	24	36	1.30			0.125		0.125
16	Electric generator	Electricity	77	10	17	4.54			0.125		
17	Electric hand driller (HDEP work)	Hole Drilling	105	0	10		1.00				
18	Electric heating plate	Connection work	63	6	12		1.00				
19	Emulsion pressure distributor	Emulsion distribution	46	4	8	1.15			0.125		
20	Excavator	Excavation/Earthwork	620	165	275	14.40			0.125		
21	Grout Injection Equipment	Crack Repair	68	12	24		1.00		0.125		
22	Grouting pump with agitator	PSC Bridge construction related	147	28	56		2.00		0.125		
23	Hacking Machine	Jacketing purpose	42	8	16	1.30			0.125		
24	Hydraulic Jack ( 40 tonne capacity)	Bearing Installation/Repair	105	20	40	0.00					
25	Hydraulic Jack ( required capacity normally 200 tonne)	Bearing Installation/Repair	256	33	56		5.00				
26	Jack hammer /Rock drill / Portable rock driller	Earthwork	22	3	5	1.62					
27	Loader	Material Loading	543	136	227	9.79			0.125		
28	Mastic cooker	Mastic Asphalt Production	69	5	16		1.00	2.88	0.125		0.125
29	Mixture machine/Concrete Mixture Machine	Concrete Production	31	3	11	1.92					
30	Mobile slurry seal equipment	Maintenance	211	32	86	6.07			0.125		0.125
31	Motor grader	Laying	1,016	256	351	8.67			0.125		
32	Paver finisher	Asphalt	775	119	298	6.94			0.125		0.125
33	Piling rig ( with all accessories)	Pile Construction upto 1.2m	1,600	267	267	7.84			0.125		0.125
34	Plate compactor/power rammer	Light Compaction	54	9	19	1.46			0.125		
35	Pneumatic roller/Pneumatic tired roller	Compaction	539	57	296	8.19			0.125		
36	Premix Mixer	Premix Production	115	25	25	4.25		20.00	0.125		0.125
37	Road marking machine	Thermoplastic Painting	92	8	21	1.30					
38	Road sweeper/Mechanical broom	Sweeping	297	34	68	6.40			0.125		
39	Screw Jack	Pipe Connection	53	0	0		0.00				

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**Department of Roads  
Norms/Rate of Plant and Machinery**

SN	Equipments	Activity/ Usages	Ownership Cost (NRs/Hr)	Servicing (NRs/Hr)	Maintenance (NRs/Hr)	Fuel/Electricity Demand			Crew, hr		Assistant,hr
						Fuel (L/hr)	Electricity (Units/hr)	Fuel Oil (Heating) (L/hr)	Skilled	Helper/Unskilled	
40	Smooth wheeled roller/Smooth 3 wheeled steel roller	Compaction	173	13	40	5.40			0.125		
41	Stressing jack with pump	Prestressing	104	8	20		1.00				
42	Tipper	Transportation/Carry	148	23	55	6.76			0.125	0.125	
43	Tractor with ripper attachment/Tractor Trolley	Ripping/Carry	83	13	33	4.50			0.125	0.125	
44	Truck flat body/Trailer	Carry	532	37	153	10.80			0.125	0.125	
45	Vibratory roller	Compaction	461	66	159	7.28			0.125		
46	Water Tanker	Watering	270	38	110	4.32			0.125		
47	Wet mix plant	Base Production	433	67	100		30.00		0.125	0.125	
48	Cutter(Bitumen Pavement/RCC Cutter)	Cutting	168	8	12	1.22					

Note :

District Rate Crew/hr =30x Daily Rate/(8\*26)

District Rate Assistant/hr =30x Daily Rate/(8\*26)

Fuel Cost = Fuel Demand x Fuel Cost per liter at site / 1.13

Electricity Cost = Electricity Demand x Electricity Unit Cost

Crew/Assistant Cost = (Crew,hr x District Rate of Crew/hr) + (Assistant, hr x District Rate of Assistant/hr)

Rate of Plant & Machinery = Ownership Cost + Operational Cost (Servicing Cost + Maintenance Cost + Crew/Assistant Cost + Fuel/Electricity Cost)



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# सडक बिभाग

## Guideline for Estimating Equipment Ownership and Operating Costs संसोधन प्रस्ताबको प्रतिबेदन

प्रतिबेदक :

संयोजक  
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- सु.ई. प्रभात कुमार झा, संघीय सडक सुपरिवेक्षण तथा अनुगमन कार्यालय, सुर्खेत ।
- सि.डी.ई. रमेश कुमार सिंह, श्री स.वि. योजना, अनुगमन तथा मुल्यांकन शाखा, ललितपुर ।
- सि.डी.ई. महेश कुमार पराजुली, श्री स.वि. यान्त्रिक महाशाखा, ललितपुर ।
- सि.डी.ई. शौरभ बज्राचार्य, गुणस्तर, अनुसन्धान तथा विकास केन्द्र, ललितपुर ।
- ईन्जिनियर केशव कप्रसाद ओझा, श्री स.वि. संभार महाशाखा, ललितपुर ।
- ईन्जिनियर अमित कुमार वर्मा, श्री स.वि. पुल महाशाखा, ललितपुर ।

सुची

- क) पृष्ठभूमि
- ख) समितिको कार्य प्रक्रिया
- ग) विस्लेषण
- घ) प्रस्तुतित Norms/Rate of Plant and Machinery

अनुसूची

- १) उदाहरण Calculation
- २) Detailed Calculation Sheets
- ३) पुर्ब स्वीकृत दर

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## क) पृष्ठभूमि

मिति २०७७/१२/२४ को विभागीय निर्णय अनुसार गठित समितिले मिति २०७५/१०/०८ मा स्वीकृत Guideline for Estimating Equipment Ownership and Operating Costs अनुसारको Rate of Plant and Machinery को Norms 2075 मा बारम्बार प्रयोग हुने Truck, Crane, Generator, Asphalt Plant आदिको, जुन सुकै Item मा पनि उही Equipment Capacity रहेको तर Approved Departmental Equipment Hire rate मा बिभिन्न Capacity को बिभिन्न दर रहेकोले, कार्यालय/योजनाहरुमा Hire rate selection मा एकरूपता नरहेको, जसकारण लागत अनुमानको लागि One Equipment one Rate हुन जरूरी रहेको, Truck/Grader/Roller/Air Compressor आदिका Departmental Equipment Hire rate निर्धारण गर्दा कायम गरिएको Ownership Charge र Operator Fee उच्च रहेकोले सोको संसोधन हुन पर्ने तथा अन्य केहि बिषयको समय सापेक्ष संसोधनको आवश्यकता अनुरूप, सो जिम्मेबारी सहित ६ सदस्य विभागीय समिति गठन भएको थियो।

### गठित समिति बिबरण :

संयोजक -	सु.ई. प्रभात कुमार झा, संघीय सडक सुपरिवेक्षण तथा अनुगमन कार्यालय, सुर्खेत।
सदस्य -	सि.डी.ई. रमेश कुमार सिंह, श्री स.वि. योजना, अनुगमन तथा मुल्यांकन शाखा, ललितपुर।
सदस्य -	सि.डी.ई. महेश कुमार पराजुली, श्री स.वि. यान्त्रिक महाशाखा, ललितपुर।
सदस्य -	सि.डी.ई. शौरभ बज्राचार्य, गुणस्तर, अनुसन्धान तथा विकास केन्द्र, ललितपुर।
सदस्य -	ईन्जिनियर केशव कप्रसाद ओझा, श्री स.वि. संभार महाशाखा, ललितपुर।
सदस्य -	ईन्जिनियर अमित कुमार वर्मा, श्री स.वि. पुल महाशाखा, ललितपुर।

## ख) समितिको कार्य प्रक्रिया

समितिले Guideline for Estimating Equipment Ownership and Operating Costs अनुसारको Rate of Plant and Machinery को Calculation basis, बर्तमान Construction Industry को Capacity तथा Specification को ब्यबस्था अनुसार बिस्तृत Analytical Analysis र Professional Experience को प्रयोग गरि, संसोधन प्रस्ताव गरिएको छ।

## ग) विस्लेषण

१. Ownership Cost Calculation मा प्रयोग हुने

$$\text{Average Annual Cost} = \frac{\text{Purchase Cost} \times (\text{Life}+1) + \text{Salvage Value} \times (\text{Life}-1)}{2 \times \text{Life}}$$
 फोर्मुलाको संसोधन गरि

$$\text{Average Annual Cost} = \text{Purchase Cost} / \text{Life}$$
 कायम हुन सिफारिस गरिएको छ

२. Ownership Cost Calculation गर्दा Taxes and Storage/License Cost आबश्यक Item हरुमा मात्र लिइयो

३. Plant र Machinery को Capital Cost (Purchase Cost), औषत Construction Industry मा प्रयोग हुने Plant र Machinery को Specification को आधारमा कायम हुन सिफारिस गरिएको छ

४. Maintenance र Service Cost calculation गर्न प्रयोग हुने क्रमशः Repair factor (RF) र Servicing factor (SF) को Value, Plant र Machinery को Specification को आधारमा संसोधन गरियो

५.  $\text{Repair and Maintenance Cost} = \frac{\text{RF} \times \text{H} \times \text{DC}}{\text{h} \times 10000}$  र  $\text{Service Cost} = \text{SF} \times \text{Fuel Cost}$  फोर्मुलाको यान्त्रिक महाशाखाले

प्रयोग गरिरहेको फोर्मुला अनुसार संसोधन गरि

$$\text{Repair and Maintenance Cost} = \frac{\text{RF} \times \text{Cost}}{\text{H}}$$

$$\text{Service Cost} = \frac{\text{SF} \times \text{Cost}}{\text{H}}$$

, H = Total Useful life Hours कायम हुन सिफारिस गरिएको छ

६. Crew/Assistant Cost को हकमा देश भर उही प्रयोग गर्दा दुर्गमता/उपलब्धता जस्ता विषयको समावेश नहुने भएकोले Crew/Assistant को Hr Quantity प्रस्ताव गरिएको र मुल्य Calculation गर्न  $30 \times \text{Daily District Rate} / (8 \times 26)$  को फोर्मुला प्रस्ताव गरिएको छ

७. Norms for Works Road and Bridges, 2075 मा Crew cost समावेश रहेका केहि Items of works मा प्रयोग हुने Equipment को हकमा Crew/Assistant Cost हटाईयो

८. Plant र Machinery को Specification को आधारमा Fuel Demand संसोधन गरिएको छ

९. Norms for Works Road and Bridges, 2075 मा उल्लेख रहेको Plant र Machinery बाहेकका Plant र Machinery लाई सुचीबाट हटायो

**Calculation को लागि प्रयोग गरिएको Sheet :**

OWNING AND OPERATING COST ANALYSIS					
Machine's Basic Information					
Equipment:			Manufactured year:	Code No.	
Make:			Fuel Type		
Mode:			Fuel	Diesel (SFC):	(ltr/hp-hr)
Power (hp):		hp		Petrol (SFC):	(ltr/hp-hr)
Capacity:				Load factor (FF):	
Purchase / Estimated Price (PP):				Time factor (TF):	
Useful Life (N):			Electric	Fuel Rate :	(Rs/ltr)
Total Useful life Hours (H):				Fuel Consumption:	(L/hr)
Uses Hours per year (h):				Energy consumed:	(kwh)
Tyre cost per unit (Ct):				Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	(unit/hr)	
Tyre replacement costs (TRC):					
Tyre Average Life (hrs) (TL):			Repair factor (RF):		
Special wear item cost (SWIC):			Servicing factor (SF):		
Interest Rate (IR):					
Operator M'thly Salary + Allw'nce(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)				
2	Estimated Salvage Value (S) (Rs)				
3	Annual (Rs/yr)				
4	Insurance (Rs/yr)				
5	Taxes / Licence etc. (Rs/yr)				
6	Storage etc. (Rs/yr)				
7	Average Annual Investment				
8	Annual Interest Cost (Rs)				
9	Annual Ownership Cost (Rs)				
10	Estimated Hourly Ownership Cost (Rs/hr)				
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)				
12	Tyre Replacement Cost (Rs/hr)				
13	Fuel Cost (Rs/hr)				
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)				
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)				
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)				
17	Estimated Hourly Operating Cost (Rs/hr)				
18	Total Hourly Owning and Operating Cost (Rs/hr)				

