

# Stursan ST-HHQ Series Mixing Pump



**BLENDER solid/liquid mixer**





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**STURSAN**



## ✓ Stursan ST-HHQ



Series mixing pump

Solutions for emulsifying, mixing, adjusting, multi-tasking, powder and liquid mixing.

The HHQ series mixing pump is for mixing solid or powder into the liquid. It provides on-line perfect processing solutions for milk powder compounding, syrup making and brine making, etc. It also can be used for preparing solid and powder mixing, in the food and beverage, biopharmacy, traditional Chinese medicine making, cosmetics and chemicals.



## Technical Specifications

Technical Specifications	
Max. capacity powder	9000kg/h
Max. capacity of thickeners	3000kg/h (Depends on the viscosity and concentration of the material)
Max. temperature	130°C
Material	304 /316L, 1.4301/1.4404, ASME BPE 316L, 1.4435 BN2 Fe ≤ 0.5%
Surface treatment	≤ Ra0.8 μ m, ≤ Ra0.6 μ m, ≤ Ra0.4 μ m,
Mechanical seal	Single mechanical seal and double mechanical seal
Mechanical seal combination	See configuration table
Inlet/Outlet connection	Thread, Clamp, Flange, Aseptic flange
Certification	 CE  EC 1935/2004



## Working Principle

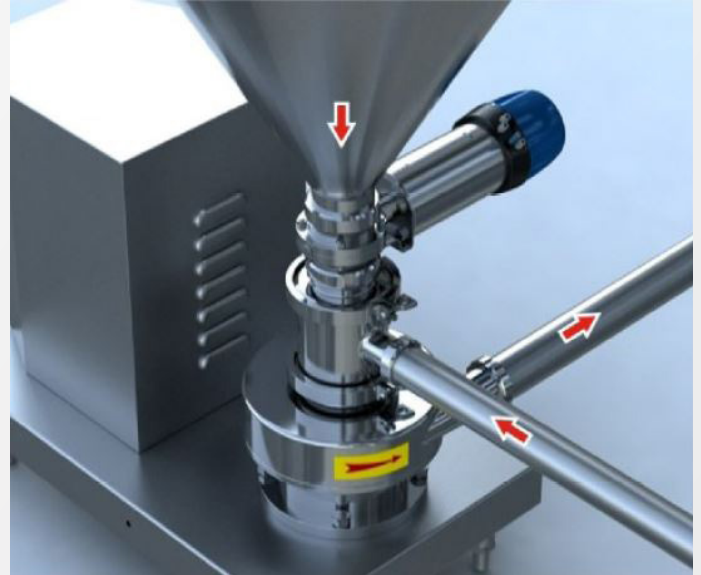
The mixer contains one tee sleeving, one impeller, one inner sleeving and a mixing chamber. Driving by motor, the impeller in mixing chamber rotates at high speed to throw around the mixture to create vacuum in the center of the impeller to inhale mediums into mixing chamber. Solid medium is inhaled into mixing chamber through inner sleeving, and liquid medium is inhaled into mixing chamber through tee sleeving. Solid medium and liquid medium are separate by inner sleeving to prevent flocculation of solid and liquid medium by premature contact before inhaled into mixing chamber. After fully mixed, the mixture is transported to mixer outlet by impeller. It asks mixer outlet keeping low pressure, in order to avoid cavitation and keeping higher work efficiency at the same time.

**Note:** higher outlet pressure will reduce the volume of inhaled solids, powders and other materials. When outlet pressure is higher, it needs to assemble a transfer pump to transport the material.



## Very Simple And Clear Piping Layout

- Multiple tasks can be handled simultaneously
- Ratio between liquid and powder is adjustable
- The powder inlet is designed with a valve that controls the amount of powder inhaled. The valve can be manual and pneumatic
- The liquid inlet is designed with a valve that controls the flow of liquid inhaled
- The side of the hopper is designed with a vibrator to prevent the powder from accumulating and agglomerating
- The hopper can be configured with tuning fork sensor. When work automatically, the sensor can prevent mixture ratio from inconsistent caused by low amounts of powder, and also can prevent the powder from overflowing



Powder and liquid are strongly sucked into the pump chamber



The material is being mixed



The mixture is transported to the tank equipment

Simple, flexible, economic and plenty combination

### Mixing pump with trolley



There are 4 wheels on the base, 2 of them have brakes. It is equipped with handles at same time.

### Electrical control box



Basic functions of electrical controller, stop/start, emergency stop, motor protection.

### Pneumatic vibrator



The vibrator is generated by a gas source and the frequency of vibrator is changed by adjusting the air entering the vibration.

### Electric vibrator



Electric vibrator is with low noise and good vibration.

