



Oh!

**Planetary centrifugal mixers
contribute to society**



Planetary centrifugal mixers / Syringe chargers

THINKY MIXER

Planetary Centrifugal System:

Revolutionized Process solution of Filling, Deagglomeration and

Mechanism of Planetary Centrifugal Mixer — THINKY MIXER

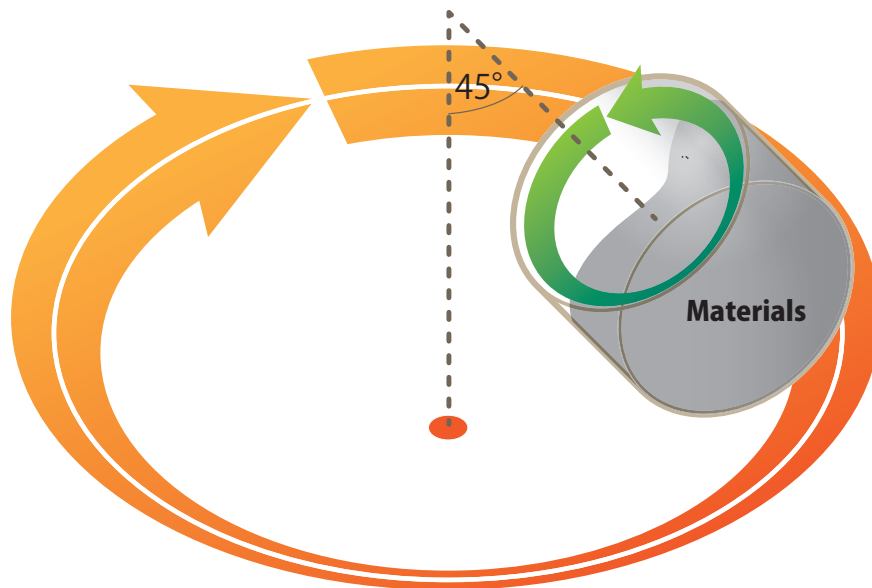
- Set the container filled with materials into the cup holder positioned at an angle of 45 degrees with respect to the axis of revolution, and rotate.
- The interaction between rotation and revolution generates a spiral flow and rising and falling currents. Air bubbles within the material are efficiently pushed out to the surface, enabling mixing and dispersion without generating air bubbles.

Revolution

Power to accelerate defoaming

Rotation

Power to accelerate mixing



Spiral flow and vertical convection of oil-based clay

Start



Two layers of high viscosity oil-based clay.



Finish



In just 7 minutes, uniform mixing is completed. No air bubbles are found.

Mixing, Defoaming, Dispersion Methods.



Customer industries and fields, and principal applications

■ Energy industry

Electrode/electrolytic materials.....Lithium-ion cells, fuel cells
Wiring materials.....Solar cells
Device materials.....Dye-sensitized solar cells
Superconductive materials.....Wire rods, electrode materials

■ Life science

Drug development (drug discovery, safety testing)
 Poorly soluble compounds, suspension preparation
Prescription drugs.....Skin care drugs
Bioengineering.....MEMS and DNA analysis
Medical equipment.....Endoscopes
Biomaterials.. Artificial bones, upper and lower limb prostheses, dental materials
Cosmetics.....Lipsticks, foundations
Food products.....Thickening agents (nursing care food)

■ Electronics

Car electronics...Batteries, sensors, electromagnetic wave shielding materials
Indication and light-emitting devices.....FPDs, LEDs, OLEDs
Communications devices.....Optical fibers, repeaters
Printed devices.....OLEDs, sensors, MEMS
Electronic materials..Capacitors, crystal oscillator devices, mounting processes

■ Material science

Aerospace.....Adhesives, heat-insulating agents, fuel materials
Robotics.....Sensors, materials (resins, pastes)
Structures.....Nanocellulose

■ Other markets

Basic research at universities and examining bodies
Quality assurance divisions and analytical bodies

Usage purposes and principal materials

■ Agitation (mixing), defoaming

Two-part resin materials.....Epoxy, silicone, urethane
Inks.....Coloring, UV type, color samples
Cosmetics..Foundations, lipsticks, nail care products, lotions, gels
Skin care drugs.....Ointment preparation
Biomaterials.....Artificial bones, dental materials

■ Dispersion (deagglomeration)

Functional resins.....Conductivity improvement, anti-static measures, wear-resistance enhancement
Insulating/resistive pastes.....Resin, carbon, nanomaterials
Metal pastes.....Gold, silver, platinum, solder
Inorganic material pastes.....Glass, ceramics
Display materials.....Sealing materials, moisture-adsorbing materials, liquid crystal materials
LED sealing materials.....Silicone, fluorescent materials
Coating materials.....Coating materials (pigments)

■ Defoaming, degassing, antifoaming

Chemical materials.....Dissolved oxygen reduction
 Property improvement, yield improvement, degradation control
Pharmaceutical materials.....Void removal, bubble reduction
 Drug effect stabilization, bubbling reduction, measurement error reduction
Electronic materials.....Void (bubble) reduction
 Property improvement, dispensing/printing yield improvement
Display materials.....Bubble reduction, moisture control
 Additive amount control improvement, aging degradation reduction

■ Pulverization

Medical drugs, agricultural chemicals (Poorly soluble compounds)
 Suspension preparation (discovery and safety testing of new drugs)

Battery materials.....Electrode materials, solid electrolytes
Inorganic material pastes.....Glass, ceramics, carbon
Cosmetics.....Skin whitening materials (hydroquinone), anti-aging materials

■ Emulsification

Inks.....Emulsion inks
Medical materials.....Peptide vaccines
Cosmetics.....Cream
Fuel.....Jet fuel

Optical materials..Bubble reduction, dissolved oxygen reduction
 Scattering suppression, optical property improvement

Inks, coating materials.....Dissolved oxygen reduction
 Color stabilization, aging degradation reduction

Quality assurance divisions

.....Void removal, bubble reduction, dissolved oxygen reduction
 Measurement variation reduction, measurement accuracy improvement

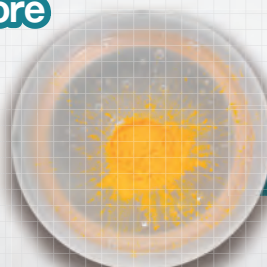
"7 features" and "3 foundations" to bring innovative

7 features

- Feature 1 Supports smooth collaboration between markedly short processing time and filling
- Feature 2 Realizes simultaneous uniform mixing, dispersion, and deformation processes
- Feature 3 Compatible with materials having different viscosities and specific gravities (powders are also dispersible)
- Feature 4 Reduces changes in material characteristics
- Feature 5 Easy operation and guaranteed reproducibility
- Feature 6 Contact-free and in-container processing for significant reduction of pre/post processes
- Feature 7 Compatible with containers of every shape/form

Material mixed and defoamed in a THINKY MIXER can be filled by the syringe charger.

Before



ARE-310



THINKY MIXER planetary centrifugal mixer is used worldwide

- | | | | | | |
|-----------------|--------------------|---------------|-----------------|------------------|---------------------|
| 1. USA | 11. France | 21. Bulgaria | 31. Taiwan | 41. New Zealand | 51. South Africa |
| 2. Canada | 12. Italy | 22. Norway | 32. Korea | 42. India | 52. Morocco |
| 3. Brazil | 13. Czech Republic | 23. Finland | 33. Mongolia | 43. Sri Lanka | 53. Egypt |
| 4. England | 14. Slovakia | 24. Sweden | 34. Singapore | 44. Kazakhstan | 54. Japan |
| 5. Ireland | 15. Spain | 25. Denmark | 35. Malaysia | 45. Uzbekistan | and other countries |
| 6. Belgium | 16. Portugal | 26. Russia | 36. Thailand | 46. Saudi Arabia | |
| 7. Netherlands | 17. Croatia | 27. Lithuania | 37. Indonesia | 47. UAE | |
| 8. Germany | 18. Poland | 28. Latvia | 38. Vietnam | 48. Qatar | |
| 9. Austria | 19. Hungary | 29. Estonia | 39. Philippines | 49. Israel | |
| 10. Switzerland | 20. Romania | 30. China | 40. Australia | 50. Turkey | no particular order |

development and production of cutting-edge materials

3 foundations

- Foundation 1 Over 30 years as a pioneer in the industry
- Foundation 2 Outstanding reliability represented by the highest record of adoptions in the world
- Foundation 3 Thorough technical support before implementation

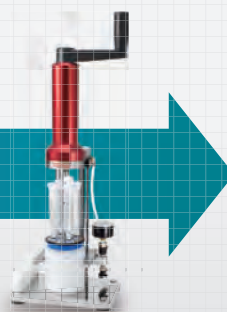
Simple Operation



After



ARC-40H



Quality and reliability supported by customers

Tsutomu Miyasaka

Professor, Doctor of Engineering, Toin University of Yokohama



Without THINKY MIXER, the time required would be ten times or longer and costs would increase.

Hidehiro Kamiya

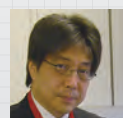
Professor, Doctor of Engineering, Institute of Engineering, Tokyo University of Agriculture and Technology



The mixer is effective in preparing a stable suspension and mixture.

Hirobumi Ushijima

National Institute of Advanced Industrial Science and Technology



THINKY Vacuum Mixer is essential for printed electronics that require highly precise resin printing plates.

Chiaki Sato

Associate Professor, Doctor of Engineering, Tokyo Institute of Technology



THINKY products are essential in the study of adhesion.

