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Safety instructions

- Read the operating instructions in full before starting up and follow the safety instructions.
 - In order to be able to use the appliance properly and safely, every user must first read the operating instructions and observe the safety instructions contained therein. Take care of these operating instructions and keep them in a place where they can be accessed by everyone.
 - Only staff who have been trained accordingly, know the appliance and are authorised to carry out work in this field should use this appliance.
 - Never operate the equipment with the dispersing tools rotating freely. Ensure that parts of the body, hair or items of clothing cannot be trapped by the rotating parts. Before switching on the dispersing instrument make sure that its shaft is immersed min. 10 mm in the medium to prevent the medium from splashing out.
 - Do not use the appliance without a dispersing element.
 - Vibrations can cause the turning handle on the dispersing tool to loosen. Check that the turning handle is secure and tighten if necessary.
 - It is not permitted to use the dispersing instrument with a freely rotating dispersing element without a stirring vessel as any contact can cause serious injury. It is important to ensure that the dispersing element is always inside the stirring vessel when the appliance is switched on.
 - The equipment is also suitable for manual operation.
 - Please follow the relevant safety instructions and guidelines, and occupational health and safety regulations for use in the laboratory.
- Please note that the dispersing element and the journal bearings can become extremely hot during use.
 - When working with the dispersing unit, the user must select and wear his personal protective equipment according to the mixing hazard category. Defective or inappropriate protective equipment can expose the user to the risk of splashing or getting caught in the dispersing tool.
 - Protect the dispersing element from any impact.
 - Even small, undetectable damage creates unbalance and blocks the dispersing instrument. It also causes the dispersing element to overheat and inevitably overloads the drive.
 - In the event of unbalance or unusual noises, switch off the appliance immediately in order to prevent unwanted resonance both in the appliance and the whole assembly. Any unbalance can damage the assembly, the appliance or destroy the stirring vessel, which, in turn, can seriously injure the user, as can the rotating dispersing element.
 - Unusual noises indicate that the appliance and the dispersion tool is no longer working properly.
 - Replace the dispersing element if you notice any unbalance or unusual noises. Stop using the appliance if there is no difference after you have changed the dispersing element and return it to the dealer or the manufacturer along with a description of the fault..
 - Only dispersing elements approved by KOREA PROCESS may be used!

- Even in the case of repair work, the unit must only be opened by a qualified engineer. The mains plug must be pulled before opening the unit. The voltage-carrying components inside the unit may continue to carry a voltage for some time after the mains plug is pulled.
- With the hand enterprise and with the enterprise at the stand, it is to be made certain that safe conditions, a suitable anti-twist plate of the agitating container and a minimum distance of the dispersion tool are ensured to the agitating container soil.
- Do not cover the ventilation slots on the drive in order to ensure adequate cooling of the drive.
- The agitated vessels used for stirring have to be secured. Consider on a good stability of the entire structure.
- Furthermore, the dispersing unit may only be used to stir those materials or material mixtures that the user knows will not react dangerously to the extra energy produced by the dispersing. This also applies to extra energy by means of solar radiation during the stirring procedure.
- Do not process any pathogenic materials in open vessels as this may cause the user to inhale vapours. Always work under a suitable extractor hood, even when using closed vessels. Please contact KOREA PROCESS customer services if you have any questions regarding work with pathogenic materials or other materials which require closed systems.
- Make certain that the unit is set at the lowest speed before commissioning otherwise, the unit will begin running at the speed last set. Dispersing at high speeds can cause the medium to splash out of the mixing vessel.
- There may be dangerous electrostatic activity between the medium and the dispersing tool.
- The appliance starts up again following a cut in the power supply. Please note that the appliance must be switched off at the on/off switch in this case before the power supply is reconnected.
- The dispersing instrument may not be used in explosive rooms, for mixing dangerous substances or under water.
- Please note that abrasion of the dispersion equipment or the rotating accessories can get into the medium you are working on. If there are any questions please contact KOREA PROCESS.
- Always disconnect the plug before changing dispersing elements and attaching accessories.
- The appliance can only be disconnected from the mains supply by pulling out the mains plug or the connector plug. The socket for the mains cord must be easily accessible..
- Meter powder not too close to the flange, otherwise powder can be sucked into the drive.
- Never run dispersion tools dry, as the gasket and bearings will be destroyed if the tools are not cooled by the medium.
- Never run dispersion tools dry, as the gasket and bearings will be destroyed if the tools are not cooled by the medium.
- The gasket and bearings are made of PTFE and rustproof steel; the following points should therefore be noted: Chemical reactions of PTFE occur in contact with molten or solute alkali metals and alkaline earth metals, as well as with fine powders of metals in groups 2 and 3 of the periodic system at temperatures above 300 °C - 400 °C. Only elementary fluorine, chlorotrifluoride

