

PT 4000

Benchtop Homogenizer, HighEnd Line

Homogenizing and Mixing Technology for the laboratory

DISPERSING

HOMOGENIZING

EMULSIFYING

SUSPENDING

WET MILLING

MIXING



KINEMATICA.CH
Dispersing and Mixing Technology

POLYTRON® PT 4000 - fast, powerful, low noise

Latest technology in homogenizing for „medium“ sized lab sample treatment

KINEMATICA is the leading manufacturer of homogenizing, mixing and milling equipment based on our technology of rotor/stator dispersing principles.

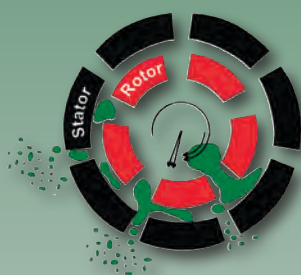
The POLYTRON® PT 4000 HighEnd System belongs within the KINEMATICA homogenizer product range to the benchtop models for small to medium sized applications in the range of approx. 0.1 - 2500 ml.

This unit, with its unique features, will improve already known applications and enter new areas of applications. This will be achieved by much higher tip speeds i.e. by adjustable rotor speeds up to 40'000 RPM. Thus results will be obtained with even finer and smaller droplets/particles.

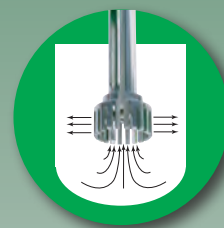
The POLYTRON® PT 4000 Dispersing System is a unique superior design with the following features:

- 500 Watt powerful, wearless three phase highfrequency motor for continuous operation
- This motor is controlled by a frequency inverter which allows a connection to a standard 230 V wall socket
- Electronic speed regulation and stabilization
- Soft-Start and thermal overload protection (PTC)
- Variable speeds up to 40 000 RPM with visual indication
- Noise level lower than <70 dB(A)
- Fast coupling for quick change of the Dispersing-Aggregate
- Different Dispersing -Aggregates in EC-Design, easily autoclavable
- Practical Stand
- Large collection of Dispersing vessels and accessories
- CE label

Principal of process



Rotor / Stator principle



POLYTRON® batch principle

The Rotor/Stator principle for dispersing and homogenizing equipment, originally invented by KINEMATICA, has become the worldwide accepted standard for homogenizing and dispersing a solid or fluid or gaseous phase into a fluid phase.

The dispersing aggregates of the **POLYTRON®** and **BIOTRONA®** batch dispersing systems are directly immersed into the medium. The product will be processed by the rotor/stator dispersing generator at the tip of the dispersing aggregate.

POLYTRON® Rotor/Stator homogenizers successfully process emulsions, suspensions and foams by reducing the size of solid particles, droplets and gas bubbles to a few microns or less. Small and large amounts of product are being dispersed in a more economical, faster and better way than with any other device.

Technical Data



Motor Power, Type	500 W (output), 3-ph. induction motor
Speed control	Integrated electronic speed regulation with control knob, soft start and LED display
Supply Voltage	230V / 100 - 120V, 50/60 Hz
Speed max.	40'000 rpm
Noise emission	<70 dB (A)
Ambient	0 - 50°C, 95% max. rel. humidity
Standards	CE label, EN / IEC 61010, 61326-1 for EMV & SAFETY
Protection class	IP 20
Dimensions drive/control unit (LxWxH)	327 x 114 x 196.5 mm 239 x 164 x 212 mm
Weight drive/control unit	7.5 kg / 2.5 kg

Further Equipment & Order information

EasyClean Dispersing Aggregates

The modern EC aggregates are equipped with saw-teeth which increase the efficiency in the preliminary size reduction of the droplets/particles and considerably shortens the processing time. The tips of the teeth are secured by a safety ring which avoids the teeth from bending. The whole dispersing aggregate is made from superior grade stainless steel (1.4435/316L) and is electropolished. POLYTRON® EC dispersing aggregates are equipped with special slide bearings made from a Teflon compound, which have extraordinary mechanical characteristics and superior chemical resistance and FDA approval. The complete aggregate can be dismantled in two to three steps, easily cleaned and sterilised i.e. autoclaved.



Control unit



With the drive unit POLYTRON® PT 4000, stepless rotor speeds up to 40 000 rpm can easily be adjusted (depending on the chosen dispersing aggregate and the product to be treated) and read out from the visual LED speed indication.

Quick Coupling



Quick coupling for Dispersing Aggregates:

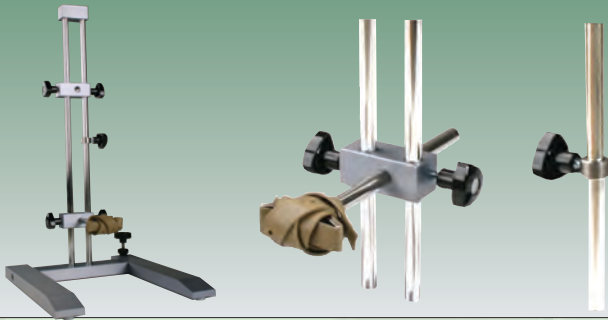
A unique quick coupling system (Coupling-Type: E) allows to mount or change the dispersing aggregate with one hand within seconds.

