

# Homogeneous Mixing Pump Series





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**Catalogue technical information only for reference. Stursan reserves the rights to update and upgrade without prior notice.**

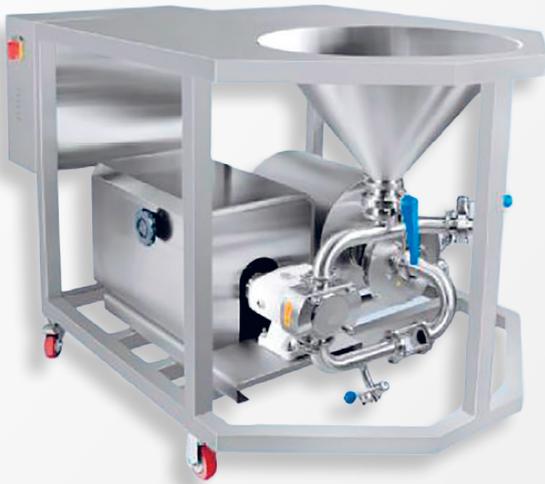
10.2020 / Revisión 1

**STURSAN**



# ✓ Stursan ST-HC PMTU

Series mixing pump



Solutions for emulsification, homogenization, refining, mixing, adjustable, multi-tasking, mixing powder and liquid.



The PM series is a multifunctional material-liquid mixing pump with functions of mixing, shearing, emulsifying, homogenizing, differentiating, refining, crushing and material improvement. Compared with the traditional production process, the pump is more simple, convenient and economical, which improves the production efficiency and the quality of the materials to be treated. Mainly applied to: food, beverages, dairy products, additives, personal care, biopharmaceuticals, thickeners, industrial applications and so on.



A= Lobe pump | B= Emulsified homogeneous pump

## Technical Specifications

Max. powder processing capacity	9000kg/h
Max. thickeners processing capacity	3000kg/h (Base on material's viscosity and density)
Max. temperature	130°C
Material	304 /316L, 1.431/1.4404, ASME BPE 316L,1.4435 NB2 Fe ≤ 0.5%
Surface treatment	≤ Ra0.8 μ m, ≤ Ra0.6 μ m, ≤ Ra0.4 μ m,
Mechanical seal	Single and double mechanical seals
Mechanical seal combination	See configuration table
Inlet/Outlet connection	Thread, clamp, flange, Aseptic flange
Certification	CE  EC 1935/2004

## Stursan ST-HC-JAB series lobe pump

JAB lobe pump pumping power and liquid from batching tank to chamber for pretreatment and sent to the emulsified homogeneous pump.

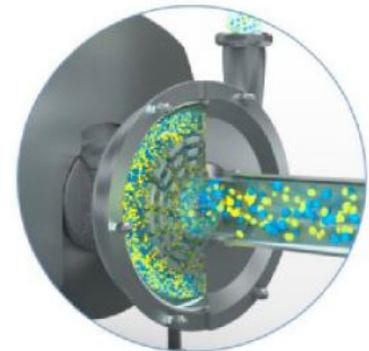
### Options:

- JAB HP series



## Stursan ST-HC-JZ1 Emulsified homogeneous pump

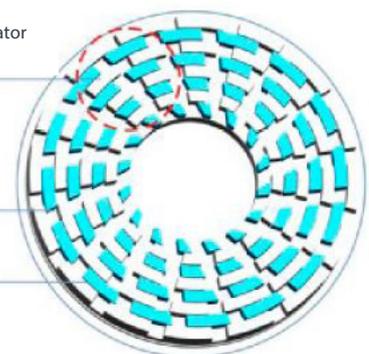
JZ1 series pumps are capable of emulsifying, homogenizing, refining, dispersing, crushing and mixing complex components such as stabilizers, thickeners, gels, flavours, sugars and other additives. Its powerful mixing function enable the material to achieve the high consistency, and improves the material quality.