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Sl	Equipments	Activity/ Usages	Ownership Cost (NRs/Hr)	Fuel/Electricity	Crew/Assistant Charges	Servicing	Maintenance	Total Operation Cost	Total Hire Cost
1	Air compressor /compressor with pneumatic breaker	General	192	516	101	42	50	709	900
2	Asphalt Plant (Batch mix HMP/Drum mix plant/Hot Mix Plant )	Asphalt/DBM Production	693	18,802	291	108	173	19,375	20,068
3	Batching Plant	Concrete Production	352	853	291	44	88	1,276	1,628
4	Bentonite pump	Drilled Hole Stabilization	26	24	0	3	8	34	60
5	Bitumen boiler	Bitumen Heating	40	626	0	3	8	638	678
6	Bitumen pressure distributor/Bitumen Distributor/ Bitumen Sprayer	Bitumen Spray	443	1,192	205	63	176	1,635	2,078
7	Chip spreader	Surface Dressing/Chips Seal/Otta Seal	196	635	205	30	64	934	1,129
8	Cold mix plant	Cold Mix Asphalt/Premix	375	590	118	50	75	833	1,208
9	Concrete Pump	Concreting	80	275	188	5	10	478	558
10	Crane	Lifting	820	911	205	145	338	1,599	2,419
11	Crane (3 T)	Lifting	599	608	205	106	170	1,089	1,687
12	Crane 15 t capacity	Lifting	1,147	1,316	205	163	431	2,115	3,261
13	Crane with grab bucket/dredger crane	Dredging	1,000	806	205	120	200	1,331	2,331
14	Dozer	Earthwork	1,300	1,273	118	330	550	2,271	3,571
15	Drilling machine with bit and accessories	Earth Hole Drilling	126	117	205	24	36	381	507
16	Electric generator	Electricity	77	408	101	10	17	536	613
17	Electric hand driller (HDEP work)	Hole Drilling	105	12	0	0	10	22	127
18	Electric heating plate	Connection work	63	12	0	6	12	30	93
19	Emulsion pressure distributor	Emulsion distribution	46	104	101	4	8	217	263
20	Excavator	Excavation/Earthwork	620	1,296	118	165	275	1,854	2,474
21	Grout Injection Equipment	Crack Repair	68	12	118	12	24	166	234
22	Grouting pump with agitator	PSC Bridge construction related	147	24	118	28	56	226	373
23	Hacking Machine	Jacketing purpose	42	117	101	8	16	242	284
24	Hydraulic Jack ( 40 tonne capacity)	Bearing Installation/Repair	105	0	0	0	4	4	109
25	Hydraulic Jack ( required capacity normally 200 tonne)	Bearing Instal ation/Repair	256	60	0	0	4	64	320
26	Jack hammer /Rock drill / Portable rock driller		22	146	0	18	99	263	285
27	Loader	Material Loading	543	881	118	229	392	1,621	2,164
28	Mastic cooker	Mastic Asphalt Production	69	271	205	495	32	1,003	1,072
29	Mixture machine/Concrete Mixture Machine	Concrete Production	31	173	0	14	16	203	233
30	Mobile slurry seal equipment	Maintenance	211	546	205	192	288	1,231	1,442
31	Motor grader	Laying	1,016	780	118	257	525	1,681	2,697
32	Paver finisher	Asphalt	775	624	205	321	783	1,933	2,708
33	Piling rig ( with all accessories)	Pile Construction upto 1.2m	1,600	706	205	192	272	1,374	2,974
34	Plate compactor/power rammer	Light Compaction	54	131	118	18	25	292	346
35	Pneumatic roller/Pneumatic tired roller	Compaction	539	737	118	227	527	1,610	2,148
36	Premix Mixer	Premix Production	115	2,183	205	50	100	2,538	2,653
37	Road marking machine	Thermoplastic Painting	92	117	0	55	25	197	288
38	Road sweeper/Mechanical broom	Sweeping	297	576	118	191	95	980	1,277



Department of Roads

Sample Calculation :

SN	Equipments	Activity/ Usages	Ownership Cost (NRs/Hr)	Fuel/Electricity	Crew/Assistant Charges	Servicing	Maintenance	Total Operation Cost	Total Hire Cost
39	Screw Jack		53	0	0	0	0	0	53
40	Smooth wheeled roller/Smooth 3 wheeled steel roller	Compaction	173	486	118	174	143	921	1,095
41	Stressing jack with pump	Prestressing	104	12	0	40	109	161	265
42	Tipper	Transportation/Carry	148	608	205	191	95	1,099	1,247
43	Tractor with ripper attachment/Tractor Trolley	Ripping/Carry	83	405	205	125	90	825	908
44	Truck flat body/Trailer	Carry	532	972	205	586	429	2,192	2,724
45	Vibratory roller	Compaction	461	655	118	151	387	1,311	1,773
46	Water Tanker	Watering	270	389	118	191	95	793	1,063
47	Wet mix plant	Base Production	433	360	205	128	223	916	1,349

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Department of Roads

Fuel/Electricity Demand :

Rate :

SN	Equipments	Activity/ Usages	Rate :			Fuel/Electricity
			90	12	90	
			Fuel (L/hr)	Electricity (Units/hr)	Fuel Oil (Heating) (L/hr)	
1	Air compressor /compressor with pneumatic breaker	General	5.73	0.00	0.00	516.10
2	Asphalt Plant (Batch mix HMP/Drum mix plant/Hot Mix Plant )	Asphalt/DBM Production	6.91	15.00	200.00	18,802.08
3	Batching Plant	Concrete Production	6.14	25.00	0.00	852.96
4	Bentonite pump	Drilled Hole Stabilization	0.00	2.00	0.00	24.00
5	Bitumen boiler	Bitumen Heating	1.96	0.00	5.00	626.40
6	Bitumen pressure distributor/Bitumen Distributor/ Bitumen Sprayer	Bitumen Spray	10.24	0.00	3.00	1,191.60
7	Chip spreader	Surface Dressing/Chips Seal/Otta Seal	7.06	0.00	0.00	635.04
8	Cold mix plant	Cold Mix Asphalt/Premix	3.89	20.00	0.00	589.92
9	Concrete Pump	Concreting	3.06	0.00	0.00	275.40
10	Crane	Lifting	10.13	0.00	0.00	911.25
11	Crane (3 T)	Lifting	6.75	0.00	0.00	607.50
12	Crane 15 t capacity	Lifting	14.63	0.00	0.00	1,316.25
13	Crane with grab bucket/dredger crane	Dredging	8.96	0.00	0.00	806.40
14	Dozer	Earthwork	14.14	0.00	0.00	1,272.96
15	Drilling machine with bit and accessories	Earth Hole Drilling	1.30	0.00	0.00	116.64
16	Electric generator	Electricity	4.54	0.00	0.00	408.24
17	Electric hand driller (HDEP work)	Hole Drilling	0.00	1.00	0.00	12.00
18	Electric heating plate	Connection work	0.00	1.00	0.00	12.00
19	Emulsion pressure distributor	Emulsion distribution	1.15	0.00	0.00	103.68
20	Excavator	Excavation/Earthwork	14.40	0.00	0.00	1,296.00
21	Grout Injection Equipment	Crack Repair	0.00	1.00	0.00	12.00
22	Grouting pump with agitator	PSC Bridge construction related	0.00	2.00	0.00	24.00
23	Hacking Machine	Jacketing prupose	1.30	0.00	0.00	116.64
24	Hydraulic Jack ( 40 tonne capacity)	Bearing Installation/Repair	0.00	0.00	0.00	0.00
25	Hydraulic Jack ( required capacity normally 200 tonne)	Bearing Installation/Repair	0.00	5.00	0.00	60.00
26	Jack hammer /Rock drill / Portable rock driller		1.62	0.00	0.00	145.80
27	Loader	Material Loading	9.79	0.00	0.00	881.28
28	Mastic cooker	Mastic Asphalt Production	0.00	1.00	2.88	271.20

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Department of Roads

Fuel/Electricity Demand :

SN	Equipments	Activity/ Usages	Fuel (L/hr)	Electricity (Units/hr)	Fuel Oil (Heating) (L/hr)	Fuel/Electricity
29	Mixture machine/Concrete Mixture Machine	Concrete Production	1.92	0.00	0.00	172.80
30	Mobile slurry seal equipment	Maintenance	6.07	0.00	0.00	546.21
31	Motor grader	Laying	8.67	0.00	0.00	780.30
32	Paver finisher	Asphalt	6.94	0.00	0.00	624.24
33	piling rig ( with all accessories)	Pile Construction upto 1.2m	7.84	0.00	0.00	705.60
34	Plate compactor/power rammer	Light Compaction	1.46	0.00	0.00	131.22
35	Pneumatic roller/Pneumatic tired roller	Compaction	8.19	0.00	0.00	737.28
36	Premix Mixer	Premix Production	4.25	0.00	20.00	2,182.73
37	Road marking machine	Thermoplastic Painting	1.30	0.00	0.00	116.64
38	Road sweeper/Mechanical broom	Sweeping	6.40	0.00	0.00	576.00
39	Screw Jack		0.00	0.00	0.00	0.00
40	Smooth wheeled roller/Smooth 3 wheeled steel roller	Compaction	5.40	0.00	0.00	486.00
41	Stressing jack with pump	Prestressing	0.00	1.00	0.00	12.00
42	Tipper	Transportation/Carry	6.76	0.00	0.00	608.40
43	Tractor with ripper attachment/Tractor Trolley	Ripping/Carry	4.50	0.00	0.00	405.00
44	Truck flat body/Trailer	Carry	10.80	0.00	0.00	972.00
45	Vibratory roller	Compaction	7.28	0.00	0.00	655.20
46	Water Tanker	Watering	4.32	0.00	0.00	388.80
47	Wet mix plant	Base Production	0.00	30.00	0.00	360.00

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Department of Roads

Sample Calculation :

SN	Equipments	Fuel/Electricity	Crew, day	District Rate of Crew/day	District Rate of Crew/hr =30x Daily Rate/(8*26)	Assistant, day	District Rate of Assistant/day	District Rate of Assistant/hr =30x Daily Rate/(8*26)	Crew	Servicing	Maintenance	Total Operation Cost
			Skilled	Skilled	Skilled	Helper/Unskilled	Helper/Unskilled	Helper/Unskilled				
1	Air compressor /compressor with pneumatic breaker	516.10	1.00	700.00	100.96				100.96	41.67	50.00	708.72
2	Asphalt Plant (Batch mix HMP/Drum mix plant/Hot Mix Plant )	18,802.08	1.00	820.00	118.27	2.00	600.00	173.08	291.35	108.33	173.33	19,375.09
3	Batching Plant	852.96	1.00	820.00	118.27	2.00	600.00	173.08	291.35	44.00	88.00	1,276.31
4	Bentonite pump	24.00								2.50	7.50	34.00
5	Bitumen boiler	626.40								3.33	8.33	638.07
6	Bitumen pressure distributor/Bitumen Distributor/ Bitumen Sprayer	1,191.60	1.00	820.00	118.27	1.00	600.00	86.54	204.81	62.60	176.23	1,635.24
7	Chip spreader	635.04	1.00	820.00	118.27	1.00	600.00	86.54	204.81	29.78	64.25	933.87
8	Cold mix plant	589.92	1.00	820.00	118.27				118.27	50.00	75.00	833.19
9	Concrete Pump	275.40	1.00	700.00	100.96	1.00	600.00	86.54	187.50	5.00	10.00	477.90
10	Crane	911.25	1.00	820.00	118.27	1.00	600.00	86.54	204.81	145.00	337.52	1,598.58
11	Crane (3 T)	607.50	1.00	820.00	118.27	1.00	600.00	86.54	204.81	106.33	170.13	1,088.77
12	Crane 15 t capacity	1,316.25	1.00	820.00	118.27	1.00	600.00	86.54	204.81	162.67	430.85	2,114.58
13	Crane with grab bucket/dredger crane	806.40	1.00	820.00	118.27	1.00	600.00	86.54	204.81	120.00	200.00	1,331.21
14	Dozer	1,272.96	1.00	820.00	118.27				118.27	330.00	550.00	2,271.23
15	Drilling machine with bit and accessories	116.64	1.00	820.00	118.27	1.00	600.00	86.54	204.81	24.00	36.00	381.45
16	Electric generator	408.24	1.00	700.00	100.96				100.96	10.00	16.67	535.87
17	Electric hand driller (HDEP work)	12.00								0.00	10.00	22.00
18	Electric heating plate	12.00								6.00	12.00	30.00
19	Emulsion pressure distributor	103.68	1.00	700.00	100.96				100.96	4.00	8.00	216.64
20	Excavator	1,296.00	1.00	820.00	118.27				118.27	165.00	275.00	1,854.27
21	Grout Injection Equipment	12.00	1.00	820.00	118.27				118.27	12.00	24.00	166.27
22	Grouting pump with agitator	24.00	1.00	820.00	118.27				118.27	28.00	56.00	226.27
23	Hacking Machine	116.64	1.00	700.00	100.96				100.96	8.00	16.00	241.60
24	Hydraulic Jack ( 40 tonne capacity)	0.00									4.00	4.00
25	Hydraulic Jack ( required capacity normally 200 tonne)	60.00									4.00	64.00
26	Jack hammer /Rock drill / Portable rock driller	145.80								18.00	99.00	262.80
27	Loader	881.28	1.00	820.00	118.27				118.27	229.00	392.00	1,620.55
28	Mastic cooker	271.20	1.00	820.00	118.27	1.00	600.00	86.54	204.81	495.00	32.00	1,003.01
29	Mixture machine/Concrete Mixture Machine	172.80		820.00						14.00	16.00	202.80
30	Mobile slurry seal equipment	546.21	1.00	820.00	118.27	1.00	600.00	86.54	204.81	192.00	288.00	1,231.02
31	Motor grader	780.30	1.00	820.00	118.27				118.27	257.00	525.00	1,680.57
32	Paver finisher	624.24	1.00	820.00	118.27	1.00	600.00	86.54	204.81	321.00	783.00	1,933.05
33	piling rig ( with all accessories)	705.60	1.00	820.00	118.27	1.00	600.00	86.54	204.81	192.00	272.00	1,374.41
34	Plate compactor/power rammer	131.22	1.00	820.00	118.27				118.27	18.00	25.00	292.49
35	Pneumatic roller/Pneumatic tired roller	737.28	1.00	820.00	118.27				118.27	227.00	527.00	1,609.55
36	Premix Mixer	2,182.73	1.00	820.00	118.27	1.00	600.00	86.54	204.81	50.00	100.00	2,537.53
37	Road marking machine	116.64								55.00	25.00	196.64
38	Road sweeper/Mechanical broom	576.00	1.00	820.00	118.27				118.27	191.00	95.00	980.27
39	Screw Jack	0.00								0.00	0.00	0.00
40	Smooth wheeled roller/Smooth 3 wheeled steel roller	486.00	1.00	820.00	118.27				118.27	174.00	143.00	921.27
41	Stressing jack with pump	12.00								40.00	109.00	161.00
42	Tipper	608.40	1.00	820.00	118.27	1.00	600.00	86.54	204.81	191.00	95.00	1,099.21

