



● Basket Mill



● Dispensing Machine [Horizontal type]



● Dispensing Machine [Vertical type]



● Reactor System



● Sonicator
● Ultrasonic Processor



● Dispenser
● Homogenizer

We have so many solutions!



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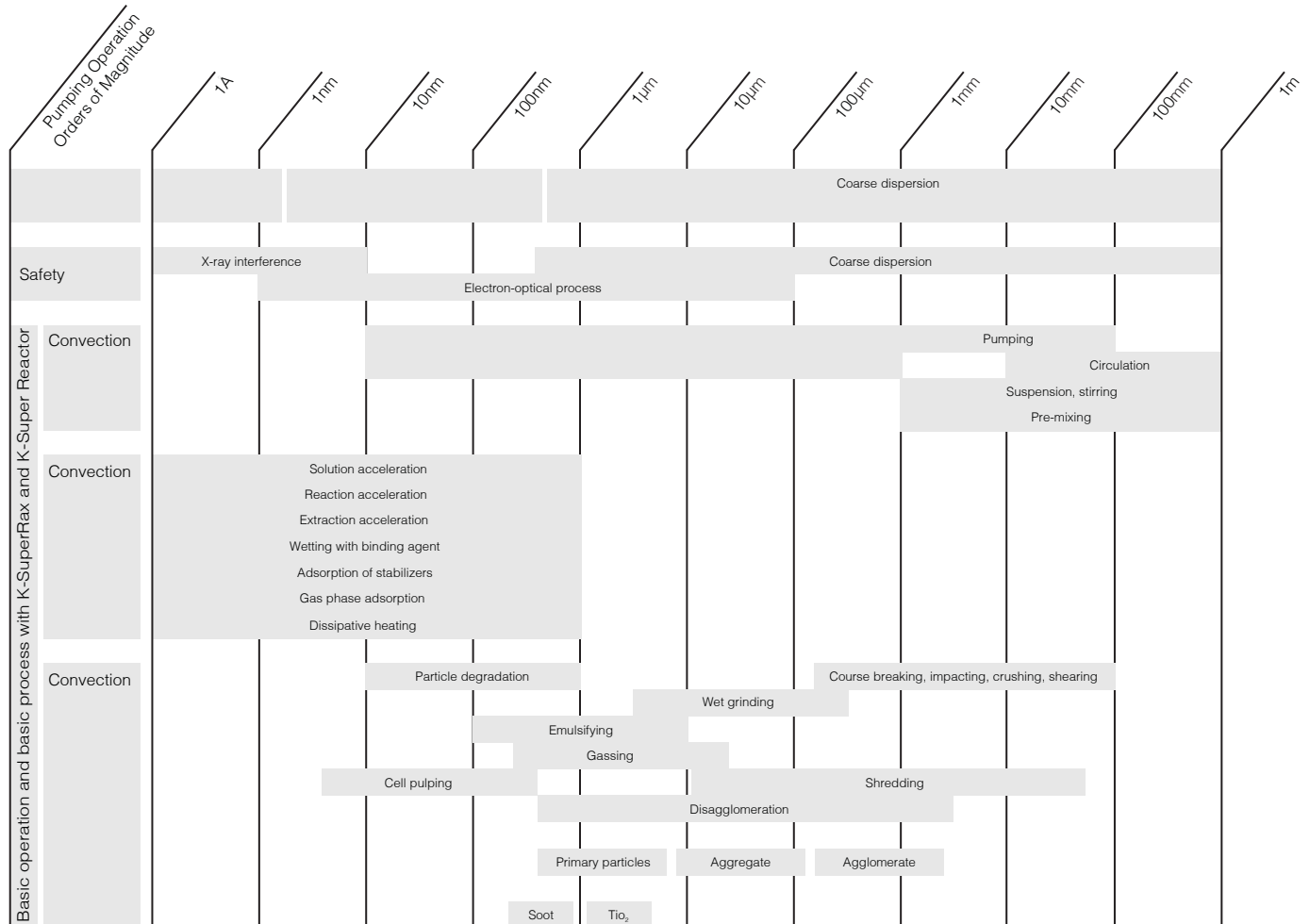
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Dispersing & Emulsifying

Crushing · Dispersing · Emulsifying · Homogenizer

Dispersing & Emulsifying



Description

Dispersing is understood as the distribution of a discontinuous phase into a surrounding continuous phase, where one normally assumes that these are not miscible. Great shear and thrusting forces, as well as turbulent currents are generated with dispersing tools by means of kinetic energy, which leads to the reduction of particle or droplet size. At the same time the phase boundary surfaces and surface tensions are exponentiated, so that a more or less stable dispersion is achieved.

Application

- Pharmaceutical products
- Production of food products
- All sorts of beverages
- Cosmetic products
- Paints, lacquers and ink
- Chemical compounds
- Fertilizers, herbicides, fats, oils



KOREA PROCESS

Lab Rotor/Stator Dispersers & Homogenizers

Crushing · Dispersing · Emulsifying · Homogenizer

■ Rotor/stator homogenizer

Shear is the relative velocity of one layer of liquid compared to the adjacent layer.

It is inversely proportional to viscosity.

Shear rate is defined as the relative velocities of liquid layers across two surfaces.

$$\text{ie, shear rate } V_s = \frac{\text{Tip/Peripheral speed (m/s)}}{\text{Rotor/stator gap (Ds)}}$$

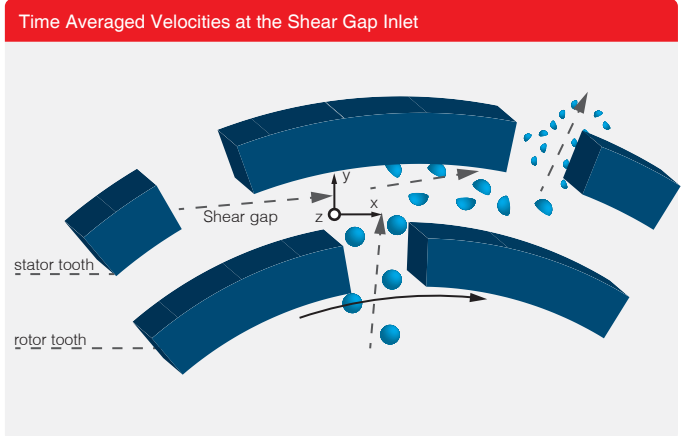
$$V_s = \frac{V_u}{D_s}$$

The shear rate is influenced by

The tip (peripheral speed) of the rotor

The distance between the rotor/stator

The distance for the Korea Process Homogenizer is between 0.3 - 1mm



Tip speed (peripheral or circumferential speed) of the rotor is represented by

$$n = \frac{3.1416 \times D \text{ (diameter)}}{60} \times \text{RPM} = \text{Metres/Sec}$$

Tip speed varies according to the diameter of the rotor and the RPM of the motor.

Generally the faster the tip speed, the greater the processing capabilities of the system, depending on the final particle size required which will also influence the motor choice.

Liquid enters rotor/stator vertically.

Liquid momentum is changed through 90° and squeezed radially through stator slits due to centrifugal force.

Liquid enters the gap between the rotor/stator and is subjected to centrifugal thrust.

The fluid stream is cut off from entering the stator slits momentarily as the rotor and stator slits align during rotor rotation.

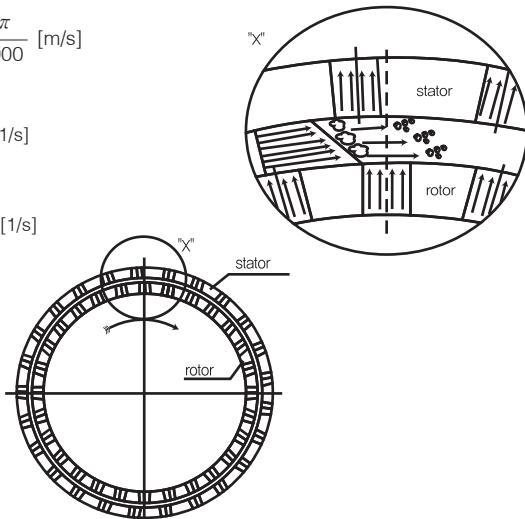
The liquid stream seeks an alternative path and at this point the liquid is subjected to three dimensional shear especially at the edge of the rotor pins.

Acceleration and breaking occurs with high shear rate and turbulence resulting in intense mixing.

$$V_u = \frac{n \cdot d_r \cdot \pi}{60 \cdot 1000} \text{ [m/s]}$$

$$V_s = \frac{V_u}{d_s} \text{ [1/s]}$$

$$f_{su} = \frac{z \cdot n}{60} \text{ [1/s]}$$



V_u = tip speed(m/s)

V_s = shear rate(1/s)

f_s = shear frequency(1/s)

n = rotor speed(1/min)

d_r = rotor outside diameter(mm)

d_s = distance between rotor and stator(ca 0.4~1mm depending on machine)

z = number of teeth of rotor

Lab Disper-Mix[®], Disperser & Homo-Mixer

Crushing · Dispersing · Emulsifying · Homogenizer

KT25/KT30/KT50 Disper-Mix[®], Disperser & Homo-Mixer, Batch operation



Features

- Use rotor/stator system with high speed rotation, can homogenous a mixed and dispersed
- The nano-materials dispersion and apply pretreatment process
- Protect equipment overloading function
- Process maximum viscosity sample of 10,000mPas
- Smooth starting function minimized overflowing sample by sudden operation
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean
- According to property, capacity, viscosity of sample, selected possible of the dispersing tool
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time

▶ Optional accessories (page 24), Dispersing elements (page 22,23)

Specifications

| Model | KT25 Disper-Mix [®] | KT30 Disper-Mix [®] | KT50 Disper-Mix [®] |
|----------------------------------|------------------------------|------------------------------|------------------------------|
| Motor capacity | 500 W | 500 W | 1,500 W |
| Speed range | 3,500 ~ 30,000 rpm | 10,000 ~ 30,000 rpm | 2,500 ~ 14,000 rpm |
| Speed adjustment | stepless | stepless | stepless |
| Max. Volume (H ₂ O) | 10,000 ml | 20,000 ml | 30,000 ml |
| Max. viscosity | 10,000 mPas | 10,000 mPas | 10,000 mPas |
| Noise without dispersing element | 70 dB | 70 dB | 70 dB |
| Overload protection | Yes | Yes | Yes |
| Smooth run-on/start | Yes | Yes | Yes |
| Material dispersing tool | SUS 316L | SUS 316L | SUS 316L |
| Dimension [W x D x H] | 57 x 58 x 260 mm | 70 x 70 x 255 mm | 125 x 120 x 367 mm |
| Weight | 1.5 kg | 1.3 kg | 4.8 kg |



KT30-S-60S



KT30-S-60M

Lab Rotor/Stator Dispersers & Homogenizers

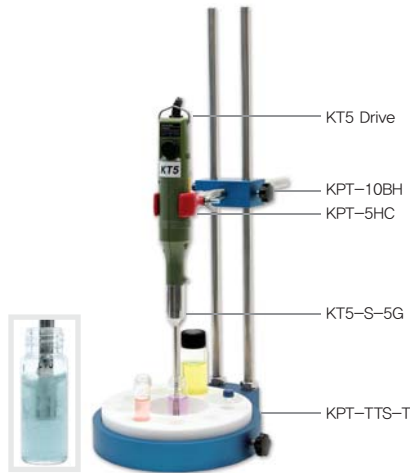
Crushing · Dispersing · Emulsifying · Homogenizer

KT5 basic, Batch operation

▶ Optional accessories (page 24), Dispersing elements (page 22)



▶ KT5 basic



Hand-held type

Features

- Potable disperser with light-weight catches in one hand can use hand-held type
- Use for the crushing tissue, dispersing and homogenizing of small amount of the sample
- Control speed range of 0~21,000rpm
- Processing capacity of 0.5~50ml (H₂O)
- Protect equipment overloading function
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean

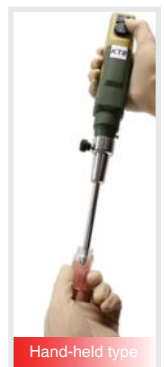
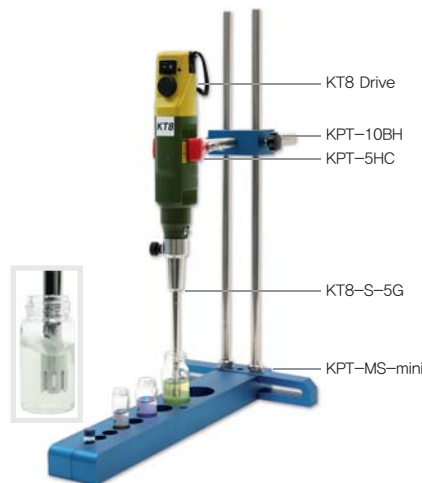
Specification

| Model | KT5 basic |
|----------------------------------|------------------|
| Ident. No. | K105000 |
| Motor capacity | 50 W |
| Speed range | 0 ~ 21,000 rpm |
| Speed adjustment | stepless |
| Volume range (H ₂ O) | 0.5 ~ 50 ml |
| Max. viscosity | 5,000 mPas |
| Noise without dispersing element | below 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 35 x 35 x 180 mm |
| Weight | 0.4 kg |

KT8 basic, Batch operation



▶ KT8 basic



Hand-held type

Features

- Potable disperser with light-weight catches in one hand can use hand-held type
- Use for the crushing tissue, dispersing and homogenizing of small amount of the sample
- Control speed range of 5,000~25,000rpm
- Processing capacity of 0.5~50ml (H₂O)
- Protect equipment overloading function
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean

Specification

| Model | KT8 basic |
|----------------------------------|--------------------|
| Ident. No. | K108000 |
| Motor capacity | 100 W |
| Speed range | 5,000 ~ 25,000 rpm |
| Speed adjustment | stepless |
| Volume range (H ₂ O) | 0.5 ~ 50 ml |
| Max. viscosity | 5,000 mPas |
| Noise without dispersing element | below 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 42 x 44 x 220 mm |
| Weight | 0.4 kg |

Lab Rotor/Stator Dispersers & Homogenizers

Crushing · Dispersing · Emulsifying · Homogenizer

KT10 basic, Batch operation

▶ Optional accessories (page 24), Dispersing elements (page 22)



▶ KT10 basic



Specification

| Model | KT10 basic |
|----------------------------------|---------------------|
| Ident. No. | K110000 |
| Motor capacity | 90 W |
| Speed range | 10,000 ~ 32,000 rpm |
| Speed adjustment | stepless |
| Volume range (H ₂ O) | 0.5 ~ 200 ml |
| Max. viscosity | 5,000 mPas |
| Noise without dispersing element | below 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 50 x 57 x 150 mm |
| Weight | 0.8 kg |

Features

- Potable disperser with light-weight catches in one hand can use hand-held type
- Use for the crushing tissue, dispersing and homogenizing of small amount of the sample
- Control speed range of 10,000~32,000rpm
- Processing capacity of 0.5~200ml (H₂O)
- Protect equipment overloading function
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean

KT15-D, Batch operation



▶ KT15-D



Specification

| Model | KT15 -D |
|----------------------------------|--------------------|
| Ident. No. | K810055 |
| Motor capacity | 160 W |
| Speed range | 8,000 ~ 30,000 rpm |
| Speed display | digital |
| Volume range (H ₂ O) | 0.5 ~ 500 ml |
| Max. viscosity | 5,000 mPas |
| Noise without dispersing element | below 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 50 x 80 x 260 mm |
| Weight | 1 kg |

Features

- Potable disperser with light-weight catches in one hand can use hand-held type
- Use for the crushing tissue, dispersing and homogenizing of small amount of the sample
- Control speed range of 8,000~30,000rpm
- Processing capacity of 0.5~500ml (H₂O)
- Protect equipment overloading function
- Digital displayed rotor speed
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean

Lab Rotor/Stator Dispersers & Homogenizers

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KT20-DT, Batch operation

▶ Optional accessories (page 24), Dispersing elements (page 22)



▶ KT20-DT

▶ KT20-DT
with protection cover

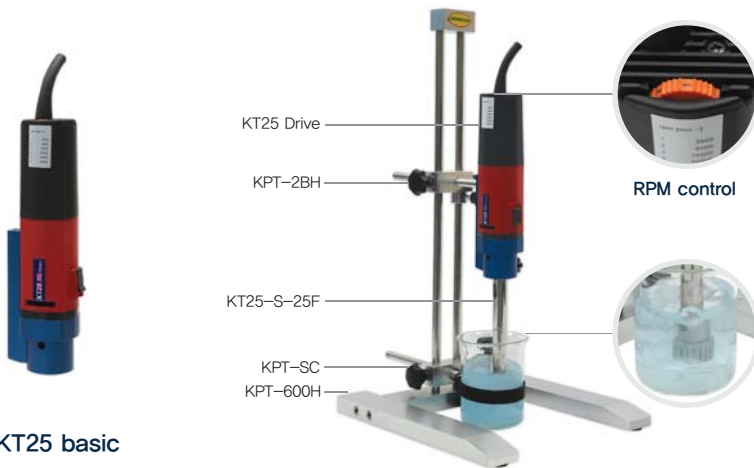
Features

- Use high-performance motors can stable mix and disperse
- Control speed range of 2,800~28,000rpm
- Processing capacity of 1~1,000ml (H₂O)
- Protect equipment overloading function
- Digital display the rotor speed set and checks the timer
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean

Specification

| Model | KT20-DT |
|----------------------------------|--------------------|
| Ident. No. | K810051 |
| Motor capacity | 360 W |
| Speed range | 2,800 ~ 28,000 rpm |
| Speed display | digital |
| Timing range | 1 ~ 9.9 min |
| Volume range (H ₂ O) | 1 ~ 1,000 ml |
| Max. viscosity | 5,000 mPas |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 220 x 320 x 430 mm |
| Weight | 8 kg |

KT25 basic, Batch operation



▶ KT25 basic

Features

- Use high-performance motors can stable mix and disperse
- Control speed range of 3,500~30,000rpm
- Processing capacity of 50~10,000ml (H₂O)
- Protect equipment overloading function
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean
- Effectively applied sample dispersion with wanting use various type of dispersing tool
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts



DSM-5, RPM measuring instrument

Specification

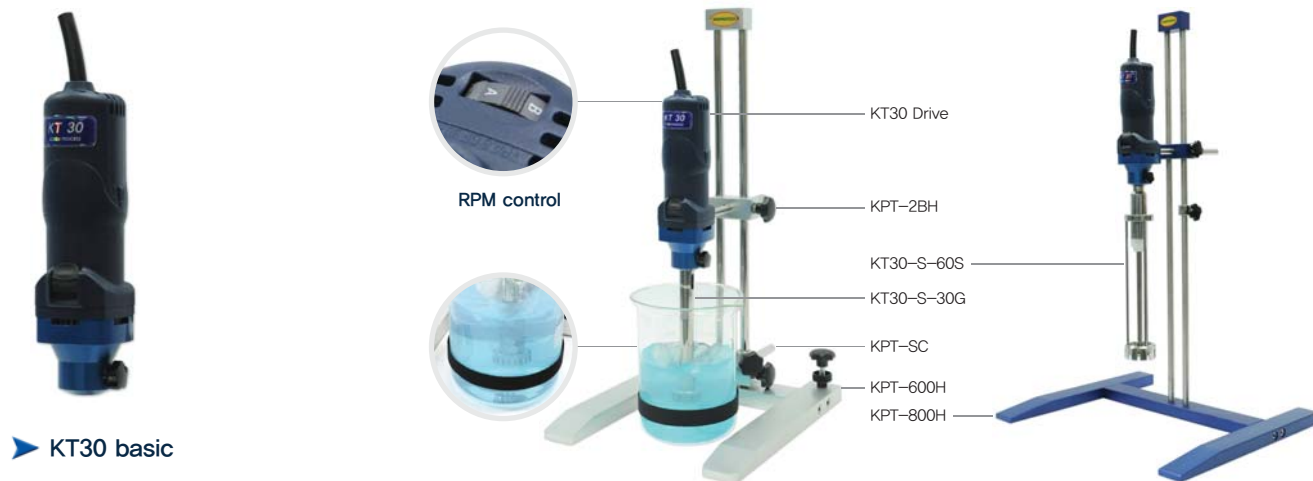
| Model | KT25 basic |
|----------------------------------|--------------------|
| Ident. No. | K125000 |
| Motor capacity | 500 W |
| Speed range | 3,500 ~ 30,000 rpm |
| Speed adjustment | stepless |
| Volume range (H ₂ O) | 50 ~ 10,000 ml |
| Max. viscosity | 5,000 mPas |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 57 x 58 x 260 mm |
| Weight | 1.5 kg |

Lab Rotor/Stator Dispersers & Homogenizers

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KT30 basic, Batch operation

Optional accessories (page 24), Dispersing elements (page 22)



KT30 basic

Features

- Use high-performance motors can stable mix and disperse
- Control speed range of 10,000~30,000rpm
- Processing capacity of 0.5~20,000ml (H₂O)
- Protect equipment overloading function
- Process maximum viscosity sample of 10,000mPas
- Smooth starting function minimized overflowing sample by sudden operation
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean
- Effectively applied sample dispersion with wanting use various type of dispersing tool
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real



DSM-5, RPM measuring instrument

Application

- Nano-dispersing
- Biotechnology
- Human & veterinary medicine
- Clinical medicine
- Pharmaceutical industry
- Cosmetics industry
- Food industry
- Petrochemistry
- Paint & lacquer industry
- Polymer industry
- Raw material industry
- etc.



