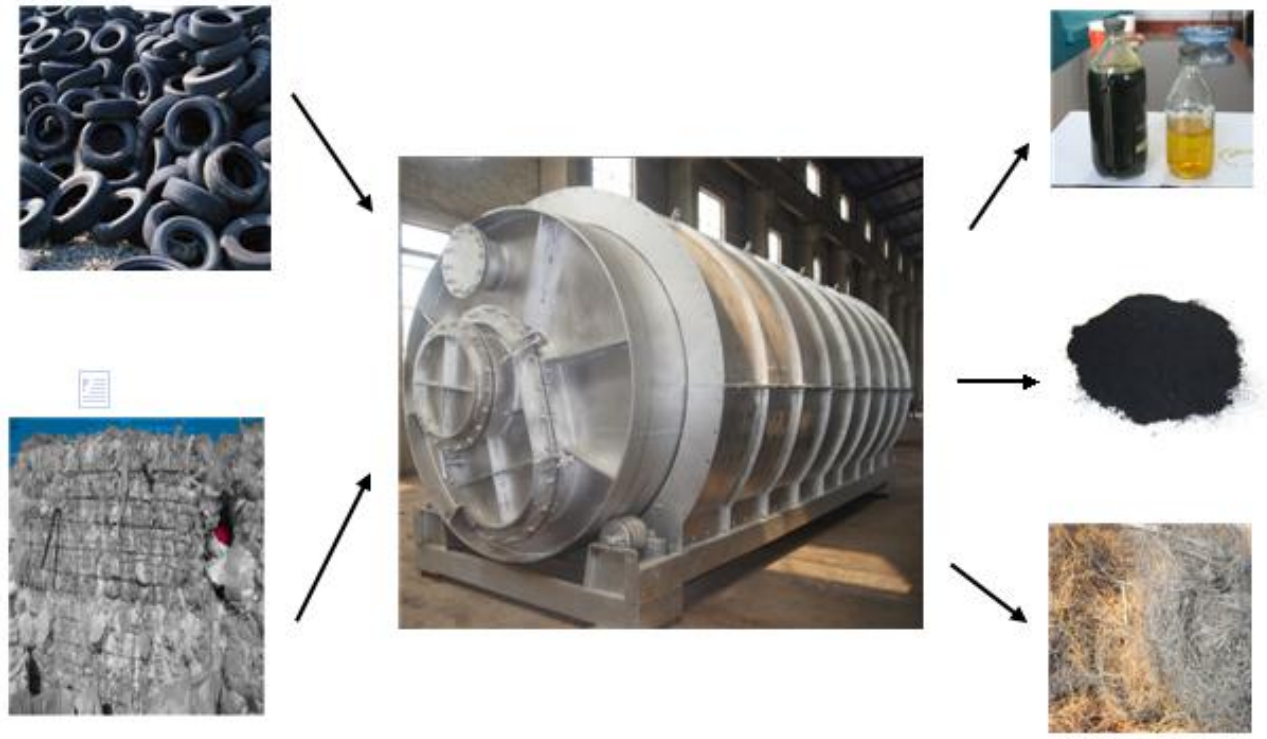
WASTE TYRE RECYCLING PLANT



The whole pyrolysis system is mainly composed by 14 parts, which are reactor, insulation layer, furnace, transmission device , oil-water separator, depositing tank, cooling pool, cooling pipes, light oil tank, safety device, water seal, dedusting system, draft fan, chimney.

The keys of pyrolysis machine are reactor, cooling system, safety system and exhaust disposal system.

No.	Item	Content			
1	Equipment Model	SIT5	SIT8	SIT10	SIT12
2	Raw materials	Waste Rubber, Plastic	Waste Rubber, Plastic	Waste Rubber, Plastic	Waste Rubber, Plastic
3	Structure	Horizontal rotation	Horizontal rotation	Horizontal rotation	Horizontal rotation
4	capacity in 24H	5 tons	8 tons	10 tons	12 tons
5	24-hour production	2.5 tons crude oil	4 tons crude oil	5 tons crude oil	6 tons crude oil

