

## PT 10-35 GT

*Benchtop lab  
homogenizer for  
a wide range of  
applications with  
digital speed display*

*Homogenizing  
and Mixing  
Technology for  
the laboratory*

**DISPERSING**

**HOMOGENIZING**

**EMULSIFYING**

**SUSPENDING**

**WET MILLING**

**MIXING**

**UPGRADED  
WITH LED  
DISPLAY**



**KINEMATICA.CH**

Dispersing and Mixing Technology

# POLYTRON® PT 10-35 GT - easy & safe

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

Starting at smallest lab volumes of 0.05 ml up to production dimensions of 150'000 l/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").

With the **new designed POLYTRON® System PT 10-35 GT** KINEMATICA presents now the successor of the famous POLYTRON® System PT 10-35 (also known as POLYTRON® System PT-K).

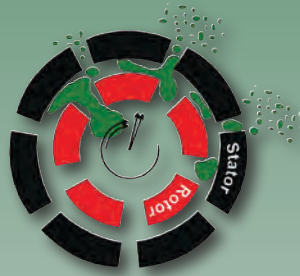
The new PT 10-35 GT is designed with many new features: a more powerful motor, an integrated speed controller, digital speed display, a new quick coupling, a noise reducing slim-line housing, a new standard stand and much more.

As the long-famous system PT 10-35 the new system PT 10-35 GT creates the new standard for lab homogenizing and mixing tasks and applications with volumes between 0.1 and 10'000 ml. Therewith the new PT 10-35 GT counts within the KINEMATICA lab homogenizer line as the new standard model in the medium benchtop homogenizer range.

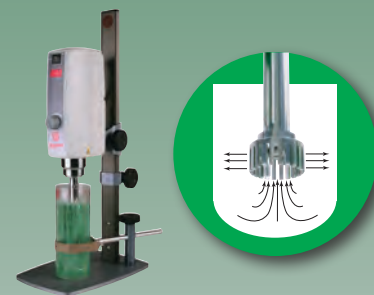
## Some special features of the PT 10-35 GT:

- 60% more power than former PT 10-35
- Speeds up to 30'000 rpm
- Low noise level
- New quick coupling (type F) for dispersing aggregates from 5 mm up to 36 mm - dispersing aggregates from POLYTRON® Systems PT 3100 (type B) and PT 10-35 (type A, with adapter) can also be connected
- Digital speed display
- Integrated digital speed controller with closed loop - constant speed independent from loadchanges, no PCU needed any more
- Acoustical error signals
- Integrated overheating, overload and blocking protection
- Space saving slim line design
- Exchangeable drive extensions for different types of stands

## 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	1200 W input / 800 W output, Universal motor
Speed control	Integrated digital speed controller with closed loop - constant speed independent from loadchanges, LED-Display, Soft Start
Supply Voltage	230V / 50Hz or 100-120V / 60 Hz
Speed at Dispersing Rotor max.	50 - 30'000 rpm (depending on dispersing aggregate and medium)
Noise emission (w/o load)	approx. 82 dB(A) at 30'000 rpm approx. 75 dB(A) at 25'000 rpm
Ambient	0 - 40°C, 95% max. rel. humidity
Standards	EMC according to IEC/EN 61000-6-2 / EN 61000-6-3 Safety according to IEC/EN 61010-2-51
Protection class	IP 20
Dimensions (drive only)	95 x 210 x 247 mm (LxWxH)
Weight (drive only)	3.2 kg



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 10-35 GT 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**.

Dispersing Aggregates for system PT 10-35 GT

For the system POLYTRON® PT 10-35 GT basically all dispersing aggregates from system POLYTRON® PT 3100 can be adapted. Below please find a choice of the most common used dispersing aggregates. With the optional available PT-DA/PTA-Adapter it is also possible to use all existing dispersing aggregates of the former system POLYTRON® PT 10-35 (PT-K). Other sizes, geometries, materials, coatings on request.

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.

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.

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.



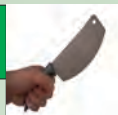
W-generator - for fibrous and stringy material

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 precutting 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

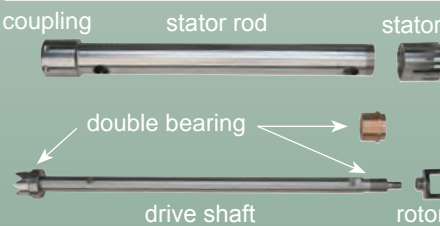
The BIOTRONA® flash blender is designed for special jobs. Thanks to the extremely high turbulence and low shear forces it is excellently suited for fast suspending and dispersing of solids also at higher viscosity.



New quick coupling is suitable for all POLYTRON® PT-DA 30.. dispersing aggregates.



New 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 10-35 GT.