Specification



| Model | KT30 basic |
|----------------------------------|---------------------|
| Ident. No. | K130000 |
| Motor capacity | 500 W |
| Speed range | 10,000 ~ 30,000 rpm |
| Speed adjustment | stepless |
| Volume range (H ₂ O) | 0.5 ~ 20,000 ml |
| Max. viscosity | 10,000 mPas |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 70 x 70 x 255 mm |
| Weight | 1.3 kg |

KT30 continuous circulating



DSM-5, RPM measuring instrument

Lab Rotor/Stator Dispersers & Homogenizers

Crushing · Dispersing · Emulsifying · Homogenizer

NEW KT30 basic, Batch operation

Optional accessories (page 24), Dispersing elements (page 22)



DSM-5, RPM measuring instrument

NEW KT30 basic

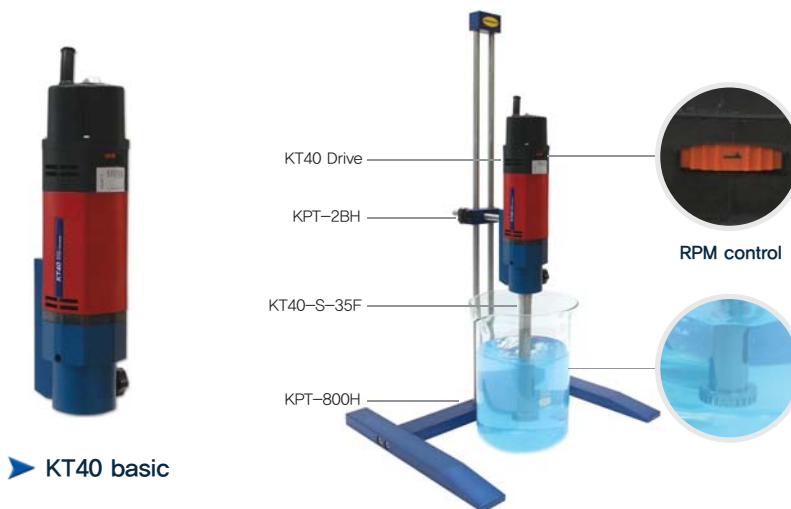
Features

- Use high-performance motors can stable mix and disperse
- Control speed range of 10,000~29,000rpm
- Processing capacity of 0.5~20,000ml (H₂O)
- Protect equipment overloading function
- Smooth starting function minimized overflowing sample by sudden operation
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean
- Effectively applied sample dispersion with wanting use various type of dispersing tool
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts

Specification

| Model | NEW KT30 basic |
|----------------------------------|---------------------|
| Ident. No. | K130000N |
| Motor capacity | 800 W |
| Speed range | 10,000 ~ 29,000 rpm |
| Speed adjustment | stepless |
| Volume range (H ₂ O) | 0.5 ~ 20,000 ml |
| Max. viscosity | 10,000 mPas |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 72 x 67 x 260 mm |
| Weight | 1.4 kg |

KT40 basic, Batch operation



DSM-5, RPM measuring instrument

KT40 basic

Features

- Use high-performance motors (1,050W) can powerful and stable to mix, disperses
- Control speed range of 3,500~25,000rpm
- Processing capacity of 200~25,000ml (H₂O)
- Protect equipment overloading function
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean
- Effectively applied sample dispersion with wanting use various type of dispersing tool
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts

Specification

| Model | KT40 basic |
|----------------------------------|--------------------|
| Ident. No. | K140000 |
| Motor capacity | 1,050 W |
| Speed range | 3,500 ~ 25,000 rpm |
| Speed adjustment | stepless |
| Volume range (H ₂ O) | 200 ~ 25,000 ml |
| Max. viscosity | 5,000 mPas |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 74 x 75 x 330 mm |
| Weight | 2.7 kg |

Lab Rotor/Stator Dispersers & Homogenizers

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KT50 basic, Batch operation

▶ Optional accessories (page 24), Dispersing elements (page 23)



▶ KT50 basic

Specification

| Model | KT50 basic |
|----------------------------------|--------------------|
| Ident. No. | K150000 |
| Motor capacity | 1,500 W |
| Speed range | 2,500 ~ 14,000 rpm |
| Speed adjustment | stepless |
| Volume range (H ₂ O) | 500 ~ 30,000 ml |
| Max. viscosity | 5,000 mPas |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 125 x 120 x 367 mm |
| Weight | 4.8 kg |

Features

- Use high-performance motors can stable mix and disperse
- Control speed range of 2,500~14,000rpm
- Processing capacity of 500~30,000ml (H₂O)
- Protect equipment overloading function
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean
- Effectively applied sample dispersion with wanting use various type of dispersing tool
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time

KT60 basic, Batch operation



▶ KT60 basic



DSM-5, RPM measuring instrument

Specification

| Model | KT60 basic |
|----------------------------------|--------------------|
| Ident. No. | K160000 |
| Motor capacity | 1,800 W |
| Speed range | 2,500 ~ 23,000 rpm |
| Speed adjustment | stepless |
| Volume range (H ₂ O) | 1,000 ~ 35,000 ml |
| Max. viscosity | 5,000 mPas |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Smooth run-on/start | Yes |
| Dimension [W x D x H] | 125 x 120 x 367 mm |
| Weight | 4.8 kg |

Features

- Use high-performance motors can stable mix and disperse
- Control speed range of 2,500~23,000rpm
- Processing capacity of 1,000~35,000ml (H₂O)
- Protect equipment overloading function
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean
- Effectively applied sample dispersion with wanting use various type of dispersing tool
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts

Lab & Small Production Inline Dispersers

Crushing · Dispersing · Emulsifying · Homogenizer

KT25 basic inline, Circulation dispersing system



▶ KT25 basic inline



DSM-5, RPM measuring instrument

Outlet ↑

Inlet ←

Features

- Use high-performance motors can stable mix and disperse
- The flow chamber is used to cycle through the available the spirit continuously distributed it can move the other process
- Dispersion time is 50% shorter than the existing batch type disperser
- Maximum processing capacity of 12L/min
- Control speed range of 3,500~30,000rpm
- Possible vacuum/pressurized work
- Protect equipment overloading function
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean
- Effectively applied sample property with various type of dispersing tool and module
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time

Specification

| Model | KT25 basic inline |
|----------------------------------|--------------------|
| Ident. No. | K125100 |
| Motor capacity | 500 W |
| Speed range | 3,500 ~ 30,000 rpm |
| Flow rate (H ₂ O) | 12 l/min |
| Max. viscosity | 5,000 mPas |
| Max. operating temperature | 180 °C |
| Chamber volume | 30 ml |
| Min. vacuum | 1 mbar |
| Max. pressure | 3 bar |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Dimension [W x D x H] | 100 x 510 x 110 mm |
| Weight | 3 kg |

Accessories

▶ Hopper



| Model | Stainless steel hopper | Acrylic hopper |
|----------------|------------------------|----------------|
| Ident. No. | K130154 | K130155 |
| Hopper Volume | 1 L | 3.2 L |
| Outer diameter | 139 mm | 170 mm |
| Inner diameter | 114 mm | 160 mm |
| Height | 147 mm | 180 mm |

▶ KFC25 Flow chamber



| Model | Single chamber (1-generator) | Double chamber (3-generator) |
|----------------|------------------------------|------------------------------|
| Ident. No. | K125151 | K125152 |
| Chamber Volume | 30 ml | 90 ml |
| Vacuum | 1 mbar | 1 mbar |
| Pressure | 3 bar | 3 bar |

▶ KMB30 Mounting base



| Model | KMB 30 |
|-----------------------|--------------------|
| Ident. No. | K130153 |
| Dimension (W x D x H) | 100 x 510 x 110 mm |

▶ Exchangeable dispersing elements

- KT25-SI-25G
- KT25-SI-25M
- KT25-SI-25F

▶ Dispersing elements (page 23)

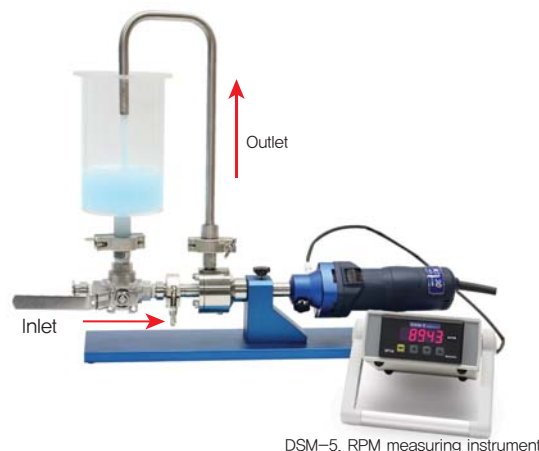
Lab & Small Production Inline Dispersers

Crushing · Dispersing · Emulsifying · Homogenizer

KT30 basic inline, Circulation dispersing system



▶ KT30 basic inline



DSM-5, RPM measuring instrument

Features

- Use high-performance motors can stable mix and disperse
- The flow chamber is used to cycle through the available the spirit continuously distributed it can move the other process
- Dispersion time is 50% shorter than the existing batch type disperser
- Maximum processing capacity of 14L/min
- Control speed range of 10,000~30,000rpm
- Possible vacuum/pressurized work
- Protect equipment overloading function
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean
- Effectively applied sample property with various type of dispersing tool and module
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time
- Product basically comprised KT30 basic, KFC30 flow chamber, dispersing tool, KMB30 mounting base

Accessories

▶ Hopper



| Model | Stainless steel hopper | Acrylic hopper |
|----------------|------------------------|----------------|
| Ident. No. | K130154 | K130155 |
| Hopper Volume | 1 L | 3.2 L |
| Outer diameter | 139 mm | 170 mm |
| Inner diameter | 114 mm | 160 mm |
| Height | 147 mm | 180 mm |

▶ KMB30 Mounting base



| Model | KMB 30 |
|-----------------------|--------------------|
| Ident. No. | K130153 |
| Dimension (W x D x H) | 100 x 510 x 110 mm |

Specification

| Model | KT30 basic inline |
|----------------------------------|---------------------|
| Ident. No. | K130100 |
| Motor capacity | 500 W |
| Speed range | 10,000 ~ 30,000 rpm |
| Flow rate (H ₂ O) | 14 l/min |
| Max. viscosity | 10,000 mPas |
| Max. operating temperature | 180 °C |
| Chamber volume | 35 ml |
| Min. vacuum | 1 mbar |
| Max. pressure | 3 bar |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Dimension [W x D x H] | 100 x 510 x 110 mm |
| Weight | 3.5 kg |

▶ KFC30 Flow chamber



| Model | Single chamber (1-generator) | Double chamber (3-generator) |
|----------------|------------------------------|------------------------------|
| Ident. No. | K130151 | K130152 |
| Chamber Volume | 35 ml | 105 ml |
| Vacuum | 1 mbar | 1 mbar |
| Pressure | 3 bar | 3 bar |

▶ Exchangeable dispersing elements

- KT30-SI-30G
- KT30-SI-30M
- KT30-SI-30F

▶ Dispersing elements (page 23)

Lab & Small Production Inline Dispersers

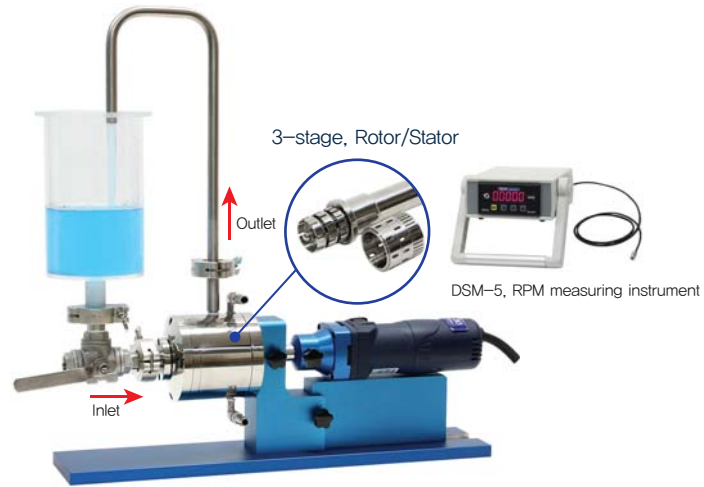
Crushing · Dispersing · Emulsifying · Homogenizer



KT30-H3-D inline, Circulation dispersing system



▶ KT30-H3-D inline



Features

- Use high-performance motors (500W) can stable mix and disperse sample
- Control speed range of 10,000~30,000rpm
- Maximum processing capacity of 14L/min
- The flow chamber is used to cycle through the available the spirit continuously distributed it can move the other process
- Dispersion time is 50% shorter than the existing batch type disperser
- Use 3 steps of rotor/stator to increase dispersion effect
- Protect equipment overloading function
- Possible vacuum/pressurized work
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time
- Product basically comprised KT32 basic, KFC30 flow chamber, dispersing tool, KMB32 mounting base

Specification

| Model | KT30-H3-D inline |
|----------------------------------|---------------------|
| Ident. No. | K132100 |
| Motor capacity | 500 W |
| Speed range | 10,000 ~ 30,000 rpm |
| Flow rate (H ₂ O) | 14 l/min |
| Max. viscosity | 10,000 mPas |
| Max. operating temperature | 180 °C |
| Chamber volume | 35 ml |
| Min. vacuum | 1 mbar |
| Max. pressure | 3 bar |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Dimension [W x D x H] | 100 x 510 x 210 mm |
| Weight | 10 kg |

Accessories

▶ Dispersing element



| Model | KT30-S-32F |
|----------------------------------|-------------------|
| Ident. No. | K132152 |
| Diam. of the rotor (mm) | 23 |
| Diam. of the stator (mm) | 30 |
| Shaft length (mm) | 157 |
| Materials in contact with medium | Silicone/SiC/316L |

▶ KFC32 Flow chamber



| Model | KFC32 Flow chamber |
|----------------|--------------------|
| Ident. No. | K130152 |
| Chamber volume | 35 ml |
| Min. Vacuum | 1 mbar |
| Max. Pressure | 5 bar |
| Dimension | 100 x 190 mm |

▶ KMB32 Mounting base



| Model | KMB 32 |
|-----------------------|--------------------|
| Ident. No. | K130154 |
| Dimension (W x D x H) | 100 x 510 x 175 mm |

▶ DSM-5, Digital speed measuring Device



- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time
- RPM Range : 0 ~ 99,999 r/min



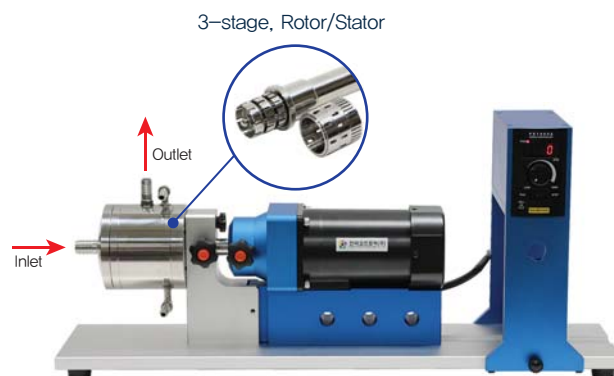
Lab & Small Production Inline Dispersers

Crushing · Dispersing · Emulsifying · Homogenizer

KT32 inline system, Circulation dispersing system



▶ KT32 inline system



Features

- Use high-performance motors (180W) can stable mix and disperse sample
- Control speed range of 100~17,000rpm
- Digital displayed rotor speed
- The flow chamber is used to cycle through the available the spirit continuously distributed it can move the other process
- Dispersion time is 50% shorter than the existing batch type disperser
- Use 3 steps of rotor/stator to increase dispersion effect
- Protect equipment overloading function
- Possible vacuum/pressurized work
- Dispersing tool can easily remove from instrument and conveniently dismantle 2~3 steps, easy to assemble and clean

Specification

| Model | KT32 inline system |
|----------------------------------|--------------------|
| Ident. No. | K132200 |
| Motor Capacity | 180 W |
| Speed range | 100 ~ 1,700 rpm |
| Speed display | LED |
| Chamber volume | 35 ml |
| Max. Viscosity | 10,000 mPas |
| Min. Vacuum | 1 mbar |
| Max. Pressure | 3 bar |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Dimension [W x D x H] | 150 x 650 x 300 mm |

Accessories

▶ Dispersing element



| Model | KT30-S-32F |
|----------------------------------|-------------------|
| Ident. No. | K132152 |
| Diam. of the rotor (mm) | 23 |
| Diam. of the stator (mm) | 30 |
| Shaft length (mm) | 157 |
| Materials in contact with medium | Silicone/SIC/316L |

▶ KFC32 Flow chamber



| Model | KFC32 Flow chamber |
|----------------|--------------------|
| Ident. No. | K130152 |
| Chamber volume | 35 ml |
| Min. Vacuum | 1 mbar |
| Max. Pressure | 5 bar |
| Dimension | 100 x 190 mm |

▶ FX1000A Speed controller



- Separate speed controller volume in front can control rotating speed and check the motor rotating speed
- RPM Range : 100 ~ 1,700 r/min

▶ KMB32 Mounting base

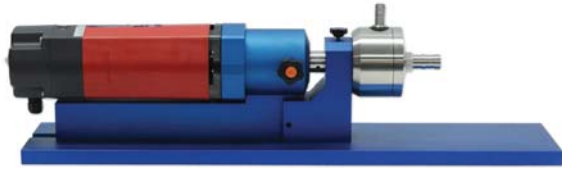


| Model | KMB 32 |
|-----------------------|--------------------|
| Ident. No. | K130154 |
| Dimension (W x D x H) | 100 x 510 x 175 mm |

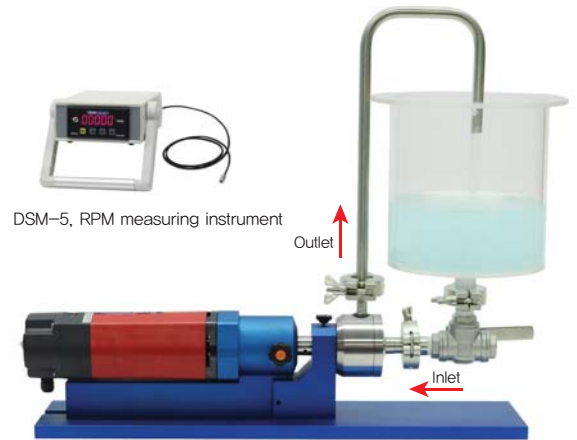
Lab & Small Production Inline Dispersers

Crushing · Dispersing · Emulsifying · Homogenizer

KT50 basic inline, Circulation dispersing system



▶ KT50 basic inline



Features

- Use high-performance motors can stable mix and disperse
- The flow chamber is used to cycle through the available the spirit continuously distributed it can move the other process
- Dispersion time is 50% shorter than the existing batch type disperser
- Maximum processing capacity of 25L/min
- Control speed range of 2,500~14,000rpm
- Possible vacuum/pressurized work
- Protect equipment overloading function
- Effectively applied sample property with various type of dispersing tool and module
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time
- Product basically comprised KT50 basic, KFC50 flow chamber, dispersing tool, KMB50 mounting base

Specification

| Model | KT50 basic inline |
|----------------------------------|--------------------|
| Ident. No. | K150100 |
| Motor capacity | 1,500 W |
| Speed range | 2,500 ~ 14,000 rpm |
| Flow rate (H ₂ O) | 25 l/min |
| Max. viscosity | 5,000 mPas |
| Max. operating temperature | 180 °C |
| Chamber volume | 100 ml |
| Min. vacuum | 1 mbar |
| Max. pressure | 3 bar |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Dimension [W x D x H] | 150 x 700 x 160 mm |
| Weight | 15 kg |

Accessories

▶ Hopper



| Model | Stainless steel hopper | Acrylic hopper |
|----------------|------------------------|----------------|
| Ident. No. | K150154 | K150155 |
| Hopper Volume | 5 L | 3.2 L |
| Outer diameter | 200 mm | 170 mm |
| Inner diameter | 180 mm | 160 mm |
| Height | 300 mm | 180 mm |

▶ KFC50 Flow chamber



| Model | Single chamber (1-generator) | Double chamber (3-generator) |
|----------------|------------------------------|------------------------------|
| Ident. No. | K130151 | K130152 |
| Chamber Volume | 100 ml | 300 ml |
| Vacuum | 1 mbar | 1 mbar |
| Pressure | 5 bar | 5 bar |

▶ KMB50 Mounting base



| Model | KMB 50 |
|-----------------------|--------------------|
| Ident. No. | K150153 |
| Dimension (W x D x H) | 150 x 700 x 160 mm |

▶ Exchangeable dispersing elements

- KT50-SI-50G
- KT50-SI-50M
- KT50-SI-50F

▶ Dispersing elements (page 23)



Lab & Small Production Inline Dispersers

Crushing · Dispersing · Emulsifying · Homogenizer

KT1 50-V1, Inline & circulation Dispersing Machine (Vertical type)



Features

- Use high-performance motors (1,500W) can stable mix and disperse sample
- The flow chamber is used to cycle through the available the spirit continuously distributed it can move the other process
- Dispersion time is 50% shorter than the existing batch type disperser
- Use 3 steps of rotor/stator to increase dispersion effect
- Control speed range of 2,500~10,000rpm
- Maximum processing capacity of 25L/min
- Possible vacuum/pressurized work
- Protect equipment overloading function
- Effectively applied sample property with various type of generator
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time

Applications

- Synthetic fiber materials (stability dispersion)
- Biotechnology
- Human & veterinary medicine
- Clinical medicine
- Pharmaceutical industry
- Cosmetics industry
- Food industry
- Petrochemistry
- Paint & lacquer industry
- Polymer industry
- Raw material industry
- etc.