Material Processing

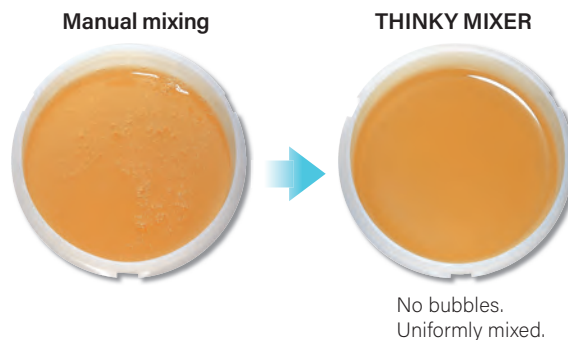
Examples of material processing

Mixing and defoaming of resin + resin

2-part Epoxy Resin



Polyimide



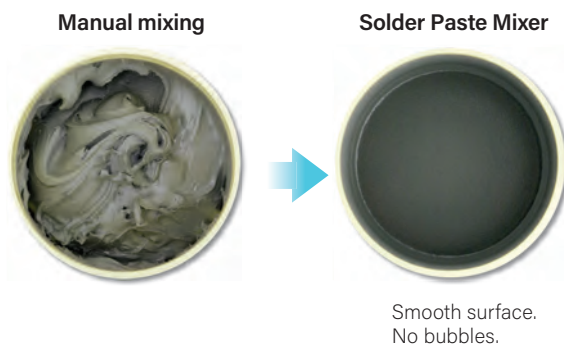
Mixing and defoaming of resin + powder

Uniform dispersion can be achieved without sedimentation.

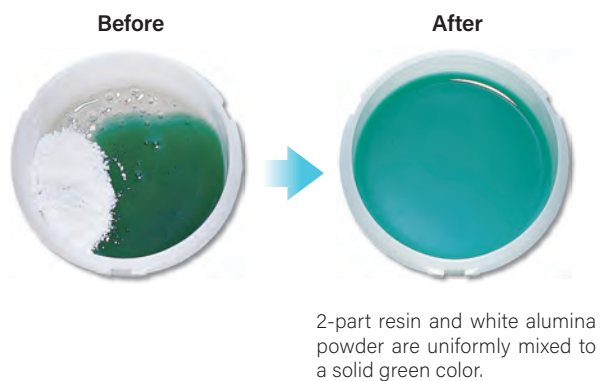
Silver Paste



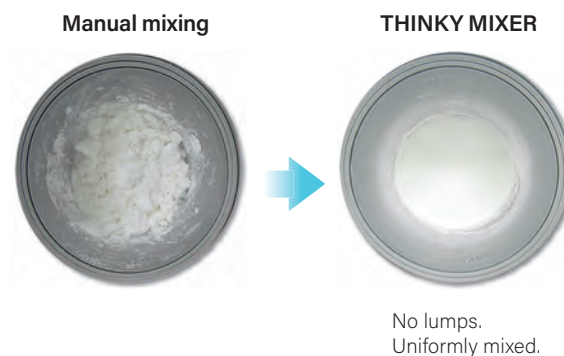
Solder Paste (solder powder and flux)



Epoxy Resin (base + hardener) and Alumina Powder



Silicone Resin and Calcium Carbonate (volume ratio 1:5)



Mixing and defoaming of pastes

High viscosity materials that are difficult to mix manually can be easily processed.

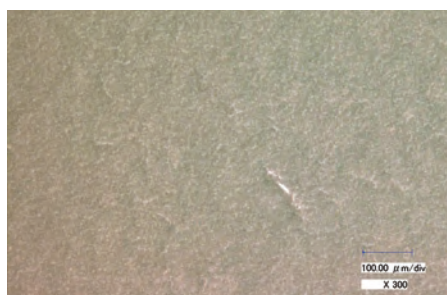
Cosmetic Foundation (wax and three types of iron oxides)



Four types of materials are uniformly mixed to a smooth cream consistency. Air bubbles are eliminated, giving vibrant color and a smooth feel.

Low viscosity liquid + powder (Slurry)

Nano Ceramics and Water 70 V%

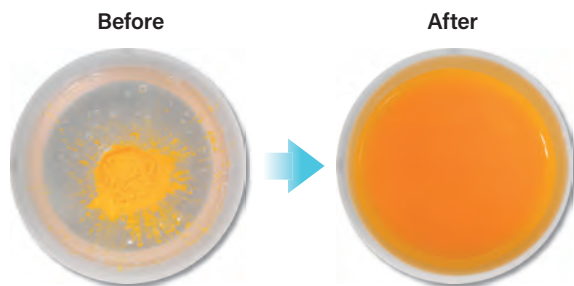


■ ARE-310
Dispersion of ceramic powders

Resin + high specific gravity powder

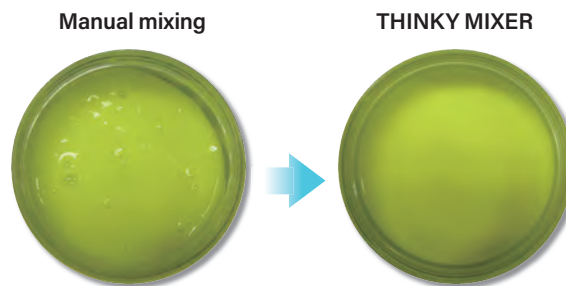
Materials with different specific gravity are dispersed without sedimentation.

Low Viscosity Silicone Resin and Silicate Fluorescent Material



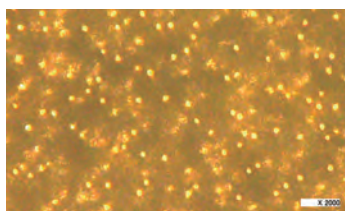
The fluorescent material is uniformly dispersed without sedimentation in low viscosity silicone resin (about 3 Pa s (3,000 cP)).

Sealant for White LED (silicone resin and fluorescent material)



The fluorescent material with high specific gravity is uniformly dispersed without sedimentation in low viscosity silicone.

Au Ball



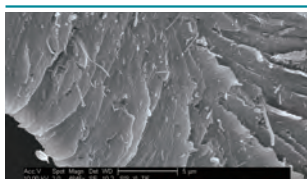
■ ARV-3000TWIN
Dispersion of Au powders (3 μm) and LCD sealant (400 Pa s)



■ ARV-310LED
Dispersion of orthosilicate fluorescent material (phosphor with about 15 μm particle diameter) and low viscosity silicone resin (3 Pa s) for LED

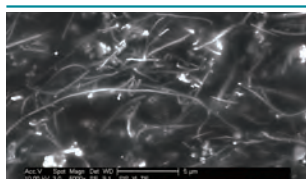
Processing nano materials

CNF 5V%



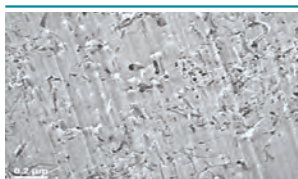
■ ARE-310
Carbon nano fiber is uniformly dispersed in epoxy.
SEM photo by George Hansen, Metal Matrix Composites Company

CNF 10V%



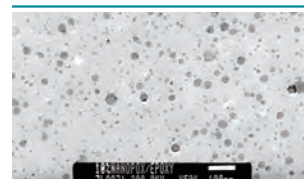
■ ARE-310
Carbon nano fiber is uniformly dispersed in polymer.
SEM photo by George Hansen, Metal Matrix Composites Company

MWNT



■ ARE-310
MWNT is uniformly dispersed in 2-part thermosetting resin.
SEM photo by Dr. J.H. Koo, University of Texas at Austin

Nano-silica



■ ARE-310
Nano-silica is uniformly dispersed in epoxy resin.
SEM photo by Dr. J.H. Koo, University of Texas at Austin

THINKY MIXER

Large selection of products meets customer needs

The planetary centrifugal **THINKY MIXER** is divided into two groups: the "non-vacuum type," which provides simultaneous process of mixing, dispersing and deaerating/defoaming under atmospheric pressure; and the "vacuum type," which provides submicron level defoaming with a vacuum function. Each type provides product scale up from small to large models for laboratory use and products that support mass production lines.

Also, there are **Solder Paste Mixer** and LED type for high specific gravity powders, such as LED phosphor.

The vacuum **Syringe Charger** can easily feed materials with high viscosity and high thixotropy processed by THINKY MIXER or Solder Paste Mixer into syringes. Select the best model for your purpose, application or materials.

Planetary Centrifugal Mixers

THINKY MIXER

■ Non-vacuum type

► P. 9 - 12

Standard
container
capacity

100 ml



AR-100

► P. 10

300 ml



ARE-250CE ★

► P. 9

300 ml



ARE-310

► P. 9

Planetary Centrifugal Mixers

THINKY MIXER

■ Vacuum type

► P. 13 - 16

Standard
container
capacity

300 ml



ARV-310P ★

► P. 13

550 ml



ARV-501 ★

► P. 13

750 ml x2



ARV-931TWIN ★

► P. 14

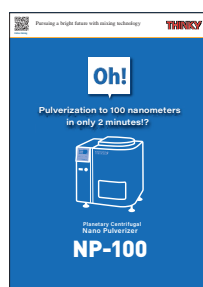
Nano Pulverizer



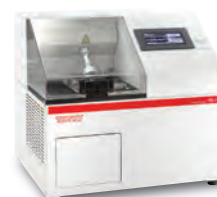
NP-100 ★



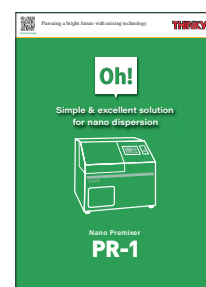
NP-500TWIN



Nano Premixer



PR-1 ★



Prototype of a planetary centrifugal system mixer

In 1987



300 ml x2



ARE-400TWIN ★

► P. 10

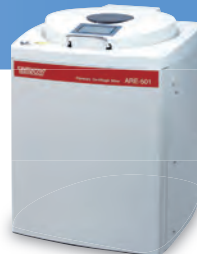
650 ml



ARE-500 ★

► P. 11

650 ml



ARE-501

► P. 11

Specialized model

Solder Paste Mixer

150 ml



SR-500 ★

► P. 12

High Specific Gravity Material Mixer (Vacuum type)

150 ml



ARV-50LED

► P. 16

300 ml



ARV-310LED ★

► P. 16

4 L



ARV-5000 ★

► P. 14

4 L x2



ARV-3000TWIN

► P. 15

10 L x2



ARV-10kTWIN ★

► P. 15

Container/Adapter



Syringe Charger



ARC-40H

► P. 17



ARC-600TWIN

► P. 17

★CE Certified model available

THINKY MIXER / Non-vacuum type

ARE-310 / ARE-250 CE

* The ARE-250CE is the CE-certified model of the ARE-310.

