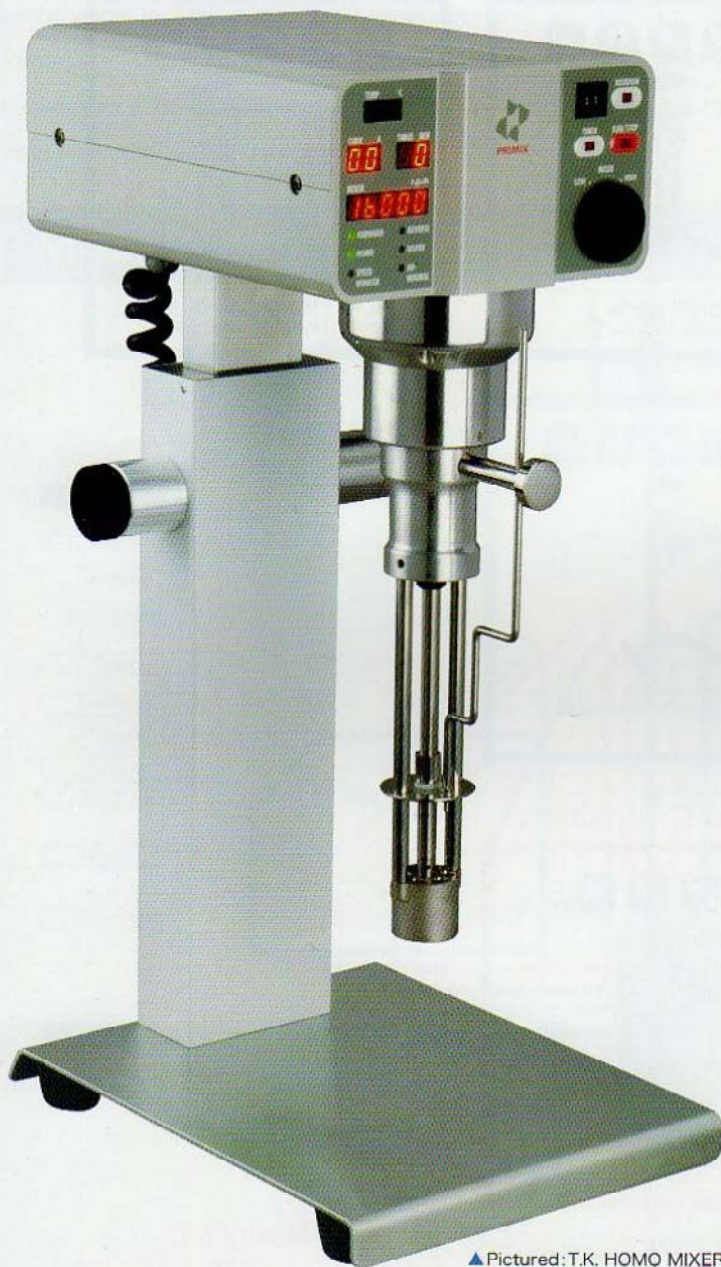




Your Research Partner in Creativity

High-Speed Multi-Use Mixing System

T.K.ROBOMICS®



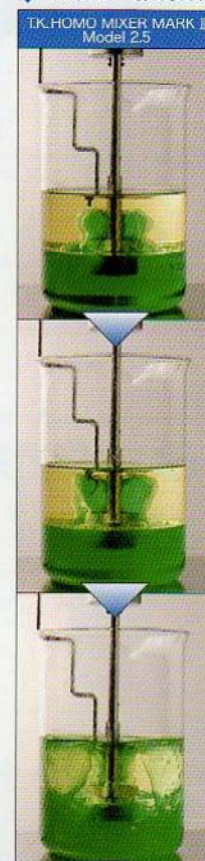
▲ Pictured: T.K. HOMO MIXER MARK II Model 2.5

The T.K.ROBOMICS high-speed mixing system represents the culmination of our company's 50 years of mixing technological development and engineering experience. It is our high-performance mixing solution to the sophisticated and varied needs of our customers. It has earned us a reputation of providing satisfaction and delivering reliability. The mixing options allow for a range of different mixing test environments including very small batches, continuous feed, and vacuum mixing. Data generated through testing can then be accurately and precisely converted for mass production standards. It is designed for usability, and is a perfect one-mixer solution for a variety of needs.

◆ Mixing Section



◆ Flow Patterns



During forward operation, the mixer sucks the material being processed from the bottom up to the top.

◆ Standard Specifications

Input Power	AC 100 V 50/60 Hz 1 phase w/Cable: 1.5m Plug: Grounded 2P plug Comes with adapter(grounded 15A adapter)	
Motor	0.3 kW RPM: 1400-16000**	
Mixing Section	T.K.HOMO MIXER MARK II Model 2.5 Mixer head RPM: 1400-16000 RPM direction: Forward, Reverse Working capacity: 3 liters Construction material: Wetted parts-SUS304** Turbine bearing-SBK1218**	T.K.HOMO DISPER Model 2.5 Mixer head RPM: 1400-8000 RPM direction: Forward, Reverse Working capacity: up to 5 liters Construction material: Wetted parts-SUS304, SUS329J1
Controls	Instruments: Ammeter, Tachometer, Time counter Operation controls: Run/Stop, RPM Knob Forward/Reverse switch, Timer On/Off switch	
Approx Weight	15 kg	

**1. Each mixing section has a different maximum allowable speed (rpm). 2. Options available in PTFE and SUS304.

Features

- Maintenance is not necessary with a newly developed brushless motor. Furthermore, the motor generates very little noise and is ideal for research environments.
- With a maximum speed of 16,000 rpm, the equipment can obtain results and data that have not been possible with conventional mixers.
- Uses a feedback system that keeps speed constant despite variations in load.
- Wide variety of mixing section options (very small batch, continuous and vacuum). Yields accurate data that allows for conversion to mass-production standards.
- Optional temperature sensor available.
- Optional data logging (speed in revolutions, current, temperature) available.

