# SHINI

# Gravimetric Blender

SGB-200-4

Refer carefully to this manual before operation.

# *SGB Series*

## ■ Coding Principle

SGB -xxxx - x - x

→ Notes*
→ Quantity of Hoppers
→ Max. Throughput (kg/hr)(4 Ingredients)
→ Shini Gravimetric Blender
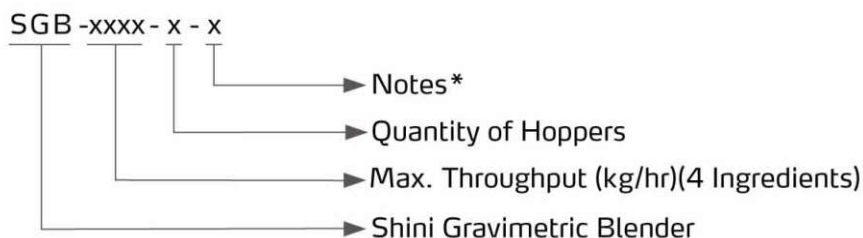
Notes:*
CE=CE Conformity

## ■ Features

### Standard configuration

- The microscale metering accuracy is ±0.1% when all materials are blended through gravity.
- Auto calibration function which is performed every time after material weighting ensures best proportioning accuracy.
- Up to 100 recipes can be stored for future use.
- Have alarm history record function.
- SGB-600 and models below are directly mounted on machines.
- For SGB-1200 and models above, floor stand is the standard supply (equipped with floor stand, material storage tank and pneumatic discharge valve).
- Each model is standard equipped with a secondary discharge valve for modular proportion within 0.5%~5%.
- Adopt Ethernet communication function to realize online centrally monitor function
- Equipped with automatic suction control function.

### Accessory option

- Hopper low material level sensor is optional for advance warning when lacking materials.
- Floor stand, pneumatic discharge valve, storage bin and suction box should be equipped for floor mounting. (Applicable for SGB-600 and models below)
- Vacuum generator SVG and central hopper receiver SHR-U-ST are optional.
- Microscale metering valve is optional for SGB-40/200/600 to meter materials with proportion of 0.2%-0.5%.
- Special material metering valve is optional for metering sheets or irregular materials whose diameters are within 12*12*12.
- Optional data-collection function can read actual additive proportion,output,all kinds of materials'total amount and output rate of every lot of virgin or recycling material,masterbatch and additives.
- Function of recycled material auto-compensation is optional ( recycling hopper should option with low level switch).Aberration compensation can be automatically calculated according to the discharging amount of recycled materials.
- Optional mixing barrel added with Teflon coating inside;  To avoid materials adhering to the barrel by static electricity which influences proportion accuracy.

## With Respect to Batch Capacity:

Ratios of Masterbacth and Additive are calculated with respect to Batch Capacity.

For example: Batch=1000g, Hopper 1=Auto calculated, Hopper 2=40%, Hopper 3=3%, Hopper 4=2%.

Thus real weights are:

* Hopper 1 (Virgin A)=1000gx(100%-40%-3%-2%)=550g.
* Hopper 2 (Virgin B)=1000gx40%=400g.
* Hopper 3 (Masterbatch)=1000gx3%=30g.
* Hopper 4 (Additive)=1000gx2%=20g.

Under this mode, weight of Masterbatch and Additive will not fluctuate with main Virgin component (Hopper 1).

## With Respect to Two (2) Virgin Components:

Ratios of Masterbatch or Additive are calculated with respect to Two (2) Virgin components (i.e. Virgin A and Virgin B):

For example: Batch=1000g, Hopper 1=Auto calculated Hopper 2=40%, Hopper 3=3%, Hopper 4=2%.

Thus real weights are:

* Hopper 1 (Virgin A)=1000g x(100%-40%)=600g.
* Hopper 2 (Virgin B)=1000g x40%=400g.
* Hopper 3 (Masterbatch)=(600g+400g)x3%=30g.
* Hopper 4 (Additive)=(600g+400g)x2%=20g.