The gap between the stator and the rotor is 0.5mm

Stator

Rotor





## 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, flavoured milk, pudding and other types of materials



### 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, drug emulsion, medicine cream paste, health care products, microcapsule emulsification, lotion, cell tissue breakage, 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.



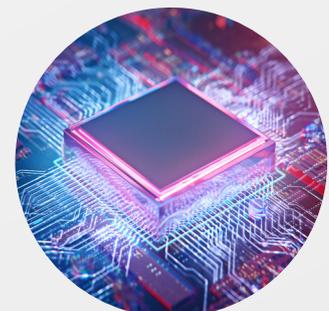
### Coating & ink

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

## 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 homogeneously mixed



The homogeneous mixture is delivered to the tank equipment



Sensor



Vibrator and valve

Simple, flexible, economical, efficient

## Very Simple and Clear Electrical Control Layout

- Lobe pump, can control speed by frequency inverter to achieve the purpose of controlling the flow
- Homogeneous pump, can control speed by frequency inverter to achieve the effect of homogenization and mixing, meanwhile control the flow
- Console, designed with motor overload protection to prevent motor from being burned
- Console, the shell is designed with work indicator, can distinguish working condition through the light



## Model instruction



PMTU 13 4KW 5.5KW 380V 50HZ M 2"/1.5" S

Connection standard: DIN (D) SMS (S) 3A(A) RJT (R) ISO/IDF (I)

Inlet/Outlet size

Connection way: Thread (M) Clamp (C)

Motor frequency: 50HZ; 60HZ

Voltage: 110V 220V 380V (see table)

JZ homogenizer pump motor power: 1.1kw 1.5kw 2.2kw...

Lobe pump/self priming pump motor power: 1.1kw 1.5kw 2.2kw...

Mixing pump model

Homogeneous mixing pump code:

- **Stursan ST-HC PMTU** for **TUL** lobe pump+**JZ** homogenizer pump series
- **Stursan ST-HC PMZX** for **CIP-U** type self-priming pump+**JZ** homogenizer pump series