Applications

Chemicals : silicone oil, wax, ink, paint, dye

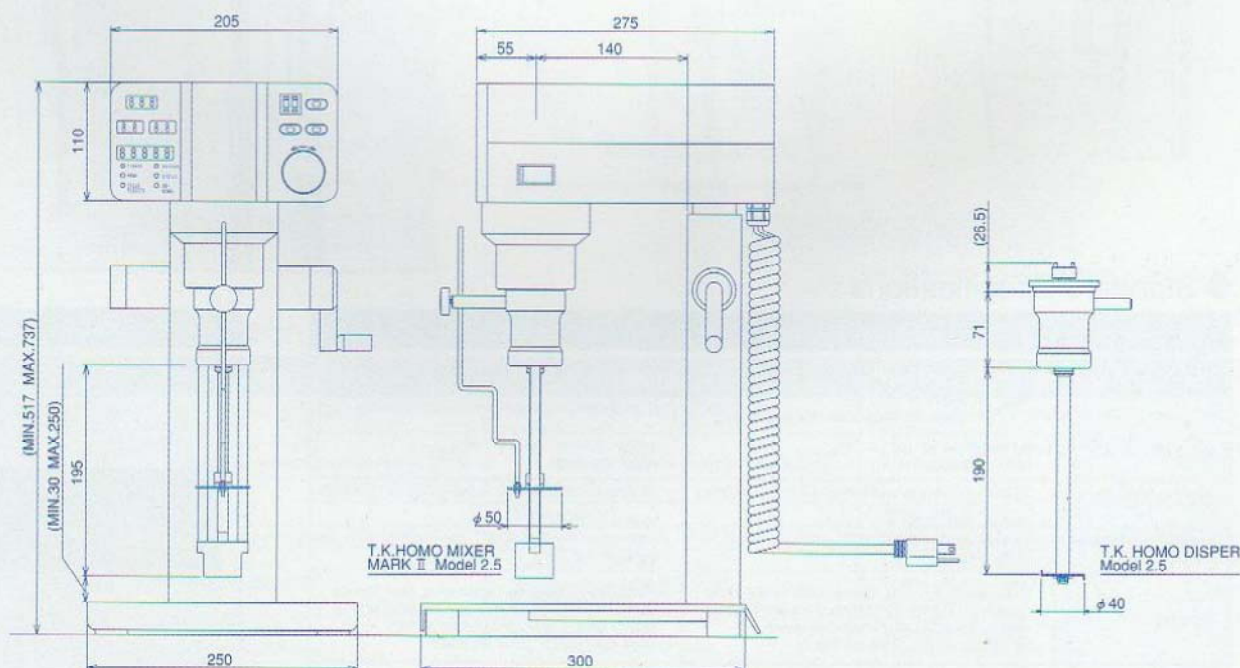
Cosmetics : lotion, cream, rinse, conditioner

Pharmaceuticals : intravenous solution, pill coating, film coating, capsule material

Foods : dressing, ice cream, yogurt, coffee creamer

IT : magnetic materials, ceramics, electronics

A Variety of Interchangeable Mixing Sections





High-Speed Emulsifier/Dispenser

Interchangeable Mixing Sections, Speed (rpm) Display, Forward / Reverse Switch, Timer

T.K.AUTO MIXER MARK II

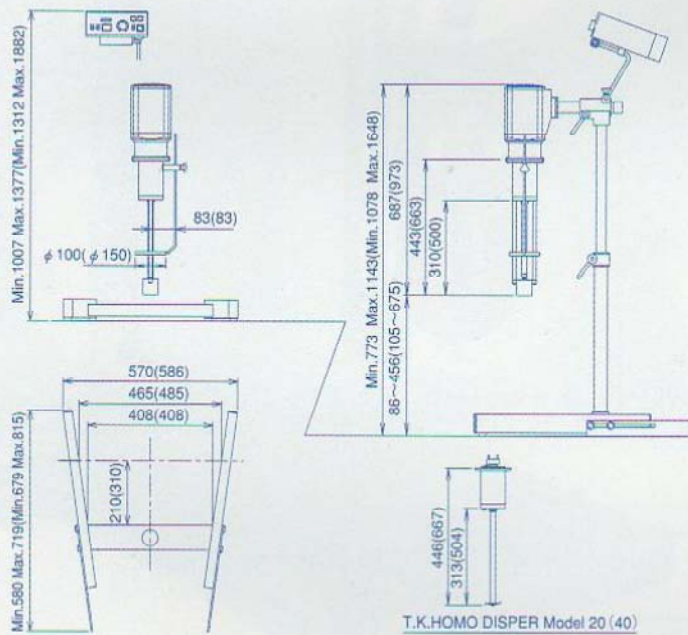
Model 20(20 L) Model 40(50 L) Patented

Ideal for research, testing and product development. Multi-functional and highly reliable.

Turbine/stator construction for high speed mixing. Turbine mixes fluid at 70 Pa/s. Moreover, switching the mixing section to the T.K. Homo Disper dispenser enables a variety of processes, including emulsifying, dispersing, and pulverizing, to be performed.

Features

- A feedback system allows for constant speed despite changes in viscosity and specific gravity of the material being processed, yielding accurate test data.
- Mixing sections are interchangeable with T.K.HOMO MIXER MARK II and T.K. HOMO DISPER (option) depending on the purpose of processing.
- Forward and reverse direction allows for powder particles to be emulsified and dispersed evenly and uniformly.