6	Work pressure	Atmospheric	Atmospheric	Atmospheric	Atmospheric
7	Host Speed	0.4 Turn / min	0.4 Turn / min	0.4 Turn / min	0.4 Turn / min
8	With force	9-12 KW / hour	9-12 KW / hour	9-12 KW /hour	9-12 KW / hour
9	Cooling	Water cooling	Water cooling	Water cooling	Water cooling
10	Cooling water consumption	0.2(t/h)	0.3(t/h)	0.4(t/h)	0.5(t/h)
11	Weight of whole plant	19t	21t	25t	32t
12	Heating	Directly	Directly	Directly	Directly
13	Installation	A base	A base	A base	A base
14	Noise dB(A)	≤85	≤85	≤85	≤85
15	Host size (D× L)	2200×5000	2200 × 6600	2600 × 6600	2800×6600
16	Forms of work	Intermittent	Intermittent	Intermittent	Intermittent

Outputs & Applications

The main products: fuel oil, combustible gas, crude carbon black and steels, which are widely used in hotels, restaurants, bathing centers, power engines, chemical sector and so on.

Equipment features

1. Operate under atmospheric pressure
2. Automatic decompression
3. Automatic sludge discharge
4. Latest high-tech
5. Danger-free
6. Pollution-free
7. Energy-conservation
8. Of great profits

Benefits from the advanced pyrolysis tech:

A. Regaining energy and value from waste in the form of fuel and charcoal

B. Reducing the plastic and tire pollution problem

C. Recycling of plastics and tires which are Eco-friendly

D. Commercially viable process

E. End product oil is used as substitute to Furnace oil

F. Perfect solution for Polymer waste management

G. Raw material (waste tires, waste plastics) available

H. Zero emission process: no harm to environment

I. Less reaction time and more energy savings

J. Plant is Energy self sufficient

Device composition

1.Heating system

Reactor

Using Q245R boiler steel and the thickness is between

14mm and 18mm.(The thickness would be adjusted

according to the requirements of the customers).

The main engine uses horizontal-type of 360^{o}structure-0.4 r/min

2.Separation system

Gas separator & Depositing tank

Depart the heavy oil and impurities from the oil gas to purify the oil.

3.Condensing system

a. The "S" shape extends the condensing area, up to 42 m^2

b. The open pool makes natural cooling viable, which is energy conservation and free of danger

c. Cooling down quickly with the pipeline diameter of 219mm and length of 6m

d. The elbows make it easier and convenient to clean and maintain

e. Just need to make up the vaporized water, it's water conservation

f. Condensing tower and vertical condensers can be added based on the customers' requirements

Our newest design:

set one condenser between water seal and oil tank to cool the waste gas so that the oil yield rate will be higher

4.Exhaust disposal system

Desulfurization dedusting, Water film cyclone,

1) Desulfurization dedusting : remove the sulpher (when use coal as fuel) and dust

2) Water film cyclone: for the second removal and the smoke from the waster film cyclone is white, butt pollution-free.