Dispersing Aggregates (selection)

Model	PT-DA 05/2EC-B078 <ul style="list-style-type: none"><li>standard model</li><li>rotor/stator with one teeth row each</li></ul>	PT-DA 07/2EC-B101 <ul style="list-style-type: none"><li>standard model</li><li>rotor/stator with one teeth row each</li></ul>	PT-DA 12/2EC-B154 <ul style="list-style-type: none"><li>standard model</li><li>rotor/stator with one teeth row each</li></ul>	PT-DA 20/2EC-B193 <ul style="list-style-type: none"><li>standard model</li><li>rotor/stator with one teeth row each</li></ul>	PT-DA 20/2MEC-B154 <ul style="list-style-type: none"><li>M-generator model</li><li>rotor/stator with one teeth row each</li></ul>	PT-DA 20/2WEC-B193 <ul style="list-style-type: none"><li>W-generator model</li><li>rotor/stator with one teeth row each</li></ul>	PT-DA 30/2ZEC-B250 <ul style="list-style-type: none"><li>Z-generator model</li><li>rotor/stator with one teeth row each</li></ul>	PT-DA 30/4 TIN EC-B250 <ul style="list-style-type: none"><li>Special TiN model</li><li>rotor/stator with two teeth rows each, TiN coated</li></ul>	PT-DA 36/2EC-B250 <ul style="list-style-type: none"><li>standard model</li><li>rotor/stator with one teeth row each</li></ul>	PT-DA 36/2WEC-B250 <ul style="list-style-type: none"><li>W-generator model</li><li>rotor/stator with one teeth row each</li></ul>	PT-DA 36/4EC-B250 <ul style="list-style-type: none"><li>standard model</li><li>rotor/stator with two teeth rows each</li></ul>	PT-DA 36/4G-B273 <ul style="list-style-type: none"><li>G-generator model</li><li>rotor/stator with two teeth rows each</li></ul>	PT-DA 36/2BEC-B250 <ul style="list-style-type: none"><li>BIOTRONA® model</li><li>blade rotor and stator with inclined slots</li></ul>
Ident-No.	11030010	11030026	11030047	11030075	11030077	11030080	11030112	on request	11030144	11030141	11030147	11030148	12030021
Rotor / Stator-Ø	3 / 5.5 mm	5 / 7.5 mm	9 / 12 mm	15 / 20 mm	15 / 20 mm	15 / 20 mm	22 / 30 mm	26 / 30 mm	26 / 35 mm	26 / 35 mm	30 / 35 mm	30 / 35 mm	28 / 35 mm
Speed (max)	30'000 rpm	30'000 rpm	30'000 rpm	28'000 rpm	28'000 rpm	28'000 rpm	25'000 rpm	22'000 rpm	22'000 rpm	22'000 rpm	19'000 rpm	18'000 rpm	22'000 rpm
Tip Speed (max)	5 m/s	8 m/s	14 m/s	22 m/s	22 m/s	22 m/s	29 m/s	30 m/s	30 m/s	30 m/s	30 m/s	28 m/s	32 m/s
Working Volume (based upon water)	0.1 - 5 ml	0.3 - 10 ml	3 - 250 ml	20 - 2000 ml	20 - 2000 ml	20 - 2000 ml	100 - 4000 ml	200 - 4000 ml	200 - 4000 ml	200 - 4000 ml	200 - 4500 ml	200 - 4500 ml	500 - 10'000 ml
Applications	<ul style="list-style-type: none"><li>dispersing of smallest plant, human or animal pieces</li><li>dissolving of solids</li><li>extractions</li></ul>	<ul style="list-style-type: none"><li>dispersing of cells and tissues in a small amount of liquid</li><li>dissolving of solids</li><li>extractions</li></ul>	<ul style="list-style-type: none"><li>dispersing of plant, human or animal tissues, resins and pigments</li><li>dissolving of solids</li><li>extractions</li><li>producing of suspensions and emulsions</li></ul>	<ul style="list-style-type: none"><li>dispersing of plant, human or animal tissues, resins and pigments</li><li>dissolving of solids</li><li>extractions</li><li>producing of suspensions and emulsions</li></ul>	<ul style="list-style-type: none"><li>dispersing and mixing of particles up to 10 mm in size</li><li>sample preparation for extraction and solution of organic material</li><li>intensive mixing</li><li>rotor with knives facilitate the processing of larger cell tissue samples or particles</li></ul>	<ul style="list-style-type: none"><li>dispersing of fibrous, stringy and brittle samples (e.g. flesh)</li></ul>	<ul style="list-style-type: none"><li>breaking open and dispersing of pills, capsules and hard large grains</li></ul>	<ul style="list-style-type: none"><li>making fine emulsions and suspensions</li><li>mixes and reduces highly intensive solids into fluids</li><li>gasses solutions</li><li>separates fibres and cellular material into very small particles</li><li>extractions</li><li>applications with abrasive components</li></ul>	<ul style="list-style-type: none"><li>dispersing and mixing of particles up to 15 mm in size</li><li>sample preparation for extraction and solution of organic material</li><li>intensive mixing</li></ul>	<ul style="list-style-type: none"><li>dispersing of fibrous, stringy and brittle samples (e.g. flesh)</li></ul>	<ul style="list-style-type: none"><li>making fine emulsions and suspensions</li><li>mixes and reduces highly intensive solids into fluids</li><li>gasses solutions</li><li>separates fibres and cellular material into very small particles</li><li>extractions</li></ul>	<ul style="list-style-type: none"><li>working under pressure / vacuum</li><li>making finest emulsions and suspensions</li><li>mixes and reduces highly intensive solids into fluids</li><li>gasses solutions</li><li>separates fibres and cellular material into very small particles</li><li>extractions</li><li>prevents foam</li></ul>	<ul style="list-style-type: none"><li>high turbulent mixing with low shear forces</li><li>fast dissolving and suspending of solids also at higher viscosity</li></ul>

