



Always New,
More Than Expected

REVOROX believes that the only way for the next generation to be proud is to prevent severe global warming. Therefore, REVOROX strives to improve all systems to achieve more efficient and productive results and are always doing their best in research and development of nano dispersion technology based on these systems.



믹센밀

Nanodispersion Emulsification System

MIXER FOR COSMETICS / FOOD
BIO · PHARMACEUTICAL INDUSTRIES



PASSON
HIGH SHEAR MIXER FOR HIGH VISCOSITY

POLIMIX
HIGH SHEAR MIXER WITH POWDER SUCTION

INLINE MIXER
CIRCULATION TYPE MIXER FOR HOMOGENIZING

TANDEM MIXER
POWERFUL DOUBLE HIGH SPEED MIXER

HOMO MIXER
BATCH TYPE MIXER FOR HOMOGENIZING

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A company that prioritizes
the preservation of the global
environment through
production process innovation.

**K&S Company,
a specialist in
nano dispersion
emulsification systems,
would like to introduce
themselves to you as
an eco-friendly
company, REVOROX.**



To transform into a more
environmentally friendly company,
K&S Company, a specialist in industrial
nano-mixing process systems,
changed its corporate name to REVOROX,
embodying the philosophy of
'Innovation and Trust'. Starting anew,
REVOROX aims to fulfill our mission
of bestowing a clean Earth to the
next generation by expanding its business
scope to the environmental sector.
With continuous technological innovation
and fervent passion, we will become a
company beloved by our customers.



MIXENMILL is the
family brand of **REVOROX's**
industrial nano dispersion,
emulsification, and milling system

**A powerhouse in industrial nano dispersion
and milling that encompasses not only nano mixing
but also nano crushing –MIXENMILL.**

The key to process-improvement proposed by
MIXENMILL System is an innovative mechanism that can reduce working time
by up to 50% simply by adding one piece of equipment to our existing system.
Break free from cumbersome and inefficient repetitive work with
the powerful MIXENMILL mixing system, which solves the
challenging processes of nano emulsification,
dispersion, milling, and homogenization in an astonishingly short time.
From planning new materials, products, and new processes,
we provide the right solutions to you.

Reducing mixing process time affects not only your company's competitiveness but also ESG management.

APPLICATION AREA

Products
and
Industries



Food

Typical applications



Bio/
Pharm-
aceutical
Typical applications



Cosmetics

Typical applications



Pectin (Food Stabilizer)

Disperses quickly and homogeneously without any clotting in the liquid.



Jelly

Easy and quick production of various jellies without heating required (gelatin).



Processed chocolate

Rigid and highly viscous ingredients are homogeneously dispersed.



Juice production

A simple juice production process that preserves taste, nutrition, and texture.

Products
and
Industries



Food

Typical applications



Sauce production

Even sauces with high viscosity and high solid contents can be produced easily and homogeneously!



Processed Cheese

Production of soft, rich-tasting processed cheese by precise dispersion.



Egg emulsification for pastry and baking

Quickly and homogeneously! Perfect dispersion, even of the chalaza



Mayonnaise production

Mass production of fresh and savory mayonnaise is possible within a short period of time.





HPMC Dispersion
Fast and homogeneous dispersion of heat-sensitive binders!



TiO2 Dispersion
Provides perfect results that maintain layer separation even over time due to its perfect dispersion.



Blood dispersion
Rapid and homogeneous dispersion of coagulated properties without destroying the nutrients.



Cream production
An innovative method to shorten the complicated cream production process and improve quality.



Essence manufacturing
Easy dispersion of high-viscosity essence with precise and homogeneous results.



Hand sanitizer production
Easy and fast mass production of hand sanitizers that uses alcohol and thickening agents.



Thickening agent dispersion
Fast and homogeneous dispersion of the thickening agent without any clumping.



Vaccine Production
Precise and safe vaccine production through powerful dispersion.



Dispersion of thickening agent
Homogeneously dispersing a wide variety of thickening agents with different types and purposes, without clumping!



Color cosmetics
Upgrades color expression and final product quality through a precise dispersion of pigments.



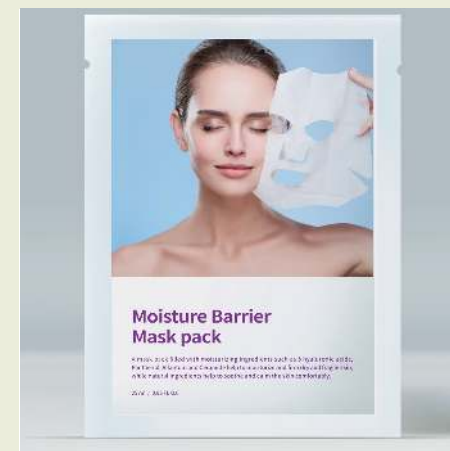
Ointment production
High-viscosity substances and additives are homogeneously dispersed to produce even quality ointments.



Protein powder dispersion
Homogeneously, stably and perfectly disperses materials even if they possess high viscosity and heat sensitivity that tend to clump together.



Manufacture of various slurries
Quickly and easily manufacture various slurries without any powder scattering.



Facial mask pack production
Maximizes the skin absorption rate of functional ingredients through fine and homogeneous dispersion.



Manicure production
Perfect dispersion achieves a rich color and a smooth coating surface.



Shampoo and hair conditioner production
Not only the even dispersion of ingredients, but also the de-foaming and transfer process all at once!

MIXENMILL PASSON

고점도하이셰어믹서
High Viscosity High Shear Mixer



A powerful one-pass
performance,
nano dispersion
emulsification
homogenization system
designed for high
viscosity materials.

Products & Industries Typical applications

Food

Mix, emulsification and dispersion of high-viscosity chocolate.

Chocolate is a typical ingredient that maintains its high viscosity and rigid texture even when melted in a double boiler. Mixing other ingredients with such chocolate or dispersing it for a proper texture is not an easy process. PASSON from MIXENMILL utilizes a specially designed multi-stage impeller to mix, homogenize, and disperse high viscosity and rigid materials quickly and evenly within a short amount of time. Experience PASSON now and upgrade your time, labor costs, and quality!

Chocolate manufacturing / Homogenization of high-viscosity food ingredients / 2-component dispersion of high-viscosity substances / Mayonnaise



Bio/Pharmaceutical

High-speed precise dispersion of collagen (artificial skin).

Collagen, which is in the limelight as an artificial skin or functional food, is a typical polymer material. This material is expensive, has a very high viscosity, and is sensitive to heat, making the mixing or dispersing process complicated. MIXENMILL's PASSON enables rapid dispersion and homogenization of high-viscosity materials, and can effectively control the dispersion heat generated by high-dispersion energy, enabling quick and easy mass production of heat-sensitive materials.

Manufacture of high dispersion of highly needed vaccines / manufacture of IV fluids / dispersion of high-concentration hyaluronic acid / silicone / two-component reaction process / dispersion of high-viscosity cream and ointments.



Cosmetics

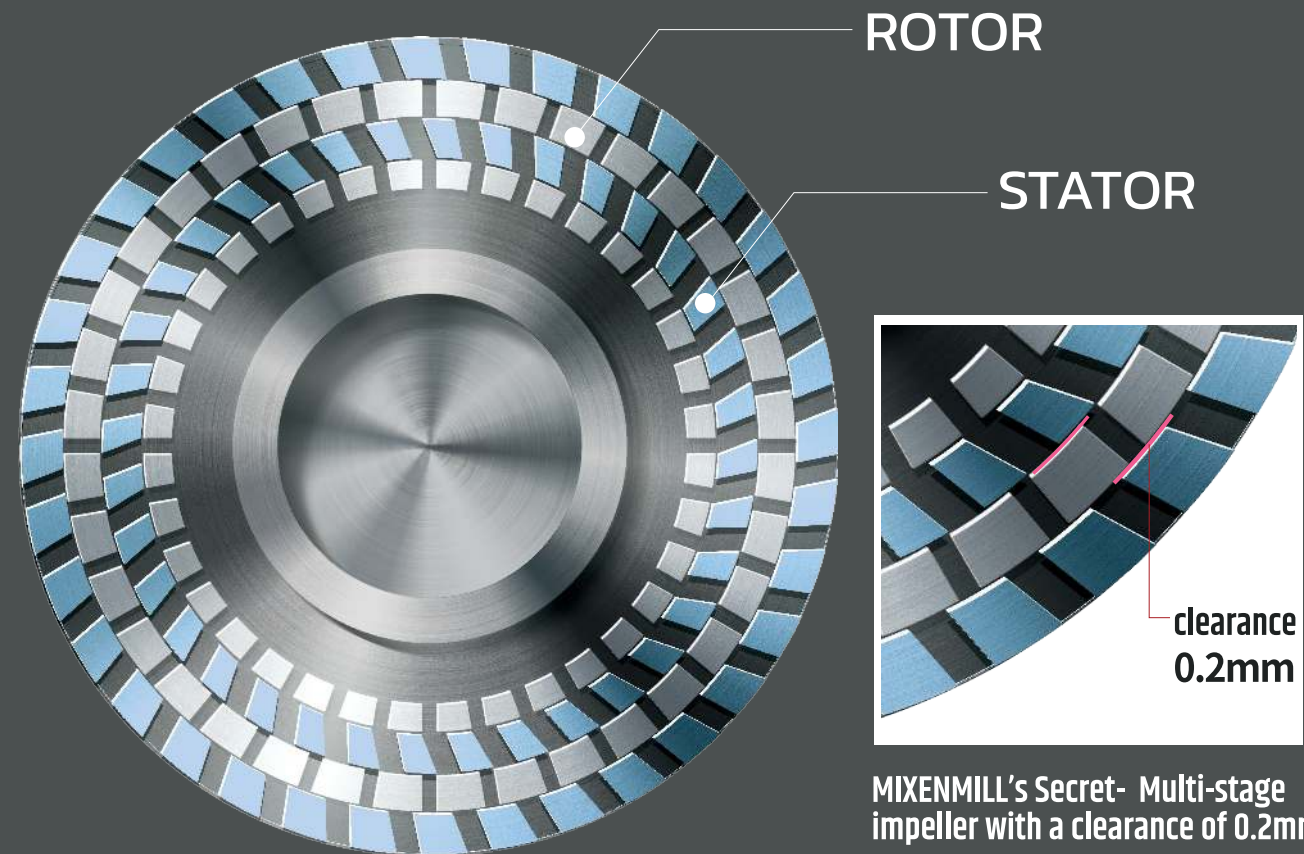
Perfect high-speed dispersion of high-viscosity face packs that are rigid due to high solid content.

Face packs, which contain a large amount of clay or mud and have a very high viscosity, are a difficult process because various additives must be mixed evenly. MIXENMILL PASSON has vertical and horizontal three-dimensional multi-stage impellers (dispersion blades) that make high-viscosity materials smoother and homogenize quickly. By reducing production time by roughly 50% compared to existing agitators, we will increase your production competitiveness.

