

PT 6100

*Powerful
Benchtop lab
homogenizer*

*Homogenizing
and Mixing Tech-
nology for
the laboratory*

- DISPERSING**
- HOMOGENIZING**
- EMULSIFYING**
- SUSPENDING**
- WET MILLING**
- MIXING**



KINEMATICA.CH
Dispensing and Mixing Technology

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

Starting at smallest lab volumes of 0.05 ml up to production dimensions of 150 t/h we have the suitable equipment configuration on hand to solve your homogenizing, dispersing, emulsifying, suspending, wet milling and mixing task.

Our **POLYTRON®** and **MEGATRON®** homogenizing and mixing processors treats your product at the finest level in shortest time ("down sizing" and "micro mixing").

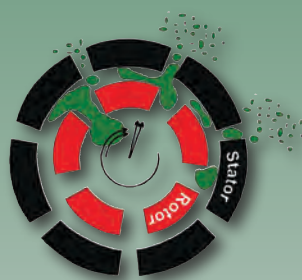
The POLYTRON® PT 6100 system with its powerful 1700 Watt drive can be equipped with more than 40 different POLYTRON® dispersing aggregates according to the rotor/stator principle. Therefore the PT 6100 System offers its user solutions for a wide range of dispersing and homogenizing applications with volumes in between approx. 100 ml and 30 000 ml.

The following features particularly distinguish the PT 6100:

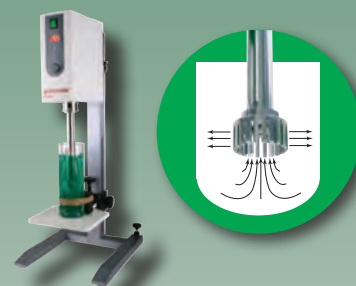
- **Powerful 1700 watt drive**
- **Up to 24 000 min⁻¹ and up to approx. 50 m/s tip speed**
- **Sound-proof to approx. 80 dB A**
- **Intelligent control with LED display for speed indication**
- **Soft-start, overload protection and speed stabilisation**
- **Safety quick-coupling**
- **More than 40 different and interchangeable dispersing aggregates**
- **PC connection with the Intelligent Cable**

Of course also this KINEMATICA product complies to all mechanical and electrical regulations, especially in regard to product safety and bears the CE mark.

Principle 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.

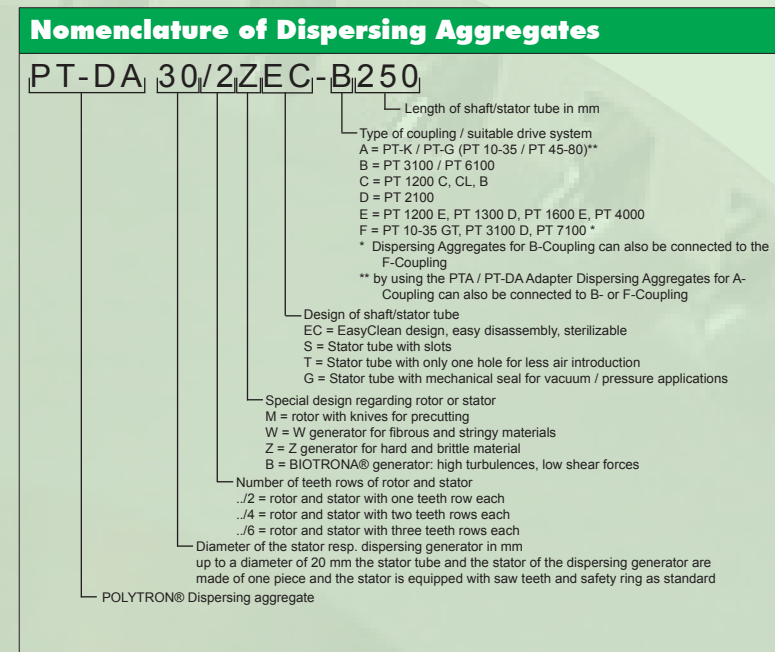
The dispersing aggregates of the **POLYTRON®** and **BIOTRONA®** batch dispersing systems are directly immersed into the medium. The product will be processed by the rotor/stator dispersing generator at the tip of the dispersing aggregate.