Specification

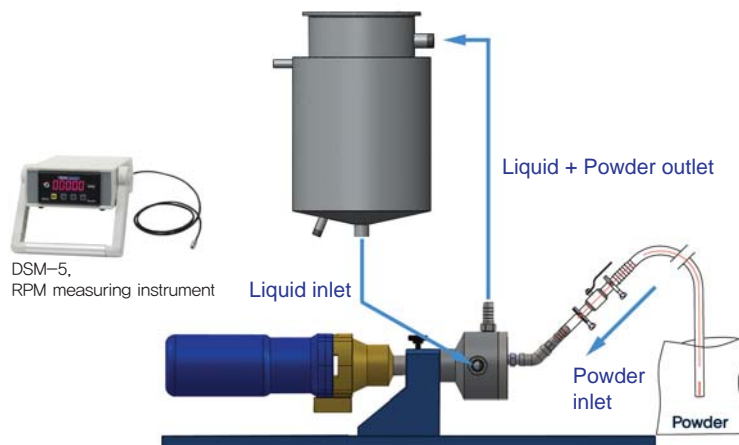
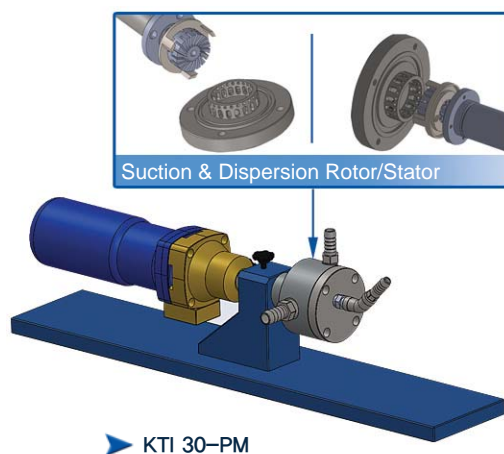
| Model | KT1 50-V1 inline |
|----------------------------------|--------------------|
| Ident. No. | K151100 |
| Motor Capacity | 1,500 W |
| Speed range | 2,500~10,000 rpm |
| Flow rate (H ₂ O) | 25 l/min |
| Max. Viscosity | 5,000 mPas |
| Max. operating temperature | 180 °C |
| Chamber volume | 100 ml |
| Min. Vacuum | 1 mbar |
| Max. Pressure | 3 bar |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Dimension[W x D x H] | 400 x 200 x 500 mm |
| Weight | 15 kg |

Suction-powder Mixing, Dispersing & Emulsifying

Crushing · Dispersing · Emulsifying · Homogenizer



KTI 30-PM, Suction-powder Mixing, Dispersing & Emulsifying



Features

KTI 30-PM system is the use of special high-speed rotation of the rotor have a vacuum, the powder evenly inhalation chamber work, and it evenly distributed in the rapid flow of sap flow, the flow in the blink Secretary powder was completely wet, do not have a massive reunion of. Then liquid and powder through a high-shear structure for the rotor to any possible spread of the (block-poly, the last fully wet) and Yan evenly distributed the materials.

KTI 30-PM system is a completely different treatment concept. The sets of equipment systems integration deal with all the necessary steps, all in a fusion of all the machines are dealing with an instant at the same time completely solve the traditional equipment difficult to resolve some of the problems.

Application

- Food Industry: homogeneous concentrated fruit juice, long fiber beverages, soup, all kinds of jam, fruit juice, mashed potatoes, mustard cake.
- Homogeneous fermented dairy products: You yogurt, soft cheese, butter, etc.
- Heterogeneous mix milk products: such as ice cream, chocolate milk, cocoa milk, CMC, starch, wheat fine, and so on.
- Biological pharmaceutical industry: tissue, cell body grinding, injection, antibiotics, drug ointment, microcapsules emulsion.
- Cosmetic Industry: Emulsion various facial cream, lipstick, liquid detergent, Ximian Nai, skin care products, shampoo.
- Chemical industry: resin emulsion, surfactant, carbon black dispersion, dye coating.
- Petrochemical Industry: emulsified asphalt, modified asphalt, heavy oil emulsified diesel emulsion, lubricants, silicone oil emulsion.
- Homogeneous production of PVC plasticizers: various emulsifier, photographic emulsion, additives, etc.

Specification

| Model | KTI 30-PM |
|---------------------------------------|----------------|
| Power Input [W] | 500 |
| Flow rate [H ₂ O], [l/min] | 14 |
| Chamber volume [ml] | 30 |
| Speed range [rpm] | 10,000-30,000 |
| Min. vacuum [mbar] | 1 |
| Max. pressure [bar] | 6 |
| Material in contact with medium | AISI 316L/FFPM |
| Max. operating temp. [°C] | 180 |
| Dimensions [mm] | 100x510x110 |
| Weight [Kg] | 4 |
| Permissible ambient temp [°C] | 5-40 |
| Permissible humidity [%] | 80 |

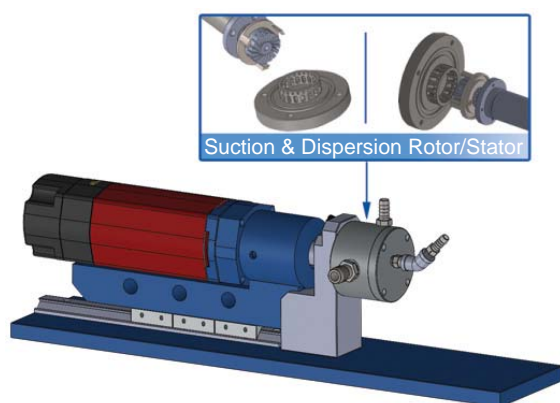
▶ Flow listed on the table refers to the datas measured when the medium is water. The flow will be varied with transformation of medium's viscosity and density, electrical power also will be different. This pump has short delivery head, it should be installed below the medium's level. High viscosity and solid content make the pump can not feed and deliver normally, a feeding pump or pressure pump with matched flow should be adopted. If the data in the table is modified, no further notification be given, and the right parameters as per the provided sample.



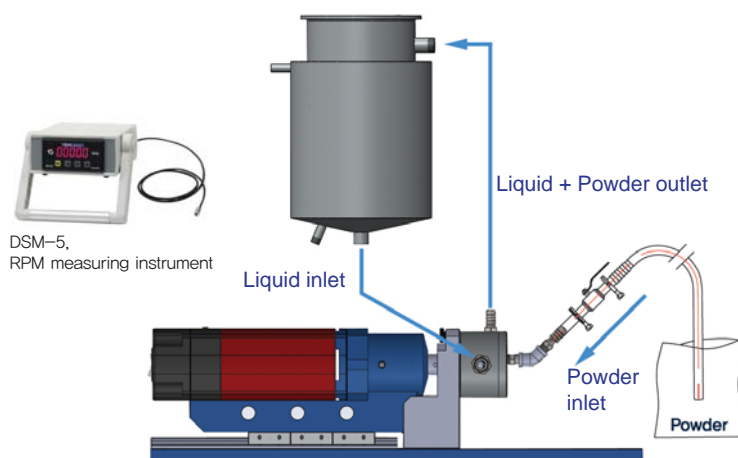
Suction-powder Mixing, Dispersing & Emulsifying

Crushing · Dispersing · Emulsifying · Homogenizer

KTI 50-PM, Suction-powder Mixing, Dispersing & Emulsifying



▶ KTI 50-PM



Features

KTI 50-PM system is the use of special high-speed rotation of the rotor have a vacuum, the powder evenly inhalation chamber work, and it evenly distributed in the rapid flow of sap flow, the flow in the blink Secretary powder was completely wet, do not have a massive reunion of. Then liquid and powder through a high-shear structure for the rotor to any possible spread of the (block-poly, the last fully wet) and Yan evenly distributed the materials.

KTI 50-PM system is a completely different treatment concept. The sets of equipment systems integration deal with all the necessary steps, all in a fusion of all the machines are dealing with an instant at the same time completely solve the traditional equipment difficult to resolve some of the problems.

Application

- Food Industry: homogeneous concentrated fruit juice, long fiber beverages, soup, all kinds of jam, fruit juice, mashed potatoes, mustard cake.
- Homogeneous fermented dairy products: You yogurt, soft cheese, butter, etc.
- Heterogeneous mix milk products: such as ice cream, chocolate milk, cocoa milk, CMC, starch, wheat fine, and so on.
- Biological pharmaceutical industry: tissue, cell body grinding, injection, antibiotics, drug ointment, microcapsules emulsion.
- Cosmetic Industry: Emulsion various facial cream, lipstick, liquid detergent, Ximian Nai, skin care products, shampoo.
- Chemical industry: resin emulsion, surfactant, carbon black dispersion, dye coating.
- Petrochemical Industry: emulsified asphalt, modified asphalt, heavy oil emulsified diesel emulsion, lubricants, silicone oil emulsion.
- Homogeneous production of PVC plasticizers: various emulsifier, photographic emulsion, additives, etc.

Specification

| Model | KTI 50-PM |
|---------------------------------------|----------------|
| Power Input [W] | 1500 |
| Flow rate [H ₂ O], [l/min] | 24 |
| Chamber volume [ml] | 100 |
| Speed range [rpm] | 2,500-14,000 |
| Min. vacuum [mbar] | 1 |
| Max. pressure [bar] | 6 |
| Material in contact with medium | AISI 316L/FFPM |
| Max. operating temp. [°C] | 180 |
| Dimensions [mm] | 100x510x110 |
| Weight [Kg] | 15 |
| Permissible ambient temp [°C] | 5-40 |
| Permissible humidity [%] | 80 |

▶ Flow listed on the table refers to the datas measured when the medium is water. The flow will be varied with transformation of medium's viscosity and density, electrical power also will be different. This pump has short delivery head, it should be installed below the medium's level. High viscosity and solid content make the pump can not feed and deliver normally, a feeding pump or pressure pump with matched flow should be adopted. If the data in the table is modified, no further notification be given, and the right parameters as per the provided sample.

Lab Combination Dispersers & Homogenizers

Crushing · Dispersing · Emulsifying · Homogenizer

Lab Combination Dispersers

Circulation Dispersing System



DSM-5, RPM measuring instrument



Exchangeable Rotor & Stator Dispersing Tools

Dispersing elements (Batch type) **KT5 basic, KT8 basic, KT10 basic**



| Model | KT5-S-5G | KT5-S-8G | K8-S-5G | KT8-S-8G | KT10-S-5G | KT10-S-8G | KT10-S-10G |
|--------------------------------------|----------|----------|---------|----------|-----------|-----------|------------|
| Ident. No. | K105001 | K105003 | K108001 | K108002 | K110001 | K110002 | K110003 |
| Working range (H ₂ O, ml) | 0.5~10 | 0.5~50 | 0.5~10 | 0.5~50 | 0.5~10 | 1~100 | 1~200 |
| Diam. of the stator (mm) | 5 | 8 | 5 | 8 | 5 | 8 | 10 |
| Shaft length (mm) | 145 | 145 | 85 | 110 | 145 | 145 | 145 |
| Ultimate Fineness suspension (μm) | 5~25 | 5~25 | 5~25 | 5~25 | 5~25 | 5~25 | 5~25 |
| Ultimate Fineness emulsion (μm) | 1~10 | 1~10 | 1~10 | 1~10 | 1~10 | 1~10 | 1~10 |

Dispersing elements (Batch type) **KT15-D, KT20-DT**



| Model | KT15-S-6G | KT15-S-8G | K15-S-10G | KT20-S-10G | KT20-S-14G | KT20-S-18G |
|--------------------------------------|-----------|-----------|-----------|------------|------------|------------|
| Ident. No. | K810156 | K810157 | K810158 | K810152 | K810153 | K810155 |
| Working range (H ₂ O, ml) | 0.5~10 | 1~50 | 10~500 | 1~100 | 10~500 | 10~1,000 |
| Diam. of the stator (mm) | 6 | 8 | 10 | 10 | 14 | 18 |
| Shaft length (mm) | 150 | 167 | 185 | 135 | 152 | 178 |
| Ultimate Fineness suspension (μm) | 5~25 | 5~25 | 5~25 | 5~25 | 10~50 | 10~50 |
| Ultimate Fineness emulsion (μm) | 1~10 | 1~10 | 1~10 | 1~10 | 1~10 | 1~10 |

Dispersing elements (Batch type) **KT25 basic, KT30 basic, KT40 basic**



| Model | KT25-S-25G | KT25-S-25M | KT25-S-25F | KT25-S-50S | KT30-S-5G | KT30-S-10G | KT30-S-20G |
|--------------------------------------|------------|------------------|------------|------------------|-----------|------------|------------|
| Ident. No. | K125005 | K125007 | K125008 | K125011 | K131001 | K131002 | K131003 |
| Working range (H ₂ O, ml) | 50~3,000 | 50~5,000 | 50~3,000 | 1,000~10,000 | 0.5~10 | 0.5~200 | 10~2,000 |
| Diam. of the stator (mm) | 25 | 25 | 25 | 50 | 5 | 10 | 20 |
| Shaft length (mm) | 193 | 193 | 193 | 336 | 128 | 150 | 220 |
| Ultimate Fineness suspension (μm) | 1~50 | high-speed mixer | 5~25 | high-speed mixer | 5~25 | 10~50 | 10~50 |
| Ultimate Fineness emulsion (μm) | 1~10 | high-speed mixer | 1~10 | high-speed mixer | 1~10 | 1~10 | 1~10 |



| Model | KT30-S-20F | KT30-S-30G | KT30-S-30F | KT30-S-40G | KT30-S-60S | KT30-S-60M | KT40-S-35G |
|--------------------------------------|------------|------------|------------|------------------|------------------|------------------|------------|
| Ident. No. | K131004 | K131005 | K131007 | K131009 | K131010 | K131011 | K140004 |
| Working range (H ₂ O, ml) | 10~2,000 | 100~5,000 | 100~5,000 | 500~10,000 | 1,000~20,000 | 500~20,000 | 200~10,000 |
| Diam. of the stator (mm) | 20 | 30 | 30 | 40 | 60 | 60 | 35 |
| Shaft length (mm) | 220 | 220 | 220 | 220 | 366 | 250 | 290 |
| Ultimate Fineness suspension (μm) | 1~50 | 5~25 | 5~25 | high-speed mixer | high-speed mixer | high-speed mixer | 5~50 |
| Ultimate Fineness emulsion (μm) | 1~10 | 1~10 | 1~10 | high-speed mixer | high-speed mixer | high-speed mixer | 1~10 |



| Model | KT40-S-35M | KT40-S-35F | KT40-S-65S |
|--------------------------------------|------------------|------------|------------------|
| Ident. No. | K140005 | K140006 | K140010 |
| Working range (H ₂ O, ml) | 200~15,000 | 200~10,000 | 1,000~25,000 |
| Diam. of the stator (mm) | 35 | 35 | 65 |
| Shaft length (mm) | 290 | 290 | 386 |
| Ultimate Fineness suspension (μm) | high-speed mixer | 5~25 | high-speed mixer |
| Ultimate Fineness emulsion (μm) | high-speed mixer | 1~10 | high-speed mixer |

▶ Rotor

· Addition rotor for dispersing element:
KT25-S-20G, KT30-S-20G, KT40-S-30G



| Model | KSW 18 Cutting Rotor | KSZ 18 Shredding Rotor |
|----------------------------------|------------------------------------|------------------------|
| Rotor diameter | 13/20 mm | 13/20 mm |
| Circumferential speed | 16.1 m/s | 15.9 m/s |
| Materials in contact with medium | stainl. steel AISI 316L | |
| Application | viscous, fibrous tissue, shredding | |

Exchangeable Rotor & Stator Dispersing Tools

Dispersing elements (Batch type) **KT50 basic**



| Model | KT50-S-45G | KT50-S-45M | KT50-S-45F | KT50-S-70S |
|--------------------------------------|------------|------------------|------------|------------------|
| Ident. No. | K150004 | K150005 | K150006 | K150010 |
| Working range (H ₂ O, ml) | 500~20,000 | 500~25,000 | 500~15,000 | 1,000~30,000 |
| Diam. of the stator (mm) | 45 | 45 | 45 | 70 |
| Shaft length (mm) | 345 | 345 | 5~25 | 406 |
| Ultimate Fineness suspension (μm) | 5~50 | high-speed mixer | 345 | high-speed mixer |
| Ultimate Fineness emulsion (μm) | 1~10 | high-speed mixer | 1~10 | high-speed mixer |

Dispersing elements (Batch type) **KT60 basic**



| Model | KT60-S-60G | KT60-S-60M | KT60-S-60F | KT60-S-75S |
|--------------------------------------|--------------|------------------|--------------|------------------|
| Ident. No. | K160001 | K160002 | K160003 | K160005 |
| Working range (H ₂ O, ml) | 1,000~25,000 | 1,000~30,000 | 1,000~20,000 | 1,000~35,000 |
| Diam. of the stator (mm) | 60 | 60 | 60 | 75 |
| Shaft length (mm) | 350 | 350 | 350 | 426 |
| Ultimate Fineness suspension (μm) | 5~50 | high-speed mixer | 5~25 | high-speed mixer |
| Ultimate Fineness emulsion (μm) | 1~10 | high-speed mixer | 1~10 | high-speed mixer |

Dispersing elements (Inline type) **KT25 basic Inline, KT30 basic Inline**



| Model | KT25-SI-25G | KT25-SI-25M | KT25-SI-25F | KT30-SI-30G | KT30-SI-30M | KT30-SI-30F |
|-----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Ident. No. | K125011 | K125012 | K125013 | K130011 | K130012 | K130013 |
| Diam. of the rotor (mm) | 19 | 14 | 19 | 23 | 19 | 23 |
| Diam. of the stator (mm) | 25 | 25 | 25 | 30 | 30 | 30 |
| Shaft length (mm) | 142 | 142 | 142 | 142 | 142 | 142 |
| Peripheral speed at 30,000 1/min | 29.8 | 21.9 | 29.8 | 31.6 | 29.8 | 31.6 |
| Materials in contact with medium | FFPM/SIC/STS316L | FFPM/SIC/STS316L | FFPM/SIC/STS316L | FFPM/SIC/STS316L | FFPM/SIC/STS316L | FFPM/SIC/STS316L |
| Suitable for solvent | yes | yes | yes | yes | yes | yes |
| Ultimate Fineness suspension (μm) | 10~50 | high-speed mixer | 5~25 | 10~50 | high-speed mixer | 5~25 |
| Ultimate Fineness emulsion (μm) | 1~10 | high-speed mixer | 1~10 | 1~10 | high-speed mixer | 1~10 |

Dispersing elements (Inline type) **KT50 basic Inline**



| Model | KT50-SI-50G | KT50-SI-50M | KT50-SI-50F |
|-----------------------------------|------------------|------------------|------------------|
| Ident. No. | K150011 | K150012 | K150013 |
| Diam. of the rotor (mm) | 36 | 31 | 36 |
| Diam. of the stator (mm) | 50 | 50 | 50 |
| Shaft length (mm) | 146 | 146 | 146 |
| Peripheral speed at 30,000 1/min | 26.4 | 22.7 | 26.4 |
| Materials in contact with medium | FFPM/SIC/STS316L | FFPM/SIC/STS316L | FFPM/SIC/STS316L |
| Suitable for solvent | yes | yes | yes |
| Ultimate Fineness suspension (μm) | 10~50 | high-speed mixer | 5~25 |
| Ultimate Fineness emulsion (μm) | 1~10 | high-speed mixer | 1~10 |

Various Stands / Fitting Accessories

Stands



| Model | KPT-TTS-S | KPT-TTS-T | KPT-MS-mini | KPT-600H | KPT-800H |
|-------------------------|--------------|--------------|--------------|--------------|--------------|
| Ident. No. | K510001 | K510002 | K510003 | K510006 | K510007 |
| Diameter of support rod | 10 mm | 10 mm | 10 mm | 13 mm | 13 mm |
| Dimensions (W x D) | 180 x 200 mm | 180 x 200 mm | 250 x 385 mm | 300 x 340 mm | 500 x 420 mm |
| Height | 470 mm | 470 mm | 470 mm | 600 mm | 800 mm |
| Max. load | 1 Kg | 1 Kg | 1 Kg | 5 Kg | 5 Kg |



| Model | KPT-800P | KPT-700U | KPT-1000H | KPT-1000TH |
|-------------------------|--------------|--------------|--------------|----------------|
| Ident. No. | K510005 | K510010 | K510008 | K510009 |
| Diameter of support rod | 16 mm | 19 mm | 34 mm | 34 mm |
| Dimensions (W x D) | 200 x 320 mm | 390 x 300 mm | 460 x 420 mm | 460 x 420 mm |
| Height | 800 mm | 700 mm | 1,000 mm | 500 ~ 1,000 mm |
| Max. load | 5 Kg | 3 Kg | 10 Kg | 10 Kg |

