



# Extrusion Blow Molding System

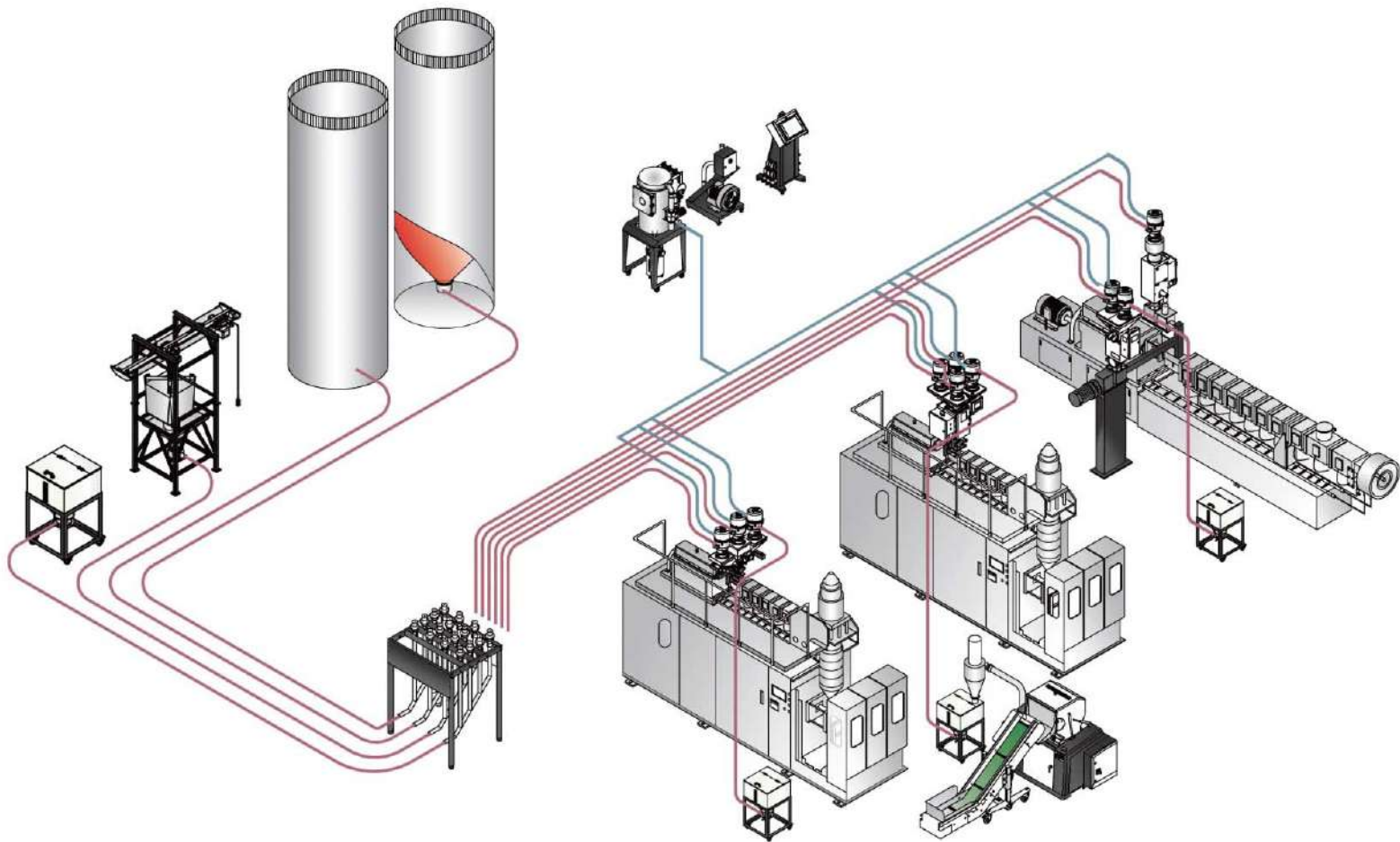
Simple Solution



## ■ Extrusion Blow Molding System

Blow molding technic is used in the production of hollow thin-walled parts with for thermoplastic materials. The typical products of blow molding are large capacity and the final consumer goods, such as bottles and containers. At present, the most popular materials for blow molding are PE, PP and PVC.

