



## **WASTE TYRE PYROLYSIS PLANT**

Model: Batch Type: 5/7.5/10/12/15 Tons

**“REUSE-REDUCE-RECYCLE”**

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# INTRODUCTION

Regarded as a leading manufacturing company in the present sector, FABHIND Industries was successfully established in the year 1991 and started the manufacturing of waste tyre pyrolysis plant in 2005. Our well equipped plant has its head office in Vatva, GIDC, Ahmedabad, Gujarat. Since then, we are successfully supplying Waste recycling projects and road construction machineries for performing numerous mixing jobs. Enclosing with the growth agenda, we have broadened the gate of supplying quality products to our customers and laying the foundation stone of trust. FABHIND Industries is integrated with multifunctional workforce having the experience in different type of field and vast knowledge of machineries. This helps our company to empower our growth and pursue massive chance in the global market. We bring the latest technology which is assisted by our supportive clients to manufacture excellent quality of products. Our organization works in collaboration with safety norms in order to offer a protective environment for our workers and thus, to meet everyday challenges related with work and specifications of our clients. FABHIND INDUSTRIES is an ISO 9001:2015 certified company involved in the manufacturing, supplying and installation of, Waste tyre pyrolysis plant, Asphalt Batch Mix Plant, Heavy road construction machineries and equipments and Concrete Batching plant.

We have been an established company with three manufacturing units and have an excellent track record of customer satisfaction through our perseverance and efforts in maintaining the quality of product. We believe in keeping our customers happy by providing them the product they demand at a very competitive price.

We never compromise in the quality of the product and provide best services as we believe that your progress is after all our success.



## MISSION & VALUES

- To establish best turnkey based projects for providing Fab Privilege to our clients nationally and globally
- To transform from a mid size manufacturer company to a leading manufacturing company.
- To provide most comprehensive construction and waste recycling plants for achieving our motto of building a bright future.

## VISION

- To become a renowned build technology in the world of fabrication through our best perseverance efforts & advancement for the development and progress of our clients.

## MILESTONE (History)

**1991**

Laid foundation stone of "FAB-INDIA INDUSTRIES" by "MR. SURESH PATEL" with the manufacturing of Mineral processing plant like Conveying drying, Grading spice plant system for- Chilly, Turmeric, coriander, mixed masala & Betel cutting machineries.

**2000**

Increased our product range by manufacturing Chemical plants & machineries.

**2008**

Taking green initiative project in mind, started with eco friendly plants manufacturing such as "Municipal solid waste processing plant" & "Waste Tyre Pyrolysis plant".

**2015**

New beginning by launching 1st construction machinery called "Asphalt batch mix" & "Drum mix plant". Other road construction equipments like Wet mix plant, Bitumen sprayer, Bitumen decanter & Hydraulic broomer were also started.

**2018**

Increased construction machinery product range by developing product called "Asphalt sensor paver".

**1995**

Started with different products like "Fly ash grinding & classification plant".

**2005**

Launched new products like Pigment plant, Ball mill grinding system & Classification complete system.

