

SVTM

Volumetric Ration of Two Feed Mixer

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Version: Ver.D (English)



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1. General Description



Read this manual carefully before operation to prevent damage of the machine or personal injuries.

SVTM is mainly used for different proportional mixing of materials and recycled materials.

Conveying part: Two screws are driven respectively by controlling two gear boxes to control the output of the materials.

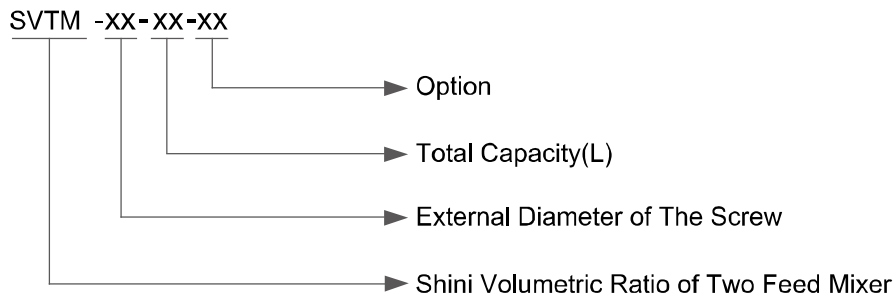
Proportional mixing control part: Motor No.1 is the constant speed motor, Motor No.2 is the adjustable speed motor; When motor No.1 and No.2 work together, adjust the proportion of raw materials to recycled materials by adjusting the speed of motor No.2;

The mixing proportion is the speed ratio of the two gear boxes, and the proportion accuracy is within 3%.



Model: SVTM-60

1.1 Coding Principle



1.2 Features

- Adopt SUS 201 material hopper
- The main body divides into two storage hoppers: hopper 1 at left, hopper 2 at right.
- Both SMH and SAL are available to amount on the two hoppers.
- Employ two gear motors separately to convey the material.
- Low noise, high accuracy and stability
- Stainless steel screw ensures no material contamination.
- The suction box is able to connect with external hopper loader for material output.

All service work should be carried out by a person with technical training or corresponding professional experience. The manual contains instructions for both handling and servicing. Chapter 7, which contains service instructions intended for service engineers. Other chapters contain instructions for the daily operator.

Any modifications of the machine must be approved by SHINI in order to avoid personal injury and damage to machine. We shall not be liable for any damage caused by unauthorized change of the machine.

Our company provides excellent after-sales service. Should you have any problem during using the machine, please contact the company or the local vendor.

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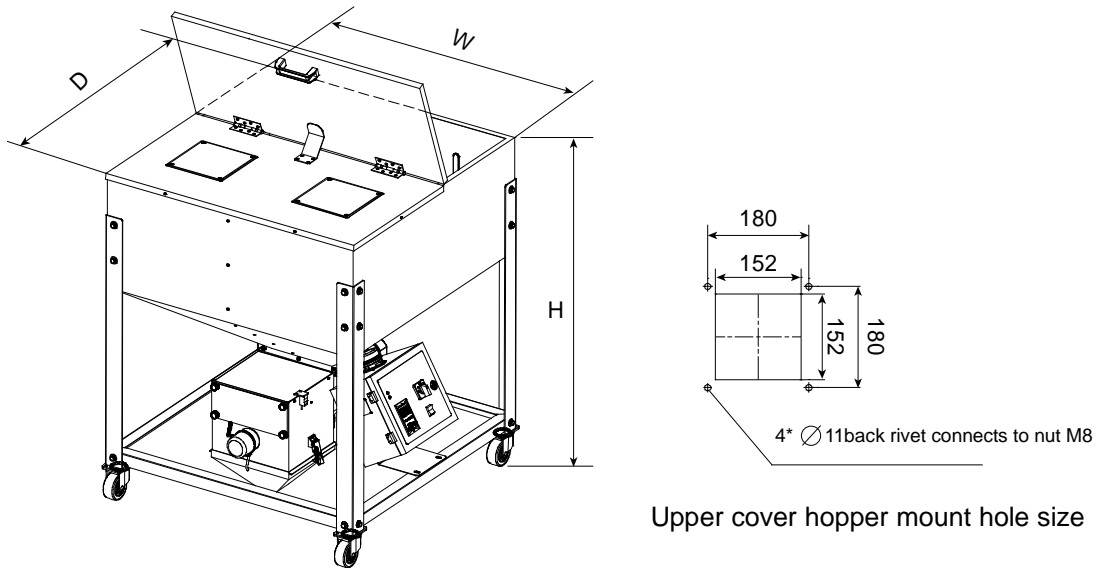
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1.3 Machine Specifications