Boss heads



| Model | KPT-5BH | KPT-10BH | KPT-1BH | KPT-2BH | KPT-50BH |
|-----------------|----------|----------|----------|----------|----------|
| Ident. No. | K530001 | K530002 | K530003 | K530004 | K530006 |
| Diameter of rod | 11 mm | 13 mm | 6~16 mm | 13 mm | 16 mm |
| Material | aluminum | aluminum | aluminum | aluminum | aluminum |

Holding clamps



| Model | KPT-5HC | KPT-10HC |
|-----------------|---------|----------|
| Ident. No. | K520001 | K520002 |
| Diameter of rod | 13 mm | 13 mm |
| Length | 280 mm | 280 mm |

Strap clamps



| Model | KPT-SC | KPT-50SC |
|---------------------|-----------|-----------|
| Ident. No. | K520003 | K520005 |
| Diameter of rod | 13 mm | 13 mm |
| For vessel diameter | 50~300 mm | 50~300 mm |

Portable Sonicators

Ultrasonic Extracting · Crushing · Homogenizing · Dispersing · Emulsifier

KYY-80 / KYY-100 Portable Sonicators (Hand-held type)



Hand-held type

▶ KYY-80



Hand-held type

▶ KYY-100

Features

- Potable Sonicator with light-weight catches in one hand can use hand-held type
- Unite ultrasonic transducer and ultrasonic processor potable Sonicator
- Corrected automatic overloading by the automatic frequency tracking, ultrasonic amplitude
- Easy to disperse small amount to sample (150 μ l~100ml)
- Convenient operation
- Nano dispersing optimization equipment

Ultrasonic dispersing application

- Crush cellular, bacteria, virus tissue
- Melt, extract, catalyst mixture, accelerate chemical reaction
- Nano dispersion

Specifications



| Model | KYY-80 | KYY-100 |
|---------------------------------|---------------------|----------------------|
| Ident. No. | K910001 | K910002 |
| Frequency | 23 KHz | 20 KHz |
| Output power | 80 W | 100 W |
| Volume range (H ₂ O) | 150 μ l ~ 50 ml | 150 μ l ~ 100 ml |
| Probe diameter | \varnothing 3 mm | \varnothing 3 mm |
| Dimension | 320 x 70 mm | 270 x 35 mm |
| Weight | 0.5 kg | 0.3 kg |



Table Sonicators

Ultrasonic Extracting · Crushing · Homogenizing · Dispersing · Emulsifier



KUP-250 Ultrasonic Homogenizer (Hand-Held type)



► KUP-250

Features

KUP-250 Ultrasonic cell crusher is a multi-function and multi-purpose apparatus handling substances by using strong ultrasonic wave, which provides cavity effect in liquid. It can be used to crush tissue, cells, bacteria and brood cell, at the same time, emulsify, separate, break up, homogenize, abstract, degas, clean and accelerate chemical reaction, so that it is the ideal tool to make and break nano material. The machine has been extensively applied in research, development and production in biological chemistry, microbiology, medical chemistry, surface chemistry, organic chemistry, inorganic chemistry, physics, zoology and other fields.

Specification

| Model | KUP-250 |
|---------------------------|----------------------------------|
| Ident. No. | K810015 |
| Work Frequency | 20-25 KHz |
| Output Power of Generator | 250 W |
| Power adjustment scope | 1%-99% , continuously adjustable |
| Total Work Time Set | 1 - 999 minutes, LCD Display |
| Ultrasonic Time Set | 0.1 – 99.9 seconds, LCD Display |
| Gap Time Set | 0.1 – 99.9 seconds, LCD Display |
| Diameter of Tip End | Ø3 or Ø6 |
| Processing Volume | 0.5-100 ml |
| Working Voltage | 220V, 60Hz |
| Dimension | 270x210x140 mm |
| Weight | 4 kg |

KSS98-III, Cup-Form Ultrasonic Homogenizer



► KSS98-III

Features

KSS98-III Cup-Form homogenizer is used for breaking up the chromosome and crushing cells aseptically across the centrifugal glass tube. For the machine with a silencer impact device, KDL-1510 Refrigerated Circulating Bath is guide ideal.

- Digital display, Microprocessor controlled and completely programmable.
- Auto-tuning for convenience of use and optimal processing efficiency, Time setting.
- Integrated Sound Abating Chamber to reduce cavitation sound emitted during processing

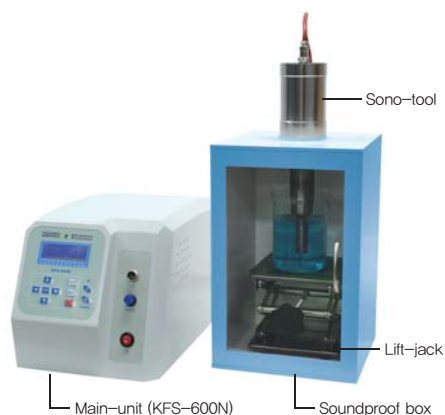
Specifications

| Model | KSS98-III | KSS08-I | KSS08-II | KSS08-III |
|-------------------|---------------|---------------|---------------|---------------|
| Ident. No. | K810018 | K810019 | K810020 | K810021 |
| Frequency | 19.5-20.5 KHz | 19.5-20.5 KHz | 19.5-20.5 KHz | 19.5-20.5 KHz |
| Power | 1200 W | 2200 W | 3200 W | 4800 W |
| Processing Volume | (0.1-2ml)x4 | (0.1-2ml)x8 | (0.1-2ml)x16 | (0.1-2ml)x32 |
| Duty Ratio (%) | 1-99% | 1-99% | 1-99% | 1-99% |
| Supply | 220V/60Hz | 220V/60Hz | 220V/60Hz | 220V/60Hz |

Table Sonicators

Ultrasonic Extracting · Crushing · Homogenizing · Dispersing · Emulsifier

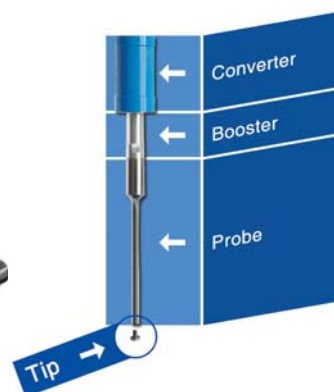
KFS-N series



Sono-tools



(Standard include one sono-tool in each model (except tip))



Features

- Processing capacity of 0.5~3,000ml with various probe, tip by type of the model
- Possible set the pulse mode, continuous mode
- Possible set the ultrasonic output amplitude range of 1~100%
- Possible control 1sec~99min for handle temperature sensitive samples
- Corrected automatic overloading by the automatic tracking supplements and sono-tool amplitude during ultrasonic generative process
- The sample temperature rises above the set temperature and measurement ultrasonic oscillation stopped/restart

Ultrasonic dispersing application

- Nano dispersion
- Crush cellular, bacteria, virus tissue
- Melt, extract, catalyst mixture, accelerate chemical reaction
- Apply the mixture, extraction, crush, dispersion, homogenization, emulsifying process of industry of biology, pharmaceutical, food, cosmetic, etc

Specifications



| Model | KFS-150N | KFS-250N | KFS-300N | KFS-450N |
|---------------------------------|---|---|---|---|
| Ident. No. | K900001 | K900002 | K900003 | K900004 |
| Frequency | 20 KHz | 20 KHz | 20 KHz | 20 KHz |
| Output power | 80 W | 150 W | 300 W | 450 W |
| Volume range (H ₂ O) | 0.5 ~ 50 ml | 2 ~ 100 ml | 5 ~ 200 ml | 10 ~ 300 ml |
| Probe diameter | Ø 3 mm | Ø 6 mm | Ø 8 mm | Ø 13 mm |
| Total working timer | 1s - 99 hours with pause function | 1s - 99 hours with pause function | 1s - 99 hours with pause function | 1s - 99 hours with pause function |
| Ultrasonic output impulse | Ultrasonic on timer: 1s - 99 min Ultrasonic off timer: 1s - 99 min | Ultrasonic on timer: 1s - 99 min Ultrasonic off timer: 1s - 99 min | Ultrasonic on timer: 1s - 99 min Ultrasonic off timer: 1s - 99 min | Ultrasonic on timer: 1s - 99 min Ultrasonic off timer: 1s - 99 min |
| Duty ratio | 0 ~ 100 % | 0 ~ 100 % | 0 ~ 100 % | 0 ~ 100 % |



| Model | KFS-600N | KFS-750N | KFS-1200N | KFS-1800N |
|---------------------------------|---|---|---|---|
| Ident. No. | K900005 | K900020 | K900006 | K900007 |
| Frequency | 20 KHz | 20 KHz | 20 KHz | 20 KHz |
| Output power | 600 W | 600 W | 1,200 W | 1,800 W |
| Volume range (H ₂ O) | 20 ~ 500 ml | 20 ~ 500 ml | 50 ~ 2,000 ml | 100 ~ 3,000 ml |
| Probe diameter | Ø 16 mm | Ø 16 mm | Ø 20 mm | Ø 25 mm |
| Total working timer | 1s - 99 hours with pause function | 1s - 99 hours with pause function | 1s - 99 hours with pause function | 1s - 99 hours with pause function |
| Ultrasonic output impulse | Ultrasonic on timer: 1s - 99 min Ultrasonic off timer: 1s - 99 min | Ultrasonic on timer: 1s - 99 min Ultrasonic off timer: 1s - 99 min | Ultrasonic on timer: 1s - 99 min Ultrasonic off timer: 1s - 99 min | Ultrasonic on timer: 1s - 99 min Ultrasonic off timer: 1s - 99 min |
| Duty ratio | 0 ~ 100 % | 0 ~ 100 % | 0 ~ 100 % | 0 ~ 100 % |

Table Sonicators

Ultrasonic Extracting · Crushing · Homogenizing · Dispersing · Emulsifier

KSS-series



Titanium alloy Tips



Features

- Processing capacity of 0.5~1,200ml with various tip by type of model
- Operating frequency range: 19.5~25 KHz (frequency automatic tracking)
- Possible set the ultrasonic output amplitude range of 0.1~99.9%
- Possible control 0.1~99.9sec for handle temperature sensitive samples
- Corrected automatic overloading by the automatic tracking supplements and sono-tool amplitude during ultrasonic generative process
- The sample temperature rises above the set temperature and measurement ultrasonic oscillation stopped

Ultrasonic dispersing application

- Nano dispersion
- Crush cellular, bacteria, virus tissue
- Melt, extract, catalyst mixture, accelerate chemical reaction
- Apply the mixture, extraction, crush, dispersion, homogenization, emulsifying process of industry of biology, pharmaceutical, food, cosmetic, etc

Specifications



| Model | KSS-150D | KSS-250D | KSS-650D | KSS-1200D |
|---------------------------------|---|---|---|---|
| Ident. No. | K810006 | K810007 | K810001 | K810003 |
| Frequency | 20 ~ 25 KHz | 20 ~ 25 KHz | 20 ~ 25 KHz | 19.5 ~ 20.5 KHz |
| Output power | 150 W | 250 W | 650 W | 1,200 W |
| Volume range (H ₂ O) | 10 ~ 100 ml | 10 ~ 200 ml | 0.5 ~ 500 ml | 50 ~ 1,000 ml |
| Tip diameter | Ø 3 mm | Ø 6 mm | Ø 6 mm | Ø 20 mm |
| Optional Tip | Ø 6 mm | Ø 3 mm | Ø 2, Ø 3, Ø 10, Ø 12, Ø 15 mm | Ø 15, Ø 25 mm |
| Temperature protection range | No | No | No | No |
| Total working timer | 1 ~ 999 min | 1 ~ 999 min | 1 ~ 999 min | 1 ~ 999 min |
| Ultrasonic output impulse | Ultrasonic on timer: 0.1 ~ 99.9 s Ultrasonic off timer: 0.1 ~ 99.9 s | Ultrasonic on timer: 0.1 ~ 99.9 s Ultrasonic off timer: 0.1 ~ 99.9 s | Ultrasonic on timer: 0.1 ~ 99.9 s Ultrasonic off timer: 0.1 ~ 99.9 s | Ultrasonic on timer: 0.1 ~ 99.9 s Ultrasonic off timer: 0.1 ~ 99.9 s |
| Duty ratio | 1 ~ 99 % | 1 ~ 99 % | 1 ~ 99 % | 1 ~ 99 % |



| Model | KSS-750DT | KSS-950DT | KSS-1200DT | KSS-1800DT |
|---------------------------------|---|--|---|---|
| Ident. No. | K810008 | K810000 | K810004 | K810005 |
| Frequency | 20 ~ 25 KHz | 20 ~ 25 KHz | 19.5 ~ 20.5 KHz | 19.5 ~ 20.5 KHz |
| Output power | 750 W | 950 W | 1,200 W | 1,800 W |
| Volume range (H ₂ O) | 0.5 ~ 400 ml | 0.5 ~ 600 ml | 50 ~ 1,000 ml | 50 ~ 1,200 ml |
| Tip diameter | Ø 6 mm | Ø 15 mm | Ø 20 mm | Ø 25 mm |
| Optional Tip | Ø 2, Ø 3, Ø 10, Ø 13 mm | Ø 2, Ø 3, Ø 6, Ø 10 mm | Ø 15, Ø 25 mm | Ø 20, Ø 28 mm |
| Temperature protection range | 0 ~ 99 °C | 0 ~ 99 °C | 0 ~ 99 °C | 0 ~ 99 °C |
| Total working timer | 1 ~ 999 min | 1 ~ 999 min | 1 ~ 999 min | 1 ~ 999 min |
| Ultrasonic output impulse | Ultrasonic on timer: 0.1 ~ 99.9 s Ultrasonic off timer: 0.1 ~ 99.9 s | Ultrasonic on timer: 0.1 ~ 9.9 s Ultrasonic off timer: 1 ~ 10,000 s | Ultrasonic on timer: 0.1 ~ 99.9 s Ultrasonic off timer: 0.1 ~ 99.9 s | Ultrasonic on timer: 0.1 ~ 99.9 s Ultrasonic off timer: 0.1 ~ 99.9 s |
| Duty ratio | 0.1 ~ 99.9 % | 0.1 ~ 99.9 % | 0.1 ~ 99.9 % | 0.1 ~ 99.9 % |

Inline Sonicators

Ultrasonic Extracting · Crushing · Homogenizing · Dispersing · Emulsifier

K-UPR® inline & circulation ultrasonic processors

Circulation Dispersing System



▶ Continuous circulating dispersion system application

Features

- Inline chamber is used to cycle through the available the spirit continuously distributed it can move the other process
- Processing capacity of 0.5~1,200ml with various tip by type of model
- Operating frequency range: 19.5~25 KHz (frequency automatic tracking)
- Possible set the ultrasonic output amplitude range of 0.1~99.9%
- Possible control 0.1~99.9sec for handle temperature sensitive samples
- Corrected automatic overloading by the automatic tracking supplements and sono-tool amplitude during ultrasonic generative process
- Set sample temperature to use cooling/heating circulative instrument with double-walled vessels type
- Convenient operation, process digital display
- Nano dispersing optimization equipment
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time

Ultrasonic dispersing application

- Nano dispersion
- Crush cellular, bacteria, virus tissue
- Melt, extract, catalyst mixture, accelerate chemical reaction
- Apply the mixture, extraction, crush, dispersion, homogenization, emulsifying process to industry of biology, pharmaceutical, food, cosmetic, etc

Specifications



| Model | KSS-150D | KSS-250D | KSS-650D | KSS-950DT | KSS-1200DT | KSS-1800DT |
|---------------------------------|-------------|-------------|--------------|--------------|-----------------|-----------------|
| Ident. No. | K810006 | K810007 | K810001 | K810000 | K810004 | K810005 |
| Frequency | 20 ~ 25 KHz | 20 ~ 25 KHz | 20 ~ 25 KHz | 20 ~ 25 KHz | 19.5 ~ 20.5 KHz | 19.5 ~ 20.5 KHz |
| Output power | 150 W | 250 W | 650 W | 950 W | 1,200 W | 1,800 W |
| Volume range (H ₂ O) | 10 ~ 100 ml | 10 ~ 200 ml | 0.5 ~ 500 ml | 0.5 ~ 600 ml | 50 ~ 1,000 ml | 50 ~ 1,200 ml |
| Tip diameter | Ø 3 mm | Ø 6 mm | Ø 6 mm | Ø 15 mm | Ø 20 mm | Ø 25 mm |
| Duty ratio | 1 ~ 99 % | 1 ~ 99 % | 1 ~ 99 % | 0.1 ~ 99.9 % | 0.1 ~ 99.9 % | 0.1 ~ 99.9 % |



| Model | SSC-50AL | SSC-100AL | SSC-200AL | SSC-300AL | SSC-500AL | SSC-2000AL |
|----------------|----------|-----------|-----------|-----------|-----------|------------|
| Ident. No. | K900011 | K900012 | K900013 | K900014 | K900015 | K900016 |
| Total volume | 55 ml | 110 ml | 220 ml | 330 ml | 550 ml | 2,200 ml |
| Working volume | 50 ml | 100 ml | 200 ml | 300 ml | 500 ml | 2,000 ml |

Combination Sonicators

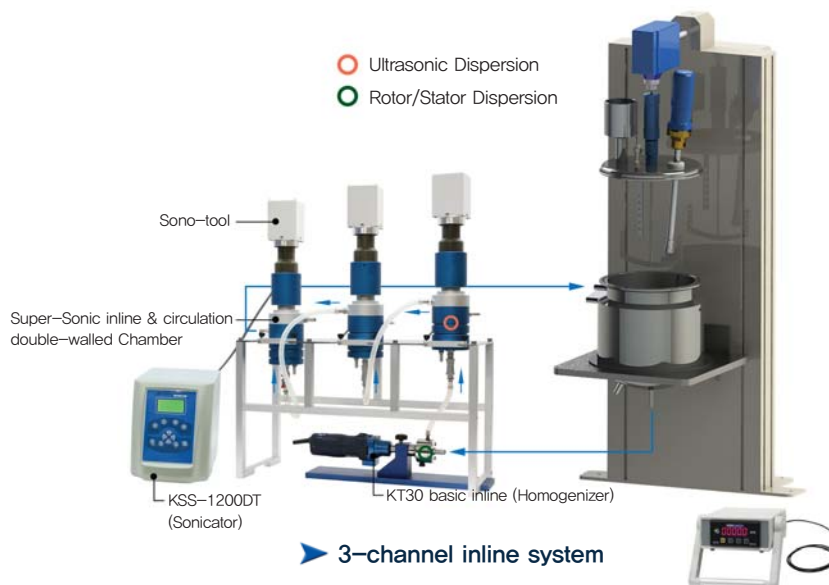
Ultrasonic Extracting · Crushing · Homogenizing · Dispensing · Emulsifier

K-UPR® Multi inline system & circulation ultrasonic processors

Circulation Dispensing System



▶ 1-channel inline system



▶ 3-channel inline system

DSM-5, RPM measuring instrument

Features

- Continuous circulating system can apply various experiments, producing condition and process large capacity of multiple connecting ultrasonic & mechanical emulsifiers
- inline chamber is used to cycle through the available the spirit continuously distributed it can move the other process
- Operating frequency range: 20~25 KHz (frequency automatic tracking)
- Possible set the ultrasonic output amplitude range of 0.1~99.9%
- According to property, capacity of sample can connect 1~6
- Possible control 0.1~99.9sec for handle temperature sensitive sample
- Corrected automatic overloading by the automatic tracking supplements and sono-tool amplitude during ultrasonic generative process
- Set sample temperature to use cooling/heating circulative instrument with double-walled vessels type
- Convenient operation, process digital display
- KT30 basic inline (Homogenizer) pre-and pumping by the use of inline, multiple usages can be used at the same time
- Nano dispersing optimization equipment
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time

Ultrasonic dispersing application

- Nano dispersion
- Crush cellular, bacteria, virus tissue
- Melt, extract, catalyst mixture, accelerate chemical reaction
- Apply the mixture, extraction, crush, dispersion, homogenization, emulsifying process to industry of biology, pharmaceutical, food, cosmetic, etc

Specifications



| Model | KSS-950DT | KSS-1200DT | KSS-1800DT |
|---------------------------------|--|---|---|
| Ident. No. | K810000 | K810004 | K810005 |
| Frequency | 20 ~ 25 KHz | 19.5 ~ 20.5 KHz | 19.5 ~ 20.5 KHz |
| Output power | 950 W | 1,200 W | 1,800 W |
| Volume range (H ₂ O) | 0.5 ~ 600 ml | 50 ~ 1,000 ml | 50 ~ 1,200 ml |
| Chamber Working volume | 500 ml | 500 ml | 500 ml |
| Tip diameter | Ø 15 mm | Ø 20 mm | Ø 25 mm |
| Total working timer | 1 ~ 999 min | 1 ~ 999 min | 1 ~ 999 min |
| Ultrasonic output impulse | Ultrasonic on timer: 0.1 ~ 9.9 s Ultrasonic off timer: 1 ~ 10,000 s | Ultrasonic on timer: 0.1 ~ 99.9 s Ultrasonic off timer: 0.1 ~ 99.9 s | Ultrasonic on timer: 0.1 ~ 99.9 s Ultrasonic off timer: 0.1 ~ 99.9 s |
| Duty ratio | 0.1 ~ 99.9 % | 0.1 ~ 99.9 % | 0.1 ~ 99.9 % |