Mud packs/high-viscosity creams, high-concentration cosmetic production /manicure, gel nail manufacturing/lipsticks, waxes, solid form manufacturing/high-viscosity detergents such as toothpaste/high dispersion of various pigments



MIXENMILL **PASSON** Component



ROTOR

STATOR

clearance
0.2mm

MIXENMILL's Secret- Multi-stage impeller with a clearance of 0.2mm.

The secret of amazing shear strength is a gap of 0.2mm. MIXENMILL's PASSON is composed of a rotor and stator formed with fine gaps of 0.2mm stacked in multiple layers. These ROTOR and STATOR allow high viscosity materials transferred into the chamber to be dispersed three-dimensionally (vertical, horizontal) through strong rotation.



Excellent high-shear disperser for high-viscosity materials.

MIXENMILL's PASSON, which demonstrates excellent effects on high-viscosity materials through multi-stage precision dispersion, is a simple one-pass type that can dramatically reduce labor by up to 50%. Discuss your process requirements with us and experience dispersion quality beyond your expectations with MIXENMILL.

MIXENMILL **PASSON** High Viscosity High Shear Mixer

ONE-PASS, BEYOND THE EXPECTED!!

Handling process.



PLANETARY MIXER

Add sample into tank

Premixing
(Planetary mixer)

PASSON

Put it in the PASSON

dispersion inside
the chamber

discharge
of the
final product

transfer of contents through pump

*The process diagram above is for reference only, and the pump and planetary mixer are optional and may be excluded upon actual delivery.

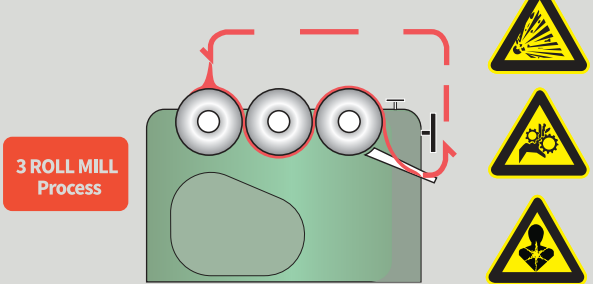


Heat generated by increasing dispersing power is controlled through a cooling jacket.

There are materials that are sensitive to temperature changes depending on the substance being processed. Since PASSON allows the material being processed to pass through the chamber without staying inside, it has a superior cooling effect compared to batch type mixers that trap heat by dispersing materials contained in the tank.

MIXENMILL **PASSON**
Treatment Process

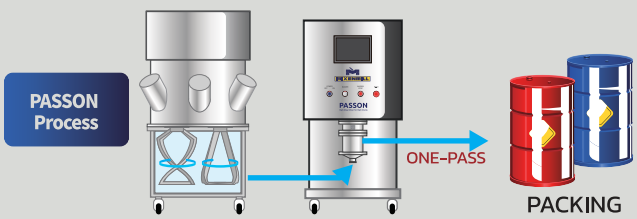
Milling by 3-ROLL MILL



3 ROLL MILL Process

- ① Open structure of operating parts.
 - May result in safety accidents such as getting caught or stuck.
 - Risk of worker safety during handling of hazardous substances.
 - Risk of ignition and explosion from flammable substances.
- ② Manually repeating the processing of the treated product.
- ③ Existing limit of mass production

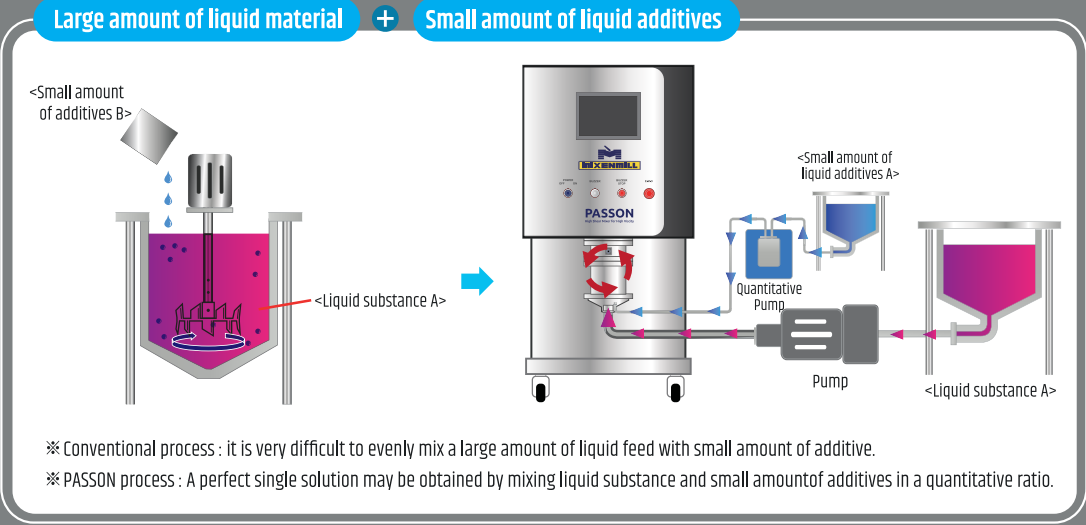
Pre-Mixing & High Shear Mixing by PASSON



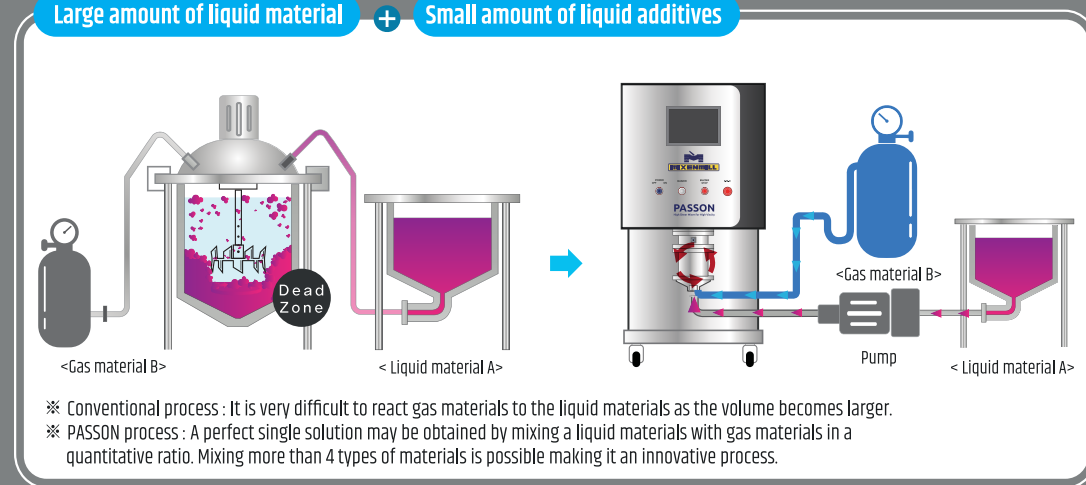
PASSON Process

- ① Sealed structure of operating parts.
 - Structure protecting hands from reaching operating (rotating) parts.
 - Enables safe handling of hazardous and flammable substances.
- ② Perfect dispersion is possible with just one-pass.
 - Automatic circulation type dispersion is possible even when circulation type dispersion is required.
- ③ Mass production is possible, which dramatically increases production efficiency.

2-component procedure of liquid state substances



2-component procedure of gas state substances

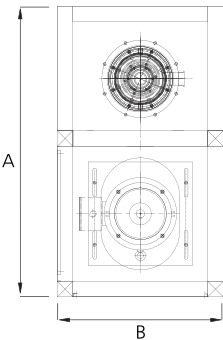


MIXENMILL **PASSON** High Viscosity High Shear Mixer

Specification

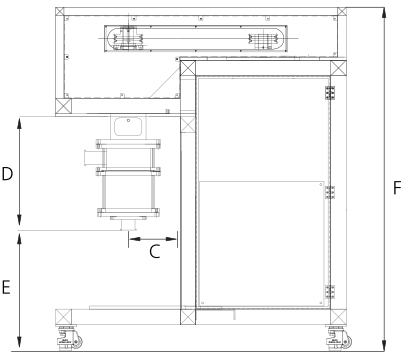
Model	Power	Volum	Speed
PS003	3HP	0.5~1 L/min	0~3,500 rpm
PS010	10HP	5~20 L/min	0~3,500 rpm
PS020	20HP	10~30 L/min	0~3,500 rpm
PS030	30HP	20~70 L/min	0~3,500 rpm
PS040	40HP	30~100 L/min	0~1,750 rpm

* production volume varies significantly depending on the dispersion efficiency of the PASSON



Size

Model	A	B	C	D	E	F
PS003	580	500	115	407	248.5	1552.5
PS010	1350	765	235	435	562	1425
PS020	1400	800	250	544	583	1528
PS030	1780	1000	385	650	640	2175
PS040	2160	1180	520	784	697	2824



- * Specifications may change depending on configured options.
- * Please contact separately for the above model.

Status of patent and design applications.



MIXENMILL POLIMIX (POWDER+LIQUID+MIXING)

피우더 흡입 분산믹서

High Shear Mixer with Powder Suction



Vacuum type of
nano dispersion
emulsification
machine that
inhales the powder
and disperses
it strongly.

Products & Industries Typical applications

Food

Dispersion of pectin and xanthan gum powder that is light and easily scatters or sticks to liquid.

Pectin powder is a type of thickening agent that is often used as a stabilizer in dairy products. However, during the dispersion process, it is not easy to disperse since its low density makes it difficult to mix in liquid without floating or sticking to the surface. MIXENMILL POLIMIX does not pour or scoop pectin powder directly into the liquid phase but uses a fixable hose to suck the powder like a vacuum cleaner and disperse it quickly without clumping.

Stabilizer for yogurt and dairy products / Dissolution of thickening agent with low density. GUM / Manufacture of various sauces and salt solutions / Dissolution of various types of starch / Manufacture of mayonnaise



Bio/Pharmaceutical

Splashing or poor mixing during the powder mixing process when producing a slurry.

When producing slurries such as anti-diarrheal, gastro-protective, and expectorants, powder with a low density is added to the liquid phase. At this time, harmful fine dust may be scattered, or the powder can clump in the liquid, and it does not mix well while floating. MIXENMILL POLIMIX has a strong suction function that sucks the scattering powder like a vacuum cleaner and immediately mixes it with the liquid.

Cell culture media / pharmaceutical raw materials / low density thickening agents, Gums / Production of slurry solutions (anti-diarrheal, gastrointestinal drugs, etc.), Dissolve various kinds of starches / Manufacture of syrups such as cold medicines and fever reducers, and dispersion of creams and ointments



Cosmetics

Clean and perfect dispersion of TiO2, the main ingredient in sunscreen!

TiO2, the main raw material in sun cream, is not only difficult to disperse, but also generates a lot of scattered dust when added into a liquid phase, and when a large amount of solid content is added, it takes a long time for fine dispersion. POLIMIX allows TiO2 powder to be dispersed in a clean, dust-free liquid phase and provides amazing results within a short period of time.