5.Waste gas recycle system

Water seal & Spray fire gun

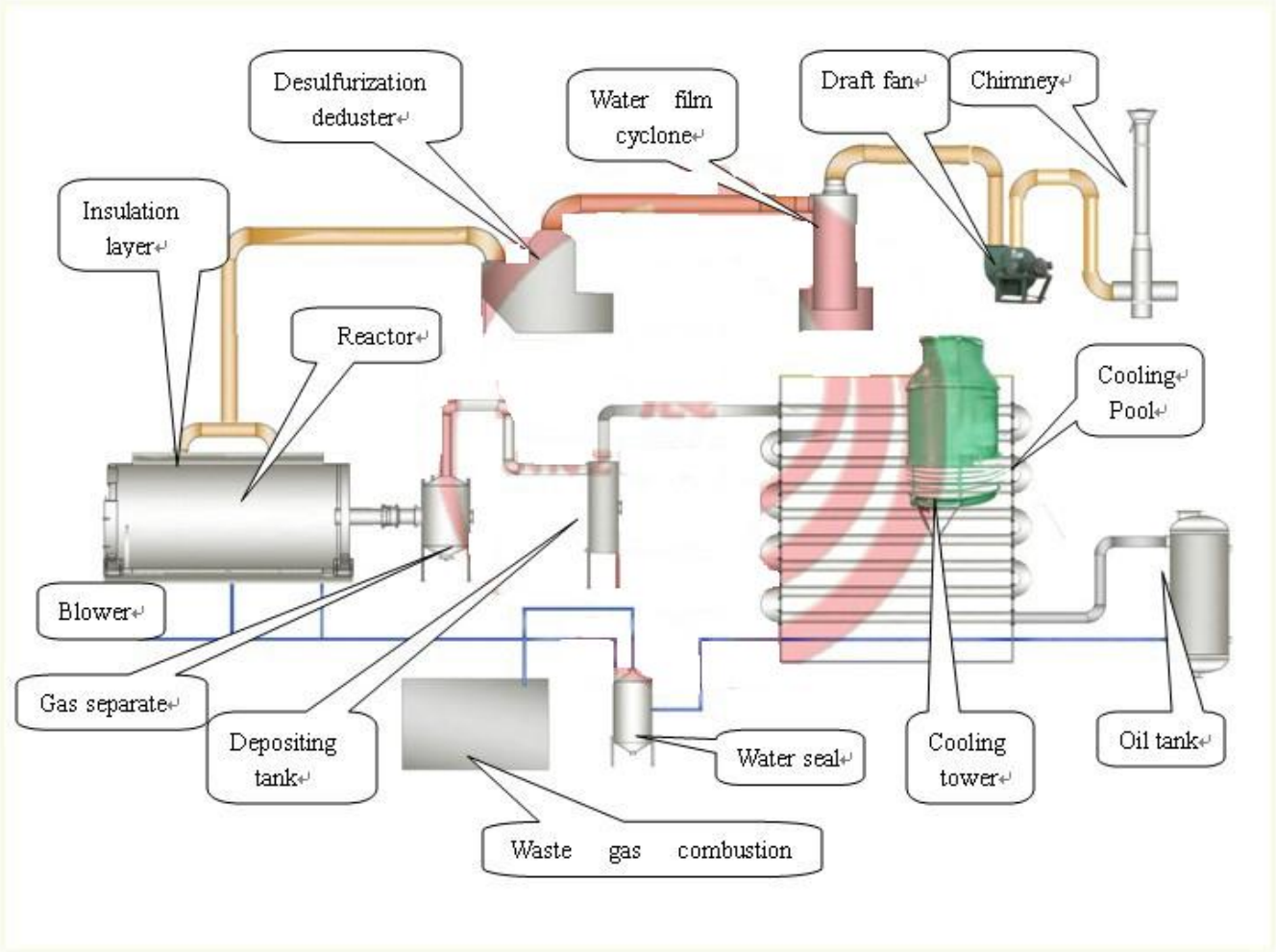
In the process of refining oil, when the gas is heated up to 150 , it will produce a large amount of gas-CH_4& C_4H_8, which cannot convert to liquid at normal temperature and normal pressure. However, these gases can be used as fuel, which is not only environment protection but also energy conservation.

6.Carbon black recycle system

Heaving dragon screw conveyor

The solid residua will be left after the catalyst splitting from scrap plastic, approximately take up 5% to 10% of the waste tire. Its main component is the black carbon, which can be used as raw materials in industry, as well could be mixed with the pulverized coal ash to produce the raw material of the thermal power plant, and also could be applied to the manufacturing of the pulverized coal ash brick (a kind of environmental protection building material).

FLOWCHART



Feed the reactor with raw materials through the feeding door by labor or machine and then close it tightly. Heat the reactor with coal, wood or other fuels. Some harmful smoke will come out along with the heating, but it can be removed by the desulfurization deduster and the water film cyclone. The smoke form the exhaust disposal system is no different from the air. The draft fan helps to inhale the smoke from the pipe and then release it into the sky more quickly.

The oil gas will travel from the reactor to the gas separate, in which the heavy oil and impurities will depart from the gas due to the gravity. Then the gas will continue its journey into the depositing tank for a second separation. After that , the cleaned oil gas will run into the cooling condensing pipes in the cooling pool, where the gas will convert to liquid, the oil, and then flow into the oil tank for storage.

There will be some waste gas in the oil tank. It will follow the pipe over the oil tank into the cooling pool for a second condensing so that the remained oil gas could turn to oil to improve the oil yield rate. As for the waste gas, that cannot transform to liquid will go to the water seal and then to the furnace for burning. ***It is not only environment protection but also energy conservation.***