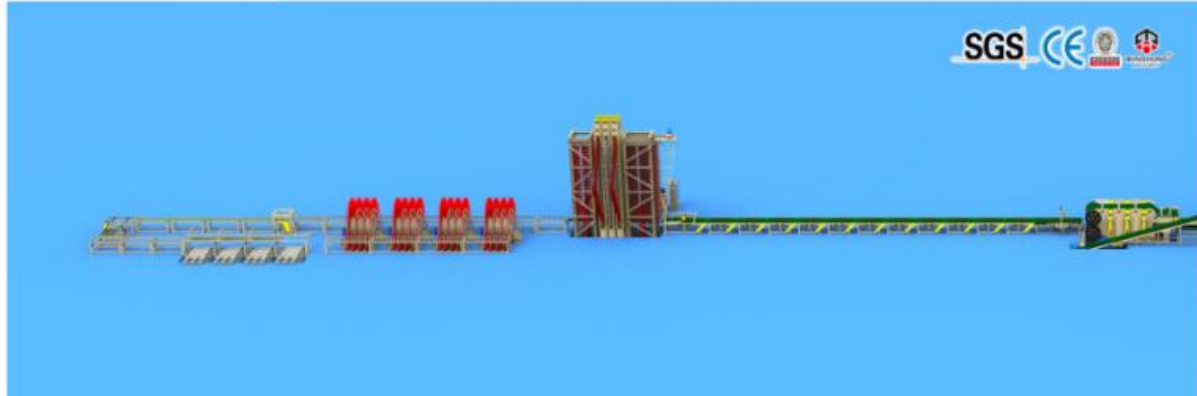


▶▶▶ Particle board Production Line



Particle board, also known as chipboard, is a versatile material widely used in the construction and furniture industries. It is a type of composite panel that is made from wood particles or fibers, combined with a synthetic resin binder. The wood particles used in the production of particle board can vary in size, ranging from fine sawdust to larger wood flakes. The resin binder acts as a glue, holding the particles together to form a solid and uniform board.

Production Process of Particle Board:

1. Raw Material Preparation section:

The first step in particle board manufacturing is the preparation of raw materials. Wood logs or residues are collected and debarked to remove the outer layer. The debarked logs are then chipped into small pieces or converted into wood particles using a grinder or chipper.

2. Screening section:

The wood particles obtained from the previous step are sorted and classified based on their size. This is an important step as it helps in achieving the desired density and strength of the final particle board. The particles are typically categorized as fine, medium, or coarse.

Advantages of our Vibrating screen:

- ▷ Strong screening ability, and good screening affect
- ▷ With frame screen box, ensure more stronger and durable
- ▷ Great elastic vibration support
- ▷ Mature and perfect motion balance technology
- ▷ Stable and reliable operation and long life span
- ▷ With Self-cleaning system
- ▷ Cover small space

3. Drying section

The original strands/flakes with high moisture, it is not suitable for next production step. Drying is usually convection drying in a drum dryer: the particles slowly pass through an elongated, rotating drum that is inclined slightly downwards. Hot air flows through the drum in the opposite direction and absorbs the moisture. The energy required for drying is usually supplied by a hot gas generator.

Advantages of our Drum dryer:

- ▷ High thermal efficiency, energy saving and loss reduction
- ▷ Oxygen-free drying will not easy to ignite and safer
- ▷ Flake shape well maintained
- ▷ Flake's moisture content is stable
- ▷ Large production capacity

4. Blending and Mixing section:

Once the wood particles are sorted, they are mixed with a resin binder in a blending machine. The resin binder can be either urea-formaldehyde (UF), melamine-urea-formaldehyde (MUF), or phenol-formaldehyde (PF). The blending process ensures that the resin is evenly distributed throughout the wood particles.

5. Forming section:

The blended mixture of wood particles and resin is spreaded evenly on a continuous conveyor belt or forming line. The thickness and density of the particle board can be controlled by adjusting the amount of mixture applied to the conveyor belt.

Forming machine has two types, one is Airflow forming, which with Airflow regulation system, Equal volume silo, Advanced control technology; another one is Combined mechanical forming, which with more delicate diamond rollers, for ensure forming precision. They have their own features and advantages. According to different requires and conditions, choose the suitable one.