Dispersion of light density silica, thickening agents, etc. / Essences / Pre-dispersion of pigments for color cosmetics / Skin, lotions, etc. / Low viscosity cream production / Perfumes, air fresheners / Vegan cosmetics.



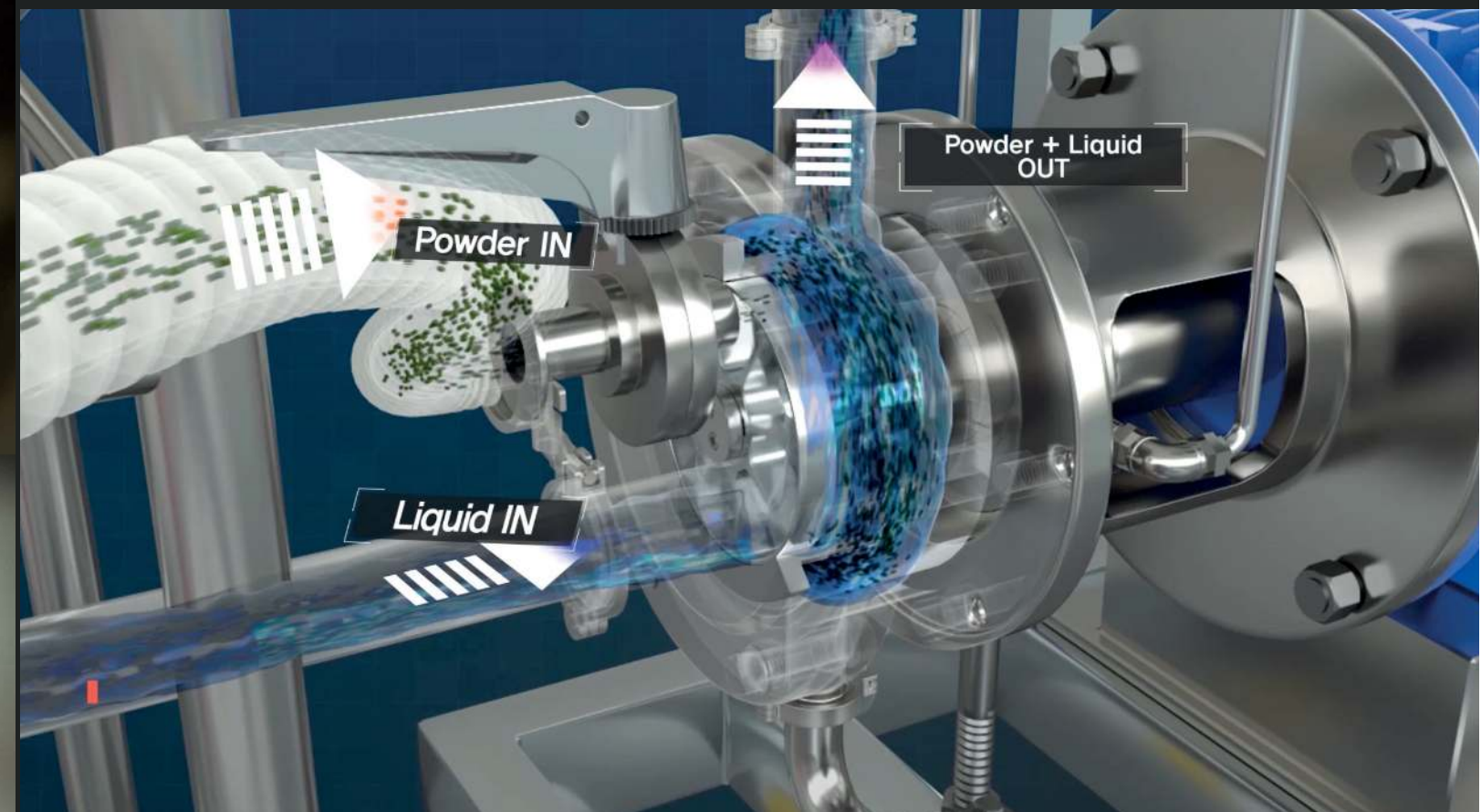
Powder scattering. The safety of the workers becomes more important.

The "Act on the Creation of a Safety Environment in Laboratories" implemented in 2006 is a legal system created for the safety of workers who are threatened with health from various harmful substances.

PSM(공정안전관리_Process Safety Management)

MIXENMILL POLI MIX
A change in the beginning
of process of dispersing
the powder in liquid.

MIXENMILL **POLI MIX** Component



Powder process specialized mixer
which applies the same principle as a
vacuum cleaner -MIXENMILL POLIMIX

MIXENMILL POLIMIX is a mixer specialized in powder processes that applies the principle of a vacuum cleaner to disperse powder directly into a liquid, thus achieving excellent dispersion efficiency by solving the problem of powder aggregation before it coagulates in the solution, regardless of the weight of the powder. You can put the powder directly into the hopper or use the flexible hose to suck directly into a container or bag. Also, unlike batch types, the wall of the container or the agitation's rotating shaft does not form a lump of powder and it makes it easy to clean.

Vacuum Aspiration



POLIMIX, which solved the powder scattering problem.

MIXENMILL POLIMIX is a best-selling equipment equipped with a specially designed flow-impeller that creates an aspiration effect with powerful rotation of approximately 3500 rpm while circulating the solution. It has exceptional dispersibility and is developed to prevent scattering dust that can be hazardous to the human body or working environment. Equipment suitable for the regulation of the working environment in the laboratory and factory can prevent powder dust explosion accidents as well as safety of workers.

MIXENMILL **POLIMIX**

Dispersion process

2 ways to supply powder



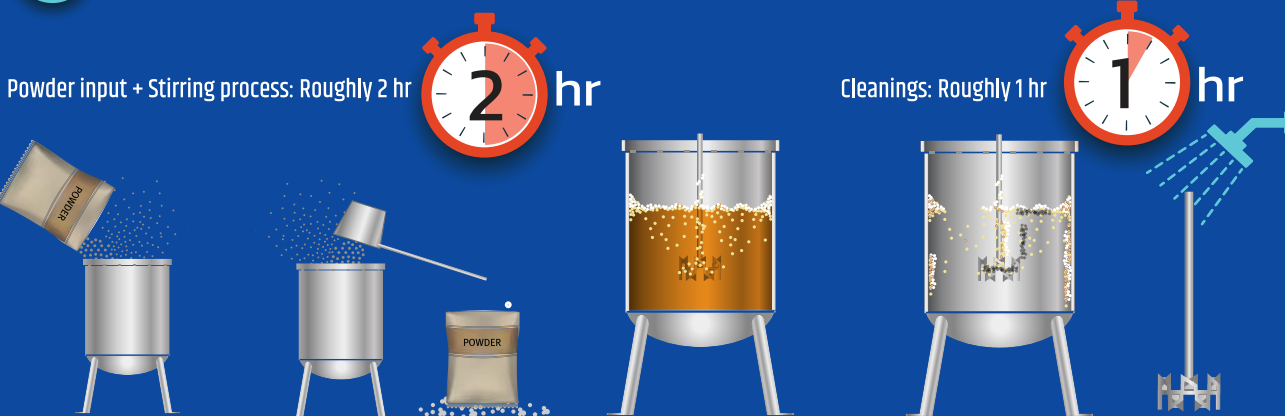
Inhale like a vacuum cleaner through the powder hose:
Use when the powder is very light and the input amount is small.

Supply via hopper instead of hose.
If the powder has a certain density or if the amount of powder is too large to be sucked through the powder hose for a long time during operation.

It can reduce powder dispersion time significantly.

Most powders have the property of aggregation when added into the solution. High dispersibility and time are required to disperse powder particles once they are agglomerated again. With REVOROX's newly developed MIXENMILL POLIMIX, the total powder dispersion time is greatly reduced and dispersion efficiency is greatly increased (depending on the process, it may be reduced by one-tenth, which is 10 times higher process efficiency).

3 hr Conventional powder mixing process

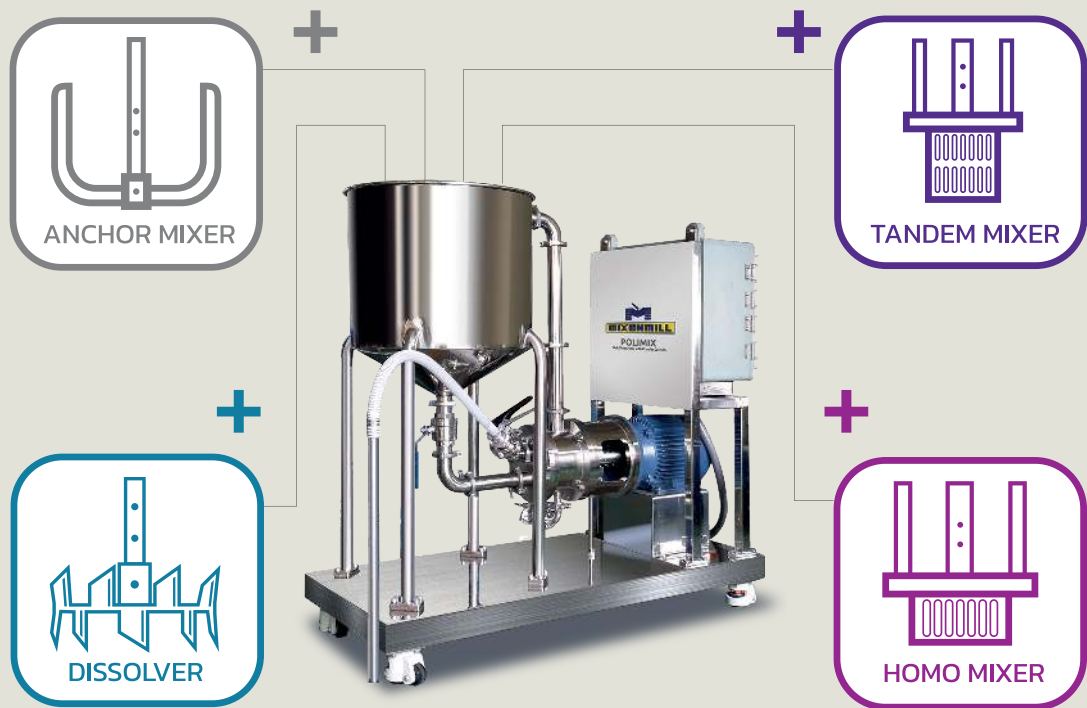


1 hr MIXENMILL POLIMIX process



MIXENMILL **POLIMIX** High Shear Mixer With Powder Suction

MIXENMILL **POLIMIX** Option_ Various Pre-Mixing Methods



Specification

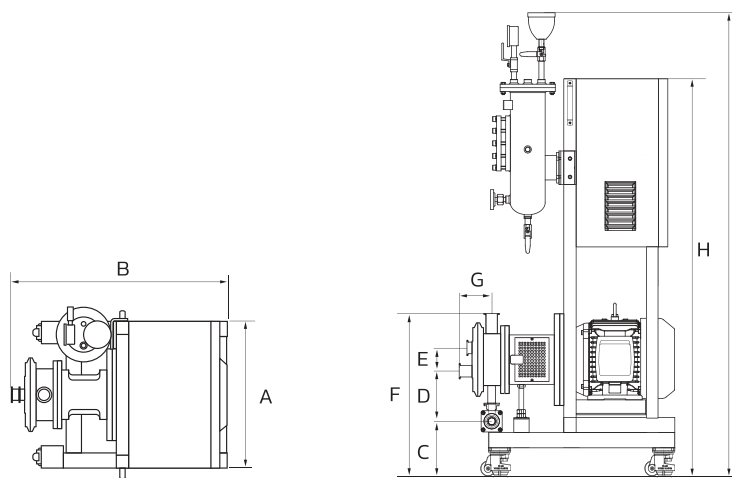
Model	Power	Volum (Water Standard)	Speed	Powder Incorporation
PM 010	10 HP	500 L	0~3,500 rpm (RPM can be changed)	100~200 (kg/h)
PM 020	20HP	1,000L	0~3,500 rpm (RPM can be changed)	200~300 (kg/h)

Size

MIXING PART

Model	A	B	C	D	E	F	G	H	I
PM 010	480	705.3	179.5	164	76	532	106	1300	1516

* Specifications may change depending on configured options.
* Please contact separately for PM020.



