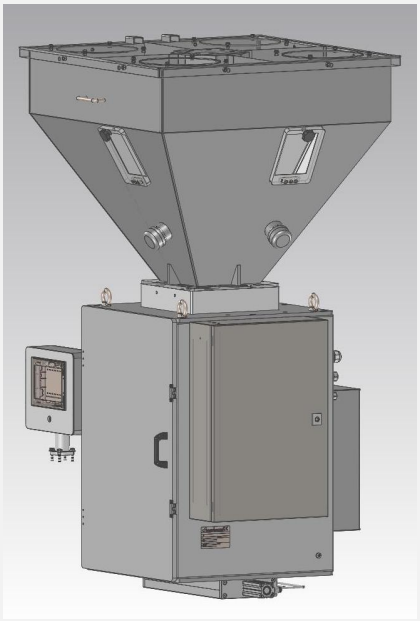
Technical Introduction



UM18G Gain Weight metering and mixing device is Sonner's most advanced Gain weight batch metering and mixing device.

Mainly used for measuring and mixing of granular and powdery plastic raw materials or additives. Suitable for Injection, Extrusion, Blow molding, Compounding and Granulation process.

UM18G can accurately control the flow rate of each component metering valve through the Load cell and digital technology. The accuracy is better than ± 0.3% which is ensured for the recipe of each batch of mixed materials. The optimally designed agitator can fully and uniformly stir or mix the metered raw material to ensure the mixing accuracy of the batch. This saves the cost of raw materials and improve the product quality. Typical output of UM18G is 600 to 900kg/hr.

The compact and modular design of the whole system ensures fast and convenient maintenance or replacement of raw materials. The raw material silo can be easily and quickly disassembled or removed. It only takes a few minutes to clean the material in the equipment to reduce the downtime to minimum.

The operation is safe and reliable. If the main raw materials and additives need to be automatically transported to hopper Sonner's optional suction device can be selected.

UM18G can be directly installed on the feeding port of the molding machine, it is equipped with connecting devices of various sizes and specifications. Any kind of structure feeding port can be used to connect with the molding machine. It can also be installed offline.

Dosing Valve and Capacity

Diameter of Dosing valve	20mm	30mm	40mm	60mm	80mm
Material	PE Granule	PE Granule	PE Granule	PE Granule	PE Granule
Flowrate of Dosing Valve	33g/s	130g/s	360g/s	950g/s	1800g/s

Applications

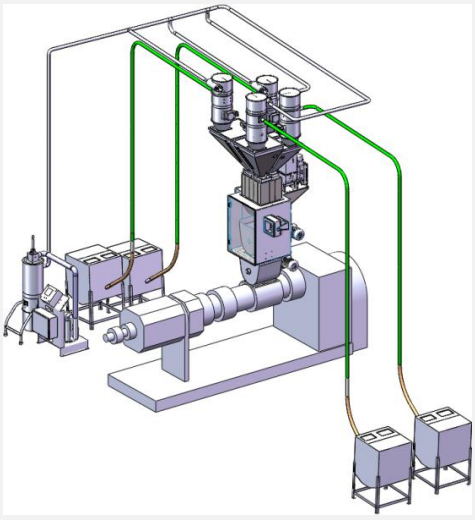
Online Installation:

1 . FSH Loader

2. UM18G Batch Blender

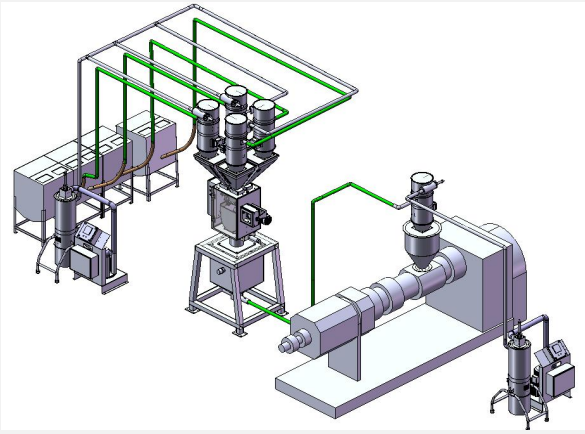
3. Secondary Mixing Tank

4. Extruder



Offline Installation:

1.FSH Loader
2. UM18G Batch Blender
3. Discharge Valve
4. Buffer silo
5. Extruder Inlet
6. Extruder
7. Movable silo



Standard Structure

UVH50G04/6 Dosing Hopper:

4 / 6　50L
SUS304 Stainless Steel
Raw Material Viewing Window

UMV20/30/40/60/80 Dosing Valve:

For Granular Raw Material Metering
Control Vertical Conical Metering Valve
Screw Dosing
Micro Cylinder With Solenoid Valve Drive

UMH18 Weigh Module:

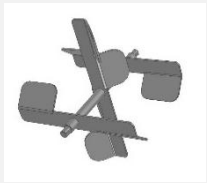
18L Detachable Weighing
SUS304 Stainless Steel
2*10Kg Load cell
0.3g Resolution Ratio

UMX40 Mixture Module:

45L Detachable Weighing
SUS304 stainless steel
370W Motor and Reducer
Level Detector Mounting Unit（Selectable）

Horizontal Agitator:

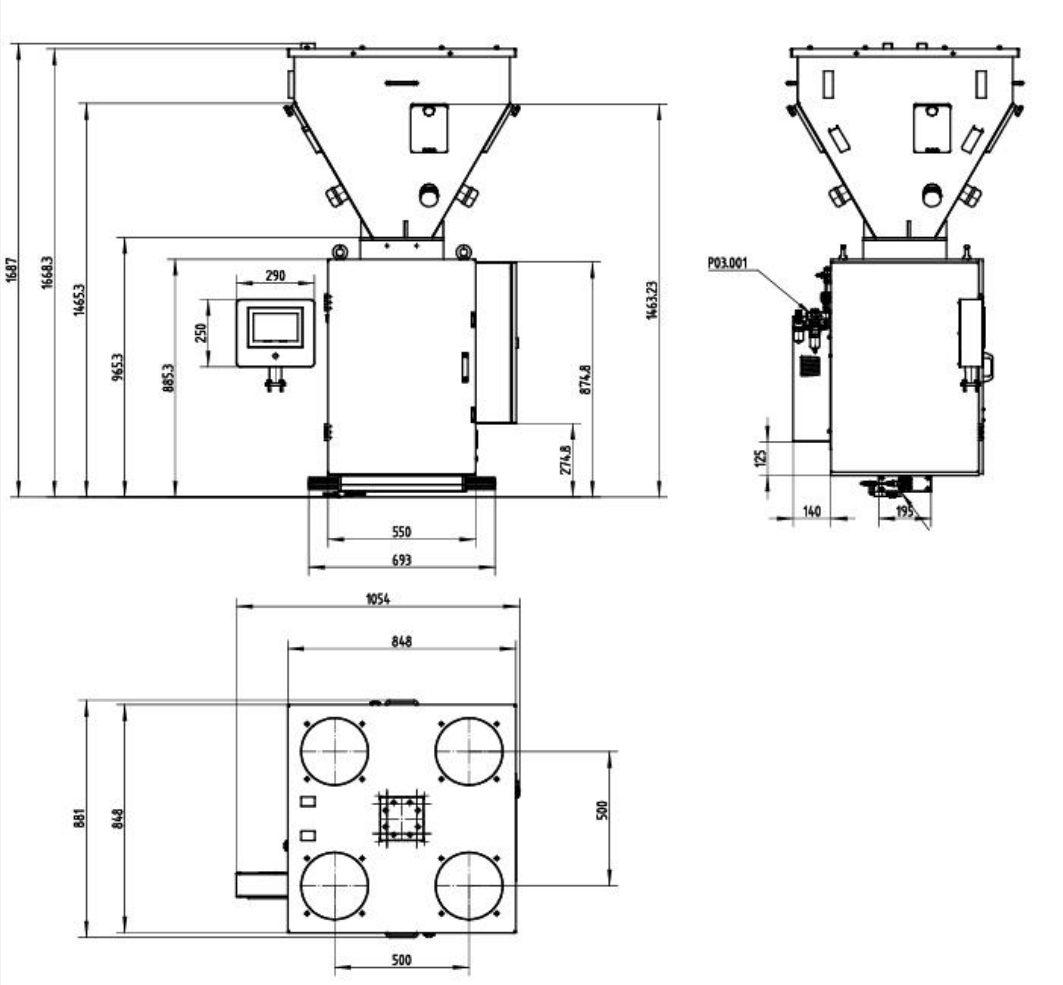
Middle Blade Toward Two Side
Side Blade Toward Middle
Material Convection In Mixture Silo