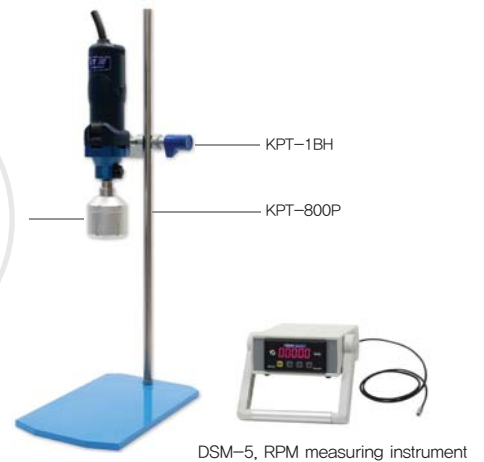
Lab Grinder (DRY/WET)

Crushing · Dispersing

KTM30 basic, Lab Grinder (DRY/WET)



▶ KTM30 basic



DSM-5, RPM measuring instrument

Features

- The brittle material of soft & hard is suitable for the dry grinding of loss
- Control speed range of 10,000~30,000rpm
- Use the quality steel chamber easy to separate, clean, seal (according to sample hardness can select stainless or aluminum material)
- Depend on wanting to grind the type of samples can replace to use the cutter of 3 types
- Using cooling/heating chamber base, it can control the sample temperature to circulate cold/hot water around the grinding chamber
- Motor drive (KT30) can use public with KT30 homogenizer dispersing elements
- One motor drive can be used as the dry grinder and the wet grinder
- Protect equipment overloading function

Specification

| Model | | KTM30 basic |
|--------------------------|------------------------------|---------------------------------------|
| Ident. No. | | K133100 |
| Motor capacity | | 500 W |
| Speed range | | 10,000 ~ 30,000 rpm |
| Speed adjustment | | Cont. variable |
| Useful volume | | 50 ml or 100 ml |
| Overload protection | | yes |
| Duty cycle ON/OFF | | 1 min / 10 min |
| circumferential speed | | 56 m/s |
| Chamber Material | | Aluminum, Mohs 6 Stainless, Mohs 9 |
| Max. granularity of task | | 10 mm |
| Weight | KTM30 basic | 3 kg |
| | Base | 2.7 kg |
| | Cooling/Heating chamber base | 2.3 kg |
| Dimension | KTM30 basic | 70 x 70 x 327 mm |
| | Base | 150 x 150 x 337 mm |
| | Cooling/Heating chamber base | 130 x 130 x 332 mm |

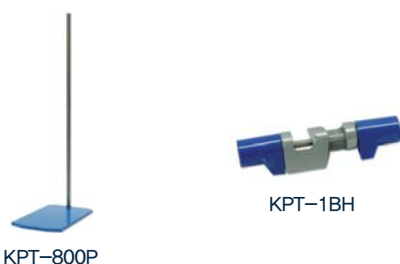
Accessories

▶ Cutter

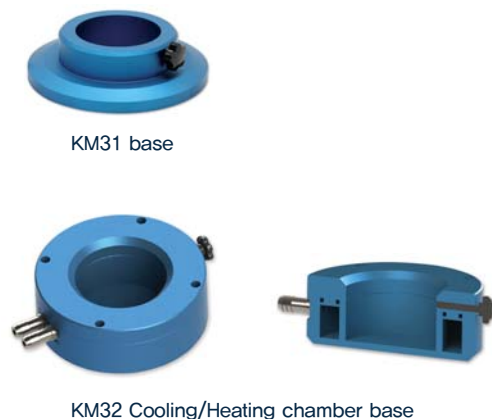


- KM3S Soft cutter, For Mohs hardness up to 6
- KM3H Hard cutter, For Mohs Hardness up to 9
- KM3B Cutting blade, For pulverizing soft, fibrous grinding materials

▶ Stand & Boss head



▶ Base



Lab Basket Mills (WET)

파쇄 · 분산

KSG-LB5 Lab Basket Mill (WET)



▶ KSG-LB5

Features

Applicable for dispersing and grinding small batch materials, results in excellent grinding fineness with uniform particle size distribution. The unique basket structure of this sand mill bring a efficient circulating system to the materials. With the high speed drive of drive plate, the high hardness milling medium has very excellent milling effect. It has good milling fineness, high efficiency and the milled materials have uniform diameter. The whole milling process is carried out in closed state. It has no dead space, the discharge is complete and the residue is very few. It is easy to clean or to change the color or other products.

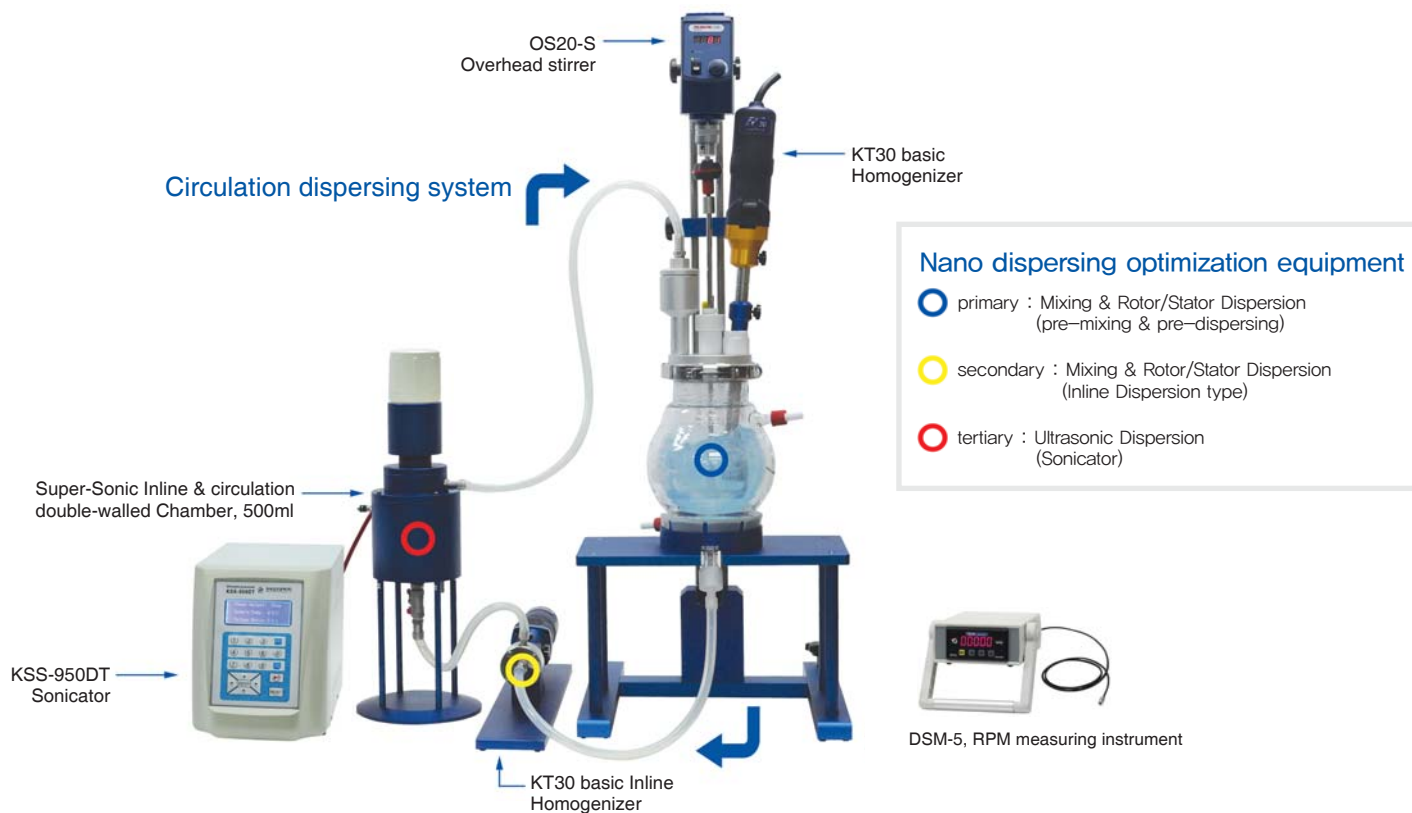
Specification

| Model | KSG-LB5 |
|-------------------|---|
| Capacity range | 1-5 L (Water as medium) |
| Power Supply | 220V, 50/60 Hz |
| Power | 750 W |
| Rotation Speed | 0-2880 rpm, Frequency Converter Control |
| Container | With standard 2.5L jacketed tank (SUS304) for cooling or heating |
| Grinding medium | Pure Zirconium Beads |
| Height Adjustment | Manual Lifting, Electric Lifting |
| Stand/Base Seat | Stainless Steel |

Laboratory Reactors

KLR-series Reactor systems

Economic & Efficient scale-up with KLR-series Reactor systems for laboratory & pilot scale production



Features

- KCLR laboratory reactor system can apply circulating sample mixtures, emulsifying, dispersion, homogenization process to use mixer, homogenizer (batch type, inline type), and ultrasonic emulsifier
- According to usage can use under the vacuum, pressure condition
- Processed viscosity of 10,000mPas in low viscosity
- Reaction vessel is a laboratory-scale from Pilot scale capacity of 2, 5L to 10, 20L capacity and it is possible to choose (according to 10, 20L capacity differ specification, material, component)
- According to demanding, reaction cover can be produced aluminum, stainless steel 304, 316L
- Set the sample temperature to use the cooling/heating circulative instrument with double-walled vessels types
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time

Option

- Reaction Vessel (Select1 2, 5, 10, 20L)
- KT25/30/50 basic Inline & Circulation dispersing system (Select1 by capacity)
- K-UPR® Inline & Circulation Ultrasonic processor (Select1 by ultrasonic output & capacity)

Application

- CNT dispersion
- Pharmaceutical industry
- Cosmetics industry
- Polymer industry
- Food industry
- Raw material industry
- Biotechnology industry
- Petrochemistry industry
- etc.

Specification

| Model | KLR-series |
|-----------------------------------|---------------------|
| Working volume (H ₂ O) | 2, 5, 10, 20 L |
| Max. temperature | 230 °C |
| Max. vacuum | 25 mbar |
| Max. viscosity | approx. 10,000 mPas |
| Stirrer speed (OS20-S) | 50 ~ 2,200 rpm |
| Speed of dispenser | 10,000 ~ 30,000 rpm |
| Ultimate finene, Suspension | 10 ~ 30 µl |
| Ultimate finene, emulsion | 1 ~ 10 µl |

Laboratory Reactors

KLR-2000/5000, Laboratory Reactor systems, Batch operation



KLR-2000ST Batch operation & KT30 basic inline & K-UPR® Inline Ultrasonic Processor Circulation Reactor systems



KLR-2000 Batch operation & KT30 basic inline & Ultra-sonic Processor Circulation Reactor systems



KLR-2000 Batch operation & KT30 basic inline & K-UPR® Inline Ultrasonic Processor Circulation Reactor systems



Laboratory Reactors



KJR-series, Benchtop jacketed glass reactor (1L- 5L)



▶ KJR-S2



▶ KJR-S5

For small quantities or limited space requirements, we offer Benchtop Jacketed Glass Reactor (1L-5L).

Despite the capacity, bench top reactor has the same functions as pilot scale reactor to suit users need, and is equipped with robust SUS304 frame to guarantee the steady of the whole structure.



SiC+PTFE Mechanical Sealing
Ensures ultimate vacuum level of <2mbar.



PTFE Drain Valve
No dead space and no leakage.

Tangent Style Jacket Inlet/Outlet
To increase circulation flow and heat exchange rate.

Specifications

| Model | KJR-S1 | KJR-S2 | KJR-S5 |
|-----------------------------------|----------------------------|----------------------------|----------------------------|
| Capacity (L) | 1L | 2L | 5L |
| Diameter of Vessel (mm) | 150 mm | 150 mm | 180 mm |
| Nozzle Size & No. on Lid | 4 (NS19x2+NS24x2) | 4 (NS19x2+NS24x2) | 4 (NS19x2+NS24x2) |
| Temp. Range (°C) | -80-250°C | -80-250°C | -80-250°C |
| Ultimate Vacuum Level (mbar) | 2 mbar | 2 mbar | 2 mbar |
| Stirring Power (W) | 40 W | 40 W | 90 W |
| Rotary Speed (rpm) | 50-1200 | 50-1200 | 50-1200 |
| Glass Material | Borosilicate G3.3 | Borosilicate G3.3 | Borosilicate G3.3 |
| Frame Material | SUS304 | SUS304 | SUS304 |
| Stirring Shaft Material | PTFE, SUS304 & PTFE Coated | PTFE, SUS304 & PTFE Coated | PTFE, SUS304 & PTFE Coated |
| Agitator Material | PTFE | PTFE | PTFE |
| Dimension (cm) | 30x35x80 | 30x35x80 | 40x50x110 |
| Power Supply | 220V/5A | 220V/5A | 220V/5A |
| Configurations | KJR-S1 | KJR-S2 | KJR-S5 |
| SiC+PTFE Mechanical Sealing | Equipped | Equipped | Equipped |
| Digital Display of Rotary Speed | Equipped | Equipped | Equipped |
| PTFE Drain Valve | Equipped | Equipped | Equipped |
| Reflux Condenser | Equipped | Equipped | Equipped |
| Pressure Equalizing Funnel | Equipped | Equipped | Equipped |
| Feeding Valve | Equipped | Equipped | Equipped |
| Thermowell | Equipped | Equipped | Equipped |
| SS304 Jacket Inlet/Outlet Adaptor | Equipped | Equipped | Equipped |
| Tangent Style Jacket Inlet/Outlet | Equipped | Equipped | Equipped |
| Glass Lid | Equipped | Equipped | Optional |
| PTFE Lid | None | None | Equipped |
| Vacuum Meter | None | None | Equipped |
| Agitator Type | Anchor | Anchor | Anchor |
| Distillation Piece | Optional | Optional | Optional |
| Distillation Receiving | Optional (0.25L) | Optional (0.25L) | Optional (1L) |
| Liquid Separation | Optional | Optional | Optional |
| Rectification Receiving | Optional | Optional | Optional |
| Digital Display Thermometer | Optional | Optional | Optional |
| Bubbler | Optional | Optional | Optional |
| Epoxy Coated Frame | Optional | Optional | Optional |
| Safety Features | KJR-S1 | KJR-S2 | KJR-S5 |
| Over-current Protection | Equipped | Equipped | Equipped |
| No-spark Electronic Control | Equipped | Equipped | Equipped |



Pilot scale Reactors

KJR-series, Pilot scale jacketed glass reactor (10L - 100L)



▶ KJR-S30



Nozzles on Lid

- Large solid feed nozzle with pressure release valve
- Thermometer – PT100 digital display thermometer
- Condenser – Optional distillation piece for switch reactions between reflux and distillation
- Pressure equalizing funnel – Control liquid feeding speed and volume
- Multifunctional valve – For liquid feed, vacuum and pressure release



▶ Cooling Circulator



▶ Heating Circulator



▶ Compact Heating & Cooling Circulator



▶ Vacuum pump

⚙ Specifications

| Model | KJR-S10 | KJR-S20 | KJR-S30 | KJR-S50 | KJR-S100 |
|-----------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Capacity (L) | 10L | 20L | 30L | 50L | 100L |
| Diameter of Vessel (mm) | 265 mm | 265 mm | 265 mm | 265 mm | 340 mm |
| Nozzle Size & No. on Lid | 5 (NS24+NS34×3+DN40) | 5 (NS24+NS34×3+DN40) | 5 (NS24+NS34×3+DN40) | 5 (NS24+NS34×3+DN40) | 5 (NS24+NS34×3+DN40) |
| Temp. Range (°C) | -80-250°C | -80-250°C | -80-250°C | -80-250°C | -80-250°C |
| Ultimate Vacuum Level (mbar) | 2 mbar | 2 mbar | 2 mbar | 2 mbar | 2 mbar |
| Stirring Power (W) | 90 W | 120 W | 120 W | 180 W | 180 W |
| Rotary Speed (rpm) | 20-600 | 20-600 | 20-600 | 20-600 | 20-600 |
| Glass Material | Borosilicate G3.3 | Borosilicate G3.3 | Borosilicate G3.3 | Borosilicate G3.3 | Borosilicate G3.3 |
| Frame Material | SUS304 | SUS304 | SUS304 | SUS304 | SUS304 |
| Stirring Shaft Material | PTFE, SUS304 & PTFE Coated | PTFE, SUS304 & PTFE Coated | PTFE, SUS304 & PTFE Coated | PTFE, SUS304 & PTFE Coated | PTFE, SUS304 & PTFE Coated |
| Dimension (cm) | 55×52×140 | 68×65×155 | 72×68×170 | 75×72×180 | 75×72×230 |
| Power Supply | 220V/5A | 220V/5A | 220V/5A | 220V/5A | 220V/5A |
| Configurations | KJR-S10 | KJR-S20 | KJR-S30 | KJR-S50 | KJR-S100 |
| VFD Rotary Speed Control | Equipped | Equipped | Equipped | Equipped | Equipped |
| Gear Box | Equipped | Equipped | Equipped | Equipped | Equipped |
| Digital Display | Rotary Speed, Reactor Temp. | Rotary Speed, Reactor Temp. | Rotary Speed, Reactor Temp. | Rotary Speed, Reactor Temp. | Rotary Speed, Reactor Temp. |
| SiC+PTFE Mechanical Sealing | Equipped | Equipped | Equipped | Equipped | Equipped |
| PTFE Lid | Equipped | Equipped | Equipped | Equipped | Equipped |
| PTFE Drain Valve | Equipped | Equipped | Equipped | Equipped | Equipped |
| PTFE Flush Drain Valve | Optional | Optional | Optional | Optional | Optional |
| Reflux Condenser | Equipped | Equipped | Equipped | Equipped | Equipped |
| Pressure Equalizing Funnel | Equipped | Equipped | Equipped | Equipped | Equipped |
| Feeding Valve | Equipped | Equipped | Equipped | Equipped | Equipped |
| SUS Jacket Inlet/Outlet Adaptor | Equipped | Equipped | Equipped | Equipped | Equipped |
| Tangent Style Jacket Inlet/Outlet | Equipped | Equipped | Equipped | Equipped | Optional |
| PT100 Digital Thermometer | Equipped | Equipped | Equipped | Equipped | Equipped |
| Vacuum Meter | Equipped | Equipped | Equipped | Equipped | Equipped |
| Dual Agitator | Optional | Optional | Equipped | Equipped | Equipped |
| Agitator Type | Propeller | Propeller | Propeller | Propeller + Turbine | Propeller + Turbine |
| Heavy Duty Lockable Casters | Equipped | Equipped | Equipped | Equipped | Equipped |
| Distillation Piece | Optional | Optional | Optional | Optional | Optional |
| Distillation Receiving | Optional (3L) | Optional (5L) | Optional (5L) | Optional (10L) | Optional (20L) |
| Two Receiving Flasks | Optional (3L + 3L) | Optional (5L + 5L) | Optional (10L + 5L) | Optional (10L + 5L) | Optional (20L + 10L) |
| Liquid Separation | Optional | Optional | Optional | Optional | Optional |
| Rectification Receiving | Optional | Optional | Optional | Optional | Optional |
| Bubbler | Optional | Optional | Optional | Optional | Optional |
| DN60 Solid Feed Nozzle | Optional | Optional | Optional | Optional | Optional |
| Dripping System (5L) | Optional | Optional | Optional | Optional | Optional |
| Epoxy Coated Frame | Optional | Optional | Optional | Optional | Optional |
| Safety Features | KJR-S10 | KJR-S20 | KJR-S30 | KJR-S50 | KJR-S100 |
| Over-current Protection | Equipped | Equipped | Equipped | Equipped | Equipped |
| No-spark Electronic Control | Equipped | Equipped | Equipped | Equipped | Equipped |
| EX-proof Motor & Control | Optional | Optional | Optional | Optional | Optional |
| EX-proof Thermometer | Optional | Optional | Optional | Optional | Optional |

Multifunctional Reactors



KMR-series, Multifunctional glass reactor (2L - 50L)



Reaction Flask and Lid

Configured: mixing, reflux condensing, funnel feeding, extraction, and temp. measuring.
Optional: distilling, rectifying, dripping, bubbling, separating, sampling, etc.

Motor with Gearbox & VFD Speed Controller

Provides precise speed control, large torque with constant speed and maximum 600 rpm.
(EX-proof is optional)

Digital Heating Bath

Digital display and setting of temp. Oil bath is available for option to reach 180°C.

SiC+PTFE Mechanical Sealing

Ensures ultimate vacuum level of 2mbar.

(Optional) Bottom Discharge

PTFE Drain Valve. No dead space and no leakage.

