

# 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...

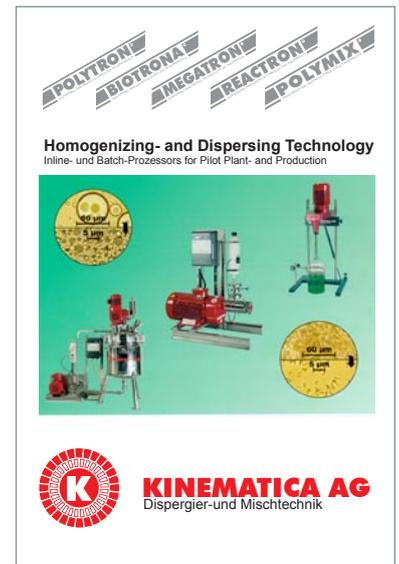
KINEMATICA entwickelt die Systeme laufend weiter und bringt sie konzeptionell und konstruktiv auf den neuesten Stand der Technik. Denn KINEMATICA hat die Ohren noch nie vor dem verschlossen, was unerhörte Fortschritte bringt - davon zeugen auch verschiedene Patente.

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. Erinnerung sei an das Bemühen um die Geräuschminderung 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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Dispersing- and Mixing Technology

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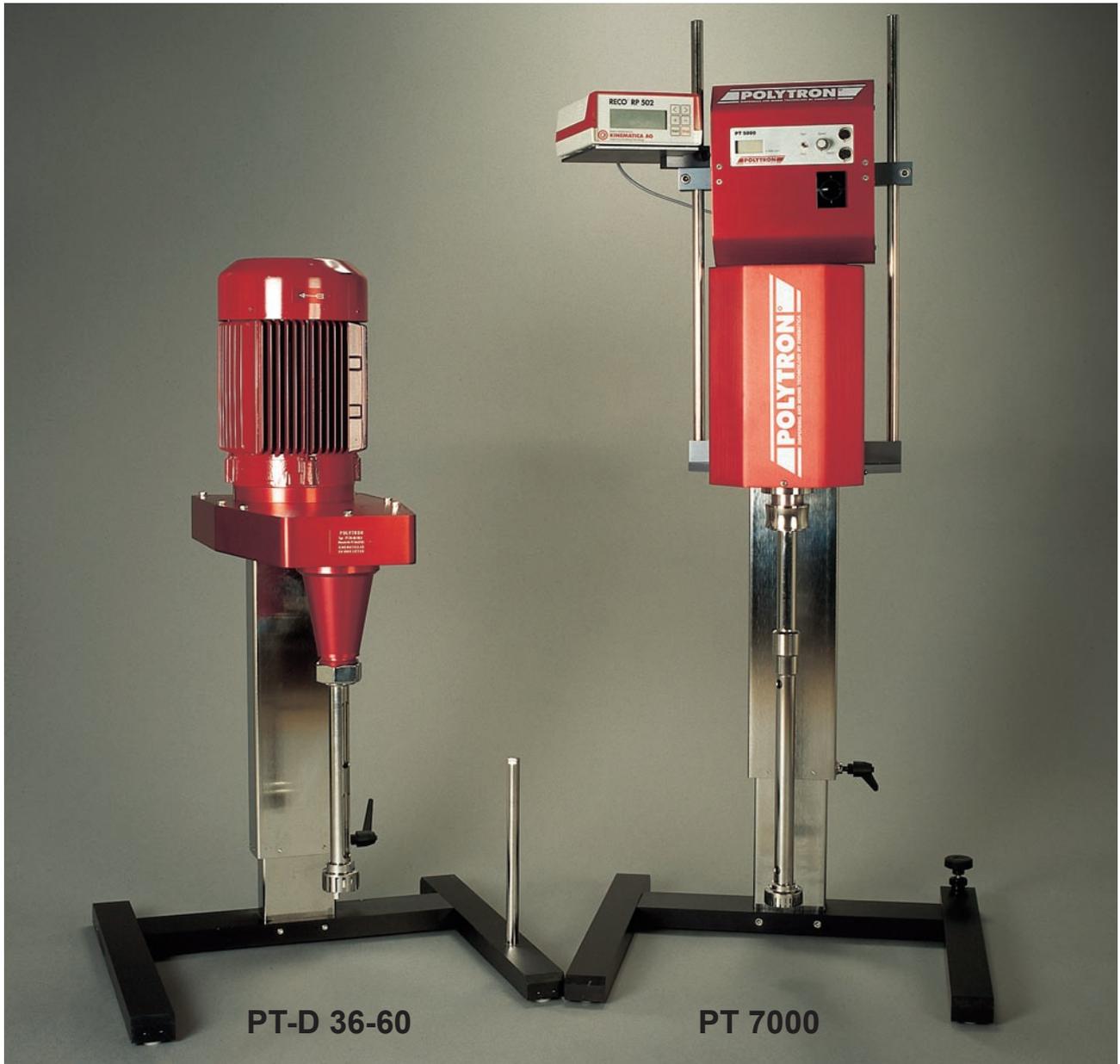
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# POLYTRON®