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Department of Roads

Sample Calculation :

SN	Equipments	Fuel/Electricity	Crew, day	District Rate of Crew/day	District Rate of Crew/hr =30x Daily Rate/(8*26)	Assistant, day	District Rate of Assistant/day	District Rate of Assistant/hr =30x Daily Rate/(8*26)	Crew	Servicing	Maintenance	Total Operation Cost
			Skilled	Skilled	Skilled	Helper/Unskilled	Helper/Unskilled	Helper/Unskilled				
43	Tractor with ripper attachment/Tractor Trolley	405.00	1.00	820.00	118.27	1.00	600.00	86.54	204.81	125.00	90.00	824.81
44	Truck flat body/Trailer	972.00	1.00	820.00	118.27	1.00	600.00	86.54	204.81	586.00	429.00	2,191.81
45	Vibratory roller	655.20	1.00	820.00	118.27				118.27	151.00	387.00	1,311.47
46	Water Tanker	388.80	1.00	820.00	118.27				118.27	191.00	95.00	793.07
47	Wet mix plant	360.00	1.00	820.00	118.27	1.00	600.00	86.54	204.81	128.00	223.00	915.81

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## 2) Detailed Calculation Sheets

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Batching Mixing Plant		Manufactured year:	Code No: 3
Make:			Fuel Type	
Model:			Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	60	hp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	15-20	cum	Load factor(FF):	0.8
Purchase / Estimated Price (PP):	4400000		Time factor(TF):	0.8
Useful Life (N):	20		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	20000		Fuel Consumption:	6.14 (L/hr)
Uses Hours per year (h):	1000		Energy consumed:	25 (kwh)
Tyre cost per unit (Ct):	0		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	0		Repair factor (RF):	0.4
Tyre Average Life (hrs) (TL):	0		Servicing factor (SF):	0.2
Special wear item cost (SWIC):			Interest Rate (IR):	10%
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			4400000
2	Estimated Salvage Value (S) (Rs)			440000
3	Annual Depreciation (Rs/yr)			198000
4	Insurance (Rs/yr)			44000
5	Taxes / Licence etc. (Rs/yr)			44000
6	Storage etc. (Rs/yr)			44000
7	Average Annual Investment			220000
8	Annual Interest Cost (Rs)			22000
9	Annual Ownership Cost (Rs)			352000
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>352.00</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			88.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			598.09
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			44.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>730.09</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>1082.09</b>

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information					
Equipment:	Bitumen Pressure Distributor		Manufactured year:	Code No:	4
Make:			Fuel Type	Fuel Oil Consumption	3.00
Model:			Fuel	Diesel (SFC):	0.16
Power (hp):	100	hp		Petrol (SFC):	0.22
Capacity:	1750	sqm/hr		Load factor(FF):	0.8
Purchase / Estimated Price (PP):	6500000			Time factor(TF):	0.8
Useful Life (N):	20		Electric	Fuel Rate :	97.34513
Total Useful life Hours (H):	20000			Fuel Consumption:	10.24
Uses Hours per year (h):	1000			Energy consumed:	
Tyre cost per unit (Ct):	40000			Electric Charge:	
Total no. of Tyres (tn):	6			Energy consumed rate	
Tyre replacement costs (TRC):	240000			Repair factor (RF):	0.4
Tyre Average Life (hrs) (TL):	3000			Servicing factor (SF):	0.2
Special wear item cost (SWIC):				Fuel Oil Rate	97.34513
Interest Rate (IR):	10%				
Operator M'thly Salary + Allw'nce(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			6260000	
2	Estimated Salvage Value (S) (Rs)			650000	
3	Annual Depreciation (Rs/yr)			280500	
4	Insurance (Rs/yr)			65000	
5	Taxes / Licence etc. (Rs/yr)			65000	
6	Storage etc. (Rs/yr)				
7	Average Annual Investment			325000	
8	Annual Interest Cost (Rs)			32500	
9	Annual Ownership Cost (Rs)			443000	
10	Estimated Hourly Ownership Cost (Rs/hr)			443.00	
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)			125.20	
12	Tyre Replacement Cost (Rs/hr)			51.03	
13	Fuel Cost (Rs/hr)			996.81	
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			62.60	
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00	
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00	
17	Estimated Hourly Operating Cost (Rs/hr)			1235.65	
18	Total Hourly Owning and Operating Cost (Rs/hr)			1678.65	

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information					
Equipment:	Bitumen Boiler Oil Fired		Manufactured year:		Code No: 5
Make:			Fuel Type	Fuel Oil Consumption	2.00 (L/hr)
Model:			Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	25	hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	1500	ltr		Load factor(FF):	0.7
Purchase / Estimated Price (PP):	500000			Time factor(TF):	0.7
Useful Life (N):	20			Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Energy consumed:	1.96 (L/hr)	
Uses Hours per year (h):	750		Electric Charge:	(kwh)	
Tyre cost per unit (Ct):			Electric	Energy consumed rate	(Rs/unit)
Total no. of Tyres (tn):					(unit/hr)
Tyre replacement costs (TRC):	0				
Tyre Average Life (hrs) (TL):				Repair factor (RF):	0.25
Special wear item cost (SWIC):				Servicing factor (SF):	0.1
Interest Rate (IR):	10%			Fuel Oil Rate	97.34513
Operator M'thly Salary + Allw'nce(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)				500000
2	Estimated Salvage Value (S) (Rs)				50000
3	Annual Depreciation (Rs/yr)				22500
4	Insurance (Rs/yr)				5000
5	Taxes / Licence etc. (Rs/yr)				
6	Storage etc. (Rs/yr)				
7	Average Annual Investment				25000
8	Annual Interest Cost (Rs)				2500
9	Annual Ownership Cost (Rs)				30000
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>				<b>40.00</b>
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)				8.33
12	Tyre Replacement Cost (Rs/hr)				0.00
13	Fuel Cost (Rs/hr)				190.80
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)				3.33
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)				0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)				0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>				<b>202.46</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>				<b>242.46</b>

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Concrete Pump		Manufactured year:	Code No.: 7
Make:			Fuel Type	
Model:			Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	25	hp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	30-40	cum/hr	Load factor(FF):	0.9
Purchase / Estimated Price (PP):	400000		Time factor(TF):	0.85
Useful Life (N):	10		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	8000		Fuel Consumption:	3.06 (L/hr)
Uses Hours per year (h):	800		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	0		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	0		Repair factor (RF):	0.2
Tyre Average Life (hrs) (TL):	0		Servicing factor (SF):	0.1
Special wear item cost (SWIC):			Interest Rate (IR):	10%
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			400000
2	Estimated Salvage Value (S) (Rs)			40000
3	Annual Depreciation (Rs/yr)			36000
4	Insurance (Rs/yr)			4000
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			238000
8	Annual Interest Cost (Rs)			23800
9	Annual Ownership Cost (Rs)			63800
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>79.75</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			10.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			297.88
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			5.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>312.88</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>392.63</b>



**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Concrete Mixture	Manufactured year:	Code No.	9
Make:		Fuel Type		
Model:			Diesel (SFC):	0.6 (ltr/hp-hr)
Power (hp):	5 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	0.4 cum	Fuel	Load factor(FF):	0.8
Purchase / Estimated Price (PP):	400000		Time factor(TF):	0.8
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	1.92 (L/hr)
Uses Hours per year (h):	1000	Electric	Energy consumed:	(kwh)
Tyre cost per unit (Ct):	0		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):	0		Repair factor (RF):	0.4
Special wear item cost (SWIC):			Servicing factor (SF):	0.1
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			400000
2	Estimated Salvage Value (S) (Rs)			40000
3	Annual Depreciation (Rs/yr)			24000
4	Insurance (Rs/yr)			4000
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			26667
8	Annual Interest Cost (Rs)			2667
9	Annual Ownership Cost (Rs)			30667
10	Estimated Hourly Ownership Cost (Rs/hr)			30.67
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			10.67
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			186.90
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			2.67
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			200.24
18	Total Hourly Owning and Operating Cost (Rs/hr)			230.90

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Crane		Manufactured year:	Code No. 13
Make:			Fuel Type	
Model:			Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	75	hp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	3	ton	Load factor(FF):	0.75
Purchase / Estimated Price (PP):	6500000		Time factor(TF):	0.75
Useful Life (N):	20		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	6.75 (L/hr)
Uses Hours per year (h):	750		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	30000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	4		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	120000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.4
Special wear item cost (SWIC):			Servicing factor (SF):	0.25
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			6380000
2	Estimated Salvage Value (S) (Rs)			650000
3	Annual Depreciation (Rs/yr)			286500
4	Insurance (Rs/yr)			65000
5	Taxes / Licence etc. (Rs/yr)			65000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			325000
8	Annual Interest Cost (Rs)			32500
9	Annual Ownership Cost (Rs)			449000
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>598.67</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			170.13
12	Tyre Replacement Cost (Rs/hr)			42.21
13	Fuel Cost (Rs/hr)			657.08
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			106.33
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>975.75</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>1574.42</b>

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Dozer Track		Manufactured year:	Code No. 15
Make:	Komatsu		Fuel Type	
Model:	D53E		Fuel	Diesel (SFC): 0.16 (ltr/hp-hr)
Power (hp):	130	hp		Petrol (SFC): 0.22 (ltr/hp-hr)
Capacity:	200/120/150	cum/hr		Load factor(FF): 0.85
Purchase / Estimated Price (PP):	15000000			Time factor(TF): 0.8
Useful Life (N):	15		Electric	Fuel Rate : 97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000			Fuel Consumption: 14.14 (L/hr)
Uses Hours per year (h):	1000		Electric	Energy consumed: (kwh)
Tyre cost per unit (Ct):				Electric Charge: (Rs/unit)
Total no. of Tyres (tn):				Energy consumed rate (unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF): 0.55	
Special wear item cost (SWIC):	80000		Servicing factor (SF): 0.33	
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			15000000
2	Estimated Salvage Value (S) (Rs)			1500000
3	Annual Depreciation (Rs/yr)			900000
4	Insurance (Rs/yr)			150000
5	Taxes / Licence etc. (Rs/yr)			150000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			1000000
8	Annual Interest Cost (Rs)			100000
9	Annual Ownership Cost (Rs)			1300000
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>1300.00</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			550.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			1376.85
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			330.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			80.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>2336.85</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>3636.85</b>

**OWNING AND OPERATING COST ANALYSIS**

<b>Machine's Basic Information</b>				
Equipment:	Front End Loader, Wheeled	Manufactured year:	Code No.	17
Make:	Komatsu/Equivalent	Fuel Type		
Model:	WA95/Equivalent	Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	90 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	60/25 cum/hr		Load factor(FF):	0.85
Purchase / Estimated Price (PP):	6500000		Time factor(TF):	0.8
Useful Life (N):	15	Electric	Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	9.79 (L/hr)
Uses Hours per year (h):	1000		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	75000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	4		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	300000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.55
Special wear item cost (SWIC):	60000		Servicing factor (SF):	0.33
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
<b>OWNERSHIP COSTS</b>				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			6200000
2	Estimated Salvage Value (S) (Rs)			650000
3	Annual Depreciation (Rs/yr)			370000
4	Insurance (Rs/yr)			65000
5	Taxes / Licence etc. (Rs/yr)			65000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			433333
8	Annual Interest Cost (Rs)			43333
9	Annual Ownership Cost (Rs)			543333
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>543.33</b>
<b>OPERATION COSTS</b>				
11	Repair and Maintenance Cost (Rs/hr)			227.33
12	Tyre Replacement Cost (Rs/hr)			79.14
13	Fuel Cost (Rs/hr)			953.20
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			136.40
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			60.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>1456.08</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>1999.41</b>

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information					
Equipment:	Hotmix Plant		Manufactured year:	Code No.	24
Make:			Fuel Type	Fuel Oil Consumption	5.00
Model:			Fuel	Diesel (SFC):	0.16
Power (hp):	60	hp		Petrol (SFC):	0.22
Capacity:	40	ton/hr		Load factor(FF):	0.8
Purchase / Estimated Price (PP):	6500000			Time factor(TF):	0.9
Useful Life (N):	20			Fuel Rate :	97.3451327
Total Useful life Hours (H):	15000		Fuel Consumption:	6.912	(Rs/ltr) (L/hr)
Uses Hours per year (h):	750		Energy consumed:	15	(kwh)
Tyre cost per unit (Ct):			Electric Charge:	12	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	15	(unit/hr)
Tyre replacement costs (TRC):	0				
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.4	
Special wear item cost (SWIC):			Servicing factor (SF):	0.25	
Interest Rate (IR):	10%		Fuel Oil Rate	97.3451327	(Rs/ltr)
Operator M'thly Salary + Allw'nce(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)				6500000
2	Estimated Salvage Value (S) (Rs)				650000
3	Annual Depreciation (Rs/yr)				292500
4	Insurance (Rs/yr)				65000
5	Taxes / Licence etc. (Rs/yr)				65000
6	Storage etc. (Rs/yr)				65000
7	Average Annual Investment				325000
8	Annual Interest Cost (Rs)				32500
9	Annual Ownership Cost (Rs)				520000
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>				<b>693.33</b>
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)				173.33
12	Tyre Replacement Cost (Rs/hr)				0.00
13	Fuel Cost (Rs/hr)				852.85
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)				108.33
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)				0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)				0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>				<b>1134.52</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>				<b>1827.85</b>

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Hydraulic Excavator	Manufactured year:	Code No.	27
Make:		Fuel Type		
Model:		Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	150 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	1 cum		Load factor (FF):	0.75
Purchase / Estimated Price (PP):	9000000		Time factor (TF):	0.8
Useful Life (N):	12	Electric	Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	18000		Fuel Consumption:	14.40 (L/hr)
Uses Hours per year (h):	1500		Energy consumed:	(kwh)
Tyre cost per unit (Ct):			Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.55
Special wear item cost (SWIC):	40000		Servicing factor (SF):	0.33
Interest Rate (IR):	10%			
Operator M'thly Salary + Allowance (OS)				

