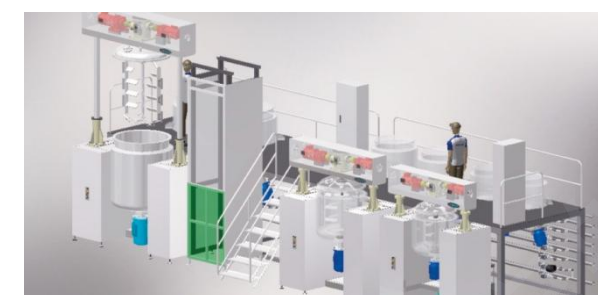


Total Process Design and Plant Engineering

QIHANG is a design and engineering company that can design the flow of material and product, and control the whole process of an automated production line. From Liquid-solid mixing and Solid-liquid mixing plants to Powder wetting processes and Emulsifying plants that have the main process of Mixing-Homogenizing-Dispersing. We design and manufacture all required equipment to handle various viscosity products in the cosmetic, pharmaceutical, food, and chemical industries.

- Multi-volume mixers and service tanks are carefully positioned for the efficient flow of materials and operator traffic.
- Product loading and inserting with vacuum.
- The work station is designed for future expandability. Additional work stations can be combined to its side.
- Single operator's capability is maximized with the multi-tasking work station.
- Ground level equipment position and bi-level or tri-level work stations are available.
- Lifted structure design for wiring and pipelines for easy maintenance.

- 다양한 용량의 믹서와 서비스 탱크를 원료와 작업자 동선을 고려한 효율적인 설계
- 진공을 이용한 원료 투입 및 이송
- 추후 측면으로 작업공간을 확장 가능한 설계
- 멀티태스킹 작업대 사용으로 개별 작업자의 역량 극대화
- 설비의 지상 배치 또는 1단, 2단 작업대 제공가능
- 상승형 구조 채택으로 배선과 배관의 유지보수 간편



QIHANG Homogenizer Details



- Flow direction from bottom to top
- Strong pumping force with high emulsifying ability
- Suitable for liquid & liquid mixing (ex. Creams and lotions)

Ultra homogenizer / 울트라 호모 임펠러



- Flow direction from top to bottom
- Strong dispersion and shearing force
- Suitable for liquid & powder mixing (ex. (BB) cream and Sunscreen)



We provide 5 homogenizers that are easily interchangeable to handle different viscosities.



QIHANG Mixer Key Features

1. Viscosity range from liquid to paste (approx. 1,000,000 cps)
2. Feeding of solid or liquid additives with vacuum in the mixing vessel
3. Treatment of smallest quantities down to approx. 20-30% of the nominal volume
4. Two-way rotating agitator on choice to control product flow in emulsifying, vacuum, heating, and cooling of the product.
5. Multifunctional pumping and dispersing machine with two-way rotating homogenizer
6. Dispersing chamber: Rotor-stator generator for optimum dispersing.
7. Geometric scale up/down technique applied to the impeller and homogenizer as the mixer volume changes for repeatability of production result.
8. Vessel tilting for discharge.
9. All mixers can be supported by multiple phase tanks and service tanks.
10. Identical structure and operation principle available for laboratory scale units, scale up equipments, pilot equipments to large scale production line.

QIHANG Range of Products

Multi-tasking performance series

- Ultra Mixer
- High Shear Mixer
- Combi Mixer
- Ultra Planetary Mixer

Laboratory centered units

- LAB Ultra Mixer
- LAB High Shear Mixer
- LAB Combi Mixer
- LAB Homogenizer/Dispersion Mixer

Single-tasking performance units

- Gelatin Mixer
- Color Mixer
- Shampoo Mixer
- Lipstick Mixer
- Inline Mixer
- Powder Mixer
- Dispersion Mixer
- Colloid Mill

Ultra Mixer Series UM

Batch Mixing System



The Ultra Mixer series is a vacuum homogenizer. Main functions are homogenizing, emulsifying, mixing and deformation. Mixing part that makes shearing force at high speed for homogenization and counter rotating scraper part that mixes the product at low speed. The heating, cooling, and vacuum pressure devices are designed to handle various products in the cosmetic, pharmaceutical, food and chemical industries. High powered homogenizer mounted at the bottom of the vessel effectively works for small volume batches. Generally applicable from low viscosity to high viscosity.

