

## Dispersing Technology for the Laboratory

System POLYTRON® PT 3100



**KINEMATICA AG**  
Dispersing and Mixing Technology

# POLYTRON® System PT 3100

## Elegant Reliability

The POLYTRON® PT 3100 dispersing unit is the result of innovative development work and is another new family member in the wide product range of KINEMATICA dispersing devices for the use in laboratories.

The system PT 3100 with its powerful 750 Watt PT-MR 3100 drive can be equipped with more than 20 different and exchangeable POLYTRON® dispersing aggregates according to the rotor/stator principle. Therefore the PT 3100 system offers its user solutions for a wide range of dispersing and homogenizing applications with volumes between approx. 0.1 ml and 3000 ml.

The following features particularly distinguish the system PT 3100:

- ➡ **powerful drive with 750 watt**
- ➡ **up to 27'000 rpm and up to approx. 36 m/s tip speed without load; max. rpm values depend on the chosen dispersing aggregate and product properties**
- ➡ **sound-proof to approx. 72 dB A**
- ➡ **intelligent control with LED display for speed indication**
- ➡ **soft-start, overload protection and speed stabilisation**
- ➡ **safety quick-coupling**
- ➡ **more than 20 different and interchangeable dispersing aggregates**
- ➡ **connection for programmable RECO® control unit**
- ➡ **3 different stand models**

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

## Intelligent Control

The integrated electronic control unit maintains a constant speed up to the load limit of the drive, which is especially important with a changing viscosity of the product. When this load limit is reached, the electronic overload protection activates. The speed is now controlled to the maximum possible motor load. The actual speed is continually displayed on the three-digit LED digital readout.

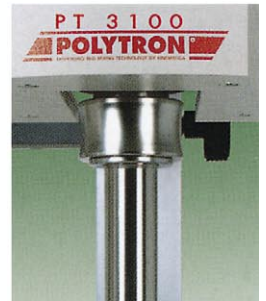
## Coupling Safety

With the elegant stainless steel safety quick-coupling you can lock the POLYTRON® dispersing aggregate by a single operation without tedious tightening of screws or other handling. When releasing, a spring system prevents the dispersing aggregate from falling.

**The** solution for your homogenising, dispersing, emulsifying, suspending, size reduction and wet milling application is offered by KINEMATICA – our staff will be glad to assist you.



Drive unit PT-MR 3100 with stand PT-ST 3001 and dispersing aggregate PT-DA 3012/2



Lock the dispersing aggregate to the drive unit with the safety quick-coupling



Lift the dispersing vessel into work position with the work table of the stand PT-ST 3001


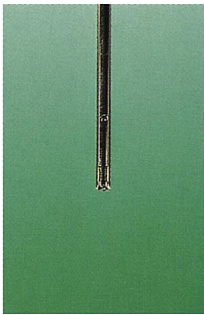
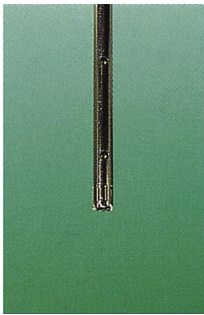

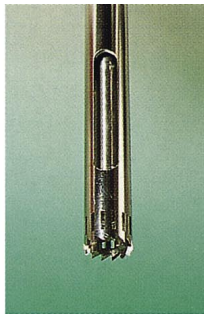


Set and read the desired speed of the rotor



# POLYTRON® Dispersing Aggregates

## Choice of Dispersing Aggregates for POLYTRON® System PT 3100

Model	PT-DA 3005/..	PT-DA 3007/..	PT-DA 3012/..	PT-DA 3020/..	PT-DA 3030/..
<b>Description</b>	suitable for smallest volumes and for Eppendorf tubes	suitable for small volumes and test tubes	suitable for small and medium volumes	universal dispersing aggregate for most applications	suitable for applications which need higher shear forces e.g. emulsions
<b>Shaft length</b>	110 mm	110 mm	170 mm	205 mm	250 mm
<b>Stator-Ø</b>	5.5 mm	7.5 mm	12 mm	20 mm	30 mm
<b>Rotor-Ø</b>	4 mm	5 mm	9 mm	15 mm	/2 : 23 mm /4 : 26 mm
<b>Tip speed up to</b>	6 m/s	7.5 m/s	13.5 m/s	21 m/s	/2 : 36 m/s /4 : 28 m/s
<b>Working volume</b>	0.1 - 0.3 ml	0.3 ml - 10 ml	2 - 250 ml	10 - 2000 ml	100 - 3000 ml
<b>Recommended dispersing vessel</b>	vessel with min. 5 mm inner diameter	vessel with min. 8 mm inner diameter	KINEMATICA dispersing vessel from GS 15 upwards for a vessel with min. 15 mm inside diameter	KINEMATICA dispersing vessel from GS 25 upwards for a vessel with min. 25 mm inside diameter	KINEMATICA dispersing vessel from GS 40 upwards for a vessel with min. 35 mm inside diameter
<b>Applications</b>	<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>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>Extractions</li> <li>Producing of suspensions and emulsions</li> </ul>	/2: • as PT-DA 3020 /4: <ul style="list-style-type: none"> <li>Producing of finest suspensions and emulsions</li> <li>Gassing, Extractions</li> <li>Accelerate the dissolving of solids</li> </ul>
     					