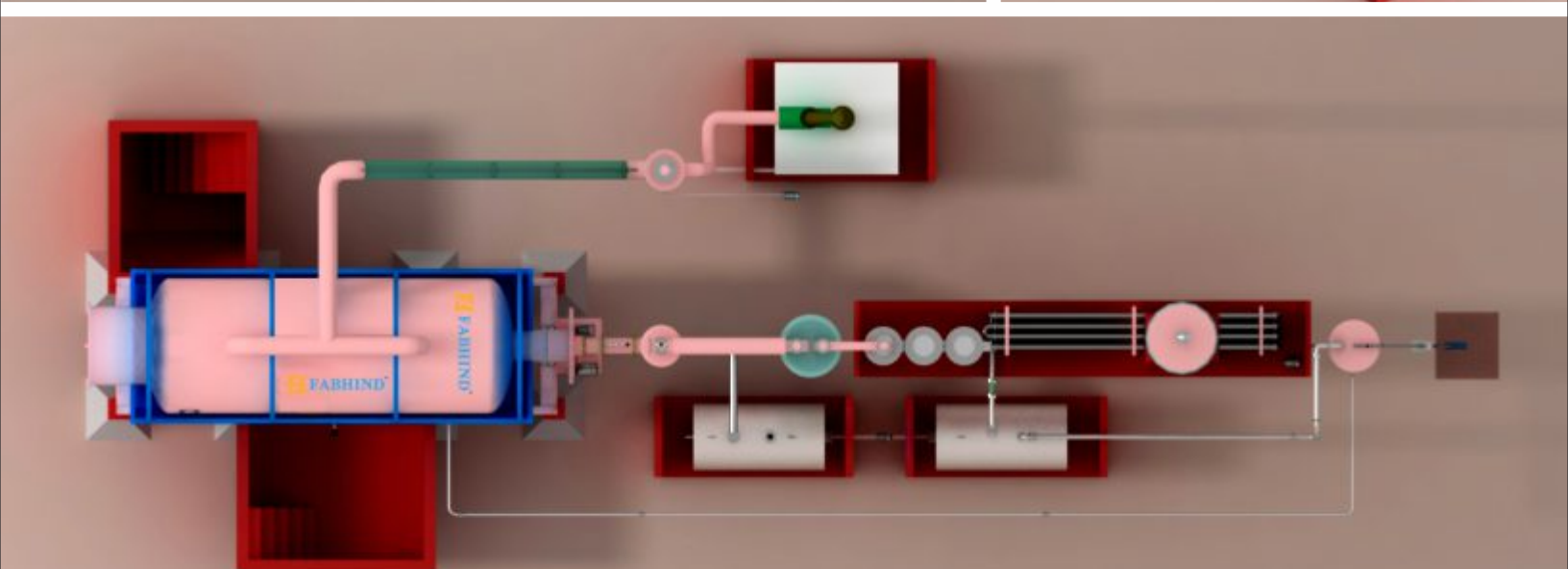
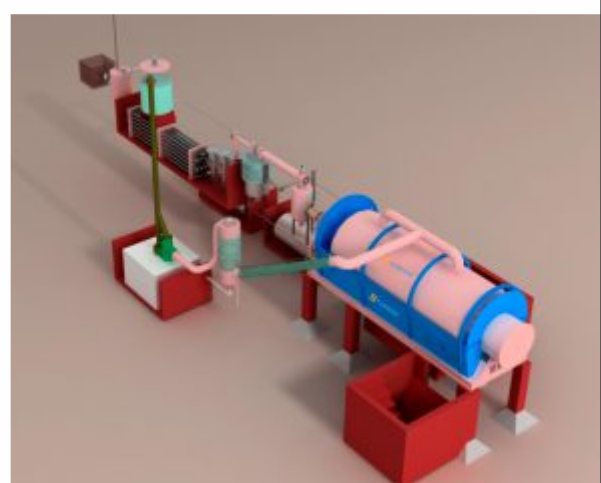
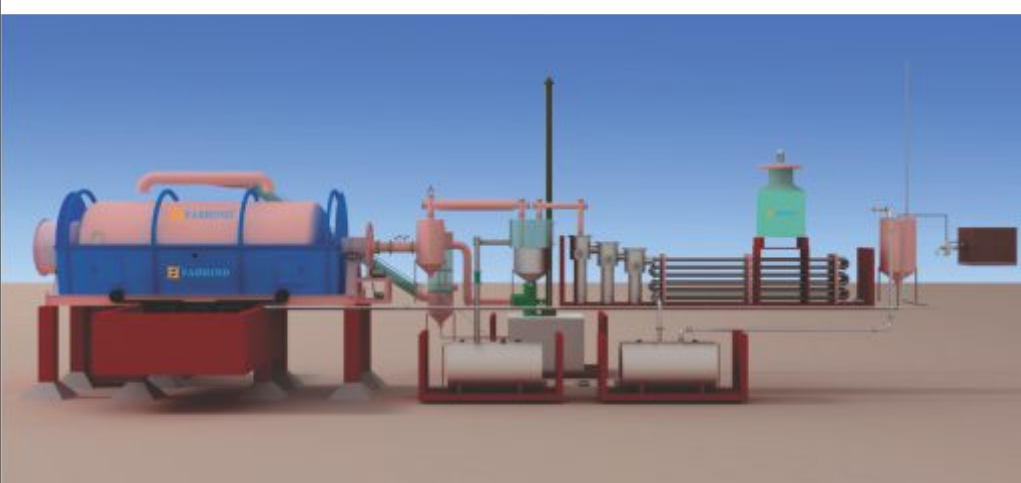
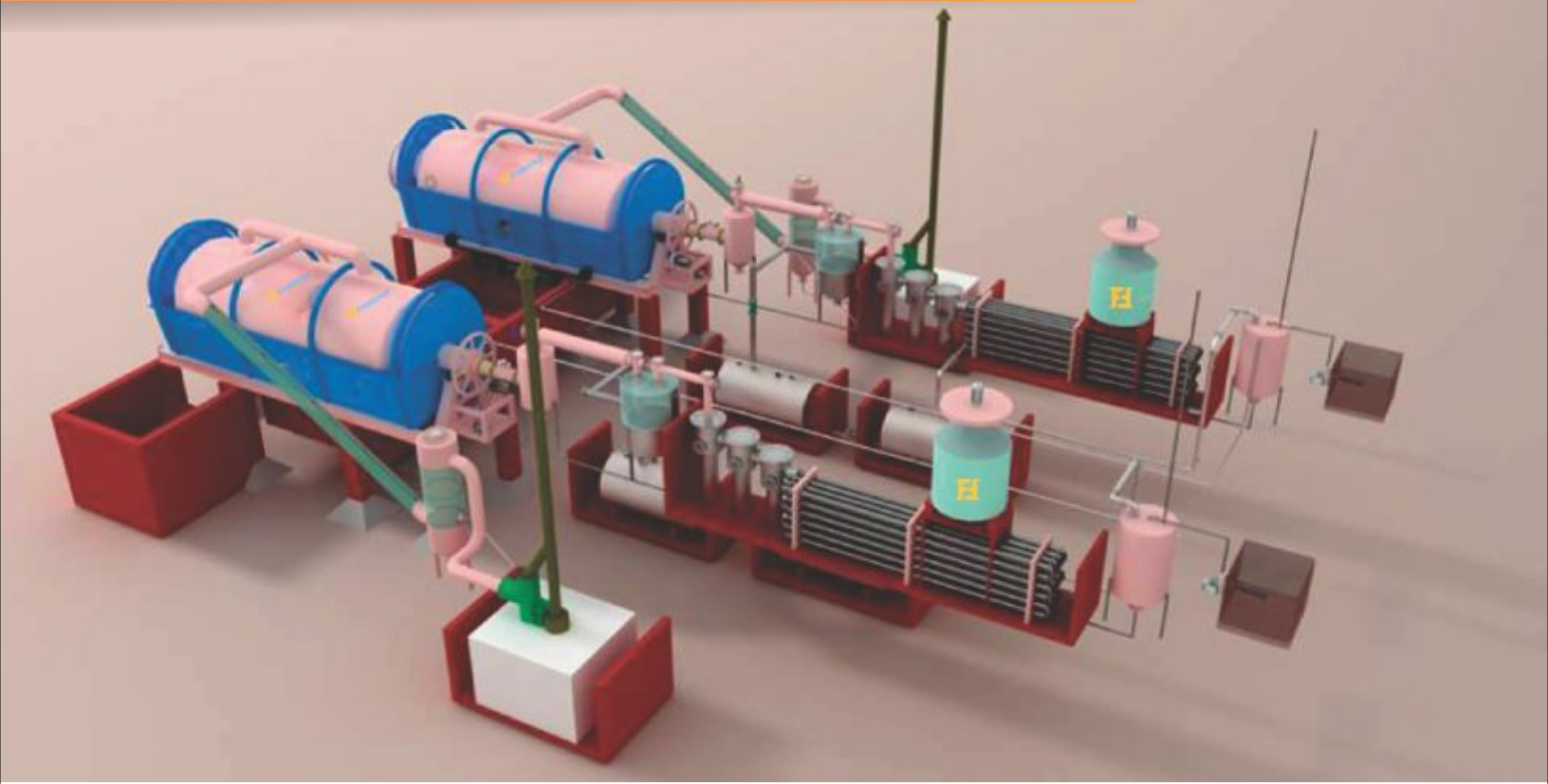
**2013**

