



**PRAKRUTI  
MACHINES**

## **PRAKRUTI MACHINES**

#22. 4<sup>th</sup> cross, shambhavi Nagar, G. K. W. Layout, 2<sup>nd</sup> Stage Peenya industrial area, Bangalore – 560 058

Contact: +91-9241099621, +91-7411722213, Email: [info@prakrutimachines.com](mailto:info@prakrutimachines.com)

Web: [www.prakrutimachines.com](http://www.prakrutimachines.com)

The **Prakruti Machines** is a one of the Brand name of Hydraulic Briquetting Machines Manufacturer in india.

We have a Specially Own Designed, Developed and Manufacturer of Briquetting Machines, Hammer mills, Shredders.

We are in the briquetting of many different types of agro-waste materials. Their size reduction technology has benefited many customers who have chosen our equipments.

### ***"Hydraulic Briquetting Machine"***

*Absolutely low Maintenance*



**Briquette** is a chunk of combustible material that is commonly used in igniting and maintaining a fire, either in a boiler, grill or in an open space such as a fire pit. It is commonly in the shape of a Cylindrical, square or rectangle, but can also be found in lump form or other molded shapes. The size of the briquette is dictated by how it will be used. The most popular briquettes are biomass and charcoal varieties.

The majority of biomass briquettes are made from sawdust or similar wood waste products. The manufacturing process generally involves compressing the sawdust and forcing it into a machine that heats it and extrudes briquettes shaped like small fireplace logs. The particles in the log are held together by a natural substance in the sawdust, so no binders are required.

Commercially produced fireplace logs favored by many homeowners are actually biomass briquettes. A similar biomass briquette is commonly used as a substitute for coal or oil to heat manufacturing plant boilers. It is often preferred over other fuel sources because its use does not release any harmful fossil fuels into the environment. Another popular reason to use biomass briquettes for boiler fuel is that they reportedly are 30% to 40% cheaper to burn than oil or coal.

Many types of waste materials with a maximum moisture content of 18% can be processed without the need for any binders or additives to be used, such as: wood, paper, polystyrene, foam, metal scrap alloys or biomass. All briquette presses are pre-commissioned prior to delivery.



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### Machine Specification

PMB MODELS	PMB-500	PMB-600	PMB-700	PMB-800	PMB-900	PMB-1000
Main Motor [Hp]	30 Hp	30 Hp	40 Hp	40 Hp	50 Hp	50 Hp
Feeder Motor [Hp]	2 Hp	2 Hp	2 Hp	2 Hp	2 Hp	2 Hp
Offline Cooling cum Filtration Motor [Hp]	3 HP	3 HP	3 HP	3 HP	3 HP	3 HP
Water Pump [Hp]	1 Hp	1 Hp	1.5 Hp	1.5 Hp	2 Hp	2 Hp
Heat Exchanger	20000 K. Cal	20000 K. Cal	25000 K.Cal	25000 K.Cal	30000 K Cal	30000 K Cal
Hydraulic Tank Capacity	600 Ltrs,	600 Ltrs,	800 Ltrs,	800 Ltrs,	1000 Ltrs,	1000 Ltrs,
Cooling Tower	15 TR	15 TR	20 TR	20 TR	25 TR	25 TR
Briquette Diameter	Dia 90mm	Dia 100mm	Dia 90mm	Dia 100mm	Dia 90mm	Dia 100mm
Briquette Length	50mm to 250mm	50mm to 250mm	50mm to 250mm	50mm to 250mm	50mm to 250mm	50mm to 250mm
Productivity	400-500Kg/Hr	500-600Kg/Hr	600-700Kg/Hr	700-800Kg/Hr	800-900Kg/Hr	900-1000Kg/Hr
Electricity Consumption	20 Units/Hr	20 Units/Hr	25 Units/Hr	25 Units/Hr	30 Units/Hr	30 Units/Hr
Density	1.2 Grams/cm <sup>3</sup>	1.2 Grams/cm <sup>3</sup>	1.2 Grams/cm <sup>3</sup>	1.2 Grams/cm <sup>3</sup>	1.2 Grams/cm <sup>3</sup>	1.2 Grams/cm <sup>3</sup>
PLC	Delta/GE					
HMI	Delta/GE Touch Screen With Automated Control Panel					
Services	6 Month Free Services					
Warranty	10 Month From the date of dispatch					
Maintenance	Absolutely Nil (Punch and Die life is more then 6-months)					
Briquettes per Minute (Appx)	4 to 5	4 to 5	6 to 7	6 to 7	8 to 9	8 to 9