1.3.1 Outline Drawings



Picture 1-1: Outline Drawings

1.3.2 Specifications

Table 1-1: Specifications

Model	Power of motor No.1 (kW)	Power of motor No.2 (kW)	Screw external diameter (mm)	Capacity of silo No.1 (L)	Capacity of silo No.2 (L)	Throughput of motor 1 (kg/h)	Throughput of motor 2 (kg/h)	External dimension (mm) (H×W×D)	Weight (kg)	Suction Pipe Diameter (inch)
SVTM-60-180	0.09	0.09	60	90	90	500	25.7~400	1145x600x600	90	1.5
SVTM-60-360	0.09	0.09	60	180	180	500	25.7~400	1100x900x900	100	1.5
SVTM-60-720	0.09	0.09	60	360	360	500	25.7~400	1540x1000x1000	150	1.5
SVTM-80-1200	0.12	0.12	80	600	600	795	41.8~650	1745x1230x1230	190	2.0

We reserve the right to change specifications without prior notice.

Notes:

- 1) Test condition of conveying capacity: plastic material of bulk density 0.65kg/L, dia.3~5mm.
- 2) Power supply: 1Φ, 220VAC, 50Hz.
- 3) The value shown on the panel refers to the percentage of the material volume in silo No.2 to material volume in silo No.1 (Mixing range: 4.5% - 70%).

1.4 Safety Regulations

Strictly abide by the following safety regulations to prevent damage of the machine or personal injuries.

1.4.1 Safety Signs and Labels



Danger !

This machine is a high-temp. and high-pressure equipment. It's forbidden to remove the housing and power switch for safety.



Warning!

All the electrical components should be installed by qualified electricians. When the machine starts, it's forbidden to wear gloves or clothes that may cause danger.

In case of power failure and other reasons, it must turn off the main power.

In case of static electricity, please stop the system to prevent accidents due to abnormal power supply.

Be sure to wear safety shoes and gloves when installing and moving the system.

It's forbidden to use parts other than our company during parts exchange and maintenance.



Attention!

Please don't touch the switch or operate with wet hands and objects to avoid electric shock.

Don't operate the machine without understanding its performance.

Please don't touch or impact the switch and sensor unconsciously.

For emergency switch, please put it in a place easy to operate and note the position.

Please guarantee a spacious working space and remove obstacles that can interfere with the operation.

In order to prevent static electricity, don't leave spilled oil or water on the ground. Keep it dry and leave a passage.

The machine must be avoided with strong vibration or impact.

Don't remove or dirty the safety icon without permission.

People who drink, take medicine or don't have normal judgment ability are not allowed to operate the machine.

1.4.2 Operation Notice

- 1) Before operation, check whether the shape of materials and recycled materials is too large ✖ if the shape is too large, the materials may be stuck on the screw.
- 2) If it is found that the output of the screw is not smooth during operation, please check whether there is material bridging at the screw.
- 3) Please don't open the acrylic plate on the suction box during machine running.
- 4) Don't touch the screw when the machine is running.
- 5) In case of low material level in the silo, the machine will give an alarm, and please replenish the material in time.
- 6) Open the pipe plug at the machine bottom and remove the suction box when it has to clean the hopper of the machine.

1.5 Exemption Clause

The following statements clarify the responsibilities and regulations born by any buyer or user who purchases products and accessories from Shide (including employees and agents).