MIXENMILL INLINE MIXER

순환식하이셰어믹서

Circulation Type Mixer for Homogenizing

Powerful
dispersion
performance
from multiple
layers of
impellers -
Incomparable
dispersion
results from
pumping,
circulation,
and precise
dispersion.



Products & Industries Typical applications

Food

Quick and easy powder dispersion for jelly without additional heating.

If the jelly, which is made by dissolving gelatin or Gummix evenly in sugar and nectar or concentrate, is being produced with normal low-speed mixers, the powder would not completely dissolve and would have to be heated separately for a long period of time. The MIXENMILL INLINE MIXER has a strong circulating dispersion power that dissolves powders for jelly quickly and completely even if the heating process is omitted.*If agar powder is used as a material, heating may be required due to the nature of the material.

Dispersion of substances of medium viscosity such as Kyounggoko (Korean restorative herb medicine) / Manufacture of jelly and stick jellies / Emulsification of eggs and sugar / Dispersion of boiled beans / Grinding of soaked rice and tangerine peel fibers / Manufacture of fruit purees / Manufacture of medium and low viscosity sauces



Bio/Pharmaceutical

A perfect dispersion process for stick-type concentrates using herbs of medium viscosity, such as oriental medicines.

As the process of mixing high viscosity medicinal herbs to make them smooth and easy to consume has increased, the MIXENMILL INLINE MIXER, which homogeneously mixes high viscosity materials, is attracting attention. Because of its strong dispersion, the circulatory structure turns rough herbal medicines into concentrated liquids in a short period of time that are more pleasant to consume. In particular, it can be directly transported to a packaging machine, etc. without the need for separate pumps or transport devices, enhancing the efficiency of productivity and improving your company's competitiveness.

Coating liquid / Antibacterial agents, odor removers, sanitizers / Dispersion of substances of medium viscosity such as Kyounggoko (Korean restorative herb medicine) / Manufacture of various jellies and stick jellies / Manufacture of soft capsules / Creams / Various medicines with medium and low viscosity



Cosmetics

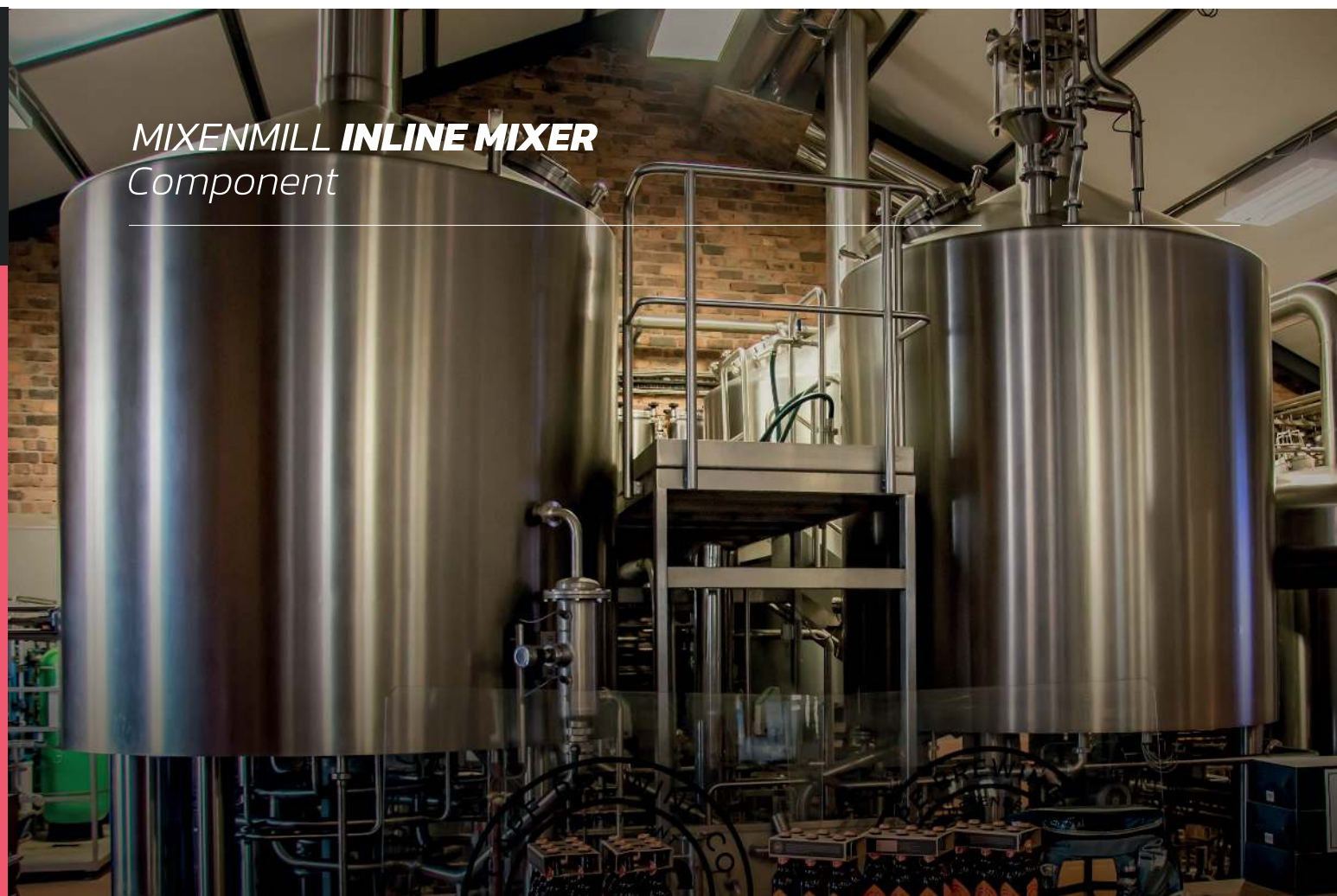
Facial mask pack essence that emulsifies and disperses strongly and quickly without dead zones.

In the case of mass production, facial mask packs are difficult to homogenize due to the occurrence of DEAD ZONES in the tank, and they can be produced only after a long process. MIXENMILL INLINE MIXER's powerful circulatory emulsification and dispersing ability finishes emulsification and dispersion in a short period of time without the occurrence of dead zones, and it is convenient to transfer to the next process without separate pumps. The MIXENMILL INLINE MIXER is more efficient in mass production of 500L.

Crushing and dispersing natural materials/Producing essence for facial mask packs / Producing various essences/ Producing shampoos, hair conditioner, sanitizers, etc./ Producing skin, lotions, other basic cosmetics/Producing creams.



MIXENMILL **INLINE MIXER** Component



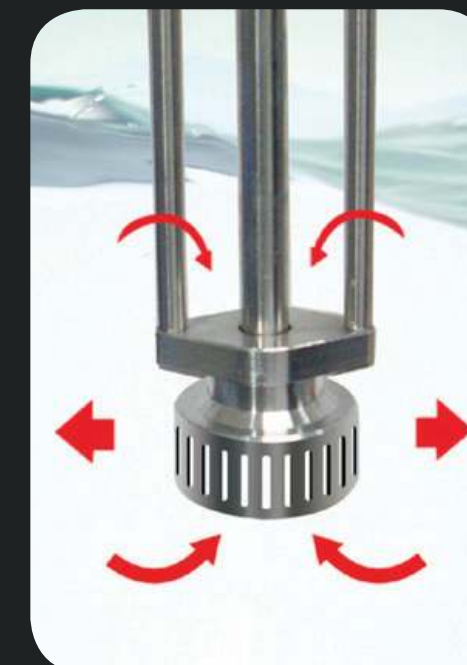
Homo mixer's upgraded version-
MIXEN MILL INLINE MIXER
is suitable for industrial-scale
production.

Pumping and high shear at the same time!
MIXEN MILL INLINE MIXER is a device that circulates substances using pumping and disperses and emulsifies them with precise ROTOR and STATOR. Compared to a homo mixer, ROTOR and STATOR are installed with 2 to 4 more layers, enabling stronger dispersion and emulsification with better overall efficiency. The built-in pumping function also makes it easy to transfer to the next process through a 3-way valve after the operation.

MIXENMILL **INLINE MIXER** Circulation Type Mixer for Homogenizing

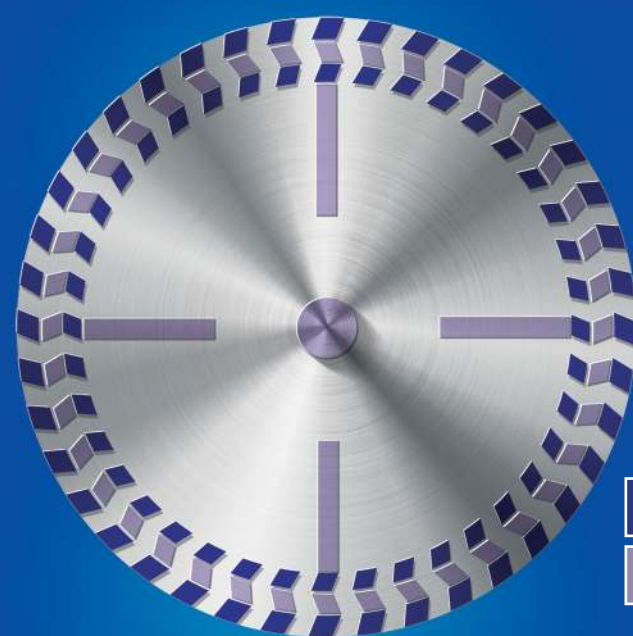


Operation mechanism of INLINE MIXER
When the pumping and circulation process of the device is used for production purposes, increased numbers of ROTOR and STATOR makes HOMO MIXER a more advanced model.