With rigorous efforts in R & D, successfully able to update recycling machinery to "Plastic pyrolysis plant".

**2017**

Started with second category of construction machinery by stepping towards concrete plant called "Concrete batching plant"





## RAW MATERIAL REQUIRED & PRODUCT OBTAINED

### WASTE TYRE AND RUBBER PRODUCT

- Nylon T
- yre(80%)
- Radial Tyre(20%)
- Belt conveyor etc.



### PLASTIC MATERIAL LIKE

- Waste plastic
- Electronic scrap
- Mixed Plastic (LDPE, LLDPE, HDPE, PP, Nylon, Teflon, PS, ABS, FRP)
- Multilayered Plastic can be used in limited quantity.



## PRODUCTS OBTAINED & ITS USES

### PYROLYSIS OIL

- Total yield obtained: Fuel oil - 40 to 45%
- Flash Point: 60 to 93.3 °C.
- Selling price comparable to industrial diesel LDO (light diesel oil)

#### USES:

- Furnace Industries
- Rolling Industries
- Casting Industries
- Road construction industries
- Crude oil distillation plant



### STEEL WIRE

- Total yield obtained: 15 to 20%
- After completion of Pyrolysis Process "steel Wire" Remains as by Product which can be removed by wire puller machine after cooling down the Reactor
- Steel wire can also be removed before adding the Radial tyre inside the Reactor by Hydraulic Steel Wire Removing Machine.