**For example:** Stursan ST-HC PMTU 13 / 4kW / 5.5KW-380V-50HZ / M-2"/1.5"-S

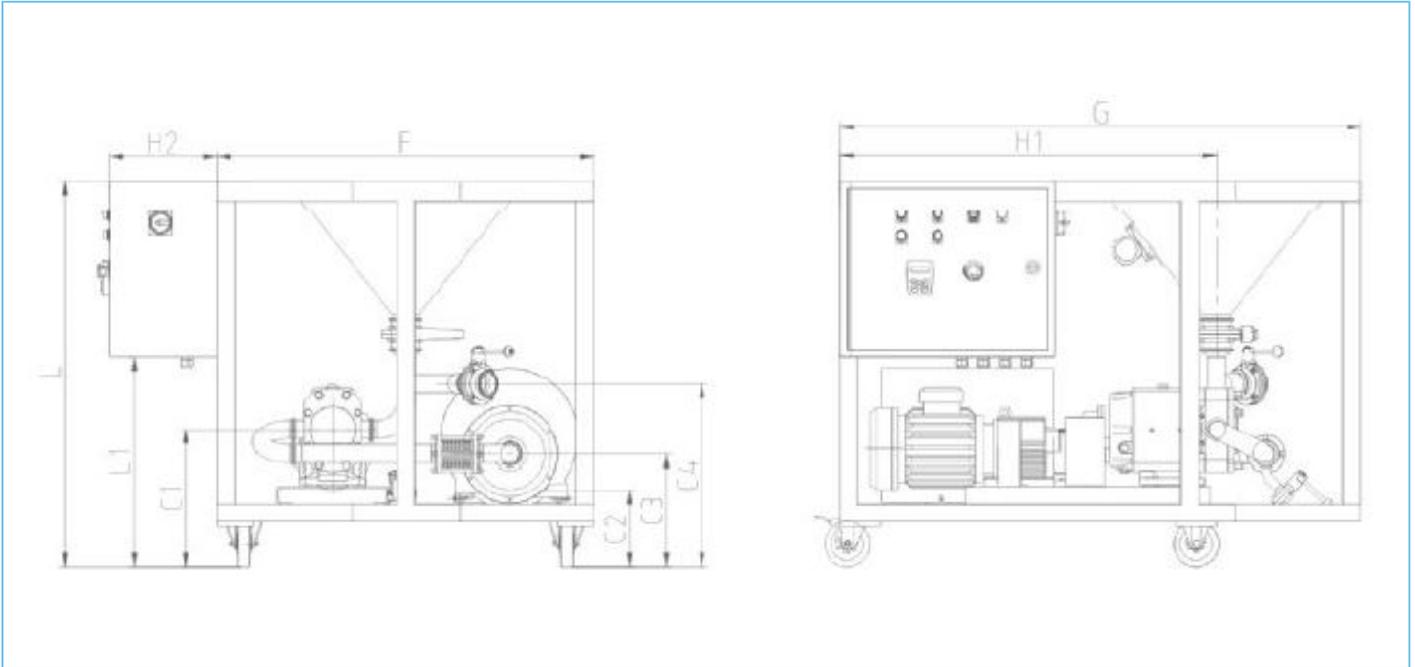


## Selection table



Homogeneous mixing pump	Lobe pump		Emulsifying homogenizing pump		Powder Capacity-KG/h			Inlet	Outlet	Hopper capacity (L)	Weight (kg)
	Speed (0-1450-MIN)		Speed (2950-MIN)		Granulated sugar	Skim milk protein powder	Thickener powder (base on grade & density)				
	Lobe pump (model)	Power (KW)	Homogenizing pump (model)	Power (KW)							
Stursan ST-HC PMTU-13	JAB-25	4.0	JZ1-130	5.5	0-500	0-450	100-200	2"-DN50	1.5"-DN40	45L	563
Stursan ST-HC PMTU-15	JAB-30	4.0	JZ1-150	7.5	0-1000	0-900	200-400	2"-DN50	1.5"-DN40	45L	606
Stursan ST-HC PMTU-17	JAB-35	5.5	JZ-170	11	0-1800	0-1600	300-500	2"-DN50	2"-DN50	45L	702
Stursan ST-HC PMTU-19	JAB-60	7.5	JZ1-190	15	0-3500	0-3200	600-1200	3"	2"-DN50	65L	436
Stursan ST-HC PMTU-21	JAB-70	11.0	JZ1-210	18.5	0-5000	0-4500	1200-2000	3"-DN80	2.5"-DN65	65L	1016
Stursan ST-HC PMTU-24	JAB-100	15.0	JZ1-240	22	0-10000	0-9000	1500-3000	4"-DN100	2.5"-DN65	65L	1076

## Data chart



Series	Assembly dimensions									
	C1	C2	C3	C4	F	G	H1	H2	L	L1
Stursan ST-HC PMTU-13	413.5	278.5	355	559.5	1050	1750	1050	300	1124	624
Stursan ST-HC PMTU-15	436.5	257	355	569	1050	1750	1050	300	1124	624
Stursan ST-HC PMTU-17	436.5	283.5	384	569	1050	1750	1050	300	1124	624
Stursan ST-HC PMTU-19	436.5	256.5	384	569	1050	1750	1050	300	1124	624
Stursan ST-HC PMTU-21	554	243	384	493.5	1050	1750	1050	300	1124	624
Stursan ST-HC PMTU-24	554	243	404	493.5	1050	1750	1050	300	1124	624



# ✓ Stursan ST-HC PMZX

Series mixing pump



Solution for emulsifying, homogenizing, refining, mixing, adjusting, multitasking, powder and liquid mixing



The PM series mixing pump is for mixing material and liquid with multi-functions, such as mixing, shearing, emulsifying, homogenizing, dispersing, refining, crushing and material improvement. Compared with the traditional production process, the pump is more simple, convenient and economical, which improves the production efficiency and the quality of treated materials.