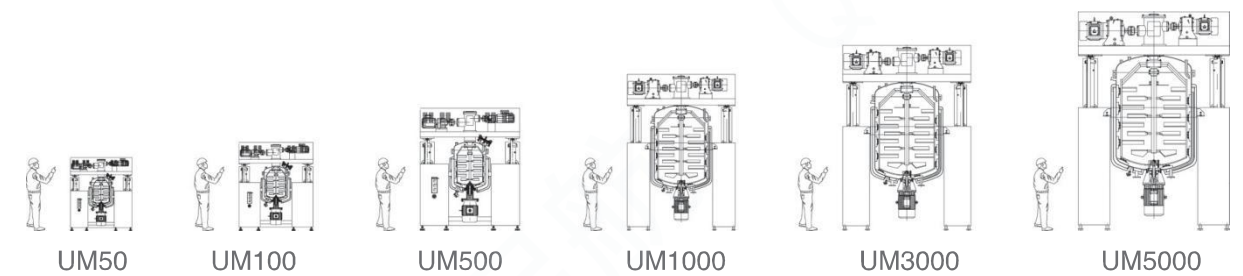


Features / 특징

- Internal vacuum homogenizing without external loop
- Counter-rotating paddle with scraper or spiral agitator
- Stainless steel product contact parts with mirror finish
- Heating and cooling vessel
- Lid lifter
- Vessel tilting for discharge

Applications / 적용제품

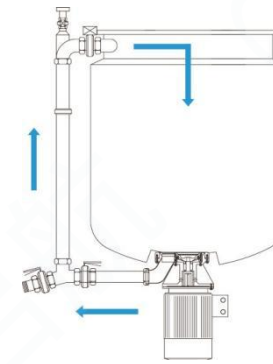
- Creams, Lotions, Sun creams, Ointments, Beverages
- Sauces and dressings, Salt solutions, Catalysts
- Lacquers, Polymer emulsions



Model	Max. useful volume	Min. useful volume	Motor power [kw]	Dimensions (L x W x H mm)
UM 5	5L	3L	0.37	1,100 X 650 X 1,760 (1,900)
UM 50	50L	15L	2.2	2,010 X 950 X 1,730 (2,380)
UM 100	100L	30L	3.7	2,150 X 950 X 2,230 (3,300)
UM 300	300L	90L	5.5	2,200 X 1200 X 2,500 (3,700)
UM 500	500L	150L	11	2,300 X 1,300 X 3,000 (4,200)
UM 1000	1000L	300L	22	2,500 X 1,600 X 3,400 (4,500)
UM 3000	3000L	900L	37	3,100 X 1,950 X 4,300 (5,800)
UM 5000	5000L	1500L	45	3,500 X 2,300 X 4,900 (7,000)

Homogenizing | Dispersing | Blending

High Shear Mixer Series HM / Batch Mixer with external circulation



The High Shear Mixer series is a vacuum pressure homogenizer with specially designed impeller and paddle agitator. Main functions are homogenization, dispersion and CIP. External circulation of products brings increased quality of homogenization within a shorter period of batch time. Vacuum pressure product loading and discharging

The pumping rotator creates suction within the system for circulation and for mixing at low shear stresses. At high speed it builds pressure up to (4-bar) and creates a significant flow capacity which is beneficial for CIP-cleaning

Feeding of liquid additives directly into the dispersing chamber, results in quick and complete wetting that avoids the formation of lumps.

Model	Max. useful volume	Min. useful volume	Motor power [kw]	Dimensions (L x W x H mm)
HM 5	5L	3L	2.2	1,100 X 650 X 1,760 (1,900)
HM 50	50L	15L	3.7	1,930 X 860 X 2,000 (2,800)
HM 100	100L	30L	5.5	1,750 X 1,100 X 2,140 (3,040)
HM 300	300L	90L	11	2,140 X 1,100 X 2,770 (3,800)
HM 500	500L	150L	22	2,440 X 1,200 X 2,900 (4,300)
HM 1000	1000L	300L	30	2,700 X 1,600 X 3,400 (4,900)
HM 3000	3000L	900L	37	3,000 X 2,000 X 4,300 (5,100)
HM 5000	5000L	1500L	45	3,700 X 2,300 X 5,400 (7,400)

Features

- Internal vacuum homogenizing with external loop.
- Counter-rotating paddle agitator with scraper or spiral agitator
- Stainless steel product contact parts with mirror finish Heating and cooling vessel
- Lid lifter
- Vessel tilting for discharge