#### USES:

- Sell to Steel scrap Industries
- Rolling mill



### CARBON BLACK

- Total yield obtained: 30 to 35%
- The vital product of pyrolysis plant is carbon black referred as "charcoal"

#### USES:

- Cement Industries
- Ink Industries
- Rubber Industries
- Carbon briquetting Plant
- New tyre manufacturing
- Rubber runway
- shoe sole.



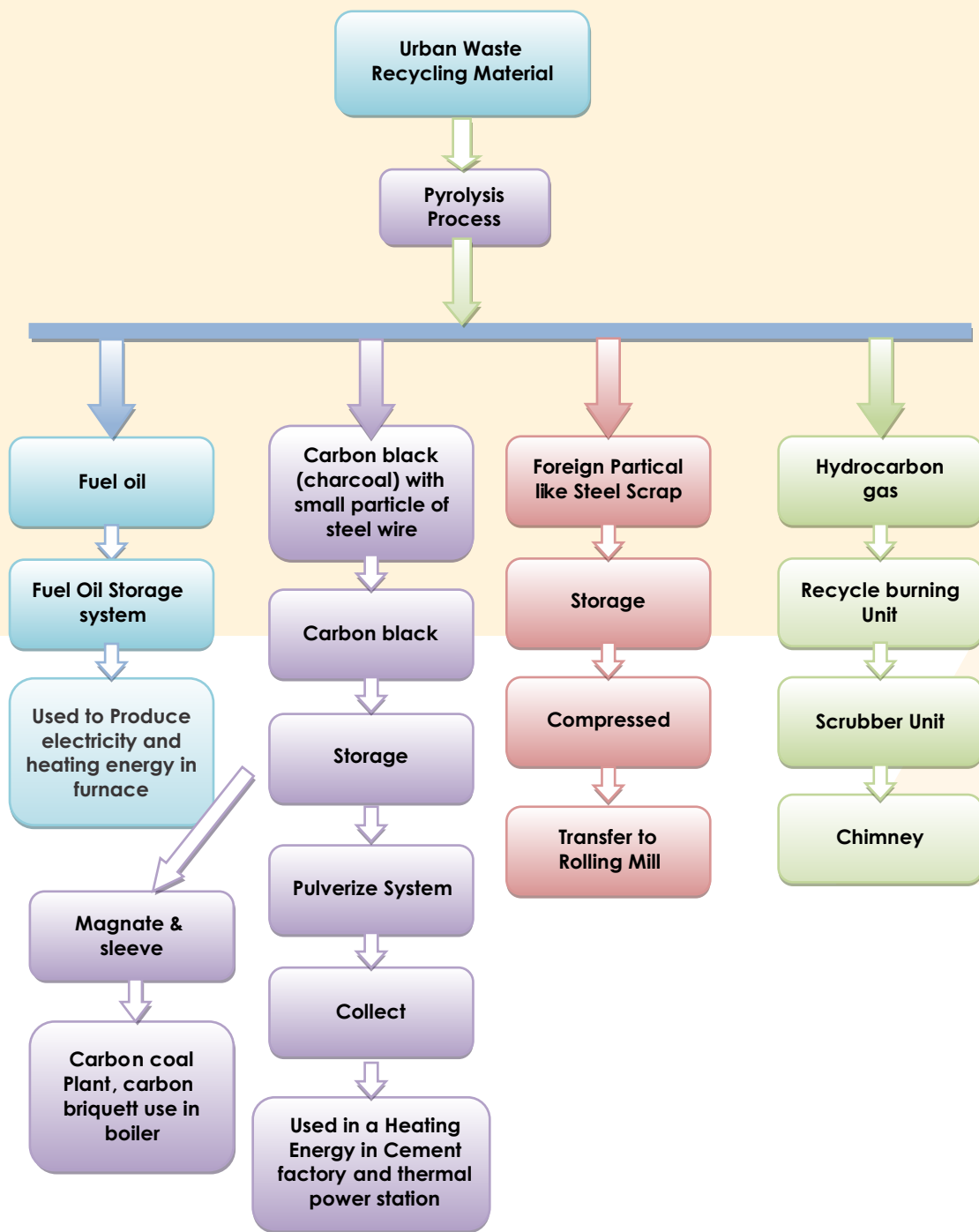
### HYDROCARBON GAS

- Total yield obtained: 5 to 8%

#### USES:

- Generally used as a fuel in the same plant for heating purpose.
- Store in Rubber Gas Balloon and can be used by next day process
- Used in waste water evaporating system to evaporate the waste water formed during process





