



PYROLYSIS MACHINE

Devoted to the field of the Pyrolysis Plant & Distillation Plant



Whatsapp Code



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Shangqiu Mingsen Environmental Protection Equipment Co., Ltd

Shangqiu Mingsen Environmental Protection Equipment Co., Ltd is modern factory combined R&D, Manufacturing and Selling, company focus in pyrolysis and distillation area, own professional 3 R&D personals, 24 engineers, 18 technicians, our company insist on the principal of 'Service First, Quality First', with high qualitative production, good reputation and Excellent Service, production has been sold to more than 20 provinces, exported to Malaysia, Thailand, Korea, Philippines, Russia, Middle East etc... more than 60 countries. Company Competitive Production: Waste Plastic, waste tyre, waste rubber and other solid waste Pyrolysis machine, Used engine oil, crude oil and other waste oil Distillation machine. Since 2008, our production has been updated to 8th generation production, build with perfect after-sale service system, from pre-sale technical guidance to After-sale installation, training and commissioning on buyer site. Company insist on lifetime service to help customer solve the problem during machine running process.



Waste Tyre



OTR



Waste Bicycle Tyre



Waste Plastic



Waste Acrylic



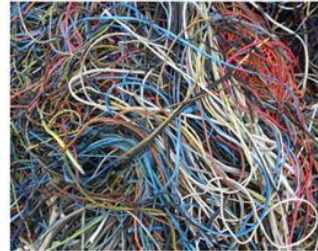
Residue /Heavy Oil



Waste Rubber



Waste Plastic



Waste Cable Skin



Oil Sludge



Waste Leather



Industrial Paint Residue



Waste Sole



Waste Aluminum Foil

Waste Plastic from
Paper mill

MSW



Industrial Waste



Waste Oil Filter

Note: Different Material require different machine structure and different operating process. Contact with us on your planning processing material, so that we can give the most exactly solution.

Waste Plastic Different Type Yield:

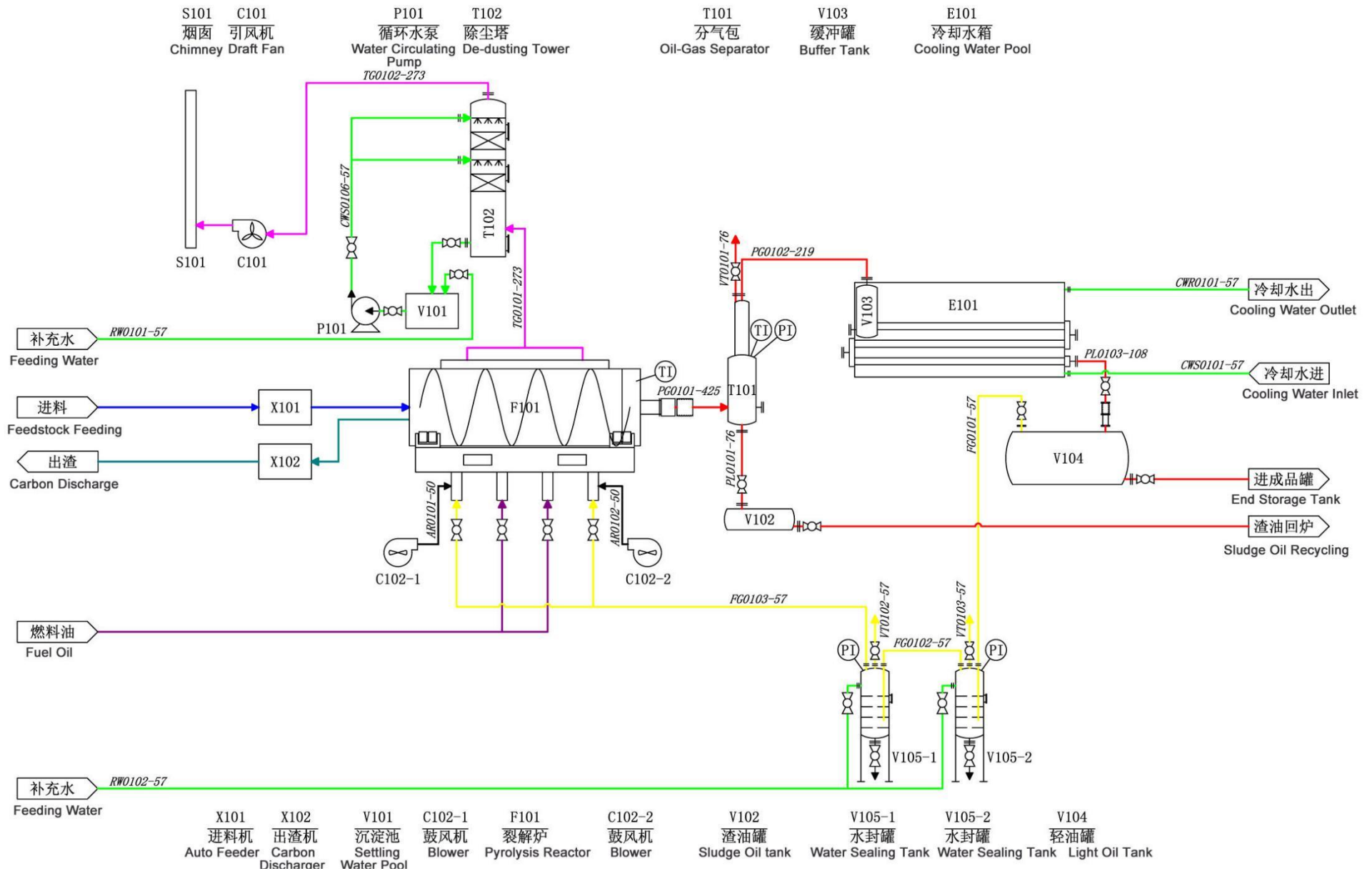
(Note: PET,PVC and other Polyester are not suitable for pyrolysis oil, PVC material usually like Thin film,Cable,Floor Board, pipes, plates, sole of shoe,toys, door and windows, skin of cable,Stationery,etc..)