Applications

- Toothpaste, Creams, Lotions, Sun creams, Ointments
- Beverages, Sauces and dressings, Salt solutions
- Catalysts, Lacquers, Polymer emulsions

Homogenizing | Dispersing | Blending

Combi Mixer Series CM

Dual Shaft Paddle Mixer



Features

Internal vacuum homogenizing without external loop
 Dispersion + dispersion or homogenizer + dispersion with anchor scraper
 Stainless steel product contact parts with mirror finish
 Heating and cooling vessel
 Lid lifter

Applications

Tooth paste, Creams, Lotions, Beverages
 Salt solutions, Catalysts, Lacquers
 Polymer emulsions

Homogenizing | Dispersing



Dispersion + dispersion with anchor scraper

- Maximize dispersion force
- Suitable for high viscosity products such as powder

Homogenizer + dispersion with anchor scraper

- Homogenizing and dispersion at the same time
- Suitable for products that require homogenizing and dispersion



The Combi Mixer series is a combination of low speed mixer and high speed mixer in a single vessel. As the two different mixing speeds are combined, it is applicable for products of high viscosity and low viscosity. Dispersion part makes dissolving easier and faster, especially for high viscosity products while homogenization process remains effective.

Model	Max. useful volume	Min. useful volume	Motor power [kw]	Dimensions (L x W x H mm)
CM 5	5L	3L	0.37	1,100 X 650 X 1,760 (1,900)
CM 50	50L	15L	2.2	2,010 X 950 X 1,730 (2,380)
CM 100	100L	30L	3.7	1,750 X 800 X 2,000 (3,000)
CM 300	300L	90L	5.5	2,300 X 1,000 X 2,800 (3,800)
CM 500	500L	150L	11	2,600 X 1,200 X 3,400 (4,900)
CM 1000	1000L	300L	22	2,600 X 1,600 X 3,600 (5,200)
CM 3000	3000L	900L	37	3,000 X 2,000 X 4,800 (7,500)
CM 5000	5000L	1500L	45	3,900 X 2,500 X 6,000 (8,500)

Ultra Planetary Mixer Series PM/ Dual Shaft Planetary Mixer



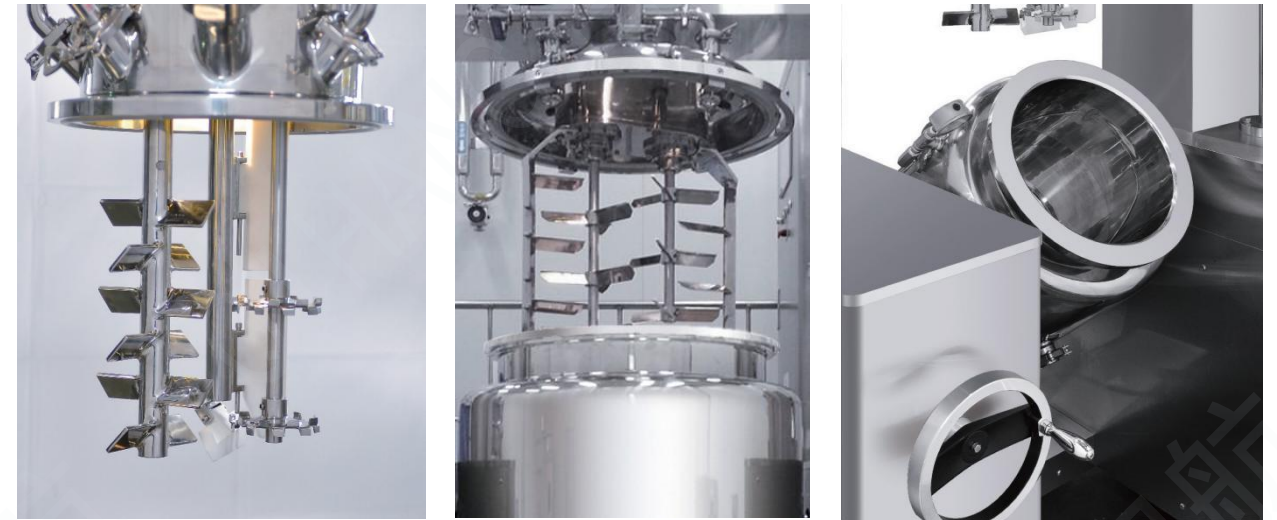
Applications

Creams, Lotions, Tooth paste, Fruit juices
 Salt solutions, Catalysts, Lacquers
 Polymer emulsions

