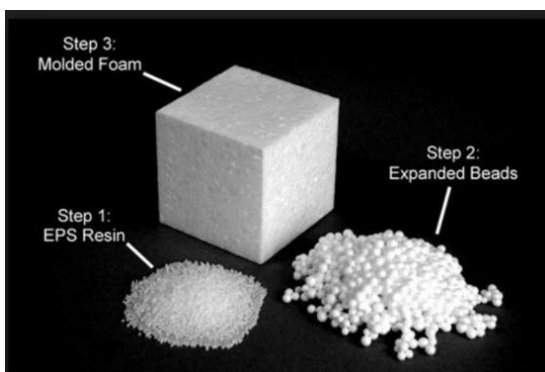## EPS Beads Making Machine



EPS auto batch pre-expander, EPS beads making machine is functioned to expand EPS raw material to the required density. Material filling and expanding are done batch by batch, so it's called Batch pre-expander. EPS auto batch pre-expander EPS beads making machine is a complete automatic EPS machine. All steps work automatically like EPS material filling, weighing, material conveying, steaming, stabilizing, discharging, drying, and expanded material conveying.
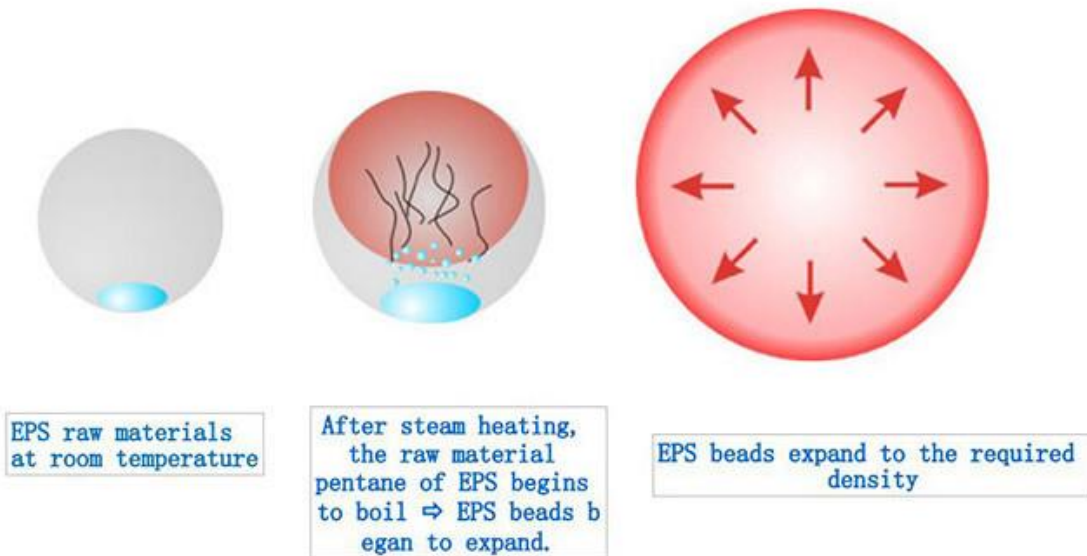
Inside EPS raw beads, there's the blowing gas called pentane. After steaming, pentane starts to expand, so the bead size also grows bigger. This is called expanding. EPS raw beads cannot be used to make blocks or packaging products directly, and all beads need to be expanded first, then made other products. Product density is decided during Pre-expanding, so density control is done in Pre-expander.
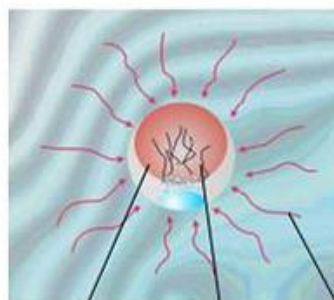
### Functions & Features

- Steam system: steam pressure reducer and angle valve to control steam
- Filling system: adopts electronic weighing system and material filling automatically
- Material level control: adopts photo sensor to control the expansion level
- Electric control: adopts PLC controller and touch screen to keep process working automatically

## EPS production technology — pre foaming

EPS raw materials at room temperature

After steam heating, the raw material pentane of EPS begins to boil ⇨ EPS beads began to expand.