#### **Subject to Technical Changes !**

\*Capacity depends on machine execution and size and kind of the used material!

\*Briquette length depends on the machine adjustment and size and kind of the used material!

\*Machine size/weights depends on press part/hopper and extra equipment!



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### **The advantages of Prakruti Machines at a glance:**

- ✓ High Performance Pressing Mechanism with Low Wear and tear.
- ✓ Heavy Duty Base Chassis with Anti Vibration Feet
- ✓ Self Contained Hydraulic Power Pack
- ✓ Oil Temperature Safety Switch Module
- ✓ Delta PLC Control unit and Sensor System
- ✓ Compact construction.
- ✓ No installation costs.
- ✓ No special paid necessary.
- ✓ Automatic compensation of different bulk densities.
- ✓ Feeding with maximum 25 mm grain size.
- ✓ Round shape of briquettes make packaging simpler and storage easier.
- ✓ Low power consumption per unit of production.
- ✓ Reduction of handling and transport costs.
- ✓ Direct connection to machine tools owing to many years of experience, we are capable to Offer you an optimized solution of a briquetting system that meets your requirements.

### **The Advantages For All Trades**

#### ***Woodworking Industry***

For carpenters, joiners and saw mills, the wood chips are compressed into dense solid briquettes, effectively reducing explosion and fire risk. They are an ideal carbon neutral fuel for heating the workshop or to sell into the domestic market place. Wooden briquettes are clean and easy to handle, with a high calorific value and a residual ash content of less than 0.5%.

#### ***Paper-processing Industry***

Paper dust and fibres represent a high explosion and fire risk. By briquetting the residual materials will greatly reduce the risks. The reduction of the materials volume also facilitates more economical disposal

#### ***Plastic processing Industry***

With mould or model-making, or the waste from the Insulation and Packaging industry, by the briquetting of the plastic shavings, polystyrene or foam reduces the volume of waste by up to 90%, considerably reducing the disposal and transportation costs.

#### ***Agricultural Industry***

Bio-fuels such as Straw, Cotton stalks, Tobacco stalks, Sunflower stalks, Mustard stalks, are shredded into small pieces which are then processed into briquettes. Agro wastes like Paddy husk, Coffee husk, Groundnut shells, Coir pith etc. can be directly processed into briquettes, ensuring a clean space-saving environment.



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### **BIOMASS MATERIALS AND THEIR TYPICAL CHARACTERISTICS**

Biomass materials and biomass based industry residues are very important renewable energy sources. The importance of these materials as alternate fuels has been well recognized for use in power generation. While the characteristics of biomass vary from different geographical regions, the values for typical biomass materials are indicated for general guidance.