**OWNERSHIP COSTS**

1	Purchase Price less tyre (P) (Rs) (Including accessories and installation)	9000000
2	Estimated Salvage Value (S) (Rs)	900000
3	Annual Depreciation (Rs/yr)	675000
4	Insurance (Rs/yr)	90000
5	Taxes / Licence etc. (Rs/yr)	90000
6	Storage etc. (Rs/yr)	
7	Average Annual Investment	750000
8	Annual Interest Cost (Rs)	75000
9	Annual Ownership Cost (Rs)	930000
10	Estimated Hourly Ownership Cost (Rs/hr)	620.00

**OPERATION COSTS**

11	Repair and Maintenance Cost (Rs/hr)	275.00
12	Tyre Replacement Cost (Rs/hr)	0.00
13	Fuel Cost (Rs/hr)	1401.77
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)	165.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)	26.67
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)	0.00
17	Estimated Hourly Operating Cost (Rs/hr)	1868.44
18	Total Hourly Owning and Operating Cost (Rs/hr)	2488.44



**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information					
Equipment:	Mastik Cooker		Manufactured year:	Code No.	32
Make:			Fuel Type	Fuel Oil Consumption	5.00 ltr/ton
Model:			Fuel	Diesel (SFC):	0.4 (ltr/hp-hr)
Power (hp):	10	hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	1	ton/hr		Load factor(FF):	0.8
Purchase / Estimated Price (PP):	800000			Time factor(TF):	0.9
Useful Life (N):	15			Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	2.88 (L/hr)	
Uses Hours per year (h):	1000		Electric	Energy consumed:	1 (kwh)
Tyre cost per unit (Ct):				Electric Charge:	12 (Rs/unit)
Total no. of Tyres (tn):				Energy consumed rate	8.64 (unit/hr)
Tyre replacement costs (TRC):	0				
Tyre Average Life (hrs) (TL):				Repair factor (RF):	0.3
Special wear item cost (SWIC):			Servicing factor (SF):	0.1	
Interest Rate (IR):	10%		Fuel Oil Rate	97.34513 (Rs/ltr)	
Operator M'thly Salary + Allw'nce(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)				800000
2	Estimated Salvage Value (S) (Rs)				80000
3	Annual Depreciation (Rs/yr)				48000
4	Insurance (Rs/yr)				8000
5	Taxes / Licence etc. (Rs/yr)				8000
6	Storage etc. (Rs/yr)				
7	Average Annual Investment				53333
8	Annual Interest Cost (Rs)				5333
9	Annual Ownership Cost (Rs)				69333
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>				<b>69.33</b>
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)				16.00
12	Tyre Replacement Cost (Rs/hr)				0.00
13	Fuel Cost (Rs/hr)				292.35
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)				5.33
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)				0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)				0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>				<b>313.69</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>				<b>383.02</b>

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Mechanical Broom Hydraulic		Manufactured year:	Code No. 33
Make:			Fuel Type	
Model:			Fuel	Diesel (SFC): 0.4 (ltr/hp-hr)
Power (hp):	25	hp		Petrol (SFC): 0.22 (ltr/hp-hr)
Capacity:	1250	sqm/hr		Load factor(FF): 0.8
Purchase / Estimated Price (PP):	3500000			Time factor(TF): 0.8
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	6.40 (L/hr)
Uses Hours per year (h):	1000		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	25000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	4		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	100000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.3
Special wear item cost (SWIC):	100000		Servicing factor (SF):	0.15
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			3400000
2	Estimated Salvage Value (S) (Rs)			350000
3	Annual Depreciation (Rs/yr)			203333
4	Insurance (Rs/yr)			35000
5	Taxes / Licence etc. (Rs/yr)			35000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			233333
8	Annual Interest Cost (Rs)			23333
9	Annual Ownership Cost (Rs)			296667
10	Estimated Hourly Ownership Cost (Rs/hr)			296.67
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			68.00
12	Tyre Replacement Cost (Rs/hr)			26.38
13	Fuel Cost (Rs/hr)			623.01
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			34.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			100.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			851.39
18	Total Hourly Owning and Operating Cost (Rs/hr)			1148.06

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Motor Grader	Manufactured year:	Code No.	34
Make:	Komatsu/Equivalent	Fuel Type		
Model:	GD300A/ Equivalent	Fuel	Diesel (SFC):	0.1 (ltr/hp-hr)
Power (hp):	120 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	200/200/50 cum/hr		Load factor(FF):	0.85
Purchase / Estimated Price (PP):	12000000		Time factor(TF):	0.85
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	8.67 (L/hr)
Uses Hours per year (h):	1000	Electric	Energy consumed:	(kwh)
Tyre cost per unit (Ct):	60000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	6		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	360000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.33
Special wear item cost (SWIC):	200000		Servicing factor (SF):	0.33
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			11640000
2	Estimated Salvage Value (S) (Rs)			1200000
3	Annual Depreciation (Rs/yr)			696000
4	Insurance (Rs/yr)			120000
5	Taxes / Licence etc. (Rs/yr)			120000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			800000
8	Annual Interest Cost (Rs)			80000
9	Annual Ownership Cost (Rs)			1016000
10	Estimated Hourly Ownership Cost (Rs/hr)			1016.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			256.08
12	Tyre Replacement Cost (Rs/hr)			94.97
13	Fuel Cost (Rs/hr)			843.98
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			256.08
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			200.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			1651.11
18	Total Hourly Owning and Operating Cost (Rs/hr)			2667.11

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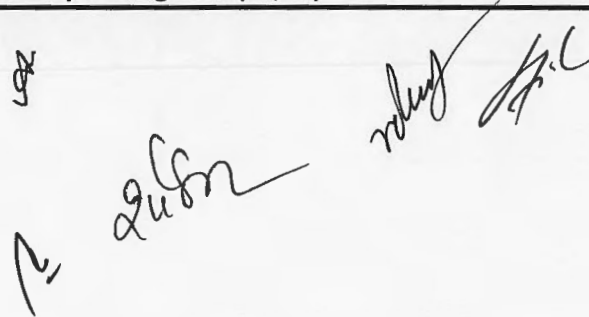
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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Mobile slurry seal equipment	Manufactured year:	Code No.	35
Make:		Fuel Type		
Model:		Fuel	Diesel (SFC):	0.12 (ltr/hp-hr)
Power (hp):	70 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	2700 sqm/hr		Load factor(FF):	0.85
Purchase / Estimated Price (PP):	2500000		Time factor(TF):	0.85
Useful Life (N):	15	Electric	Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	6.07 (L/hr)
Uses Hours per year (h):	1000		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	20000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	4		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	80000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.4
Special wear item cost (SWIC):			Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			2420000
2	Estimated Salvage Value (S) (Rs)			250000
3	Annual Depreciation (Rs/yr)			144667
4	Insurance (Rs/yr)			25000
5	Taxes / Licence etc. (Rs/yr)			25000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			166667
8	Annual Interest Cost (Rs)			16667
9	Annual Ownership Cost (Rs)			211333
10	Estimated Hourly Ownership Cost (Rs/hr)			211.33
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			64.53
12	Tyre Replacement Cost (Rs/hr)			21.10
13	Fuel Cost (Rs/hr)			590.79
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			32.27
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			708.69
18	Total Hourly Owning and Operating Cost (Rs/hr)			920.02

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Paver finisher mechanical		Manufactured year:	Code No. 37
Make:			Fuel Type	
Model:			Fuel	Diesel (SFC): 0.06 (ltr/hp-hr)
Power (hp):	160	hp		Petrol (SFC): 0.22 (ltr/hp-hr)
Capacity:	100	ton/hr		Load factor(FF): 0.85
Purchase / Estimated Price (PP):	9000000			Time factor(TF): 0.85
Useful Life (N):	15			Fuel Rate : 97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000			Fuel Consumption: 6.94 (L/hr)
Uses Hours per year (h):	1000			Energy consumed: (kwh)
Tyre cost per unit (Ct):	20000			Electric Charge: (Rs/unit)
Total no. of Tyres (tn):	4			Energy consumed rate (unit/hr)
Tyre replacement costs (TRC):	80000			
Tyre Average Life (hrs) (TL):	10000		Repair factor (RF): 0.4	
Special wear item cost (SWIC):			Servicing factor (SF): 0.2	
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			8920000
2	Estimated Salvage Value (S) (Rs)			900000
3	Annual Depreciation (Rs/yr)			534667
4	Insurance (Rs/yr)			90000
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			90000
7	Average Annual Investment			600000
8	Annual Interest Cost (Rs)			60000
9	Annual Ownership Cost (Rs)			774667
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>774.67</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			237.87
12	Tyre Replacement Cost (Rs/hr)			60.05
13	Fuel Cost (Rs/hr)			675.19
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			118.93
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>1092.04</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>1866.71</b>





**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Piling Rig with Bantonite pump		Manufactured year:	Code No. 38
Make:			Fuel Type	
Model:			Fuel	Diesel (SFC): 0.1 (ltr/hp-hr)
Power (hp):	160	hp		Petrol (SFC): 0.22 (ltr/hp-hr)
Capacity:	2	RM/hr		Load factor (FF): 0.7
Purchase / Estimated Price (PP):	40000000			Time factor (TF): 0.7
Useful Life (N):	10		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	30000		Fuel Consumption:	7.84 (L/hr)
Uses Hours per year (h):	3000		Energy consumed:	(kwh)
Tyre cost per unit (Ct):			Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.2
Special wear item cost (SWIC):	500000		Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			40000000
2	Estimated Salvage Value (S) (Rs)			4000000
3	Annual Depreciation (Rs/yr)			3600000
4	Insurance (Rs/yr)			400000
5	Taxes / Licence etc. (Rs/yr)			400000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			4000000
8	Annual Interest Cost (Rs)			400000
9	Annual Ownership Cost (Rs)			4800000
10	Estimated Hourly Ownership Cost (Rs/hr)			1600.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			266.67
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			763.19
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			266.67
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			166.67
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			1463.19
18	Total Hourly Owning and Operating Cost (Rs/hr)			3063.19

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Pneumatic Road Roller	Manufactured year:	Code No.	39
Make:		Fuel Type		
Model:		Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	80 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	25 cum/hr		Load factor(FF):	0.8
Purchase / Estimated Price (PP):	6000000		Time factor(TF):	0.8
Useful Life (N):	20	Electric	Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	8.19 (L/hr)
Uses Hours per year (h):	750		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	40000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	8		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	320000			
Tyre Average Life (hrs) (TL):	6000		Repair factor (RF):	0.25
Special wear item cost (SWIC):	0		Servicing factor (SF):	0.15
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			5680000
2	Estimated Salvage Value (S) (Rs)			600000
3	Annual Depreciation (Rs/yr)			254000
4	Insurance (Rs/yr)			60000
5	Taxes / Licence etc. (Rs/yr)			60000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			300000
8	Annual Interest Cost (Rs)			30000
9	Annual Ownership Cost (Rs)			404000
10	Estimated Hourly Ownership Cost (Rs/hr)			538.67
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			94.67
12	Tyre Replacement Cost (Rs/hr)			201.24
13	Fuel Cost (Rs/hr)			797.45
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			56.80
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			1150.16
18	Total Hourly Owning and Operating Cost (Rs/hr)			1688.83

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	stressing jack with pump & acc		Manufactured year:	Code No. 41
Make:			Fuel Type	
Model:			Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	10	Ehp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:		RM/hr	Load factor (FF):	0.9
Purchase / Estimated Price (PP):	400000		Time factor (TF):	0.85
Useful Life (N):	10		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	5000		Fuel Consumption:	1.10 (L/hr)
Uses Hours per year (h):	500		Energy consumed:	1 (kwh)
Tyre cost per unit (Ct):			Electric Charge:	12 (Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	12 (unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.25
Special wear item cost (SWIC):			Servicing factor (SF):	0.1
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			400000
2	Estimated Salvage Value (S) (Rs)			40000
3	Annual Depreciation (Rs/yr)			36000
4	Insurance (Rs/yr)			4000
5	Taxes / Licence etc. (Rs/yr)			4000
6	Storage etc. (Rs/yr)			4000
7	Average Annual Investment			40000
8	Annual Interest Cost (Rs)			4000
9	Annual Ownership Cost (Rs)			52000
10	Estimated Hourly Ownership Cost (Rs/hr)			104.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			20.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			12.00
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			8.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			40.00
18	Total Hourly Owning and Operating Cost (Rs/hr)			144.00

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Road Marking Machine		Manufactured year:	Code No. 44
Make:			Fuel Type	Fuel Oil Consumption 2.00 ltr/hr
Model:			Fuel	Diesel (SFC): 0.16 (ltr/hp-hr)
Power (hp):	10	hp		Petrol (SFC): 0.22 (ltr/hp-hr)
Capacity:	100	sqm/hr	Electric	Load factor (FF): 0.9
Purchase / Estimated Price (PP):	500000			Time factor (TF): 0.9
Useful Life (N):	10			Fuel Rate: 97.34513 (Rs/ltr)
Total Useful life Hours (H):	6000			Fuel Consumption: 1.296 (L/hr)
Uses Hours per year (h):	600			Energy consumed: (kwh)
Tyre cost per unit (Ct):				Electric Charge: (Rs/unit)
Total no. of Tyres (tn):				Energy consumed rate 0 (unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):				Repair factor (RF): 0.25
Special wear item cost (SWIC):				Servicing factor (SF): 0.1
Interest Rate (IR):	10%			Fuel Oil Rate 97.34513 (Rs/ltr)
Operator M'thly Salary + Allw'nce (OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			500000
2	Estimated Salvage Value (S) (Rs)			50000
3	Annual Depreciation (Rs/yr)			45000
4	Insurance (Rs/yr)			5000
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			50000
8	Annual Interest Cost (Rs)			5000
9	Annual Ownership Cost (Rs)			55000
10	Estimated Hourly Ownership Cost (Rs/hr)			91.67
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			20.83
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			126.16
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			8.33
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			155.33
18	Total Hourly Owning and Operating Cost (Rs/hr)			246.99

