

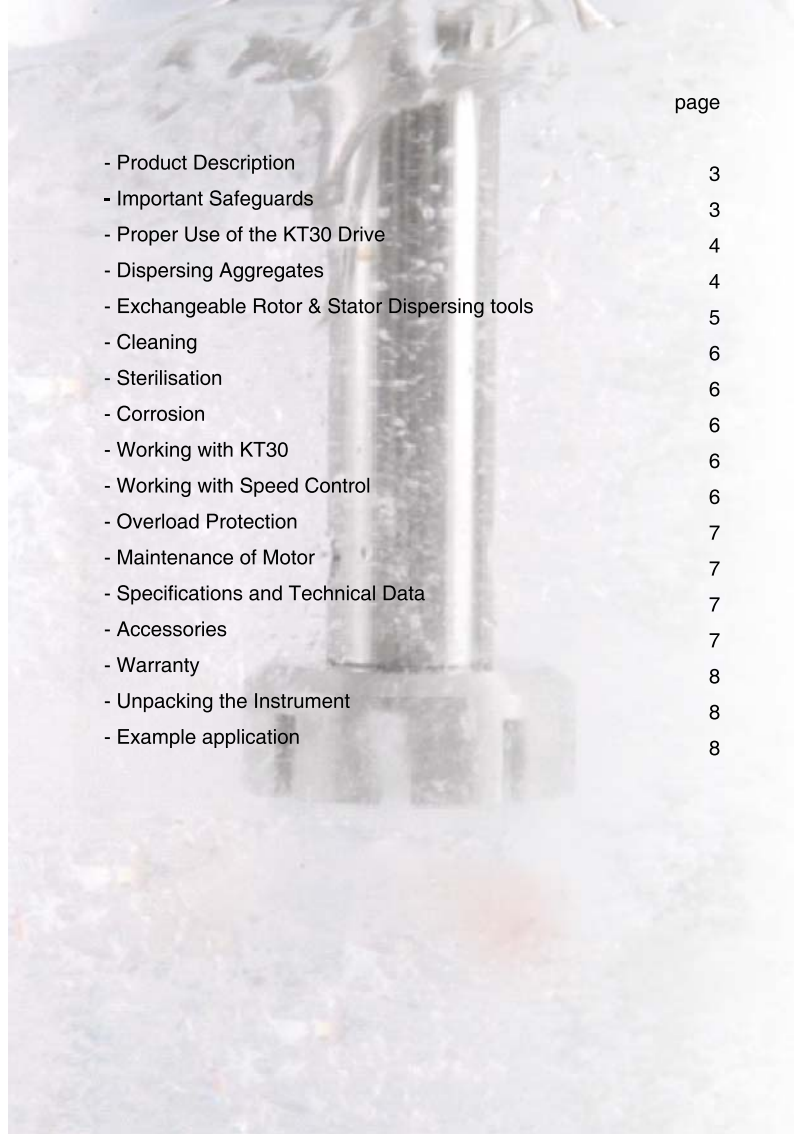
KT30 basic, Batch operation

K130000



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## Message from CEO

We congratulate you on the excellent choice of this unit. With this unit you have purchased a product of high quality and reliability.

To ensure the greatest satisfaction, best results and a long lifespan with your new KOREA PROCESS KT30 disperser, we ask you to first read the operation manual before putting the unit in operation. This will help you to avoid mistakes and minimize the risk of damage to the unit.

The KT 30 requires little maintenance. Please ensure that the unit is kept clean and utilized only for its intended purpose.

Thank you once again for your excellent choice in purchase.

**Jeong-il, PPYUN**  
CEO & President

## Product Description

The KT 30 Disperser is a high speed dispersing instrument. It is based on the Rotor/Stator Technology. The shaft and rotor/stator can be disassembled for easy cleaning. You will receive the dispersing tools completely assembled for immediate use with your disperser. This product is for laboratory use only and is used in chemical industry, cosmetic industry, pharmaceutical industry, paint industry as well as in universities and a wide range of medical laboratories. The unit is a high performance dispersing/homogenizing unit and also can be used as a high speed mixing unit with certain dispersing shafts. The drive unit can be used, based on the dispersing shaft used for volumes from 0.5ml to 20,000ml. There is a wide range of dispersing shafts with diameters of 20mm, 30mm and 40mm stator diameters. It is to be mounted on a stand and not used as a hand held instrument.