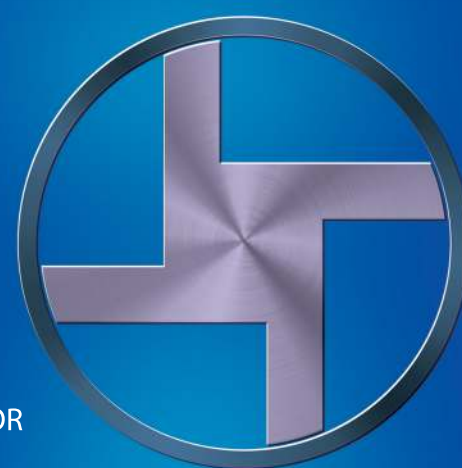
Operation mechanism of HOMO MIXER
The device may easily be used with BATCH type materials. ROTOR and STATOR are composed in a set, which sucks up the ingredients before distributing them, makes the device useful when inserting powder to a liquid or pigment dispersion.

Compare Rotor & Stator



INLINE MIXER

■ STATOR
■ ROTOR



HOMO MIXER

MIXENMILL **INLINE MIXER** without dead zone.

Compared to batch type mixer or dissolver or anchor mixer, MIXENMILL INLINE MIXER is suitable for mass production because it has almost no dead zone and is easy to clean with CIP (Cleaning in Place) design and is used in various fields.

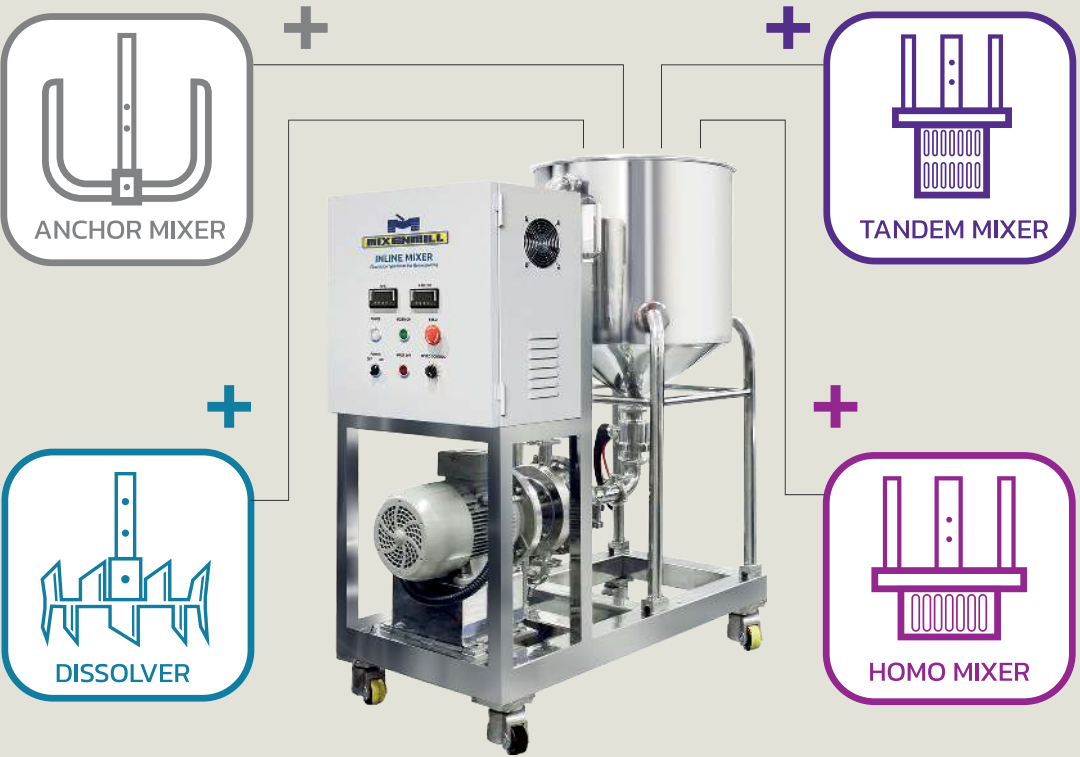


Special tank application



Hopper application

MIXENMILL **INLINE MIXER** Option Various Pre-Mixing Methods



Create a stronger performance with various tank options and PLC applications.

By using suitable pre-mixing according to the materials or substances, it is possible to improve the process time and produce better quality. In addition, the PLC application can be fully and automatically controlled through a touch screen with functions such as temperature, pressure, water level, and transfer through the automatic valve.



MIXENMILL **INLINE MIXER** Circulation Type Mixer for Homogenizing

Specification

Model	Power	Speed	Stage	Inlet/Outlet	Volume(물기준)
IM 001	1HP	0~4,800 rpm	2	1 S / 3/4 S	2 L
IM 002	2HP	0~3,500 rpm	2	1.5 S / 1 S	50 L
IM 005	5HP	0~3,500 rpm	2	2 S / 1.5 S	500 L
IM 010	10HP	0~3,500 rpm	3	2.5 S / 2 S	1,000 L
IM 020	20HP	0~3,500 rpm	3	3 S / 2.5 S	2,000 L
IM 030	30HP	0~1,750 rpm	3	4 S / 3 S	3,000 L
IM 050	50HP	0~1,750 rpm	3	5 S / 4 S	5,000 L

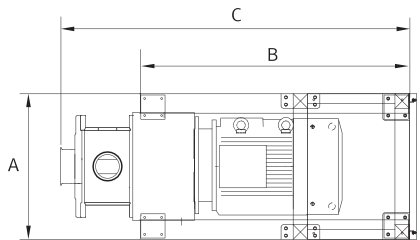
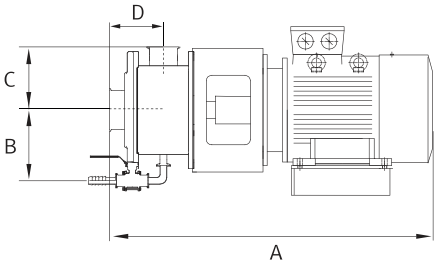
- * STAGES are number of ROTOR & STATOR as a set.
- * The S Inlet/Outlet port gauge is for Sanitary Inch.
- * The processing capacity is equal to Hopper or batch process(when attached to a tank) maximum water standard, and is a different concept with flow rate.
- * Please contact us for information on advanced models.
- * The speed may be changed beyond standard rate depending on the material or the process.

Size

MIXING PART

Model	A	B	C	D
IM 001	465.5	90.2	90.2	69
IM 002	524.5	136	136	83.5
IM 005	622	150.5	150.5	92
IM 010	713.5	148	178	110.5
IM 020	923.7	168	188	158
IM 030	1046.5	237.5	201	165
IM 050	1152.5	246.5	289.5	168

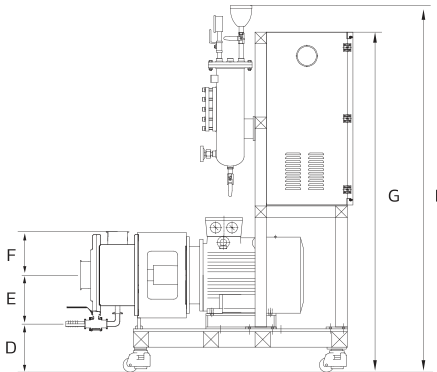
- * The specification may vary depending on the composition options.
- * Contact us for more information on IM075 and IM100 models.



INLINE MIXER

Model	A	B	C	D	E	F	G	H
IM 001	340	490	507.5	162.8	131.7	90.2	1362	1362
IM 002	380	413	537.5	102.5	192.5	136	1074.5	1320
IM 005	480	610	681	154.5	207	150.5	1300	1516
IM 010	600	610	724.8	177	204.5	178	1300	1516
IM 020	600	760	945	205	206.5	188	1515.5	1591.5
IM 030	600	760	1000	194	237.5	201	1515.5	1591.5
IM 050	730	887	1150	281.5	205	289.5	1697.5	1697.5

- * The specification may vary depending on the composition options.
- * Contact us for more information on IM075 and IM100 models.



MIXENMILL TANDEM MIXER

믹센밀의 역발상 혁신제품

Tandem Type Mixer for Homogenizing

Powerful double vortex
performance with
simultaneous suction
and dispersion of light
suspended particles and
subdued substances-
The best seller of
MIXENMILL developed for
the first time in the world.



Products & Industries Typical applications

Food

The forms of chocolate are diversified, and various products such as spreads and squeezes are being developed and released.

And in the process of manufacturing processed chocolate, which has a high proportion of powder such as cacao and skimmed milk, mixing hard materials quickly and uniformly determines production efficiency. MIXENMILL TANDEM MIXER, which can disperse high-viscosity materials and large amounts of powder with strong vortices above and below, will revolutionize the processed chocolate process.

Yogurt, dairy product stabilizer dispersion / thickening agents, GUM dissolution / protein powders, fat dispersion / processed chocolate process / various sauces with high viscosity / salt solution production.



Bio/Pharmaceutical

Dispersion of protein powder that is not mixed in liquid.

The liquid mixing process of protein powder, which is used or highly utilized, such as in pharmaceutical raw materials, fermentation, and cell media, is clumpy and difficult to dissolve. MIXENMILL TANDEM MIXER solves the mixing process that requires a long period of time and work to be dispersed. It creates a strong double vortex above and below and mixes floating powder and sunk liquids simultaneously in a short period of time to achieve dispersion and homogenization. Also, it is better to use it in a tank that doesn't have a drum or outlet under 200 liters.

Slurry production / protein powders, fat dispersion / starch dispersion / CMC, thickening agent dispersion / various powders and low density powder dispersion



Cosmetics

The mixing process of shampoos or detergents has very high basic viscosity and is difficult to disperse.

If surfactants are included, the quality of the final product may be lowered if deformation is not achieved or the homogeneity is low if fine bubbles occur. MIXENMILL TANDEM MIXER excellently disperses guar gum, xanthan gum, PEG, etc., which are the raw materials of shampoo and can easily produce high-quality products without causing micro bubbles when the defoaming system is applied.