## ADVANTAGES OF PYROLYSIS PLANTS

- Purest quality of Pyrolysis Oil as finished product.
- Use of green technology to achieve environment friendly process.
- Automatic safety valve (pressure and temperature valve) used to improve safety, profitability & ease of operation.
- It is energy self-sufficient.
- No external fuel required for heating.
- It recovers energy and generates value from waste, in form of fuel, steel wire and charcoal.
- Reduces land pollution.
- Eco-friendly recycling of tires.
- Commercially viable process.
- A good substitution to LDO / Furnace oil.



## ► REACTOR

- Made from heat resistance Plate.
- It is of three types
  - a) Flat model
  - b) Capsule model
  - c) Flat and capsule combination.
- Reactor is consider as the heart of this plant
- Raw material feed inside will start converting to gas at 300-350 degree Celsius
- Anaerobic heating process takes place.



## ► TANKS

### A) INSULATION TANK

- It is also called gas separator tank because gas obtained by heating raw material from reactor will get separate here .
- Hence oil produce will store in the bottom of tank and gas will move further to water coolant pipe



### B) WATER SEAL TANK

- It is also called the vertical tank which is jacketed from all sides and coolant pipe is connected to this tank.
- Gas and oil will come from the water coolant pipe to water seal tank and oil will store to oil tank which is connected to water seal tank



### C) CARBON HOLDING TANK (2 NOS)

- Carbon holding tank which is in water seal tank in this tank oil and carbon will mix well and will move to pipe condenser and carbon particles will set down



### D) GAS TANK

- Gas tank is made from 5 mm MS plate . This excess hydrocarbon gas which is in gas tank is very dry and does not contain any oil particles . Hence we can either burn it through auto spark at the end of the chimney to release in the air or can be stored in gas balloon in order to reuse it as fire agent in the fire chamber for heating reactor in next recycling process



### E) UNDERGROUND OIL TANK

- Should Be 40% Oil Store In This Tank.
- Light Gas Transfer To Gas Tank From This Under Ground Oil Tank



## ► CONDENSING SYSTEM

### A) WATER COOLANT PIPE (HORIZONTAL)

- It is also called Jacketed pipe.
- Here the water gets circulated inside the pipe that lowers the temperature of vapors converting it into oil.
- Thus oil and uncondensed vapors gets separated here leaving oil at the bottom of the tank and gas moving further.



### B) CONDENSING PIPE

- This pipe is very useful to increase Yield Percentage.
- It is usually designed in zigzag pattern, so it creates huge condensing area.
- Very easy to maintain.
- Condenser is coil type. Total 24 coils are used in this pipe.
- The more the coils faster the cooling process. Hence more yield percentages obtained.
- Continuous water supply converts condensed vapor into oil, which is transferred into oil receiving tank and the uncondensed gas travels to the next level.



### C) COOLING TOWER

- It has 70 TR capacity.
- It is very useful for cooling of hot vapors to oil.
- It generally has a very long life.



## ► CHIMNEY & BLOWER

### SMOKE CHIMNEY (100 FEET)

- Smoke chimney is connected to wet scrubber system
- Black smoke is converted to white smoke via scrubber system which will be released through chimney into air.
- It is of 100 FT so that pollution is prevented into air.



### BLOWER

- It helps reducing the processing time of whole process to maintain number of batches throughout the month.
- It is used to decrease the temperature of reactor quickly, which helps increase the number of batches.
- This in total helps increasing the productivity & profit. With the help of cooling blower at least 24 batches can be achieved in a month.
- It has 5HP motor which is sufficient to take the hot smoke out of the plant.



## ► WET SCRUBBER SYSTEM

- It consist of water sprinklers inside the pipe
- Polluted smoke coming from the process is continuously sprinkled by water.
- Hence carbon gets settle down at the bottom of the tank & white smoke will be released through chimney.