Blow molding process consists of two main molding methods: extrusion blow molding and injection blow molding. Through extrusion or injection molding, thermoplastic resin is molded into tube-shaped parison which are instantly (when it is still hot or heat it up to the state of softening) put into blowing mold. Then compressed air is blown into it until it expanded and stuck on mould cavity. After cooling and demolding, hollow products can be finished.



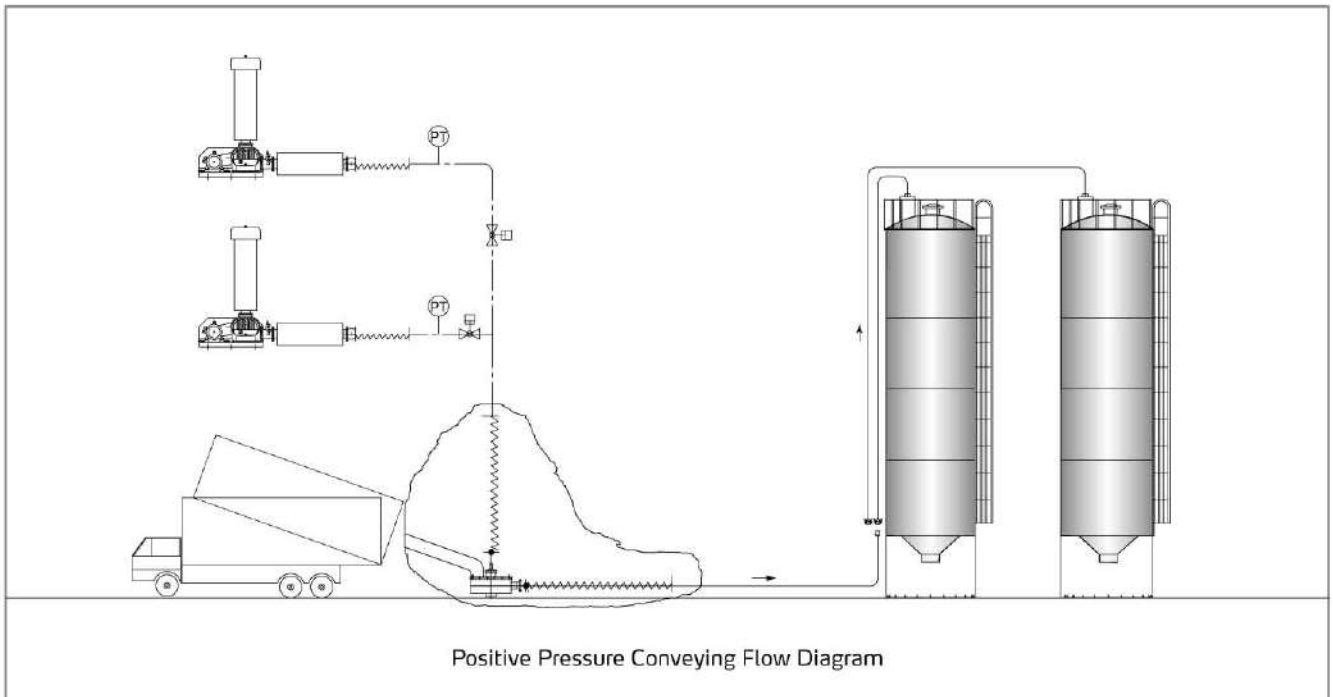


# Extrusion Blow Molding

## ■ Conveying

### Positive Pressure Conveying

Shini specially designed auto conveying and feeding system for extrusion blow molding system. The outdoor positive pressure conveying system is made up of silo, container bag discharging terminal, vacuum pump, rotary valve and material distribution station, etc. And the indoor feeding system contains auto loaders and hopper with conveying capacity of 2,000kg/hr and conveying distance 100m to satisfy different needs.



### Negative Pressure Conveying

Central or single unit control method can be chosen according to the number and positions of the blow molding machines in the workshop.

All material contact surfaces are made of stainless steel, together with filtering device in the conveying system, no contamination can be assured.

