

SIMEC
WE ENGINEER YOUR SUCCESS!



SIMEC MACHINERY PRODUCT LIST

Upgrade the Value of Biomass Waste



HENAN SINOVO MACHINERY ENGINEERING CO., LTD.

+86 372 5375806
www.simecpellet.com
info@simecpellet.com

Company Profile

Henan Sinovo Machinery Engineering Co., Ltd (SIMEC) is a leading supplier of plants, equipment, services for wood pellet project, palm EFB pellet project, RDF pellet project, agrowaste pellet project, torrefaction project, biocoal pellet project, and biomass burner, pellet burner, etc.

SIMEC is specialized in the research and development of biomass energy applications, and equipment manufacture.

The target of all our research and equipment engineering is to promote the application of biomass energy technology. The biomass energy utilization influences the energy structure all over the world. On one hand, there is the shortage of traditional fossil energy; on the other hand, the low grade utilization of bio-energy is a wastage. So for our earth and our future generations, it is very important and necessary to develop high efficiency technology and equipment to utilize biomass materials.



Product Catalogue



Solid Waste Shredder
01



Drum Chipper
03



Hammer Mill
05



Ultra-Fine Pulverizer
07



Rotary Drum Dryer
09



Mobile Pellet Plant
11



Pellet Mill SPM420
13



Pellet Mill SPM520S & 650S
15



Pellet Mill SPM780
17



Pellet Mill SPM850
19



Pyrolysis Laboratory Apparatus
21



Automatic Charcoal Plant
23



More Information

Description

SIMEC solid waste shredder can process various kinds of raw materials, such as wooden pallets with nails, waste wood furniture, veneer waste, plywood waste, wooden template, vehicle tire, building template, straw bales, paint pots, etc. The solid waste shredder is equipped with double shafts & motors, customized special knives. Automatic Control System is adopted with start, stop, reversal and overload automatic reversal functions. Solid Waste Shredder has the features of low speed rotation, large torque and low noise, etc. The bearing seat adopts open type, which is easy and convenient to dismantle and change the bearing seal. Shredder machine is suitable to shred large, thick and hard materials.



Features

- ◆ Top open feeding inlet which can shred wooden pallets with nails, waste wood furniture, and other solid waste, etc.
- ◆ High shredding ability, large torque and low noise.
- ◆ Automatic material feeding/reversal functions.
- ◆ Sizes of shredded material adjustable as for requirements.
- ◆ Low speed rotation, low noise, less dust emission.
- ◆ Knives are made of special tool steel, sturdy and durable;

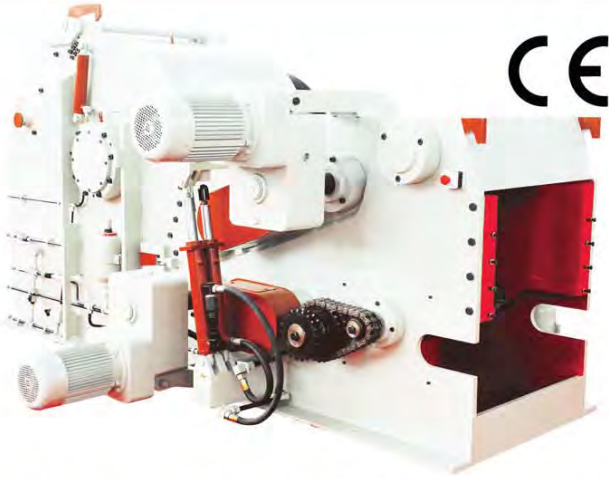


Specification

Model	SD-2600	SD-1900	SD-1500	SD-1200	SD-1000	SD-600
Motor power(Kw)	160+160	90+90	45+45	37+37	37+37	15+15
Output(ton/hour)	15~18	8~10	6~8	5~7	3~6	1~3
Weight(Kg)	16000	9600	7500	6000	5200	3500
Output particle size(cm)	4	3	3	3	Optional	None
Discharge conveyor(Kw)	3~10	3~10	3~10	3~10	3~10	3~10
Bin size(m)	2x3.5	1.6x2.5	1.2x1.8	1.4x1	0.8x1	0.7x0.75
Overall size(m)	8x4x4.3	6.5x1.6x2.4	5.2x1.5x2.4	3.2x1.5x1.9	2.9x1.5x1.7	2.1x0.85x1.6