Proper use

The KT5 basic is a dispersing unit which is suitable for the production of emulsions and dispersions of minimum quantities in conjunction with the dispersing elements (please order separately) KT5-S-05G and KT5-S-08G. The KT5 basic is a hand-held instrument. With the aid of a stand clamp it can also be operated as a stand instrument. The protection for the user is not ensured no more, if the equipment with accessories is operated, which are supplied or are not recommended not by the manufacturer or if the equipment in not correct use is operated against the manufacturer default.

Unpacking

Please unpack the device carefully and inspect them for any damage. It is important that any damage is detected as soon as the items are unpacked. A record of the relevant facts may be required (railway, mail or carrier). The device delivery quantity includes: a driving unit, an power supply unit and an operating manual.

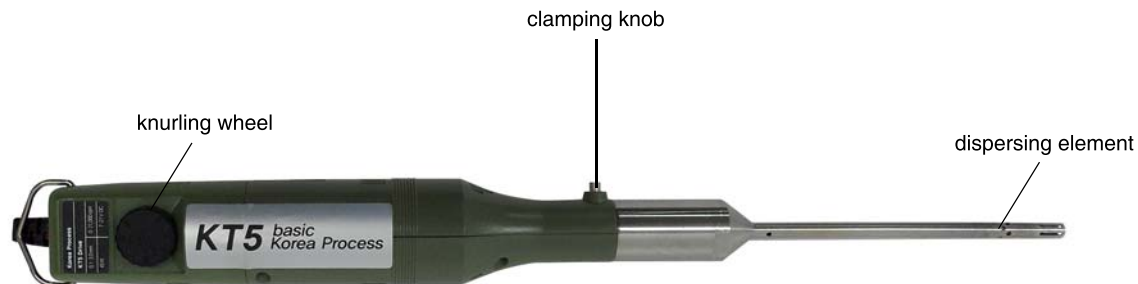
Useful information

Because of the high speed of the rotor, the medium to be processed is automatically sucked axially into the dispersing head and then pressed radially through the slots of the rotor-stator arrangement. The stator acts at the first approach as the ideal flow breaker. It largely prevents a rotation of the medium and enables an input of big mechanic energies on closest space. The trumpet formation know from stirring is strongly reduced but is not totally avoidable. In the shearing gap between rotor and stator about 1000 times more energy is entered than when stirring the medium.

Setting-up the instrument

Please pay attention to the ambient conditions listeted in Technical data (temperature and humidity). Dispersing elements and drive make an operable dispersing instrument.

- loosen knurled-head screw
- insert dispersing element up to stop
- tighten knurled-head screw



Starting up

Before starting up the instrument, please check the conformity between the voltage indicated on the ID-plate and your mains voltage. If they do not agree, the instrument must not be operated.

- Connect power pack to socket - red LED shines
- Put attaching plug of drive into connector socket of power pack
The attaching plug is equipped with a code pin that ensures the correct polarity. If this code pin is broken, the correct polarity is no longer ensured, and the sense of rotation of the drive may change, which consequently would destroy the dispersing element. In this case the connection lead has to be replaced.
- Put the substance to be processed into e.g. a breaker which has to be secured against torsion by e.g. an KPT-clamp support
- Place the dispersing element into the medium to be processed, and only after that switch on the instrument (at the lowest possible speed)
- Set the requested speed (infinitely variable from 0 up to 21000 1/min) at the knurling wheel
- In case of solid/liquid mixtures, do not add the solid before the request speed has been reached

Drive unit KT5 basic

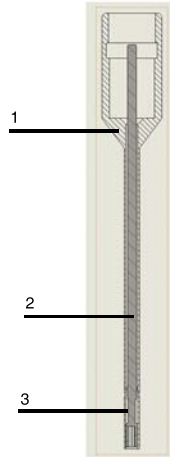
The high-quality drive with a power input of up to max. 50 watts at speeds from 0 up to 21000 1/min opens new ways in the dispersing technology.