Plastic Type	Usual Material can see in market	Approx Yield
PE	Think film, bottle, Electrical Insulation Materials,Plastic Handbag, Waterpipe, Oil Drum, Beverage Bottle, Calcium Milk Bottle, Daily Supplies etc...	~95%
PP /Polypropylene	Thin film, plastic rope, Food Utensils,Basin, Bucket,Furniture,Woven Bag, Cap for bottle, Car Bumper etc...	~90%
PS /Polystyrene	Electrical Equipment, Stationery, cup, Food containers,Casing of Household electrical appliances, Electrical Accessories, Foam products, toys, etc...	~90%
ABS Engineering Plastic		~40%
Pure White Plastic Cloth		~70%
Instant Noodle Packaging Bag		~40%
Plastic Trademark		~20%
Waste plastic from Paper Mill	High water content	~60%
MSW		30~50%
Clean Plastic Bag		~50%




Waste Rubber Different Type Yield:

Note:Waste Tires only cover the component of rubber, carbon and steel wire, pyrolysis speed is faster, waste plastic component a little complex, slower pyrolysis speed.

Big Car Tires	If higher steel wire content, then less oil yield	~45%
Small Car Tires, Bicycle Tires		~35%
Rubber Cable Skin,sole of shoe	Gym shoes oil content is 20~30%	~35%
Waste Synthetic Fiber Carpet Material		~30%
PMMA		~90%
Miscellaneous Rubber		~35%



Step No.	Working Flow	Operating Action
1	Feeding	Put waste tyre in Auto feeder hopper with grappling, feed into reactor via Automatic Hydraulic Feeder, close the feeding door after finishing feeding.
2	Heating	Tyre oil or Non-condensable gas(Extra Non-condensable gas come from other pyrolysis machine running process) heating reactors evenly, after heating around 2 hours temperature up to 260°C,pyrolysis gas come out from oil gas outlet to condenser system to be oil, finally go to oil tank.
3	Syn gas Processing	Along with oil to oil tank, still have Syn gas(C1-C4), the gas will go to heating furnace for heating after treating by 2 layers water sealing system and 1 layer fire arrester system, fully burned via oil burner, by this way, can save most heating fuel.
4	De-Dusting system	All dusts created by heating, extracted by professional draft fan,treated by de-dusting system, after treating, emission will be white steam without black dust, white steam will be further treated by professional industry purification system before emission,ensure final smoke emission meet national standard emission requirement.
5	Slag Discharging (Carbon Black)	After reactor temperature cooling down to be lower than 100°C, open slag outlet, connect with automatic discharge machine with slag outlet, discharged carbon will be delivered to carbon warehouse via vacuum delivery system,ensure no dust fly out while discharging process.
6	Steel Wire Discharging	Open feeding door, take out steel wire with our automatic steel wire discharging machine, equipped with dust extraction equipment while discharging steel wire, ensure no dust fly out while discharging process.
<p>Note:</p> <p>1) Non-condensable gas is the gas which couldn't be liquefaction under normal pressure;</p> <p>2)Vacuum Delivery System also named as Vacuum Pneumatic Delivering System.</p>		

No.	Name	Yield	Usage	Photo
1	Tyre Oil	40%	<ul style="list-style-type: none"> * Sold directly * Further distillation to get gasoline and diesel. * Used as heating fuel. 	
2	Carbon Black	38%	<ul style="list-style-type: none"> * Sold directly * Further refine to get refinery carbon black. * Make pellets with carbon black briquette machine. 	
3	Steel Wire	15%	<ul style="list-style-type: none"> * Sold Directly. * Make steel block via Hydraulic Baler for deliverying and store convenience. 	
4	Syn gas	7%	<ul style="list-style-type: none"> * Used for heating fuel via gas burner(gas burner provide by free). * Extra gas can be stored via store system. 	