310 g

Maximum capacity

300 ml
resin container

Standard container

User-friendly & highly versatile standard type

- Over 400 G of acceleration generated by rotation and revolution speed allows powerful simultaneous mixing and defoaming
- A powerful 510 G in defoaming mode
- Outstanding rigidity and durability; vibration sensor and door locking function secure a high degree of safety
- Lightweight, compact body with maximum capacity of 310 g
- Optimal mixing for any material can be achieved by adjusting the RPM
- Each memory can process up to 5 steps for continuous operation (STP mode)
- Equipped with an original air cooling mechanism
- Different types of containers can be utilized with THINKY adapters
- 10 memories (STD x 5, STP x 5) can be set for operation (ARE-310 only)



ARE-310

Unit Dimensions	H390 × W300 × D340 (mm)
Unit Weight	Approx. 21 kg



CE CE-certified model **ARE-250CE**

Unit Dimensions	H380 × W300 × D315 (mm)
Unit Weight	Approx. 22 kg

Optional **ENS-10**

Heat discharger table dedicated for planetary centrifugal mixers

Cooling system for THINKY MIXER

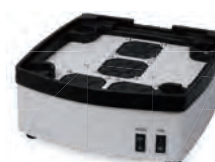


Unit Dimensions	H145 × W310 × D320 (mm)
Unit Weight	Approx. 7 kg

Optional **ENS-10CE**

Heat discharger table dedicated for planetary centrifugal mixers

Cooling system for THINKY MIXER



Unit Dimensions	H145 × W310 × D320 (mm)
Unit Weight	Approx. 7 kg

AR-100

140 g

Maximum capacity

100 ml
disposable container

Standard container

Our most compact portable planetary centrifugal mixer

- The space-saving, compact design is best for fundamental experiments by researchers and engineers
- Have been utilized at universities and laboratories
- Specialized for low volume. Mixing capacity from a few grams
- Optimal mixing for any material can be achieved by adjusting the RPM
- 5 memories can be set for timer operation
- Easy to open and close the sliding lid
- Mounted stroboscope allows observation of the material during operation
- Different types of containers can be utilized with THINKY adapters



*This product is not suitable for continuous operation or frequent use; this is recommended for R&D purposes.

Unit Dimensions	H328 × W250 × D250 (mm)
Unit Weight	Approx. 15 kg

ARE-400TWIN

**400 g
×2**

Maximum capacity

300 ml
resin container

Standard container

State-of-the-art twin system that can vary the rotation-revolution ratio

- Independent variable mechanism for rotation and revolution
- Twin system, maximum capacity of 400 g x 2
- Capable of mixing high viscosity material such as viscous grease
- Effective in setting memories for materials that are vulnerable to temperature rise
- Can display memory settings, rotations and material temperature in real time (USB Type B standard equipment) by connecting to PC
- Different types of containers can be utilized with THINKY adapters
- Sensor unit that can detect temperature of materials being mixed in real time (optional)



CE CE-certified model
Product name: ARE-400TWIN CE

Unit Dimensions	H560 × W460 × D480 (mm)
Unit Weight	Approx. 70 kg

ARE-500

1100 g

Maximum capacity

650 ml
resin container

Standard container

Many cases of adoption for production applications

- Successful introduction to production applications
- The high durability drive system was developed for manufacturing production
- Optimal mixing for any material can be achieved by adjusting the RPM
- Easy operation with membrane switches
- 10 memories (STDx5, STPx5) can be set for operation
- Different types of containers can be utilized with THINKY adapters

Optional

ARE-500 / ARE-501 Stand

Unit Dimensions	H240 ± 5 × W550 × D550 (mm)
Unit Weight	Approx. 15 kg



CE CE-certified model
Product name: ARE-500 CE

Unit Dimensions	H692 × W500 × D500 (mm)
Unit Weight	Approx. 95 kg



ARE-501

1100 g

Maximum capacity

650 ml
resin container

Standard container

Production site's long-seller ARE-500, now with even higher functionalities

- Improved mixing performance by increasing revolution speed and optimizing rotation/revolution ratio
- With changeable rotational speed, optimal setting is possible for any material characteristics
- Condition setting made even easier with installed touch panel
- Succeeding the highly durable ARE-500 drive unit tempered at production sites
- Added communications function contributes to traceability management
- Different types of containers can be utilized with THINKY adapters

Optional

ARE-500 / ARE-501 Stand

Unit Dimensions	H240 ± 5 × W550 × D550 (mm)
Unit Weight	Approx. 15 kg



Unit Dimensions	H689 × W500 × D500 (mm)
Unit Weight	Approx. 100 kg



THINKY MIXER / Solder Paste Mixer

SR-500

680 g

Maximum capacity

150 ml
resin container

Standard container

Temperature and viscosity adjustment & defoaming in only a few minutes

- Capable of mixing with uniformity and defoaming in just a few minutes
- 5 steps can be registered in each memory to ensure optimal temperature and viscosity adjustment
- Solder Paste from the refrigerator can be mixed and warmed to room temperature rapidly
- Capable of mixing and defoaming with commercially available 500 g containers
- Capable of mixing and defoaming less than 500 g solder paste
- By using an optional adapter, solder paste filled in a syringe can be mixed

Optional **ENs-10**

Heat discharger table dedicated for planetary centrifugal mixers

Cooling system for THINKY MIXER



CE CE-certified model
Product name: ENs-10CE

Unit Dimensions	H145 × W310 × D320 (mm)
Unit Weight	Approx. 7 kg



CE CE-certified model
Product name: SR-500 CE

Approx. 18 kg	H390 × W300 × D340 (mm)
Unit Weight	Approx. 18 kg

THINKY MIXER / Vacuum type

ARV-310P

310 g

Maximum capacity

300 ml
resin container

Standard container

Remove submicron level air bubbles without spillage & Touchpanel and traceability function

- Unlike conventional vacuum defoaming devices, the planetary centrifugal system and the vacuuming pressure reduction function prevents spillage during operation and achieves rapid removal and dispersal of submicron level air bubbles
- Optimal mixing for any material can be achieved by adjusting the RPM
- Different types of containers can be utilized with THINKY adapters
- Real-time rpm and vacuum display
- 20 recipes can be programmed with online connection



CE CE-certified model
Product name: ARV-310P CE

Explosion protection can be added

Unit Dimensions	H450 × W555 × D645 (mm)
Unit Weight	Approx. 90 kg

ARV-501

700 g

Maximum capacity

550 ml
resin container

Standard container

Vacuum-type ARE-500, a reliable model at production sites

- THINKY's original cup holder vacuum system minimizes the vacuum volume and significantly reduces the time required to achieve the set vacuum level and atmosphere releasing
- Succeeding the highly durable ARE-500 drive unit tempered at production sites
- With the new defoaming mode thanks to the strong centrifugal force that has been adopted as a standard feature, the model is now applicable to volatile materials as well.
- Built-in vacuum pump type for dedicated stand also available, reducing contact area to a minimum
- Added communications function contributes to traceability management
- Different types of containers can be utilized with THINKY adapters

Optional

ARV-501 Stand with Built-in Vacuum Pump PU-501

Unit Dimensions	H300 × W493 × D493 (mm)
Unit Weight	Approx. 47 kg



CE CE-certified model
Product name: ARV-501 CE

Unit Dimensions	H815 × W500 × D595 (mm)
Unit Weight	Approx. 100 kg

ARV-931TWIN

**930 g
×2**

 Maximum
capacity

750 ml
resin container

 Standard
container

Manufacturing model with two-container system & 1.8 kg (930 g × 2) maximum vacuum processing

- Over 400 G of acceleration generated by rotation and revolution speed allows powerful simultaneous mixing and vacuum defoaming
- Defoaming mode generates powerful acceleration of 670 G at maximum for accurate defoaming of volatile materials
- Maximum capacity 1860 g / Removal of submicron level air bubbles
- Unlike conventional vacuum defoaming devices, the planetary centrifugal system and the vacuuming pressure reduction function prevents spillage during operation and achieves rapid removal and dispersal of submicron level bubbles
- Optimal mixing for any material can be achieved by adjusting the RPM
- THINKY's original cup holder vacuum system minimizes the vacuum volume and significantly reduces the time required to achieve the set vacuum level and atmosphere releasing
- Different types of containers can be utilized with THINKY adapters
- 20 recipes can be programmed with online connection
- Added communications function contributes to traceability management



CE CE-certified model
Product name: ARV-931 TWIN CE

Unit Dimensions	H900 × W660 × D670 (mm) (not including handle)
Unit Weight	Approx. 240 kg

ARV-5000

5 kg

 Maximum
capacity

4 L
resin container

 Standard
container

Uniform mixing and removal of submicron level air bubbles for up to 5 kg of materials

- Mass production model of ARE-310 and ARV-310P with maximum capacity of 5 kg
- Unlike conventional vacuum defoaming devices, the planetary centrifugal system and the vacuuming pressure reduction function prevents spillage during operation and achieves rapid removal and dispersal of submicron level bubbles
- Optimal mixing for any material can be achieved by adjusting the RPM
- Excellent operability with touch panel
- THINKY's original cup holder vacuum system minimizes the vacuum volume and significantly reduces the time required for vacuuming and atmosphere releasing
- Equipped with an original air cooling mechanism
- Various containers can be used
- Different types of containers can be utilized with THINKY adapters
- External host communication function (optional)



CE CE-certified model
Product name: ARV-5000 CE

**Explosion protection
can be added**

Unit Dimensions	H1650 × W1050 × D925 (mm)
Unit Weight	Approx. 500 kg

ARV-3000TWIN

Uniform mixing and removal of submicron level air bubbles for up to 10 kg (5 kg × 2) of materials

- Mass production model of ARE-310 and ARV-310P with maximum capacity of 10 kg
- Unlike conventional vacuum defoaming devices, the planetary centrifugal system and the vacuuming pressure reduction function prevents spillage during operation and achieves rapid removal and dispersal of submicron level bubbles
- Optimal parameter settings for materials can be achieved with the variable rotation/revolution ratio mechanism
- Excellent operability with touch panel
- Improved efficiency, e.g. increased process volume, standardized operations, stabilized quality, and reduction of material loss
- THINKY's original cup holder vacuum system minimizes the vacuum volume and significantly reduces the time required for vacuuming and atmosphere releasing
- Capable of operating continuously during mass production with the unique heat dissipating mechanism
- Capable of processing One Drop Fill (ODF) sealant defoaming applications and adopting for major ODF sealant
- Clean room compatibility
- Different types of containers can be utilized with THINKY adapters