Under this mode, weight of both Masterbatch and Additive will fluctuate with both two Virgin components (Hopper 1 and Hopper 2).

## With Respect to One (1) Virgin Component:

Ratios of Masterbatch or Additive are calculated with respect to Virgin Component (Hopper 1):

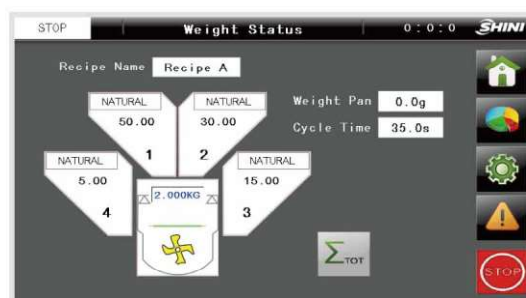For example: Batch=1000g, Hopper 1=Auto calculated, Hopper 2=40%, Hopper 3=3%, Hopper 4=2%.

Thus real weights are:

* Hopper 1 (Virgin)=1000gx(100% - 40%)=600g.
* Hopper 2 (Regrind)=1000gx40%=400g.
* Hopper 3 (Masterbatch)=600gx3%=18g.
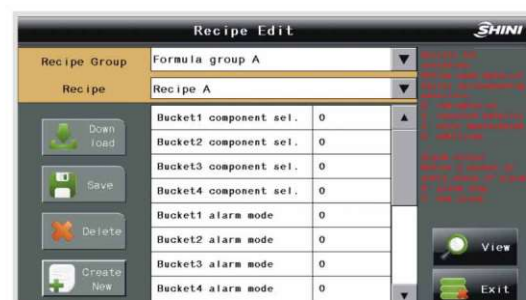* Hopper 4 (Additive)=600gx2%=12g.

Under this mode, weight of both Masterbatch and Additive will be adjusted automatically depending on the availability of regrind (Hopper 2). Take above as example: As long as Regrind in Hopper 2 is full, amount of Masterbacth (Hopper 3) and Additive (Hopper 4) will be always 18g and 12g respectively. But, if Regrind is not available or its level is low, Virgin component in Hopper 1 will replenish the difference automatically, therefore real weights of Masterbatch and Additive will become:

* Hopper 3 (Masterbatch) = 1000g x 3% = 30g.
* Hopper 4 (Additive) = 1000g x 2% = 20g.