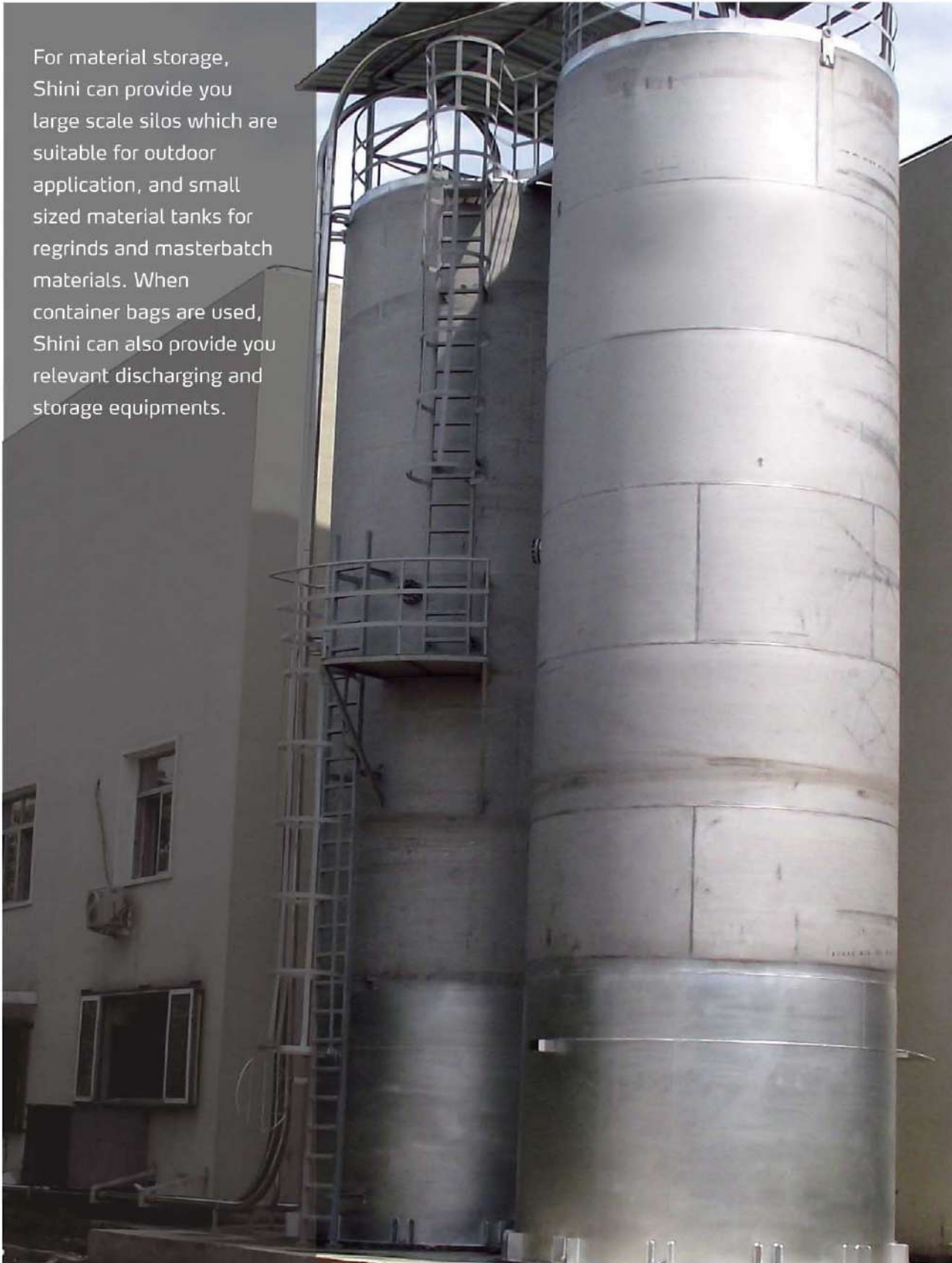
Conveying speed can be adjusted by the air refilling adjusting system to material stringing and dusting caused by different conveying conditions.

Closed loop of two-stage conveying system. For the conveying of materials to the hopper on injection molding machine, Shini can greatly reduce the heat dissipation and the risk of material rewetting.