<b>Biomass</b>	<b>Grade</b>	<b>Bulk Density Kgs/M<sup>3</sup></b>	<b>Ash Content %</b>	<b>C%</b>	<b>H %</b>	<b>N%</b>	<b>O%</b>	<b>Calorific Value Kcal/Kg.</b>
Castor stick			5.40	45.97	6.65	1.28	40.70	4300
Castor Seed Shell			8.00	44.25	5.65	0.16	41.94	3860
Corn cobs	11% moisture	304	1.20	41.44	5.96	0.14	51.26	
Cotton pods			5.01	41.49	6.20	1.81	45.49	4200
Cotton stalk			3.01	41.49	6.20	1.81	47.49	4200
Saw dust	Loose	177	1.20	52.28	5.20	0.47	40.85	4400
Straw	Loose	80	15.50	35.97	5.28	0.17	43.08	3700
Straw	Bales	320						
Wood (hard)	---	330	1.50	52.30	5.20	0.50	42.00	4500
Bagasse	0.12	74	4.00	47.00	6.50	0.0	42.50	4200
Coir pith	0.12	47	13.60	41.27	4.02	1.51	39.60	4100
Cotton shell	0.21	79	4.60	44.19	5.87	0.73	44.61	4200
Coconut Wastes			6.31	46.69	5.89	0.07	41.04	3720
Coffee Husk			11.61	46.46	6.26	0.72	34.95	3745
Eucalyptus Saw dust	0.12	239	0.21	49.37	6.39	2.02	42.01	4400
Ground nut shell	0.15	165	3.10	33.90	1.97	1.10	59.93	4500
Mulberry stick			2.49	44.23	6.61	0.51	46.25	4380
Rice husk	0.12	235	22.20	36.42	4.91	0.59	35.88	4000
Sun flower stalk	0.12	93	4.30	44.20	5.50	0.50	45.50	4300
Sugar cane leaves	0.13	167	7.71	39.75	5.55	0.17	46.82	4200
Saw dust	0.12	165	1.20	52.28	5.20	0.47	40.85	4500
Subabul			1.20	42.76	5.68	1.07	49.29	3980
Sweet sorghum stalk			7.40	41.83	5.90	0.53	44.34	4100
Tobacco dust	0.18	586	49.40	19.94	1.63	4.35	24.68	1164
Tea waste	0.17	100	6.70	45.97	5.40	2.76	39.17	4000
Tobacco stem			20.6	28.30	4.50	1.00	45.60	3041

Source : Book titled "BIOMASS, Thermo-chemical characterization" Published by IIT, New Delhi.

#### **Please Note:**

Above biomass is suitable for using separately or in a mix form as an input of Raw Material for converting finished briquettes.

Calorific value may vary due to different quality of raw material.





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### Briquette Materials



Hemp Straw



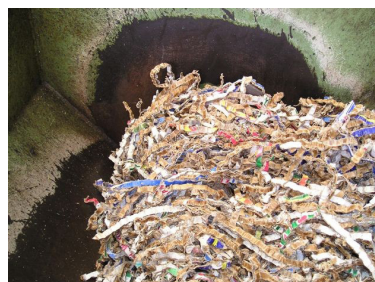
Corn cobs



Cotton



Groundnet shells



Shredded cartons



Saw Dust



Saw mill Chips



Card board dust



Wood chippis



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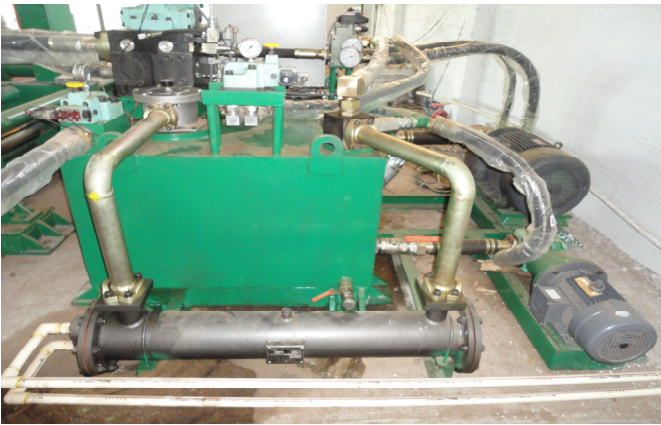
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PLC Control Panel



Offline cooling cum  
oil filtration system



Finished Products