Under this mode, if compensational value is set to 0%, weight of both Masterbatch and Additive will be adjusted proportionally against real weight of Virgin component. And, if the value is set to >0.01% or <0.01%, weight of both Masterbatch and Additive will be adjusted proportionally against real weight of both Virgin and Regrind.
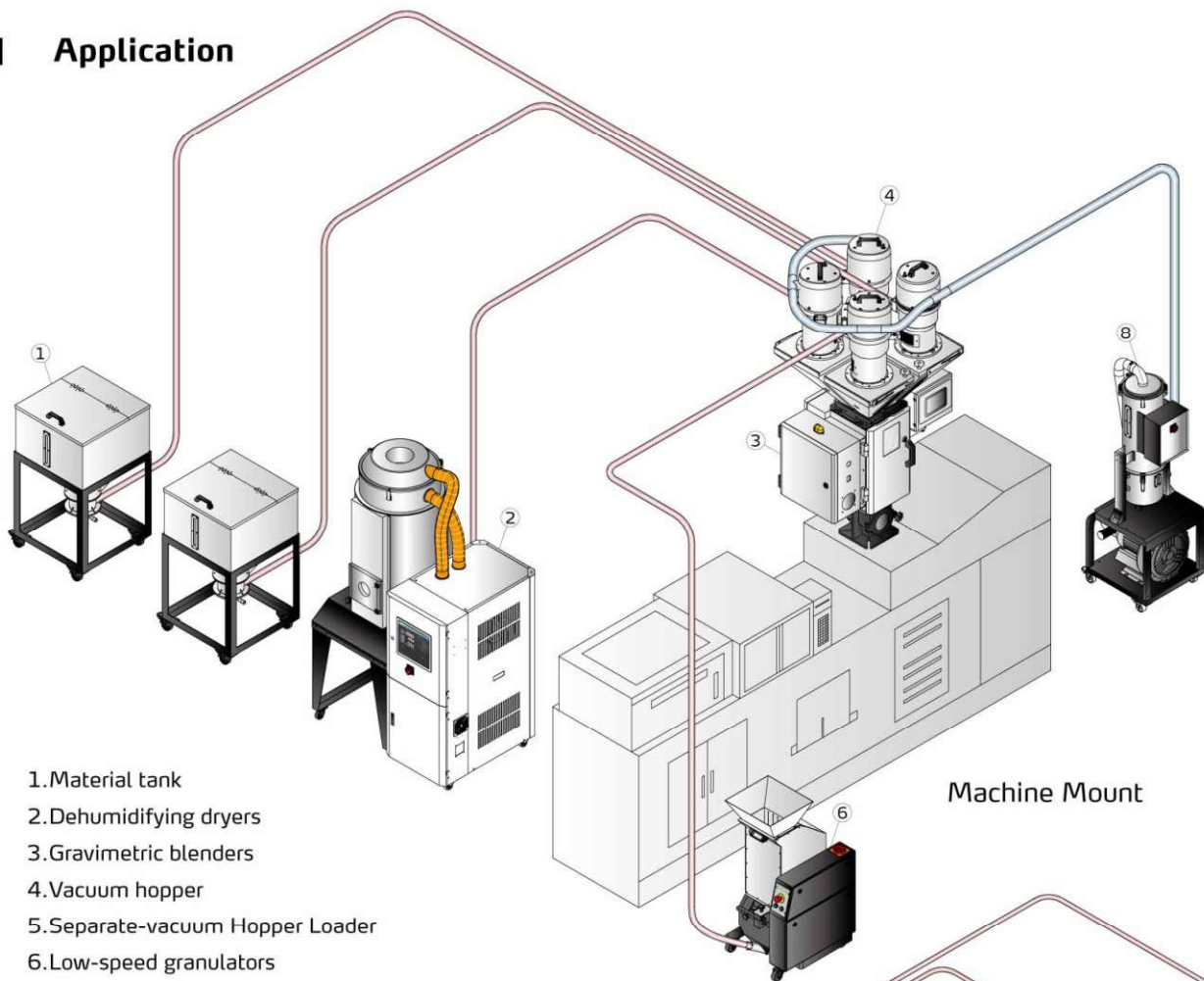


