

DISPERSING / eMULSIFYING / NANO FORMING / CRUSHING / PULVERIZING / DEGASSING

# ***Ultrasonic Processor Nano Forming System***

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- System Integration / Design / Sales / Engineering Support / Powder Processing Service
- Nano Creating (Grinding / Dispersion / Emulsifying / Classification) Systems
- Powder & Particles Processing Equipment / Systems



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## The Ultrasonic Processor Nano Forming System

### ■ Principles

The Ultrasonic Processor Nano Forming System was developed and designed by Hielscher (Germany), the specialized manufacturer of high power ultrasonic equipment, for the dispersion, emulsifying, nano forming ,crushing, pulverizing, degassing, & others.

Wide range of modes, from compact laboratory equipment to large-scale equipment, are proposed and can be offered to the industries such as the food, chemical and electronics, magnetic materials and others.

Without using the media for dispersing and grinding, and using ultrasonic cavitation effects, the slurry is effectively processed for necessary nano particles forming without contaminations.

Operation in batch system, continuous processing system from laboratory Beaker test level to large scaled industrial production stage can be available,



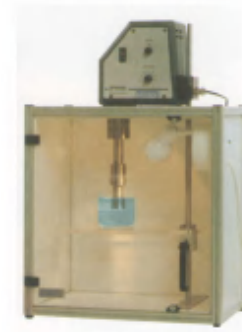
UIP16000 System



UIP100H



UIP2000hd / UIP2000



UIP2400S



UIP2000hd

**■ Features**

There is no energy loss occurred by internal heat generation, and high efficiency is achieved. [Patent registered]

24 hours of continuous operation is available.

No load operation can be permitted, and it can be ran even in the air. [Patent registered]

The output per unit is high, and the larger size pipes are usable for the slurry

The interface before and after the Ultrasonic Processor Nano Forming System is very simple and easy. Which makes total operation system planning very flexible.

Various Related accessories / devices are offered. And the most suitable system can be selected for your own requirement.

Simple, but safety structure is adopted. No operations under the high pressure is requested.

It can be applied to various particle sizes and wide range applications.

No moving part- is adopted. Overhaul and cleaning is so easy and simple.

Wide range of lineups has been introduced for experimental operation to industrial production for various applications

PC control system can monitor various data, output, operation time, etc., is possible.



UIP4000 Processor



Cavitation Emission

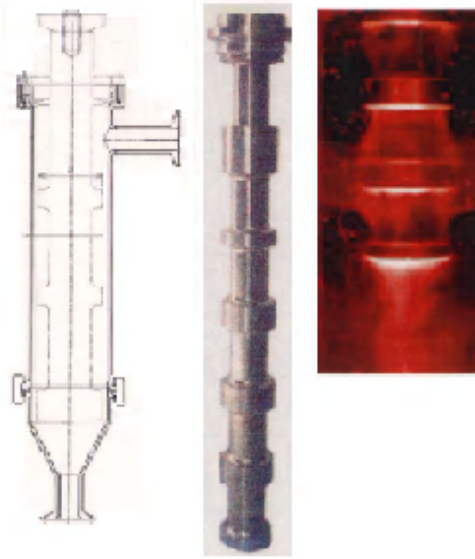


UIP4000

**■ Applications**



Sonotrode



Cascade Sonotrode



Flow Cell



PC Control

Ink pigments, Oxide (aluminum oxide and various · ITO · zinc oxide, tin oxide, titanium oxide, Iron oxide), Ceramics, Various metal (nickel, manganese and cobalt, platinum, gold, silver), Silica, Zeolite, Teflon, Silicon, Carbon black, CNT, Dye, Abrasives, Coatings

Emulsifying of Oil and Water, Food, Fuel, Adhesives, Organic synthesis

Activation of Catalyst, Various polymers, Chemical reaction

Powerful Cleaning, Washing, Peeling

Extraction of ingredient

Uniformity of Particle size

Crushing of bacteria, virus

**■ Laboratory, Small Experimental Production unit**

Removable Handy Operation & Fixed Stand Operation can be done.

24 hours of continuous operation is also possible.

Easy Operataion can be done from the main menu.

The Power Unit, & Transmission Unit are isolated. It is also possible to set the Power Generation portion separately.

It can be used for Dispersion, emulsification, dissolution, cell disruption, degassing, extraction, and various catalytic reactions, in various applications,

Using Touch panel, & Network connection, you can also easily accommodate data management.

Customers various demands can be realized by various transmitters, soundproof box, & other options.

Based on the data of the Laboratory, Small Experimental Production unit, & extensive experience, the scale up to the large suitable production system can be offered.