Manufacture of various powders, thickeners, dispersion/ medium viscosity emulsification, emulsion/production of shampoo, hair conditioners, detergents, etc./color cosmetics manufacturing process/skin, lotions and other basic cosmetics/mascaras, eyeliners



MIXENMILL **TANDEM MIXER** Component

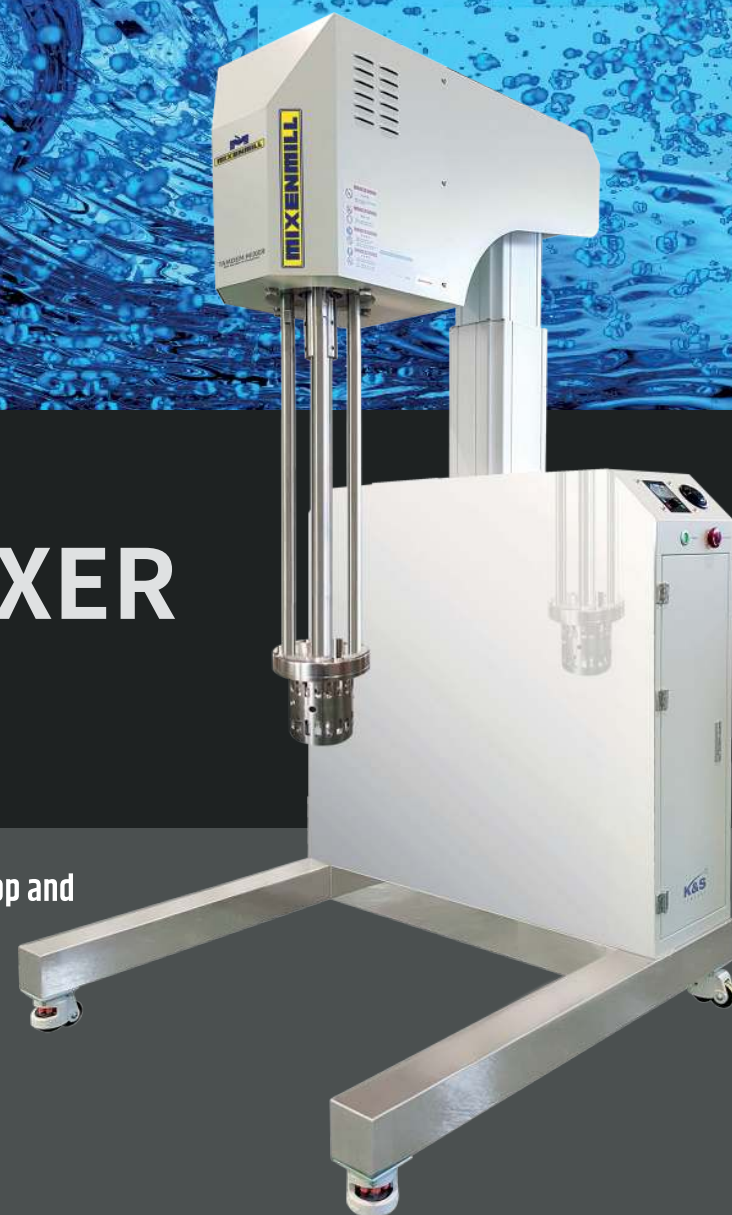
"
**Amazing mechanisms and
dispersive power**
"

which the powerful upper
and lower double vortex produces.

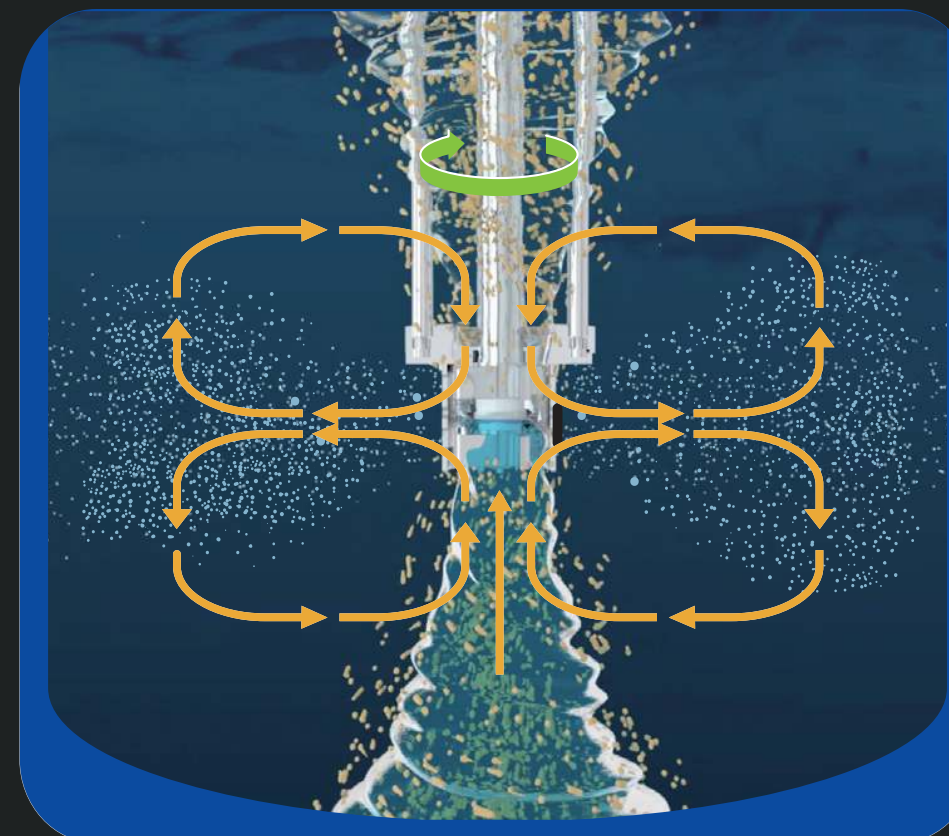
MIXENMILL TANDEM MIXER MIXENMILL's reverse innovation product.

**A powerful double vortex made from the top and
bottom - MIXENMILL TANDEM MIXER.**

The MIXENMILL TANDEM MIXER is a mixer that has two rotors (rotating blades) installed vertically, creating the Kerrblack Hole phenomenon, which pulls the material floating on the liquid surface downward and sucks up the material settled at the bottom, resulting in rapid and powerful emulsification and dispersion.

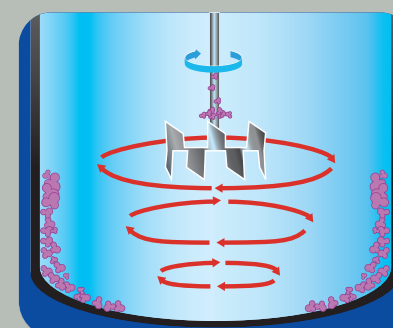


MIXENMILL **TANDEM MIXER** Tandem Type Mixer for Homogenizing

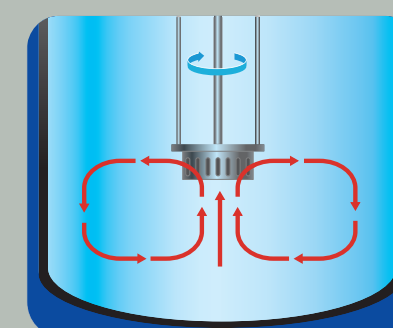


**Strong dispersing, emulsifying, and
dissolving power equivalent to
operating two homo mixers.**

Flow Compared to General Emulsifiers/Dispersers

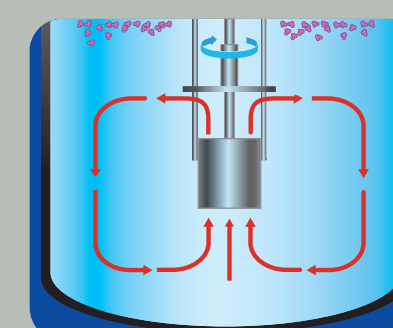


The blade stirrer is not capable of performing fine dispersion/emulsification, and dead zones increase while efficiency decreases as the viscosity of the material increases, thereby requiring more time.



**General Homogenizer
[Our Homogenizing Mixer]**

The only disadvantage to our basic model is that it is not as efficient when working with powders or oils that have low specific gravity because the material is introduced from the bottom.



HOMO MIXER TYPE with Baffle Plate

Specification

Model	Power	General Volum (물기준)	Immersion Depth (max/min)	Speed	Electrical Data
TM 1HF	0.5 HP	5 L	260 mm / 70 mm	0~6,000 rpm	SINGLE -PHASE 220V
TM 001	1 HP	10 L	350 mm / 100 mm	0~5,100 rpm	
TM 003	3 HP	30 L	630 mm / 160 mm	0~3,500 rpm	3 -PHASE 220/380/440V 선택
TM 005	5 HP	80 L	760 mm / 170 mm	0~3,500 rpm	
TM 010	10 HP	150 L	900 mm / 180 mm	0~3,500 rpm	

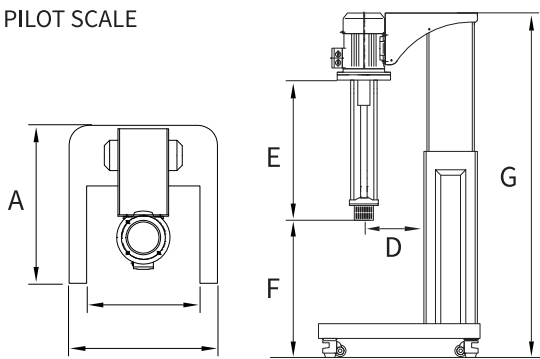
- * IMMERSION DEPTH is a maximum and minimum hight of the SHAFT which can be submerged in the SAMPLE.
- * VOLUME is a model specific capacity of water amount which is generally used.
- * Please contact us for information on advanced models.

Size

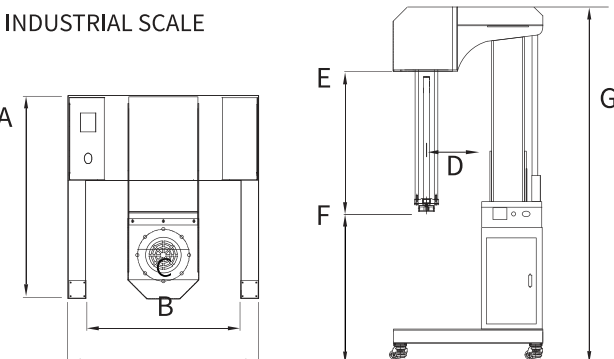
Model		A	B	C	D	E	F	G
PILOT SCALE	TM 1HF	400	380	300	150	350.5	313.5	880
	TM 001	600	560	420	229.5	424.5	625	1300
INDUSTRIAL SCALE	TM 003	600	560	420	311	503	544	1613
	TM 005	1000	950	800	333	797	907	2139
	TM 010	1330	1050	870	335	990	1111	2594

- * The specification may vary depending on the composition options.
- * Contact us for more information on lift options.
- * Please contact us for information on advanced models.