Weight Status
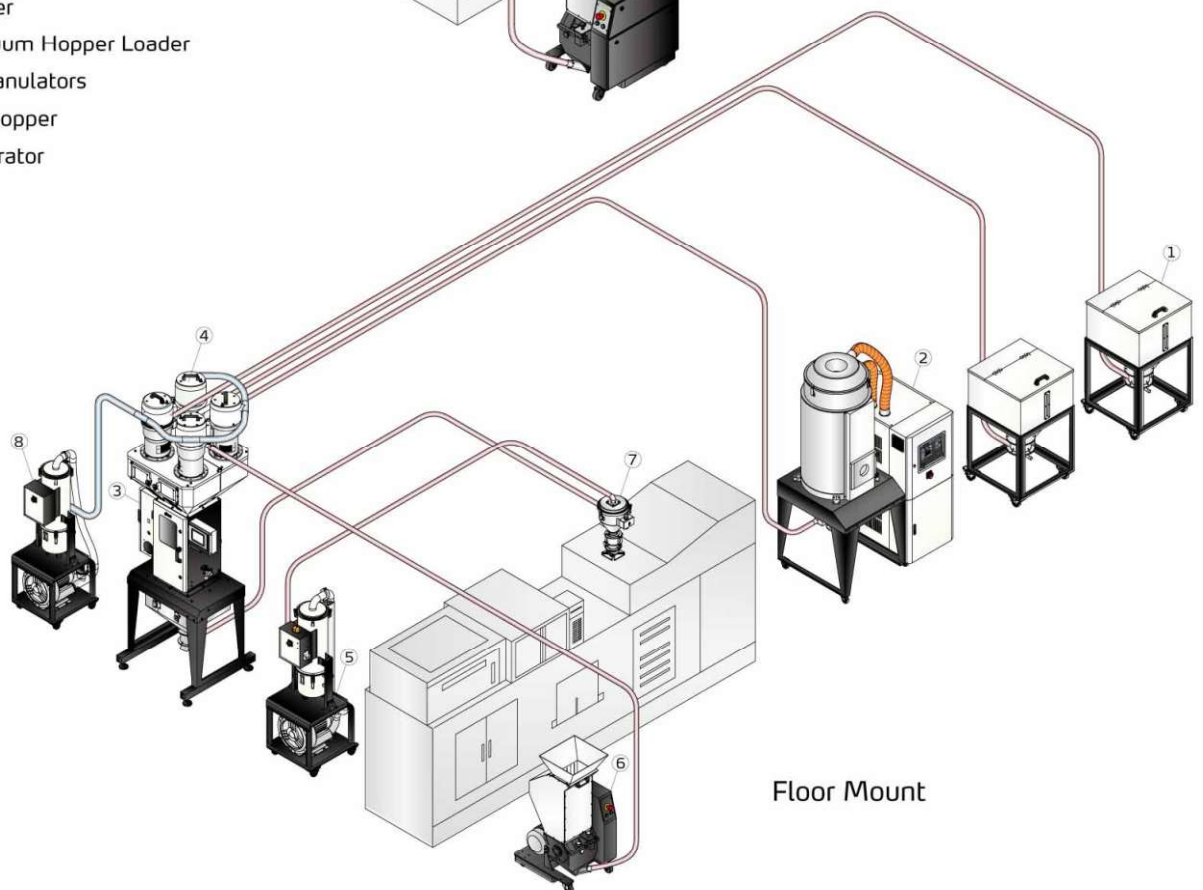


Recipe Edit



Feeding monitor

## ■ Application

1. Material tank
2. Dehumidifying dryers
3. Gravimetric blenders
4. Vacuum hopper
5. Separate-vacuum Hopper Loader
6. Low-speed granulators
7. Photosensor hopper
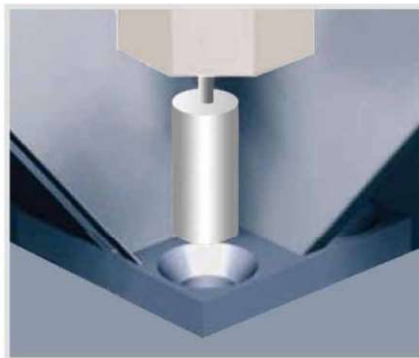8. Vacuum Generator

Machine Mount

Floor Mount

![SHINI]

## ■ Working Principle

When machine starts working, hopper 1 starts feeding on the basic calculation of set weight and unit time feeding of metering valve. The valve will be closed after feeding time and then gravimetric sensor will starts work. Within the error range, the machine will go to hopper 2, and then in succession hopper 3, until all the hoppers finish feeding. After feeding, materials will fall into the mixing tank and be blended until reaching the time limit. Manually open the shut-off plate or automatically open the pneumatic discharge valve to let the material fall into the injection molding machine or storage tank.