More Information

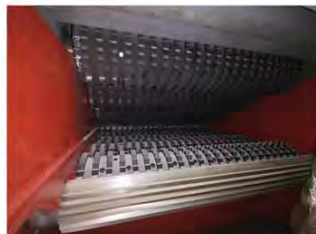
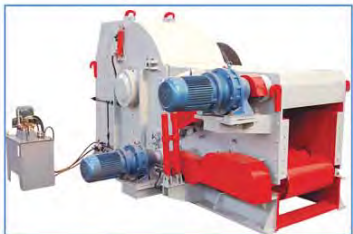


Description

SIMEC Drum Chipper is a kind of special equipment for wood chipping, widely used in shaving board, chipboard and paper mills and other industrial production.

This kind of machine is mainly used to chip wood logs, wood cutting remains (tree stumps, branches, etc.) and waste material from wood working industry (slab, lath, logs core and waste veneer, etc). Wood chip size is adjustable upon clients' requirements. It can also cut non-wood materials, like bana grass, palm EFB, palm trunk, bulrush, gross bamboo and so on.

SIMEC has more large scale heavy duty wood chippers, which can chip larger wood logs or trunks in diameter above 450 mm till up to 700 mm. SIMEC drum wood chippers are of advanced structure, high quality material, wide adaptability of raw materials, simple operation and maintenance.



Features

- ◆ Automatic raw material feeding system.
- ◆ Adjustable chipped material sizes.
- ◆ Optional mobile chipping solution.
- ◆ High Quality Surface-Hardening Gear Reducer.



Specification

Model	BX213	BX215	BX216	BX218	BX2113	BX2113D	BX2116
Knife number	2	2	2	2	3	2*3	4*2
Inlet dimension(mm)	120*300	160*400	240*540	240*680	450*700	450*1000	600*1250
MAX Diameter of feeded wood(mm)	90	160	220	240	450	450	600
Length of Finished product(mm)	25	30	30/22	30/22	38	38	30
Capacity (cubic meter/hour)	3	4-5	10	15-20	35-60	65-90	95-185
Mail engine(kw)	30	45	55	110	200	315	400

MFSP140 Series Hammer Mill

Upgrade the Value of Biomass Waste



More Information



Description

MFSP140 series wood hammer mill is designed to grind a variety of woody wastes and other biomasses with large sizes, such as wood chips, chopped barks & branches, shredded roots, wood blocks, chipped wood slabs, corn cob, chopped paddy straw and cotton stalk, shredded palm EFB fiber, shredded old palm trunk, sugarcane bagasse, and so on.

MFSP140 wood hammer mill adopts steel plate welded structure. Electric motor and milling rotor are installed on the same base and directly connected by coupling. The milling rotor is checked by high precision dynamic balance. The top-open feeding inlet matches with dilated feeding belt conveyor. The milling hammers are arranged symmetrically. It features compact structure, high grinding efficiency, sturdy and durable production, safe and reliable operation and easy maintenance.



Features

- ◆ SKF BEARINGS for milling rotor, including AUTOMATIC BEARING COOLING SYSTEM by circulating coolant liquid. Reduce maintain consumption but increase the service life of bearings.
- ◆ SIEMENS standard motor. Multiple milling chamber design. DIAMETER 1400 MM milling rotor, WIDTH 400 to 1600 MM milling chamber.
- ◆ Reinforced and welded as a whole pedestal plus the uniquely designed damper results stable operation;
- ◆ Specially designed fast open slide gates to change screen and to inspect inside status;
- ◆ Split type screen design, reduce maintenance cost of screens;
- ◆ Equipped with dust separation system. It helps to reduce fly dust generated by crushing process, thereby keep working environment clean.
- ◆ Ingeniously hammer fixing groove results quick hammer replacement;
- ◆ Double sound-proof layers on the slide gates lead to 90~95 decibel low operation noise;
- ◆ Milling rotor lifting device to benefit maintenance on bearings, hammers, etc.