5 kg ×2	4 L resin container	Specially designed SUS container
Maximum capacity		Standard container



**Explosion protection
can be added**

Unit Dimensions	H1600 × W1330 × D1015 (mm)
Unit Weight	Approx. 700 kg

ARV-10kTWIN

Mass production model up to 29 kg (14.5 kg × 2) capacity while achieving the performance of laboratory models

- Mass production model of ARE-310 and ARV-310P with maximum capacity of 29 kg
- Unlike conventional vacuum defoaming devices, the planetary centrifugal system and the vacuuming pressure reduction function prevents spillage during operation and achieves rapid removal and dispersal of submicron level bubbles
- Optimal parameter settings for materials can be achieved with the variable rotation/revolution ratio mechanism
- Excellent operability with touch panel
- THINKY's original cup holder vacuum system minimizes the vacuum volume and significantly reduces the time required for vacuuming and atmosphere releasing
- Removal of submicron level air bubbles
- Capable of operating continuously during mass production with the unique heat dissipating mechanism
- Capable of processing at atmospheric pressure for processing materials with volatile components
- Different types of containers can be utilized with THINKY adapters

14.5 kg ×2	Specially designed 10 L SUS container
Maximum capacity	Standard container



**Explosion protection
can be added**

CE CE-certified model
Product name: ARV-10kTWIN CE

Unit Dimensions	H1280 × W1900 × D1370 (mm)
Unit Weight	Approx. 1500 kg

Optional Raku-Raku Hand

※Raku-Raku Hand is the registered trade mark of AIKOKU ALPHA CORPORATION.

Unit Dimensions	H3396 × W1600 × D1600 (mm)
Unit Weight	Approx. 90 kg



THINKY MIXER / High Specific Gravity Material Mixer (Vacuum type)

ARV-50LED

Ultracompact vacuum mixer: dispersion of high specific gravity powder without sedimentation

- A small amount of material (50 ml) can be dispersed and defoamed rapidly
- Space-saving vacuum mixer
- Stainless-steel specification
- Excellent operability with touch panel
- Multilingual language (Japanese, English, Chinese and Korean)
- Universal power supply (AC85-265 V)
- Low power consumption (Maximum 150 VA)
- Auto-balance feature

113 g

Maximum capacity

150 ml
resin container

Standard container



Unit Dimensions	H380 × W300 × D233 (mm)
Unit Weight	Approx. 20 kg

ARV-310LED

Dispersion of high specific gravity powder such as LED fluorescent substances without sedimentation

- A vacuum pressure reduction function removes submicron air bubbles and gives outstanding dispersion performance
- No spillage of material during operation
- Optimal mixing for any material can be achieved by adjusting the RPM
- 9 memories can be set for timer operation
- 5 steps can be registered in each memory

310 g

Maximum capacity

300 ml
resin container

Standard container



CE CE-certified model
Product name: ARV-310LED CE

Unit Dimensions	H450 × W555 × D645 (mm)
Unit Weight	Approx. 90 kg

Vacuum Syringe Chargers

ARC-40H

Improved filling efficiency for small capacity syringes

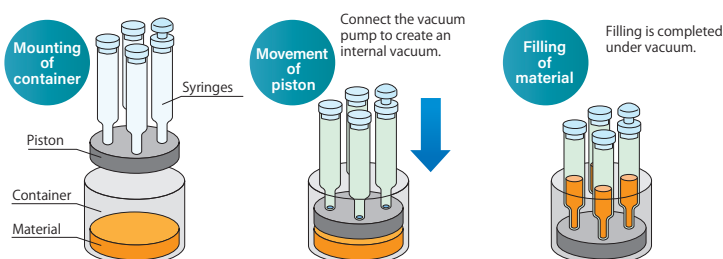
- Capable of filling materials into 3, 5, and 10 ml syringes, which are too small to fill manually
- Capable of filling low to high viscous materials
- Up to 4 syringes can be filled at one time
- With THINKY MIXERS, work efficiency from mixing/defoaming to filling is increased
- Capable of operating in both vacuum and atmospheric pressure

Unit Dimensions	H550 × W200 × D140 (mm) (Up to the handle height)
Unit Weight	Approx. 7.5 kg
Max processing volume	10 ml Syringes × 4 * Consult us for 20, 30, and 50 ml syringes. We will provide customization.

3~10ml	Non-Vacuum Vacuum	4 syringes
Standard syringe size	Pressure	Max number of syringes



Illustration of operation



ARC-600TWIN

Automatic filling control for large capacity syringes

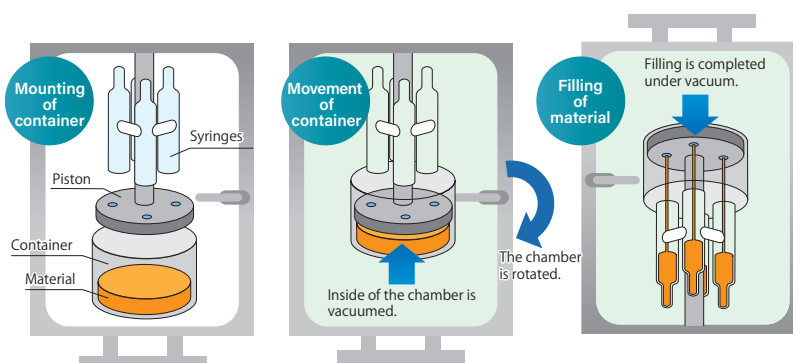
- No air bubbles. No dripping
- Simultaneously filling up to 16 syringes. Supports large capacity syringes
- Reduced filling time. Easy to clean after use
- Few cleaning parts and few consumables
- Excellent capability for filling high viscous materials such as One Drop Fill (ODF) process sealant
- Automated operations: filling process and vacuum pressure are all automated and systematized

Unit Dimensions	H2170 × W1125 × D1045 (mm)
Unit Weight	Approx. 650 kg
Max processing volume	Customizable

60ml	Vacuum	Customizable
Standard syringe size	Pressure	Max number of syringes



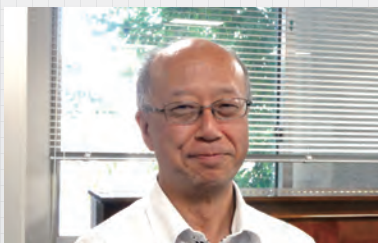
Illustration of operation



Introduction Examples

Users' voice

THINKY MIXER is loved by the leading authority in the field of powders



Hidehiro Kamiya

*Dean, Doctor of Engineering
Graduate School of Bio-Applications &
Systems Engineering (BASE)
Professor, Institute of Engineering,
Tokyo University of Agriculture and Technology*

Research overview

When I received my doctorate about thirty years ago, my professor told me that the subjects from now on would be nano particles and high-temperature powder adhesion, and I started to examine those subjects. I began the study of nanotechnology before the Clinton administration advocated the targets of the national strategic research plan in 2001. As for the adhesion of fine particles at high temperature, it was revealed

that the phenomenon of high-temperature ash adhesion caused technical difficulties in power generation from coal or biomass, and companies have offered joint research projects repeatedly. PM 2.5 has been studied for more than ten years, and I think it is important to initiate an investigation before the boom.

Using THINKY MIXER for 20 years

I first heard of the THINKY MIXER 20 years ago when my associate mentioned the product to me. It was soon after MX-201 was introduced to the market. The equipment had excellent capability to knead and defoam small samples in the laboratory. At the time, it was also used for premixing to prepare ceramic slurry with added trace components and for preparatory surface modification to blend hard-to-wet particles in an organic solvent.

The simplicity of THINKY MIXER makes it easy to do trials

Major recent uses are for the dispersion of fine particles in solvents to produce polymer composites and the preparation of electrode

material slurry for lithium ion batteries. The equipment is also effective in dry premixing of fine particles. The simplicity of THINKY MIXER makes it easy to do trials, so I don't even remember all the experiments I've done. The operation is simple and everything works well. Rapid processing is also attractive. The equipment is effective for preparing stable suspensions and mixtures. Last year, the latest model ARE-310 was purchased to replace MX-201 which had been used for years.

Possible application to 3D printers

My recent research is to clarify the mechanism of fine particle dispersion with surface modification and the primary challenge is the arbitrary dispersion and aggregation of fine and nano particles. Moreover, I am thinking about the development and mechanism explanation of application and molding methods after dispersion and, in particular, the applicability to 3D printers using fine ceramic particles.

Guaranteed by the expert of adhesives – THINKY products are essential



Chiaki Sato

*Associate Professor, Doctor (Engineering)
Area of ultimate materials,
Advanced Materials Division,
Precision and Intelligence Laboratory
Tokyo Institute of Technology*

THINKY MIXER and Syringe Charger are useful for preparing tensile test specimens of cured adhesives

I study the boundary region between mechanics and chemistry, and the specific research themes are the development of lightweight vehicle bodies with the use of carbon fiber reinforced plastic composite (CFRP), the development of removable

adhesive containing thermally expansive microcapsules, and the study of shrink and residual stress generation mechanisms during the curing process of ultraviolet-curable adhesives.

The most important element in understanding the mechanical properties of adhesives is the tensile test of the cured matter. However, it is surprisingly troublesome to create good specimens. The high viscosity of adhesive creates many bubbles during mixing which leads to foamy specimens. You cannot measure high strength with them. Therefore, my laboratory creates specimens using THINKY products.

Let me give you an example of two-component adhesives, such as epoxy adhesives. A liquid adhesive base component and a curative component are placed in a cup-type container and kneaded by THINKY MIXER. This process also removes bubbles, and a vacuum defoaming type is suitable (ARV-310). At the time of kneading completion, you can obtain a uniformly mixed liquid adhesive with few bubbles. This is not taken out from the cup-type container but directly injected into syringes with the Syringe Charger ARC-40*. It is difficult to

transfer adhesives into syringes without bubbles, so Syringe Charger is extremely useful. After filling, the adhesive is pneumatically ejected from the syringes to specimen dies. (The trick is to slightly warm the hot plate to control the viscosity of the adhesive.) Then, the specimen dies are heated to cure the adhesive before completion of the tensile test specimen of the cured adhesive. This method enables the creation of good test specimens with few bubbles. THINKY products play a significant role in our laboratory and are essential for the study of adhesives.