<b>Models and Order No.</b>					
<b>Standard-Version with cleaning slots</b>		PT-DA 3007/2 11030025	PT-DA 3012/2 11030046	PT-DA 3020/2 11030074	PT-DA 3030/2 11030100 PT-DA 3030/4 11030113
<b>EC-Version Easy Clean</b>	PT-DA 3005/2EC 11030010	PT-DA 3007/2EC 11030026	PT-DA 3012/2EC 11030047	PT-DA 3020/2EC 11030075	PT-DA 3030/2EC 11030101
<b>T-Version foam inhibiting</b>			PT-DA 3012/2T 11030050	PT-DA 3020/2T 11030078	PT-DA 3030/2T 11030106 PT-DA 3030/4T 11030116
<b>M-Version rotor with knives</b>			PT-DA 3012/2M 11030048 PT-DA 3012/2MEC 11030049 PT-DA 3012/2TM 11030051	PT-DA 3020/2M 11030076 PT-DA 3020/2MEC 11030077 PT-DA 3020/2TM 11030079	PT-DA 3030/2M 11030103 PT-DA 3030/2TM 11030107
<b>G-Version mechanical seal</b>					PT-DA 3030/2G 11030102
<b>Z-Version</b>					PT-DA 3030/2Z 11030111 PT-DA 3030/2ZEC 11030112
<b>W - Version</b>			PT-DA 3012/2WEC 11030061	PT-DA 3020/2WEC 11030080	PT-DA 3030/2W 11030109 PT-DA 3030/2WEC 11030110
<b>BIOTRONA®</b>					PT-BIA 6036 12030020 PT-BIA 6036 EC 12030021

# The suitable solution for all dispersing applications

## POLYTRON® Dispersing Aggregates – unrivalled

Up to the present the efficiency of POLYTRON® dispersing aggregates remains unequalled. Thanks to the optimized shear forces and bounce effects, 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 have shafts with double bearings as standard equipment and are made of high quality stainless steel (V4A,316L). For specific applications KINEMATICA offers customer tailored work. Elaborated rotor/stator geometries are a speciality of KINEMATICA.

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. The saw teeth serve for preliminary reduction of the sample and considerably reduce the processing time.

### EC – versions simple and safe cleaning

POLYTRON® dispersing aggregates are also available as EC (Easy Clean) aggregates. In this design, slide bearings made of high quality plastic in combination with special ball bearings are used because of their excellent mechanical properties and best chemical resistance. POLYTRON® dispersing aggregates in the EC version are be disassembled in a few steps, cleaned easily and can be sterilized and autoclaved by any standard method.

### M – versions knives for 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.

### G – versions 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.

### T – versions foam inhibiting

Like the G – versions these dispersing aggregates are suitable for applications under normal conditions where no additional air or gas phase in the product is wished – a special design of the stator rod is the solution.

### Z – versions 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. Ask for dokumentation on the dispersing aggregates PT-DA 3030/2Z and /2TZ.

### BIOTRONA® high turbulences

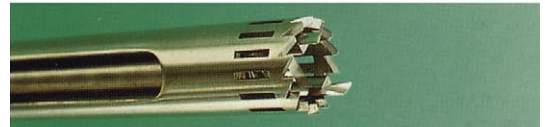
The BIOTRONA® flash blender is designed for special jobs. Thanks to the extremely high turbulence and low shear forces it is excellently suited for fast suspending and dispersing of solids also at higher viscosity.

### W – versions for fibrous and stringy material

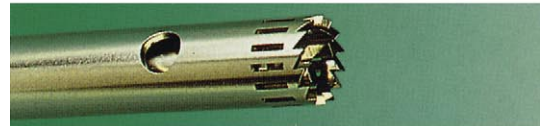
The preparation of hard and brittle, partially tough and fibrous samples for analysis is often tedious and time consuming work, creating high demands for the user and the equipment. Frozen kernels of grain for example, or field beans, are extremely hard and abrasive; the connective tissue of meat, on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



