

Technical Introduction

The T50 loss-in-weight feeder is suitable for metered feeding of highly viscous/sticky powdered raw materials that are difficult to flow.

T50 systems is suitable for continuous production processes. Such as mixing granulation, food and chemical production processes.

The optimized modular design can be fed both as a volumetric feed and as a Metered Loss-in-Weight feed material, so that the whole system can better adapt as per customer' s processing process formula changes.

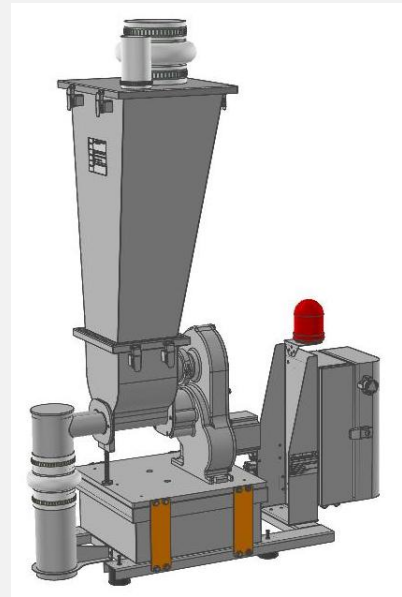
Based on the Loss-in-Weight principle, the T50 continuously monitors the flow rate and motor speed of the raw material and double closed-loop control, ensuring that the typical accuracy value is better than $\pm 0.25\%$.

The T50 silo is made of stainless steel and the part in contact with the raw material is mirror polished. It' s simple, quick disassembly and easy removal feature takes a very few minutes to clean material in the equipment, which reduces the cleaning time to minimum.

T50 comes with optimize design that provide different types of twin screws to push various sizes and characteristics of powders. The horizontal mechanical stirring module of the feeder can solve the problem of powdery raw materials with high viscosity and difficult flow.

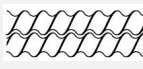
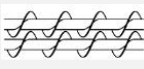
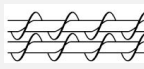
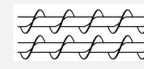
T50 reducer adopts the latest optimized design of high-precision gear transmission, which is suitable for screw and horizontal agitator. The link provides integrated power to both mechanisms.

T50 has obtained the European CE safety design standard certification, electronic controller has undergone strict EMC Standard test.



Screw and Feeding range

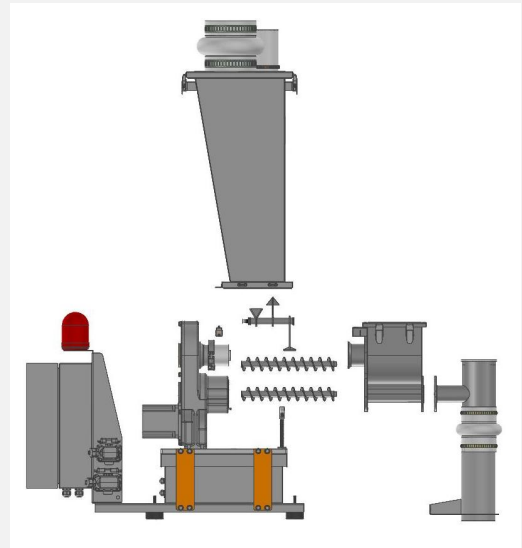
Note: The correct selection of screw is based on specific raw materials and has been fully tested to confirm. Different raw material characteristics determine the actual feeding range. If you need a specific and accurate feeding range, please provide us with raw materials, we can test and conform in our laboratory. The feeding data in the following table is a theoretical reference value and can only be used as a reference for selection.

	Twin concave Screw	Twin auger Screw	Twin auger Screw	Double auger screws	Screw Speed Range
					
Diameter	46*40mm	46*30mm	46*60mm	36*40mm	
	50 - 500 dm ³ /h	100 - 1000 dm ³ /h	200 - 2000 dm ³ /h	40 - 400 dm ³ /h	25 - 250 Rev/min

Material	Screw	30	90	150	200	250	300	400	500	600	700	800	1000	Kg/h	
Talc	4630A		█												
CB (Light)	4630A	█													
BaSO ₄	4630A		█												
CaCO ₃ (Heavy)	4630A		█												
Talc	4660A		█												
CB (Light)	4660A	█													
TiO ₂	4660A	█													
CaCO ₃ (Heavy)	4660A		█												
MAC	4640B	█													
CaCO ₃ (Heavy)	4640B		█												
ABS Premix	3640A	█													