Features

Internal vacuum homogenizing without external loop
 Stainless steel product contact parts with mirror finish
 Heating and cooling vessel
 Lid lifter
 Vessel tilting for discharge

Homogenizing | Dispersing | Blending



The Ultra Planetary Mixer series is a vacuum pressure homogenizer with bottom mount homogenizing device. It features two sets of agitators that turn on offset shafts, while the mixing bowl remains stationary and creates very effective coverage with minimal dead zone. This motion is similar to the way the planets move around the sun. Applicable for super high viscosity products such as adhesive bonds.



Model	Max. useful volume	Min. useful volume	Motor power [kw]	Dimensions (L x W x H mm)
PM 5	5L	3L	0.37	1,100 X 650 X 1,760 (1,900)
PM 50	50L	15L	2.2	2,010 X 950 X 1,730 (2,380)
PM 100	100L	30L	3.7	1,750 X 800 X 2,000 (3,000)
PM 300	300L	90L	5.5	2,300 X 1,000 X 2,800 (3,800)
PM 500	500L	150L	11	2,600 X 1,200 X 3,400 (4,900)
PM 1000	1000L	300L	22	2,600 X 1,600 X 3,600 (5,200)
PM 3000	3000L	900L	37	3,000 X 2,000 X 4,800 (7,500)
PM 5000	5000L	1500L	45	3,900 X 2,500 X 6,000 (8,500)



Gelatin Mixer



Dispersing | Blending | Melting

Features

Agitator mixing without a homogenizing unit / Counter-rotating agitator with scraper / Stainless steel product contact parts with mirror finish / Heating and cooling vessel / Lid lifter / Vessel tilting for discharge

Specifications

Capacity: From 50 liter to 20 ton
Mixing speed: Up to 100 rpm
Mixing paddle: Up to 60 rpm

Applications

Gelatin

The Gelatin Mixer is a vacuum pressure mixer for gelatin dissolving. Basic structure is same as the Ultra Mixer, but without the bottom mount homogenizer.

Shampoo Mixer



Features

Agitator mixing / Stainless steel product contact parts with mirror finish / Heating and cooling vessel / Vessel bottom discharge

아지테이터 믹싱 / 유광/무광 처리된 스테인리스 스틸 / 가열 및 냉각 가능, On/Off 제어 및 비례제어 / 용기 하부로 제품 배출

Applications / 적용제품

Shampoo, Skin

Specifications

Capacity: From 50 liter to 20 ton
Agitator speed: Up to 100 rpm

This mixer has a single agitator for mixing and blending of products that do not require homogenization.

Color Mixer



Stirring | Blending | Homogenizing

Features

Batch-type color homogenizer without a vessel / Single homogenizing impeller / Stainless steel product contact parts with mirror finish / Powered impeller height adjustment

Applications

Gels, Enamels, Manicures

Specifications

Homogenizer speed: Up to 1,800 rpm
Motor power: 3.7 – 15kW

The Color Mixer consists of a driving shaft where a high speed homogenizer is mounted at the end without the vessel and the machine base. Applicable for stirring and homogenizing liquids or liquids-solids with other colors.

Lipstick Mixer



Dispersing | Blending

Features

Dispersion mixing without a homogenizing unit / Stainless steel product contact parts with mirror finish / Heating and cooling vessel / Lid lifter / Vessel tilting for discharge

Applications

Lipsticks, Manicures, Mascaras
립스틱, 매니큐어, 마스크라

Specifications

Capacity: From 3 liter to 500 liter
Dispersion speed: Up to 1,800 rpm

This mixer is designed for lipstick melting and mixing. A high speed dispersion impeller dissolves lipstick ingredients to the required quality.

Inline Mixer



The Inline mixer is used for mixing and homogenizing liquids, liquids-powders and liquids-solids. This machine is designed to achieve certain particle size.