## Important Safeguards

When using electrical equipment, basic safety precautions are necessary to reduce the risk of fire, electric shock and personal injury.

- Only use the instrument for its intended purpose.
- Ensure that the correct electric voltage of the instrument and the power supply correspond correctly.
- Do not use this instrument in a hazardous area or manner. When handling hazardous chemicals, use appropriate hand and eye protection.
- Do not immerse electrical equipment in water.
- The drive must not be used in highly combustible areas and operated with easily inflammable liquids. It is recommended to run the units in fume hoods during operation.

- To avoid electrical shock, do not open housing. Remove cord from the power source when it is being checked or serviced. This instrument should only be opened by a qualified service personnel only.

**The KT 30 is designed for continuous operation, however normally the ultimate fineness will be reached within a few minutes. Any further dispersing will only introduce unnecessary heat into the medium.**

- The KT 30 must never run without liquid – the lower slide bearing is cooled and lubricated by the liquid phase of the treated medium. Any dry running will destroy the slide bearing!!
- Ensure that the dispersing shafts are cleaned properly after every use. When cleaning, remove the power cord from the power source.
- Never touch the spinning rotor, nor shaft, nor motor side coupling parts.
- It is recommended that the operator should be using hearing protection when operating the unit at maximum speed.
- Do not operate after the equipment malfunctions or has been damaged in any manner. Return unit to our service centre for examination and repair.
- Switch off the unit before changing the dispersing element.
- Only suitable dispersing shafts from KOREA PROCESS may be used.
- Glass vessels must always be secured with a clamp to prevent them from sliding.
- Use caution when adjusting the speed to avoid possible spraying of medium.
- The ventilation slots of the drive must not be obstructed.
- Never let the aggregate touch the bottom of the vessel.

## Proper Use of the KT 30 Drive

The voltage on the name plate must match the main voltage. If it does not, do not operate the instrument.

Screw the support rod into the flange of the drive and tighten it. Make sure that the “nylon” washer is between the flange and the nut to avoid scratching and rubbing marks on the flange.

Make sure that the unit is switched off when connecting or disconnecting the dispersing shaft into the drive.

For correct use the KT 30 drive must be secured to a stand with a bosshead. We recommend that for this purpose you only use the KPT 800 plate stand. For safety reasons the container should be fixed with a strap clamp.

Insert the dispersing element into the drive flange by pressing upwards and turning clockwise until it locks into place. A click confirms the correct insertion. Once inserted the dispersing element should not move any longer.

To remove the dispersing element from the flange, hold the dispersing element and turn anticlockwise and gently remove the dispersing element downwards. The distance between the bottom of the vessel and the shaft should not be less than 8mm.

## Dispersing Aggregates

### • Disassembly of the dispersing tool

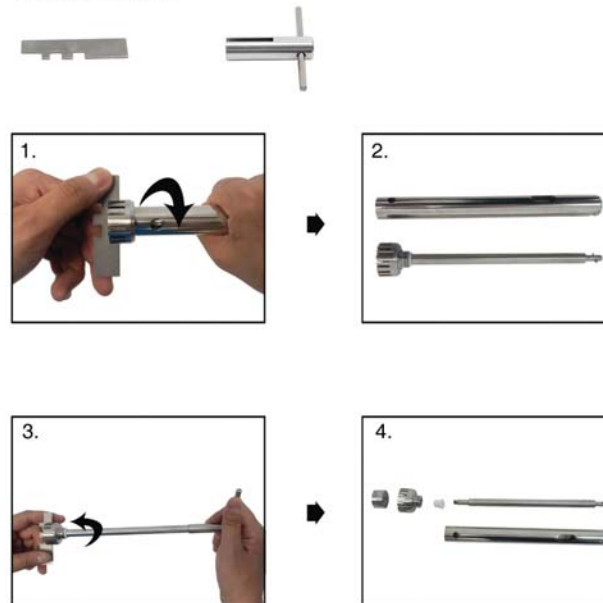
1. Hold the dispersing tool with a cloth (to avoid cutting of your hand due to sharp edges at the stator). At the same time turn the shaft tube clockwise. Screw the shaft tube of the stator and pull it over the axle and put it aside.