Storage hopper
Metering valve
Gravimetric hopper
Gravimetric sensor
Gravimetric hopper discharge valve
Mixing tank
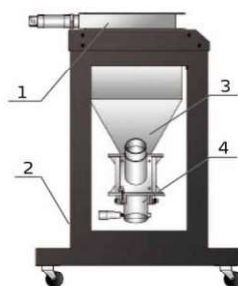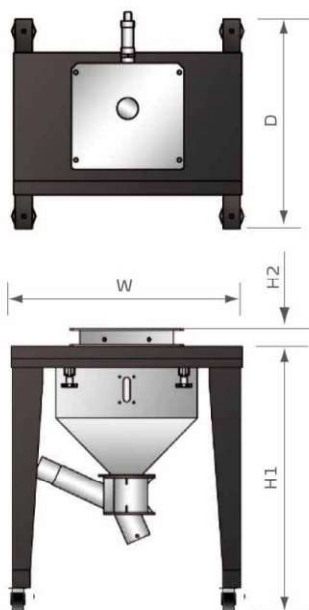Mixing tank discharge valve
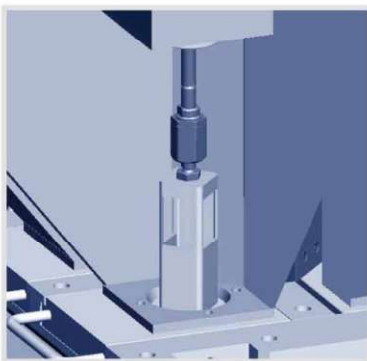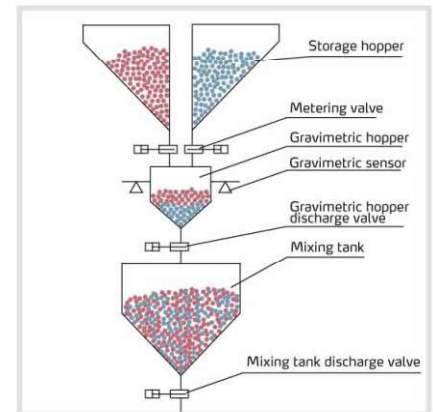


Vertical Cone-dosing of SGB-40



Vertical Cone-dosing of SGB-200 and Models above

## ■ Options



1. Pneumatic discharge plate
2. Movable floor stand
3. Storage hopper
4. Suction box



SHR-U-ST

Floor Stand Assembly

# SGB Series

## Specifications of SVG

| Model | | Vacuum generator | Power (kW) | Central hopper receiver | Hopper capacity(L) | Transporting pipe(inch) | Suction pipe (inch) |
|---|---|---|---|---|---|---|---|
| SGB-40 | -4 | SVG-1HP | 0.75 | 4×SHR-3U-ST | 3 | 1.5 | 2 |
| SGB-200 | -4 | SVG-2HP | 1.5 | 4×SHR-6U-ST | 6 | 1.5 | 2 |
| SGB-600 | -6 | SVG-3.5HP | 2.4 | 6×SHR-12U-ST | 12 | 1.5 | 2 |
| | -4 | SVG-3.5HP | 2.4 | 4×SHR-12U-ST | 12 | 1.5 | 2 |
| SGB-1200 | -6 | SVG-5HP | 3.75 | 6×SHR-12U-ST | 12 | 1.5 | 2 |
| | -4 | SVG-7.5HP | 5.5 | 4×SHR-24U-ST | 24 | 2 | 2.5 |
| SGB-2000 | -8 | SVG-7.5HP | 5.5 | 4×SHR-24U-ST | 24 | 2 | 2.5 |
| | -6 | SVG-10HP | 7.5 | 6×SHR-36U-ST | 36 | 2 | 2.5 |
| | -4 | SVG-10HP-D | 7.5 | 4×SHR-36U-ST | 36 | 2 | 2.5 |
| SGB-3000 | -8 | SVG-10HP-D | 7.5 | 8×SHR-36U-ST | 36 | 2 | 2.5 |
| | -6 | SVG-20HP-D | 13 | 6×SHR-48U-ST | 48 | 2.5 | 3 |
| | -4 | SVG-20HP-D | 13 | 4×SHR-48U-ST | 48 | 2.5 | 3 |