Mainly used in: food, beverage, dairy products, additives, personal care, biopharma, thickeners, industrial applications, etc.



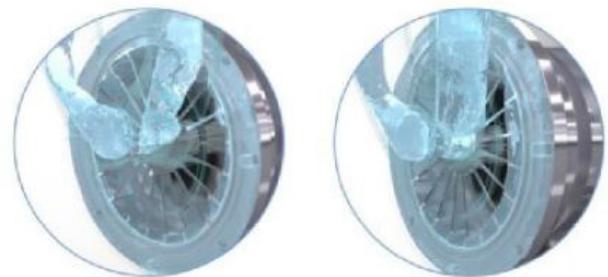
A= Liquid ring type self-priming pump | B= Homogeneous mixing pump

### Technical Specifications

Max. capacity of 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, 1.431/1.4404, ASME BPE 316L,1.4435 NB2 Fe ≤ 0.5%
Surface treatment	≤ Ra0.8 μ m, ≤ Ra0.6 μ m, ≤ Ra0.4 μ m,
Mechanical seal	Single and double mechanical seals
Mechanical seal combination	See configuration table
Inlet/Outlet connection	Thread, clamp, flange, Aseptic flange
Certification	CE  EC 1935/2004

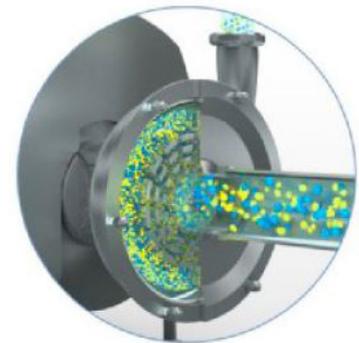
## Stursan ST-HC-CIP series self priming pump

CIP Series liquid ring type self-priming pump has super strong self-priming ability, and negative pressure can reach 0.8bar, the powder and liquid are sucked into the chamber from the dosing tank for pretreatment, and then they're transported to emulsification homogenization pump.



## Stursan ST-HC-JZ1 Emulsification homogenization pump

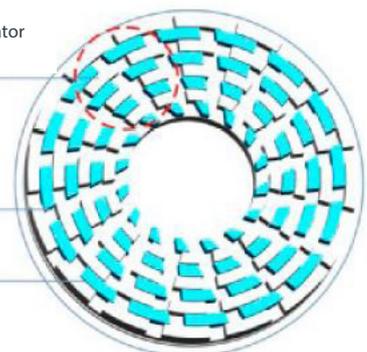
JZ1 Series pumps can be used for emulsifying, homogenizing, refining, dispersing, crushing and mixing of various complex components such as stabilizers, thickeners, gels, flavours, sugars and other additives. And the strong mixing ability makes the materials reach high consistency and improves the quality of materials.



The gap between the stator and the rotor is 0.5mm

Stator

Rotor





## 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, flavoured milk, pudding and other types of materials



### 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 breakage, 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.



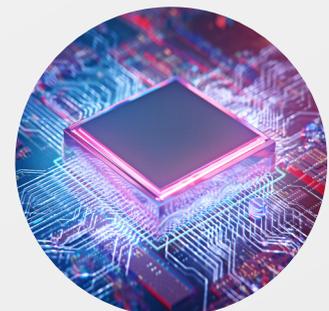
### Coating & ink

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.