◆ Mixing Section



◆ Standard Specifications

	Model 20	Model 40
Input Power	AC 100 V 50/60 Hz 1 phase w/Cable: 1.5m Plug: Grounded 2P plug Comes with Adapter(grounded 15A adapter)	AC 100 V 50/60 Hz 1 phase w/Cable: 1.5m Plug: Grounded 3P Locking waterproof cord connector plug
Motor	0.75kW RPM: 500-9000	1.5kW RPM: 500-8000
Working Capacity	20 liters (Recommended Vessel φ300mm×410mm)	50 liters (Recommended Vessel φ400mm×510mm)
Construction Material	Wetted parts-SUS304 Turbine bearing-SBK1218 ^{※1} Baffle plate-PTFE ^{※2}	Wetted parts-SUS304 Turbine bearing-SBK1218 ^{※1} Baffle plate-PTFE ^{※2}
Controls	Instruments: Ammeter, Tachometer, Time counter Operation controls: RPM knob, Forward / Reverse switch, Mixer/Disper change-over switch, Timer start switch, Timer set switch	Instruments: Ammeter, Tachometer, Time counter Operation controls: RPM knob, Forward / Reverse switch, Mixer/Disper change-over switch, Timer start switch, Timer set switch
Approx Weight	30 kg	40 kg



※1: Options available in PTFE and SUS304. ※2: Options available in SUS304.



High-Speed Emulsifier/Dispenser

T.K.HOMO MIXER MARK II

Model 2.5(3 L) Model 20(20 L)

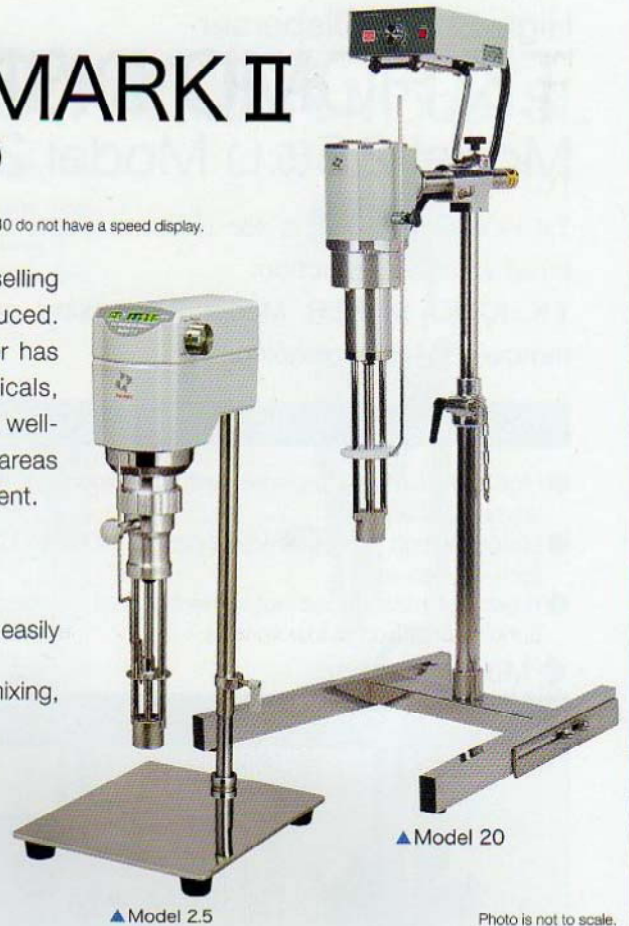
Model 40(50 L) Patented

※Model 20 and Model 40 do not have a speed display.

Half a century has passed since the T.K. Homo Mixer, the best-selling high-speed emulsifier/dispenser, was developed and introduced. Despite the ever-changing world around it, the T.K. Homo Mixer has been used in a variety of industrial fields such as chemicals, pharmaceuticals, cosmetics and foods. The mixer has earned its well-established and long-standing reputation by achievements in areas such as new product development and product quality improvement.

Features

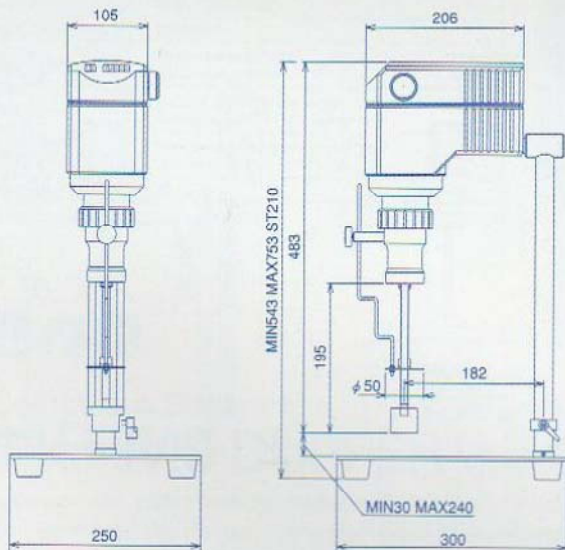
- Mixing section on T.K. HOMO MIXER Model 2.5 can be removed easily for cleaning. (Cannot be removed on Model 20 and 40.)
- Mixing section uses turbine/stator construction for high-speed mixing, even emulsification and dispersion.
- Brushless motor does not generate dust or noise; and speed is consistent at low speeds. (Models: 20 and 40: Noise 80 db for previous machines reduced to 70 db for new models.)



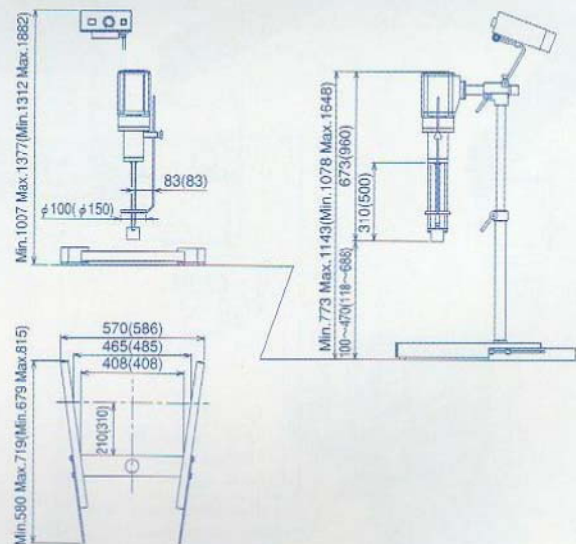
▲ Model 2.5

▲ Model 20

Photo is not to scale.