6. Continuous Pre-press section

The formed mat of wood particles and resin is transferred to the pre press. In order to ensure a high panel quality, pre-pressing is usually carried out before the hot pressing. This is also referred to as deaeration.

Also the Pre-press will press the mat in required thickness, and it also has effect on pre-heat the mat at the same time, improve production capacity and work efficiency.

7. Hot press section

The panel will be conveyed to Hot press machine, through high pressure and temperature, causing the resin to cure and bond the wood particles together, and press it to the specified thickness. The pressing process typically takes a few minutes, allowing the resin to harden and form a solid board.

Advantages of our Hot press:

- <1> The whole machine frame and body is thick and strong, keep stable
- <2> Fast closing, high work efficiency
- <3> Fully automatic, save labor cost and improve production capacity

7. Trimming section:

After the pressing process, the particle board is trimmed to the desired dimensions using Edge cutting saw. The edges of the board may also be profiled or shaped, depending on the intended application.

8. Sanding section:

The finished boards are sanded to achieve a smooth surface and remove any imperfections.

Sanding machine can be single side or double sides, also can be different sanding heads, some sanding machine for calibrating panel thickness. Some for polishing panel surface.

9. Electronic control system:

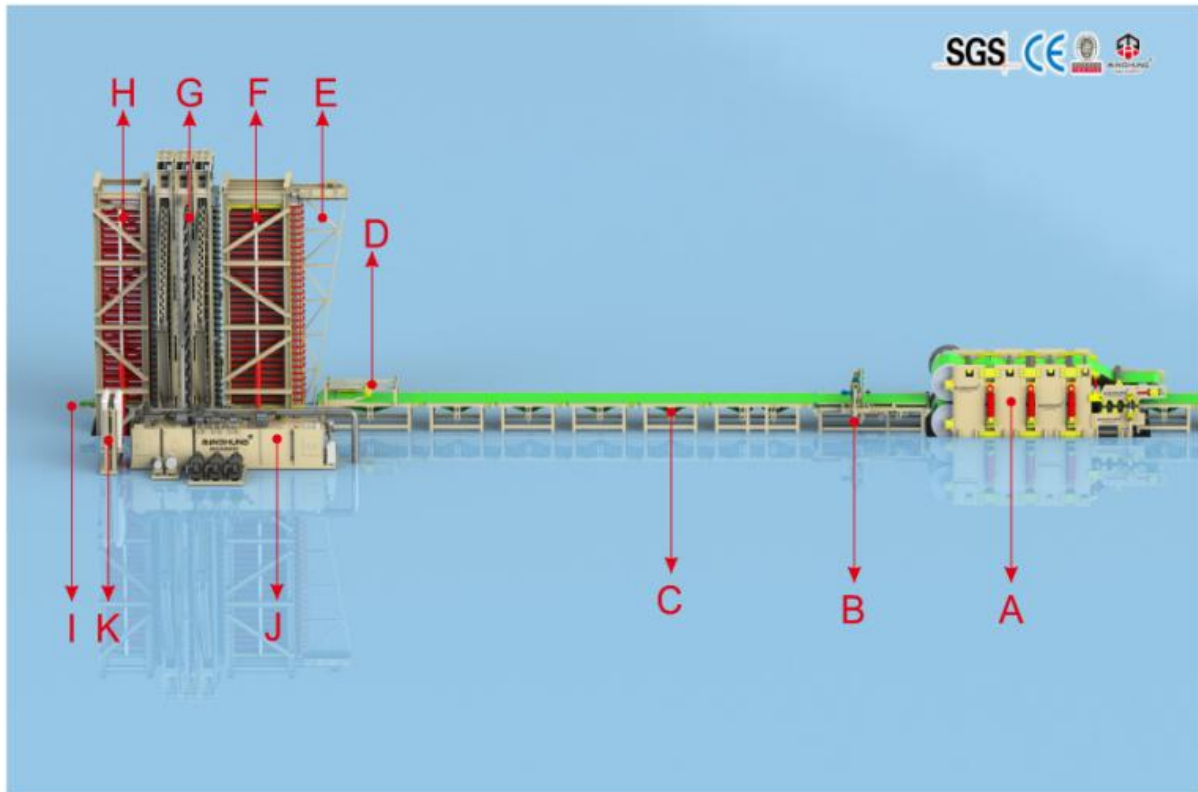
We use good brand control parts like Siemens PLC control system, Schneider switch, and others, and it is Fully automatic control