## ■ Storage

For material storage, Shini can provide you large scale silos which are suitable for outdoor application, and small sized material tanks for regrinds and masterbatch materials. When container bags are used, Shini can also provide you relevant discharging and storage equipments.





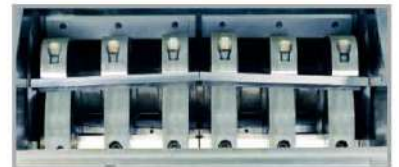
# Extrusion Blow Molding

## ■ Granulating

Shini granulators are applicable to granulating of all kinds of recycled plastic products such as pre-forms and PET bottles. They can help you regrind and recycle products efficiently and save energy.



- Centralized control design makes operation easier.
- Openable cutting chamber makes cleaning easier.
- Feed throat can be closed for safe operation.
- Multi-safety device ensures no damage to machine and operator.
- Adopts cyclone dust-separator for removal of dust from regrind.
- Adopts high pressure blower to convey material and make sure there is no remain in storage box and cutting chamber.



Paddle Blades



Staggered Blades

## ■ Dosing and Mixing

SGD



SCM-H



SCM model of Shini is suitable for masterbatch particles both crystallized and non-crystalline with output within 0.2~32kg/hr. If the masterbatch proportion and precision is demanding, SGD model is suggested which adopt loss-in-weight calculation with output within 0.04~32kg/hr.

- Adopt brushless motor to accurately control the rotation frequency of the screw.
- The inner cooling water system can prevent masterbatch from falling into the PET main stream and melting. Thus ensures accurate dosage.
- Modular assembly structure with forced cleaning function makes masterbatch replacement much more convenient.
- Current running mode can be recorded which is free from power failure. When power comes back, the system can be resumed.
- Molding cycles of adding masterbatch can be set to meet the requirements of micro weight measuring.



Gravimetric Sensor

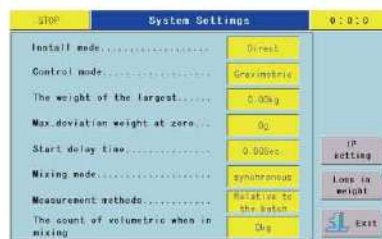
# Extrusion Blow Molding

## ■ Dosing and Mixing



Gravimetric and loss-in-weight dosing system is applicable for precise dosing of granules and sheet materials with which product quality can be guaranteed.

- The output of Shini SGB is with 40~3,000kg/hr with 2~8 ingredients.
- With gravimetric sensor and material level switch, the special gravimetric blender designed for high temperature material is suitable for PET crystallized materials.
- Ethernet interface attached to the controller works together with the relevant software, material proportion data (max. output, actual output, proportioning accuracy) can be transmitted to control product quality.
- Recalibration will be automatically started after each weighing to ensure optimal proportion accuracy.
- Regrinds auto compensation function available. Aberration compensation can be automatically calculated based on the discharge amount of material.



System Setting

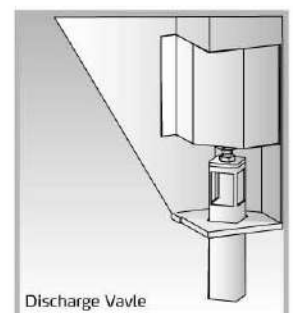


Recipe Edit

- Special bridge-breaking structure and discharge way are used to meet all the requirement of sheet material dosing and at the same time ensure the continuity of the operation.



Bridge-breaking Device



Discharge Valve



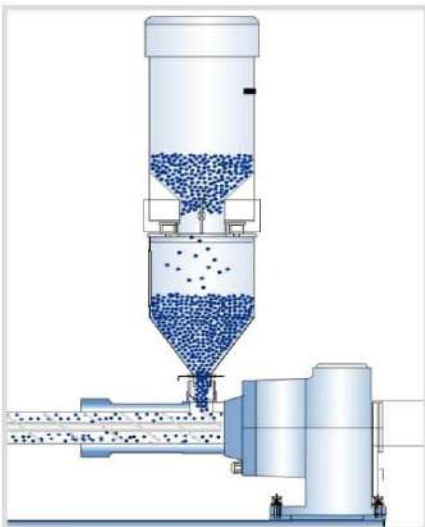
## ■ Loss-in-weight Feeder

- Loss-in-weight feeder adopt hungry feeding technology, by detecting actual material flow, the screw speed of the feeder can be automatically adjusted to achieve and maintain set flow amount.
- Hermetic design to avoid ambient condition influence. Also no material splashing will occur during power material feeding.
- Integrate screw structure make screws replacing and cleaning more convenient.
- With simple flange, multiple material recipes can be fulfilled.
- Both auto and manual material replenishing are available.