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	1700 W (input) / 1100 W (output), Universal motor
Speed control	Integrated electronic speed controller, soft-start, LED-Display
Supply Voltage	230V / 50Mz or 100-120V / 60 Hz
Speed at Dispersing Rotor max.	24'000 rpm (depending on dispersing aggregate and medium)
Noise emission (w/o load)	approx. 80 dB(A) at 24'000 rpm
Ambient	0 - 40°C, 95% max. rel. humidity
Standards	EMC according to IEN / IEC 61010, EN / IEC 61326-1
Protection class	IP 20
Dimensions (drive only)	360 x 164 x 313 mm (LxWxH)
Weight (drive only)	approx. 7.0 kg



Dispersing Generator - at the head of a POLYTRON® Dispersing Aggregate

POLYTRON® dispersing generators (consisting of a rotor and a stator) are mounted at the head of a dispersing aggregate and are available in many designs, geometries and sizes. Next to single (..2.. - meaning rotor and stator with one teeth row each) and multiple teeth rows (..4.. - two teeth rows each, ..6.. - three teeth rows each) for different achievable size distributions, a variety of special designs and geometries can be chosen to get the best result for the desired application.

POLYTRON® Dispersing Aggregates – unrivalled

Up to the present the efficiency of POLYTRON® dispersing aggregates **remain unequalled**. Thanks to the optimized shear forces and bounce effects (mechanical forces) the processed medium will be treated at **finest level in shortest time**. The optimal aggregate for the dispersing application can be chosen from **over 40 different**, interchangeable POLYTRON® dispersing aggregates. POLYTRON® dispersing aggregates for the PT 6100 have shafts with **double bearings** as standard and are made from **high quality stainless steel** (1.4435, V4A, 316L). Dispersing aggregates up to a diameter of 20 mm have **additional saw teeth** and a **safety ring** to protect the teeth from bending also at highest load like hard samples. For specific applications KINEMATICA offers customer tailored solutions. Elaborated rotor/stator geometries are a **speciality of KINEMATICA**.

Simple and safe cleaning

POLYTRON® dispersing aggregates are available as EC (Easy Clean) aggregates as standard. In this design, a combination of two slide bearings made of high quality plastic with excellent mechanical properties and best chemical resistance or a combination of a slide bearing (tungsten carbide/bronze) with a high performance stainless steel ball bearing is used. POLYTRON® dispersing aggregates in the EC version can be disassembled in a few steps, are easily cleaned or can be sterilized / autoclaved by any standard method.

G-generator - working under vacuum/pressure

These special versions are made for working under pressure and vacuum due to the incorporated mechanical seal inside the generator head. Absolutely gas-tight is the other advantage of a mechanical seal. No additional air or gas phase will be mixed into the product – this is very important regarding e.g. emulsions.

W-generator - for fibrous and stringy material

The preparation of hard and brittle, partially tough and fibrous samples for analysis is often tedious and time consuming work, creating high demands for the user and the equipment. Frozen kernels of grain for example, or field beans, are extremely hard and abrasive; the connective tissue of meat, on the other hand, is very fibrous and tough. The new geometry of the W-generators has solved these problems.

M-generator - for pre-cutting coarse material

Dispersing aggregates in M-version have a rotor with a pair of knives. They help dispersing larger and/or tougher samples by pre-cutting the material.

Z-generator - for hard and brittle material

Pills, capsules and hard large grains are broken open and dispersed by the Z-generators in a short time. The special effect is caused by the unique geometry of the generator teeth.

BIOTRONA® generator - High turbulence

The BIOTRONA® flash blender is designed for special jobs. Thanks to the extremely high turbulence and low shear forces it is excellently suited for fast suspending and dispersing of solids also at higher viscosity.

The quick coupling is suitable for all POLYTRON® PT-DA dispersing aggregates.

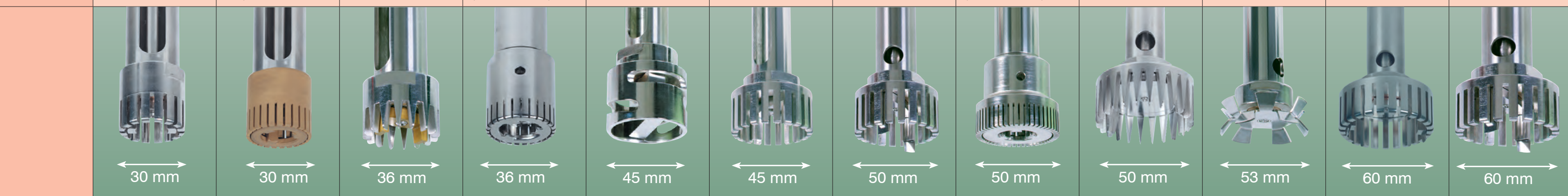
The quick coupling is suitable for all POLYTRON® PTA dispersing aggregates by using the optional PT-DA/PTA adapter.