► KMR-S20

Specifications

| Model | KMR-S2 | KMR-S5 | KMR-S20 | KMR-S50 |
|------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Capacity (L) | 2L | 5L | 20L | 50L |
| Diameter of Vessel Opening (mm) | 150 mm | 150 mm | 180 mm | 180 mm |
| Nozzle Size & No. | 4 (NS19×2+NS24×2) | 4 (NS19×2+NS24×2) | 4 (NS19+NS29×3) | 4 (NS19+NS29×3) |
| Ultimate Vacuum Level (mbar) | 2 mbar | 2 mbar | 2 mbar | 2 mbar |
| Stirring Power (W) | 40 W | 90 W | 120 W | 180 W |
| Rotary Speed (rpm) | 50-1200 | 50-1200 | 20-600 | 20-600 |
| Heating Power (kW) | 1.5 kW | 2 kW | 4 kW | 6 kW |
| Temp. Control Range& Accuracy (°C) | 20 -99 (180) ±1°C | 20 -99 (180) ±1°C | 20 -99 (180) ±1°C | 20 -99 (180) ±1°C |
| Bath Size, Capacity, Material | Ø24×15H, 6L, SUS304 | Ø28×19H, 10L, SUS304 | Ø45×26H, 38L, SUS304 | Ø55×35H, 76L, SUS304 |
| Bath Height Adjustment (cm) | 11 | 12 | None | None |
| Glass Material | Borosilicate G3.3 | Borosilicate G3.3 | Borosilicate G3.3 | Borosilicate G3.3 |
| Frame Material | SUS304 | SUS304 | SUS304 | SUS304 |
| Stirring Shaft Material | PTFE | PTFE | SUS304 & PTFE Coated | SUS304 & PTFE Coated |
| Dimension (cm) | 32×25×80 | 36×46×90 | 45×45×170 | 55×55×190 |
| Power Supply | 220V/10A | 220V/15A | 220V/30A | 220V/40A |
| Configurations | KMR-S2 | KMR-S5 | KMR-S20 | KMR-S50 |
| VFD Rotary Speed Control | None | None | Equipped | Equipped |
| Gear Box | None | None | Equipped | Equipped |
| Digital Display | Rotary Speed, Bath Temp. | Rotary Speed, Bath Temp. | Rotary Speed, Bath Temp. | Rotary Speed, Bath Temp. |
| SiC+PTFE Mechanical Sealing | Optional | Optional | Equipped | Equipped |
| Reflux Condenser | Equipped | Equipped | Equipped | Equipped |
| Pressure Equalizing Funnel | Equipped | Equipped | Equipped | Equipped |
| Feeding Valve | Equipped | Equipped | Equipped | Equipped |
| Thermowell | Equipped | Equipped | Equipped | Equipped |
| Vacuum Meter | None | None | Equipped | Equipped |
| Agitator Type | Anchor | Anchor | Propeller | Propeller + Turbine |
| Bottom Discharge | None | None | Optional | Optional |
| PTFE Drain Valve | None | None | Optional | Optional |
| Oil Bath (180°C) | Optional | Optional | Optional | Optional |
| Distillation Piece | Optional | Optional | Optional | Optional |
| Distillation Receiving | Optional (0.5L) | Optional (2L) | Optional (5L) | Optional (10L) |
| Liquid Separation | Optional | Optional | Optional | Optional |
| Rectification Receiving | Optional | Optional | Optional | Optional |
| Bubbler | Optional | Optional | Optional | Optional |
| Dripping System (5L) | None | None | Optional | Optional |
| Heavy Duty Lockable Casters | None | None | Equipped | Equipped |
| Epoxy Coated Frame | Optional | Optional | Optional | Optional |
| Safety Features | KMR-S2 | KMR-S5 | KMR-S20 | KMR-S50 |
| Over-current Protection | Equipped | Equipped | Equipped | Equipped |
| No-spark Electronic Control | Equipped | Equipped | Equipped | Equipped |
| EX-proof | None | None | Optional | Optional |



Separators

KSR-series, Separators (10L - 100L)



► KSR-S20

Motor with Gearbox & VFD Speed Controller
Provides precise speed control, large torque with constant speed and maximum 600 rpm.
(EX-proof is optional)

SiC+PTFE Assemble Sealing
Sealing Ensures ultimate vacuum level of <2mbar.

Taper Vessel Bottom for efficient separation

Dual Branching Piece at bottom discharge for better observation on separation result

(Optional) Glass baffles are to prevent whirlpool for efficient mixing

Specifications

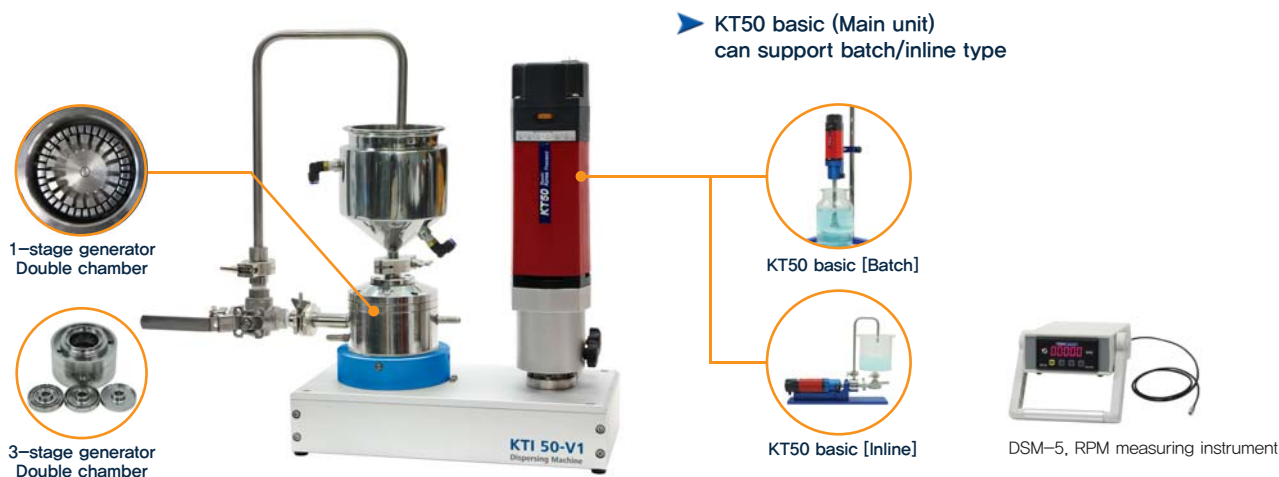
| Model | KSR-S10 | KSR-S20 | KSR-S50 | KSR-S80 | KSR-S100 |
|---------------------------------|--------------------|--------------------|---------------------|----------------------|----------------------|
| Capacity (L) | 10L | 20L | 50L | 80L | 100L |
| Vessel Diameter(mm) | 180 mm | 180 mm | 265 mm | 265 mm | 265 mm |
| Nozzle Size & No. on Lid | 2 (NS34×2) | 2 (NS34×2) | 2 (NS34×2) | 2 (NS34×2) | 2 (NS34×2) |
| Ultimate Vacuum Level (mbar) | 2 mbar | 2 mbar | 2 mbar | 2 mbar | 2 mbar |
| Stirring Power (W) | 90 W | 120 W | 180 W | 180 W | 180 W |
| Rotary Speed (rpm) | 20-600 | 20-600 | 20-600 | 20-600 | 20-600 |
| Glass Material | Borosilicate G3.3 | Borosilicate G3.3 | Borosilicate G3.3 | Borosilicate G3.3 | Borosilicate G3.3 |
| Frame Material | SUS304 | SUS304 | SUS304 | SUS304 | SUS304 |
| Stirring Shaft Material | PTFE | PTFE | PTFE | SUS304 & PTFE Coated | SUS304 & PTFE Coated |
| Agitator Material | PTFE | PTFE | PTFE | PTFE | PTFE |
| Dimension (cm) | 40×40×150 | 45×45×160 | 50×50×180 | 65×65×200 | 65×65×230 |
| Power Supply | 220V/5A | 220V/5A | 220V/5A | 220V/5A | 220V/5A |
| Configurations | KSR-S10 | KSR-S20 | KSR-S50 | KSR-S80 | KSR-S100 |
| VFD Rotary Speed Control | Equipped | Equipped | Equipped | Equipped | Equipped |
| Gear Box | Equipped | Equipped | Equipped | Equipped | Equipped |
| Digital Display of Rotary Speed | Equipped | Equipped | Equipped | Equipped | Equipped |
| SiC+PTFE Mechanical Sealing | Equipped | Equipped | Equipped | Equipped | Equipped |
| PTFE Drain Valve | Equipped | Equipped | Equipped | Equipped | Equipped |
| Feeding Valve | Equipped | Equipped | Equipped | Equipped | Equipped |
| Vacuum Meter | Equipped | Equipped | Equipped | Equipped | Equipped |
| Dual Agitator | Optional | Optional | Equipped | Optional | Optional |
| Agitator Type | Propeller | Propeller | Propeller | Propeller | Propeller |
| Dual Branching Piece | Optional | Optional | Optional | Optional | Optional |
| Two Receiving Flasks | Optional (3L + 3L) | Optional (5L + 5L) | Optional (10L + 5L) | Optional (10L + 10L) | Optional (20L + 10L) |
| Bubbler | Optional | Optional | Optional | Optional | Optional |
| Dripping System (5L) | Optional | Optional | Optional | Optional | Optional |
| Glass Baffles | Optional | Optional | Optional | Optional | Optional |
| Heavy Duty Lockable Casters | Equipped | Equipped | Equipped | Equipped | Equipped |
| Epoxy Coated Frame | Optional | Optional | Optional | Optional | Optional |
| Safety Features | KSR-S10 | KSR-S20 | KSR-S50 | KSR-S80 | KSR-S100 |
| Over-current Protection | Equipped | Equipped | Equipped | Equipped | Equipped |
| No-spark Electronic Control | Equipped | Equipped | Equipped | Equipped | Equipped |
| EX-proof | Optional | Optional | Optional | Optional | Optional |

Lab & Small Production Inline Dispersers

Crushing · Dispersing · Emulsifying · Homogenizer



KTI 50-V1, Inline & circulation Dispersing Machine (Vertical type)



Features

- Use high-performance motors (1,500W) can stable mix and disperse sample
- The flow chamber is used to cycle through the available the spirit continuously distributed it can move the other process
- Dispersion time is 50% shorter than the existing batch type disperser
- Use 3 steps of rotor/stator to increase dispersion effect
- Control speed range of 2,500~10,000rpm
- Maximum processing capacity of 25L/min
- Possible vacuum/pressurized work
- Protect equipment overloading function
- Effectively applied sample property with various type of generator
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time

Applications

- Synthetic fiber materials (stability dispersion)
- Biotechnology
- Human & veterinary medicine
- Clinical medicine
- Pharmaceutical industry
- Cosmetics industry
- Food industry
- Petrochemistry
- Paint & lacquer industry
- Polymer industry
- Raw material industry
- etc.

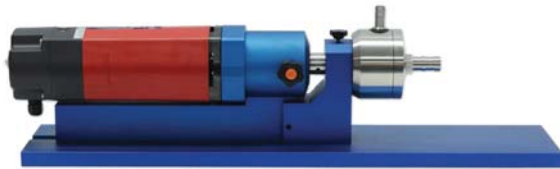
Specification

| Model | KTi 50-V1 inline |
|----------------------------------|--------------------|
| Ident. No. | K151100 |
| Motor Capacity | 1,500 W |
| Speed range | 2,500~10,000 rpm |
| Flow rate (H2O) | 25 l/min |
| Max. Viscosity | 5,000 mPas |
| Max. operating temperature | 180 °C |
| Chamber volume | 100 ml |
| Min. Vacuum | 1 mbar |
| Max. Pressure | 3 bar |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Dimension[W x D x H] | 400 x 200 x 500 mm |
| Weight | 15 kg |

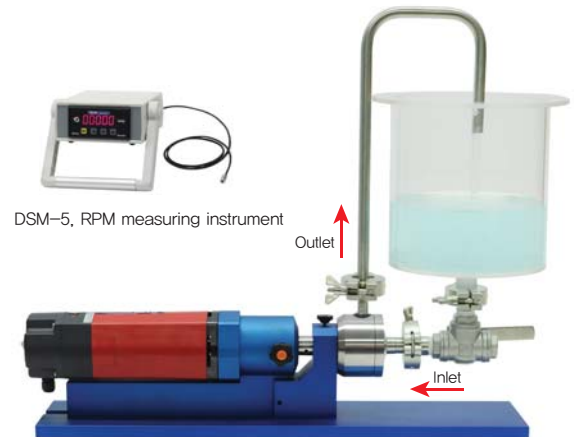
Lab & Small Production Inline Dispersers

Crushing · Dispersing · Emulsifying · Homogenizer

KT50 basic inline, Circulation dispersing system



▶ KT50 basic inline



Features

- Use high-performance motors can stable mix and disperse
- The flow chamber is used to cycle through the available the spirit continuously distributed it can move the other process
- Dispersion time is 50% shorter than the existing batch type disperser
- Maximum processing capacity of 25L/min
- Control speed range of 2,500~14,000rpm
- Possible vacuum/pressurized work
- Protect equipment overloading function
- Effectively applied sample property with various type of dispersing tool and module
- Use DSM-5 to measure the actual revolutions per minute (RPM) of homogenizer rotor shafts drive in real time
- Product basically comprised KT50 basic, KFC50 flow chamber, dispersing tool, KMB50 mounting base

Specification

| Model | KT50 basic inline |
|----------------------------------|--------------------|
| Ident. No. | K150100 |
| Motor capacity | 1,500 W |
| Speed range | 2,500 ~ 14,000 rpm |
| Flow rate (H ₂ O) | 25 l/min |
| Max. viscosity | 5,000 mPas |
| Max. operating temperature | 180 °C |
| Chamber volume | 100 ml |
| Min. vacuum | 1 mbar |
| Max. pressure | 3 bar |
| Noise without dispersing element | 70 dB |
| Overload protection | Yes |
| Dimension [W x D x H] | 150 x 700 x 160 mm |
| Weight | 15 kg |

Accessories

▶ Hopper



| Model | Stainless steel hopper | Acrylic hopper |
|----------------|------------------------|----------------|
| Ident. No. | K150154 | K150155 |
| Hopper Volume | 5 L | 3.2 L |
| Outer diameter | 200 mm | 170 mm |
| Inner diameter | 180 mm | 160 mm |
| Height | 300 mm | 180 mm |

▶ KFC50 Flow chamber



| Model | Single chamber (1-generator) | Double chamber (3-generator) |
|----------------|------------------------------|------------------------------|
| Ident. No. | K130151 | K130152 |
| Chamber Volume | 100 ml | 300 ml |
| Vacuum | 1 mbar | 1 mbar |
| Pressure | 5 bar | 5 bar |

▶ KMB50 Mounting base



| Model | KMB 50 |
|-----------------------|--------------------|
| Ident. No. | K150153 |
| Dimension (W x D x H) | 150 x 700 x 160 mm |

▶ Exchangeable dispersing elements

- KT50-SI-50G
- KT50-SI-50M
- KT50-SI-50F

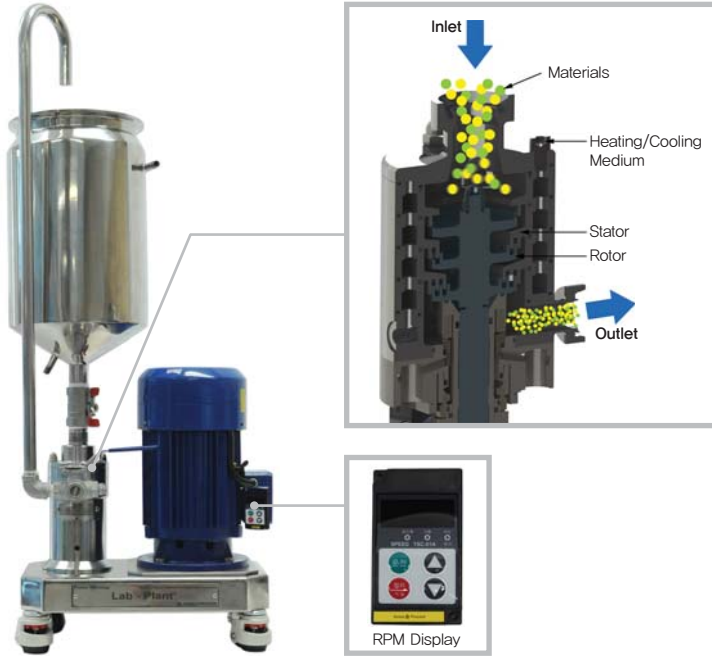
▶ Dispersing elements (page 23)

Lab-Plants / Pilot-Plants

Small Multipurpose Dispersion System

[1–3 Stage Gegerators / Double chamber / Vertical type]

Lab-plant® & Pilot-plant® inline & circulation Dispensing Machines (Vertical type)



▶ Lab-plant®



▶ Pilot-Plants®

Feature

- Use 1.5kW/3.7kW inverter embedded high-performance motors to quiet, convenient operation
- Multipurpose high-speed disperser can apply research experiment and small production process
- Used to cycle through the available the spirit continuously distributed it can move the other process
- Dispersion time is 50% shorter than the existing batch type disperser
- Digital displayed rotor speed
- According to module possible the vacuum or pressurized work operation
- Maximum to use 3 steps of rotor/stator to guarantee optimum mixing and dispersion efficiency

Specification

| Model | Lab-Plant® | Pilot-Plant® |
|---|-------------------------------------|-------------------------------------|
| Ident. No. | KLP0001 | KPP0001 |
| Power | 1.5 kW | 3.7 kW |
| Speed range | 1,400 ~ 10,000 rpm | 1,400 ~ 10,000 rpm |
| Flow capacity (HzO) (depending on type of generator) | approx. 200 ~ 500 l/h | approx. 300 ~ 700 l/h |
| Peripheral speed | 9.4 ~ 41 m/s | 9.4 ~ 41 m/s |
| Voltage/ Frequency | 3 x 380V/ 60Hz or 3 x 220V/ 60Hz | 3 x 380V/ 60Hz or 3 x 220V/ 60Hz |
| Dimensions (L x W x H) | 420 x 250 x 1100 mm | 470 x 320 x 1100 mm |

Exchangeable Dispensing Modules



| Model | KDS |
|--------------------|--|
| Function mode | 3-step inline |
| Generator | KG/KM/KF other configurations available as optional |
| Flow rate KG/KM/KF | up to 350 l/h |
| Speed range | 1,400 ~ 10,000 rpm |
| Standard speed | 7,000 rpm |

| Model | KCO |
|----------------|--|
| Function mode | two counter opposing cones for setting milling grade |
| Flow rate | approx. 30 - 300 l/h |
| Speed range | 1,400 ~ 10,000 rpm |
| Standard speed | 7,000 rpm |

| Model | KMH |
|----------------|---|
| Function mode | continuous "solid/liquid" incorporation |
| Flow rate | approx. 50 - 200 l/h |
| Speed range | 1,400 ~ 10,000 rpm |
| Standard speed | 7,000 rpm |
| Generator | 2P |

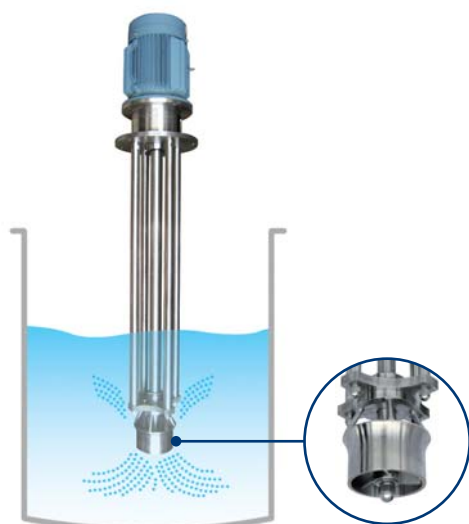
| Model | KCM |
|----------------|--|
| Function mode | "solid/liquid" incorporation in batch mode |
| Flow rate | up to 6,000 l/h |
| Standard speed | 9,000 rpm |



Jet Mixers

[Batch type]

KTJ series, Jet Mixer, for batch



▶ KTJ-120



▶ Jet type Rotor-Stator

Features

Liquid stream driven by high speed rotation of rotor, combined with flow guide chamber effect, form strong liquid circulations in the whole tank. On the other hand, high speed rotation of rotor can also produce some small shear turbulence required by micro mixing, and the micro processed liquid will then dispersed with the whole stream to every corner of the tank. Different from conventional agitators, Jet Mixer can fully disperse and mix all liquids in tank without dead corner.

- Whole vertical liquid stream dispersing and mixing, little air incorporation.
- No vortex in stream, and no sediment in bottom of tank.
- X type dispersing tool generates high shear force to reduce particle sizes.
- Highly efficient mixing and emulsifying make suspension preparation more easily.
- Applicable for efficient dosing, liquid-liquid dispersing and solid-liquid dispersing.
- Can do super saturation and accelerate reaction rate.

Application

Sugar dissolving, powder dissolving, gel resolving, suspending, reaction accelerating, dispersing, mixing and depolymerizing of nano materials and light powder.