ARC-40* sales discontinued (Successor: ARC-40H)

His book below also introduces THINKY ARV-310.

**Design of Adhesive Joints Under Humid Conditions
(Advanced Structured Materials)**

Co-authored by Lucas F. M. da Silva and Chiaki Sato
Publisher: Springer

Total Support System

We provide excellent customer support with our total support system

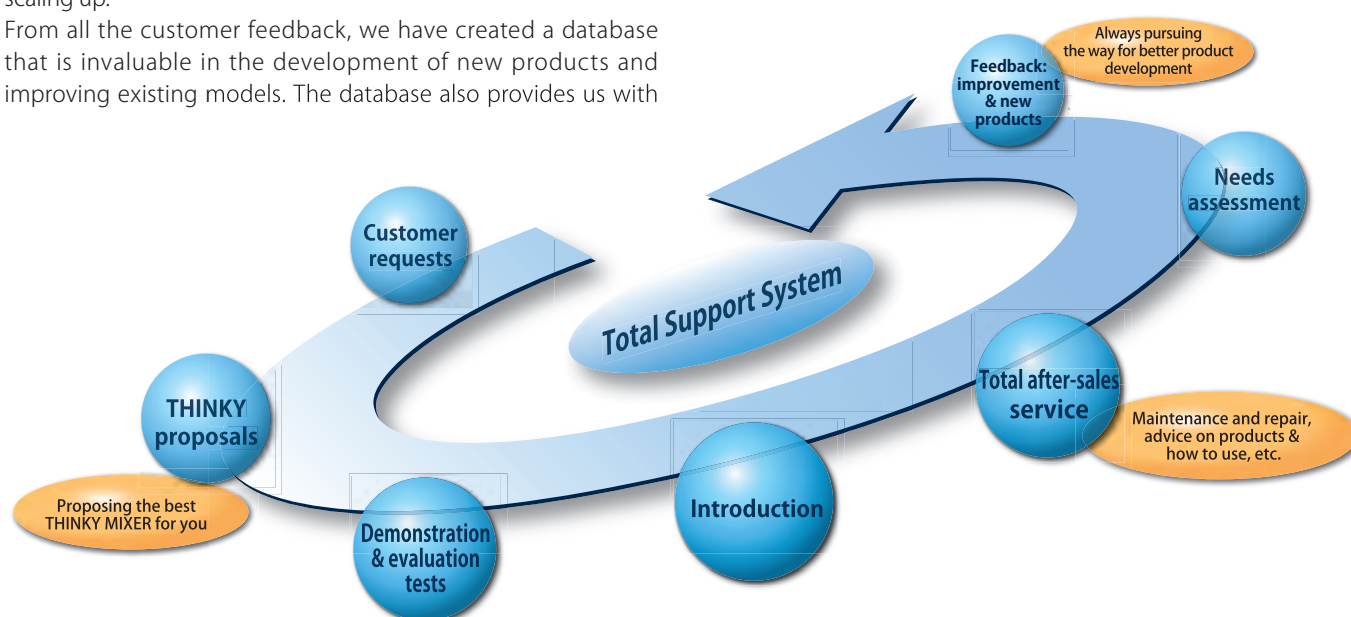
For the total life cycle of your THINKY MIXER, our customer service team will respond to your requests.

We listen to your requirements, purpose and conditions of use, and then suggest the optimal model. As a part of our service, not only do we ask you to evaluate our unit with your material, but we also help develop recipes suitable for the material and our technical experts offer advice on operation. After installation of THINKY MIXER, we welcome any queries and comments. We can also offer in-depth advice on material processing that is different from your initial evaluation, and advise you on any plans for scaling up.

From all the customer feedback, we have created a database that is invaluable in the development of new products and improving existing models. The database also provides us with

a wide range of technical data from which to draw upon and improve our response to customers and deliver increased customer satisfaction.

THINKY is firmly committed to our original pioneering spirit, and continues to make every effort to develop customer-oriented products and strengthen our customer service system. We look forward to hearing your opinions and requests concerning our products and services.



Our Fivefold Support System Enables Safer and More Convenient Device Use

1 A wide variety of dedicated adaptors

Supply us with a sample of an actual container and we make an adaptor for it.

2 A global distribution network and an extensive product lineup

With our business bases in California, U.S.A., and Shenzhen, Shanghai, and Beijing in China, we have established a network of distributors in more than 50 countries around the world. We also offer CE-compliant models for the European Union (EU).

3 Offering useful information

We offer useful and timely technical information for customers from the THINKY Library on our website.

4 PC connections and online connectivity possible

For product traceability at manufacturing sites, we offer consultations regarding PC connections or online connectivity at factories.

5 After-sales service

Our service department at the head office works with our worldwide distributors to offer services so that customers may be able to use our devices with no worries no matter where they are.

Original THINKY adapters

THINKY provides original containers and adapters to fit the characteristics of the material.
We produce more than 150 custom-made adapters a year to meet customer needs.

Creating a whole new adapter is always challenging.

Our professional team considers the material characteristics, customer issues and the operating environment in order to design and supply you with custom-made adapters for your materials.

We are grateful for the frequent compliments from customers who appreciate the high quality of adapters made by THINKY.

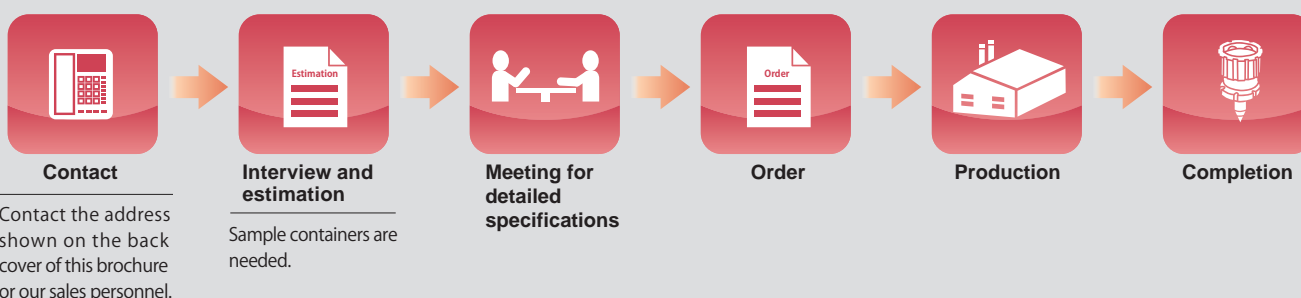


The number of customized adaptors has reached 1,500.

We are more than happy to customize an adaptor so that the container that customers are currently using can be set in our mixer as is.






By leveraging our wealth of experience and ideas as a maker who has dedicated itself to developing rotation/revolution mixers over many years, we will propose what is truly helpful for our customer.

Production flow of custom-made adapters



*For details, contact THINKY

Product Specification List / THINKY MIXER Non-vacuum type / Solder Paste

Planetary Centrifugal Mixers THINKY MIXER (Non-vacuum type)						
Model		AR-100	ARE-310	ARE-400TWIN	ARE-500	ARE-501
		 ▶ p.10	 ▶ p.9	 ▶ p.10	 ▶ p.11	 ▶ p.11
System		Planetary, propeller-less mixing	Planetary, propeller-less mixing	Planetary, propeller-less mixing	Planetary, propeller-less mixing	Planetary, propeller-less mixing
Operation Time Setting		Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments
Continuous Operation Time		Max 30 min	Max 30 min	Max 30 min	Max 30 min	Max 30 min
Programming Function		5 memories	10 memories: STD mode: 5 memories with 1 step STEP mode: 5 memories with 5 steps	20 memories with 5 steps	10 memories: STD mode: 5 memories with 1 step STEP mode: 5 memories with 5 steps	20 memories with 10 steps
Revolution/ Rotation Speed (rpm)	Mixing Mode	Revolution: 400 to 2000 rpm (adjustable) Rotation: Approx. 0.4 revolution-to-rotation ratio	Revolution: STD mode 2000rpm(fixed) STEP mode 0, 200 to 2000 rpm (adjustable) Rotation: Approx. 0.4 revolution-to-rotation ratio (STD and STEP modes)	Revolution: 0, 200 to 1600 rpm (adjustable) Rotation: 0, 200 to 1600 rpm (adjustable) Max up to 1.0 revolution-to-rotation ratio (When 600 rpm of revolution, minimum rotation speed is 200 rpm.)	Revolution: 400 to 1000 rpm (adjustable) Rotation: Approx. 1.0 revolution-to rotation ratio	Revolution: 1500rpm (400 to 1500 rpm (adjustable)) Rotation: 867rpm (Approx. 0.58 revolution-to rotation ratio)
	Defoaming Mode	Revolution: 2200 rpm (fixed) Rotation: 0 rpm (fixed)	Revolution: STD mode 2200 rpm (fixed) STEP mode 0, 400 to 2200 rpm (adjustable) Rotation: Approx. 0.03 revolution-to-rotation ratio (STD and STEP modes)	—	Revolution: 400 to 2000 rpm (adjustable) Rotation: Approx. 0.03 revolution-to-rotation ratio	Revolution: 2000rpm (400 to 2000 rpm (adjustable)) Rotation: 60rpm (Approx. 0.03 revolution-to rotation ratio)
Maximum Capacity *1		140 g	310 g	400 g × 2	1100 g	1100 g
Standard Container *2		100 ml disposable container	300 ml resin container	300 ml resin container	650 ml resin container	650 ml resin container
Power Supply		Voltage: Single-phase AC 120 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 800 VA (operation)	Voltage: Single-phase AC 120 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 900 VA (operation)	Voltage: Single-phase AC 100 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 1400 VA (operation)	Voltage: Single-phase AC 100 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 1400 VA (operation)	Voltage: Single-phase AC 100 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 1500 VA (operation)
Operating Environment		10 to 35 °C, 35 to 85 % RH (without condensation)	10 to 35 °C, 35 to 85 % RH (without condensation)	10 to 35 °C, 35 to 85 % RH (without condensation)	5 to 35 °C, 35 to 85 % RH (without condensation)	10 to 35 °C, 35 to 85 % RH (without condensation)
Safety Mechanism		Lid sensor, Vibration sensor, Speed sensor	Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor	Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor	Lid sensor, Vibration sensor, Speed sensor, mixing/defoaming clutch sensor	Lid sensor, Vibration sensor, Speed sensor, mixing/defoaming clutch sensor
Transport Locking Mechanism *3		1 on the bottom and 1 on the rear	1 on the internal rotation body surface and 1 on the rear	1 on the rear	1 on the rear, and 1 on the right inside and 1 on the left inside	1 on the rear, and 1 on the right inside and 1 on the left inside
Others		Equipped with a stroboscope	—	Real-time temperature monitoring function*4 (used with dedicated sensor unit), LED lightstack*4, Emergency stop switch*4, RS485 connector*4, 150 ml container*4, 201 adapter*4, replacement rubber rings*4	—	External communication function
Unit Dimensions		H328 × W250 × D250 (mm)	H390 × W300 × D340 (mm)	H 560 × W460 × D480 (mm)	H692 × W500 × D500 (mm)	H686 × W500 × D500 (mm)
Unit Weight		Approx. 15 kg	Approx. 21 kg	Approx. 70 kg	Approx. 95 kg	Approx. 100 kg
Accessories 1		Instruction Manual × 1 AC cable (including 3P adapter) × 1, ABS container × 3, PP 100 ml disposable container × 10	Instruction Manual × 1 AC cable (including 3P adapter) × 1, HDPE 300 ml container × 3, 150 ml container × 1, Adapter for 150 ml container × 1 (including 1 rubber ring)	Instruction Manual × 1 AC cable (including 3P adapter) × 1, HDPE 300 ml container × 6, PC Management Software for setting Parameter and monitoring materials, USB cable (TypeB) × 1	Instruction Manual × 1 AC cable (including 3P adapter) × 1, HDPE 650 ml container × 2, 550 ml container × 2, 300 ml container × 2, Adapter for 300 ml container × 1 (including 3 types of O-ring (1 each))	Instruction Manual × 1 AC cable (including 3P adapter) × 1, HDPE 650 ml container × 2, 550 ml container × 2, 300 ml container × 2, Adapter for 300 ml container × 1 (including 3 types of O-ring (1 each))
Accessories 2		—	Key to unlock door during power failure (unit rear) × 1	L-shaped wrench (for M6) × 1, Key to unlock door during power failure × 1	Phillips screwdriver × 1, L-shaped wrench large × 1, L-shaped wrench small × 1, Spanner × 1, Hexagon head bolt M16 × 200 (for carrying the unit) × 4	Phillips screwdriver × 1, L-shaped wrench large × 1, L-shaped wrench small × 1, Spanner × 1, Hexagon head bolt M16 × 200 (for carrying the unit) × 4, CD × 1