Notes： 1) "T" means the material suction pipe is T joint.
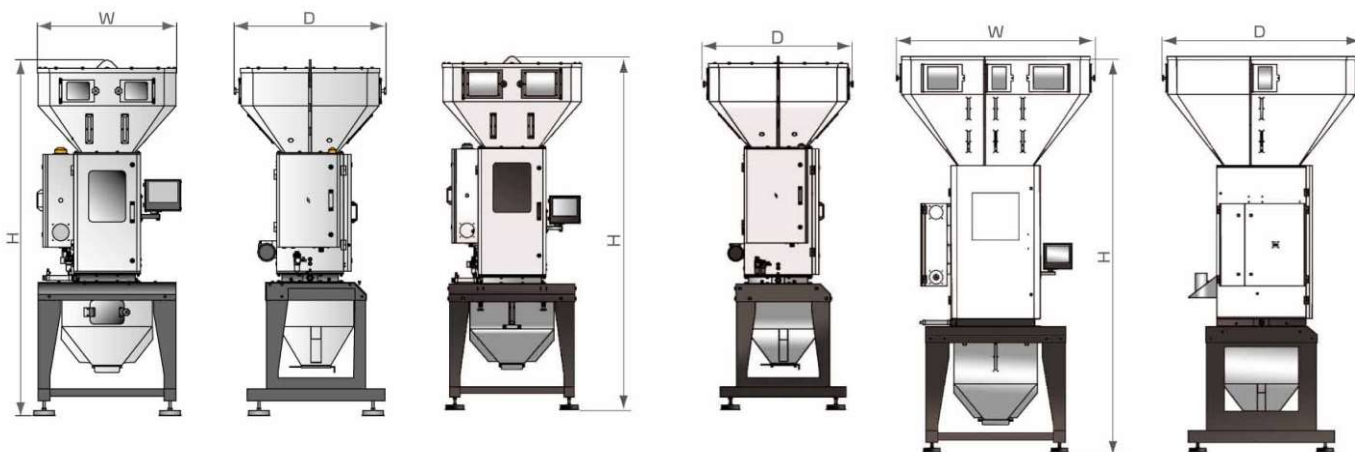2) Power：3Φ，400VAC，50Hz.
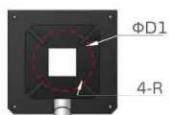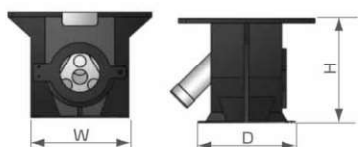
## ■ Outline Drawings
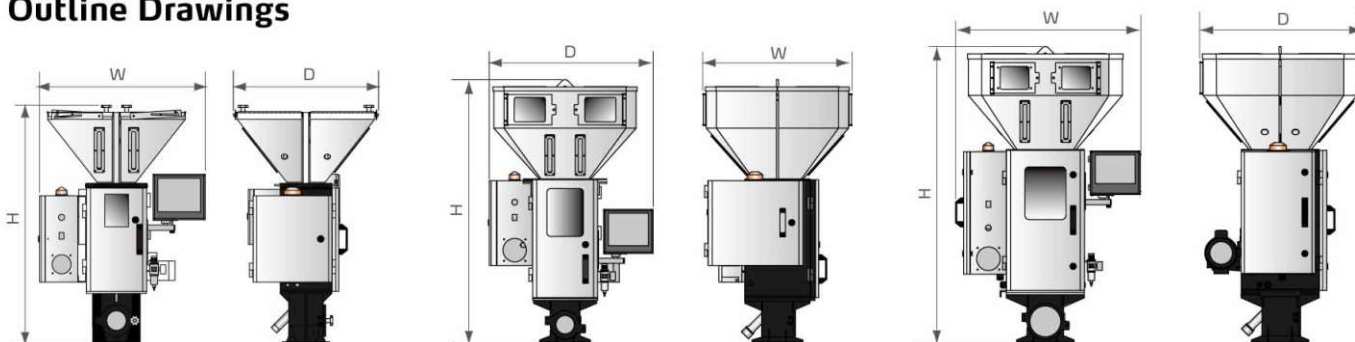