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Smooth Wheeled Roller	Manufactured year:	Code No.	45
Make:		Fuel Type		
Model:	8 ton	Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	60 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	70/25 cum/hr		Load factor(FF):	0.75
Purchase / Estimated Price (PP):	4000000		Time factor(TF):	0.75
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	30000	Electric	Fuel Consumption:	5.40 (L/hr)
Uses Hours per year (h):	2000		Energy consumed:	(kwh)
Tyre cost per unit (Ct):			Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):		Repair factor (RF):	0.3	
Special wear item cost (SWIC):		Servicing factor (SF):	0.1	
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			4000000
2	Estimated Salvage Value (S) (Rs)			400000
3	Annual Depreciation (Rs/yr)			240000
4	Insurance (Rs/yr)			40000
5	Taxes / Licence etc. (Rs/yr)			40000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			266667
8	Annual Interest Cost (Rs)			26667
9	Annual Ownership Cost (Rs)			346667
10	Estimated Hourly Ownership Cost (Rs/hr)			173.33
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			40.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			525.66
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			13.33
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			579.00
18	Total Hourly Owing and Operating Cost (Rs/hr)			752.33

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Smooth Wheeled Roller		Manufactured year:	Code No. 45
Make:			Fuel Type	
Model:	8 ton		Fuel	Diesel (SFC): 0.16 (ltr/hp-hr)
Power (hp):	60	hp		Petrol (SFC): 0.22 (ltr/hp-hr)
Capacity:	70/25	cum/hr		Load factor(FF): 0.75
Purchase / Estimated Price (PP):	4000000			Time factor(TF): 0.75
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	30000		Fuel Consumption:	5.40 (L/hr)
Uses Hours per year (h):	2000		Energy consumed:	(kwh)
Tyre cost per unit (Ct):			Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.3
Special wear item cost (SWIC):			Servicing factor (SF):	0.1
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				

**OWNERSHIP COSTS**

1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)	4000000
2	Estimated Salvage Value (S) (Rs)	400000
3	Annual Depreciation (Rs/yr)	240000
4	Insurance (Rs/yr)	40000
5	Taxes / Licence etc. (Rs/yr)	40000
6	Storage etc. (Rs/yr)	
7	Average Annual Investment	266667
8	Annual Interest Cost (Rs)	26667
9	Annual Ownership Cost (Rs)	346667
10	Estimated Hourly Ownership Cost (Rs/hr)	173.33

**OPERATION COSTS**

11	Repair and Maintenance Cost (Rs/hr)	40.00
12	Tyre Replacement Cost (Rs/hr)	0.00
13	Fuel Cost (Rs/hr)	525.66
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)	13.33
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)	0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)	0.00
17	Estimated Hourly Operating Cost (Rs/hr)	579.00
18	Total Hourly Owning and Operating Cost (Rs/hr)	752.33

### OWNING AND OPERATING COST ANALYSIS

Machine's Basic Information				
Equipment:	Tipper Truck		Manufactured year:	Code No. 47
Make:			Fuel Type	
Model:	(8 ton)		Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	100	hp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	5.5	cum/hr	Load factor(FF):	0.65
Purchase / Estimated Price (PP):	3500000		Time factor(TF):	0.65
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	30000		Fuel Consumption:	6.76 (L/hr)
Uses Hours per year (h):	2000		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	20000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	6		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	120000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.4
Special wear item cost (SWIC):			Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			3380000
2	Estimated Salvage Value (S) (Rs)			350000
3	Annual Depreciation (Rs/yr)			202000
4	Insurance (Rs/yr)			35000
5	Taxes / Licence etc. (Rs/yr)			35000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			233333
8	Annual Interest Cost (Rs)			23333
9	Annual Ownership Cost (Rs)			295333
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>147.67</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			45.07
12	Tyre Replacement Cost (Rs/hr)			9.76
13	Fuel Cost (Rs/hr)			658.05
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			22.53
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>735.42</b>
18	<b>Total Hourly Owing and Operating Cost (Rs/hr)</b>			<b>883.08</b>

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Tractor with Ripper	Manufactured year:	Code No.	52
Make:		Fuel Type		
Model:		Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	50 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	50 HP		Load factor(FF):	0.75
Purchase / Estimated Price (PP):	2000000		Time factor(TF):	0.75
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	30000		Fuel Consumption:	4.50 (L/hr)
Uses Hours per year (h):	2000	Electric	Energy consumed:	(kwh)
Tyre cost per unit (Ct):	25000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	4		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	100000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.4
Special wear item cost (SWIC):	10000		Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allowance(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			1900000
2	Estimated Salvage Value (S) (Rs)			200000
3	Annual Depreciation (Rs/yr)			113333
4	Insurance (Rs/yr)			20000
5	Taxes / Licence etc. (Rs/yr)			20000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			133333
8	Annual Interest Cost (Rs)			13333
9	Annual Ownership Cost (Rs)			166667
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>83.33</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			25.33
12	Tyre Replacement Cost (Rs/hr)			8.14
13	Fuel Cost (Rs/hr)			438.05
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			12.67
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			5.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>489.19</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>572.52</b>

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Vibratory Roller		Manufactured year:	Code No. 56
Make:			Fuel Type	
Model:	10 ton		Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	100	hp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	11	ton.km	Load factor(FF):	0.7
Purchase / Estimated Price (PP):	5000000		Time factor(TF):	0.65
Useful Life (N):	20		Fuel Rate :	97.3451327 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	7.28 (L/hr)
Uses Hours per year (h):	750		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	40000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	2		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	80000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.4
Special wear item cost (SWIC):			Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			4920000
2	Estimated Salvage Value (S) (Rs)			500000
3	Annual Depreciation (Rs/yr)			221000
4	Insurance (Rs/yr)			50000
5	Taxes / Licence etc. (Rs/yr)			50000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			250000
8	Annual Interest Cost (Rs)			25000
9	Annual Ownership Cost (Rs)			346000
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>461.33</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			131.20
12	Tyre Replacement Cost (Rs/hr)			28.14
13	Fuel Cost (Rs/hr)			708.67
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			65.60
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>933.61</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>1394.94</b>

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Water Tanker		Manufactured year:	Code No. 57
Make:			Fuel Type	
Model:			Diesel (SFC):	0.12 (ltr/hp-hr)
Power (hp):	100	hp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	6	KL	Load factor(FF):	0.6
Purchase / Estimated Price (PP):	3000000		Time factor(TF):	0.6
Useful Life (N):	20		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	4.32 (L/hr)
Uses Hours per year (h):	750		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	25000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	6		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	150000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.3
Special wear item cost (SWIC):			Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			2850000
2	Estimated Salvage Value (S) (Rs)			300000
3	Annual Depreciation (Rs/yr)			127500
4	Insurance (Rs/yr)			30000
5	Taxes / Licence etc. (Rs/yr)			30000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			150000
8	Annual Interest Cost (Rs)			15000
9	Annual Ownership Cost (Rs)			202500
10	Estimated Hourly Ownership Cost (Rs/hr)			270.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			57.00
12	Tyre Replacement Cost (Rs/hr)			52.76
13	Fuel Cost (Rs/hr)			420.53
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			38.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			568.29
18	Total Hourly Owning and Operating Cost (Rs/hr)			838.29

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Crane		Manufactured year:	Code No. 62
Make:			Fuel Type	
Model:	Rough terrian (10 ton)		Diesel (SFC):	0.1 (ltr/hp-hr)
Power (hp):	180	hp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	10	ton	Load factor(FF):	0.75
Purchase / Estimated Price (PP):	9000000		Time factor(TF):	0.75
Useful Life (N):	20		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	10.125 (L/hr)
Uses Hours per year (h):	750		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	50000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	6		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	300000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.4
Special wear item cost (SWIC):			Servicing factor (SF):	0.25
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			8700000
2	Estimated Salvage Value (S) (Rs)			900000
3	Annual Depreciation (Rs/yr)			390000
4	Insurance (Rs/yr)			90000
5	Taxes / Licence etc. (Rs/yr)			90000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			450000
8	Annual Interest Cost (Rs)			45000
9	Annual Ownership Cost (Rs)			615000
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>820.00</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			232.00
12	Tyre Replacement Cost (Rs/hr)			105.52
13	Fuel Cost (Rs/hr)			985.62
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			145.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>1468.14</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>2288.14</b>

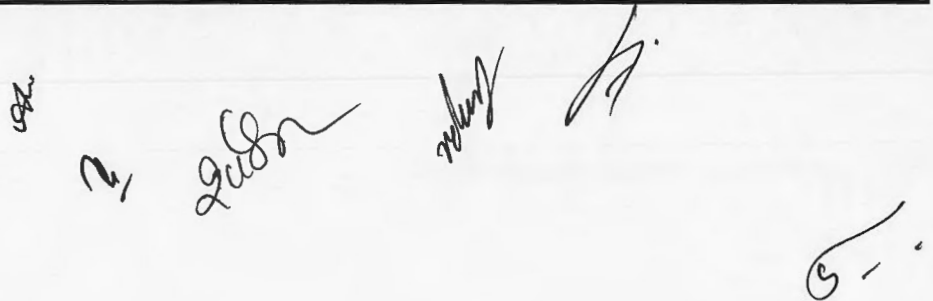


**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Crane (15 ton)		Manufactured year:	Code No. 63
Make:			Fuel Type	
Model:	Rough terrian (15 ton)		Diesel (SFC):	0.13 (ltr/hp-hr)
Power (hp):	200	hp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:		ton	Load factor (FF):	0.75
Purchase / Estimated Price (PP):	12500000		Time factor (TF):	0.75
Useful Life (N):	20		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	14.625 (L/hr)
Uses Hours per year (h):	750		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	50000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	6		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	300000			
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.4
Special wear item cost (SWIC):			Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allowance (OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			12200000
2	Estimated Salvage Value (S) (Rs)			1250000
3	Annual Depreciation (Rs/yr)			547500
4	Insurance (Rs/yr)			125000
5	Taxes / Licence etc. (Rs/yr)			125000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			625000
8	Annual Interest Cost (Rs)			62500
9	Annual Ownership Cost (Rs)			860000
10	Estimated Hourly Ownership Cost (Rs/hr)			1146.67
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			325.33
12	Tyre Replacement Cost (Rs/hr)			105.52
13	Fuel Cost (Rs/hr)			1423.67
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			162.67
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			2017.19
18	Total Hourly Owing and Operating Cost (Rs/hr)			3163.86

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Crane with grab 0.75 capacity	Manufactured year:	Code No.	67
Make:		Fuel Type		
Model:	grab 0.75 capacity	Fuel	Diesel (SFC):	0.14 (ltr/hp-hr)
Power (hp):	100 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	ton		Load factor(FF):	0.8
Purchase / Estimated Price (PP):	12000000		Time factor(TF):	0.8
Useful Life (N):	25	Electric	Fuel Rate :	97.34513274 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	8.96 (L/hr)
Uses Hours per year (h):	600		Energy consumed:	(kwh)
Tyre cost per unit (Ct):			Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.25
Special wear item cost (SWIC):	400000		Servicing factor (SF):	0.15
Interest Rate (IR):	10%			
Operator M'thly Salary + Allow'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			12000000
2	Estimated Salvage Value (S) (Rs)			1200000
3	Annual Depreciation (Rs/yr)			432000
4	Insurance (Rs/yr)			120000
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			480000
8	Annual Interest Cost (Rs)			48000
9	Annual Ownership Cost (Rs)			600000
10	Estimated Hourly Ownership Cost (Rs/hr)			1000.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			200.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			872.21
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			120.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			666.67
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			1858.88
18	Total Hourly Owning and Operating Cost (Rs/hr)			2858.88



**OWNING AND OPERATING COST ANALYSIS**

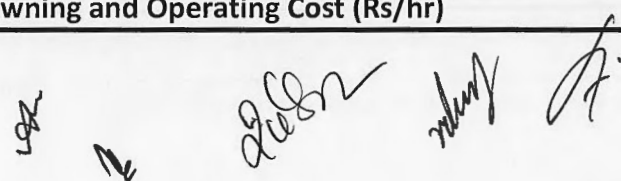
Machine's Basic Information				
Equipment:	Grouting Enjection gun		Manufactured year:	Code No. 69
Make:			Fuel Type	
Model:			Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	15	Ehp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	ton		Load factor(FF):	0.8
Purchase / Estimated Price (PP):	150000		Time factor(TF):	0.8
Useful Life (N):	5		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	2500		Fuel Consumption:	(L/hr)
Uses Hours per year (h):	500		Energy consumed:	1 (kwh)
Tyre cost per unit (Ct):			Electric Charge:	12 (Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	12 (unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.4
Special wear item cost (SWIC):			Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			150000
2	Estimated Salvage Value (S) (Rs)			15000
3	Annual Depreciation (Rs/yr)			27000
4	Insurance (Rs/yr)			1500
5	Taxes / Licence etc. (Rs/yr)			1500
6	Storage etc. (Rs/yr)			750
7	Average Annual Investment			30000
8	Annual Interest Cost (Rs)			3000
9	Annual Ownership Cost (Rs)			33750
10	Estimated Hourly Ownership Cost (Rs/hr)			67.50
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			24.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			0.00
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			12.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			36.00
18	Total Hourly Owning and Operating Cost (Rs/hr)			103.50

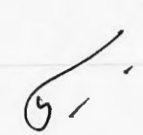
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### OWNING AND OPERATING COST ANALYSIS