SR.NO.	ITEMS	MODEL	MODEL	MODEL
1	Equipment type	RF-5	RC/RFC-10	RC/RFC-12
2	Raw material	Nylon/radial tyre	Nylon/radial tyre	Nylon/radial tyre
3	Structural form	Horizontal rotation	Horizontal rotation	Horizontal rotation
4	Capacity	4.3 ton	8.5 ton	11 ton
5	Oil yield	1.71 ton	3.8 ton	4.9 ton
6	Steel scrap	0.86 ton	1.7 ton	2.2 ton
7	Carbon	1.29 ton	2.5 ton	3.3 ton
8	Operating pressure	0.05-0.2kg/bar	0.05-0.2kg/bar	0.05-0.2kg/bar
9	Reactor material	B.Q plate SA 516 (Grade 70)	B.Q plate SA 516 (Grade 70)	B.Q plate SA 516 (Grade 70)
10	Reactor thickness	14mm	16mm	16mm

Rotation speed of reactor	0.4turn/min® 0.2 turn/min(u)	0.4turn/min® 0.2 turn/min(u)	0.4turn/min® 0.2 turn/min(u)
Total power	24KW	30KW	34KW
Mode of cooling	Circular	Circular	Circular
Cooling area of condensor	20 sq.mt	51 sq.mt.	77 sq.mt.
Transmission mode	Dual speed motor	Dual speed motor	Dual speed motor
Noise db(A)	≤85	≤85	≤85
Size of Reactor(D*L)	2.2*6 mt.	2.6*6.6 mt.	2.8*6.6 mt./2.8*7.5mt.
Working pattern	Intermittent operation	Intermittent operation	Intermittent operation
Land require	10,800 sq.ft.	10,800 sq.ft.	10,800 sq.ft.
Delivery time	Within 2 weeks	Within 2 weeks	Within 2 weeks
Installation time	10-15 days	10-15 days	10-15 days

## AUXILIARY EQUIPMENTS



**NITROGEN PLANT**



**PYRO WATER BURNER**



**100 FEET CHIMNEY**



**COOLING BLOWER**



**GAS BALLOON**



**BABY STEAM BOILER**



**TYRE SIDE WALL CUTTER**



**AUTO IGNITION SYSTEM**

Our plant follows pollution norms declared by the government. We provide accessories / optional equipments to reduce pollution norms, to increase production cycle and to run machine smoothly with less maintenance.

### WET SCRUBBER SYSTEM

CONVERTS POLLUTED BLACK SMOKE TO SAFE & WHITE SMOKE

### NITROGEN SYSTEM

COOLS DOWN REACTOR FASTER WHICH ELIMINATES RISK OF INJURY

### CHIMNEY

REDUCES POLLUTION BY RELEASING SMOKE AT A HEIGHT OF 100FT

### AUTO IGNITION SYSTEM

BURNS FOUL SMELLING SMOKE TO MAKE IT HARMLESS

### PYRO WATER BURNER

REPLACES WOODS IN THE PROCCES, THUS SAVES TREES

### GAS BALLOON

BYPRODUCT-HYDROCARBON GAS CAN BE STORED FOR HEATING PURPOSE IN PLACE OF WOODS

### CARBON HOLDING SYSTEM

COLLECTS & STORES CARBON. HENCE REDUCES LAND/AIR/WATER POLLUTION



## EVALUATION OF EXPENSES AND GROSS PROFIT-10 TON

1	Postage and Stationery	6,000.00
2	Telephone	5,000.00
3	Traveling and freight	20,000.00
4	Consumables	34,000.00
5	Repair and Renewals	20,000.00
6	Insurance fire and Employee	10,000.00
7	Rent	NIL
<b>Total Amount 1 Total</b>		<b>95,000.00</b>

### Utilities (Per month)

S.N	Personal	Salary (Rs.)	Nos.	Amount (Rs.)
1	Production Manager	25000	1	25,000.00
2	Maintenance engineer	18000	1	18,000.00
3	Purchased manager	25000	1	25,000.00
4	Semi-skilled workers	15000	6	90,000.00
5	Watchman	10000	1	10,000.00
6	Additional perquisites @ 20%			33,600.00
7	Waste Tyre 8500 kg. per day x 22days x Rs 12 per Kg			22,44,000.00
8	Coal/wood 1500 kg. per day x 22days x Rs 4/kg			1,32,000.00
9	Power 45 HP 24 hours x 22 days x Rs 6			35,000.00
10	Water			7,000.00
	Total Amount 2		Total Amount	20,58,600.00

### Total Recurring Expenditure (per month) Rs. Total Amount 1 + Amount 2

Sr.	Turnover per Monthly	Presented	Per Month
1	By selling Oil 3570(kg)*22 days*Rs39/Ltr.	42% to 45%	30,63,060.00
2	By selling steel scrap 1275kg*22days*Rs10/kg	15 %to 20%	2,80,500.00
3	By selling Carbon 2805Kg *22days*Rs 4 /kg	30%to 35%	2,46,840.00
4	Gas Around Recycling	5% to 10%	Nil
•	Turnover per Monthly		28,30,245.00
•	Total Recurring Expenditure (per Monthly) Rs.		21,53,600.00
•	Profit Gross Per Monthly	Monthly Profit	6,76,645.00
<b>Gross Annually Profit</b>			<b>81,19,740.00</b>