DISPERSING AND MIXING TECHNOLOGY BY KINEMATICA

## Rotor/Stator Dispersing / Homogenizing Technology

POLYTRON® PT 7000/PT-D 36-60 (ex) Batch Pilot Plant Systems



**KINEMATICA AG**  
Dispensing and Mixing Technology

## Batch Processing of Pilot Plant Quantities

The treatment of batch sizes in the range of about 5 to 60 liters has, up to now, always been a compromise.

The use of laboratory equipment is limited by the power which is available from a single phase outlet. In addition, standard brush motors are designed only for short term operations of about 15 minutes at a time. Certain applications, however, require a longer treatment time.

The alternative is using an industrial batch processor. The 3-phase motors allow continuous operation. Because of the relative small vessels, there is a limit on the diameter of the rotor/stator generator which can be used. In addition, most 3-phase motors are running at 3000 rpm only. Therefore, the tip speed is, in many cases, not high enough. If continuous speed control over the entire speed range is required, an additional frequency controller is needed.

This results in an expensive system configuration for a 5 to 60 liters batch.

The new POLYTRON® System PT 7000 closes the gap between the under-powered laboratory units and the large-scale industrial processors.

## High Power and Continuous Operation

An entirely new technology used for the motor drive and the control unit allows the POLYTRON® System PT 7000 to be operated continuously. The connection to a standard 230 V wall socket is sufficient. The maintenance-free high frequency 3-phase motor is controlled by an integrated frequency controller. The speed is infinitely variable between 500 and up to 20 000 rpm – thus a tip speed of up to 40 m/s can be achieved. The digital display of the actual rotor speed is standard.

The efficiency of the motor drive is unique: out of the 1500 Watt input, 1300 Watt output power is available for a large variety of dispersing tasks. There is always enough power available, even for higher viscosity media.

The POLYTRON® PT 7000 Rotor/Stator Homogenizer disperses, emulsifies and reduces the size of solid particles, droplets and gas bubbles to about 1 micron in a more economical, faster and more efficient way than any other comparable devices.



PT 7000 with Stand, RECO® RP 502 and Dispersing Aggregate PT-DA 7050/2T



Drive and Control Unit PT 7000 with programming unit RECO® RP 502

## Programmed to be Successful

In combination with the electronic programming unit, model RECO® RP 502, all of the important parameters such as speed, working time and maximum temperature can be selected and monitored. Five different program sets can be permanently stored and recalled for routine work under identical conditions. This worthwhile option also allows the connection of the POLYTRON® PT 7000 system to a computer via an RS 232 interface. A control software program is optionally available and allows experimentation with additional parameters.

## Unbelievably Quiet

The days of noisy brush motor drives have passed. A new generation of powerful and quiet high frequency motors covers the entire speed range of the rotor. The result: only a mild noise of 62 dB (A).

## Lightweight and Space Saving

Compared to an industrial processor, the POLYTRON® System PT 7000 is a real lightweight: only 37 kg. The compact design has a footprint of 500 x 520 mm only, including the stand PT-ST 7001.

The optimum working condition is achieved when the drive unit is mounted to the stand PT-ST 7001. This telescopic stand is especially designed to allow easy height adjustments of the motor drive with an integrated gas spring up to 320 mm (other strokes on request).



Electronic Programming Unit RECO® RP 502

Technical Data		PT 7000
Working Volume, Water	(ml)	200–60 000
Power Input /Output	(W)	1500 / 1300
Speed Range	(rpm)	500–20 000 (off load)
Tip Speed	(m/s)	up to 40
Dimension	(mm)	500 x 520 x 1450 (lifted)
Weight	(kg)	37
Protection Class Motor		IP 55
Dispersing Tools		PT-DA + PT-BIA
Coupling		Pat. Quick Coupling



PT 7000 with Stand PT-ST 7001

## More Power

Also for pilot plants it is sometimes necessary to have more power than a standard single phase wall socket can deliver. Therefore the system POLYTRON® PT-D 36-60 is well suited. With its powerful 3-phase motor this pilot plant batch processor is able to handle volumes up to about 60 liters also when the product has a higher viscosity.