- 1) Single phase AC220V/110V
- 2) Three phase AC380V (other power)

### Multi-function cover



Multiple configurations such as:

- 1) Cover + sight glass + small hopper
- 2) Cover + sight glass + small hopper + LED light

### Tuning fork position sensor



The sensor mainly prevents the hopper material from being completely drained and the material overflowing the hopper. There are two kinds of sensors: high level and low level.

**Power:** DC24V AC220V/110V

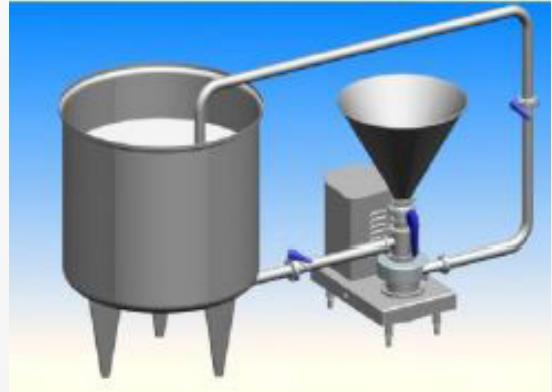
**Output signal:** 4-20mA, PNP



## Typical Applications

### 1.

Can be achieved fast-dissolving of a powder product. Mainly make solution that solid content not more than 15%. Usually used in the rapid dissolution process of milk powder, pectin, additives, sugar and other materials.



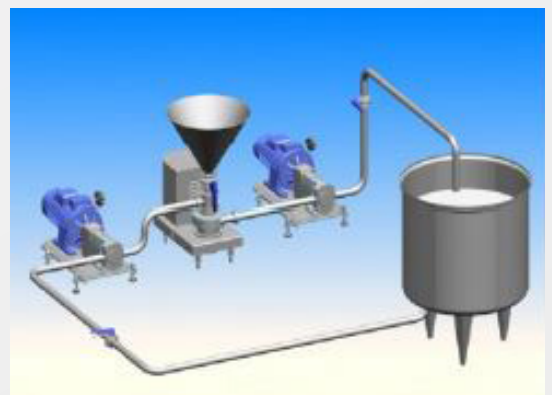
### 2.

Adding a centrifugal pump between Mixer and make-up tank is in order to feed mixer. This configuration can handle solution with solid, accelerating the dissolution of dry powder by high-speed liquid generated by centrifugal pump. Mainly used in the processing of final solution with solid content of 25% or less.



### 3.

This system is equipped with two sets of rotor pumps; rotor pump has relative large advantage in the process of delivery of materials containing the viscosity, and has a relative high pressure. This system is designed to handle high solids content of mixed solution, especially perfect in dealing with the solution with solids content of 50% or more.





## Typical applications



### Food & beverage

Juice, jam, ice cream, dairy products, food additives, tea drinks, chocolate, soy milk, essence, salad dressing, chill sauce, mayonnaise, tomato sauce, mustard, yogurt, sour cream, pudding, etc



### Daily chemical

Liquid detergent, liquid soap, facial cleanser, emulsified silicone oil, fragrance compound, skin care product, cosmetics, cream, shampoo, shower gel, etc



### Bio-pharmaceutical

Injection, antibiotic, medicine emulsion, medicine emulsifiable paste, health care products, microcapsule emulsification, lotion, cell tissue smash, etc



### Additives and Thickeners

Aspartame, non-skimmed milk powder, salt, citric acid, sugar, egg powder, whey protein concentrate, calcium carbonate, honey, powder essence and other additives, gels, pectin, synthetic thickeners, starch, gelatin and other thickeners



### Petrochemical industry

Lubricant, heavy oil emulsification, diesel oil emulsification, modified asphalt, catalyser, wax emulsion, etc. Which media need to be emulsified and homogenized



### Fine chemical engineering

Pigment, dyestuff, plastic additive, textile assistant, adhesive, resin emulsification, hot melt adhesive, sealant, glue, sizing agent, finishing agent, surfactant, dye leveller, carbon black dispersion, anti-sticking agent, textile finishing agent, brightener, leather auxiliaries, pigment paste, etc. Which media need to be emulsified and homogenized.



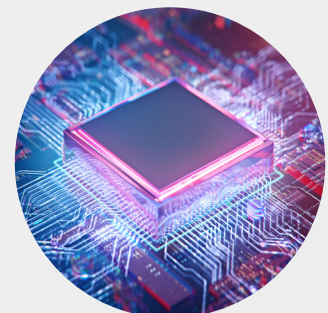
### Coating & ink

Printing ink, oil paint, emulsion paint, coating, nano paint, photocurable coating, coating adhesive, carbon black dispersion, glaze, bentonite, dye compounds, etc



### Pesticide

Insecticide, herbicide, pesticide miscible oil, fertilizer, inert ingredient, etc. Which media need to be emulsified and homogenized.