Specifications

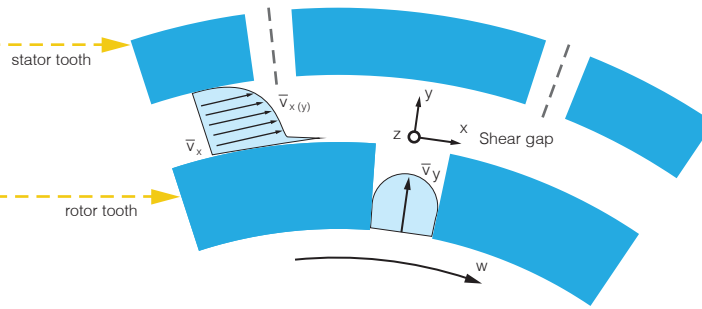
| Model | Power [Kw] | Rotation speed [r/min] | Handling capacity (L) |
|---------|------------|------------------------|-----------------------|
| KTJ-90 | 1.5 | 2900 | 5-80 |
| KTJ-100 | 2.2 | 2900 | 50-100 |
| KTJ-120 | 4 | 2900 | 100-300 |
| KTJ-140 | 5.5 / 7.5 | 2900 | 200-800 |
| KTJ-160 | 11 / 15 | 2900 | 300-1000 |
| KTJ-180 | 18.5 | 2900 | 500-1500 |
| KTJ-200 | 22 | 1450 | 800-2000 |
| KTJ-220 | 30 | 1450 | 1000-3000 |
| KTJ-240 | 37 | 1450 | 1500-5000 |
| KTJ-270 | 55 | 1450 | 2000-8000 |
| KTJ-290 | 75 | 1450 | 3000-10000 |

Rotor & Stator Batch High-shear Dispersers

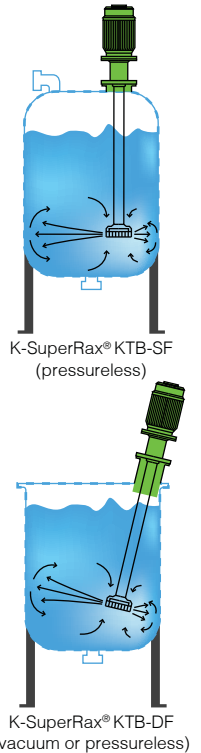
Crushing · Dispersing · Emulsifying · Homogenizer

[Batch type]

K-SuperRax® , Batch operation Dispersing Machines

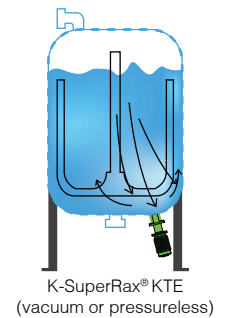


Averaged Velocities at the Shear Gap Inlet

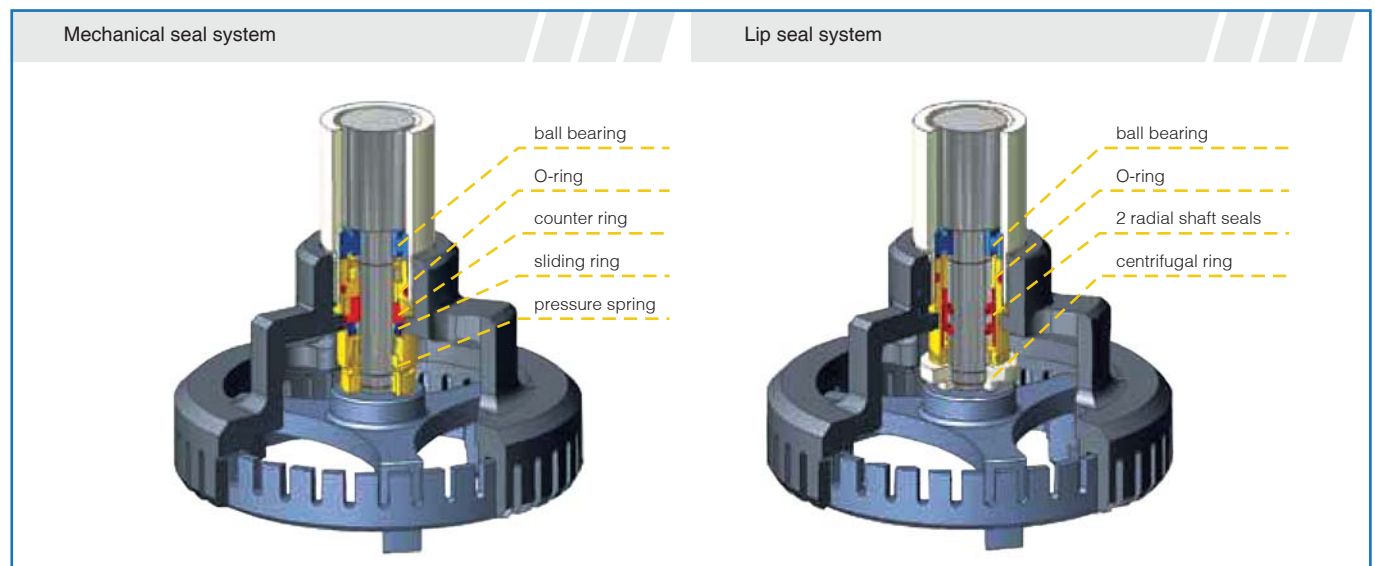


Since decades K-SuperRax® is a common term representing quality and reliability. The machines are used for the production of any kind of emulsions, suspensions as well as lysols. A variety of generators (rotor + stator) enable further adaptations to the respective mixing task. Moreover, different types of seals allow different fitting positions as well as working under pressure up to 10 bar and with temperatures up to approx. 160°C.

The models KTB, KTI and KTE are basically only differing in their design, respectively in the type of seal. Nevertheless, the generators are always the same so that the same mixing result is achieved. The KTE model has to be preferred in case of varying filling levels in the container.



K-SuperRax® KTE (vacuum or pressureless)



Rotor & Stator Batch High-shear Dispersers

[Batch type]

Crushing · Dispersing · Emulsifying · Homogenizer

| *KTB/KTS K-SuperRax® Batch operation for pilot & production Dispersing Machines*



Dispersing Tool
K-DTP... 4



Dispersing Tool
K-DTM... 2

- Applications**
- + Creams
 - + Waxes
 - + Polishing agents
 - + Gelling agents
 - + Disperse dyes
 - + Polymer emulsions



| Type | Size | Max. recon. volume, ref. H ₂ O | Motor power IP 55 | Speed | Tip Speed |
|-------------|------|---|-------------------|-------|-----------|
| K-SuperRax® | | l | kW | 1/min | m/s |
| KTB | 80 | 150 | 1.5 | 2,850 | 10 |
| KTB | 115 | 500 | 3 | 2,850 | 15 |
| KTB | 150 | 1,700 | 5.5 | 2,850 | 21 |
| KTB | 220 | 2,500 | 7.5 | 1,420 | 15 |
| KTB | 280 | 3,500 | 18.5 | 1,420 | 20 |
| KTB | 300 | 4,000 | 30 | 1,420 | 21 |
| KTB | 330 | 5,000 | 22 | 960 | 15 |
| KTB | 350 | 6,000 | 22 | 960 | 17 |
| KTS-Ph | 115 | 500 | 3 | 2,850 | 15 |
| KTS-Ph | 150 | 1,700 | 5.5 | 2,850 | 21 |

Rotor & Stator Inline High-shear Dispersers & Emulsifiers

Crushing · Dispersing · Emulsifying · Homogenizer

[Horizontal type]

■ K-Super Reactor® inline & circulation dispersing machines (Horizontal system)

For years K-Super Reactor® has been synonymous with high performance dispersing machines in process engineering circles.

The development of these machines is based on Prof. Willem's discovery of the effects of mechanical high frequencies on stator-rotor systems with high peripheral velocities. After proving in the chemical industry : the range of applications has been expanded to include other areas.

Reasons for the wide spectrum of applications are not only to be found in the excellent dispersing performance of K-Super Reactor® machines, but rather also the rugged, mature design and minimal power consumption of the drive system, which assures highly cost effective operation.

The fine dispersions which have been achieved with these machines are the result of complex interaction between several fragmentation mechanisms, whereby the turbulent forces at the shear gap also make a decisive contribution.

3-dimensional, local, time phased velocity fluctuations occur to this end, which are coupled with high frequency pressure fluctuations.

Individual geometric layout of the stator-rotor design (generators) make the K-Super Reactor® machines adaptable to any process goal.

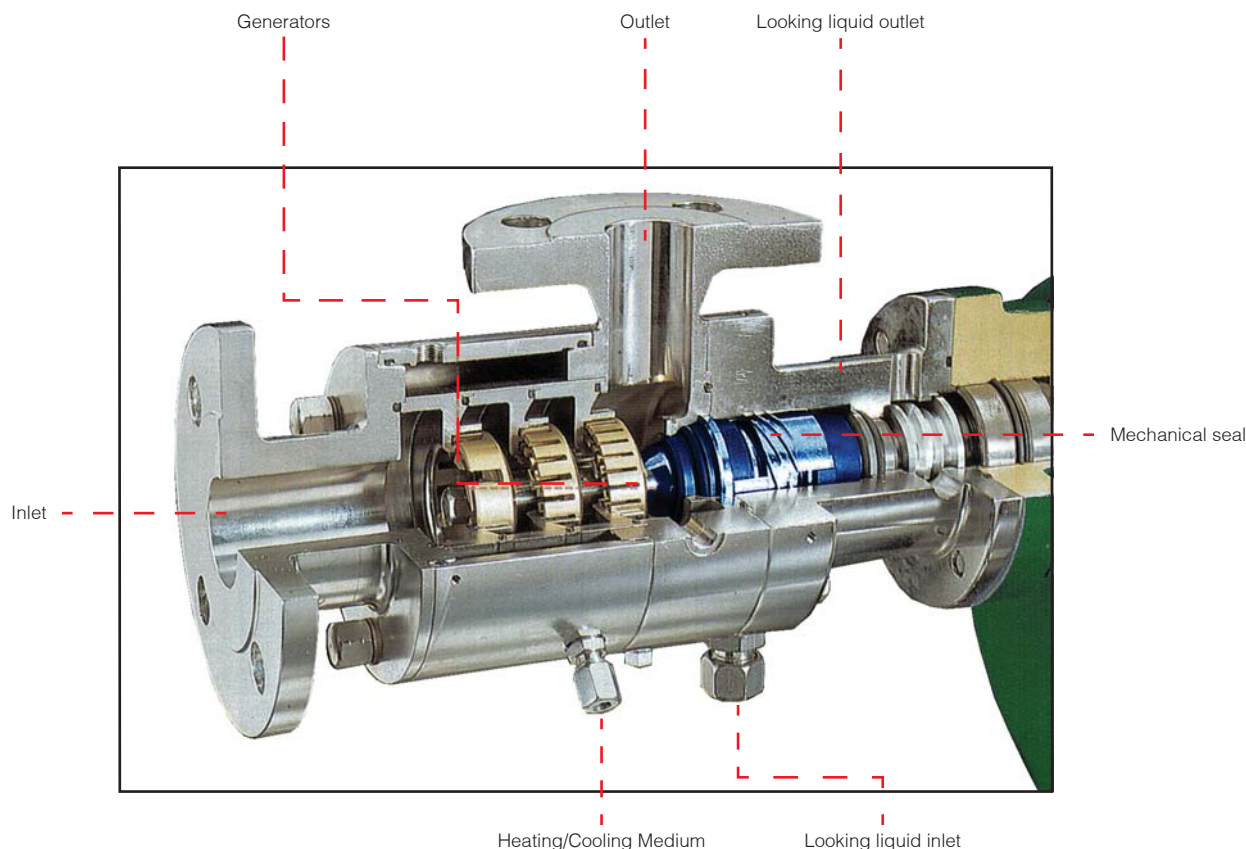
Thus the applications range of K-Super Reactor® machines covers the entire spectrum of dispersion technology. It includes the production of emulsions, (liquid-liquid), suspensions (solid-liquid) and lyosols (gas-liquid), as well as homogenization.

Because the intensity of mass transfer is increased by forces caused by the rotor-stator system, the dissolving of mono, as well as macromolecular materials is accelerated.

If a reliable recommendation concerning the selection of a machine is not possible despite extensive practical experience, we will determine the requirements for correct dimensioning of K-Super Reactor® machines in our technical applications department.

Practical Tips :

- The nominal throughput volume is reduced by about 20% per approx. 1,000 mPas (rule of thumb).
- Thus a pump is required at the inlet side as of about 3,000 mPas.
- The pump should be as pulsation-free as possible.
- When a pump is used, motor power consumption from the K-Super Reactor® must be taken into consideration.
- Observe temperature carefully for small throughput volumes; consider installing a pump at the inlet side and increasing throughput.



Schematic Model, K-Super Reactor®

Rotor & Stator Inline High-shear Dispersers & Emulsifiers

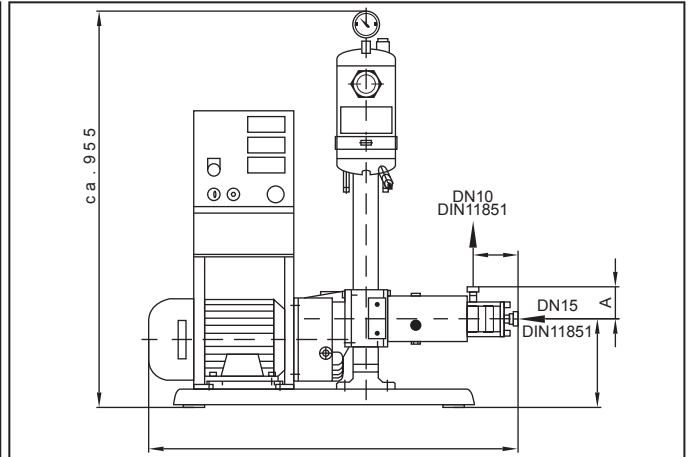
[Horizontal type]

Crushing · Dispersing · Emulsifying · Homogenizer

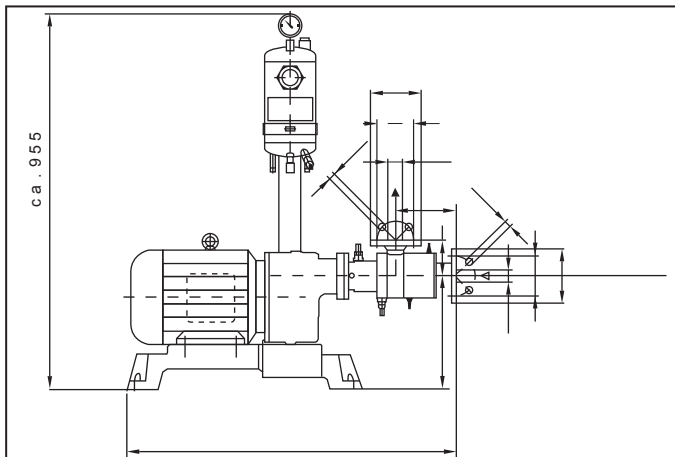
Inline & circulation Dispensing machines for pilot & production Scales (Horizontal type)



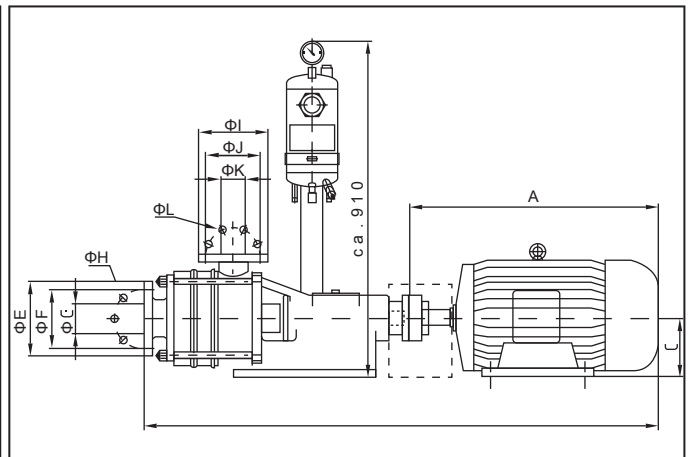
K-Super Reactor® KTI 3-6



KTI 3-5



KTI 3-6
KTI 3-8
KTI 3-9



KTI 3-16
KTI 3-23
KTI 3-28
KTI 3-30

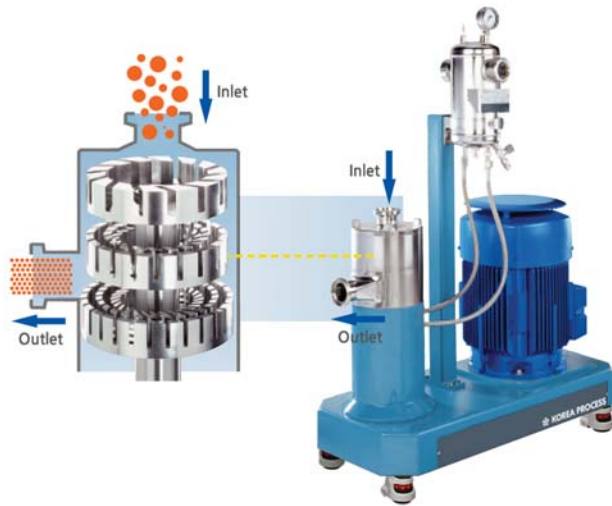
| Type | Power kW | IP 54/55 | | EExe II-T3 | Throughput, H ₂ O (L/hr.) | | | | | | | | | | | | | | | |
|----------|-----------|---------------------|-----|------------|--|-----|-----|------|--|-----|-----|------|-------------------------|-----|-----|--------|--------------------------|-----|-----|--------|
| | | Machine weight (kg) | | | With 3 phase motor, IP 54/55, dimensions in mm | | | | With 3 phase motor, EExe II - T3/ IP 54/55, dimensions in mm | | | | Inlet, dimensions in mm | | | | Outlet, dimensions in mm | | | |
| | | | | | A | B | C | D | A | B | C | D | E | F | G | H | I | J | K | L |
| KTI 3-6 | 4 4.6 | 60 | 80 | 2,500 | 100 | 166 | 290 | 890 | 100 | 166 | 310 | 897 | 150 | 110 | 32 | 4 × 18 | 140 | 100 | 40 | 4 × 18 |
| KTI 3-5 | 5.5 4 | 70 | 70 | 600 | 77 | 109 | 173 | 723 | 77 | 109 | 226 | 875 | - | - | - | - | - | - | - | - |
| KTI 3-8 | 7.5 7.5 | 100 | 140 | 5,000 | 154 | 213 | 320 | 1060 | 154 | 213 | 343 | 1196 | 165 | 125 | 50 | 4 × 18 | 165 | 125 | 50 | 4 × 18 |
| KTI 3-9 | 11 10 | 140 | 140 | 9,000 | 131 | 203 | 348 | 1182 | 131 | 203 | 348 | 1182 | 165 | 125 | 50 | 4 × 18 | 165 | 125 | 50 | 4 × 18 |
| KTI 3-16 | 22 24 | 310 | 430 | 20,000 | 696 | - | 180 | 1413 | 766 | - | 200 | 1483 | 200 | 160 | 80 | 8 × 18 | 185 | 145 | 65 | 8 × 18 |
| KTI 3-23 | 45 44 | 800 | 850 | 45,000 | 843 | - | 225 | 1838 | 930 | - | 250 | 1925 | 285 | 240 | 150 | 8 × 22 | 250 | 210 | 125 | 8 × 18 |
| KTI 3-28 | 55 58 | 840 | 900 | 70,000 | 930 | - | 250 | 1925 | 1004 | - | 280 | 2000 | 285 | 240 | 150 | 8 × 22 | 250 | 210 | 125 | 8 × 18 |
| KTI 3-30 | 75 70 | 930 | 950 | 90,000 | 1004 | - | 280 | 2000 | 1055 | - | 280 | 2050 | 285 | 240 | 150 | 8 × 22 | 250 | 210 | 125 | 8 × 18 |

Please request official dimensions sheet.

Rotor & Stator Inline High-shear Dispersers & Emulsifiers

[Vertical type]

■ KTI-series, inline & circulation dispersing machines (Vertical type)



▶ KTI 10-V3



▶ Various Generators

⚙️ Features

A three-stage high-shear dispersing machine for the production of macro-emulsions and very fine suspensions. Due to the three generators (rotor + stator) in direct series a narrow distribution range, smaller droplets and particles and thus a longer stability of the mixture are reached. The generators are easily interchangeable, by which a further adaptation to the respective application becomes possible. Same speed and shear rate for all machine sizes enables an exact scale-up.

⚙️ Application

- Synthetic fiber materials (안정화 분산)
- Biotechnology
- Human & veterinary medicine
- Clinical medicine
- Pharmaceutical industry
- Cosmetics industry
- Food industry
- Petrochemistry
- Paint & lacquer industry
- Polymer industry
- Raw material industry
- etc.

⚙️ Specifications

| Model | Max. flow capacity (l/h) | Drive speed (1/min) | Motor power (kW) |
|-----------|--------------------------|---------------------|------------------|
| KTI 4-V3 | 300-700 | 3,160-13,750 | 1.5 |
| KTI 05-V3 | 2,500 | 5,800 | 5.5 |
| KTI 10-V3 | 8,000 | 4,200 | 15 |
| KTI 20-V3 | 20,000 | 2,850 | 37 |
| KTI 30-V3 | 40,000 | 1,420 | 55 |
| KTI 40-V3 | 70,000 | 1,420 | 75 |
| KTI 50-V3 | 125,000 | 1,100 | 160 |

High shear emulsifying machines

[Batch type]



KTS-series, High shear emulsifying machines



Features

KTS disperser series is worked by rotor revolving in high speed and stationary stator, absorbs the processed medium. The gap between rotor and stator is precisely designed which guarantees the processed medium dispersed, crashed, mixed and emulsified. KTS disperser series are mainly used in processing adhesive, paint, cosmetics, food, medicine, plastics etc.