Specification

Model	MFSP140x40	MFSP140x80	MFSP140x120	MFSP140x160
Rotor Diameter (mm)	1400	1400	1400	1400
Width of Milling Chamber (mm)	400	800	1200	1600
Speed of Main Shaft (rpm)	1480	1480	1480	1480
Linear Speed of Hammer (m/s)	108	108	108	108
Hammer Quantity (pcs)	48	96	144	192
Power (kW)	75/90	110/132	160/185	200/250
Screen Size (mm)	1500*390 (2 pcs)	1500*390 (4 pcs)	1500*390 (6 pcs)	1500*390 (8 pcs)
Overall Dimensions (mm)	Length	2060	2784	3196
	Width	2010	2010	2010
	Height	2220	2220	2220



More Information



Description

SIMEC biomass ultra-fine pulverizing production line is specially designed to pulverize various kinds of biomass materials, such as wood chips, bamboo chips, bagasse, palm EFB, etc. into high value-added products. The ultra-fine pulverizing system consists of Coarde Grinder, Pulverizer, Cyclone, Pulse Dust Collector, Fan, Piping System and Control Cabinet. It's friendly for processing feedstocks with larger particle size due to the integrated coarse grinder.

The air inlet and fan are equipped with a dedicated muffler, aiming to greatly reduce the noise level. Free of dust emission can be achieved as the pulverizing presents in an enclosed production path backed by an outstanding pulse-dust-collecting system.



Features

- ◆ Screen free structure design for the pulverizer, free of blockage.
- ◆ Innovative design of pulverizing mechanism, high yield, uniform fineness and low temperature rise on material.
- ◆ Rugged transmission technology, steady operation.
- ◆ 60 to 300 meshes can be adjusted dynamically without shutting down the production line.
- ◆ ≤80 dB noise with mufflers for pulverizer and fan.
- ◆ Powder product discharging system includes cyclone separator and pulse dust collector, enhancing production capacity and no dust spilling over.
- ◆ Toothed blade and gear ring adopt high quality carbide, which greatly extends the service life of wearing parts.
- ◆ Specially designed comminution rotor structure, high capacity, uniform fineness, low temperature rises on material.
- ◆ Main shaft adopts imported SKF bearing, long life span.
- ◆ Compound water cooling & air cooling to the pulverizing chamber, ensuring safety and quality.

Specification

Model	CGFP30	CGFP40	CGFP50	CGFP75	CGFP90	CGFP110	CGFP130	CGFP150	CGFP170
Grinding Disc Diameter(mm)	300	400	500	750	900	1100	1300	1500	1700
Fineness(mesh)	60-300	60-300	60-300	60-300	60-300	60-300	60-300	60-300	60-300
Feed Motor(kW)	0.37	0.55	0.55	0.55	1.1	1.5	1.5	1.5	1.5
Main Motor(kW)	18.5	30	45	75	90	110/132	132/160	160/200	220
Grading Motor(kW)	1.5	3	3	4	7.5	11	11	18.5	18.5
Air Lock(kW)	0.75*2	0.75*2	0.75*2	0.75*2	1.1+0.75	1.5+0.75	1.5+0.75	1.5+0.75	1.5+0.75
Coarse Grinder(kW)	7.5	11	11	22	customize	customize	customize	customize	customize

Rotary Drum Dryer

Upgrade the Value of Biomass Waste



More Information



Description

The drum dryer is customized based on the raw material conditions and customer's capacity requirements.

SIMEC has single layer and triple layer rotary drum dryer for drying different kinds of high moisture content bulk raw materials, such as wood sawdust, wood chips, palm EFB fibers, bana grass chops and sugar cane bagasse, etc.

Photograph



Features

- ◆ Fuel type for heat source: wood chips or sawdust, barks; Digital display for inlet & outlet air temperature; alarm system for over heat.
- ◆ Improved single triple pass design which increases the drying distance and efficiency; Negative pressure system to prevent any dust-release.
- ◆ Rotate speed adjustable, frequency control timing motors.
- ◆ 50mm thickness rock wool insulation; Dust explosion prevention design.
- ◆ Optional online moisture monitoring system.
- ◆ Automatic fuel feeding for chain grate stove.
- ◆ Optional automatic spark detecting and extinguishing system.





More Information



Description

Mobile pellet plant includes a complete process flow chart for making biomass pellets: **Chipping**→**Crushing**→**Drying**→**Pelletizing**→**Cooling**→**Packing**.