Dispersing | Suspending | Emulsifying
| Homogenizing

Features

Multi-stage homogenizer to process a large volume of product within a short time
Up to 3 rotor-stator combinations in a single unit
Stainless steel product contact parts with mirror finish
Direct product feeding from the top and circulation with external loop (when purchased)

Applications

Creams, Lotions, Tooth paste, Fruit juices,
Salt solutions, Catalysts, Lacquers, Polymer emulsions

Specifications

Homogenizer speed: Up to 3,600 rpm
Motor power: 0.7 – 22kW

Powder Mixer



Specifications

Capacity: From 100 liter to 1,000 liter
Mixing speed: Up to 1750 rpm
Motor power: 0.7 – 22kW

The powder mixer is a diatomite filter mixer for mixing and milling powders with powders. It consists of diatomite filter and paper filter.

Mixing | Milling

Features

Powder to powder mixing with filter application / A high speed mixer efficient for mixing of materials that have different compositions / Stainless steel product contact parts with mirror finish / Air cylinder product discharge

Applications

Alumina suspensions, Foundations, Starch solutions,
Calcium carbonate solutions, Fertilizers, Vitamins



Dispersion Mixer

Mixing | Solving | Dispersing | Blending



Features

Batch-type dispersion mixer without a vessel
Single dispersion impeller
Stainless steel product contact parts with mirror finish
Powered impeller height adjustment

Specifications

Dispersing speed: Up to 1,800 rpm
Motor power: 3.7 – 15kW

Applications

Material dissolving
Beverages

The Dispersion Mixer consists of a driving shaft where a high speed dispersion tool is mounted at the end without the vessel. Applicable for dispersing liquids, liquids-powders, and liquids-solids.

Colloid Mill

Milling | Grinding



Features

High throughput in a very small space / Different grinding elements available for a variety of applications / Grinding gap adjustable

작은 공간에서 대량 제품처리 가능 / 다양한 제품에 적용할 수 있도록 여러가지 그라인더 자재 사용가능 / 그라인더 틈 조절방식

The Colloid Mill works on the rotor-stator principle. The resulting high levels of hydraulic shear applied to the process liquid disrupt structures in the fluid. It increases the stability of suspensions and emulsions. Applicable for milling and grinding solids in suspension in a liquid or liquid droplet in another liquid.

Specifications

[20HP]
Motor speed: 3,600 rpm
Motor power: 15kW

Pharmaceutical, Cosmetic, Paint, Soap,
Textile, Paper, Food

Throughput: 100 liter to 700 liter per hour
Grinding stone: 178mm
Outlet height: 940mm
Machine height: 1,540mm
Net weight: 450kg

LAB Ultra Mixer



Specifications

Capacity: From 3 liter to 10 liter
Homogenizer speed: Up to 3,600 rpm
Motor power: 0.75 kW

Homogenizing | Dispersing | Blending

Features

Internal homogenizing without external loop
Counter-rotating paddle agitator with scraper or spiral agitator
Stainless steel product contact parts with mirror finish
Electronic heating and cooling vessel
Lid lifter
Vessel tilting (manual) for discharge

Applications

Creams, Lotions, Beverage



LAB Combi Mixer



Applications

Tooth paste, Creams, Lotions, Fruit juices, Salt solutions, Catalysts, Lacquers, Polymer emulsions

Emulsifying | Dispersing | Blending

Features

Internal vacuum homogenizing without external loop
Dispersion + dispersion or homogenizer + dispersion with anchor scraper
Stainless steel product contact parts with mirror finish
Electronic heating and cooling vessel
Lid lifter

Specifications

Capacity: From 5 liter to 10 liter
Homogenizer speed: Up to 3,600 rpm
Motor power: 0.75 kW

LAB High Shear Mixer



Specifications

Capacity: From 5 liter to 10 liter
Homogenizer speed: Up to 3,600 rpm
Motor power: 1.5 kW

Homogenizing | Dispersing | Blending

Features

Internal homogenizing without external loop / Counter-rotating paddle agitator with scraper or spiral agitator / Stainless steel product contact parts with mirror finish / Electronic heating and cooling / Lid lifter / Vessel tilting for discharge

Applications

Creams
Lotions
Tooth paste



LAB Homogenizer/Dispersion Mixer



Stirring | Dispersing | Blending
| Homogenizing

Features

Batch-type LAB homogenizer without a vessel
Single dispersing or homogenizing impeller
Stainless steel product contact parts
Manual impeller height adjustment