PILOT SCALE

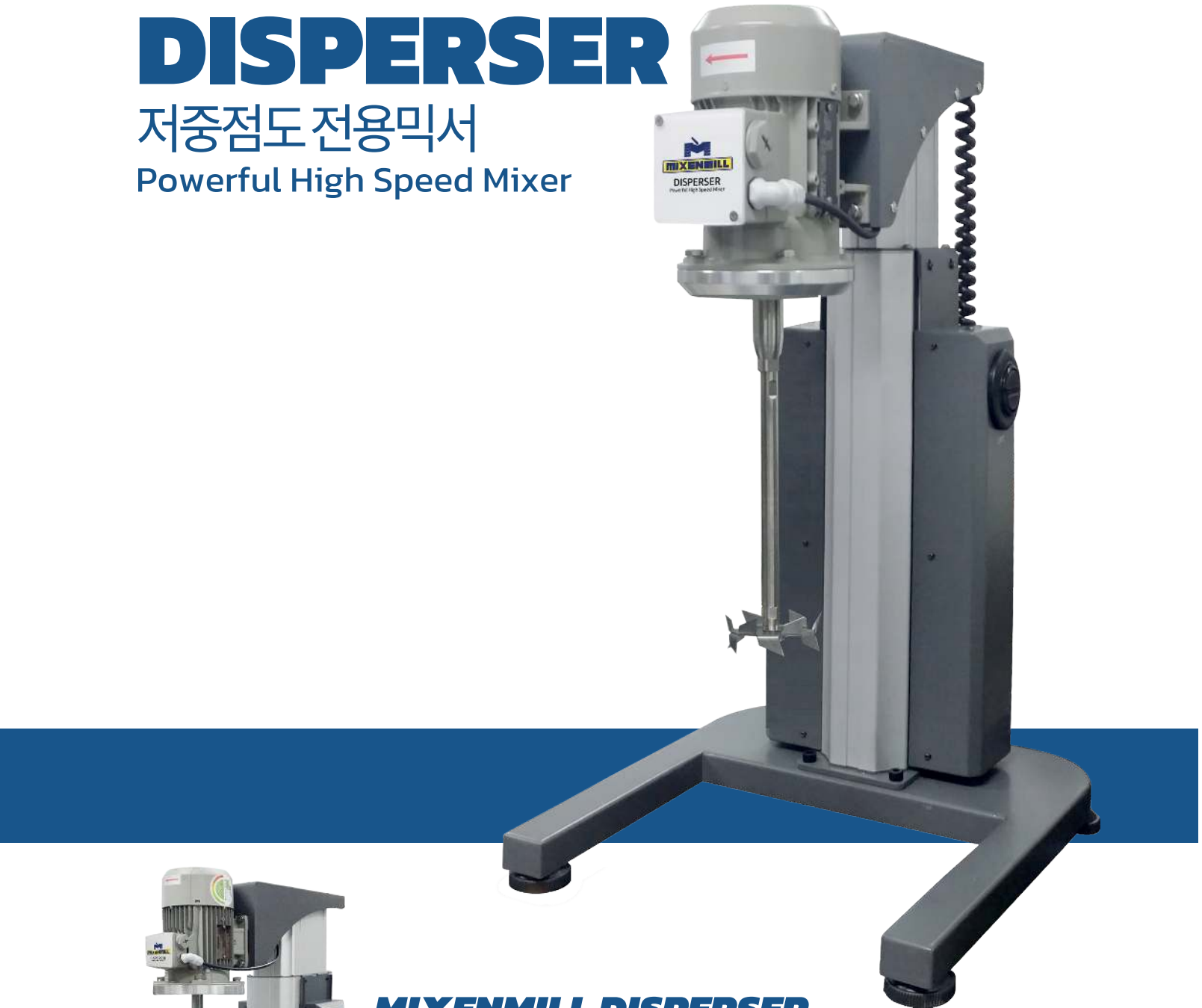


INDUSTRIAL SCALE



MIXENMILL DISPERSER

저중점도 전용믹서
Powerful High Speed Mixer



MIXENMILL DISPERSER

MIXENMILL Dispenser is a compact equipment suitable for laboratories and boasts strong power and durability by adopting a powerful AC motor. The Mixenmill disperser is capable of stable mixing without shaking or vibration even at high speeds and can be conveniently used with dedicated LIFT and CONTROLLER. It is compatible with a variety of impellers, making it suitable for various applications.

Compatible impellers and accessories



MIXENMILL HOMO MIXER

BATCH TYPE 유화, 분산기의
STEADY SELLER

Batch Type Mixer for Homogenizing

Ultra-precise
performance created
by MIXENMILL technology.
The strongest
multipurpose homo mixer
with strong emulsifying
and dispersing power -



Products & Industries Typical applications

Food

Prepares sauces to be smooth and quickly prepares tomato ketchup as well as pork cutlet sauce!

Ketchup or tonkatsu (pork cutlet) sauce are representative sauces widely used in the food industry. However, it is true that when various ingredients are used, the viscosity is rather high, so it takes a lot of time to mix evenly, and it is difficult to disperse them into a soft texture. MIXENMILL HOMO MIXER is a versatile emulsifying disperser with powerful dispersion capabilities and it can produce not only western-style sauces but also Korean sauces with a lot of red pepper powder and garlic.

Various sauces manufacturing in the food industry / beverages, alcoholic beverages production / dispersion of thickening agents, CMC / dissolution of various types of starches / production and emulsification of creams



Bio/Pharmaceutical

Manufacture a homogeneous, layer-free coating solution with fast and strong dispersion.

Refining coating is an important process that determines the marketability of refined products. Coating solutions manufactured using binders such as iron oxide or titanium dioxide and HPMC tend to separate layers quickly if they are not well dispersed, making it difficult to achieve a smooth and even coating. The strong dispersion capabilities of the MIXENMILL HOMO MIXER help to overcome these disadvantages and enable the production of high-quality refined coating solutions.

Dispersion of TiO₂/ pigments (colorants) / CMC, thickening agents / binders / blood and production of eye drops / production and emulsification of creams



Cosmetics

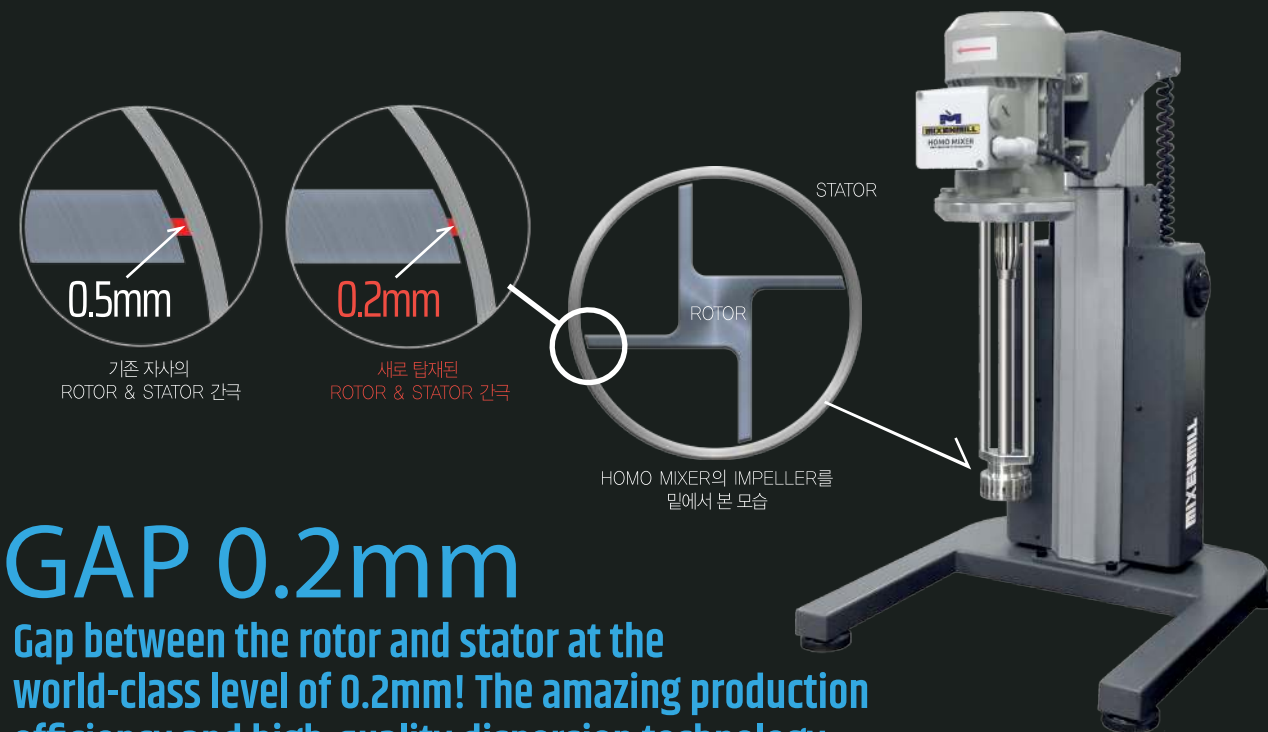
Production of high-end basic cosmetics that cannot be achieved by simple agitators or low-speed mixers.

The 'emulsification' process, which is the most important process in basic cosmetics such as skin care products, lotions, essences, and creams, determines the quality of characteristics such as absorption, spreadability, and functionality depending on how evenly and finely the individual ingredients are emulsified. The MIXENMILL HOMO MIXER minimizes the use of chemical stabilizers and ensures maximum emulsion stability, enhancing the competitiveness of cosmetics production by enabling large-scale production in a short period of time.

Dispersion of various powders, thickening agents / Emulsification of water-soluble and oil-soluble materials, production of emulsions / Shampoo, hair conditioners, detergents / creams production, sunscreen / skin, lotions basic cosmetics/perfumes, fragrances



MIXENMILL **HOMO MIXER** Component

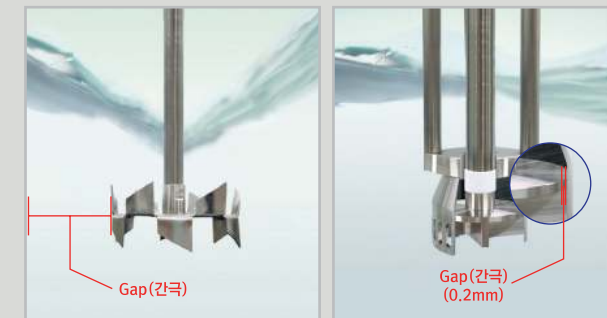


GAP 0.2mm

Gap between the rotor and stator at the world-class level of 0.2mm! The amazing production efficiency and high-quality dispersion technology produced by this precision technology!

MIXENMILL **HOMO MIXER** Batch Type Mixer for Homogenizing

DISPERSER VS HOMO MIXER



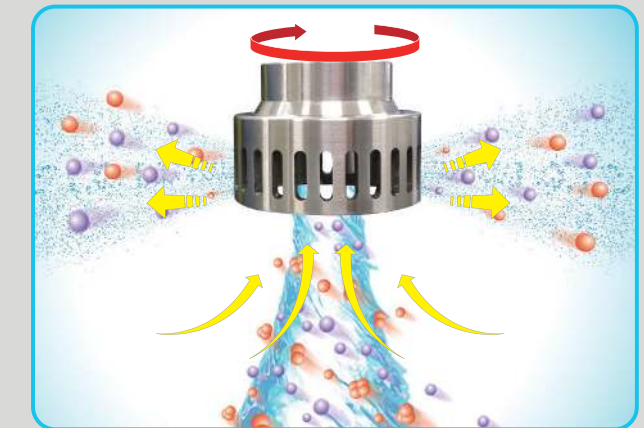
[DISPERSER]

[HOMO MIXER]

Assuming that the same rotational force is applied, when the gap between the ROTOR and the STATOR is narrower, the more powerful shear force occurs. In the case of the disperser, the Blade of the ROTOR spins with a large gap between the container walls, whereas the ROTOR and the STATOR in the HOMO MIXER spins at a high speed with a small gap(0.2mm) which provides greater shear power and emulsifying dispersing results.