Disassembled POLYTRON® Dispersing Aggregate

The PT-DA / PTA Adapter allows also to connect PTA dispersing aggregates (coupling type A) to the PT 6100.

Dispersing Aggregates (selection)

Model	PT-DA 30/2ZEC-B250	PT-DA 30/4 TIN EC-B250	PT-DA 36/2WEC-B250	PT-DA 36/4G-B273	PT-DA 45/BEC-B50	PT-DA 45/2EC-B250	PT-DA 50/2MEC-B250	PT-DA 50/6G-B250	PT-DA 50/2WEC-B250	PT-DA 53/DS-B250	PT-DA 60/2EC-B250	PT-DA 60/2MEC-B250
special Z-Generator	special Z-Generator	special generator titan-nitrated	special W-Generator	special G-Generator with mechanical seal	BIOTRONA® Generator	standard generator	special M-Generator	special G-Generator with mechanical seal	special W-Generator	special dissolver disk	standard generator	special M-Generator
rotor/stator with one teeth row each	rotor/stator with one teeth row each	rotor/stator with two teeth rows each	rotor/stator with one teeth row each	blade rotor and stator with inclined slots	rotor/stator with one teeth row each	rotor/stator with one teeth row each	rotor/stator with one teeth row each	rotor/stator with three teeth rows each	rotor/stator with one teeth row each	rotor/stator with one teeth row each	rotor/stator with one teeth row each	rotor/stator with one teeth row each
Ident-No.	11030112	auf Anfrage	11030141	11030148	12030031	11030197	11030214	11030223	11030219	12030100	11030241	11030244
Tip Speed (max)	29 m/s	30 m/s	30 m/s	28 m/s	40 m/s	40 m/s	44 m/s	44 m/s	50 m/s	47 m/s	50 m/s	50 m/s
Working Volume (based upon water)	100 - 4000 ml	200 - 4000 ml	200 - 4000 ml	200 - 4500 ml	1000 - 15 000 ml	200 - 6000 ml	300 - 10 000 ml	300 - 4000 ml	1000 - 30 000 ml	1000 - 30 000 ml	200 - 4000 ml	1000 - 30 000 ml
Applications	<ul style="list-style-type: none"> breaking open and dispersing of pills, capsules and hard large grains 	<ul style="list-style-type: none"> making fine emulsions and suspensions mixes and reduces highly intensive solids into fluids gasses solutions separates fibres and cellular material into very small particles extraktions applications with abrasive components 	<ul style="list-style-type: none"> dispersing of fibrous, stringy and brittle samples (e.g. flesh) 	<ul style="list-style-type: none"> working under pressure / vacuum making finest emulsions and suspensions mixes and reduces highly intensive solids into fluids gasses solutions separates fibres and cellular material into very small particle prevents foam built-up 	<ul style="list-style-type: none"> high turbulent mixing with low shear forces fast dissolving and suspending of solids also at higher viscosity 	<ul style="list-style-type: none"> dispersing and mixing of particles up to 22 mm in size sample preparation for extraction and solution of organic material intensives mixing 	<ul style="list-style-type: none"> dispersing and mixing of particles up to 25 mm in size sample preparation for extraction and solution of organic material intensives mixing rotor with knives facilitate the processing of larger cell tissue samples or particles 	<ul style="list-style-type: none"> working under pressure / vacuum making finest emulsions and suspensions mixes and reduces highly intensive solids into fluids gasses solutions separates fibres and cellular material into very small particles prevents foam built-up 	<ul style="list-style-type: none"> dispersing of fibrous, stringy and brittle samples (e.g. flesh) 	<ul style="list-style-type: none"> fast mixing and homogenizing of solid material into fluid by means of a dissolving disk Preparing highly viscous products 	<ul style="list-style-type: none"> dispersing and mixing of particles up to 30 mm in size sample preparation for extraction and solution of organic material intensives mixing 	<ul style="list-style-type: none"> dispersing and mixing of particles up to 30 mm in size sample preparation for extraction and solution of organic material intensives mixing rotor with knives facilitate the processing of larger cell tissue samples or particles