Shini is exempted from liability for any costs, fees, claims and losses caused by reasons below:

1. Any careless or man-made installations, operation and maintenances upon machines without referring to the Manual prior to machine using.
2. Any incidents beyond human reasonable controls, which include man-made vicious or deliberate damages or abnormal power, and machine faults caused by irresistible natural disasters including fire, flood, storm and earthquake.

3. Any operational actions that are not authorized by Shini upon machine, including adding or replacing accessories, dismantling, delivering or repairing.
4. Employing consumables or oil media that are not appointed by Shini.

2. Structure Characteristics and Working Principle

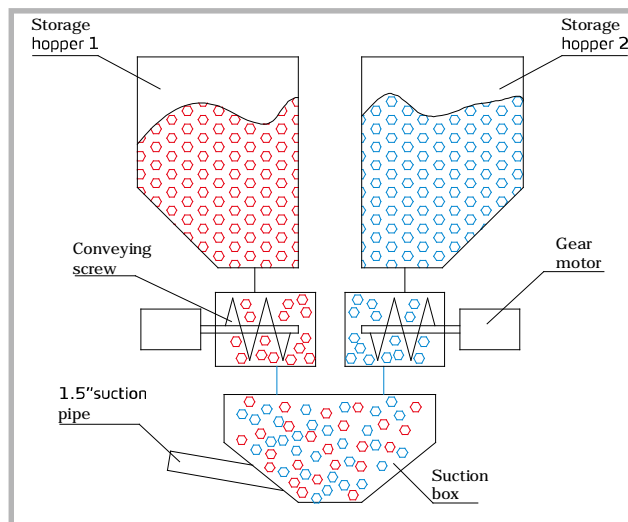
2.1 Functional Description

The proportional mixing range of the SVTM is 4.5%-70%, and the panel display and mixing proportional introduction is as below:

Panel Display Value	Mixing Proportion (silos 2: silo 1)
10	1:10=10%
20	1:5=20%
30	3:10=30%
40	2:5=40%
50	1:2=50%
60	3:5=60%

Note: The value displayed on the panel means the percentage of silo 2's weight to that of silo 1, and other proportions not indicated in the Table are the same (the mixing ratio range is 4.5%-70%).

2.2 Working Principle



Picture 2-1: Working Principle

There are two kinds of different materials can be stored in the storage hopper; When the switch is turned to gear 1, motor No.1 starts to work and motor No.2 doesn't work, thus driving the screw to transport the materials in silo No.1.

When the switch is turned to gear 2, motor No.2 starts to work and motor No.1 doesn't work, thus driving the screw to transport the materials in silo No.2.

When the switch is turned to gear 1+2, motor No.1 and motor No.2 will work simultaneously. Then, adjust the speed of motor No.2 through the panel, and control the output mixing proportion of two kinds of materials by controlling the speed ratio of the two motors.