Applications

Gels, Enamels, Manicures

Specifications

Capacity: Up to 2 liter

Homogenizer speed: Up to 12,000 rpm
Motor power: 1.25kW

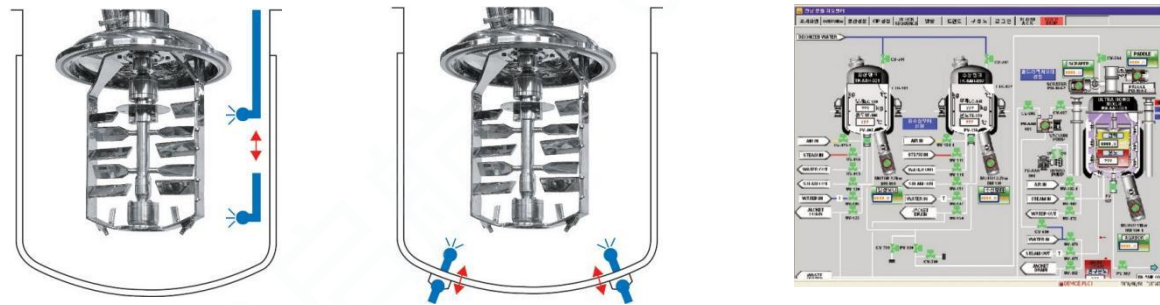
Automation Technology,
Quality Assurance Program,
and Service



QIHANG Automation Technology

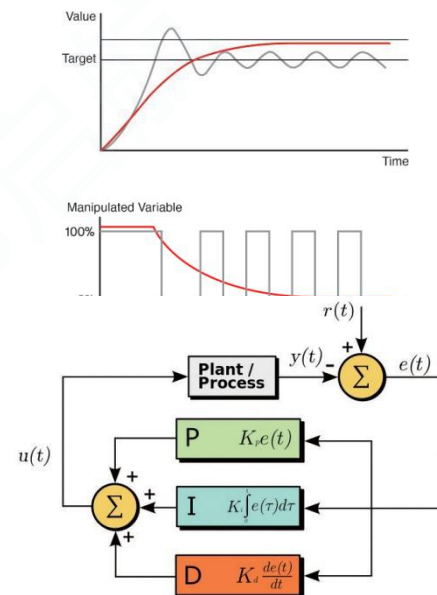
1. High impact CIP with jet head

Fully automatic CIP system – We provide recommendations on most efficient and economical CIP system.
 Up/down type CIP – Jet heads move up and down to clean dead spots. This system can be installed together with bottom mount type CIP.
 Bottom mount type CIP – Jet heads are mounted in the bottom of the vessel for cleaning underneath the impeller wings. This system can be installed together with up/down type CIP.

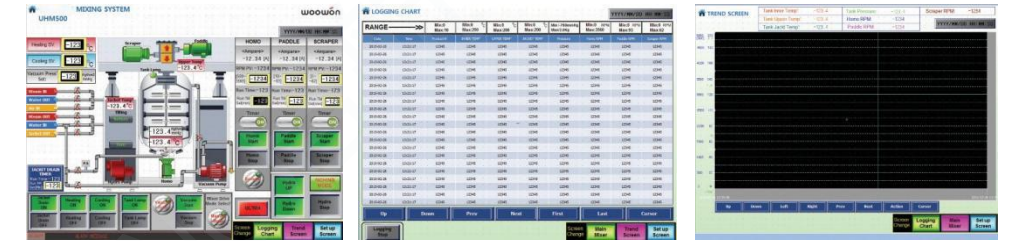


2. PID (Proportional Integral Derivative) temperature controller / PID

Hot water/cooling water temperature control system with heat exchanger. The PID accurately controls the temperature of the jacket heating and cooling media based on the target temperature.
 Compared to the conventional on/off control in gray color, the PID is stable in controlling the heating and cooling temperature, is less tolerant to the preset target temperature and it can maintain the target temperature without exceeding or dropping.
 The heating/cooling systems also perform “Ramped” heating and cooling, where you control how fast or slow you want each function to take place for special requirements.



3. User interface



- Intuitive screen layout showing all movements and user friendly controls.
- Production recipe program storing the heating temperature, cooling temperature, speed control of each product. FDA 21 CFR Part 11 compliant.
- Stored production data can be viewed on PC through USB storage media.
- Operating system developed by QIHANG – Program modifications/upgrades possible.
- Compatible with HMI/SCADA system HMI/SCADA
- Available monitoring system that can monitor real time procedure away from the production room.
- Available internet connections (ethernet) to the PC for remote trouble shooting.