▲ Model 2.5



▲ Model 20 (40)

※The dimensions in the parentheses are for model 40.

◆ Standard Specifications

	Model 2.5※	Model 20	Model 40
Input Power	AC 100 V 50/60 Hz 1 phase w/Cable: 1.5m Plug: Grounded 2P plug Comes with adapter(grounded 15A adapter)	AC 100 V 50/60 Hz 1 phase w/Cable: 1.5m Plug: Grounded 2P plug Comes with adapter(grounded 15A adapter)	AC 200 V 50/60 Hz 1 phase w/Cable: 1.5m Plug: Grounded 3P Locking waterproof cord connector plugs
Motor	0.2kW RPM: 600-12000	0.75kW RPM: 1000-9000	1.5kW RPM: 1000-8000
Working Capacity	3 liters (Recommended Vessel φ145mm×225mm)	20 liters (Recommended Vessel φ300mm×410mm)	50 liters (Recommended Vessel φ400mm×510mm)
Construction Material	Wetted parts-SUS304 Turbine bearing-SBK1218※1	Wetted parts-SUS304 Turbine bearing metal-SBK1218※1 Baffle plate-PTFE※2	Wetted parts-SUS304 Turbine bearing-SBK1218※1 Baffle plate-PTFE※2
Controls	Instruments: Ammeter, Tachometer Operation controls: RPM knob	Instruments: Ammeter Operation controls: RPM knob	Instruments: Ammeter Operation controls: RPM knob
Approx Weight	12 kg	30 kg	40 kg

※The mixing sections of the T.K. HOMO MIXER MARK II Model 2.5 and T.K. HOMO DISPERSER Model 2.5 are not interchangeable.
 ※1: Options available in PTFE and SUS304. ※2: Options available in SUS304.



High-Speed Dispenser

T.K.HOMO DISPER

Model 2.5(5 L) Model 20(20 L) Model 40(50 L)

※Model 20 and Model 40 do not have a speed display.

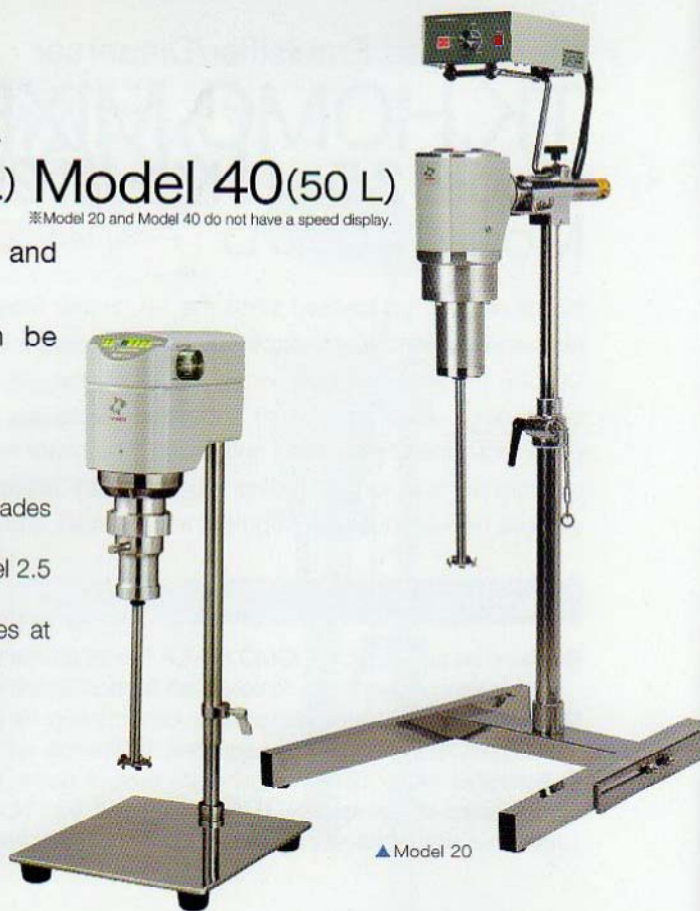
T.K.HOMO DISPER is for uniform dispersion testing and small volume production.

T.K.HOMO DISPER Model 2.5 mixing section can be removed for easy cleaning.

Features

- High-speed mixing provides uniform dispersion, and mixing blades are easily changed.
- Mixing section can be removed on the T.K.HOMO DISPER Model 2.5 for easy cleaning.
- Brushless motor does not generate dust or noise and operates at consistent speed at low speeds.