Further Equipment & Order information

Drive Unit & Tools



Order No.	Description
11010100	PT-MR 6100, 230V/EU-cable
11010101	PT-MR 6100, 230V/CH-cable
11010109	PT-MR 6100, 230V/UK-cable
11010102	PT-MR 6100, 100-120V
11010103	PT-DA / PTA adapter
11020040	Intelligent cable with RS232
11020041	Temperature sensor PT 100

Stands



Order No.	Description
11040025	ST-F11/855 - The practical stand of anodized aluminum with its stable H foot and a PTFE coated work table which can be adjusted in height and swung out. (ill. left)
11040031	ST-F12/600-1000 - The user friendly stand, a telescopic stand with pneumatic springs and 300 mm stroke. (ill. middle)
11040033	ST-F13/820 - The economical stand with H foot, a column, two cross sleeves and a vessel holder, all made of stainless steel. (ill. right)

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 40	11050012	80 / 200	500 ml	Clover leaf shaped	Borosilicate glass	top open with cover
GS 50	11050013	90 / 250	1000 ml			with screw cap
GS 60	11050014	100 / 300	1300 ml			glas inlet: GS 40/50/60K Ø 40 mm
GS 40 K	11050022	80 / 200	500 ml	Clover leaf shaped	Borosilicate glass	with screw cap
GS 50 K	11050023	90 / 250	1000 ml			glas inlet: GS 40/50/60K Ø 40 mm
GS 60 K	11050024	100 / 300	1300 ml			with screw cap tapered fitting 25 mm glas inlet (as above)
GS 40 KL 25	11050034	80 / 200	500 ml	Clover leaf shaped	Borosilicate glass	with screw cap
GS 50 KL 25	11050036	90 / 250	1000 ml			glas inlet: GS 40/50/60K Ø 40 mm
GS 60 KL 25	11050038	100 / 300	1300 ml			with screw cap tapered fitting 25 mm glas inlet (as above)
GS 100	11050050	155 / 200	3000 ml	Cylindrical	V2A stainless steel	top open with cover
GS 130	11050051	180 / 210	4000 ml			
GS 150	11050052	180 / 320	6000 ml			
GS 190	11050053	230 / 320	10000 ml			
GS 100 Z	11050060	100 / 150	900 ml	Cylindrical	V2A stainless steel	top open without cover
GS 130 Z	11050061	125 / 170	2000 ml			
GS 155 Z	11050062	175 / 190	3500 ml			
GS 175 Z	11050063	175 / 230	4500 ml			
GS 200 Z	11050064	200 / 270	7000 ml			
GS 230 Z	11050065	220 / 285	9000 ml			

HOMOGENIZING AND MIXING TECHNOLOGY



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 3100 D

Digital High-End Benchtop Homogenizer with PC Interface

NEW

Homogenizing and Mixing Technology for the Laboratory

- DISPERSING
- HOMOGENIZING
- EMULSIFYING
- SUSPENDING
- WET MILLING
- MIXING

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MT 5100

Inline Homogenizer for throughputs up to 65 l/min

Homogenizing and Mixing Technology for Pilot Plant and Small Scale Production

- DISPERSING
- HOMOGENIZING
- EMULSIFYING
- SUSPENDING
- WET MILLING

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- REACTRON

Homogenizing and Dispersing Technology for **Laboratory & Pilot Plant**

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- SUSPENDING
- WET MILLING
- MIXING
- DRY MILLING
- FOAM PRODUCTION
- POWDER INTRODUCTION

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Homogenizing and Dispersing Technology for **Pilot Plant & Production**

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- WET MILLING
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- POWDER INTRODUCTION
- FOAM PRODUCTION

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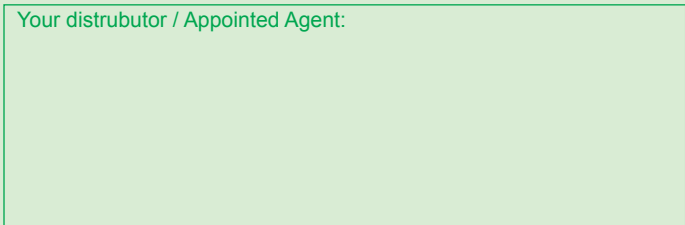


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