S.N	Other Contingent Expenses (Per month)	12 TON -AMT
1	Postage and Stationery	2,000.00
2	Telephone	5,000.00
3	Traveling and freight	28,000.00
4	Consumables	20,000.00
5	Repair and Renewals	20,000.00
6	Insurance fire and Employee	20,000.00
7	Rent	NIL
	<b>Total Amount 1 Total</b>	<b>95,000.00</b>

## Utilities (Per month)

S.N	Personal	Salary (Rs.)	Nos.	Amount (Rs.)
1	Manager(Production)	25000	1	25,000.00
2	Maintenance engineer	18000	1	18,000.00
3	Purchase Manager	25000	1	25,000.00
4	Semi-Skilled Workers	15000	6	90,000.00
5	Watchman	10000	1	10,000.00
6	Additional perquisites @ 20%			33,600.00
7	Waste Tyre 10500 kg. per day x 22days x Rs 9 per Kg			20,79,000.00
8	Coal/wood 1800 kg. per day x 22days x Rs 4/kg			1,58,400.00
9	Power 45HP x 0.8 x 24hours x 22 days x Rs 6			40,000.00
10	Water			8,000.00
	<b>Total Amount 2</b>		<b>Total Amount</b>	<b>24,87,000.00</b>
				<b>25,82,000.00</b>

## Total Recurring Expenditure (per month) Rs. Total Amount 1 + Amount 2

Sr.	Turnover per Monthly	Presented	Per Month
1	By selling Oil 4410 Ltrs*22 days*Rs 32/Ltr.	42 to 45%	31,04,640.00
2	By selling steel scrap 1575kg*22days*Rs8/kg	15 to 20%	2,77,200.00
3	By selling Carbon 3465Kg *22days*Rs 1.5 /kg	30 to 35%	1,14,345.00
4	Gas Around Recycling	5 to 10%	Nil
•	Turnover per Monthly		34,96,185.00
•	Total Recurring Expenditure (per Monthly) Rs.		25,82,000.00
•	Monthly Gross Profit		9,14,185.00
	<b>Gross Annually Profit</b>		<b>1,09,70,220.00</b>

## Total Investment of 10 & 12 Tons Plant (Without land & Raw Material Investment working capital)

S.N	Details		Approximate Price-10 TON	Approximate Price-12 TON
1	10 Tons Machine Cost	Without Tax	42,00,000.00*	52,00,000.00*
2	Transportation cost	Trailer/ trucks	1,50,000.00	2,00,000.00
3	Shed fabrication works [open shed]	50 Feet x 100 Feet	5,00,000.00	7,00,000.00
4	Foundation cost for FI-RC-10 TPD	As per dwg.	4,50,000.00	5,00,000.00
5	D.G. Generator set [40 KVa]	Standard	3,50,000.00	3,50,000.00
6	Site Office	10 x 10 Feet x 2 Room	3,25,000.00	3,25,000.00
7	Pollution certificate	As per state norms	50,000.00	50,000.00
8	Electric Cable Connection Charges	As per location	1,00,000.00	1,00,000.00
9	Oil Storage Tank 2.5 KL X 2 Nos.	Old Tank	3,00,000.00	3,00,000.00
10	Other Expenses	xxx	1,00,000.00	1,00,000.00
<b>Total Investment of 10 &amp; 12 Tons Plant (Without land &amp; Raw Material Investment working capital)</b>			<b>65,25,000.00</b>	<b>78,25,000.00</b>