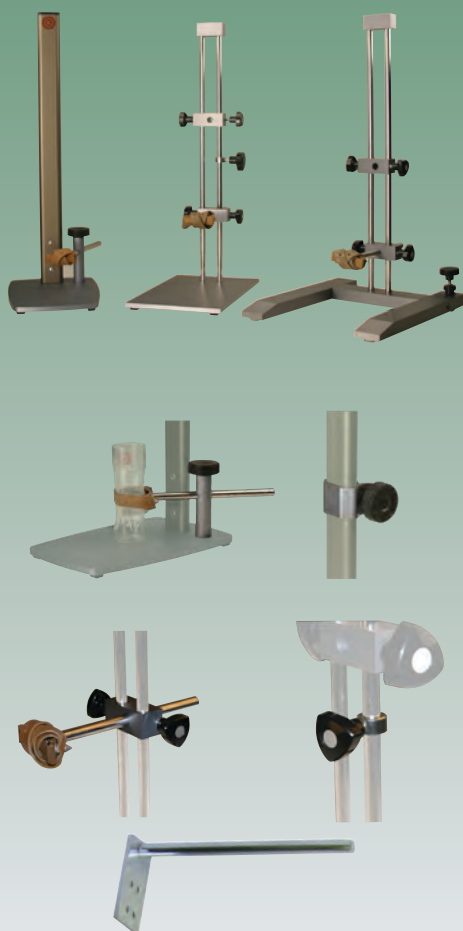
# Further Equipment & Order information

## Drive Unit



Order No.	Description
11010104	PT 10-35 GT, 230V/EU-plug
11010105	PT 10-35 GT, 230V/CH-plug
11010106	PT 10-35 GT, 230V/UK-plug
11010103	PT 10-35 GT, 100-120V
11035001	PT-DA / PTA adapter

## Stands & Tools



Order No.	Description
11040050	ST-P10/600 - Plate stand for PT 10-35 GT (ill. left)
11040051	ST-P20/600 - Plate stand with two rod design (ill. middle)
11040020	ST-F20/600 - H-shape feet stand with two rod design (ill. right)
11045013	Vessel holder for ST-P10/600
11045035	Safety positioning ring for ST-P10/600
11045011	Vessel holder for ST-P20/600 and ST-F20/600
11045031	Safety positioning ring for ST-P20/600 and ST-F20/600
11045051	Extension adapter for drive unit when used with ST-P20/600 and 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	top open with cover
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			with screw cap
GS 25 K	11050021	55 / 150	150 ml			glas inlet: Ø 9 mm
GS 40 K	11050022	80 / 200	500 ml			GS 25K Ø 25 mm
GS 50 K	11050023	90 / 250	1000 ml			GS 40/50/60K Ø 40 mm
GS 60 K	11050024	100 / 300	1300 ml			
GS 15 KL 7.5	11050030	30 / 150	35 ml	Cylindrical	V2A stainless steel	with screw cap tapered fitting 7.5, 12, 20 or 25 mm glas 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	11050050	155 / 200	3000 ml			top open with cover
GS 100 Z	11050060	100 / 150	900 ml			
GS 130 Z	11050061	125 / 170	2000 ml			top open without cover
GS 155 Z	11050062	175 / 190	3500 ml			



# 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 3100 D**

Digital High-End Benchtop Homogenizer with PC interface

Homogenizing and Mixing Technology for the Laboratory

DISPERSING  
HOMOGENIZING  
EMULSIFYING  
SUSPENDING  
WET MILLING  
MIXING



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**MEGATRON®** Finest Swiss Made solutions... worldwide! +

**MT 3000**

HighEnd Inline homogenizer

Homogenizing and Mixing Technology for the laboratory

LAB Scale continuous In-Line Recirculating

DISPERSING  
HOMOGENIZING  
EMULSIFYING  
SUSPENDING  
WET MILLING  
MIXING



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Homogenizing and Dispersing Technology for

**Laboratory & Pilot Plant**

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EMULSIFYING  
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WET MILLING  
MIXING  
DRY MILLING  
FOAM PRODUCTION  
POWDER INTRODUCTION



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