Technical Introduction

The T65 loss-in-weight feeder is suitable for metered feeding of highly viscous/sticky powdered raw materials that are difficult to flow.

T65 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 T65 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 ±0.25%.

The T65 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.

T65 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.

T65 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.

T65 has obtained the European CE safety design standard certification, electronic controller has undergone strict EMC Standard test.
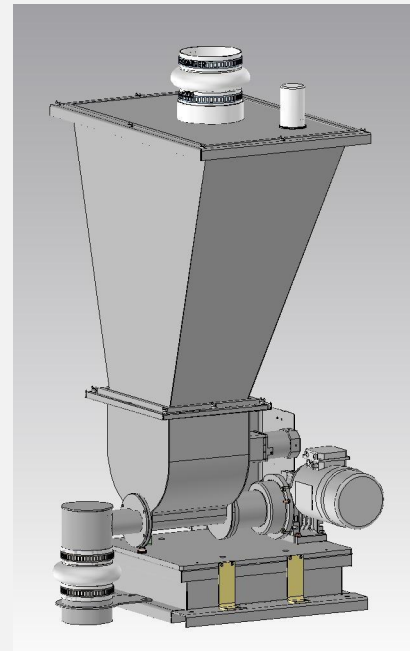
Screw and Feeding range

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	Double Auger Screw	Screw Speed Range
Diameter×Pitch	60*60mm	60*35mm	60*65mm	
Big Pitch	150 - 1500dm3/h	210 - 2100 dm3/h	380 - 3800 dm3/h	23.3 –233 Rev/min

Material	Screw	120	150	400	600	800	1000	1200	1400	1500	1800	2000	Kg/hr
Talc	6065A												
CaCO3(Light)	6065A												
CaCO3(heavy)	6065A												
AL(HO)3	6065A												
CB(Light)	6065A												
White CB	6065A												

Standard Structure

Inlet Soft Connecter:	D200mm Silicone Material
Dosing Hopper:	200L SUS304 (Standard)
	600L SUS304 (Selectable)
	160AV SUS304 (Selectable)
Feeding Chamber:	20L SUS304
Horizontal Agitator:	Detachable, SUS304
Twin Screw:	D60mm
	SUS316 Stainless Steel
Motor:	2.2kw，380V/3Phase
Weighing Unit:	900kg
	FTD Digital Transmitter
Feed Tube:	D159mm
Outlet Soft Connecter:	D168mm Silicone Material
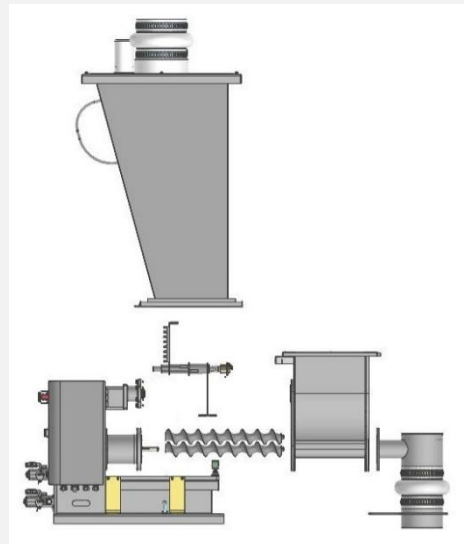
Design parameters

Material :	4K Stainless Steel Mirror
Sealing Parts：	Silicone or PTFE
Material Temperature :	≤160℃ (Standard)
Ambient Temperature :	0℃-50℃
Ambient Humidity :	≤80%
Protection Class :	IP54
Power Supply :	380V±10%, AC, 3P, 50Hz
Loading Power:	2.5KW (Max.)
Weight :	200kg
Exterior Color :	RAL7035