The process is separated into three modules: chipping & hammer crushing module, drying module, pelletizing & cooling module. It can process raw materials such as wood logs, wood chips, sawdust, palm EFB fiber, rice husk, straw, corn cob, sugar cane bagasse, bana grass, etc. This plant is equipped with a power generator. Its flue gas will supply heat for drying module.

According to customers' specific requirements and raw material condition, SIMEC team can design and customize Mobile Pelletizing Solution.



Features

- ◆ Free of workshop by its compact containerized structure.
- ◆ Its location can be anywhere close to the raw materials.
- ◆ Easy for assembly/disassembly and transportation.
- ◆ Installation & commissioning completed before delivery.
- ◆ Automatic PLC control system. Optional remote monitoring & control.



Specification

Model	Pellet Mill Quantity	Capacity
Model A	Single Pellet Mill	15,000 MT/Year
Model B	Two Pellet Mills	30,000 MT/Year
Model C	Three Pellet Mills	45,000MT/Year



More Information



Description

SPM series high-grade pellet mill is the main item of equipment for producing biomass pellet with application to large and medium scale biomass pellet plant.

The machine features compact structure, fine appearance, low noise, and high output with low power consumption. It is convenient in operation and reliable in performance.

Ring dies with $\phi 6$ mm or $\phi 8$ mm die holes are alternative according to pellet production requirements.

The machine adopts frequency speed control screw feeder, and optional large door conditioner with liquid addition access.

SIMEC pellet mills can make biomass pellets from wood sawdust, palm EFB fiber, palm trunk, sugar cane bagasse, bana grass, agriculture wastes, and other kinds of biomass raw materials.



Features

- ◆ Automatic Lubrication System
- ◆ Moisture Adjusting Device
- ◆ Overload Protection Shear Pin
- ◆ Integrated Main Shaft
- ◆ Interlocked Roller Adjusting System
- ◆ Frequency Control Timing Feeder
- ◆ Die & Roller Hoist Device



Specification

Model	Capacity	Main Power	Force Feeder Powder	Screw Feeder (KW)	Ring Die Inner Diameter	Pellet Die
SPM420	0.8-1t/h	90kw	1.5kw	3 frequency control	$\phi 420$ mm	$\phi 6/8$ mm



Pellet Mill SPM520S & SPM650S

Upgrade the Value of Biomass Waste



More Information

Description

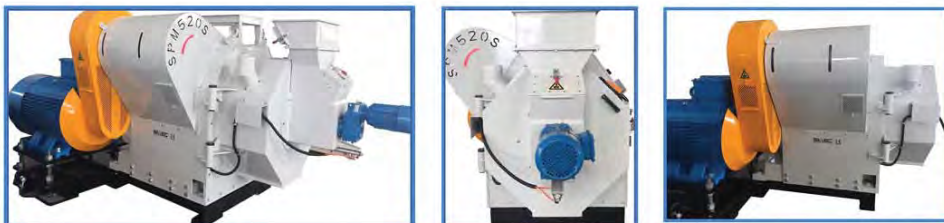


SIMEC SPM520S and SPM650S pellet mills are specially designed for the conversion of various kinds of biomass materials into high-quality biomass pellets. The pellet mills are driven by single motor synchronized tooth belt driving system.

Main shaft front and rear bearings both adopt SKF brand. Ring die is made of 4Gr13 stainless steel which adopts roll forging technology.

The transition shaft design reduces rotation speed of hollow shaft & ring die. Then torque output is increased. Biomass raw material can be pressed inside ring die holes for longer time. Based on the same compress ratio, hardness and density of pellets can be both improved.

Roller bearing temperature monitoring system helps to increase life span of roller bearings, monitor inside running status of pellet mill, and reduce operating cost.