Design Parameters

Output Range:	600-900Kg/h
Material Temperature:	80℃（Standard）
Dosing Station:	4 - 6 工位
Measurement Accuracy:	<±0.3%
Ambient Temperature:	0℃-40℃
Ambient Humidity:	≤80%
Protection class:	IP54
Power Supply:	380V±10%, AC, 3P, 50Hz
Control Power:	24VDC
Loading Power:	1.0 KW (Max.)
Pneumatic Pressure:	6 – 8 Bar
Air Consumption:	85 L/h
Weight:	200 kg（Net Weight）

Mechanical Drawing



Paid Spare Parts List

Material Name	Model Specifications	Part Code
10kg Loadcell	SP4MC3MR-10kg	4400LC000010001
DI/DO Digital Module	IO-DI08DO10-STM32 V1.0	4130IODI08DO1000I01
Weigh Digital Transmitter	IO-LC241-STM32 V1.2	4110IO00LC24100I02
Loadcell Paralleling Module	JXH-4B	4400EA000000014
0.37KW Motor	FC71B 4B14	4300GR200370B14
Reducer	CM050 FS 40 71B14	4300GR100370B14
Slide Valve Module	ISVD150 - 150mm	312ISV00D150000I12
Rotation Switch Module	IOⅡ-PLRT-000-I07	3120IO00PLRT000I07

Associated Configuration

7"HMI Operation Controller	M240 HMI Operation Controller
Control Module	EC-BW Control Module
Moveable Cart	UMB Moveable Cart，100L Stainless Steel Silo
Convey System	FC Small Automatic Central Conveyor
Single Screw Feeder	US35 Single Screw Feeder

Typical Feeding Accuracy

Sample Method	1. Empty：Include Each Hopper and Pipe and Loader 2. Prepare Material: Confirm Weight and Record All the Material Before Using to Feeder 3. Run After Parameter Setting; After One Hour or Preset of Batch Reached, Then Stop 4. Collect All the Material in Each Hopper and Pipe and Loader. Then Confirm the Weight of Left Material. 5. Calculate the Consumption of Each Material 6. Calculate the Actual Percentage for Each Material, Then Compare with Percentage Setting
Accuracy Range	1. Accuracy Showing in HMI is Less Than 0.3% 2.Actual Accuracy is Less Than 0.3% from Calculation of Actual Percentage and Percentage Setting

UM18 Typical Accuracy

ID	Material	Diameter Valve(mm)	Percentage Setting%	Actual Batch Weight (kg)	Actual Percentage%	Remark
1#	Granule	60	66.94%	264.302	66.72%	Running 400kg, the Batch Setting is 25kg
2#	Granule	40	11.25%	45.097	11.38%	
3#	Granule	45	16.87%	67.144	16.95%	
5#	Granule	30	3.94%	15.654	3.95%	
6#	Granule	20	1.00%	3.942	0.995%	
Totalizer				396.139		

Weighing Accuracy

Weigh Module	USP-20
Load cell Range	10Kg*2
Protection Class	IP65
Comprehensive Error	< ±0.03%
Weighing Resolution	1: 4'000'000
Operating Temperature	–10 to +60 °C
Weight Signal Output	Digital Output Signal Via RS485
Baud Rate Range	9600 – 38400 baud
Sampling time	6ms – 4500ms programmable
Voltage	24VDC
Communication distance	< 500m
Operational characteristics	10ms dynamic weighing scanning cycle; 32-bit DSP high-precision weight calculation
Interference characteristics	Intelligent assessment of impact disturbance, the impact of continuous vibration disturbance on feeding operation
Suspension characteristics	Double shock absorber anti-mechanical interference design

The second generation of Sonner has completely independent intellectual property rights of weighing technology, based on 32-bit. DSP arithmetic function chip circuit design and perfect dynamic scale.
Weighing software provides customers with highly dynamic weighing technology.