2. Now hold the rotor with a cloth and turn the axle anticlockwise. Slowly screw the axle from the rotor and put it aside.
3. Remove the PTFE bearing from the axle. After this disassembly you should have the following five parts: shaft tube, axle, rotor, stator and PTFE bearing.

To assemble the dispersing tool please follow above 3 steps in reverse order (3./2./1.)

When assembling the dispersing tool, always make sure that the PTFE bearing is fixed correctly and cooled by the working medium. Otherwise, it may cause serious defects to the whole dispersing tool. Examine the PTFE bearings regularly.

- Disassembly tool



## Exchangeable Rotor & Stator Dispersing tools



Model	KT30-S-5G	KT30-S-10G	KT30-S-20G
Ident. No.	K131001	K131002	K131003
Working range (H <sub>2</sub> O)	0.5 ~ 10	0.5 ~ 200	10 ~ 2,000
Diam. of the stator (mm)	5	10	20
Ultimate finene, Suspension (µm)	5 ~ 25	10 ~ 50	10 ~ 50
Ultimate finene, emulsion (µm)	1 ~ 10	1 ~ 10	1 ~ 10



Model	KT30-S-20F	KT30-S-30G	KT30-S-30F
Ident. No.	K131004	K131005	K131007
Working range (H <sub>2</sub> O)	10 ~ 2,000	100 ~ 5,000	100 ~ 5,000
Diam. of the stator (mm)	20	30	30
Ultimate finene, Suspension (µm)	1 ~ 50	5 ~ 25	5 ~ 25
Ultimate finene, emulsion (µm)	1 ~ 10	1 ~ 10	1 ~ 10



Model	KT30-S-40G	KT30-S-60S	KT30-S-60M
Ident. No.	K131009	K131010	K131011
Working range (H <sub>2</sub> O)	500 ~ 10,000	1,000 ~ 20,000	1,000 ~ 20,000
Diam. of the stator (mm)	40	60	60
Ultimate finene, Suspension (µm)	High-speed mixer	High-speed mixer	High-speed mixer
Ultimate finene, emulsion (µm)	High-speed mixer	High-speed mixer	High-speed mixer

### • Applications

1. Emulsions, intensive mixing of w/o and o/w emulsions
2. Suspensions, intensive mixing
3. Coarse crushing of hard solids in liquid
4. High speed mixing without crushing
5. Fragmentation of vegetable, animal and human tissues
6. Dispersing of resins and pigments for paint and lacquer industry
7. Dispersing of tissue decomposition, clinical diagnostics and suspensions

### • Industries

- Bio Technology
- Food
- Pharma
- Cosmetic
- Ceramic Industry
- Paint Industry
- Medicine
- Petro Chemistry
- Paper & Tissue Industry
- Sewage / Pollution Control
- Chemical Industry
- Tobacco Industry

### • Speed range

- KT30-S-5G : 10,000~30,000 rpm
- KT30-S-10G : 10,000~30,000 rpm
- KT30-S-20G : 10,000~30,000 rpm
- KT30-S-20F : 10,000~30,000 rpm
- KT30-S-30G : 10,000~30,000 rpm
- KT30-S-30F : 10,000~30,000 rpm
- KT30-S-40G : 10,000~30,000 rpm
- KT30-S-60S : 10,000 rpm (fixed rpm)
- KT30-S-60M : 10,000 rpm (fixed rpm)

(KT30-S-60S, KT30-S-60M : Do not use for more than 5 minutes)

## Cleaning

- Immediately after finishing work with the apparatus, the dispersing element must be cleaned so that substance residues do not stick to the threads.
- Small bacterial cultures can form in the small grooves, and this will create difficulties. For this reason, and to clean the dispersing tool effectively, it should be run in a solvent that dissolves the residue, but does not harm the Teflon bearing and the steel.
- For proper cleaning, the dispersing element must be disassembled.
- Proper care and cleaning of the equipment will ensure a longer and better use of the equipment.