Standard Structure

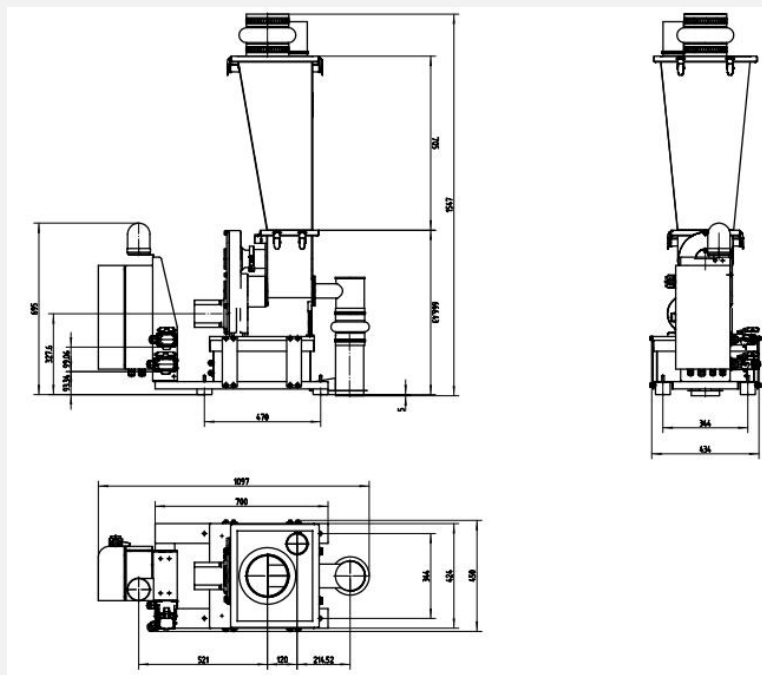
Inlet Soft Connector:	D168mm Silicone Material
Dosing Hopper:	50L SUS304 (Standard) 80L SUS304 (Selectable) 80AV SUS304 (Selectable)
Feeding Chamber:	10L SUS304
Horizontal Agitator:	Detachable SUS304
Twin Screw:	D32 - 46mm SUS316 Stainless Steel
Motor:	0.75Kw BLDC (Standard)
Weighing Unit:	300kg
Feed Tube:	D114mm
Outlet Soft Connector:	D114mm Silicone Material



Design parameters

Material :	4K Stainless Steel Mirror
Sealing Parts:	Silicone or PTFE
Material Temperature :	≤160°C (Standard)
Ambient Temperature :	0°C-50°C
Ambient Humidity :	≤80%
Protection Class :	IP54
Power Supply :	220V±10%, AC, 1P, 50Hz or 380V±10%, AC, 3P, 50Hz
Loading Power:	0.75Kw BLDC or 1.1 Kw AC (Max.)
Weight :	130kg
Exterior Color :	RAL7035

Mechanical Drawings



Non-Standard Design

Extended screw	Standard Extended 100mm, L410mm
Agitator	Vertical Agitator for Powder
Silo Material	Available In Stainless Steel 316 With Mirror Polished Interior
Explosion-Proof Design	Zone 21, Dust Explosion Proof, EXII DBT4 (Siemens Explosion Motor, Explosion load cell)
Manual Feeding	HR Manual Refilling Cover

Paid Spare Parts List

Material Name	Model specifications	Part code
Inlet Soft Connector	D168mm/ Silicone	413ISC00168S001I01
Outlet Soft Connector	D114mm/ Silicone	413ISC00114S001I02
Exhaust Bag	HP76E-240-1PP	4110HP00076E2401PP
Silo Gaskets (Upside)	L360mm*W300mm	414TVH000050005I01
Silo Gaskets (Downside)	L220mm*W180mm	414TVH000050004I01
Horizontal Agitator	TMHII50-005-00-I02	412TMH00005000500I02
DC Motor	FL110SV51-220V-1500	430MDC750110F00
DC Driver	FLDBLS-07	440DCD000750001
LIW Control Panel	EC-LW	4110ECLW0STM32000I02

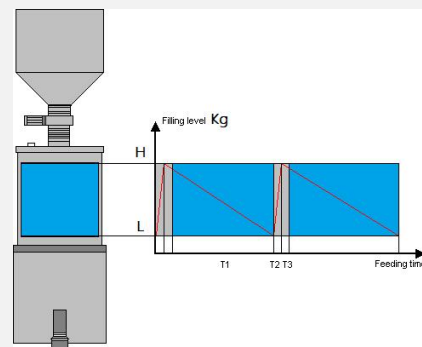
Associated Configuration

7" HMI Operation Controller	M240 HMI Operation Controller
12" HMI Operation Controller	M280 HMI Operation Controller
Communication Module	TS180 Modbus RTU ->Profinet
300L Refill Hopper	ICHS300AV- 300L With Vertical Agitator
300L Refill Hopper	ICHS300V – 300L With vibrator
300L Refill Hopper (25Kg Bag Feeding)	IBU25-300AV - 300L With Vertical Agitator
Refill Valve	IBV150 - 150mm Butterfly Valve
Refill Pipe	IDO168-100 – 168mm/L1M
Collection Hopper	BMI50
Connection Pipe	TCO114-100 – 114mm/L1M Between Collection Hopper and Extruder