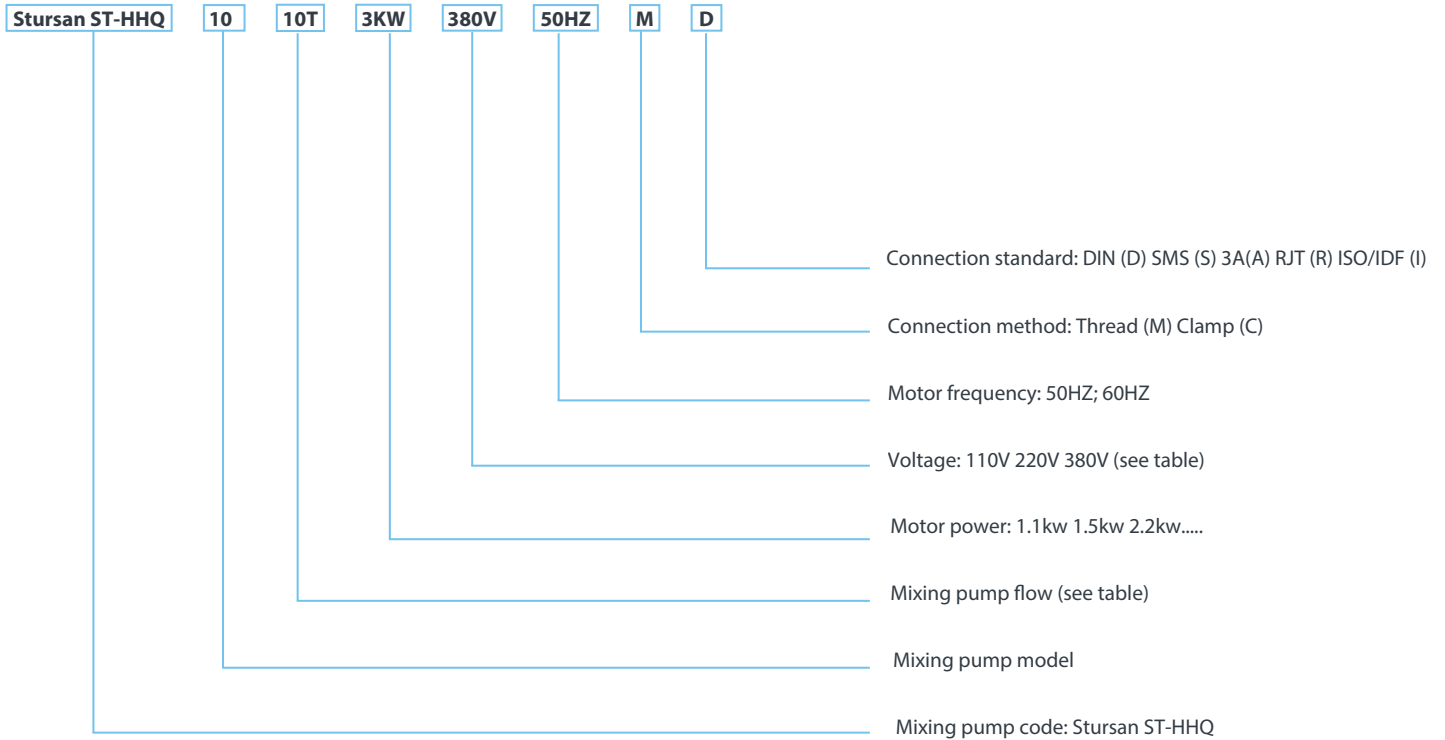


### Semiconductor

Dispersion & depolymerization of nanometre materials, etc



## Model Instruction

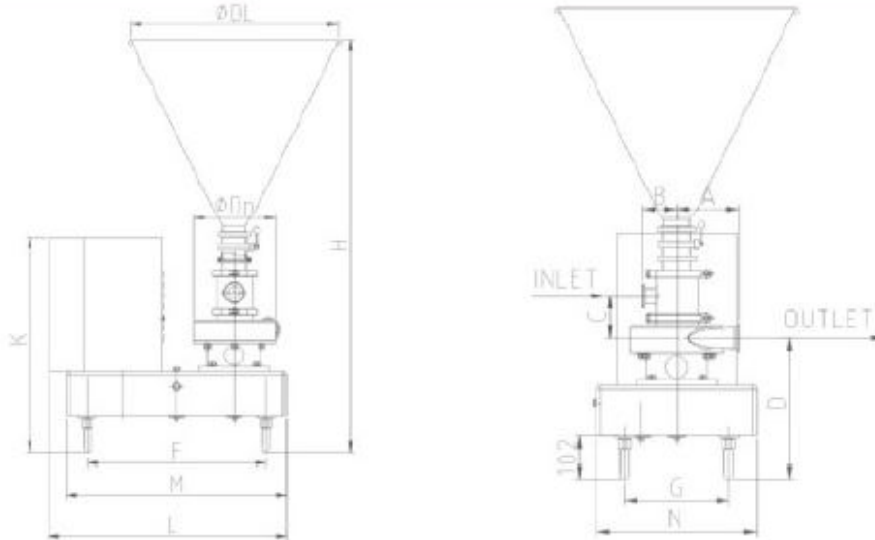


**For example:** Stursan ST-HHQ-10-10T-3KW-380V-50HZ-M-D

## Selection Table

Model	Power	Outlet pressure (bar)	Flow (m <sup>3</sup> /h)	Applicable mixture viscosity	Hopper volume	Solid suction volume	Solid Inlet	Liquid Inlet	Outlet	Connection way
Stursan ST-HHQ - 10	3kw	3.0	10	≤2000	45L	2000kg/h	DN65-3"	DN40-1.5"	DN50-2"	Clamp, Thread
	5.5kw			≤3000						
Stursan ST-HHQ - 20	4kw	3.0	20	≤2000	45L	3000kg/h	DN65-3"	DN40-1.5"	DN50-2"	Clamp, Thread
	7.5kw			≤3000						
Stursan ST-HHQ - 30	5.5kw	3.0	30	≤2000	45L	4200kg/h	DN80-3.5"	DN50-2"	DN65-2.5"	Clamp, Thread
	11kw			≤3000						
Stursan ST-HHQ - 40	7.5kw	3.0	40	≤2000	45L	5500kg/h	DN80-3.5"	DN50-2"	DN65-2.5"	Clamp, Thread
	15kw			≤3000						
Stursan ST-HHQ - 50	11kw	3.0	50	≤2000	65L	7000kg/h	DN100-4"	2.5"	DN80-3"	Clamp, Thread
	18.5kw			≤3000						
Stursan ST-HHQ - 60	15kw	3.0	60	≤2000	65L	9000kg/h	DN100-4"	2.5"	DN80-3"	Clamp, Thread
	22kw			≤3000						

## Data chart



Stursan ST-HHQ	Assembly dimension														
	Power	Solid Inlet	Liquid Inlet	Outlet	Dp	C	D	F	G	H	K	L	M	N	DL
Stursan-ST-HHQ - 10	3kw	3"	1.5"	2"	234	109	352	550	320	1116	607	682	630	400	590
	5.5kw	3"	1.5"	2"	234	109	352	790	350	1116	692	930	870	430	590
Stursan-ST-HHQ - 20	4kw	3"	1.5"	2"	234	109	352	550	320	1116	607	682	630	400	590