5.1 Fuel Type & Consumption

No.	Name	Auxiliary Tools	Fuel Consumption
1	Pyrolysis Oil(Tyre Oil)	Oil Burner	6 sets machine for example, each set machine require around 100kg tyre oil for heating
2	Natural Gas	Oil Burner	1 set machine for example, each set machine require around 350kg tyre oil.

5.2 Electricity Consumption per set machine(Take 10-12TPD as example):

No.	Motor Name	Total Power
1	400 Speed reducer 5.5KW, Draft Fan 4KW, Blowers 1.8KW,Carbon Black discharging 2.2KW Water Pump 2.2KW, oil pumps 2.2KW Hydraulic Auto Feeder 11KW	29KW

5.3 Water Consumption

Water used for cooling down oil gas, recycling utilized, no consumption(except evaporation).

No.	Capacity	Model	Feeding Time	Pyrolysis Time	Cooling Time/Hours	Discharge carbon Time	Discharge steel wire Time	Total Hours
1	5TPD	LL-2200*6000	1 hour	7 hours	4-6 hours	0.5 hour	0.5 hour	11-15
2	6Tpd	LL-2200*6600	1 hour	7 hours	4-6 hours	0.5 hour	0.5 hour	11-15
3	8Tpd	LL-2600*6000	1 hour	8 hours	6 hours	1 hour	0.5 hour	16.5
4	9Tpd	LL-2600*6600	1 hour	8 hours	6 hours	1 hour	0.5 hour	16.5
5	10Tpd	LL-2800*6000	1.5 hour	9 hours	6 hours	1 hour	0.5 hour	18
6	12Tpd	LL-2800*6600	1.5 hour	10 hours	7 hours	1 hour	0.5 hour	20
7	15Tpd	LL-2800*7500	2 hour	12 hours	7 hours	1.5 hour	0.5 hour	23
8	17Tpd	LL-2800*8000	2 hour	14 hours	8 hours	1.5 hour	0.5 hour	26

Note: Above data for reference only, if you have different material with waste tyre, contact with us to get more detailed data.

Equipment Cover Area

No.	Quantity	Covering Area	Auxiliary Area	Note
1	1 set	300 m ² (L*W*H= 30M*10M*7M)	200 m ² (Raw material and end product store area)	Office,staff canteen and dormitory not included.
2	2 sets	600 m ² (L*W*H= 30M*20M*7M)	200 m ² (Raw material and end product store area)	
3	3 sets	900 m ² (L*W*H= 30M*30M*7M)	300 m ² (Raw material and end product store area)	

Note: Above size for basic reference, if you have special size or requirement on installed qty, contact with us.

After-Sale Service

No.	Service Type	Service Content Description
1	Warranty	Warranty 1 year for whole set machine, lifetime maintenance.
2	Installation and Training	Send Technicians to buyer site for installation guidance, commissioning and training, whole process for free .
3	Shipment	Arrange shipment and post documents to buyer for cooperating clean custom
4	Wearing Parts	Lifetime provide spare parts (with lower price than market)
5	Drawing supply	Supply layout, foundation and install drawings for free once confirm order.

Daily Input:

Waste Tyre: USD 30/ton, 30* 20 tons=USD 600.00

Wages: 4 workers/shift, 2 shifts totally 8 persions, averagely USD 100/worker/day, USD100*8 workers=USD 800.00

Electricity: Total 500KW per day,500KW*USD 0.2/KW=USD 100.00

Fuel: 600kg tyre oil and non-condensable gas

Daily Input Summary: USD 600+USD 800+ USD 100=USD 1,500.00

Daily Output:

Tyre Oil: Yield 40%,20 tons tyre *40%=8 tons tyre oil, 600kg used as heating fuel, 7.4 tons left for selling.

USD 350/ton*7.4tons=USD2,590.00

Steel Wire: 15%*20 tons=3 tons, USD 200/ton, 3 tons*200=USD 600.00

Carbon Black: 38%*20 tons=7.6 tons, USD50/ton, 7.6 tons*USD 50/ton= USD 380.00

Daily Output Summary: USD 2590+USD 600+USD 380=USD 3,570.00

Profit:

Daily Profit: Daily Output-Daily Input=USD 3,570-USD 1,500=USD 2,070.00

Monthly Profit:USD 2070*25 days(25 working day per month)=USD 51,750.00

Yearly Profit: USD 51750 *10 months(10 working months per year)=USD 517,500.00

Note: Different country different region price different, please refer above calculation way to get your local exactly profit.