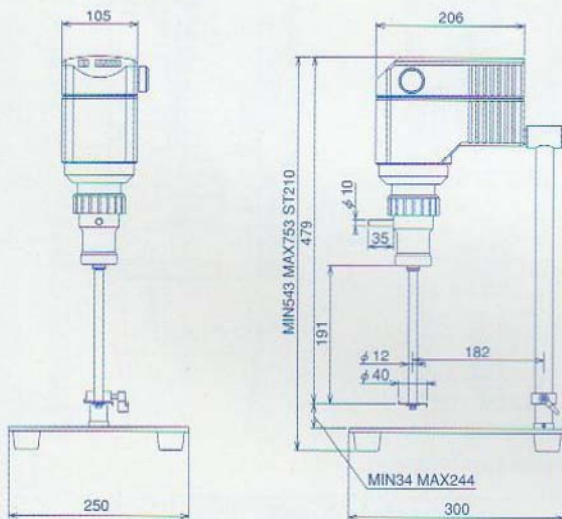
◆ Mixing Section



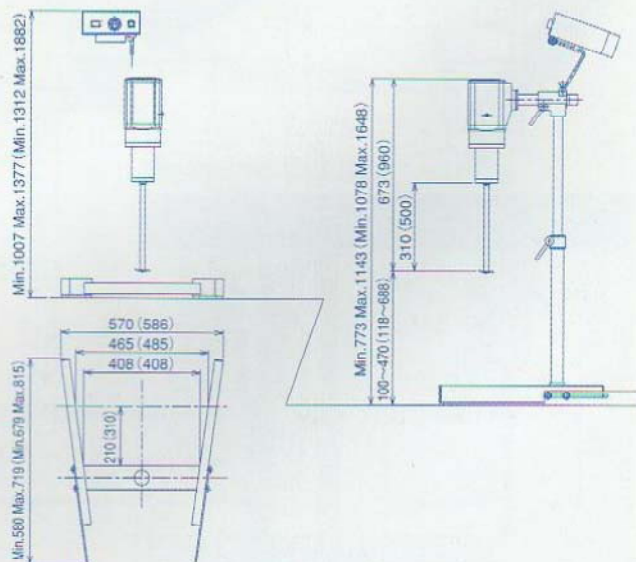
▲ Model 2.5

▲ Model 20

Photo is not to scale.



Model 2.5



Model 20 (40)

※The dimensions in the parentheses are for model 40.

◆ Standard Specifications

	Model 2.5※	Model 20	Model 40
Input Power	AC 100 V 50/60 Hz 1 phase w/Cable: 1.5m Plug: Grounded 2P plug Comes with adapter(grounded 15A adapter)	AC 100 V 50/60 Hz 1 phase w/Cable: 1.5m Plug: Grounded 2P plug Comes with adapter(grounded 15A adapter)	AC 200 V 50/60 Hz 1 phase w/Cable: 1.5m Plug: Grounded 3P Locking waterproof cord connector plugs
Motor	0.2kW RPM: 600-6000	0.75kW RPM: 1000-7500	1.5kW RPM: 1000-6500
Working Volume	5 liters (Recommended Vessel φ145mm×225mm)	20 liters (Recommended Vessel φ300mm×410mm)	50 liters (Recommended Vessel φ400mm×510mm)
Construction Material	Wetted parts-SUS304, SUS329J1	Wetted parts-SUS304, SUS329J1	Wetted parts-SUS304, SUS329J1
Controls	Instruments: Ammeter, Tachometer Operation controls: RPM knob	Instruments: Ammeter Operation controls: RPM knob	Instruments: Ammeter Operation controls: RPM knob
Approx Weight	12 kg	30 kg	40 kg

◆ Flow Patterns



The dispenser generates strong vortex motion.

※The mixing sections of the T.K.HOMO DISPER Model 2.5 and the T.K.HOMO MIXER MARK II Model 2.5 are not interchangeable.



Continuous Disperser/ Emulsifier/Mixer

T.K.PIPELINE HOMO MIXER Model SL

The T.K.PIPELINE HOMO MIXER is an inline emulsifying and dispersing mixer. The machine utilizes a pressure gap that occurs between the inlet and outlet to pull material from the inlet. The material is then emulsified and dispersed through a strong shearing force that is generated from a tiny distance between the turbine and stator.

Features

- Can be used in inline processing.
- Can be used as an outboard mixer.
- Equipped with pumping capacity.



Standard Specifications

Input Power	AC 100 V 50/60 Hz 1 phase w/Cable: 1.5 m Plug: Grounded 2P plug Comes with Adapter (grounded 15A adapter)
Motor	0.75 kW RPM: 1000-9000
Working Capacity	6000 liter/h
Construction Material	Wetted parts-SUS304 Turbine bearing-SBK1218*
Nozzle	Inlet: Dia 25A R1 (male thread) Outlet: Dia 32A R1 1/4 (male thread)
Controls	Instruments: Ammeter, Tachometer Operation controls: RPM knob
Approx Weight	30 kg



The picture shows the operation panel with an optional RPM Indicator and Timer.



*Options available PTFE sheet and SUS304.



Continuous Deaerator

T.K.HIVIS DUPPER Model 3

In the cosmetics, pharmaceuticals and chemicals including foods industries, the air and foam generated during mixing and transportation can cause a variety of problems, such as material quality degradation due to oxidation and volume change during feeding. Air and foam can be prevented by mixing under vessel vacuum conditions and by mixing at atmospheric pressure, then mixing at low speed in a hermetically sealed vessel. Both of these measures are based on batch processing.

The T.K.DUPPER is a continuous deaerator that takes foam out of material and processes it using vessels not possible in vacuum mixing.

Features

- Uses a strong centrifugal separation action, and can remove air from material with low to high viscosities 100 Pa-s (100000 cPs).
- Since there is little instance of shear force, there is no shear impact to the material.
- Very easy to clean.

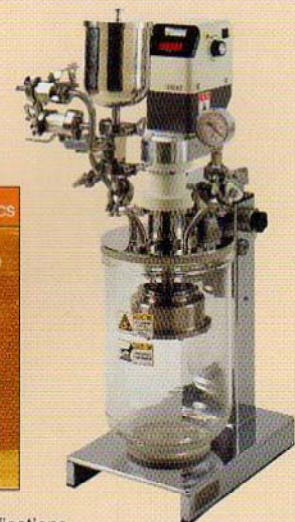
Applications

Chemicals: latex, liquid resin, oil, coatings used in paper manufacturing, adhesives, ink, paint
Cosmetics: toiletries: milky lotion, lotion, cream, shampoo, rinse
Foods: sauce, mustard, thickeners, chocolate



Standard Specifications

Input Power	AC 100 V 50/60 Hz 1 phase w/Cable: 1.5m Plug: Comes with 2P plug with grounding wire
Motor	0.2 kW RPM: 4000
Working Capacity	3 liters/min*
Approx Weight	30 kg



*Processing force of 5Pa-s (5000cPs) for standard volume will vary according to viscosity and air content.