By the infinitely variable speed setting, and by using small dispersing elements with a shaft diameter of 5 and/or 8 mm, smallest quantities can be smoothly and rapidly processed. The drive is equipped with a knurling wheel with a division of 1 to 6 as well as with a mark on the casing for speed adjustment, so that speeds can be reproducibly set.

Dispersing elements

Dispersing element KT5-S-05G

- 1 shaft tube
- 2 rotor shaft compl.
- 3 PTFE - bearing bushing



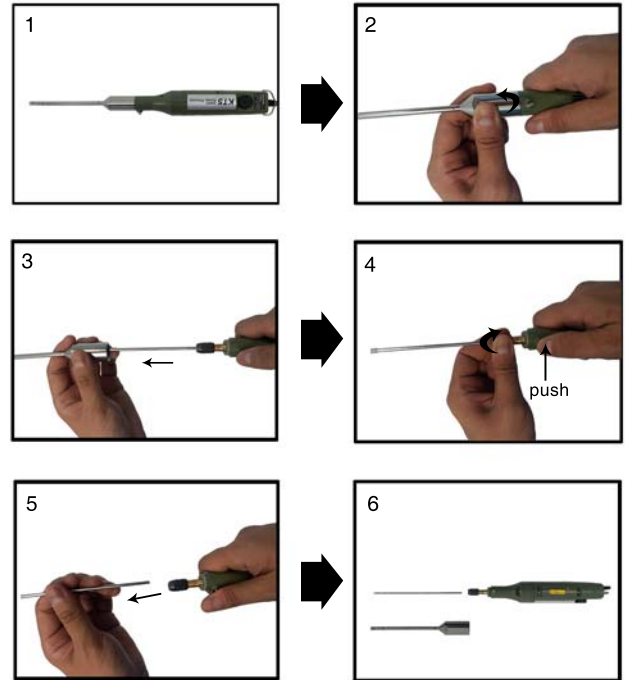
Exchangeable dispersing element

- KT5-S-05G
- KT5-S-05F
- KT5-S-08G

Materials contacting the product (both dispersing elements)
Shaft, rotor and shaft: SUS 316 L
Bearing bushing: PTFE

Disassembling of dispersing element

KT5 basic with dispersing element



Technical data

Model	KT5 basic Drive
Motor capacity	50W
Speed range	0 ~ 21,000 rpm
Speed adjustment	Cont. variable
Sample volume (H ₂ O)	0.1 ~ 20 ml
Max viscosity	5,000 mpas
Noise without dispersing element	70 dB
Overload protection	Yes
Smooth run-on/start	Yes
Safety swich	Yes
Dimensions (W x D x H)	35 x 35 x 180 mm
Weight	0.4 kg
Electric source	220V, 60Hz(or 50Hz), 1-phase
Warranty	1 year

Warranty

In accordance with KOREA PROCESS warranty conditions, the warranty period is 12 months. For claims under the warranty please contact your local dealer. You may also send the machine direct to our works, enclosing the delivery invoice and giving reasons for the claim. You will be liable for freight costs.

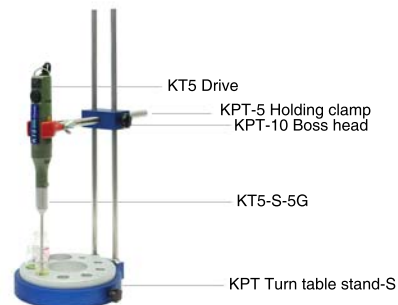
The warranty does not cover wearing parts, nor does it apply to faults resulting from improper use or insufficient care and maintenance contrary to the instructions in this operating manual.

Accessories

- KPT Turn table stand-S	K510001
- KPT Turn table stand-T	K510002
- KPT Multi stand-mini	K510003
- KPT-5 Holding clamp	K520001
- KPT-10 Holding clamp	K520002
- KPT-5 Boss head	K530001
- KPT-10 Boss head	K530002

Exchangeable dispersing element

- KT5-S-05G	K105001
- KT5-S-05F	K105002
- KT5-S-08G	K105003



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