POLYTRON® PT-DA 3020/2



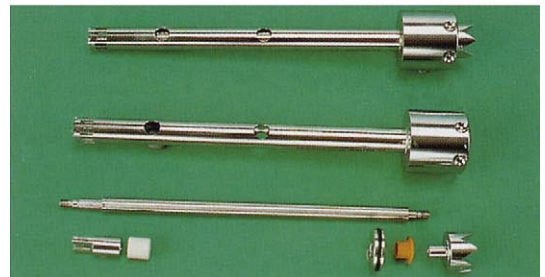
POLYTRON® PT-DA 3020/2M



POLYTRON® T-Version



POLYTRON® T-Version with tapered fitting



POLYTRON® EC-Version

# Complete versatile

## Programmable: RECO® RP 502

This electronic control allows you to program work which recurs often. Speed, working time and maximal temperature can be entered for five separate programs. The RECO® RP 502 continually informs you of the current values on an LCD display. The RECO® RP 502 is equipped with a data output (RS 232 interface) and therefore can comfortably be connected to a computer.



Programmable control unit RECO® RP 502 mounted to the stand PT-ST 3001

## Choice of stands

Three different stands are available for ease of work and for carrying:

- The practical PT-ST 3001 of anodized aluminum with its stable H foot and a PTFE coated work table which can be adjusted in height and swung out.
- The user friendly PT-ST 6002, a telescopic stand with pneumatic springs and 300 mm stroke.
- The economical PT-ST 6003 stand with the same H foot, a column, two cross sleeves and a vessel holder, all made of stainless steel.



From left to right: PT-ST 6003, PT-ST 6002 and PT-ST 3001

## 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		Borosilicate glass
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	Clover leaf shaped	Borosilicate glass
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		V2A stainless steel
GS 100 Z	11050060	100 / 150	900 ml		
GS 130 Z	11050061	125 / 170	2000 ml		
GS 155 Z	11050062	175 / 190	3500 ml		



Choice of dispersing vessels

## Order Information for system PT 3100

Description	Order No.	Description	Order No.
PT-MR 3100	11010081 EU	Stand PT-ST 3001	11040025
Drive Unit 230 V, 50 Hz	11010080 CH	Telescopic Stand - PT-ST 6002	11040031
		Economy Stand - PT-ST 6003	11040032
PT-MR 3100	11010082	RECO® RP 502	11020030
Drive Unit 115 V, 60 Hz		PT 100 Temp. Sensor for RECO®	11020031

*suitable Dispersing Aggregates and Accessories inside this leaflet or on request*



# Finest Solutions ... worldwide !

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 proved 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 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 for a personal demonstration of our POLYTRON® and MEGATRON® systems.

# Feinste Lösungen ... weltweit !

Eine breite Produktpalette mit der optimalen Lösung für jede Applikation, sowie der hohe Qualitätsstandard aller Systemteile machen KINEMATICA zum weltweit führenden Unternehmen im Bereich der Rotor/Stator-Dispersier- und Mischtechnik.

## Mit offenen Ohren...

KINEMATICA entwickelt die Systeme laufend weiter und bringt sie konzeptionell und konstruktiv auf den neuesten Stand der Technik. Denn KINEMATICA hat die Ohren noch nie vor dem verschlossen, was unerhörte Fortschritte bringt - davon zeugen auch verschiedene Patente.

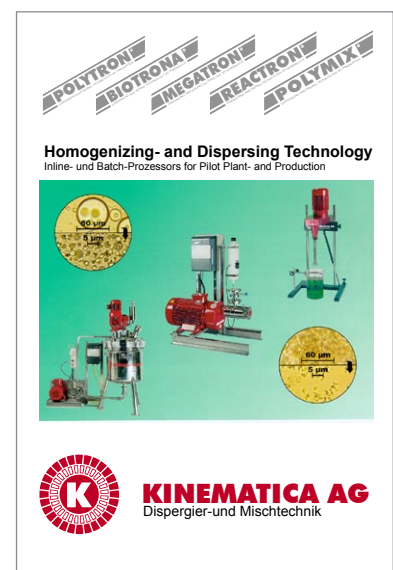
So hat sich das von KINEMATICA entwickelte Rotor/Stator-Dispersierprinzip weltweit durchgesetzt und bewährt.

## ... für Ihre Bedürfnisse

Die Einsatzbereiche der Rotor/Stator-Dispersiertechnik erweitern sich ständig. Das nicht zuletzt deshalb, weil KINEMATICA durch Innovationen, wie erhöhte Umfangsgeschwindigkeiten, neue Arbeitsgebiete und neue Applikationen erschliesst - ohne dabei menschliche Aspekte zu vernachlässigen. Erinnert sei an das Bemühen um die Geräuschkürzung am Arbeitsplatz.

Wenden Sie sich an uns. Gerne senden wir Ihnen weitere Unterlagen oder führen Ihnen unsere POLYTRON®- und MEGATRON®-Systeme vor.

Represented by / Vertreten durch:



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