Vacuum Mixer Emulsifier (for laboratory use)
 Mixing Sections are Interchangeable for 2 L working capacity and 5 L working capacity.

T.K.AGI HOMO MIXER®

Model 2M-2 Model 2M-5

Designed specifically with the necessary functions required by pharmaceutical and cosmetic research.

Small size makes it the ideal vacuum emulsifying equipment for research.

Features

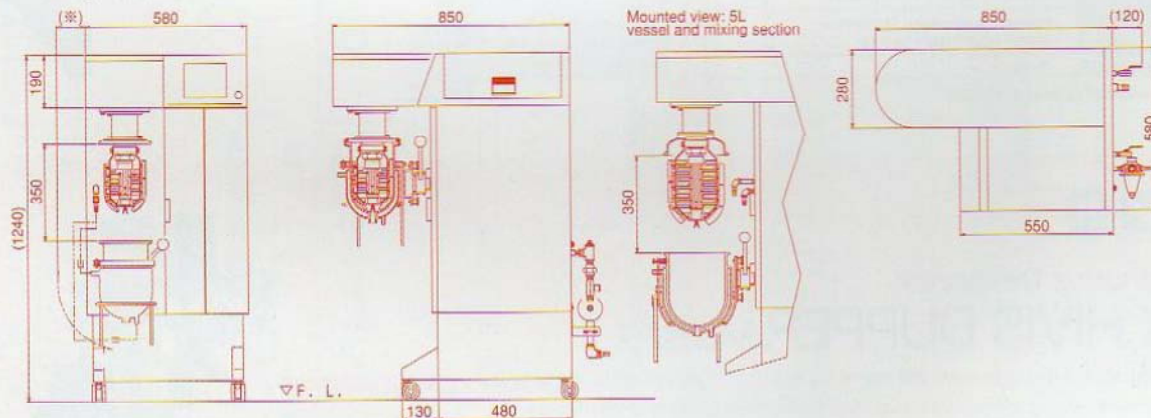
- Very easy to connect; just attach the water and electricity. A vacuum mixer emulsifier that is all-in-one with a vacuum pump and water circulation unit.
- By simply changing the vessel and mixing section (Homo Mixer and Paddle Mixer), you can process either 2 L or 5 L.
- The Homo Mixer and Paddle Mixer mixing sections use a bottless construction for greater ease in cleaning.
- The vessel uses hardened glass, making it an ideal equipment for mixing test materials under a variety of conditions such as heat, cold and vacuum for observation purposes.
- The Paddle Mixer is equipped with scrapers that remove material from the inner wall of the vessel and promote optimal heat exchange efficiency for better mixing.
- Options:
 - Data logging software,
 - Batch to mass. Production conversion software
 - T.K.EC Sensor displays emulsification conditions.
- Production can be expanded to 10,000 L.



▲ Photo: Working capacity is 2L

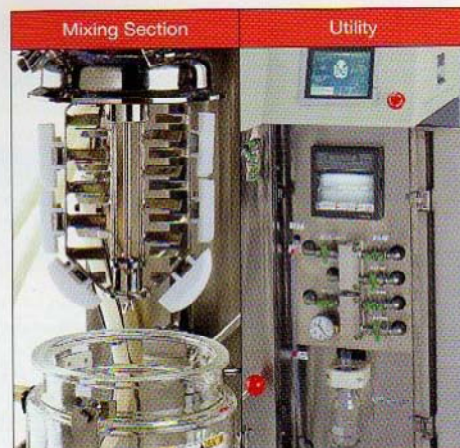
Applications

- Cosmetics: Basic products (cream, milky lotion), foundation, conditioner, face wash, etc.
- Pharmaceuticals: Ointment, cream, syrup, suspension
- Foods: dressing, mayonnaise, jam



◆ Standard Specifications

	Model 2M-2	Model 2M-5
Input Power	for Main body AC 100 V 50/60 Hz 1 phase w/ Cable:3 m Plug: Grounded 2P waterproof rubber cord connector plugs (☉) Come with adapter(grounded 15A adapter)	for Constant temperature water bath AC 100 V 50/60 Hz 1 phase w/ Cable:3 m Plug: Grounded 2P waterproof rubber cord connector plugs (☉) Come with adapter(grounded 15A adapter)
Mixing Section	T.K.HOMO MIXER MARK II Model 2.5 Motor: 0.4kW Mixer head RPM: 1000-12000 Construction material: Wetted parts-SUS304 Turbine bearing-PTFE	T.K.PADDLE MIXER Motor: 0.4kW Mixer head RPM: 15-120 Construction material: Wetted parts-SUS304 Turbine bearing-PTFE
Controls	Touch-sensitive liquid crystal display (LCD) Display: Operating time, Abnormality Operation controls: Run/Stop switch, Vessel lift up/down, Vacuum pump, Constant temperature water bath Setup: RPM, Timer	
Vessel	Full capacity: 4 liters; Working capacity: 2 liters (model 2M-2) Construction material: Hard glass with jacket Jacket inlet/outlet with platinum resistance thermometer	Full capacity: 7 liters; Working capacity: 5 liters (model 2M-5) Construction material: Hard glass with jacket Jacket inlet/outlet with platinum resistance thermometer
Recorders	RPM, temperature, ammeter	
Built-in Unit	Constant temperature water bath, Vacuum pump	
Approx Weight	250 kg	





Small-Batch Mixer/ Kneader

T.K.HIVIS MIX[®]

Model 2P-03 Model 2P-1

The blade rotates on its axis while orbiting the vessel, resulting in uniform mixing, kneading and vacuum de-aeration.