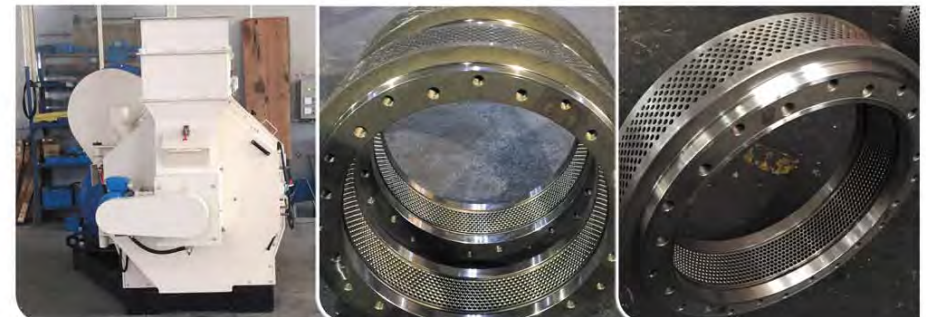
Features

- ◆ Main shaft front and rear bearings both adopt SKF brand.
- ◆ Equipped with temperature monitoring system for roller bearings.
- ◆ Main shaft and roller bearings adopt automatic lubrication system.
- ◆ Pneumatic quick-dump bypass and safety pins for overload protection.
- ◆ Die & rollers electric hoist device.
- ◆ Moisture adjusting device.



Specification

Model	Capacity	Power	Pellet Diameter	Pellet Shaping Rate	Noise
SPM520S	1.5-2.0 t/h	132kW	Φ6~Φ12mm	≥ 95%	≤ 70dB(A)
SPM650S	2.0-2.5t/h	200kW	Φ6~Φ12mm	≥ 95%	≤ 70 dB(A)





More Information



Description

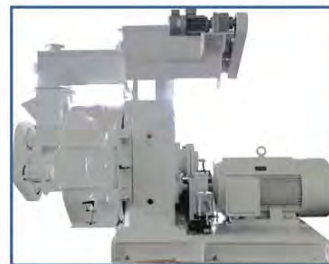
SPM series high-grade pellet mill is the main item of equipment for producing biomass pellet with application to large and medium scale biomass pellet plant.

The machine features compact structure, fine appearance, low noise, and high output with low power consumption. It is convenient in operation and reliable in performance.

Ring dies with $\varnothing 6\text{mm}$ or $\varnothing 8\text{mm}$ die holes are alternative according to pellet production requirements.

The machine adopts frequency speed control screw feeder, and optional large door conditioner with liquid addition access.

SIMEC pellet mills can make biomass pellets from wood sawdust, palm EFB fiber, palm trunk, sugar cane bagasse, bana grass, agriculture wastes, and other kinds of biomass raw materials.



Features

- ◆ Dual force feeders.
- ◆ Integrated main shaft.
- ◆ Main shaft bearings adopt SKF brand.
- ◆ Automatic lubrication system for roller bearings.
- ◆ Automatic forced cycle oil lubrication system for transmission unit.
- ◆ Frequency control timing feeder adopts SEW gearbox.
- ◆ Moisture adjusting device and overload protection system.



Specification

Model	Capacity	Power	Pellet Diameter	Pellet Shaping Rate	Noise
SPM780	2.5-3 t/h	200/220kW	$\varnothing 6\sim\varnothing 12\text{mm}$	$\geq 95\%$	$\leq 80\text{dB(A)}$





More Information



Description

SPM850 wood pellet mills adopt belt flexible transmission technology, large torque but low noise. Linear speed of ring die is adjustable through belt pulley replacement. The main motor configuration includes dual-motor mode and single-motor mode, depending on use requirements.

The machine is designed to make pellet fuel from a variety of woody and agricultural biomass material. It is equipped with frequency control timing feeder and operation security system.

All parts in contact with biomass material are made of stainless steel, including material feeder and pelleting chamber, which prolongs the service life of pellet mill.



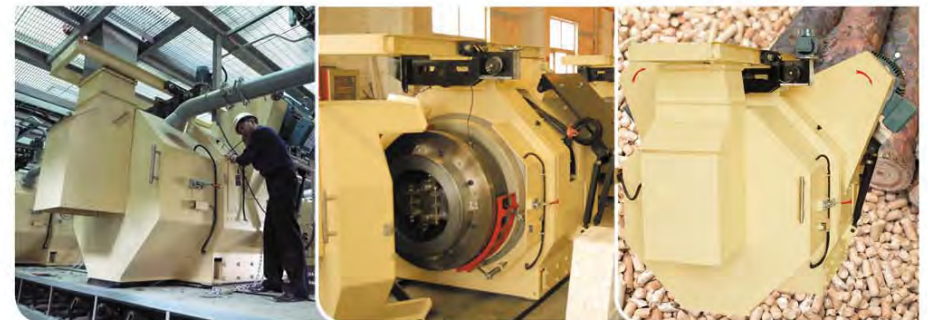
Features

- ◆ Main shaft front & rear bearings both adopt SKF brand.
- ◆ Equipped with temperature monitoring system for roller bearings.
- ◆ Main shaft and roller bearings adopt automatic grease lubrication system.
- ◆ Pneumatic quick-dump bypass and safety pins for overload protection.
- ◆ Die & rollers electric hoist device.