Simultaneous suction and distribution!

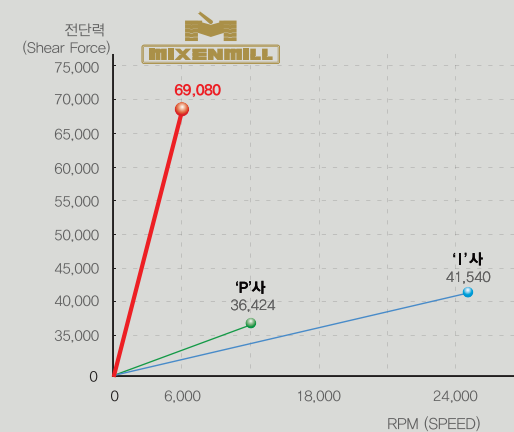
Perfect homogenization with powerful suction and shear forces!



Impeller rotation direction Material movement direction

Especially with the impeller, the high speed rotational force of the ROTOR inhales the particles from the bottom and splits them between the gap of the ROTOR and STATOR. While this process is in progress the particles are pumped out simultaneously allowing an overall flow. With this phenomenon, even the crumpled particles that have been precipitated is grinded which leads to excellent dispersion and emulsification.

Shear power comparison of MIXENMILL HOMO MIXER device vs third party device

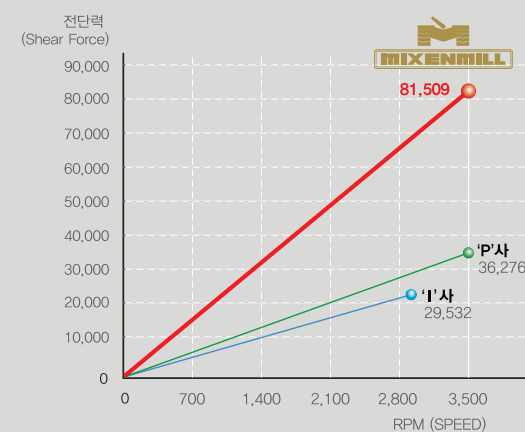


< LABORATORY HOMO MIXER >

MIXENMILL : HM1QT (0.25HP / MAX rpm 6,000 / Clearance 0.2mm)

'P' COMPANY (JAPAN) : M××× (0.5HP / MAX rpm 12,000 / Clearance 0.5mm)

'I' COMPANY (GERMANY) : U××× (0.5HP / MAX rpm 24,000 / Clearance 0.5mm)



< INDUSTRIAL HOMO MIXER >

MIXENMILL : HM005 (5HP / MAX rpm 3,500 / Clearance 0.2mm)

'P' COMPANY (JAPAN) : M××× (5HP / MAX rpm 3,500 / Clearance 0.5mm)

'I' COMPANY (GERMANY) : U××× (5HP / MAX rpm 2,850 / Clearance 0.5mm)

MIXENMILL HOMO MIXER with various options.

MIXENMILL HOMO MIXER provides products in various forms suitable for industrial characteristics.



GMP waterproof type

Explosion proof type

Canopy applied type

Vacuum defoamation type

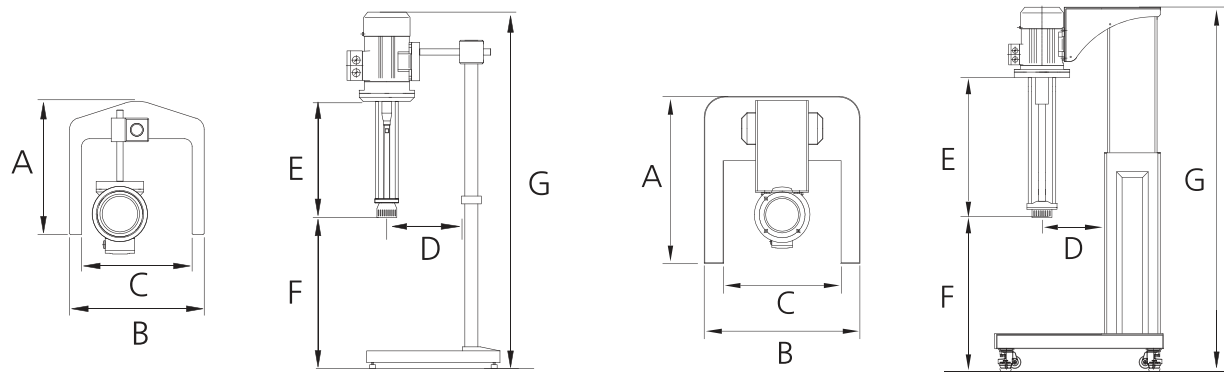
Specification

Model	Power	General Volum (물기준)	Immersion Depth (max/min)	Speed	Electrical Data
HM 1QT	0.25 HP	5 L	180 mm / 60 mm	0~6,000 rpm	SINGLE -PHASE 220V
HM 1HF	0.5 HP	10 L	260 mm / 70 mm	0~5,100 rpm	
HM 001	1 HP	30 L	350 mm / 100 mm	0~3,500 rpm	3 -PHASE 220/380/440V 선택
HM 003	3 HP	80 L	630 mm / 160 mm	0~3,500 rpm	
HM 005	5 HP	1500 L	760 mm / 170 mm	0~3,500 rpm	
HM 010	10 HP	5000 L	900 mm / 180 mm	0~3,500 rpm	

* IMMERSION DEPTH is a maximum and minimum hight of the SHAFT which can be submerged in the SAMPLE.
* VOLUME is a model specific capacity of water amount which is generally used.
* Please contact us for information on advanced models.

Size

LAB SCALE



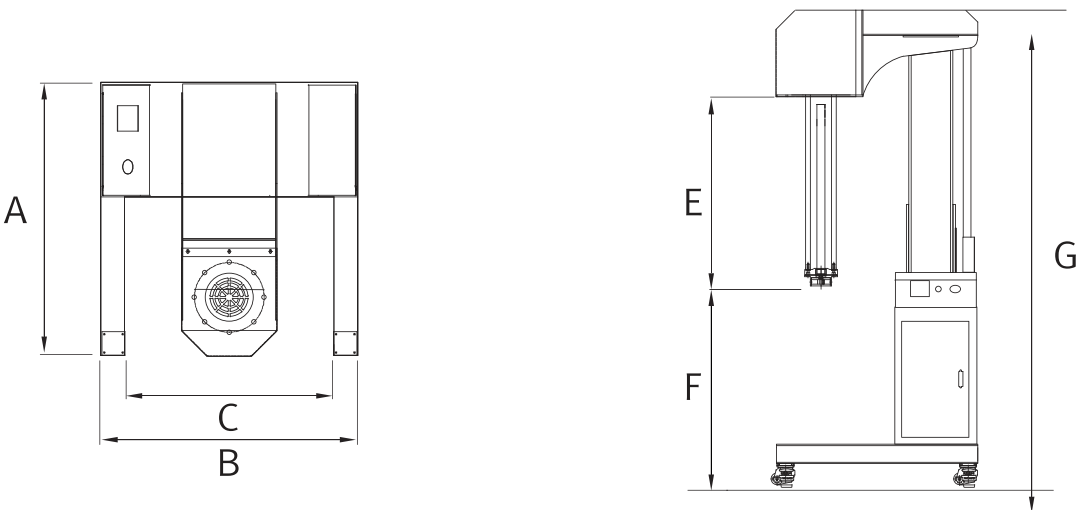
Manual Lift

Automated Lift

LIFT TYPE	Model	A	B	C	D	E	F	G
수동	HM 1QT	340	340	280	150	294	380	902
	HM 1QT	400	380	300	135	294	349	837
전동	HM 1HF	400	380	300	143.5	350.5	313	919
	HM 001	600	560	420	299.5	431.5	618	1300

* The specification may vary depending on the composition options.
* Contact us for more information on lift options.

INDUSTRIAL SCALE



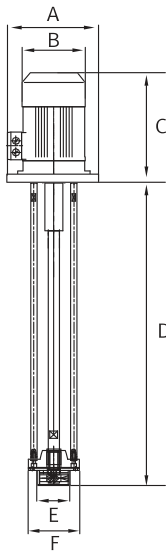
Model	A	B	C	D	E	F	G
HM 003	1000	950	800	311	639.3	889	1938.3
HM 005	1000	950	800	333	802	902	2139
HM 010	1330	1050	870	335	991.5	1110	2593.7

* The specification may vary depending on the composition options.
* Contact us for more information on HM050.
* Contact us for more information on lift options.

MIXING PART

Model	A	B	C	D	E	F
HM 1QT	156	124	256	294	Ø50	Ø60
HM 1HF	191	139	216	350.5	Ø61	Ø102
HM 001	250	158	224.5	413.5	Ø72	Ø134
HM 003	320	178	259	655	Ø80	Ø169
HM 005	350	190	317	810	Ø100	Ø196
HM 010	400	230	351	1001.5	Ø120	Ø224

* The specification may vary depending on the composition options.
* Please contact us for information on advanced models.



Synergy!!

MIXENMILL COMPLEX EQUIPMENT

MIXENMILL SOLUTION SYSTEMS for maximum efficiency.

Various equipment of MIXENMILL exhibits greater synergy when combined.

If you had to ensure quality through complex and numerous mixing processes and long hours of repetitive work, now consider MIXENMILL's proposed compound equipment. MIXENMILL's compound equipment, proven in various industrial fields, opens up new avenues for increased production efficiency through various solutions such as vacuum, pressure, heating, cooling, automatic operation through PLC (Programmable Logic Controller) application, automatic supply, and weighing. We compress multiple processes into one to provide space for production and reduce costs and energy. Moreover, MIXENMILL's compound equipment, which enhances business competitiveness, will be an excellent choice for automation, unmanned operation, and consistent mass production in the era of the fourth industrial revolution.

Please inquire now and let us help you build the most ideal system for your company.



MIXENMILL **COMPLEX EQUIPMENT** *Typical applications*

FOOD

TANDEM + INLINE MIXING SYSTEM

Translation: TANDEM MIXER: Raw material emulsification, GUM dissolution.

INLINE MIXER: For the overall homogenization, circulating dispersion is performed and transferred to the next process without a separate pump.



BIO/ PHARMACEUTICAL INDUSTRIES

HOMO + ANCHOR MIXING SYSTEM

HOMO MIXER: Dispersion and homogenization of released cellulose

ANCHOR MIXER: Low-speed agitation is used to prevent high-viscosity materials from stagnating in the tank, supporting the HOMO MIXER to achieve fine homogenization.



COSMETICS

TANDEM + ANCHOR MIXING SYSTEM

TANDEM MIXER: Emulsification of cosmetics, dissolution of gums.

ANCHOR MIXER: Helps to eliminate the DEAD ZONE, where high viscosity substances are stagnant on the edge of the tank, and ensures uniform mixing inside the tank.