Drive and control Unit



Order No.	Description
11010060	PT 4000 drive and control unit, 230V, EU-cable
11010061	PT 4000 drive and control unit, 230V, CH-cable
11010066	PT 4000 drive and control unit, 230V, UK-cable
11010062	PT 4000 drive and control unit, 100-120V incl. transformer

Stand & Accessories



Order No.	Description
11040020	ST-F20/600 - H-Stand incl. vessel holder, boss head and safety positioning ring
11045011	Vessel holder with boss head for ST-F20/600
11045031	Safety positioning ring for ST-F20/600

Dispersing Vessels



The suitable dispersing vessel

The following overview should help you to find the correct working vessel for your application.

We will be pleased to provide you with further information on other vessels and about special designs as well.

Description	Order No.	Dim. (mm) Ø / H	Working Vol.	Model	
GS 15	11050010	30 / 150	35 ml	Clover leaf shaped	Borosilicate glass
GS 25	11050011	55 / 150	150 ml		
GS 40	11050012	80 / 200	500 ml		
GS 50	11050013	90 / 250	1000 ml		
GS 60	11050014	100 / 300	1300 ml		
GS 15 K	11050020	30 / 150	35 ml	Cylindrical	top open without cover
GS 25 K	11050021	55 / 150	150 ml		
GS 40 K	11050022	80 / 200	500 ml		
GS 50 K	11050023	90 / 250	1000 ml		
GS 60 K	11050024	100 / 300	1300 ml		
GS 15 KL 7.5	11050030	30 / 150	35 ml	Cylindrical	with screw cap tapered fitting 7.5, 12, 20 or 25 mm glass inlet (as above)
GS 25 KL 12	11050031	55 / 150	150 ml		
GS 25 KL 20	11050032	55 / 150	150 ml		
GS 40 KL 25	11050034	80 / 200	500 ml		
GS 50 KL 25	11050036	90 / 250	1000 ml		
GS 60 KL 25	11050038	100 / 300	1300 ml		
GS 100 Z	11050060	100 / 150	900 ml	Cylindrical	top open without cover
GS 130 Z	11050061	125 / 170	2000 ml		

Dispersing Aggregates (choice)

Model	PT-DA 05/2 EC-E068	PT-DA 07/2 EC-E092	PT-DA 12/2 EC-E123	PT-DA 20/2EC-E170	PT-DA 25/2EC-E170	PT-DA 25/2FEC-E170
Ident-No.	11030009	11030024	11030062	11030073	11030090	11030091
Rotor/Stator	3 / 5.6 mm	5 / 7.8 mm	9 / 11.8 mm	15 / 20 mm	18 / 25 mm	20 / 25 mm
Tip speed	6.3 m/s	10.5 m/s	18.8 m/s	27 m/s	30 m/s	32 m/s
Volume	0.1 - 5 ml	0.3 - 10 ml	100 - 250 ml	100 - 2000 ml	100 - 2500 ml	100 - 2500 ml
Application	<ul style="list-style-type: none"> Extraction Producing of suspensions and emulsions 	<ul style="list-style-type: none"> Dispersing of cells and tissues in a small amount of liquid Dissolving of solids Extractions 	<ul style="list-style-type: none"> Dispersing of tissues, resins and pigments in liquid Extractions And many others... 	<ul style="list-style-type: none"> Dispersing of tissues, resins and pigments in liquid Extractions And many others... 	<ul style="list-style-type: none"> Producing of creams and ointments, coating solutions for tablets, gels, shampoo, lotions, polymer emulsions, salad dressing... 	<ul style="list-style-type: none"> Producing of creams and ointments, coating solutions for tablets, gels, shampoo... For medium to very fine particle/ droplet sizes

HOMOGENIZING AND MIXING TECHNOLOGY

POLYTRON®
DISPERSING AND MIXING TECHNOLOGY BY KINEMATICA

BIOTRONA®
DISPERSING AND MIXING TECHNOLOGY BY KINEMATICA

POLYMIX®
DISPERSING AND MIXING TECHNOLOGY BY KINEMATICA

MEGATRON®
DISPERSING AND MIXING TECHNOLOGY BY KINEMATICA

REACTRON®
DISPERSING AND MIXING TECHNOLOGY BY KINEMATICA

A wide range of products with the finest solution for every application, matched by the superior quality of all components make KINEMATICA a world leader for Dispersing and Mixing technology.

With Keen Eyes ...

Development knows no rest at KINEMATICA. Our systems are constantly upgraded to reflect the state-of-the-art technology and the needs of the market. KINEMATICA has always had a keen eye for major advances, as proven by various patents.

The rotor/stator principle for dispersing technology was conceived and developed at KINEMATICA and has become the world standard.

... For Your Needs

Applications for Dispersing/Homogenizing Technology are always on the increase. KINEMATICA continually creates new areas of processing applications based on innovations. We do not neglect the human factor as it is exemplified by the safe and comfortable operation and noise reduction of our high-speed systems.

Please, get in touch with us, our local appointed agent or your preferred dealer. We will be pleased to supply more details or arrange a personal demonstration of our POLYTRON® and MEGATRON® systems.

POLYTRON® Finest Swiss Made solutions... worldwide! +

PT 1300 D

Digital handheld homogenizer

Homogenizing and Mixing Technology for the laboratory

DISPERSING
HOMOGENIZING
EMULSIFYING
SUSPENDING
WET MILLING
MIXING



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PT 3100 D

Digital High-End Benchtop Homogenizer with PC interface

Homogenizing and Mixing Technology for the Laboratory

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POWDER INTRODUCTION



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