	7.5kw	3"	1.5"	2"	234	109	352	790	350	1116	692	930	870	430	590
Stursan-ST-HHQ - 30	5.5kw	DN80	2"	2.5"	253	128	410.5	790	350	1328.5	692	930	870	430	620
	11kw	DN80	2"	2.5"	253	128	410.5	840	420	1328.5	827	989	920	500	620
Stursan-ST-HHQ - 40	7.5kw	DN80	2"	2.5"	253	128	410.5	790	350	1328.5	692	930	870	430	620
	15kw	DN80	2"	2.5"	253	128	410.5	840	420	1328.5	827	989	920	500	620
Stursan-ST-HHQ - 50	11kw	4"	2.5"	3"	292	135	415	840	420	1393	827	989	920	500	704
	18.5kw	4"	2.5"	3"	292	135	415	840	420	1393	827	989	920	500	704
Stursan-ST-HHQ - 60	15kw	4"	2.5"	3"	292	135	415	840	420	1393	827	989	920	500	704
	22kw	4"	2.5"	3"	292	135	415	840	420	1393	925	990	920	500	704

Stursan ST-HHQ	Inlet and Outlet connection way								
	SMS Male connection			INCH Clamp connection			DIN Thread connection		
	A (Solid)	A(Liquid)	B	A (Solid)	A(Liquid)	B	A (Solid)	A(Liquid)	B
Stursan-ST-HHQ - 10	184.3	179.3	94	172	172	86.7	184.3	179.3	95
Stursan-ST-HHQ - 20	184.3	179.3	94	172	172	86.7	184.3	179.3	95
Stursan-ST-HHQ - 30	210	204	120	196.7	196.7	108.7	209	205	119
Stursan-ST-HHQ - 40	210	204	120	196.7	196.7	108.7	209	205	119
Stursan-ST-HHQ - 50	230	227	114	218.8	215.7	101.7	231	\	114
Stursan-ST-HHQ - 60	230	227	114	218.8	215.7	101.7	231	\	114

**Note:** The relevant dimensions of the above data diagrams are not regarded as the final basis of the actual object. Stursan reserves the right to update the data without further notice



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