Features

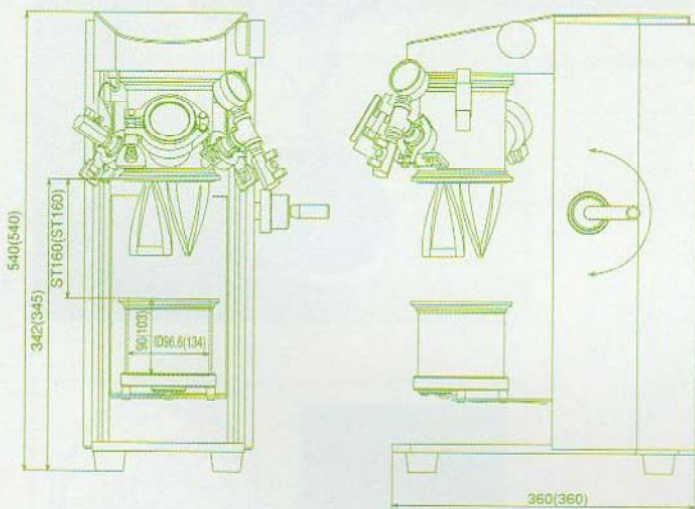
- Wide variety of uses from mixing of dry powder particle materials to kneading of high-viscosity material of 1000 Pa·s (1000000 cPs).
- The vessel can be sealed, allowing for mixing in a vacuum. An optional container with jacket makes available quick heating or cooling.
- Contains two twisted blades that move simultaneously on their own axis while orbiting the vessel in a planetary motion to reduce "dead space" and promoting uniformed processing.
- Data for conversion to mass-production can be collected.

Applications

Chemicals : adhesive, putty, caulking material, ink, ceramic
 Cosmetics : foundation, pack, toothpaste
 Pharmaceuticals : poultice, ointments
 Foods : roux, packaged food
 Electronics : various kinds of metal pastes, fluorescent pastes, solder paste, secondary batteries



▲ Photo: Model 2P-1
 Vessel with half-jacket is optional.



*The dimensions in the parentheses are for model 2P-1.

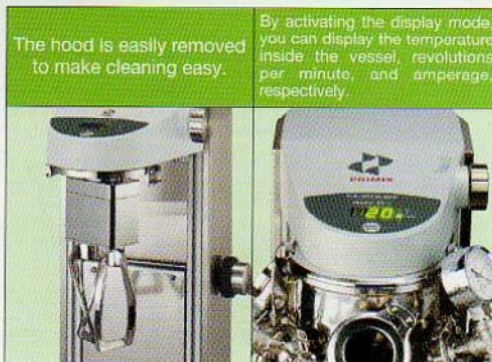


Ceramic coating lining on wetted parts optional.

◆ Standard Specifications

	Model 2P-03	Model 2P-1
Input Power	AC 100 V 50/60 Hz 1 phase w/Cable : 1.5 m Plug : Grounded 2P plug Comes with adapter(grounded 15A adapter)	
Mixing Section	Motor: 0.24 kW Mixer head RPM: Orbital revolutions 10-100rpm Own axis rotation 24-243rpm Mixing section construction/shape: Twisted blades-2pcs Construction material: Wetted parts-SUS304	
Controls	Instruments: Ammeter, Tachometer, Thermometer Operation controls: On/Off, RPM knob, Display changeover button	
Vessel	Full capacity: 0.7 liter Working capacity: 0.3 liter	Full capacity: 1.4 liter Working capacity: 1.0 liter
Approx Weight	30 kg	33 kg

Scrapers can be attached as an option.



The hood is easily removed to make cleaning easy.

By activating the display mode, you can display the temperature inside the vessel, revolutions per minute, and amperage, respectively.



Triple Shaft, Planetary type Disperser, Kneader and Mixer
Registered for practical innovation. Registered for twisted blade design

T.K.HIVIS DISPER MIX®

Model 3D-5

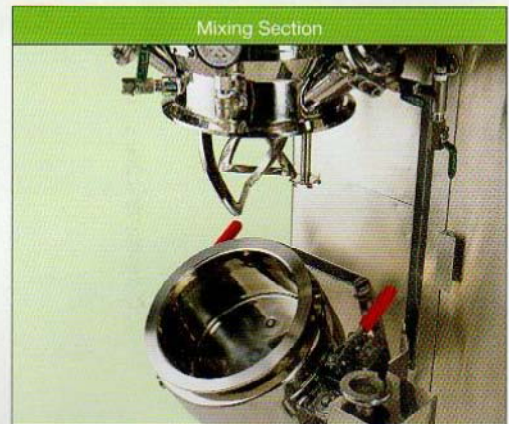
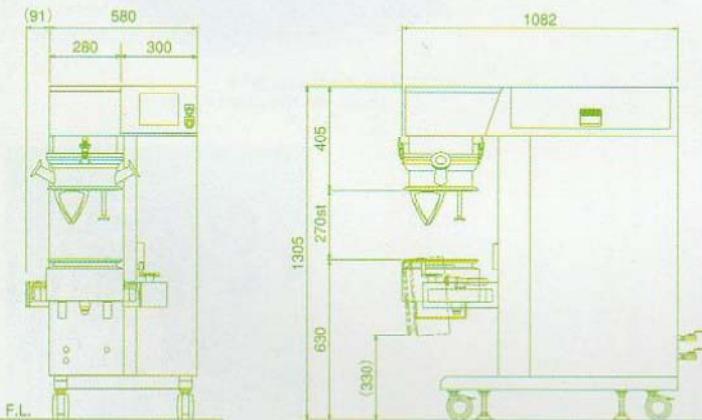
Mixing (dispersion) at high speed during kneading for the next generation of products.