10. Energy center

Energy center is designed to offer heating energy for wood based panel industry, it uses the wood bark, panel waste, veneer waste, sawdust and others come out from Panel production as the fuel, producing multiple heat carrier as the conduction oil, steam, hot wind and so on. It realizes High efficiency, Energy conservation, Environmental protection.

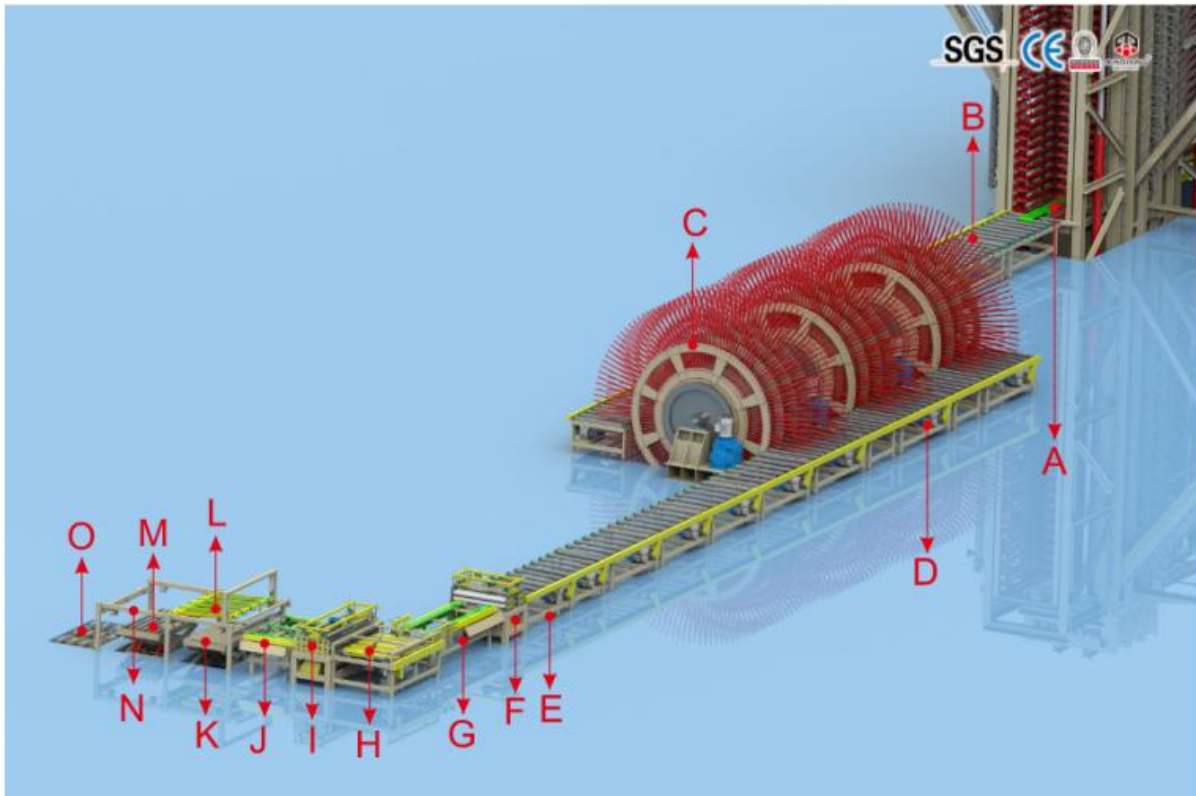


Multi-opening hot press and Continuous pre press Line



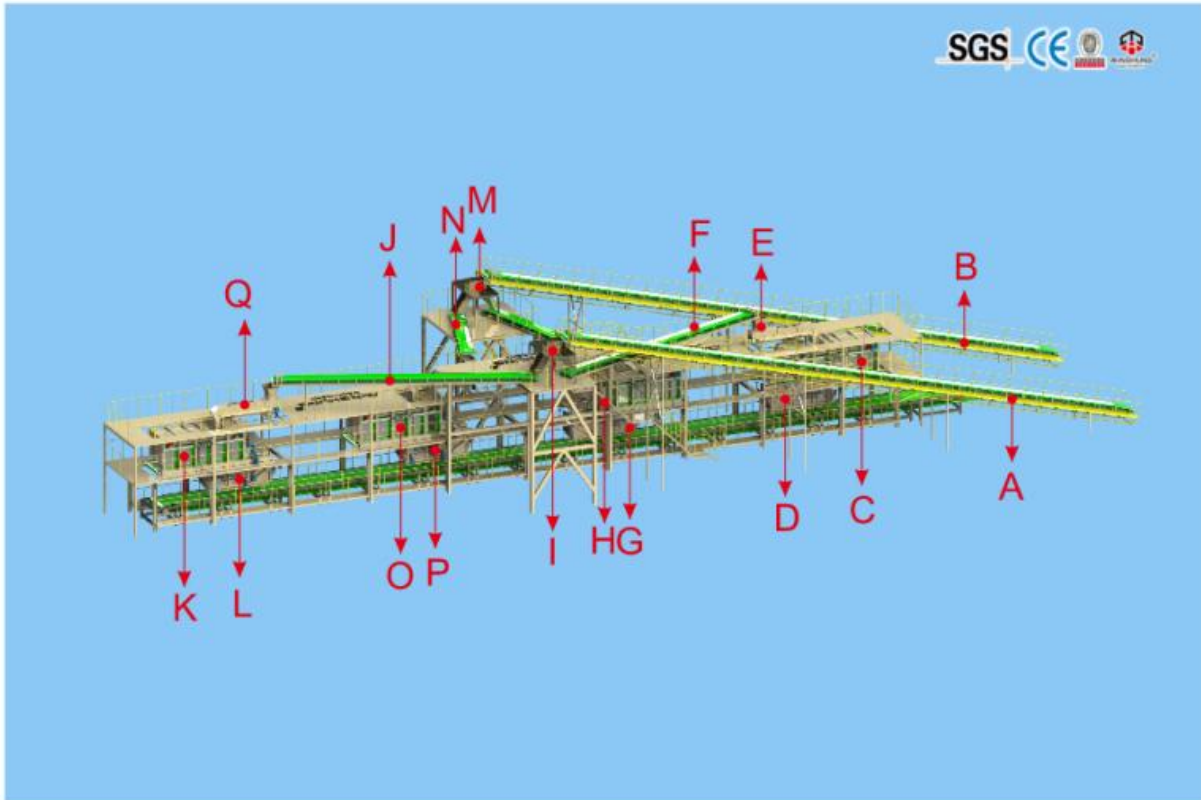
- A. Continuous pre press
- B. Synchronous crosswise cutting saw
- C. Plate blank conveyor
- D. Infeeding plate blank conveyor
- E. Push plate device
- F. Auto loader
- G. Hot press machine
- H. Auto unloader
- I. Unloading belt conveyor
- J. Oil tank (Hydraulic station)
- K. Energy accumulator

Edge cutting machine and board cooling frame



- A. Unloading belt conveyor
- B. Feed roll conveyor
- C. Panel turnover machine
- D. Unloading roll conveyor
- E. Feed roller conveyor for Longitudinal edge saw
- F. Longitudinal edge saw
- G. Unloading roll conveyor for Longitudinal edge saw
- H. Feed roll conveyor for Lateral edge saw
- I. Lateral edge saw
- J. Unloading-board roller conveyor for Lateral edge saw
- K. Unloading lift table
- L. Transition belt conveyor
- M. Unloading lift table
- N. Automatic stacker
- O. Unloading-board ground roll