Machine's Basic Information					
Equipment:	Generator		Manufactured year:	Code No.	70
Make:			Fuel Type		
Model:			Fuel	Diesel (SFC):	0.12 (ltr/hp-hr)
Power (hp):	70	hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	35	KVA		Load factor(FF):	0.6
Purchase / Estimated Price (PP):	1000000			Time factor(TF):	0.9
Useful Life (N):	15			Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000			Fuel Consumption:	4.54 (L/hr)
Uses Hours per year (h):	1000			Energy consumed:	(kwh)
Tyre cost per unit (Ct):				Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):				Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	0				
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.25	
Special wear item cost (SWIC):			Servicing factor (SF):	0.15	
Interest Rate (IR):	10%				
Operator M'thly Salary + Allowance(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)				1000000
2	Estimated Salvage Value (S) (Rs)				100000
3	Annual Depreciation (Rs/yr)				60000
4	Insurance (Rs/yr)				10000
5	Taxes / Licence etc. (Rs/yr)				
6	Storage etc. (Rs/yr)				
7	Average Annual Investment				66667
8	Annual Interest Cost (Rs)				6667
9	Annual Ownership Cost (Rs)				76667
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>				<b>76.67</b>
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)				16.67
12	Tyre Replacement Cost (Rs/hr)				0.00
13	Fuel Cost (Rs/hr)				441.56
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)				10.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)				0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)				0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>				<b>468.22</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>				<b>544.89</b>



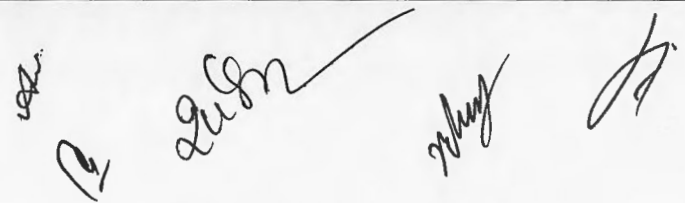


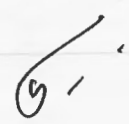
**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Jack for lifting	Manufactured year:	Code No.	74
Make:		Fuel Type		
Model:	(40 ton catagory)	Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:			Load factor (FF):	0.8
Purchase / Estimated Price (PP):	200000		Time factor (TF):	0.9
Useful Life (N):	5		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	2000		Fuel Consumption:	0.00 (L/hr)
Uses Hours per year (h):	400		Energy consumed:	(kwh)
Tyre cost per unit (Ct):			Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	0		Repair factor (RF):	0.4
Tyre Average Life (hrs) (TL):		Servicing factor (SF):	0.2	
Special wear item cost (SWIC):				
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			200000
2	Estimated Salvage Value (S) (Rs)			20000
3	Annual Depreciation (Rs/yr)			36000
4	Insurance (Rs/yr)			2000
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			40000
8	Annual Interest Cost (Rs)			4000
9	Annual Ownership Cost (Rs)			42000
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>105.00</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			40.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			0.00
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			20.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>60.00</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>165.00</b>

**OWNING AND OPERATING COST ANALYSIS**

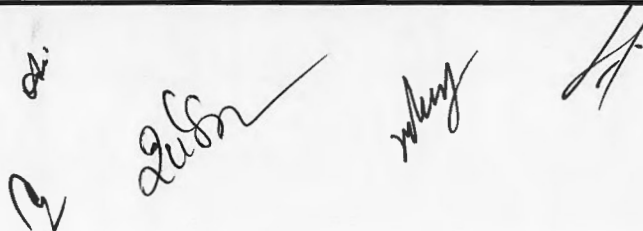
Machine's Basic Information				
Equipment:	Wet mix plant 75TPH	Manufactured year:	Code No.	81
Make:		Fuel Type		
Model:	(~75 ton/hr)	Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	ton		Load factor(FF):	0.8
Purchase / Estimated Price (PP):	5000000		Time factor(TF):	0.8
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000	Electric	Fuel Consumption:	0.00 (L/hr)
Uses Hours per year (h):	1000		Energy consumed:	30 (kwh)
Tyre cost per unit (Ct):			Electric Charge:	12 (Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	360 (unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):		Repair factor (RF):	0.3	
Special wear item cost (SWIC):		Servicing factor (SF):	0.2	
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			5000000
2	Estimated Salvage Value (S) (Rs)			500000
3	Annual Depreciation (Rs/yr)			300000
4	Insurance (Rs/yr)			50000
5	Taxes / Licence etc. (Rs/yr)			50000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			333333
8	Annual Interest Cost (Rs)			33333
9	Annual Ownership Cost (Rs)			433333
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>433.33</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			100.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			360.00
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			66.67
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>526.67</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>960.00</b>

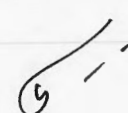




### OWNING AND OPERATING COST ANALYSIS

Machine's Basic Information					
Equipment:	Screw Jack		Manufactured year:	Code No.	86
Make:			Fuel Type		
Model:					
Power (hp):		hp	Diesel (SFC):	0.16	(ltr/hp-hr)
Capacity:			Petrol (SFC):	0.22	(ltr/hp-hr)
Purchase / Estimated Price (PP):	25000		Load factor(FF):	0.8	
Useful Life (N):	2		Time factor(TF):	0.9	
Total Useful life Hours (H):	500		Fuel Rate :	97.34513	(Rs/ltr)
Uses Hours per year (h):	250		Fuel Consumption:	0.00	(L/hr)
Tyre cost per unit (Ct):			Energy consumed:		(kwh)
Total no. of Tyres (tn):			Electric Charge:		(Rs/unit)
Tyre replacement costs (TRC):	0		Energy consumed rate		(unit/hr)
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0	
Special wear item cost (SWIC):			Servicing factor (SF):	0	
Interest Rate (IR):	10%				
Operator M'thly Salary + Allw'nce(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)				25000
2	Estimated Salvage Value (S) (Rs)				2500
3	Annual Depreciation (Rs/yr)				11250
4	Insurance (Rs/yr)				250
5	Taxes / Licence etc. (Rs/yr)				250
6	Storage etc. (Rs/yr)				125
7	Average Annual Investment				12500
8	Annual Interest Cost (Rs)				1250
9	Annual Ownership Cost (Rs)				13125
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>				<b>52.50</b>
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)				0.00
12	Tyre Replacement Cost (Rs/hr)				0.00
13	Fuel Cost (Rs/hr)				0.00
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)				0.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)				0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)				0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>				<b>0.00</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>				<b>52.50</b>





**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Electric Heating Plate	Manufactured year:	Code No.	87
Make:		Fuel Type		
Model:		Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	2 Ehp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:			Load factor(FF):	0.8
Purchase / Estimated Price (PP):	150000		Time factor(TF):	0.9
Useful Life (N):	5	Electric	Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	2500		Fuel Consumption:	(L/hr)
Uses Hours per year (h):	500		Energy consumed:	1 (kwh)
Tyre cost per unit (Ct):			Electric Charge:	12 (Rs/unit)
Total no. of Tyres (tn):			ergy consumed rate	8.64 (unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.2
Special wear item cost (SWIC):			Servicing factor (SF):	0.1
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			150000
2	Estimated Salvage Value (S) (Rs)			15000
3	Annual Depreciation (Rs/yr)			27000
4	Insurance (Rs/yr)			1500
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			30000
8	Annual Interest Cost (Rs)			3000
9	Annual Ownership Cost (Rs)			31500
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>			<b>63.00</b>
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			12.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			12.00
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			6.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>			<b>30.00</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>			<b>93.00</b>

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**OWNING AND OPERATING COST ANALYSIS**

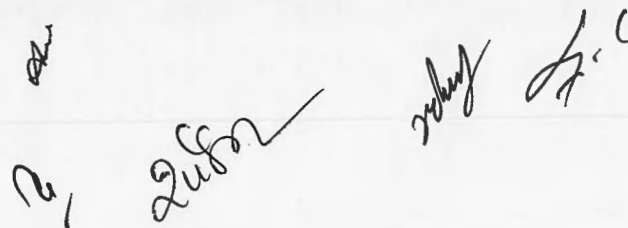
Machine's Basic Information				
Equipment:	Electric hand driller	Manufactured year:	Code No.	88
Make:		Fuel Type		
Model:		Diesel (SFC):	0.16	(ltr/hp-hr)
Power (hp):	1 Ehp	Petrol (SFC):	0.22	(ltr/hp-hr)
Capacity:		Load factor(FF):	0.8	
Purchase / Estimated Price (PP):	100000	Time factor(TF):	0.9	
Useful Life (N):	5	Fuel Rate :	97.34513	(Rs/ltr)
Total Useful life Hours (H):	1000	Fuel Consumption:		(L/hr)
Uses Hours per year (h):	200	Energy consumed:	1	(kwh)
Tyre cost per unit (Ct):		Electric Charge:	12	(Rs/unit)
Total no. of Tyres (tn):		Energy consumed rate	8.64	(unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):		Repair factor (RF):		
Special wear item cost (SWIC):	2000	Servicing factor (SF):		
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			100000
2	Estimated Salvage Value (S) (Rs)			10000
3	Annual Depreciation (Rs/yr)			18000
4	Insurance (Rs/yr)			1000
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			20000
8	Annual Interest Cost (Rs)			2000
9	Annual Ownership Cost (Rs)			21000
10	Estimated Hourly Ownership Cost (Rs/hr)			105.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			0.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			0.00
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			0.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			10.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			10.00
18	Total Hourly Owning and Operating Cost (Rs/hr)			115.00

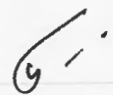


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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Bitumen/ Emulsion Sprayer		Manufactured year:	Code No. 89
Make:			Fuel Type	Fuel Oil Consumption 5.00 ltr/ton
Model:				Diesel (SFC): 0.16 (ltr/hp-hr)
Power (hp):	10	hp		Petrol (SFC): 0.22 (ltr/hp-hr)
Capacity:	1000L		Fuel	Load factor(FF): 0.8
Purchase / Estimated Price (PP):	600000			Time factor(TF): 0.9
Useful Life (N):	15			Fuel Rate : 97.34513274 (Rs/ltr)
Total Useful life Hours (H):	15000			Fuel Consumption: 1.15 (L/hr)
Uses Hours per year (h):	1000			Energy consumed: 0 (kwh)
Tyre cost per unit (Ct):			Electric	Electric Charge: 0 (Rs/unit)
Total no. of Tyres (tn):				Energy consumed rate 0 (unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):				Repair factor (RF): 0.2
Special wear item cost (SWIC):				Servicing factor (SF): 0.1
Interest Rate (IR):	10%			Fuel Oil Rate 97.34513274 (Rs/ltr)
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			600000
2	Estimated Salvage Value (S) (Rs)			60000
3	Annual Depreciation (Rs/yr)			36000
4	Insurance (Rs/yr)			6000
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			40000
8	Annual Interest Cost (Rs)			4000
9	Annual Ownership Cost (Rs)			46000
10	Estimated Hourly Ownership Cost (Rs/hr)			46.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			8.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			112.14
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			4.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			124.14
18	Total Hourly Owning and Operating Cost (Rs/hr)			170.14





**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Jack hammer/ Rock drill	Manufactured year:	Code No.	92
Make:		Fuel Type		
Model:	(Rock drilling 3.2 cum/hr)	Diesel (SFC):	0.4	(ltr/hp-hr)
Power (hp):	5 hp	Petrol (SFC):	0.22	(ltr/hp-hr)
Capacity:	3.2 cum/hr	Load factor(FF):	0.9	
Purchase / Estimated Price (PP):	100000	Time factor(TF):	0.9	
Useful Life (N):	10	Fuel Rate :	97.34513	(Rs/ltr)
Total Useful life Hours (H):	5000	Fuel Consumption:	1.62	(L/hr)
Uses Hours per year (h):	500	Energy consumed:		(kwh)
Tyre cost per unit (Ct):		Electric Charge:		(Rs/unit)
Total no. of Tyres (tn):		Energy consumed rate		(unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):		Repair factor (RF):	0.25	
Special wear item cost (SWIC):	25000	Servicing factor (SF):	0.15	
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			100000
2	Estimated Salvage Value (S) (Rs)			10000
3	Annual Depreciation (Rs/yr)			9000
4	Insurance (Rs/yr)			1000
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			10000
8	Annual Interest Cost (Rs)			1000
9	Annual Ownership Cost (Rs)			11000
10	Estimated Hourly Ownership Cost (Rs/hr)			22.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			5.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			157.70
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			3.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			50.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			215.70
18	Total Hourly Owning and Operating Cost (Rs/hr)			237.70

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information					
Equipment:	Rotary drill		Manufactured year:	Code No.	95
Make:			Fuel Type		
Model:	(6"/8"/10")		Diesel (SFC):	0.16	(ltr/hp-hr)
Power (hp):	10 hp		Petrol (SFC):	0.22	(ltr/hp-hr)
Capacity:			Load factor(FF):	0.9	
Purchase / Estimated Price (PP):	300000		Time factor(TF):	0.9	
Useful Life (N):	5		Fuel Rate :	97.34513	(Rs/ltr)
Total Useful life Hours (H):	2500		Fuel Consumption:	1.30	(L/hr)
Uses Hours per year (h):	500		Energy consumed:		(kwh)
Tyre cost per unit (Ct):			Electric Charge:		(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate		(unit/hr)
Tyre replacement costs (TRC):	0				
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.3	
Special wear item cost (SWIC):	50000		Servicing factor (SF):	0.2	
Interest Rate (IR):	10%				
Operator M'thly Salary + Allw'nce(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)				300000
2	Estimated Salvage Value (S) (Rs)				30000
3	Annual Depreciation (Rs/yr)				54000
4	Insurance (Rs/yr)				3000
5	Taxes / Licence etc. (Rs/yr)				
6	Storage etc. (Rs/yr)				
7	Average Annual Investment				60000
8	Annual Interest Cost (Rs)				6000
9	Annual Ownership Cost (Rs)				63000
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>				<b>126.00</b>
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)				36.00
12	Tyre Replacement Cost (Rs/hr)				0.00
13	Fuel Cost (Rs/hr)				126.16
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)				24.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)				100.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)				0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>				<b>286.16</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>				<b>412.16</b>