*1: Total mass to mount on the cup holder, including materials, containers, and adapters. *2: Contact us because the actual volume of mixing may vary depending on the containers, materials, and conditions. *3: Products are shipped and delivered in a locked state. Release the lock before use. *4: Option †: Please contact THINKY about specification for explosion proof.

Mixer

Solder Paste Mixer






SR-500



► p.12

Planetary, propeller-less mixing
Timer setting range: 0 s to 30 min in 1 s increments
Max 30 min
10 memories: STD mode: 5 memories with 2 steps STEP mode: 5 memories with 5 steps
Revolution: STD mode (STEP1 1000 rpm fixed, STEP2 500 rpm fixed), STEP mode (0, 200 to 1200 rpm adjustable) Rotation: Approx. 0.33 revolution-to-rotation ratio
680 g
150 ml resin container
Voltage: Single-phase AC 120 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 900 VA (operation)
10 to 35 °C, 35 to 85 % RH (without condensation)
Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor
1 on the internal rotation body surface and 1 on the rear
H390 × W300 × D340 (mm)
Approx. 18 kg
Instruction Manual × 1, AC cable (including 3P adapter) × 1, 150 ml container × 3, Adapter for HDPE 150 ml container × 1 (including 1 O-ring) Silicon rubber sheet × 1, O-ring for fine adjustment × 1
1 metal fitting is attached to the unit rear to release the lid lock, in case of power failure.




Product Specification List / THINKY MIXER Vacuum type / High Specific Gr



		Planetary Centrifugal Mixers THINKY MIXER (Vacuum type)				
Model		ARV-310P [†]	ARV-501	ARV-931TWIN	ARV-5000 [†]	ARV-3000TWIN [†]
		 ▶ p.13	 ▶ p.13	 ▶ p.14	 ▶ p.14	 ▶ p.15
System		Vacuum-type, planetary, propeller-less mixing	Vacuum-type, planetary, propeller-less mixing	Vacuum-type, planetary, propeller-less mixing	Vacuum-type, planetary, propeller-less mixing	Vacuum-type, planetary, propeller-less mixing
Operation Time Setting		Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 1 s to 30 min in 1 s increments	Timer setting range: 1 s to 30 min in 1 s increments
Continuous Operation Time		Max 30 min	Max 30 min	Max 30 min	Max 30 min	Max 30 min
Programming Function		20 memories with 5 steps	20 memories with 5 steps	20 memories with 10 steps	10 memories with 10 steps	20 memories with 10 steps
Revolution/ Rotation Speed (rpm)	Mixing Mode	Revolution: 0, 200 to 2000 rpm (adjustable) Rotation: Approx. 0.5 revolution-to-rotation ratio	Revolution: 0, 400 to 1500 rpm (adjustable) Rotation: Approx. 0.58 revolution-to-rotation ratio	Revolution: 0, 200 to 1400 rpm (adjustable) Rotation: Approx. 0.5 revolution-to-rotation ratio	Revolution: 0, 200 to 800 rpm (adjustable) Rotation: Approx. 0.75 revolution-to-rotation ratio	Revolution: 0, 200 to 800 rpm (adjustable) Rotation: Differs depending on gear ratio
	Defoaming Mode	—	Revolution: 0, 400 to 2000 rpm (adjustable) Rotation: Approx. 0.03 revolution-to-rotation ratio	Revolution: 0, 200 to 1800 rpm (adjustable) Rotation: Approx. 0.03 revolution-to-rotation ratio	—	—
Maximum Capacity *1		310 g	700 g	930 g × 2	5 kg	5 kg × 2
Standard Container *2		300 ml resin container	550 ml resin container	750 ml resin container	4 liter resin container	Specially designed SUS containers / 4 liter resin containers
Vacuum System		Rotation section vacuum chamber system	Vacuum system within container holder	Vacuum system within cup holder	Vacuum system within container holder	Vacuum system within container holder
Ultimate Vacuum		0.67 kPa	0.67 kPa	0.60 kPa	0.67 kPa	0.1 kPa
Vacuum Trap Connection		Connectable*4	Ask to THINKY	Ask to THINKY	Connectable*4	Ask to THINKY
Vacuum Pump Capability		Pump capacity: 100 liters/minute	Pump capacity: 100 liters/minute	Pump capacity: 100 liters/minute	Pump capacity: 100 liters/minute	Pump capacity: 200 liters/minute
Power Supply		Voltage: Single-phase AC 100 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 1200 VA (operation)	Voltage: Single-phase AC 200 to 240 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 2000 VA (operation)	Voltage: Single phase AC 200V±10%, 50/60 Hz Power consumption: Approx. 120 VA (standby) Max 4400 VA (operation)	Voltage: Three-phase AC 200 V ± 10 %, 50/60 Hz Power consumption: Approx. 35 VA (standby) Max 4500 VA (operation)	Voltage: Three-phase AC 200 V ± 10 %, 50/60 Hz 30 A Power consumption: Approx. 138.6 VA (standby) Max 10.4 kVA (operation)
Operating Environment		10 to 35 °C, 35 to 85% RH (without condensation)	10 to 35 °C, 35 to 80% RH (without condensation)	10 to 35 °C, 35 to 85% RH (without condensation)	10 to 35 °C, 35 to 85% RH (without condensation)	5 to 35 °C, 35 to 85 % RH (without condensation)
Safety Mechanism		Lid locking sensor, Vibration sensor, Speed sensor	Lid locking sensor, Vibration sensor, Speed sensor	Lid locking sensor, Vibration sensor, Speed sensor	Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor	Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor
Transport Locking Mechanism *3		1 on the unit front and 1 on the rear	1 on the rear, and 1 on the right inside and 1 on the left inside	1 on the right inside and 1 on the left inside	1 on the right inside and 1 on the left inside	Depending on specifications
Others		External communication function	Stand with Built-in Vacuum Pump*4 *5 External communication function	External communication function	External communication function*4	External remote operation available*4
Unit Dimensions		H450 × W555 × D645 (mm)	H815 × W500 × D595 (mm)	H900 × W660 × D670 (mm)	H1650 × W1050 × D925 (mm)	H1600 × W1330 × D1015 (mm)
Unit Weight		Approx. 90 kg	Approx. 100 kg	Approx. 240 kg	Approx. 500 kg	Approx. 700 kg
Accessories 1		Instruction Manual × 1, AC cable (including 3P adapter) × 1, HDPE 300 ml container × 3 (Inner lid with hole×3, Outer lid with hole × 3) 150 ml Container × 1 (Inner lid with hole × 1, Outer lid with hole × 1, Adapter × 1, and 1 spare rubber ring)	Instruction Manual × 1, Power cable × 1, HDPE 550 ml container × 3 (Inner lid without hole × 1, Outer lid without hole × 1, Inner lid with hole × 2, and Outer lid with hole × 2), Vacuum tube × 1 pair, Vacuum-line × 1	Instruction Manual × 1, Communication Specifications Manual × 1, Power cable × 1, HDPE 750 ml container × 6 (O-ring × 4, Inner lid without hole × 2, Inner lid with hole × 4, and Outer lid with hole × 6) 550 ml container × 6 (Adapter × 2) Silicon Sheet × 4, Holder Adapter × 1	Instruction Manual × 1, Power cable × 1, Vacuum tube × 1 pair	Instruction Manual × 1, Power cable × 1, Containers and others: Depending on specifications
Accessories 2		Box wrench × 1, Hexagon wrench × 2, Vacuum pump oil, Waste oil receiver × 1, Funnel × 1, CD × 1	Phillips screwdriver × 1, Hexagon wrench large × 1, Hexagon wrench small × 1, Spanner large × 1, Spanner small × 1, Waste oil receiver × 1, Funnel × 1, CD × 1	Phillips screwdriver × 1, Hexagon wrench × 1, Bolt × 2, Vacuum pump oil, Waste oil receiver × 1, Funnel × 1, CD × 1	Vacuum pump oil	Vacuum pump oil

*1: Total mass to mount on the cup holder, including materials, containers, and adapters. *2: Contact us because the actual volume of mixing may vary depending on the containers, materials, and conditions.