**Minimum Land Requirement for Plant : 50' X 120'(Feet)**

**Total Land Requirement for Plant : 90' x 120'(Feet)**

**Foundation drawing will be send by us**

## AFTER SALES SERVICES

### Whenever and wherever you need us

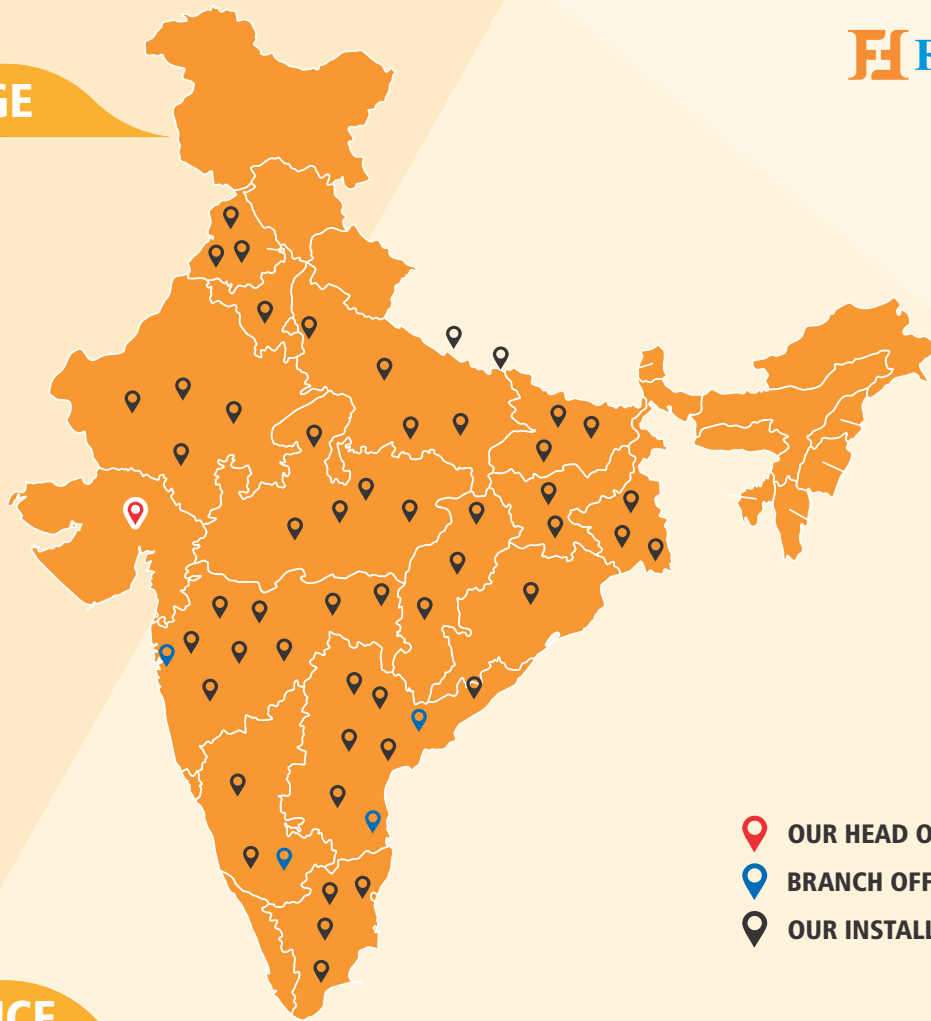
- FABHIND Services offers you a strong combination of global expertise and local presence. Our customer-oriented Field Service is designed to suit your specific needs. We work closely with you to ensure your machine receives the best possible care.
- Well-trained engineers and technicians equip your machines with high-quality original parts. They support you in developing the optimal maintenance program for your plant, for instance with a customized Preventive Maintenance Agreement. An Embedded Engineer can also support your team on-site. Our Field Service is rounded out by personalized training with expert instructions, shaped to the individual requirements of your staff. Our strong on-site presence and tailor-made service enable us to support you in reducing your machine downtimes to a minimum.




### Benefits

- Optimum on-site support from service technicians
- Long-term expertise for best possible results
- Personalized production support and coaching
- Engineer and operator training on-site
- Minimized downtimes through optimization and modernization



## SALES COVERAGE



-  **OUR HEAD OFFICE**
-  **BRANCH OFFICE**
-  **OUR INSTALLATION**

## GLOBAL PRESENCE



**SRI LANKA**



**NEPAL**



**MYANMAR**



**BANGLADESH**



**SOUTH AFRICA**



**KENYA**



**IRAN**



We never compromise on ethics. For reaching the required parameters of product, right performance with correct thirst is necessary and we as a team of FABHIND work on the same principle. Competing with ourselves provide more opportunities to understand way of work precisely rather than the competitors. We believe that our corporate is our family which makes the work atmosphere more reliable and co-operative, hence increases the work efficiency. Company's prime motto is to satisfy customer's need and aim with the latest technologies & updated knowledge of our experienced staff & employees. The main legacy which I follow is to stand up always for the thing which I consider as right and always have tried to be as fair & equitable as I could.

I would like to thanks all my employees whom I refer to as my family who work very hard and restless day & night. I would like to thanks sales team who travel without seeing time , my clients who believe in us from all over India and other foreign countries like Bangladesh, Kazakhstan, Sri Lanka, South Africa, Uganda & other Asian countries.

**SURESH PATEL**  
FOUNDER & DEVELOPER



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