4. Mixing quality measurement by Electrical Conductivity sensor

- EC sensor measures the electrical conductivity in product and provides a numerical value instead of operator's rough estimate.

5. Air bubble sensor

- To remove bubbles from a liquid as by mechanical agitation in a vacuum or by heating at atmospheric pressure, non-invasive bubble sensors detect air bubbles through rigid tubing and make automatic operation under vacuum pressure possible by preventing overflow.

6. Load cell checkweigher

- Finished product weight can be measured by a load cell unit with a tolerance of +/- 500g.

7. Data logger

- Logging software for acquiring process and operational data from the equipment that can make a print out or transfer the data to a PC. FDA 21 CFR Part 11 compliant.



QIHANG Quality Assurance Program

Design Capability

A difficult task is a matter of time for QIHANG. Professional engineers with flexible thinking in our own Research and Development center consider all aspects of the individual project and provide a tailor made design based on our customers' needs for maximum efficiency in the cosmetics and pharmaceutical industries.

까다롭고 어려운 프로젝트도 자체 R&D 센터 내에 유연한 사고를 가진 전문 설계인력들이 각 프로젝트의 모든 부분을 고려한 후 최고의 효율성이 보장되도록 맞춤 설계를 제공하고 있습니다.



Metal Fabrication

QIHANG's metal fabrication begins at raw material inspection. After a thorough inspection, the raw material goes through the cutting, heating, forming, machining, welding, and polishing processes. Automated high-precision fabrication machines guarantee interchangeability of components and provide identical performance standards. Our specialty manufacturing for flawless surface (passivation or electropolishing) and mirror finished (less than 0.6 RA finish) product contact parts is highly renowned.

가공 품질 관리는 원자재 반입검수에서부터 시작합니다.

철저한 검수를 거친 원자재는 절삭, 가열, 형태 가공, 금속가공, 용접 및 표면처리 공정을 거치게 됩니다. 전자동 고정밀 CNC 기계를 보유하여 부품간 호환성 및 동일한 표준을 통한 성능 균일화를 가능하게 합니다.

흠 없는 표면가공을 위한 산처리 및 전해연마 과정과 0.6 RA finish 미만의 표면처리를 통해 제약 및 식품 생산에 적합한 가공품질을 확보하였습니다.



Assembly Process

Finished materials and machined parts are put together according to the individually created assembly drawings. Each and every machine is assembled and built with the highest quality components by our assembly specialists. Locations of motors and parts are carefully determined for future upgrades and possible services.

가공이 완료된 자재와 부품을 도면에 맞게 조립하는 일은 아주 중요합니다.



Quality Control

End product quality control is a matter of utmost importance for QIHANG. The most experienced specialist engineers are assigned to inspect the appearance of finished surfaces inside and out, assembly inspection, operation inspection, and performance inspection according to the IQ/OQ/PQ validation documents. Only the equipment that pass this complicated process can leave the factory and are finally delivered to our customers.



1. Ultrasonic thickness gauge
2. Surface roughness tester
3. Laser thermometer
4. Sound level meter
5. Product pH meter
6. RPM checker

1	2
3	4
5	6

Manufacturing Process Control /

QIHANG manufacturing process control is an element of the total quality management system. The quality assessment data are gathered during the raw material fabrication, purchasing, and assembly processes, defects can be detected and prevented much earlier than methods that only look at the quality of the end product. All of our equipments through this process are delivered on time to the designated place and be directly put into production.



QIHANG Service

Our laboratory is equipped with trial mixers from 5 liter to 100 liter where customers can try out their product before purchasing. All types of measuring devices such as grindometers, viscosity meters, and thermometers are available to ensure qualified evaluation of the test results.

2. Spare parts

Equipment production data is strictly controlled and managed at our spare parts warehouse to provide correct parts and components as fast as possible, whenever needed.

3. Prompt customer service

Our service team actively responds to customer's contact for service and/or parts, to help our customers minimize downtime and maximize productivity.

4. Installation and training

The installation team at QIHANG provides supports and training to ensure smooth installation and trouble free operation.

5. Validation supports IQ/OQ & certificates / IQ/OQ

We provide all required qualification protocols with quality certificates to comply with most up-to-date validation standards in the pharmaceutical industry.

6. International standards

All of our equipment comply with CE, UL and are manufactured according to the GMP regulations. ECM (Enter Certification Machine-Italy) certifications for pressure vessel standards in accordance with 97/23/EC Pressure Equipment.