*3: Products are shipped and delivered in a locked state. Release the lock before use. *4: Option *5: The voltage of the PU-501 (Stand with Built-in Vacuum Pump) is single-phase AC200±10%. †: Please contact THINKY about specification for explosion proof.

avity Material Mixer (Vacuum type) / Vacuum Syringe Chargers

	THINKY MIXER (Vacuum LED type)	
	ARV-50LED	ARV-310LED
		
▶ p.15	▶ p.16	▶ p.16
Vacuum-type, planetary, propeller-less mixing	Vacuum-type, planetary, propeller-less mixing	Vacuum-type, planetary, propeller-less mixing
Timer setting range: 1 s to 30 min in 1 s increments	Timer setting range: 0 s to 10 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments
Max 30 min	Max 10 min	Max 30 min
20 memories with 10 steps	9 memories with 5 steps	9 memories with 5 steps
Revolution: 200 to 800 rpm Rotation: 0 to 350 rpm (Rotation RPM ≤ Revolution RPM)	Revolution: 0, 200 to 1500 rpm (adjustable) Rotation: Mainly optimized for mixing, dispersing and deafoaming the LED materials.	Revolution: 0, 200 to 1200 rpm (adjustable) Rotation: Mainly optimized for mixing, dispersing and deafoaming the LED materials
_____	_____	_____
14.5 kg × 2	113 g	310 g
Specially designed 10 liter SUS containers	150 ml resin container	300 ml resin container
Vacuum system within container holder	Rotation section vacuum chamber system	Rotation section vacuum chamber system
0.1 kPa	2.6 kPa	0.67 kPa
Ask to THINKY	Ask to THINKY	Connectable*4
Pump capacity: 200 liters/minute	Pump capacity: 5 liters/minute	Pump capacity: 100 liters/minute
Voltage: Three-phase AC 200 V ± 10 %, 50/60 Hz 100 A Power consumption: Approx. 170 VA (standby) Max 30 kVA (operation)	Voltage: Single-phase AC 85 V to 265 V (47 Hz-63Hz) Power consumption: Approx. 50 VA (standby) Max 150 VA (operation)	Voltage: Single-phase AC 100 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 1200 VA (operation)
5 to 35 °C, 35 to 85 % RH (without condensation)	10 to 35 °C, 35 to 80 % RH (without condensation)	10 to 35 °C, 35 to 85 % RH (without condensation)
Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor	Lid locking sensor, Vibration sensor, Speed sensor	Lid locking sensor, Vibration sensor, Speed sensor
Depending on specifications	_____	1 on the unit front and 1 on the rear
_____	_____	_____
H1280 × W1900 × D1370 (mm)	H380 × W300 × D233 (mm)	H450 × W555 × D645 (mm)
Approx. 1500 kg	Approx. 20 kg	Approx. 90 kg
Instruction Manual × 1, Power cable × 1, Standard container: SUS container × 2, Others: Depending on specifications	Instruction Manual × 1, AC cable (including 3P adapter) × 1, HDPE 150 ml Container × 3 (Inner lid without hole × 3, Outer lid without hole × 3, Inner lid with hole × 2, Outer lid with hole × 2) Rubber washer × 1	Instruction Manual × 1, AC cable (including 3P adapter) × 1, HDPE 300 ml container × 3 (Inner lid with hole × 3, Outer lid with hole × 3) 150 ml Container × 1 (Inner lid with hole × 1, Outer lid with hole × 1, Adapter × 1, and 1 spare rubber ring)
Vacuum pump oil	T-shaped hexagon bar wrench × 1	Box wrench × 1, Hexagon wrench × 2, Vacuum pump oil, Waste oil receiver × 1, Funnel × 1

	Vacuum Syringe chargers	
Model	ARC-40H	ARC-600TWIN
		
	▶ p.17	▶ p.17
System	Manual Operation	Automatic Operation
Syringe Manufacturers	Nordson Corp. (EFD), Musashi Engineering, Inc., and other manufacturers*1)	Supports syringes depending on specifications
Syringe Volume	3ml, 5ml 10ml*2)	30 ml to 120 ml (Standard: 60 ml)*4) (Customizable)
Standard Container	Specially designed containers 300 ml	Specially designed SUS containers (Customizable)
Max Processing	Simultaneous filling of four 10 ml syringes * Consult us for 20, 30, and 50 ml syringes. We will provide customization	Customizable
Number of Syringes per Process	1 to 4 syringes (Joint stopper used)	Simultaneous filling of 16 syringes*4) (Customizable)
Connection with Vacuum Pump	By a 6 mm outer diameter tube (Vacuum pump is sold separately)	Built-in
Syringe Ultimate Vacuum	Depending on vacuum pump capability*3)	_____
Chamber Ultimate Vacuum	_____	0.1 kPa or less (no filler)
Vacuum Pump Flow Rate	Depending on vacuum pump capacity	200 liter/minute
Operating Environment	10 to 35 °C, 35 to 85 % RH (without condensation)	5 to 35 °C, 35 to 85 % RH (without condensation)
Power Supply	None	Voltage: Three-phase AC 200 V ± 10 %, 50/60 Hz 20A Power consumption: Approx. 138.6 VA (standby) Max 6.9 kVA (operation)
Unit Dimensions	H 550 × W 220 × D 140 (mm) (Up to the handle height)	H2170 × W1125 × D1045 (mm)
Unit Weight	Approx. 7.5 kg	Approx. 650 kg
Accessories	Instruction Manual × 1 Specially designed container 300 ml (Container × 2, Inner lid × 2, Outer lid × 2) Vacuum head × 1, Plug × 3 Piston × 2, Syringe cap 3 of each Syringe cap with check valve 3 of each Cleaning container set (Cleaning container × 2, lid × 2, rubber ring × 2)	Depending on specifications

◆ 1 : Supports syringe made by the above companies.





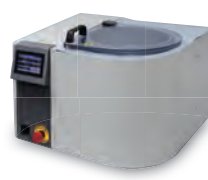
◆ 2 : For other sizes, please contact us.

◆ 3 : Do not reduce the pressure to a lower level than the saturated vapor pressure of water and organic solvent included in the material.

◆ 4 : The syringe mount will need to be built to custom specifications, so depending on the syringe capacity, it may not be possible to fit 16 syringes in some cases.






Product Specification List / THINKY MIXER

CE CE-certified model

		Planetary Centrifugal Mixers THINKY MIXER (Non-vacuum type)			Solder Paste Mixer	Planetary
Model		ARE-250CE	ARE-400TWINCE	ARE-500CE	SR-500CE	ARV-310PCE
						