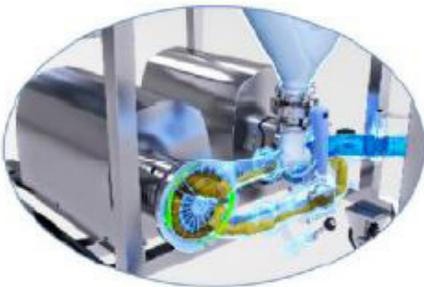


### Semiconductor

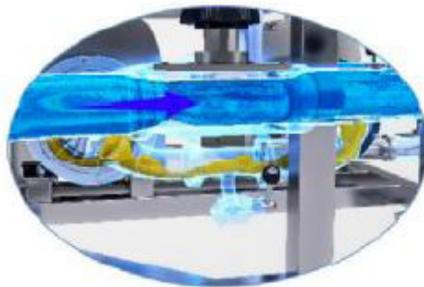
Dispersion & depolymerization of nanometre materials, etc

## 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 homogeneously mixed



The homogeneous mixture is transported to the tank equipment



Simple, flexible, economical



Sensor



Vibrator and valve



Cleaning liquid is poured into the hopper



Cleaning pipes and hopper



Open bottom discharge valve to drain the cleaning solution

## Very Simple And Clear Electrical Control Layout

- Self priming pump, can control speed by frequency inverter to achieve the purpose of controlling the flow
- Homogeneous pump, can control speed by frequency inverter to achieve the effect of homogenization and mixing, meanwhile control the flow
- Console, designed with motor overload protection to prevent motor from being burned
- Console, the shell is designed with work indicator, can distinguish working condition through the light

## Model description



PMZX 13 5.5KW 5.5KW 380V 50HZ M 2"/1.5" S

Connection standard: DIN (D) SMS (S) 3A(A) RJT (R) ISO/IDF (I)

Inlet/Outlet size

Connection method: Thread (M) Clamp (C)

Motor frequency: 50HZ; 60HZ

Voltage: 110V 220V 380V (see table)

The motor power of JZ homogeneous pump in the mixer is: 1.1kw 1.5kw 2.2kw...

The motor power of lobe pump and self-priming pump in the mixer is: 1.1kw 1.5kw 2.2kw...

Mixing pump model

Homogeneous mixing pump code:

- **Stursan ST-HC PMTU** stands for **TUL** lobe pump+**JZ** homogeneous pump series
- **Stursan ST-HC PMZX** stands for **CIP-U** type self-priming pump+**JZ** homogeneous pump series, etc