## ■ Loss-in-weight Hopper SYline

SYline is a gravimetric loss-in-weight hopper designed to gravimetrically feed the extruder throat controlling the throughput set. The weight of hopper and relevant material is weighted by two off-centre load cell. Based on commercial modular PLC electronics, SYline ensures simple and practical operation. Control softwares of SYline are loss-in-weight control, gram/meter and throughput control, material consumption control.





# Extrusion Blow Molding

## Gain-in-weight Batch Blender eaSYbatch

eaSYbatch is the traditional gain-in-weight batch blender, designed to dose and blend multiple components. Using modularized PLC technology, the simple and practical operation can be assured. Control software of eaSYbatch consists of loss-in-weight control, gram/meter and throughput control, material consumption control.

- Adopt gain-in-weight and loss-in-weight integrated design, the structure is compact and easy to be installed at the feed throat of extruder.
- Controller adopts B&R integrated PLC and HMI which make upgrade and maintenance much more convenient.
- FESTO solenoid valve with compact structure can easily detect failures.
- Gain-in-weight and loss-in-weight integrated dosing function realize dosing and mixing of each material by weighing.
- Gram/meter (coding wheel needed) and throughput control can help achieve constant throughput and gram/meter.
- With feeding control function, up to 42 stations of feeding can be controlled.
- INTERNET port can help to realize remote control and trouble-shooting as well as central controlling.
- Recipes and material consumption can be saved.
- At most six materials can be processed simultaneously.
- All material contact surfaces are made of stainless steel to ensure no contamination.
- Changerover base is equipped to make installation much easier.



BLENDING 2			Status: STOP
Component	Metering Valve	Loader	
1	STOP	CLOSE	STOP
2	STOP	CLOSE	STOP
3	STOP	CLOSE	STOP
4	STOP	CLOSE	STOP
Weight Bin	CLOSE	00.000 (Kg)	
Mixer	STOP	00.000 (Kg)	
MENU	CMD	Warns	Hand

MENU		
BLENDING CONTROL 	LAYER COMPONENTS	EXTRUSION CONTROL 
ORDER MANAGER	PRODUCT MANAGER	RECIPE MANAGER

SYNCRON

- Material discharge port is convenient to discharge materials quickly.



## Loss-in-weight continuous Dosing System SYdos

SYdos is continuous loss-in-weight gravimetric dosing system designed to dose and feed multiple components in all process in which a constant gravimetric feeding is required. Main material is weighed by two off-centre load cells and the data is transfer to control system to adjust the screw speed with the data transferred by each load cells of other materials. Control software of SYdos consists of loss-in-weight control, gram/meter and throughput control and material consumption control.

- All materials are continuously and simultaneously screwed into the weighing hopper and form a waterfall-like discharging mixture during falling.
- Weighing hopper continuously detects the weight variation of the materials.
- With single control unit, set dosing ratio and a stable weighing hopper can be guaranteed and then ensures each ingredient and extrusion throughput.



LAYER COMPONENTS					
Recipe:			Code: 000		
ID	Name	SP (%)	Dens. (g/cm <sup>3</sup> )	Toll. (%)	Total (kg)
1	Component 1	100.00	0.000	000.0	00000.0
2	Component 2	000.00	0.000	000.0	00000.0
3	Component 3	000.00	0.000	000.0	00000.0
4	Component 4	000.00	0.000	000.0	00000.0
Sum.		100.00	0.000		000000.0
MENU	Reset	Restore	Enter		

BLENDING 1					
1	% SP	000.00	2	% SP	000.00
	% PV	000.00		% PV	000.00
3	% SP	000.00			
	% PV	000.00			
4	% SP	000.00			
	% PV	000.00			
Status: STOP					
MENU	CMD	Alarms			



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