**UP200Ht Lab Unit**



**UP200ST Small Production Unit**



**Major Models - Production Unit**

Model	Output (W)	Cycle (kHz)	Converter	Type of Sonotrode
UIP50	30	30	-	Block Sonotrode
UIP250	250	24	-	Block Sonotrode
UIP500hd	500	20	-	Block Sonotrode
UIP1000hd	1000	20	-	Block Sonotrode
UIP2000hd	2000	20	-	Block Sonotrode & Cascade Sonotrode
UIP4000	4000	20	Air Cooling	Block Sonotrode & Cascade Sonotrode
UIP10000	10000	20	Water Cooling	Block Sonotrode & Cascade Sonotrode
UIP16000	16000	20	Water Cooling	Block Sonotrode & Cascade Sonotrode

**Major Models - Laboratory Unit**

Model	Output (W)	Cycle (kHz)	Sonotrode Top Size ( mm Φ )	Sample volume (ml)
P100H	100	30	Block Sonotrode 0.5 – 10	0.01 - 250
UP200H	200	24	Block Sonotrode 1 – 40	0.1 - 1000
UP200S	200	24	Block Sonotrode 1 – 40	0.1 - 1000
UP400S	400	24	Block Sonotrode 3 – 40	5 - 2000

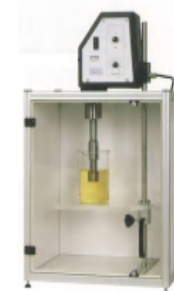
■ Basic Specification for Major Models

Model	Output (W)	Cycle (kHz)	Sonotrode Head point size (φ mm)	Capacity	
				Batch (ml)	Continuous (L/h)
UP50H	50	30	0.5 1.0 2.0 3.0 7.0	0.01 - 250	1 - 5
UP100H	100	50	0.5 1.0 2.0 3.0 7.0 10.0	0.01 - 500	1 - 5
UP200S	200	24	1.0 2.0 3.0 7.0 14.0 40.0	0.1 - 2000	1 - 5
UP400S	400	24	3.0 7.0 14.0 22.0 40.0	5 - 2000	1 - 5
UIS250V	250	24	3.0 10.0	0.01 - 1000	
UIP1000	1000	20			100
UIP2000	2000	20			200
UIP4000	4000	20			400
UIP4000	16000	20			1600

UP50H & 100H



UP400S



UIP1000



UP200S



UIS250S



UIP4000



UIP2000



UIP16000



**Inquiry Sheet**

Please fill your requirement / Information & return to us.

Customer	Company			Dept. Position				
	Address			Phone				
	Name			E-Mail				
Required System & Request	Category	A) Grinding B) Dispersing / Emulsifying C) Classification / Sifting D) Feeding / Transportation E) Separation / Concentration F) Drying G) Others						
	System	A) Cavitation Mill Dispersing System B) Beads Mill Ultra Fine Grinding System C) Jet Mill Ultra Fine Grinding System D) Grinding Mill Powder Pulverization System E) Super Micro Sieve F) Hydro-Cyclone Classification System G) Vibration Sifter H) Micro Powder Air Classifier I) Constant Micro Feeder J) Others						
	Request	A) Sales Material B) Proposal C) Test D) Process Service E) Rental F) Others						
Materials & Target	Name			Properties Y or N	Bulk Density		Moisture	
	Condition	A) Powder B) Particle C) Solid D) Others			Hygroscopic		% if Yes	
					Abrasiveness		Aggregation	
	Particle Shape	A) Spherical B) Unspecified C) With Protrusion D) Single Particle E) Aggregates F) Unknown		Solvent	A) Water B) Ethanol C) IPA D) MEK E) Acetone F) Toluene G) Xylene H) Ethyl Acetate I) Others			
	Size	Original Powder	Required	Slurry	Density wt%		Viscosity cps	
	D <sub>50</sub>							
	Top							
Others			Detergent					
Test & Work	Required Volume	Test sample			Production			
	Test / Work Schedule				Attendance			
Remarks								

Excel version is available at <http://www.ftajapan.com/inquiry.xls> , if required.



## ■ Major Systems & Services offered by FTA



### Grinding / Crushing / Dispersing / Emulsifying

**Dispersing / Emulsifying / Mixing** Wet Operation  
Cavitation Mill Nano Dispersing System

**Nano Grinding / Crushing / Dispersing / Mixing** Wet Operation  
Beads Mill Nano Grinding System

**Grinding / Crushing** Dry Operation  
Jet Mill Ultra Fine Grinding System

**Dispersing / Emulsifying / Mixing** Wet Operation  
Ultrasonic Processor Nano Forming System

**Grinding, Crushing** Dry Operation  
Grinding Mill Powder Pulverization System



### Classifying / Sifting

**Classification / Sifting** Dry & Wet Operation  
Super Micro Sieve & Screen

**Classification/Separation/Concentration** Wet Operation  
Hydrocyclone Classification System

**Sifting / Screening / Classifying** Dry & Wet Operation  
Powder & Particles Vibration Sifter

**Classifying** Dry Operation  
Micro Powder Air Classifier



### Other Powder Processing Systems & Services

**Concentration**  
Screw Decanter Concentration System

**Constant Feeding**  
Powder & Particles Constant Micro Feeder