**For example:** Stursan ST-HC PMZX 13 / 5.5kW / 5.5KW-380V-50HZ / M-2"/1.5"-S

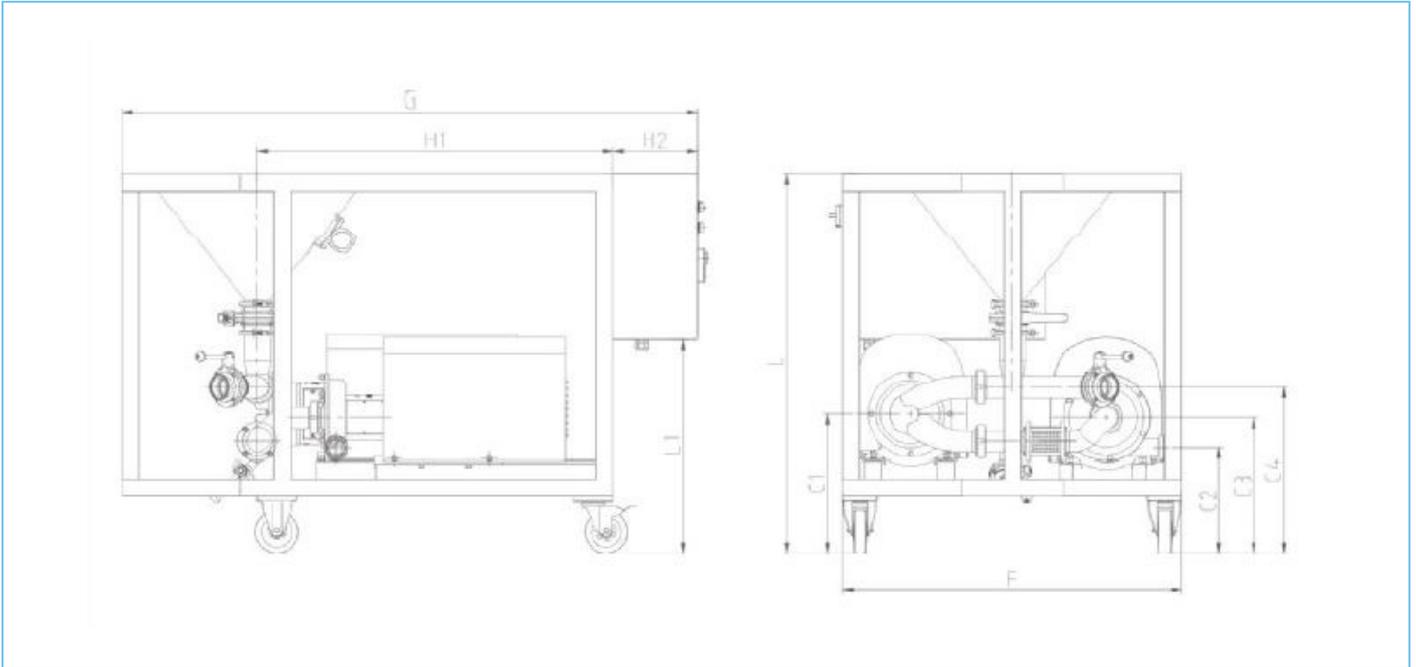


## Selection table



Homogeneous mixing pump	Self-priming pump		Emulsifying homogenizing pump		Powder processing capacity-kg/h			Inlet	Outlet	Hopper capacity (L)	Weight (kg)
	Rotate Speed (1450-MIN)		Rotate Speed (2950-MIN)		Sugar class	Skim milk Protein powder class	Thickener powder (for example, pectin sodium casenate, depends on grade a concentration)				
	Self-priming pump (model)	Power (KW)	Homogeneous pump (model)	Power (KW)							
Stursan ST-HC PMZX-13	CIPU-10	5.5	JZ1-10	5.5	500	450	100-200	2"-DN50	1.5"-DN40	45	537
Stursan ST-HC PMZX-15	CIPU-10	5.5	JZ1-15	7.5	1000	900	200-400	2"-DN50	1.5"-DN40	45	560
Stursan ST-HC PMZX-17	CIPU-10	5.5	JZ1-20	11	1800	1600	300-500	2"-2.5"-DN50-65	2"-DN50	45	611
Stursan ST-HC PMZX-19	CIPU-20	7.5	JZ1-30	15	3500	3200	600-1200	DN65-3"-DN80	2"-2.5"-DN50-65	65	640
Stursan ST-HC PMZX-21	CIPU-20	11	JZ1-35	18.5	5000	4500	1200-2000	DN65-3"-DN80	2.5"-DN65	65	732
Stursan ST-HC PMZX-24	CIPU-30	11	JZ1-240	22	10000	9000	1500-3000	4"-DN100	DN65-3"-DN80	65	784

## Data chart



Model	Assembly Dimension									
	C1	C2	C3	C4	F	G	H1	H2	L	L1
Stursan ST-HC PMZX-13	355	278.5	355	485	1050	1750	1050	300	1011	624
Stursan ST-HC PMZX-15	355	257	355	485	1050	1750	1050	300	1011	624
Stursan ST-HC PMZX-17	355	283.5	384	514	1050	1750	1050	300	1011	624
Stursan ST-HC PMZX-19	355	256.5	384	514	1050	1750	1050	300	1011	624
Stursan ST-HC PMZX-21	355	243	384	514	1050	1750	1050	300	1124	624
Stursan ST-HC PMZX-24	355	243	404	514	1050	1750	1050	300	1124	624

**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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**Homogeneous mixing pump**

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