EPS beads expand to the required density

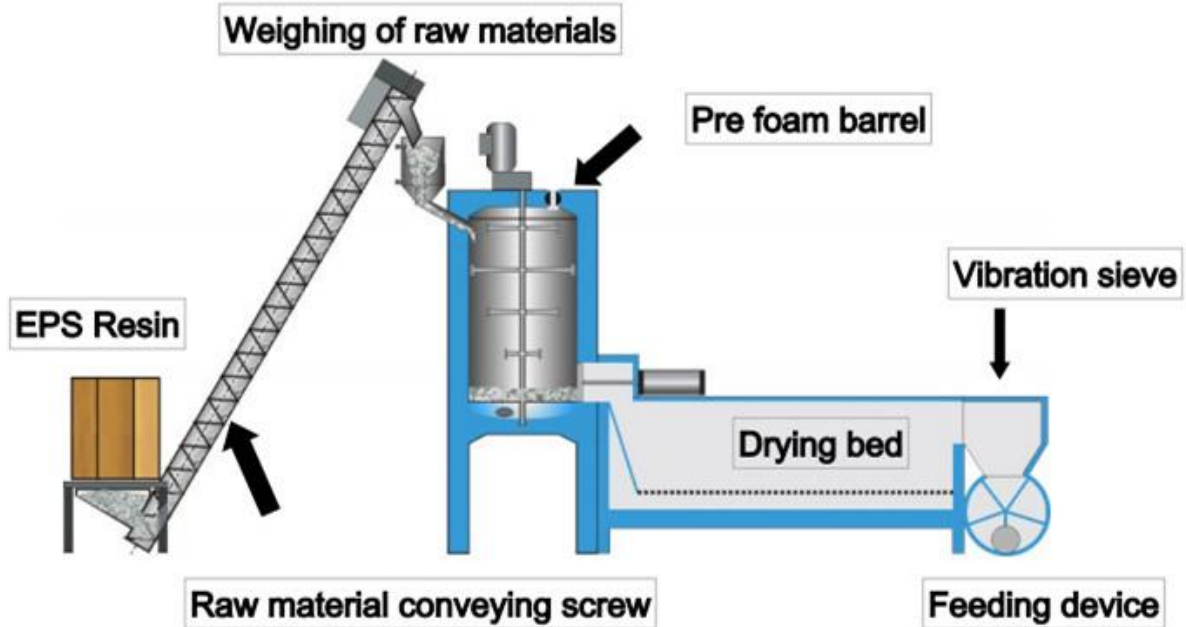## Heat transfer

*Heat softened polystyrene

*The pentane stored in EPS beads begins to boil and vaporize

*The vaporized pentane gas increases the pressure in the EPS beads, causing them to expand
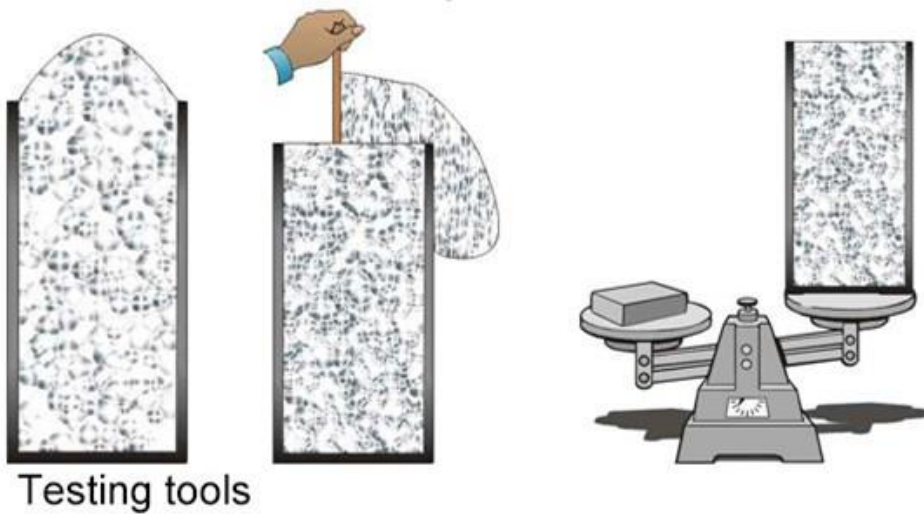
EPSResin          Pentane          Wet steam

PREHEATING

Open the cleaning door to remove the impurities in the cylinder, check whether the movable mixing rod is firm, and then close the cleaning door. Close the three valves on the control panel and close the feed gate. Start the mixing and feeding motor, and the mixing rod and feeding screw are idly running. At this time, open the steam valve to raise the temperature in the foaming cylinder to 70 ~ 75 ° C and keep it for 3 ~ 5 minutes.