3. Component Structure and Application

3.1 Nameplate Operation

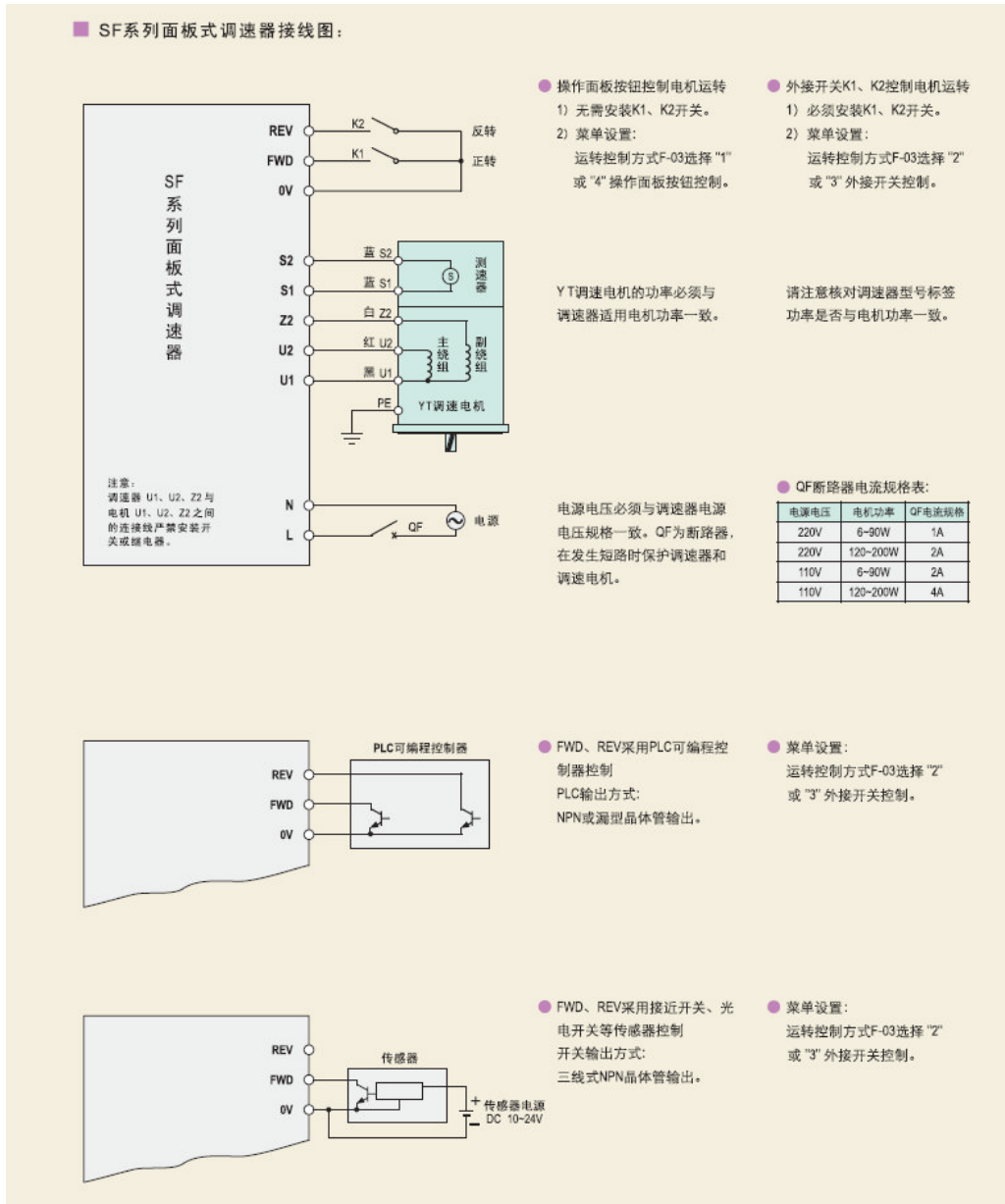


Picture 3-1: Nameplate

Table 3-1: Nameplate Description

No.	Name	Function Description	Remarks
1	3-gear switch	Three gears can be switched to control motor No.1 and motor No.2.	
2	SF panel	When the gear is shifted to gear 2 or 0, it can control the speed of motor No.2.	In addition to controlling the speed of motor 2, it also can display corresponding proportion.
3	Switch	When the machine is powered on, it can start the machine after turned on the switch.	

1. SF Panel Description:

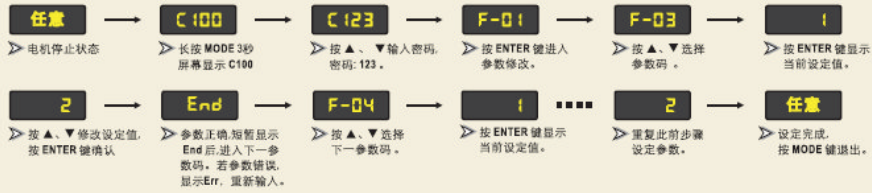


Picture 3-2: SF Series Panel Speed Regulator Wiring Diagram

2. SF Series Panel Speed Regulator Menu

● 菜单修改:

注意:为保证安全,F-03、F-05、F-29参数修改必须在电机停止状态下进行,否则无法设置,屏幕显示 [Err]。



● SK系列内置式调速器菜单清单:

参数码	参数功能	设定范围	功能说明	出厂设定值	用户设定值
F-01	显示内容	1. 电机转速设定值 2. 倍率转速设定值	倍率转速设定值 = 电机转速设定值 × 倍率	1	
F-02	倍率设定	1.0 ~ 999.9	根据显示直观性需要设定, 显示目标值。	1.0	
F-03	运转控制方式	1. 正转 / 反转 2. 正转 / 停止	选择正转 / 反转, 电机由K1、K2开关控制。 选择正转 / 停止, 电机由SB1、SB2按钮控制。	1	
F-04	旋转方式	1. 允许正反转 2. 允许正转, 禁止反转 3. 允许反转, 禁止正转	限制电机旋转方向, 防止设备故障或事故。 当F-03选择2时, F-04自动选择2且无法修改, 若需改变旋转方向可由F-05设定。	1	
F-05	旋转方向	1. 不取反 2. 取反	无需改变电机接线, 轻而易举改变电机转向, 使之与习惯或要求一致。	1	
F-06	主速调整方式	1. 面板▲▼按钮 2. 面板旋钮 3. 外部0-10V模拟量	1. 当任意闭合多功能端子M1、M2时, 电机运行方式为段速, 主速调整无效。 2. 面板旋钮、外部0-10V模拟量自动匹配0-最高转速。 3. 由于外接调速电位器连接于0-10V模拟量AV输入端, 故采用外接调速电位器调速时, 主速调整方式F-06 应选择3。	1	
F-07	最高转速	500 ~ 3000	限制电机最高转速, 可防止超速, 发生损坏或事故。	1400	
F-08	最低转速	90 ~ 1000	限制电机最低转速, 可防止电机由于运行于低速导致速度不稳定, 过热, 过载。	90	
F-09	正转启动 加速时间	0.1-10.0秒	时间长, 电机启动平缓, 启动时间长, 时间短, 电机启动快猛, 启动时间短。	1.0	
F-10	正转停止方式	1. 自由减速停止 2. 快速停止 3. 缓慢减速停止	1. 若选择自由减速停止, 电机停止较慢, 可选择快速停止, 改变F-11设定值, 改变快速停止快慢。 2. 若选择自由减速停止, 电机停止较快, 可选择缓慢减速停止, 改变F-12设定值, 改变缓慢减速停止的快慢。	1	
F-11	正转停止时 快速停止强度	1-10	F-10选择2时, 菜单有效, 数值越大, 停止越快。	5	
F-12	正转停止时 缓慢减速时间	0.1-10.0秒	F-10选择3时, 菜单有效, 数值越大, 停止越慢。	1.0	
F-13	反转启动 加速时间	0.1-10.0秒	时间长, 电机启动平缓, 启动时间长, 时间短, 电机启动快猛, 启动时间短。	1.0	
F-14	反转停止方式	1. 自由减速停止 2. 快速停止 3. 缓慢减速停止	1. 若选择自由减速停止, 电机停止较慢, 可选择快速停止, 改变F-15设定值, 改变快速停止快慢。 2. 若选择自由减速停止, 电机停止较快, 可选择缓慢减速停止, 改变F-16设定值, 改变缓慢减速停止的快慢。	1	
F-15	反转停止时 快速停止强度	1-10	F-14选择2时, 菜单有效, 数值越大, 停止越快。	5	
F-16	反转停止时 缓慢减速时间	0.1-10.0秒	F-14选择3时, 菜单有效, 数值越大, 停止越慢。	1.0	
F-17	第一段速	最低转速-最高转速	闭合多功能端子M1, 电机以第一段速运转。	500	
F-18	第二段速	最低转速-最高转速	闭合多功能端子M2, 电机以第二段速运转。	700	
F-19	第三段速	最低转速-最高转速	同时闭合多功能端子M1、M2, 电机以第三段速运转。	900	
F-29	恢复出厂设定	1. 不恢复 2. 恢复出厂设定		1	
F-30	程序版本	代码 + 版本		02.**	