Mechanical Drawings
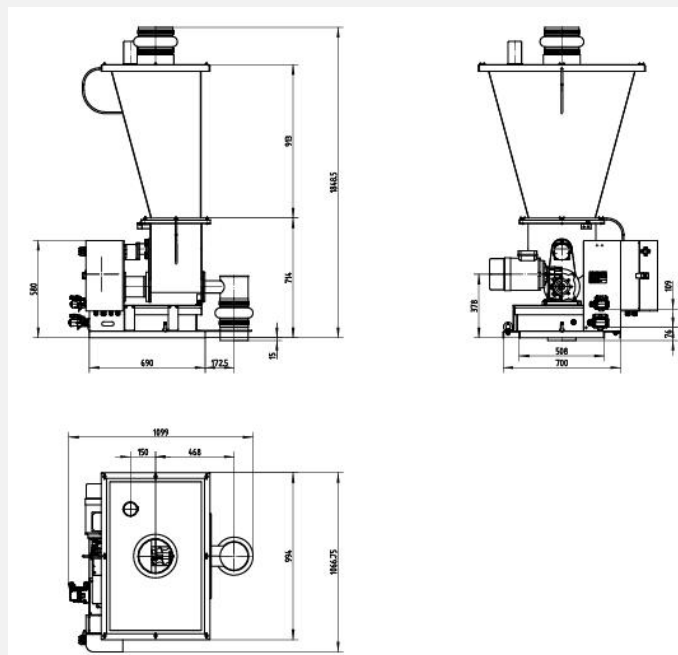
Non-Standard Design

Extended screw	Standard Extended 100mm, L510mm
Dosing Hopper	Special Design 600L Dosing Hopper for White Carbon Black
Silo Material	Available In Stainless Steel 316 With Mirror Polished Interior
Explosion-Proof Design	Zone 21, Dust Explosion Proof, EXⅡDBT4 (Siemens Explosion Motor, Explosion load cell)

Paid Spare Parts List

Material Name	Model specifications	Part code
Inlet Soft Connecter	D219mm/ Silicone	413ISC00219S001I01
Outlet Soft Connecter	D168mm/ Silicone	413ISC00168S001I01
Exhaust Bag	HP76E-240-1PP	4110HP00076E2401PP
Silo Gaskets (Upside)	L480mm*W320mm	414TVH000050005I01
Silo Gaskets (Downside)	L300mm*W240mm	414TVH000025005I01
Horizontal Agitator	TMHIV65-002-00-I01	414TMH00006500200I01
Agitator Motor	5IK90GVR-EC/5GVR180B	4300HW000000290
AC Motor	MS100L 4B14/50Hz 2.2kw	4300GR002200B14
Inverter	DV1-345D0NB-C20CX1	4400ID002200001
Reducer	CM075 U 15 100B14 M1	4300GR00075UB14
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
600L Refill Hopper	ICHS600AV- 600L With Vertical Agitator
600L Refill Hopper	ICHS600V – 600L With Vibrator
Refill Valve	IBV200 - 200mm Butterfly Valve
Refill Pipe	IDO219-100 – 219mm/L1M

Loss-In-Weight-Refill Control Time

Typical Refill Number as below form:

Typical Maximum Capacity	1000Kg/hr
Diameter of Refill valve	200mm Butterfly valve
Volume of Dosing Hopper	200L
Bulk Density	0.4kg/l
Typical Refill Weight	70Kg
Refill Number	≤15 Times/hr
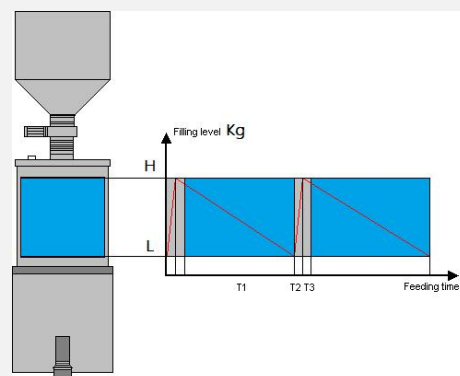
Feeding Accuracy

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.

TFE65-6065A Typical Accuracy Testing Table

Accuracy Test Report

Customer And Feeder Information

Customer:		Order No.:	
Feeder Type:	T65-200L	SN.:	SH11024030
Screw:	6065A	Scale:	900
Speed Range(rpm/min):	25-250	Motor(kw):	0.75

Material

Name:	PE	Shape:	Powder
Fluidity:	Good	Bulk Density(kg/l):	0.5

Running

Setpoint(kg/h):	150	Actual Current(A):	0.12
Screw Speed(rpm):	31	Feeder Factor:	100
Test Time:	2024-04-19 15:10:25	Test Person:	Wuzhiping

Measuring Result

Sample(S)	5	10	15	30	60	120
No.	180	90	60	30	15	7
S dev(g)	2.145	2.328	2.867	4.088	3.156	3.486
S dev(%)	1.029	0.558	0.458	0.327	0.126	0.070
2S dev(%)	2.057	1.117	0.917	0.654	0.252	0.139
Mean(g)	208.559	416.917	625.413	1250.721	2501.114	5001.938
Setpoint(g)	208.333	416.667	625.000	1250.000	2500.000	5000.000
SP dev(%)	0.108	0.060	0.066	0.058	0.045	0.039

30 Sec. Samples

60s Samples

2505.857	2500.468	2499.789	2504.777	2500.927
2501.051	2501.697	2503.706	2496.479	2494.341
2505.093	2502.409	2498.099	2500.626	2501.396

Shanghai Sonner Intelligent Equipment Co.,Ltd
www.sonnerfeeder.com
Version：V1.0

SHANGHAI SONNER INTELLIGENT EQUIPMENT CO., LTD.

Version：V6.0

Weighing Accuracy

Weigh Module	SP8-300*3
Load cell Range	300Kg*3
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.