KTS disperser series can be equipped with the normal motor working under the normal condition. This series also can work under the special condition equipped with the explosion-proof motor. Explosion-proof motor is supplied as your requested to make sure the safety.

Application

- Nano-dispersing
- Biotechnology
- Human & veterinary medicine
- Clinical medicine
- Pharmaceutical industry
- Cosmetics industry
- Food industry
- Petrochemistry
- Paint & lacquer industry
- Polymer industry
- Raw material industry
- etc.

Specifications

| Model | Power [Kw] | Rotation speed [r/min] | Handling capacity (L) |
|-----------|------------|------------------------|-----------------------|
| KTS 90 | 2.2 | 2900 | 5-80 |
| KTS 100 | 3 / 4 | 2900 | 50-100 |
| KTS 300 | 4 / 5.5 | 2900 | 100-300 |
| KTS 800 | 5.5 / 7.5 | 2900 | 200-800 |
| KTS 1000 | 11 / 15 | 2900 | 300-1000 |
| KTS 1500 | 18.5 | 2900 | 500-1500 |
| KTS 2000 | 22 | 1450 | 800-2000 |
| KTS 3000 | 30 | 1450 | 1000-3000 |
| KTS 5000 | 37 | 1450 | 1500-5000 |
| KTS 8000 | 55 | 1450 | 2000-8000 |
| KTS 10000 | 75 | 1450 | 3000-10000 |

Inline high shear emulsifying machines

[Horizontal type]



KTI-H1 series, Inline high shear emulsifying machines (Horizontal type)



▶ Rotor/Stator



⚙️ Features

Inline high shear dispersing emulsifier is a high performance equipment used for continuous production or circulated treatment of fine material. In the small chamber, there are 1–3 sets of paired and produces a strong rotor. Driven by motor, the rotor revolve quickly and produces a strong axial suction force which intakes the material to the chamber. The machine disperses, shears and emulsifies the material in shortest time, and the diameter range of the particles gets smaller so that fine and stable products are produced.

⚙️ Application

- Fine chemical
- Petroleum chemical
- Bio-pharmacy
- Coating & oil inks
- Pesticides
- Nanometer material
- Food industry
- Daily Chemicals
- Paper making

⚙️ High shear emulsifier system



⚙️ Specifications

| Model | Power [Kw] | Rotation speed [r/min] | Capacity (m ³ /h) |
|------------|------------|------------------------|------------------------------|
| KTI 80-H1 | 1.5 | 2900 | 0-1.5 |
| KTI 100-H1 | 2.2 | 2900 | 0-3 |
| KTI 120-H1 | 4 | 2900 | 0-4 |
| KTI 140-H1 | 5.5 | 2900 | 0-5 |
| KTI 165-H1 | 7.5 | 2900 | 0-8 |
| KTI 180-H1 | 11 | 2900 | 0-12 |
| KTI 185-H1 | 15 | 2900 | 0-18 |
| KTI 200-H1 | 22 | 2900 | 0-25 |
| KTI 210-H1 | 30 | 2900 | 0-35 |
| KTI 230-H1 | 45 | 2900 | 0-50 |
| KTI 245-H1 | 55 | 2900 | 0-75 |
| KTI 260-H1 | 75 | 2900 | 0-90 |
| KTI 275-H1 | 90 | 2900 | 0-110 |
| KTI 280-H1 | 132 | 2900 | 0-130 |

Note : the flow in the table refers to the data tested taking water as the medium, outlet pressure of the listed type $\leq 0.2\text{Mpa}$

If circulated procedure is adopted, intermittent high shear emulsifier is recommended. If there is high temperature, high pressure, flammable, explosive or corrosive, condition, correct data should be provided by customers in order to customize the right product type. For mediums that flow slowly, pumps of matched flow rate should be equipped in the inlet. For medium that flows slowly, it is recommended to use pump of matched flow in the inlet for transport Pump suction pressure $\leq 0.2\text{Mpa}$

The data in the table is subject to change without notice. See the actual products for the right data.



Powder liquid high shear emulsifying machines

[Vertical type]

KTRS-series, Powder liquid high shear emulsifying machines (vertical type)



▶ KTRS-1
1-stage generator



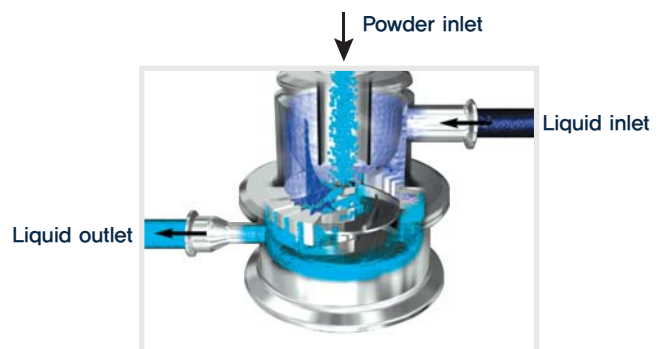
▶ KTRS-3
3-stage generator

Features

The Powder liquid high shear dispersing emulsifier is composed of main machine body and the gear of mixing pump, which are vertically installed. Through a double-layer wall pipe, the liquid materials and solid materials are separately pumped in, which can prevent them from agglomerating before entering into the main body of mixer at high speed, vacuum will produce in the center of rotor and stator to suck the solid materials. The solid materials will be evenly sucked in through and regulation of valve under the hopper. It has brief design and multiple functions. It can rapidly and evenly mix multiple solid materials without contacting the air. The mixing is enough and the product can be recycled. Medium (or material) is dispersed, sheared and emulsified in the shortest time by the machine, and the diameter range of the particles gets smaller so that fine and stable products are produced.



▶ Rotor/Stator



Specifications

| Model | Power [Kw] | Rotation speed [r/min] | Capacity [m ³ /h] |
|-----------|------------|------------------------|------------------------------|
| KTRS1-80 | 1.2 | 2900 | 0-1.5 |
| KTRS1-100 | 2.2 | 2900 | 0-3 |
| KTRS1-120 | 4 | 2900 | 0-4 |
| KTRS1-140 | 5.5 | 2900 | 0-5 |
| KTRS1-165 | 7.5 | 2900 | 0-8 |
| KTRS1-180 | 11 | 2900 | 0-12 |
| KTRS1-185 | 15 | 2900 | 0-18 |
| KTRS1-200 | 22 | 2900 | 0-25 |
| KTRS1-210 | 30 | 2900 | 0-35 |
| KTRS1-230 | 45 | 2900 | 0-50 |
| KTRS1-245 | 55 | 2900 | 0-75 |
| KTRS1-260 | 75 | 2900 | 0-90 |
| KTRS1-275 | 90 | 2900 | 0-110 |
| KTRS1-280 | 132 | 2900 | 0-130 |

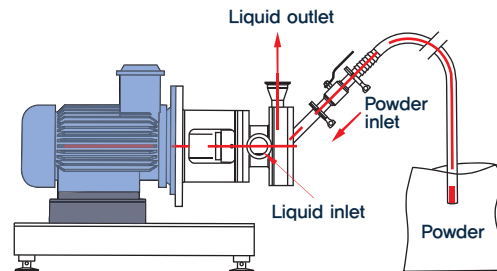
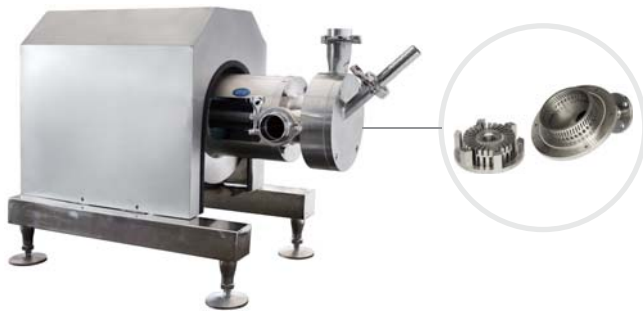
| Model | Power [Kw] | Rotation speed [r/min] | Capacity [m ³ /h] |
|-----------|------------|------------------------|------------------------------|
| KTRS3-80 | 4 | 2900 | 0-1.5 |
| KTRS3-100 | 5.5 | 2900 | 0-3 |
| KTRS3-120 | 7.5 | 2900 | 0-4 |
| KTRS3-140 | 11/15 | 2900 | 0-5 |
| KTRS3-165 | 18.5 | 2900 | 0-8 |
| KTRS3-180 | 22 | 2900 | 0-12 |
| KTRS3-185 | 30 | 2900 | 0-18 |
| KTRS3-200 | 45 | 2900 | 0-25 |
| KTRS3-210 | 55 | 2900 | 0-35 |
| KTRS3-230 | 75 | 2900 | 0-50 |
| KTRS3-245 | 90 | 2900 | 0-75 |

Suction-Powder high shear emulsifying machines

[Horizontal type]



KTI-PL series Suction-powder Mixing, Dispersing & Emulsifying



► KTI-PL

Features

KTI-PL system is the use of special high-speed rotation of the rotor have a vacuum, the powder evenly inhalation chamber work, and it evenly distributed in the rapid flow of sap flow, the flow in the blink Secretary powder was completely wet, do not have a massive reunion of. Then liquid and powder through a high-shear structure for the rotor to any possible spread of the block-poly, the last fully wet) and Yan evenly distributed the materials.

KTI-PL system is a completely different treatment concept. The sets of equipment systems integration deal with all the necessary steps, all in a fusion of all the machines are dealing with an instant at the same time completely solve the traditional equipment difficult to resolve some of the problems.

Application

- Food Industry: homogeneous concentrated fruit juice, long fiber beverages, soup, all kinds of jam, fruit juice, mashed potatoes, mustard cake.
- Homogeneous fermented dairy products: You yogurt, soft cheese, butter, etc.
- Heterogeneous mix milk products: such as ice cream, chocolate milk, cocoa milk, CMC, starch, wheat fine, and so on.
- Biological pharmaceutical industry: tissue, cell body grinding, injection, antibiotics, drug ointment, microcapsules emulsion.
- Cosmetic Industry: Emulsion various facial cream, lipstick, liquid detergent, Ximian Nai, skin care products, shampoo.
- Chemical industry: resin emulsion, surfactant, carbon black dispersion, dye coating
- Petrochemical Industry: emulsified asphalt, modified asphalt, heavy oil emulsified diesel emulsion, lubricants, silicone oil emulsion.
- Homogeneous production of PVC plasticizers: various emulsifier, photographic emulsion, additives, etc.

Specifications

| Model | Capacity (H2O),(m ³ /h) | Outlet pressure (Mpa) | Power (Kw) | Rotation speed (r/min) |
|------------|------------------------------------|-----------------------|------------|------------------------|
| KTI-PL-120 | 0-10 | 0.15 | 7.5 | 2900 |
| KTI-PL-140 | 0-20 | 0.20 | 11/15 | 2900 |
| KTI-PL-165 | 0-30 | 0.25 | 22/30 | 2900 |
| KTI-PL-200 | 0-50 | 0.30 | 37/45 | 2900 |
| KTI-PL-260 | 0-70 | 0.40 | 55/75 | 2900 |

Notes:

Flow listed on the table refers to the datas measured when the medium is water. The flow will be varied with transformation of medium's viscosity and density, electrical power also will be different. This pump has short delivery head, it should be installed below the medium's level. High viscosity and solid content make the pump can not feed and deliver normally, a feeding pump or pressure pump with matched flow should be adopted. If the data in the table is modified, no further notification be given, and the right parameters as per the provided sample.



KOREA PROCESS Plants System



Plants System

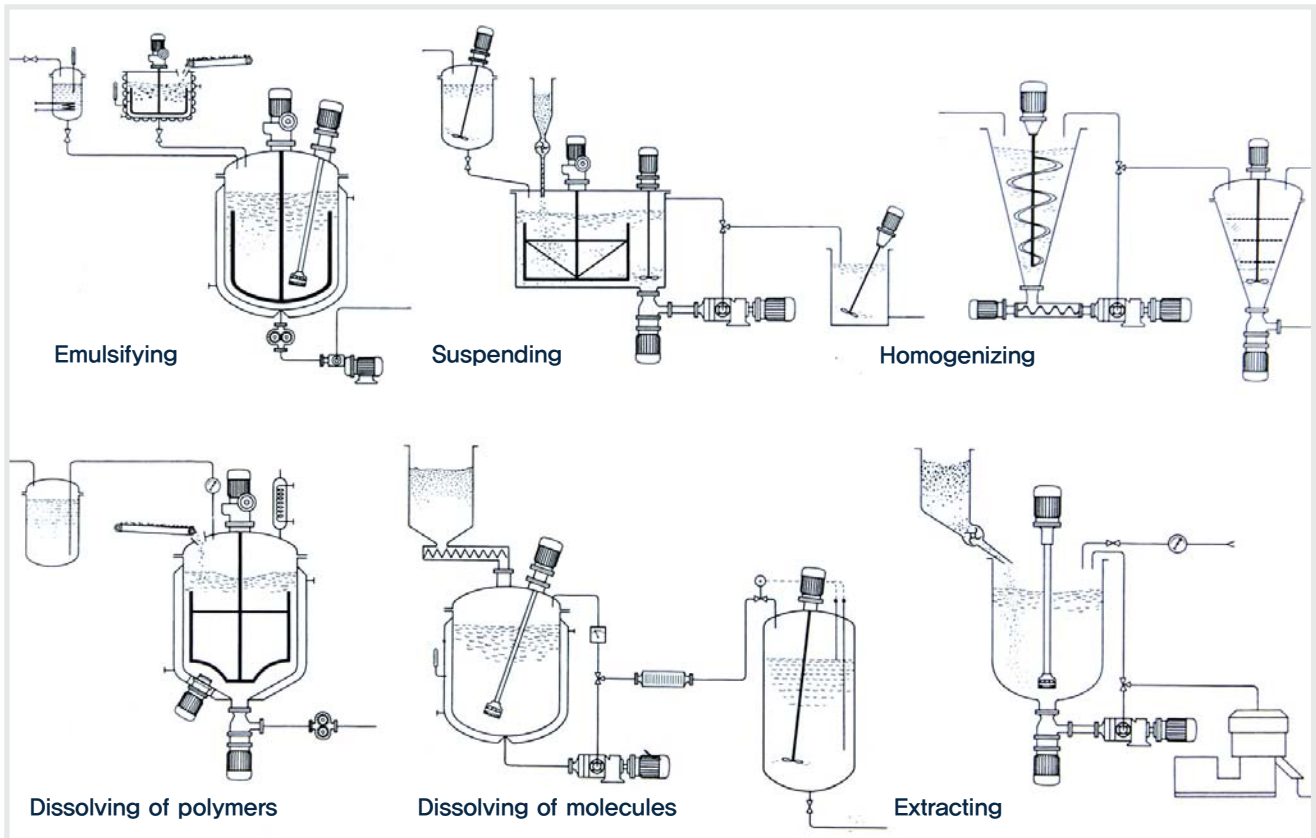


▶ Water in oil with powder suction mixing emulsion system



▶ Vacuum mixing emulsion system

Examples of combination

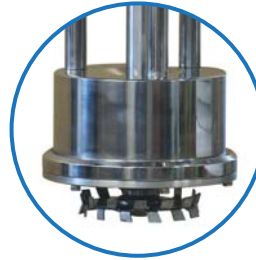


Lab & Pilot Batch Basket Mills

Crushing · Dispersing



KSG-LB20 Lab & Pilot Batch Basket Mill



▶ KSG-LB20

Features

The unique basket structure of this sand mill bring a efficient circulating system to the materials. With the high speed drive of drive plate, the high hardness milling medium has very excellent milling effect. It has good milling fineness, high efficiency and the milled materials have uniform diameter. The whole milling process is carried out in closed state. It has no dead space, the discharge is complete and the residue is very few. It is easy to clean or to change the color or other products.

Application

- Nano industry
- Pharmaceutical industry
- Cosmetics industry
- Food industry
- Petrochemistry
- Paint & lacquer industry
- Polymer industry
- Raw material industry
- etc

Specification

| Model | KSG-LB20 |
|--|--|
| Drive power | 220V/380V,50/60Hz |
| Motor power | 2.2Kw, explosion proof |
| Rotation speed range | Digital display, 0-3600rpm |
| Handing capacity | 5-20L (use water as medium) |
| Vessel | With standard 20L Double-walled vessel (SS304) for cooling or heating |
| Material of parts in contact with product | SUS304, SUS316L, SUS316Ti, Zirconia |
| Lifting mode | manual/electrical |
| Working flame, base | Stainless steel working trolley, equipped with handrail, has universal caster on the bottom, very easy and flexible to move. |
| Zirconia milling beads (Zirconium content 95%) | |
| Diameter of Zirconia beads | 2.2-2.4mm |

Basket Mills

Crushing · Dispersing

KSG-P Series Basket Mills (Pneumatic Lifting)



► KSG-P

Features

Applicable for dispersing and grinding small batch materials in industrial production. It is with brake wheel and removes easily. Pneumatic lifting stand without any air pollution. Simple structure and easy operation.

- Capacity Range: 10–500 L
- Power Supply: 380V, 50/60 Hz (Can be customized)
- Grinding medium: Pure Zirconium Beads
- Height Adjustment: Pneumatic Lifting Stand

Parameter table for model selection

| Model | Power kW(hp) | Rotation(rpm) | Capacity(l) | Basket Volume(l) | Medium Dimension(mm) | Stroke(mm) | Weight(Kg) |
|---------|--------------|---------------|-------------|------------------|----------------------|------------|------------|
| KSG-P4 | 4(5.5) | 0-2880 | ≤100 | 3.5 | 1.8-2.4 | 800 | 256 |
| KSG-P5 | 7.5(10) | 0-1440 | ≤200 | 5 | 1.8-2.4 | 900 | 330 |
| KSG-P7 | 11(15) | 0-1440 | ≤300 | 6.5 | 1.8-2.4 | 900 | 400 |
| KSG-P10 | 15(20) | 0-1440 | ≤400 | 9 | 1.8-2.4 | 1000 | 470 |

KSG-H Series Basket Mills (Hydraulic Lifting)



► KSG-H

Features

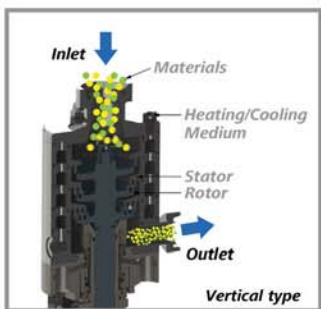
Applicable for dispersing and grinding material in industrial production. Capacity range: 10–5000L, hydraulic lifting stand with anchoring bolt to ensure steady operation. Cover is optional to avoid material splash or solvent volatilization

- Power Supply: 380V, 50/60 Hz (Can be customized)
- Speed Adjustment: Frequency Converter Control
- Grinding Medium: Pure Zirconium Beads
- Height Adjustment: Hydraulic Lifting

Parameter table for model selection

| Model | Power kW(hp) | Rotatio(rpm) | Capacity(l) | Basket Volume(l) | Medium Dimension(mm) | Stroke(mm) | Pumper Power(kW) | Weight(Kg) |
|---------|--------------|--------------|-------------|------------------|----------------------|------------|------------------|------------|
| KSG-H4 | 4(5.5) | 0-2500 | 50-120 | 3.5 | 1.8-2.4 | 800 | 0.55 | 600 |
| KSG-H5 | 7.5(10) | 0-1200 | 100-200 | 5 | 1.8-2.4 | 900 | 0.55 | 780 |
| KSG-H7 | 11(15) | 0-1200 | 150-250 | 6.5 | 1.8-2.4 | 900 | 0.55 | 865 |
| KSG-H10 | 15(20) | 0-1200 | 150-300 | 10 | 1.8-2.4 | 900 | 0.55 | 960 |
| KSG-H15 | 18.5(25) | 0-1200 | 200-400 | 17 | 1.8-2.4 | 1200 | 0.75 | 1130 |
| KSG-H20 | 22(30) | 0-1200 | 250-500 | 20 | 1.8-2.4 | 1200 | 0.75 | 1210 |
| KSG-H30 | 30(40) | 0-1200 | 350-800 | 32 | 1.8-2.4 | 1200 | 0.75 | 1380 |
| KSG-H40 | 37(50) | 0-1200 | 600-1200 | 35 | 1.8-2.4 | 1200 | 1.1 | 1520 |
| KSG-H50 | 45(60) | 0-1200 | 750-1200 | 50 | 1.8-2.4 | 1500 | 1.1 | 1830 |
| KSG-H70 | 55(75) | 0-1200 | 800-1500 | 55 | 1.8-2.4 | 1500 | 1.1 | 2230 |
| KSG-H90 | 75(100) | 0-1200 | 1000-2000 | 80 | 1.8-2.4 | 1700 | 2.2 | 2580 |

**Stirring-Agitating-Mixing-Homo Mixing-
Dissolving-Dispersing-Crushing-Extracting-
Suspending-Emulsifying-Nano Dispersing-
Ultrasonic Processing**



 **KOREA PROCESS**
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