SGB-40

SGB-200

SGB-600

SGB-1200

SGB-2000

SGB-3000

Magnetic Base

## Dimension

| Model | SGB-40 | SGB-200 | SGB-600 | SGB-1200 | SGB-2000 | SGB-3000 |
|---|---|---|---|---|---|---|
| H (mm) | 1110 | 1300 | 1445 | 2398 | 2800 | 3375 |
| W (mm) | 770 | 810 | 905 | 940 | 1110 | 1695 |
| D (mm) | 675 | 735 | 785 | 1023 | 1180 | 1695 |
| Magnetic Base (mm) (W×D×H×ΦD1×R) | 220×220×243.5 ×160×6.5 | 250×250×213 ×200×6 | 280×280×250 ×220×6 | - | - | - |
| Movable Floor Stand (mm)(H1×H2×W×D) | 713×50×654 ×600 | 880×50×724 ×800 | 885×60×814 ×800 | 900×60×930 ×930 | 1000 × 65 × 1060 ×1000 | 1075 × 70 × 1240 ×1240 |
| Weight (kg) (Machine Mount) | 115 | 135 | 160 | - | | - |
| Weight (kg) (Floor Mount) | 135 | 170 | 220 | 400 | 500 | 850 |

## ■ Specifications

| Model | Ingredients | | Main metering valve | Secondary metering valve | Largest throughput (kg) | Mixing Motor Power (kW) | Max. Output (kg/hr) |
|---|---|---|---|---|---|---|---|
| SGB-40- | 4 | 4 | 3 | 1 | 1.0 | 0.09 | 40 |
| SGB-200- | 4 | 4 | 3 | 1 | 3.0 | 0.18 | 200 |
| SGB-600- | 6 | 6 | 4 | 2 | 8 | 0.55 | 400 |
| | 4 | 4 | 3 | 1 | | | 600 |
| SGB-1200- | 6 | 6 | 4 | 2 | 12 | 0.37 | 900 |
| | 4 | 4 | 3 | 1 | | | 1200 |
| SGB-2000- | 8 | 8 | 5 | 3 | 18 | 0.4 | 1200 |
| | 6 | 6 | 4 | 2 | | | 1600 |
| | 4 | 4 | 3 | 1 | | | 2000 |
| SGB-3000- | 8 | 8 | 5 | 3 | 40 | 1.1 | 2000 |
| | 6 | 6 | 4 | 2 | | | 2500 |
| | 4 | 4 | 3 | 1 | | | 3000 |

Notes: 1) The above data is based on continuous running of even particles whose bulk densities are 0.8kg/L and diameters are 3~4mm. The values varies along material features. Please further discuss if the material is not sure.

2) The main metering valve is suitable for proportion not lower than 5% and raw material of even particles or recycled materials of even particles whose diameters are within 6*6*6mm.

3) The secondary metering valve is suitable for proportioin of 0.5%~5% and master batch of even particles or additives whose diamerters are within 4*4*4mm.

4) Microscale metering valve is optional for proportioin of 0.2%~0.5% and master batch of even particles or additives whose diamerters are within 4*4*4mm.

5) Special material metering valve is suitable for sheets and irregular materials whose diameters are within 12*12*12mm.

6) Mixing and ratio deviation refers to the difference between the setting percent and actual percent of each group. The microscale metering accuracy can reach to ±0.1%.

7) Come with a set of secondary metering valves for use when replacing recipe.

8) Power specifications of the blending motor: 1Φ，230VAC，50Hz for SGB-600 and models below; 3Φ，400VAC，50Hz for SGB-1200 and models above.