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information					
Equipment:	Bentenite Pump		Manufactured year:	Code No.	98
Make:			Fuel Type		
Model:			Diesel (SFC):	0.16	(ltr/hp-hr)
Power (hp):			Petrol (SFC):	0.22	(ltr/hp-hr)
Capacity:			Load factor(FF):	0.9	
Purchase / Estimated Price (PP):	25000		Time factor(TF):	0.9	
Useful Life (N):	2		Fuel Rate :		(Rs/ltr)
Total Useful life Hours (H):	1000		Fuel Consumption:		(L/hr)
Uses Hours per year (h):	500		Energy consumed:	2	(kwh)
Tyre cost per unit (Ct):			Electric Charge:	12	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	19.44	(unit/hr)
Tyre replacement costs (TRC):	0				
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.3	
Special wear item cost (SWIC):			Servicing factor (SF):	0.1	
Interest Rate (IR):	10%				
Operator M'thly Salary + Allw'nce(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)				25000
2	Estimated Salvage Value (S) (Rs)				2500
3	Annual Depreciation (Rs/yr)				11250
4	Insurance (Rs/yr)				250
5	Taxes / Licence etc. (Rs/yr)				
6	Storage etc. (Rs/yr)				
7	Average Annual Investment				12500
8	Annual Interest Cost (Rs)				1250
9	Annual Ownership Cost (Rs)				12750
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>				<b>25.50</b>
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)				7.50
12	Tyre Replacement Cost (Rs/hr)				0.00
13	Fuel Cost (Rs/hr)				0.00
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)				2.50
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)				0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)				0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>				<b>10.00</b>
18	<b>Total Hourly Owning and Operating Cost (Rs/hr)</b>				<b>35.50</b>

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information					
Equipment:	Chips Spreader		Manufactured year:	Code No.	98
Make:			Fuel Type		
Model:			Fuel	Diesel (SFC):	0.14 (ltr/hp-hr)
Power (hp):	140	hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	6	cum/hr		Load factor(FF):	0.6
Purchase / Estimated Price (PP):	3500000			Time factor(TF):	0.6
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)	
Total Useful life Hours (H):	22500		Fuel Consumption:	7.06 (L/hr)	
Uses Hours per year (h):	1500		Energy consumed:	(kwh)	
Tyre cost per unit (Ct):	25000		Electric Charge:	(Rs/unit)	
Total no. of Tyres (tn):	6		Electric	Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	150000				
Tyre Average Life (hrs) (TL):	3000		Repair factor (RF):	0.3	
Special wear item cost (SWIC):			Servicing factor (SF):	0.2	
Interest Rate (IR):	10%				
Operator M'thly Salary + Allw'nce(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)				3350000
2	Estimated Salvage Value (S) (Rs)				350000
3	Annual Depreciation (Rs/yr)				200000
4	Insurance (Rs/yr)				35000
5	Taxes etc. (Rs/yr)				35000
6	Taxes / Licence etc. (Rs/yr)				
7	Storage etc. (Rs/yr)				233333
8	Annual Interest Cost (Rs)				23333
9	Annual Ownership Cost (Rs)				293333
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>				<b>195.56</b>
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)				44.67
12	Tyre Replacement Cost (Rs/hr)				19.58
13	Fuel Cost (Rs/hr)				686.87
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)				29.78
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)				0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)				0.00
17	<b>Estimated Hourly Operating Cost (Rs/hr)</b>				<b>780.89</b>
18	<b>Total Hourly Owing and Operating Cost (Rs/hr)</b>				<b>976.45</b>

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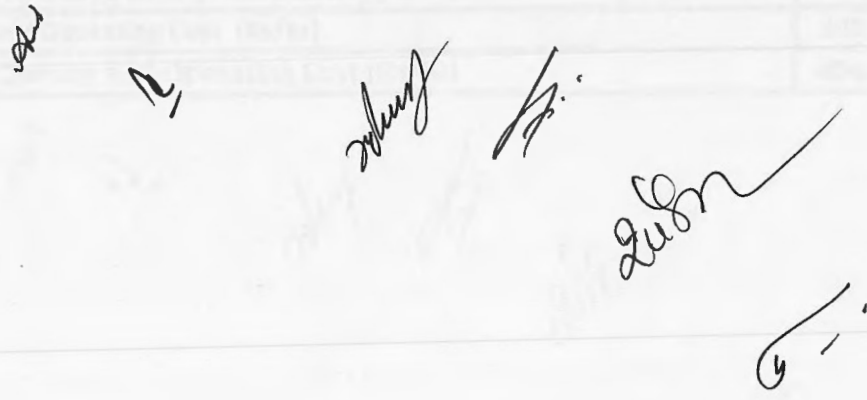
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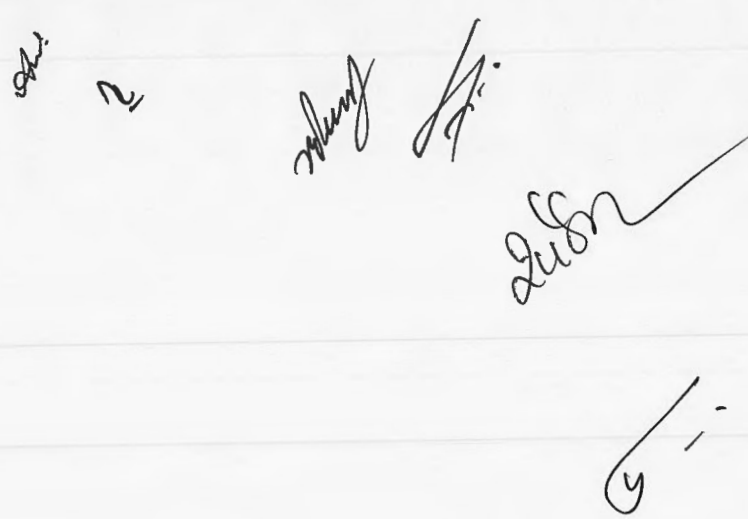
**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Grouting pum with agitator	Manufactured year:	Code No.	98
Make:		Fuel Type		
Model:		Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):			Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:			Load factor(FF):	0.9
Purchase / Estimated Price (PP):	350000		Time factor(TF):	0.9
Useful Life (N):	5		Fuel Rate :	(Rs/ltr)
Total Useful life Hours (H):	2500		Fuel Consumption:	(L/hr)
Uses Hours per year (h):	500		Energy consumed:	(kwh)
Tyre cost per unit (Ct):		Electric	Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	19.44 (unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.4
Special wear item cost (SWIC):			Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			350000
2	Estimated Salvage Value (S) (Rs)			35000
3	Annual Depreciation (Rs/yr)			63000
4	Insurance (Rs/yr)			3500
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			70000
8	Annual Interest Cost (Rs)			7000
9	Annual Ownership Cost (Rs)			73500
10	Estimated Hourly Ownership Cost (Rs/hr)			147.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			56.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			24.00
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			28.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			108.00
18	Total Hourly Owning and Operating Cost (Rs/hr)			255.00



**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information					
Equipment:	Premix Mixture		Manufactured year:	Code No.	98
Make:			Fuel Type		
Model:			Diesel (SFC):	0.15	(ltr/hp-hr)
Power (hp):	35	hp	Petrol (SFC):	0.22	(ltr/hp-hr)
Capacity:			Load factor (FF):	0.9	
Purchase / Estimated Price (PP):	1500000		Time factor (TF):	0.9	
Useful Life (N):	15		Fuel Rate :	97.34513	(Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	4.25	(L/hr)
Uses Hours per year (h):	1000		Energy consumed:		(kwh)
Tyre cost per unit (Ct):			Electric Charge:		(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	0.00	(unit/hr)
Tyre replacement costs (TRC):	0				
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.25	
Special wear item cost (SWIC):			Servicing factor (SF):	0.25	
Interest Rate (IR):	10%				
Operator M'thly Salary + Allw'nce(OS)					
OWNERSHIP COSTS					
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)				1500000
2	Estimated Salvage Value (S) (Rs)				150000
3	Annual Depreciation (Rs/yr)				90000
4	Insurance (Rs/yr)				15000
5	Taxes / Licence etc. (Rs/yr)				
6	Storage etc. (Rs/yr)				
7	Average Annual Investment				100000
8	Annual Interest Cost (Rs)				10000
9	Annual Ownership Cost (Rs)				115000
10	Estimated Hourly Ownership Cost (Rs/hr)				115.00
OPERATION COSTS					
11	Repair and Maintenance Cost (Rs/hr)				25.00
12	Tyre Replacement Cost (Rs/hr)				0.00
13	Fuel Cost (Rs/hr)				413.96
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)				25.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)				0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)				0.00
17	Estimated Hourly Operating Cost (Rs/hr)				463.96
18	Total Hourly Owing and Operating Cost (Rs/hr)				578.96





**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Cutter(Bitumen Pavement/RCC Cutter)		Manufactured year:	Code No. 98
Make:			Fuel Type	
Model:			Diesel (SFC):	0.15 (ltr/hp-hr)
Power (hp):	10	hp	Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:			Load factor(FF):	0.9
Purchase / Estimated Price (PP):	200000		Time factor(TF):	0.9
Useful Life (N):	5		Fuel Rate :	97 (Rs/ltr)
Total Useful life Hours (H):	5000		Fuel Consumption:	1.22 (L/hr)
Uses Hours per year (h):	1000		Energy consumed:	(kwh)
Tyre cost per unit (Ct):			Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	0.00 (unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.3
Special wear item cost (SWIC):	30000		Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			200000
2	Estimated Salvage Value (S) (Rs)			20000
3	Annual (Rs/yr)			36000
4	Insurance (Rs/yr)			
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			40000
8	Annual Interest Cost (Rs)			4000
9	Annual Ownership Cost (Rs)			40000
10	Estimated Hourly Ownership Cost (Rs/hr)			40.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			12.00
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			118.27
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			8.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			30.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			168.27
18	Total Hourly Owing and Operating Cost (Rs/hr)			208.27

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Plate Compactor	Manufactured year:	Code No.	76
Make:		Fuel Type		
Model:		Diesel (SFC):	0.1	(ltr/hp-hr)
Power (hp):	18 hp	Petrol (SFC):	0.22	(ltr/hp-hr)
Capacity:		Load factor (FF):	0.9	
Purchase / Estimated Price (PP):	700000	Time factor (TF):	0.9	
Useful Life (N):	15	Fuel Rate :	97.34513	(Rs/ltr)
Total Useful life Hours (H):	15000	Fuel Consumption:	1.46	(L/hr)
Uses Hours per year (h):	1000	Energy consumed:		(kwh)
Tyre cost per unit (Ct):		Electric Charge:		(Rs/unit)
Total no. of Tyres (tn):		Energy consumed rate		(unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):		Repair factor (RF):	0.4	
Special wear item cost (SWIC):		Servicing factor (SF):	0.2	
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			700000
2	Estimated Salvage Value (S) (Rs)			70000
3	Annual Depreciation (Rs/yr)			42000
4	Insurance (Rs/yr)			7000
5	Taxes / Licence etc. (Rs/yr)			
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			46667
8	Annual Interest Cost (Rs)			4667
9	Annual Ownership Cost (Rs)			53667
10	Estimated Hourly Ownership Cost (Rs/hr)			53.67
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			18.67
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			141.93
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			9.33
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			169.93
18	Total Hourly Owing and Operating Cost (Rs/hr)			223.60

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Truck Trailer 25 ton	Manufactured year:	Code No.	78
Make:		Fuel Type		
Model:	(25 ton capacity)	Fuel	Diesel (SFC):	0.1 (ltr/hp-hr)
Power (hp):	180 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:	30 ton		Load factor(FF):	0.8
Purchase / Estimated Price (PP):	4000000		Time factor(TF):	0.75
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	10.80 (L/hr)
Uses Hours per year (h):	1000		Energy consumed:	(kwh)
Tyre cost per unit (Ct):	30000		Electric Charge:	(Rs/unit)
Total no. of Tyres (tn):	10		Energy consumed rate	(unit/hr)
Tyre replacement costs (TRC):	300000			
Tyre Average Life (hrs) (TL):	3000	Repair factor (RF):	0.3	
Special wear item cost (SWIC):		Servicing factor (SF):	0.15	
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			3700000
2	Estimated Salvage Value (S) (Rs)			400000
3	Annual Depreciation (Rs/yr)			220000
4	Insurance (Rs/yr)			40000
5	Taxes / Licence etc. (Rs/yr)			40000
6	Storage etc. (Rs/yr)			
7	Average Annual Investment			2320000
8	Annual Interest Cost (Rs)			232000
9	Annual Ownership Cost (Rs)			532000
10	Estimated Hourly Ownership Cost (Rs/hr)			532.00
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			74.00
12	Tyre Replacement Cost (Rs/hr)			79.14
13	Fuel Cost (Rs/hr)			1051.33
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			37.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			1241.47
18	Total Hourly Owning and Operating Cost (Rs/hr)			1773.47

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**OWNING AND OPERATING COST ANALYSIS**