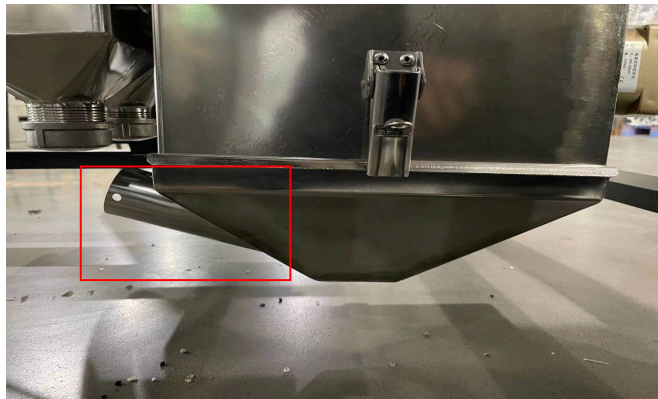
3.2 Material Level Switch Description



Picture 3-3: Material Level Switch

When the material level in the discharge box is too high, the material level switch controls the two screws to stop running. When the material level in silo No.1 and No.2 is too low, the material level switch will send a signal to the alarm light and buzzer, and the buzzer will trigger the alarm.

3.3 Suction Pipe Description



Picture 3-4: Suction Pipe

Connect 1.5” steel wire hose here to output the mixed materials.

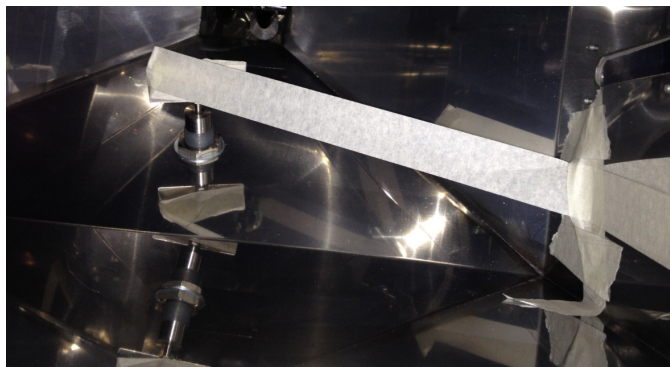
3.4 Delayer Description



Picture 3-5: Delayer

The factory setting is set to 8 secs. delay, which is used to control the delay of material level motor No. 1.

3.5 Preparation for Operation



Before using the machine, remove the stickers inside silo 1 and silo 2.

3.6 Parameter Setting Description

1. Switch on the machine.
2. Long press the MODE key on the panel for 3 secs., and the screen will display C100;
3. Press the up and down keys to enter the password, the screen displays C123, and then press ENTER key.
4. At this time, the screen displays F-01 and press ENTER to enter, press up and down key to set the value to 2, and then press ENTER after setting.

5. At this time, the screen displays F-02 and press ENTER to enter, press up and down key to set the value to 20, and then press ENTER after setting.
6. At this time, the screen displays F-03 and press ENTER to enter, press up and down key to set the value to 3, and then press ENTER after setting.
7. Switch off the machine, and switch it on again to complete the parameter setting.

4. Repair

All maintenance must be completed by professional personnel to avoid personal injury and machine damage.

4.1 Maintenance

Please keep the machine appearance clean.

4.2 Maintenance Schedule

4.2.1 About the Machine

Model _____ SN _____ Manufacture date _____

Voltage _____ Φ _____ V Frequency _____ Hz Power _____ KW

4.2.2 Check after Installation

- Check whether the screw is installed correctly.
- Check whether the snap hook of the suction box is locked tightly.

Electrical Installation

- Power supply _____ V _____ Hz
- Fuse melt current: 1 Φ _____ A 3 Φ _____ A
- Check the electrical wire connections of the control.

4.2.3 Daily Checking

- Check the four gear switch
- Check the alternative switch

4.2.4 Weekly Checking

- Check all the electrical wires
- Check whether the motor fixing screws are loose