Our production has been inspected by many third inspection party to ensure machine safe characteristics. Machine equipped with anti-blocking system, pressure gauge, alarm system, safe valve and alarm system for pressure and temperature. Machine right running based on atmospheric condition. Machine security risks mainly come from non-liquefiable Alkanes C1-C4, heating directly has some dangerous, our company adopt the technology as below: Before burning, treat it via 2 layer safety device and one layer fire arrester, then go through 2nd layer safety device gas burner, ensure it can be fully burning, reduce emission and security risks at most.

In addition, machine equipped with pressure gauge, automatic alarm system and thermometer, etc... When reactor inner pressure over fix pressure data, can relieve pressure and alarm automatically.

Machine equipped with Syn gas recycling for burning device, ensure no odor; Equipped with de-dusting system, no black smoke emission; Whole cooling system required water is circulating utilization, no waste water flow out; Waste slag processed by more than 400°C temperature, no any toxic. According different raw material, design different fire channel scientifically, ensure maximize the heating utilization, achieve energy saving.

Whole set machine noise lower than National standard.

This system mainly used for processing the soot created by heating during pyrolysis process, first dedusting by 1st layer de-dusting system, this system equip with stainless steel spiral nozzle and filled with Bauer Ceramic Ball, adopt water spray method to remove particulate matter from flue gas, treated gas rapid cooled down via 2 layers condensers, then go to cyclone dust removal system, which second time remove the particular which didn't get processed by first layer de-dusting system. Then Neutralize the sulphur and acid content via Lye Washing system, treated gas go to air cooling tower to cool down the gas, then go the water gas separator to separate the water and gas, separated gas enter UV photolysis activated carbon absorption filtration system, which take advantage of the special high-energy high-ozone UV ultraviolet beam irradiates odorous gas, for example: Molecular Bonds, such as sulfides, allow free-form pollutant molecules to be oxidized with ozone to form small molecules which are harmless or less harmful, like CO₂, H₂O, etc... Also by high-energy high-ozone UV ultraviolet beam to decompose oxygen molecules in the air to generate free oxygen, that is active oxygen, the positive and negative electrons carried by free oxygen are unbalanced, so they need combine with oxygen molecules to generate ozone, says $UV + O_2 \rightarrow O + O^*$ (active oxygen) $O + O_2 \rightarrow O_3$ (Ozone).

As we all know, ozone has strong oxidation effect on organic matters, has strong removal effect on odorous gas and other irritating odors. Purification equipment use high-energy UV ultraviolet beam and Ozone to decompose and Oxidate the stench gas, decompose the malodorous gas and converts them into low molecular compounds, water and carbon dioxide, then emission via exhaust pipe. With high energy UV beam, pyrolysis the bacteria molecular bonds of malodorous gas, destroy the Nucleic acid (DNA) of bacteria, then get oxidation reacting with ozone, completely achieve the purpose of deodorizing and killing bacteria.

After above multiple processing procedures, the **gas which achieve national standard** can be draft out for emission via chimney.

No.	System Name	Note
1	Feeding System	Automatic feeding, conveyor belt feeding can be chosen
2	Reactor,insulation,heating furnace	Reactor lifetime at least 5 years
3	Sealing System	Graphite sealing material, plus reasonable structure, sealing perfect
4	Running System	Low speed but high temperature resistance can ensure 8-9 years lifetime running device
5	Oil Gas Separating System	8-9 years lifetime
6	Cooling System	Sufficient cooling area ensure cooling time shortest, cooling effect best
7	Oil Tank	With shell cover, which can cover some pressure
8	Syn Gas Recycling System	Heating fuel reduction, recovery the waste gas, protect environment
9	Safety System(Cover Temperature and Pressure Alarm)	Safe is first important thing we should consider for customer
10	De-dusting System	Emission must ensure meet local national standard
11	Oil Pump, Water Pump,etc...	Prepare, no need customer second time consumption
12	Pressure Gauge, Thermometer, Safe Valve,etc...	Safe is first important thing we should consider for customer
13	Flange, Elbow, Blind Plate,etc...	National standard, ensure safe for customer who using the machine
14	Pipes, Channel Steel,Angle Iron,etc...	National standard, ensure safe for customer who using the machine

NO.	Model	Packing
1	LL-2200*6000mm	2*40HQ
2	LL-2200*6600mm	
3	LL-2600*6000mm	1*40FR(open container) 1*40HQ
4	LL-2600*6600mm	
5	LL-2800*6000mm	
6	LL-2800*6600mm	
7	LL-2800*7500mm	1*40FR(open container) , 1*40HQ, 1*20GP,
8	LL-2800*8000mm	1*40FR(open container) , 2*40HQ,









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