**Machine's Basic Information**

Equipment:	Hacking Machine	Manufactured year:	Code No.	98
Make:		Fuel Type		
Model:		Diesel (SFC):	0.16	(ltr/hp-hr)
Power (hp):	10 hp	Petrol (SFC):	0.22	(ltr/hp-hr)
Capacity:		Load factor(FF):	0.9	
Purchase / Estimated Price (PP):	100000	Time factor(TF):	0.9	
Useful Life (N):	5	Fuel Rate :	97.34513	(Rs/ltr)
Total Useful life Hours (H):	2500	Fuel Consumption:	1.30	(L/hr)
Uses Hours per year (h):	500	Energy consumed:		(kwh)
Tyre cost per unit (Ct):		Electric Charge:		(Rs/unit)
Total no. of Tyres (tn):		Energy consumed rate	0.00	(unit/hr)
Tyre replacement costs (TRC):	0	Repair factor (RF):	0.4	
Tyre Average Life (hrs) (TL):		Servicing factor (SF):	0.2	
Special wear item cost (SWIC):				
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				

**OWNERSHIP COSTS**

1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)	100000
2	Estimated Salvage Value (S) (Rs)	10000
3	Annual Depreciation (Rs/yr)	18000
4	Insurance (Rs/yr)	1000
5	Taxes / Licence etc. (Rs/yr)	
6	Storage etc. (Rs/yr)	
7	Average Annual Investment	20000
8	Annual Interest Cost (Rs)	2000
9	Annual Ownership Cost (Rs)	21000
10	<b>Estimated Hourly Ownership Cost (Rs/hr)</b>	<b>42.00</b>

**OPERATION COSTS**

11	Repair and Maintenance Cost (Rs/hr)	16.00
12	Tyre Replacement Cost (Rs/hr)	0.00
13	Fuel Cost (Rs/hr)	126.16
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)	8.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)	0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)	0.00
17	<b>Estimated Hourly Operating Cost (Rs/ltr)</b>	<b>150.16</b>
18	<b>Total Hourly Owing and Operating Cost (Rs/hr)</b>	<b>192.16</b>

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Cold Mix Plant		Manufactured year:	Code No. 98
Make:			Fuel Type	
Model:			Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	30 hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:			Load factor(FF):	0.9
Purchase / Estimated Price (PP):	5000000	Fuel	Time factor(TF):	0.9
Useful Life (N):	20		Fuel Rate :	97.35 (Rs/ltr)
Total Useful life Hours (H):	20000	Electric	Fuel Consumption:	3.89 (L/hr)
Uses Hours per year (h):	1000		Energy consumed:	20 (kwh)
Tyre cost per unit (Ct):			Electric Charge:	12 (Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	194.40 (unit/hr)
Tyre replacement costs (TRC):	0			
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.3
Special wear item cost (SWIC):			Servicing factor (SF):	0.2
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				

**OWNERSHIP COSTS**

1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)	5000000
2	Estimated Salvage Value (S) (Rs)	500000
3	Annual Depreciation (Rs/yr)	225000
4	Insurance (Rs/yr)	50000
5	Taxes / Licence etc. (Rs/yr)	50000
6	Storage etc. (Rs/yr)	25000
7	Average Annual Investment	250000
8	Annual Interest Cost (Rs)	25000
9	Annual Ownership Cost (Rs)	375000
10	Estimated Hourly Ownership Cost (Rs/hr)	375.00

**OPERATION COSTS**

11	Repair and Maintenance Cost (Rs/hr)	75.00
12	Tyre Replacement Cost (Rs/hr)	0.00
13	Fuel Cost (Rs/hr)	618.48
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)	50.00
15	Speclal wear items (blade, teeth, bucket..... etc.) (Rs/h)	0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)	0.00
17	Estimated Hourly Operating Cost (Rs/hr)	743.48
18	Total Hourly Owing and Operating Cost (Rs/hr)	1118.48

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**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information				
Equipment:	Hydraulic Jack 200t	Manufactured year:	Code No.	74
Make:		Fuel Type		
Model:		Fuel	Diesel (SFC):	0.16 (ltr/hp-hr)
Power (hp):	hp		Petrol (SFC):	0.22 (ltr/hp-hr)
Capacity:			Load factor(FF):	0.8
Purchase / Estimated Price (PP):	2000000		Time factor(TF):	0.9
Useful Life (N):	15		Fuel Rate :	97.34513 (Rs/ltr)
Total Useful life Hours (H):	9000		Fuel Consumption:	0.00 (L/hr)
Uses Hours per year (h):	600		Energy consumed:	5 (kwh)
Tyre cost per unit (Ct):			Electric Charge:	12 (Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	43.20 (unit/hr)
Tyre replacement costs (TRC):	0		Electric	
Tyre Average Life (hrs) (TL):		Repair factor (RF):		0.25
Special wear item cost (SWIC):		Servicing factor (SF):		0.15
Interest Rate (IR):	10%			
Operator M'thly Salary + Allw'nce(OS)				
OWNERSHIP COSTS				
1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)			2000000
2	Estimated Salvage Value (S) (Rs)			200000
3	Annual Depreciation (Rs/yr)			120000
4	Insurance (Rs/yr)			20000
5	Taxes etc. (Rs/yr)			
6	Taxes / Licence etc. (Rs/yr)			
7	Storage etc. (Rs/yr)			133333
8	Annual Interest Cost (Rs)			13333
9	Annual Ownership Cost (Rs)			153333
10	Estimated Hourly Ownership Cost (Rs/hr)			255.56
OPERATION COSTS				
11	Repair and Maintenance Cost (Rs/hr)			55.56
12	Tyre Replacement Cost (Rs/hr)			0.00
13	Fuel Cost (Rs/hr)			60.00
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)			33.33
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)			0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)			0.00
17	Estimated Hourly Operating Cost (Rs/hr)			148.89
18	Total Hourly Owing and Operating Cost (Rs/hr)			404.44

**OWNING AND OPERATING COST ANALYSIS**

Machine's Basic Information					
Equipment:	Premix Mixture		Manufactured year:	Code No.	98
Make:			Fuel Type		
Model:			Diesel (SFC):	0.15	(ltr/hp-hr)
Power (hp):	35 hp		Petrol (SFC):	0.22	(ltr/hp-hr)
Capacity:			Load factor(FF):	0.9	
Purchase / Estimated Price (PP):	1500000		Time factor(TF):	0.9	
Useful Life (N):	15		Fuel Rate :	97.34513	(Rs/ltr)
Total Useful life Hours (H):	15000		Fuel Consumption:	4.25	(L/hr)
Uses Hours per year (h):	1000		Energy consumed:		(kwh)
Tyre cost per unit (Ct):			Electric Charge:		(Rs/unit)
Total no. of Tyres (tn):			Energy consumed rate	0.00	(unit/hr)
Tyre replacement costs (TRC):	0				
Tyre Average Life (hrs) (TL):			Repair factor (RF):	0.25	
Special wear item cost (SWIC):			Servicing factor (SF):	0.25	
Interest Rate (IR):	10%				
Operator M'thly Salary + Allw'nce(OS)					

**OWNERSHIP COSTS**

1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)	1500000
2	Estimated Salvage Value (S) (Rs)	150000
3	Annual Depreciation (Rs/yr)	90000
4	Insurance (Rs/yr)	15000
5	Taxes / Licence etc. (Rs/yr)	
6	Storage etc. (Rs/yr)	
7	Average Annual Investment	100000
8	Annual Interest Cost (Rs)	10000
9	Annual Ownership Cost (Rs)	115000
10	Estimated Hourly Ownership Cost (Rs/hr)	115.00

**OPERATION COSTS**

11	Repair and Maintenance Cost (Rs/hr)	25.00
12	Tyre Replacement Cost (Rs/hr)	0.00
13	Fuel Cost (Rs/hr)	413.96
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)	25.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)	0.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)	0.00
17	Estimated Hourly Operating Cost (Rs/hr)	463.96
18	Total Hourly Owning and Operating Cost (Rs/hr)	578.96

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**OWNING AND OPERATING COST ANALYSIS**

**Machine's Basic Information**

Equipment:	Cutter(Bitumen Pavement/RCC Cutter)	Manufactured year:	Code No
Make:		Fuel Type	
Model:		Diesel (SFC):	0.15
Power (hp):	10 hp	Petrol (SFC):	0.22
Capacity:		Load factor(FF):	0.9
Purchase / Estimated Price (PP):	200000	Time factor(TF):	0.9
Useful Life (N):	5	Fuel Rate :	97
Total Useful life Hours (H):	5000	Fuel Consumption:	1.22
Uses Hours per year (h):	1000	Energy consumed:	
Tyre cost per unit (Ct):		Electric Charge:	
Total no. of Tyres (tn):		Energy consumed rate	0.00
Tyre replacement costs (TRC):	0	Repair factor (RF):	0.3
Tyre Average Life (hrs) (TL):		Servicing factor (SF):	0.2
Special wear item cost (SWIC):	30000		
Interest Rate (IR):	10%		
Operator M'thly Salary + Allw'nce(OS)			

**OWNERSHIP COSTS**

1	Purchase Price less tyre (P) (Rs)(Including accessories and installation)	200000
2	Estimated Salvage Value (S) (Rs)	20000
3	Annual (Rs/yr)	36000
4	Insurance (Rs/yr)	
5	Taxes / Licence etc. (Rs/yr)	
6	Storage etc. (Rs/yr)	
7	Average Annual Investment	40000
8	Annual Interest Cost (Rs)	4000
9	Annual Ownership Cost (Rs)	40000
10	Estimated Hourly Ownership Cost (Rs/hr)	40.00

**OPERATION COSTS**

11	Repair and Maintenance Cost (Rs/hr)	12.00
12	Tyre Replacement Cost (Rs/hr)	0.00
13	Fuel Cost (Rs/hr)	118.27
14	Servicing (Oil, filters, grease .... etc.) (Rs/hr)	8.00
15	Special wear items (blade, teeth, bucket..... etc.) (Rs/h)	30.00
16	Operator's hourly charge (Salary+ allowances) (Rs/hr)	0.00
17	Estimated Hourly Operating Cost (Rs/hr)	168.27
18	Total Hourly Owning and Operating Cost (Rs/hr)	208.27

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ई-मेल: mechb@dor.gov.np  
फ्याक्स: (९७७)५००५५३४  
फोन: (९७७)५००५५३४  
हाल चाकुपाट, ललितपुर।

पत्र संख्या :- ४१०७७/७८

मिति:-२०७७/१२/३१

चलानी नम्बर :- २०९

**विषय: Norms/Rate of Plant and Machinery for Estimating Guideline ।**

- श्री योजना तथा अनुगमन/पुल/संभार/यान्त्रिक/विकास सहायता कार्यान्वयन महाशाखा ।
- श्री संघीय सडक सुपरिबेक्षण तथा अनुगमन कार्यालय दमक/काठमाडौं/पोखरा/सुर्खेत ।
- श्री उत्तरदक्षिण व्यापारिक मार्ग विस्तार आयोजना निर्देशनालय, ललितपुर ।
- श्री आयोजना निर्देशनालय, (ए.डि.वि.) काठमाडौं ।
- श्री हुलाकी राजमार्ग आयोजना निर्देशनालय, काठमाडौं ।
- श्री मदनभण्डारी राजमार्ग आयोजना निर्देशनालय, काठमाडौं ।
- श्री सडक सुधार विकास आयोजना, काठमाडौं ।
- श्री हेभी ईक्विपमेन्ट डिभिजन/यान्त्रिक कार्यालयहरु सबै ।
- श्री सडक डिभिजनहरु सबै ।
- श्री योजना कार्यालयहरु सबै ।

सडक विभाग वा अन्तर्गत मातहत हुने विभिन्न निर्माण कार्यहरुको लागत अनुमान तयार गर्ने प्रयोजनको लागि मिति २०७७/१२/३१ को विभागीय निर्णयानुसार संसोधित Guideline For Estimating Equipment Ownership and Operating Costs यसैसाथ संलग्न गरि पठाईएको व्यहोरा निर्देशानुसार अनुरोध छ।

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महेश कुमार पराजुली  
सि.डि.ई.

श्रीमान महानिर्देशक ज्यु,  
सडक विभाग

बिषय : संसोधित Guideline for Estimating Equipment Ownership and Operating Costs स्वीकृतको लागि पेश गरिएको बारे ।

उपरोक्त बिषयमा, मिति २०७७/१२/२४ को विभागीय निर्णय अनुसार गठित समितिले मिति २०७५/१०/०८ मा स्वीकृत Guideline for Estimating Equipment Ownership and Operating Costs को निम्न Issues विस्लेषण गरि, समय सापेक्ष संसोधनको प्रस्ताव यसै पत्र साथ संगलन गरि स्वीकृति हुन् सिफारिश गर्दछौ ।

निम्न :

१. Ownership Cost Calculation
२. Ownership Cost Calculation गर्दा Taxes and Storage/License Cost
३. Plant र Machinery को Capital Cost (Purchase Cost)
४. Maintenance र Service Cost calculation गर्न प्रयोग हुने क्रमशः Repair factor (RF) र Servicing factor (SF) को Value
५. Repair and Maintenance Cost र Service Cost
६. Crew/Assistant Cost
७. Plant र Machinery को Specification को आधारमा Fuel Demand

मैदान परकार
भौतिक पूर्वाधार तथा यानायात मन्त्रालय
सडक विभाग
काठमाडौं
भु. नं. नं. :
दिनांक : ४५२८
मिति : १२/१२/२७

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- सु.ई. प्रभात कुमार झा, संघीय सडक सुपरिवेक्षण तथा अनुगमन कार्यालय, सुर्खेत ।  
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सि.डी.ई. महेश कुमार पराजुली, श्री स.वि. यान्त्रिक महाशाखा, ललितपुर ।  
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ईन्जिनियर अमित कुमार वर्मा, श्री स.वि. पुल महाशाखा, ललितपुर ।

श्री यान्त्रिक महाशाखा

४/१२/२७

श्री पराजुली

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रमेश कुमार  
सि.डी.ई.