Specification

Model	Capacity	Power	Pellet Diameter	Pellet Shaping Rate	Noise
SPM850	3.8-4.5 t/h	132*2kW	Φ6~Φ12mm	≥ 95%	≤ 70dB(A)



Biomass Pyrolysis Laboratory Apparatus

Upgrade the Value of Biomass Waste



More Information



Features

- ◆ Raw Material Requirement: small particle solid phase raw materials, moisture content $\leq 15\%$, particle size less than 20~30 mm.
- ◆ Biomass Processing Capacity: 5~10 Kg/H.
- ◆ Pyrolysis Temperature Range: 200-1100 °C. Temperature control precision is ± 1 °C.
- ◆ Equipped with PLC control system, process monitor, data logger & analysis software which can generate curve graphs.
- ◆ Syngas Online Monitoring and Analysis Module enables the researcher to gain complete data of synthetic gas, such as composition, proportion, thermal value, etc., and to graph dynamic data curves.
- ◆ Overall dimensions fit to be loaded in 20GP standard shipping container.
- ◆ All the biomass and syngas contact parts are made of stainless steel.

Description

Biomass pyrolysis laboratory apparatus is designed for scientific research on biomass thermal chemical process.

The apparatus can perform biomass thermochemical experiments at set temperature precisely. The sensitive data logging system provide precise experimental data of pyrolysis temperature, gas flow volume, pressure and so on. Different types of biomass pyrolysis experiments can be conducted by this apparatus, for example, torrefaction, carbonization, etc.

Compact design of the laboratory apparatus enables the operator to conduct biomass pyrolysis experiments in research office. The simple and accurate operation of the apparatus help the people, who will set up commercial biomass pyrolysis projects, to collect the relevant experimental data for further analysis and research, then improve commercial operation and enhance commercial benefits.





More Information



Description

SIMEC automatic charcoal production line is used to produce biomass charcoal via anaerobic destructive distillation technology. It is a kind of thermal chemical process which will generate combustible gas. The gas will provide heat for continuous biochar production. Waste heat could be captured from flue gas to dry the raw material to improve production efficiency.

The operation of biomass charcoal plant is fully automatic, being realized through the logical self-regulation based on the essential pre-set production parameter.

The key equipment of SIMEC carbonization process is called Three-phase fusion pyrolysis reactor. The reactor is made of high temperature resistance and acid & alkali corrosion resistance material, which guarantees the 24h x 7days stable and safe operation.

It's designed for continuous charcoal production at large capacity. After initial start up, it can work continuously without external heat source. Advance heat penetration technology reduces heat loss and greatly promotes production efficiency.

Features

- ◆ Automatic operation, continuous production and simple maintenance.
- ◆ Low production consumption, equipped with combustible gas utilization system.
- ◆ Energy saving, equipped with waste heat capture system.
- ◆ High production rate performed by state-of-the-art technology.
- ◆ Equipment safety and reliability guaranteed by advanced design & engineering.
- ◆ Charcoal cooling & discharging system enables low temperature of discharged charcoal which can be bagged directly.



Specification

Raw Material Species	Coconut shell	Almond shell	Mixed wood	Eucalyptus	Edible fungi residues	Corn cob
Moisture %	0.78	0.8	0.68	0.26	1	2.54
Ash %	2.11	5.74	4.64	6.55	26.34	15.7
Volatiles %	7.3	4.21	8.53	1.91	9.76	4.54
Carbon %	89.81	88.52	86.15	91.28	62.9	77.3
Calorific value Kcal	8064	7539	7810	7529	5756	6531

SIMEC TURNKEY BIOMASS PELLET PLANT