Features

- The twisted blade that rotates on its axis while orbiting the vessel allows for even temperature of highly viscous material.
- Optional software can collect data for conversion to mass-production conditions.
- Expansion up to 1250 L is possible.

Applications

- Chemicals : ink, ceramic material, ferrite, magnetic materials, epoxy resin, scagliola, adhesives
Cosmetics : foundation, pack, other makeup
Pharmaceuticals : ointment, poultice
Foods : roux, packaged food
Electronics : condensers, secondary batteries, solder paste, semiconductors

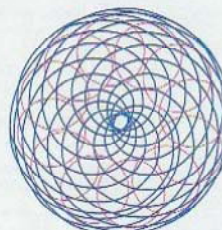
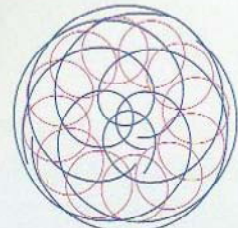


Standard Specifications

Input Power	AC 200 V 50/60 Hz Three-phase w/ Cable:5 m Plug: Grounded 3 P waterproof rubber cord connector plugs	
Mixing Section	T.K.PLANETARY MIXER Motor: 1.5kW Mixer head RPM: Orbital revolutions 5-75rpm Own axis rotation 12-187rpm Construction material: Wetted parts-SUS304	T.K.HOMO DISPER Motor: 0.4KW Mixer head RPM: Orbital revolutions 5-75rpm Own axis rotation 1200-17500rpm Construction material: Wetted parts-SUS304
Controls	Touch-sensitive liquid crystal display(LCD) Display: RPM, Temperature, Ammeter, Operating time, Abnormality Operation controls: Run/ Stop switch, Vessel lift up/ down, Lighting lamp, Vacuum pump Setup: RPM, Timer	
Vessel	Full capacity: 6 liters; Working capacity: 3.5-5 liters comes with jacket	
Built-in Unit	Vacuum pump	
Approx Weight	340 kg	

Blade and Homo Disper Orbit Patterns

- Blade locus
- Disper locus





Mixer for Designing Nanometer-sized Particles

T.K.FILMICS®

T.K.FILMICS has shattered conventional wisdom in mixing, giving rise to totally new technologies.

The thin-film, spin methodology ensures sharp distribution of nanometer-sized particles that has been impossible with conventional mixers. High speed revolution of turbine causes materials to form a thin film along the walls of the vessel. Because the centrifugal force is greater than gravity, the material is mixed in a closed-in space where a significant energy can be applied to it.



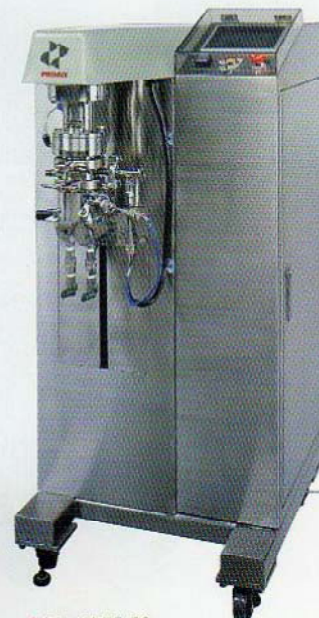
▲ Model 80-50

Features

- Allows for particle engineering (Pulverization occurs at the nanometer size and creates very accurate even distribution.)
- Able to disintegrate secondary agglomeration.
- Even slurry shape can be obtained.
- Dispersion is instantaneous.
- Mixing effect prevents secondary agglomeration.

Applications

Chemicals : ink, toner, resin, coating material
 Cosmetics : basic cosmetics (cream, milky lotion, lotion)
 Pharmaceuticals : DDS medication, liposome, lipids emulsion
 Foods : seasoning, additives
 Electronics : ceramics, metal material, IT materials, display material



▲ Model 56-50
Cover on operation panel optional.



▲ Model 30-25
Can attach to T.K.ROBOMIX

Photo not to scale.

Standard Specifications

	Model 30-25	Model 56-50	Model 80-50
Input Power	AC 100 V 50/60 Hz 1 phase w/Cable: 1.5 m Plug: Grounded 2P plug Comes with adapter(grounded 15A adapter)	AC 200 V 50/60 Hz Three-phase w/Cable: 5 m Plug: Grounded 3P waterproof rubber cord connector plugs	AC 100 V 50/60 Hz 1 phase, AC 200 V 50/60 Hz Three-phase w/Cable: 5 m Plug: for 100V grounded 2P waterproof rubber cord connector plugs for 200V grounded 3P waterproof rubber cord connector plugs
Mixing Section	Motor: 0.3 kW Mixer head RPM: 1400-16000 Working capacity: Batch 15 ml Construction material: Wetted parts-SUS304	Motor: 3.7 kW Mixer head RPM: up to 18400 Working capacity: Batch 40-90 ml, Continuousness 1 liter/ min Construction material: Wetted parts-SUS304	Motor: 7.5 kW Mixer head RPM: up to 12600 Working capacity: Batch 100-250 ml, Continuousness 3 liter/min Construction material: Wetted parts-SUS304
Controls	Instruments: Ammeter, Tachometer, Thermometer, Time counter Operation controls: Run/ Stop switch, RPM knob, Forward/ Reverse switch, Timer start switch, Timer set switch	Touch-sensitive liquid crystal display(LCD) Display: Peripheral speed, temperature, Amperage, Abnormality Operation controls: Run/Stop Setup: Peripheral speed, temperature, Timer	Touch-sensitive liquid crystal display(LCD) Display: Peripheral speed, temperature, Amperage, Abnormality Operation controls: Run/Stop Setup: Peripheral speed, temperature, Timer
Vessel	Full capacity: 18 ml	Full capacity: 130 ml Comes with jacket.	Full capacity: 380 ml Comes with jacket.
Approx Weight	17 kg	200 kg	350 kg

Calculated after 5 seconds holding time.