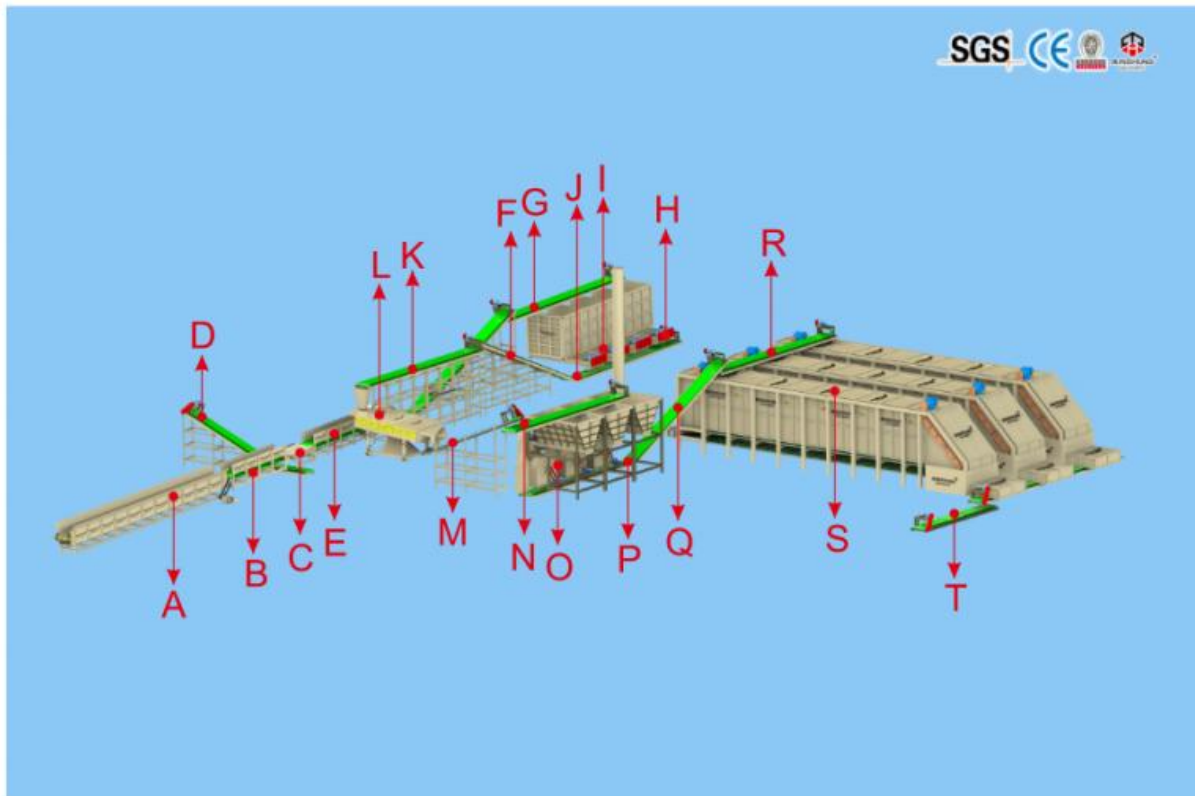
Mat forming machine



- A. Surface belt conveyor
- B. Core belt conveyor
- C. Surface measuring box
- D. Surface forming box
- E. Surface swing measuring belt
- F. Surface separator belt conveyor
- G. Core forming box
- H. Core measuring box
- I. Surface separator opening
- J. Surface separator belt conveyor
- K. Surface measuring box
- L. Surface forming box
- M. Core separator
- N. Core separator belt conveyor
- O. Core measuring box
- P. Core forming box
- Q. Surface swing measuring belt



Core layer preparation process flowsheet



- A. Log conveyor
- B. Feeding belt conveyor
- C. Bark peeling machine
- D. Waste recycling belt conveyor
- E. Belt conveyor of wood chipper
- F. Unloading belt conveyor of wood chipper
- G. Feeding belt conveyor of wood chips silo
- H. Wood chips silo
- I. Unloading spiral conveyor
- J. Unloading belt conveyor
- K. Feeding belt conveyor of vibrating screen
- L. Vibrating screen
- M. Unloading belt conveyor of vibrating screen
- N. Feeding belt conveyor of flaker
- O. Wood flaker
- P. Wood chips transition bin
- Q. Belt conveyor of wet shavings silo
- R. Feeding belt conveyor of wet shavings silo
- S. Wet shavings silo
- T. Unloading belt conveyor of wet shavings silo

Multi-opening hot press



»» Energy center



➤➤ Drum dryer