Loss-In-Weight-Refill Control Time

Typical Refill Number as below form:

Typical Maximum Capacity	400Kg/hr
Diameter of Refill valve	150mm Butterfly valve
Volume of Dosing Hopper	80L
Bulk Density	0.4kg/l
Typical Refill Weight	26Kg
Refill Number	≤15 times/hr



Feeding Accuracy

Sampling Measurement	Usually take 15 samples and 60s for one sample (If need Special Requirement, please reference below accuracy form for 5s/10s/15s/30s)
Feeding Range	15: 1 Times Screw
Linear Accuracy	±0.25%-0.5% at 60sec
Repeatability Accuracy	≤0.5% at 2 Sigma, Flow Characteristics of Material Determine Repeatability Accuracy

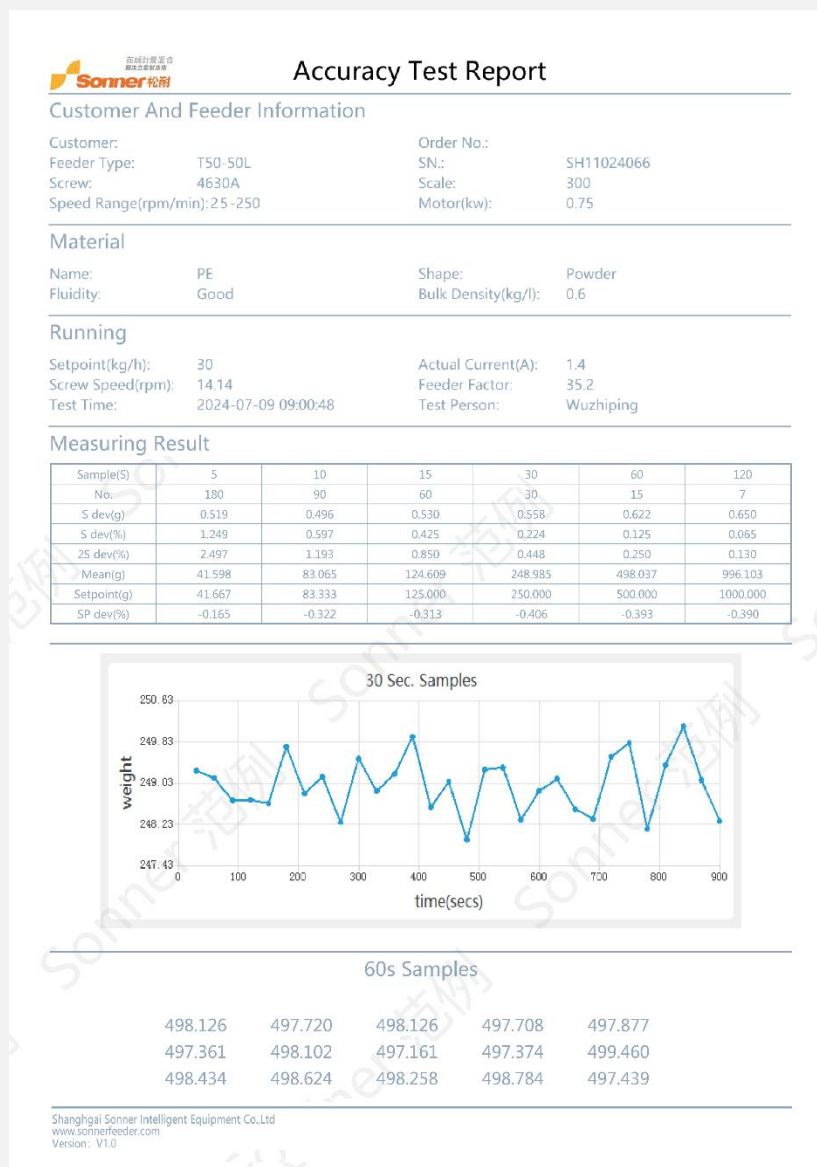
Repeatability Accuracy:

It is based on the standard sample variance, which describes the flowrate of the screw feeder in a period of time and the discrete situation of several flow samples in each sampling period. It is one of the important indicators to describe the repeatability error of the screw feeder. The repetition error can be quantified based on the standard deviation.

Linear Accuracy:

It describes the accuracy of each operating point with in the operating range of the feeder from the minimum federate to the maximum feed rate. That is the error between the actual feeding amount and the set amount in the whole range. Smaller the error higher is the linear accuracy of the feeder.

TFE50-4630A Typical Accuracy Testing Table



Weighing Accuracy

Weigh Module	SP6-300
Load cell Range	300Kg
Protection Class	IP65
Comprehensive Error	< $\pm 0.03\%$
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.