		► p.9	► p.10	► p.11	► p.12	► p.13
System		Planetary, propeller-less mixing	Planetary, propeller-less mixing	Planetary, propeller-less mixing	Planetary, propeller-less mixing	Vacuum-type, planetary, propeller-less mixing
Operation Time Setting		Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments	Timer setting range: 0 s to 30 min in 1 s increments
Continuous Operation Time		Max 30 min	Max 30 min	Max 30 min	Max 30 min	Max 30 min
Programming Function		5 memories with 5 steps	20 memories with 5 steps	10 memories: STD mode: 5 memories with 1 step STEP mode: 5 memories with 5 steps	10 memories: STD mode: 5 memories with 2 steps STEP mode: 5 memories with 5 steps	20 memories with 5 steps
Revolution/ Rotation Speed (rpm)	Mixing Mode	Revolution: STD mode 2000rpm(fixed) STEP mode 0, 200 to 2000 rpm (adjustable) Rotation: Approx. 0.4 revolution-to-rotation ratio (STD and STEP modes)	Revolution: 0, 200 to 1600 rpm(adjustable) Rotation: 0, 200 to 1600 rpm (adjustable) Max up to 1.0 revolution-to-rotation ratio (When 600 rpm of revolution, minimum rotation speed is 200 rpm.)	Revolution: 400 to 1000 rpm (adjustable) Rotation: Approx. 1.0 revolution-to-rotation ratio	Revolution: STD mode (STEP1 1000 rpm fixed, STEP2 500 rpm fixed), STEP mode (0, 200 to 1200 rpm adjustable) Rotation: Approx. 0.33 revolution-to-rotation ratio	Revolution: 0, 200 to 2000 rpm (adjustable) Rotation: Approx. 0.5 revolution-to-rotation ratio
	Defoaming Mode	Revolution: STD mode 2200 rpm (fixed) STEP mode 0, 400 to 2200 rpm (adjustable) Rotation: Approx. 0.03 revolution-to-rotation ratio (STD and STEP modes)	_____	Revolution: 400 to 2000 rpm (adjustable) Rotation: Approx. 0.03 revolution-to-rotation ratio	_____	_____
Maximum Capacity *1		310 g	400 g × 2	1100 g	680 g	310 g
Standard Container *2		300 ml resin container	300 ml resin container	650 ml resin container	150 ml resin container	300 ml resin container
Vacuum System		_____	_____	_____	_____	Rotation section vacuum chamber system
Ultimate Vacuum		_____	_____	_____	_____	0.67 kPa
Vacuum Trap Connection		_____	_____	_____	_____	Connectable*4
Vacuum Pump Capability		_____	_____	_____	_____	Pump capacity: 100 liters/minute
Power Supply		Voltage: Single-phase AC 230 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 900 VA (operation)	Voltage: Single-phase AC 230 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 805 VA (operation)	Voltage: Single-phase AC 230 V ± 10 %, 50 Hz Power consumption: Approx. 50 VA (standby) Max 920 VA (operation)	Voltage: Single-phase AC 230 V ± 10 %, 50 Hz Power consumption: Approx. 50 VA (standby) Max 920 VA (operation)	Voltage: Single-phase AC 230 V ± 10 %, 50 Hz Power consumption: Approx. 50 VA (standby) Max 1035 VA (operation)
Operating Environment		5 to 35 °C, 35 to 85 % RH (without condensation)	10 to 35 °C, 35 to 85 % RH (without condensation)	10 to 35 °C, 35 to 85 % RH (without condensation)	10 to 35 °C, 35 to 85 % RH (without condensation)	10 to 35 °C, 35 to 85 % RH (without condensation)
Safety Mechanism		Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor	Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor	Lid sensor, Vibration sensor, Speed sensor, mixing/defoaming clutch sensor	Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor	Lid locking sensor, Vibration sensor, Speed sensor
Transport Locking Mechanism *3		1 on the bottom and 1 on the rear	1 on the rear	1 on the rear, and 1 on the right inside and 1 on the left inside	1 on the internal rotation body surface and 1 on the rear	1 on the unit front and 1 on the rear
Others		_____	Real-time temperature monitoring function*4 (used with dedicated sensor unit), LED lightstack*4, Emergency stop switch*4, RS485 connector*4, 150 ml container*4, 201 adapter*4, replacement rubber rings*4	_____	_____	External communication function
Unit Dimensions		H380 × W300 × D315 (mm)	H 560 × W460 × D480 (mm)	H700 × W500 × D630 (mm)	H390 × W300 × D340 (mm)	H450 × W555 × D645 (mm)
Unit Weight		Approx. 22 kg	Approx. 70 kg	Approx. 100 kg	Approx. 18 kg	Approx. 90 kg
Accessories 1		Instruction Manual × 1 AC cable (including 3P adapter) × 1, HDPE 300 ml container × 3, 150 ml container × 1, Adapter for 150 ml container × 1 (including 1 rubber ring)	Instruction Manual × 1 AC cable (including 3P adapter) × 1, HDPE 300 ml container × 6, PC Management Software for setting Parameter and monitoring materials, USB cable (TypeB) × 1	Instruction Manual × 1 AC cable (including 3P adapter) × 1, HDPE 650 ml container × 2, 550 ml container × 2, 300 ml container × 2, Adapter for 300 ml container × 1 (including 3 types of O-ring (1 each))	Instruction Manual × 1, AC cable (including 3P adapter) × 1, 150 ml container × 3, Adapter for HDPE 150 ml container × 1 (including 1 O-ring) Silicon rubber sheet × 1, O-ring for fine adjustment × 1	Instruction Manual × 1, AC cable (including 3P adapter) × 1, HDPE 300 ml container × 3 (Inner lid with hole×3, Outer lid with hole × 3) 150 ml Container × 1 (Inner lid with hole × 1, Outer lid with hole × 1, Adapter × 1, and 1 spare rubber ring)
Accessories 2		_____	L-shaped wrench (for M6) × 1, Key to unlock door during power failure × 1	Phillips screw driver × 1, L-shaped wrench large × 1, L-shaped wrench small × 1, Hexagon head bolt M16 × 200 (for carrying the unit) × 4	Key to unlock door during power failure (unit rear) × 1	Box wrench × 1, Hexagon wrench × 2, Vacuum pump oil, Waste oil receiver × 1, Funnel × 1, CD × 1

*1: Total mass to mount on the cup holder, including materials, containers, and adapters. *2: Contact us because the actual volume of mixing may vary depending on the containers, materials, and conditions.

*3: Products are shipped and delivered in a locked state. Release the lock before use. *4: Option *5: The voltage of the PU-501CE (Stand with Built-in Vacuum Pump) is single-phase AC200±10%.

Centrifugal Mixers THINKY MIXER (Vacuum type)				High Specific Gravity Material Mixer
ARV-501CE	ARV-931TWINCE	ARV-5000CE	ARV-10kTWINCE	ARV-310LEDCE
 ▶ p.13	 ▶ p.14	 ▶ p.14	 ▶ p.15	 ▶ p.15
Vacuum-type, planetary, propeller-less mixing Timer setting range: 0 s to 30 min in 1 s increments Max 30 min	Vacuum-type, planetary, propeller-less mixing Timer setting range: 0 s to 30 min in 1 s increments Max 30 min	Vacuum-type, planetary, propeller-less mixing Timer setting range: 1 s to 30 min in 1 s increments Max 30 min	Vacuum-type, planetary, propeller-less mixing Timer setting range: 1 s to 10 min in 1 s increments Max 10 min	Vacuum-type, planetary, propeller-less mixing Timer setting range: 0 s to 30 min in 1 s increments Max 30 min
20 memories with 5 steps	20 memories with 10 steps	10 memories with 10 steps	20 memories with 20 steps	9 memories with 5 steps
Revolution: 0, 400 to 1500 rpm (adjustable) Rotation: Approx. 0.58 revolution-to-rotation ratio	Revolution: 0, 200 to 1400 rpm (adjustable) Rotation: Approx. 0.5 revolution-to-rotation ratio	Revolution: 0, 200 to 800 rpm (adjustable) Rotation: Approx. 0.75 revolution-to-rotation ratio	Revolution: 200 to 800 rpm Rotation: 0 to 350 rpm (Rotation ≤ Revolution)	Revolution: 0, 200 to 1200 rpm (adjustable) Rotation: Mainly optimized for mixing, dispersing and defoaming the LED materials
Revolution: 0, 400 to 2000 rpm (adjustable) Rotation: Approx. 0.03 revolution-to-rotation ratio	Revolution: 0, 200 to 1800 rpm (adjustable) Rotation: Approx. 0.03 revolution-to-rotation ratio	_____	_____	_____
700 g	930 g × 2	5 kg	10 kg × 2	310 g
550 ml resin container	750 ml resin containers	4 liter resin container	Specially designed 10 liter SUS containers	300 ml resin container
Vacuum system within container holder	Vacuum system within cup holder	Vacuum system within container holder	Vacuum system within container holder	Rotation section vacuum chamber system
0.67 kPa	0.60 kPa	0.67 kPa	0.1 kPa	0.67 kPa
Ask to THINKY	Ask to THINKY	Connectable*4	Ask to THINKY	Connectable*4
Pump capacity: 100 liters/minute Voltage: Single-phase AC 200 V ± 10 %, 50/60 Hz Power consumption: Approx. 50 VA (standby) Max 2000 VA (operation)	Pump capacity: 100 liters/minute Voltage: Three-phase AC 220 V ± 10 %, 50/60 Hz Power consumption: Approx. 120 VA (standby) Max 4400 VA (operation)	Pump capacity: 100 liters/minute Voltage: Three-phase AC 200 V ± 10 %, 50/60 Hz Power consumption: Approx. 35 VA (standby) Max 4500 VA (operation)	Pump capacity: 200 liters/minute Voltage: Three-phase AC 200 V ± 10 %, 50/60 Hz Power consumption: Approx. 100 VA (standby) Max 30 kVA (operation)	Pump capacity: 100 liters/minute Voltage: Single-phase AC 230 V ± 10 %, 50 Hz Power consumption: Approx. 50 VA (standby) Max 460 VA (operation)
10 to 35 °C, 35 to 80% RH (without condensation)	10 to 35 °C, 35 to 85% RH (without condensation)	10 to 35 °C, 35 to 85% RH (without condensation)	10 to 35 °C, 35 to 85 % RH (without condensation)	10 to 35 °C, 35 to 85 % RH (without condensation)
Lid locking sensor, Vibration sensor, Speed sensor	Lid locking sensor, Vibration sensor, Speed sensor	Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor	Lid locking sensor, Lid sensor, Vibration sensor, Speed sensor	Lid locking sensor, Vibration sensor, Speed sensor
1 on the rear, and 1 on the right inside and 1 on the left inside	1 on the right inside and 1 on the left inside	1 on the right inside and 1 on the left inside	Ask to THINKY	1 on the unit front and 1 on the rear
Stand with Built-in Vacuum Pump**4*5 External communication function	External communication function	External communication function*4	_____	_____
H815 × W500 × D601 (mm)	H900 × W660 × D820 (mm)	H1600 × W1000 × D865 (mm)	H1280 × W2033 × D1420 (mm)	H450 × W555 × D645 (mm)
Approx. 100 kg	Approx. 240 kg	Approx. 530 kg	Approx. 1500 kg	Approx. 90 kg
Instruction Manual × 1, Power cable × 1, HDPE 550 ml container × 3 (Inner lid without hole × 1, Outer lid without hole × 1, Inner lid with hole × 2, and Outer lid with hole × 2), Vacuum tube × 1 pair, Vacuum-line × 1	Instruction Manual × 1, Communication Specifications Manual × 1, Power cable × 1, HDPE 750 ml container × 6 (O-ring × 4, Inner lid without hole × 2, Inner lid with hole × 4, and Outer lid with hole × 6) 550 ml container × 6 (Adapter × 2) Silicon Sheet × 4, Holder Adapter × 1	Instruction Manual × 1, Power cable × 1, Vacuum tube × 1 pair	Instruction Manual × 1, Power cable × 1, SUS container × 2	Instruction Manual × 1, AC cable (including 3P adapter) × 1, HDPE 300 ml container × 3 (Inner lid with hole × 3, Outer lid with hole × 3) 150 ml Container × 1 (Inner lid with hole × 1, Outer lid with hole × 1, Adapter × 1, and 1 spare rubber ring)
Phillips screwdriver × 1, Hexagon wrench large × 1, Hexagon wrench small × 1, Spanner large × 1, Spanner small × 1, Waste oil receiver × 1, Funnel × 1, CD × 1	Phillips screwdriver × 1, Hexagon wrench × 1, Bolt × 2, Vacuum pump oil, Waste oil receiver × 1, Funnel × 1, CD × 1, Lock Cover + Padlock × 1	Vacuum pump oil	Vacuum pump oil	Box wrench × 1, Hexagon wrench × 2, Vacuum pump oil, Waste oil receiver × 1, Funnel × 1

Product appearance/specifications may change without notice.



For requests concerning demonstrations
and evaluation testing, please contact
THINKY CORPORATION

Email: mixer@thinkymixer.com

or the sales agent below

For the latest information about products
and exhibitions, visit:

<https://www.thinkymixer.com/en-gl/>

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