# Batch Pre-Expander

Weighing of raw materials

Pre foam barrel

EPS Resin

Vibration sieve

Drying bed

Raw material conveying screw

Feeding device

## Density detection

Testing tools

- balance, bucket (≥ 1L), scraper

TEST METHOD

- Sampling location and time
- Outlet of fluidized bed and curing silo
- Density changes before and after ripening

## Technical Data

| Item | | Type | | | |
|---|---|---|---|---|---|
| | | ESPB-50 | ESPB-110 | ESPB-150 | ESPB-160 |
| Expansion Container | Diameter Volume Useable Volume | ℂ500mm 0.14m³ 0.1 m³ | ℂ1100mm 1.4 m³ 0.9m³ | ℂ1500mm 4.5m³ 3.2m³ | ℂ1600mm 5.4m³ 4.5 m³ |
| Steam | Entry Consumption Pressure | DN25 0.5-0.7kg／cycle 0.6-0.8MPa | DN50 8-11kg／cycle 0.6-0.8MPa | DN 50 15-18kg／cycle 0.6-0.8MPa | DN100 18-20kg／cycle 0.6-0.8MPa |
| Compressed Air | Entry Consumption Pressure | DN20 0.2-0.3m³／cycle 0.6-0.8MPa | DN25 0.5-0.6m³/cycLe 0.6-0.8MPa | DN40 0.5-0.6 m³／cycle 0.6-0.8MPa | DN40 0.5-0.8 m³／cycle 0.6-0.8MPa |
| Drainage | Drainage Port Condensate | DN80 DN20 | DN80 DN80 | DN100 DN 40 | DN150 DN 50 |
| Productive Capacity | | 12g／l  70kg／h 18 g／l  100kg／h 25 g／l  110kg／h 32g／l  130kg／h | 12g／l  240kg／h 15g／l  320kg／h 20g／l  430kg／h 30g／l  600kg／h | 12g／l  600kg／h 15g／l  900kg／h 20g／l  1200kg／h 30g／l  1500kg／h | 12g／l  1400kg／h 15g／l  1800kg／h 18g／l  2300kg／h 25g／l  2800kg／h Second expansion 8g／l  800kg／h 10 g／l  1000kg／h |
| Material Conveying Line | | ℂ150mm | ℂ150mm | ℂ250mm | ℂ250mm |
| Power | | 9.5KW | 16.1 KW | 24.85KW | 3 .5KW |
| Density | | 12-140g／l | 12-30g／l | 12-30g／l | 12-30g／l |
| Density Tolerance | | ≤±2％ | ≤±2％ | ≤±3％ | ≤±3％ |
| Overall Dimension | (L×W×H) | 3000×3800×3800(mm) | 5600×3 00×4530(mm) | 6500×4150×5400(mm) | 7600×3700×4200(mm) |
| Weight | | 1500kg | 3500kg | 5000kg | 6300kg |
| Room Height Required | | 5000mm | 5000mm | 5500mm | 7000mm |

## Product Features

1. Five safety protection devices with a safety maintenance;

2. Adopts touch screen and plc control with easy operation;

3. The barrel material of the pre-expander is 304 stainless steel;

4. High-density rock wool is used as a thermal insulation layer, which can effectively reduce the temperature change;

5. Japanese reducing valve to control the steam pressure and make it stable and uniform;

6. Accurate weighing sensor to ensure the density difference between each batch;

7. The constant temperature and pressure guarantee foaming error within 3%;

8. The secondary foaming system to produce EPS products with lower density;

9. The fluidized bed is equipped with a particular drying system to reduce the ageing time of beads in the silo;

10. Branded low voltage electrical components.