## Sterilisation

- Chemical processes: Germicidal solutions (formalin, phenol, alcohol etc) can disinfect in most cases. However, residues of the gemoce must subsequently be removed with sterilized water.
- Sterilizing by humid heat: This means sterilizing with steam at a pressure bar of 2 above atmospheric and a temperature of 120 °C
- Sterilizing by hot air: Hot air sterilization is normally carried out at 160°C or 190°C

## Corrosion

- Stainless steel is not corrosion proof. Certain chemicals can seriously attack this material.
- All corrosive agents should only be in contact with the fine steel for a short period of time. Make sure they do not dry out the material.

- Ensure that the dispersing element is always cleaned properly after every use. Neutralise lye with solutions and acids.
- Protect all parts from aggressive agents.

## Working with KT 30

The optimal immersion depth of the dispersing shaft is approximately 2/3 below the liquid surface and 1/3 above the bottom of the beaker. When inserting the dispersing shaft slightly slanted (approximately at an angle 15 degrees), it improves the efficiency of the disperser. The dispersing shaft should not be immersed more than 30mm below the flange.

## Working with Speed Control

The drive and control are in the same housing. Before using the unit, run a test without the dispersing shaft by switching the ON button on the front of the drive. The speed is selected by the control knob on the top of the drive. Approximate rpm of the drive is:

A= 10,000 rpm    B= 12,000 rpm    C= 15,000 rpm  
D= 18,000 rpm    E= 22,000 rpm    F= 25,000 rpm  
G= 29,000 rpm

For an emergency stop, press the large button on the drive. For reaching the best effects, the rotor speed of KT-30 should be adapted to the dispersion problem.

### IMPORTANT:

The maximum rotor speed depends on the kind of sample and its viscosity. The speed is reduced by its viscosity in order to protect the drive from overload. If the viscosity is too high, the motor will stop automatically to prevent damage to the equipment. The electronic control system prevents damage to the motor drive.

## Overload Protection

When the motor overloads and the power supply cuts off, switch off the main switch to O, disconnect the aggregate and re-start the instrument as fast as possible, without the load in order to accelerate cooling by the built-in fan.

## Maintenance of Motor

The motor does not need any maintenance and there are no parts inside which can be repaired by the user. The only parts which are excluded from this are the carbon brushes. Please contact KOREA PROCESS or your authorized supplier for replacement and use original spare parts only. The carbon brushes can be replaced after disconnecting the power supply!

## Specifications and Technical Data

Model	KT30 Drive
Power input/output	500/380 watt
Speed range	10,000 ~ 30,000 rpm
Speed adjustment	Cont. variable
Sample volume (H <sub>2</sub> 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
Dimensions (W x D x H)	70 x 70 x 255 mm
Weight	1.3 kg

## Accessories

### - Stands



KPT-600H  
H-stand, 600mm



KPT-800H  
H-stand, 800mm



KPT-800P  
Plate stand, 800mm



KPT-700U  
U-stand, 700mm

### - Fixing elements



KPT-2BH  
Boss head



KPT-SC  
Strap clamp



KPT-1BH  
Boss head

## Warranty

This instrument has a warranty of 12 months from date of purchase which covers material and workmanship.

KOREA PROCESS will repair or replace free of charge the defect parts which were found defective after an inspection finds that the defect is due to materials or workmanship.

The warranty for this equipment does not cover normal wear from using it and does not apply to any instrument or part which has been altered by anyone else than an employee of KOREA PROCESS or its authorized agents.

It also does not cover instruments which have been damaged due to accident, negligence of the user, failure to follow the operating instructions, the use of electric currents and circuits other than in this manual, misuse of the unit or abuse of it. We reserve the right to change or modify or improve any of our instruments without any obligation to make corresponding changes to any instrument previously sold.

## Unpacking the Instrument



## Example application



► Circulation Dispersing system

Disperser (Batch operation) +  
Overhead stirrer +  
Disperser (Inline operation)







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