A gear belt drive allows rotor speeds up to 15 000 rpm.

By connecting additionally a frequency inverter it is possible to control the motor speed continuously in the whole range.

## More Safety

Working under explosion-proof conditions demands special safety precautions. For these requirements, the POLYTRON® System PT-D 36-60 will be equipped with an ex-proof motor: PT-D 36-60 ex.

The 3-phase motor drive is selected according to the requested safety class and the necessary power for a particular application. This flexibility allows tailoring the system according to your needs.

An explosion-proof belt transmission is incorporated and delivers high speeds also in ex-proof areas. Speed variation is possible by using pole changeable motors or frequency inverters. Various custom made configurations are possible, for example, mounting a standard frequency controller in a non-hazardous area and controlling the speed in the ex-zone with an explosion-proof potentiometer.

## Flexibility also with the Stand

Working with heavier 3-phase motors especially in hazardous areas doesn't mean giving up the comfort of a handy stand. Our especially designed telescopic stand ST 9 allows easy height adjustments of the motor drive with an integrated gas spring up to 320 mm (other strokes on request).



PT-D 36-60 (ex) with Stand ST 9 and Dispersing Aggregate PTA 45/2

Technical Data		PT-D 36-60 (ex)
Working Volume, Water	(ml)	200–60 000
Power Input / Output	(kW)	up to 5,0
Motor Speed	(rpm)	3000 (off load)
Gear Belt Transmission		5 : 1 (standard)
Rotor Speed	(rpm)	15 000
Tip Speed	(m/s)	up to 40
Dimension	(mm)	500 x 520 x 1150 (unlifted)
Weight	(kg)	about 43 (incl. stand)
Protection Class Motor		IP 55
Ex-Class (only PT-D 36-60 ex)		Ex e ll T3 ≥ (standard)
Dispersing Tools		PTA + BAA
Coupling		with Lock Nut



RECO® Frequency Inverter

## The right POLYTRON® Dispensing Tool

The ideal processor configuration is selected from a choice of differently designed rotor/stator generators.

The all important design determines how the material is processed. Compared to similar devices on the market, KINEMATICA rotors and stators are machined from solid bar stock. They will not be damaged when dealing with bones, gristle, pebbles or any hard materials which would normally harm inferior models. The unique design cumulates shear forces and crushing effects to an optimum.

Generators which consist of one, two or even three concentric teeth rows are available. They suit all application requirements concerning volume and desired final particle and droplet size. At a high tip speed and with a fine toothed generator, droplet sizes of about 1 micron can be obtained.

The BIOTRONA® special generator, also called "flash-blender", is designed to create high turbulences, to treat higher viscosity material and to dissolve solids in liquids very rapidly.

The aggregates for the POLYTRON® PT 7000 are mounted to the drive unit very easily, thanks to KINEMATICA's patented quick coupling.

Aggregates for the system POLYTRON® PT-D 36-60 (ex) are mounted to the drive in an easy way with the help of an union nut.



POLYTRON® / BIOTRONA®-Aggregates

### All aggregates

- have a double bearing of the rotor shaft (additional support bearing for long shaft lengths)
- are made from finest stainless steel (1.4435/316L)

Order Code	Package-Name	Volume (water)	Teeth rows	Generator-Ø
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### POLYTRON® Systems PT 7000 (Selection)

8162070302	PT 7030/2T	up to 3 000 ml	1/1 (coarse)	30 mm
8162070304	PT 7030/4T	up to 3 000 ml	2/2 (medium)	30 mm
8162070402	PT 7040/2T	up to 4 000 ml	1/1 (coarse)	40 mm
8162070456	PT 7045/6T	up to 6 000 ml	3/3 (fine)	45 mm
8162070502	PT 7050/2T	up to 12 000 ml	1/1 (coarse)	50 mm
8162070145	PT 7045/BA	up to 30 000 ml	BIOTRONA®	45 mm
8162070258	PT 7058/Di	up to 50 000 ml	Dissolver	58 mm
8162070265	PT 7065/Di	up to 60 000 ml	Dissolver	65 mm

#### Complete unit with:

- drive system
- incl. frequency inverter
- stand
- aggregate, length 500 mm

### POLYTRON® Systems PT-D 36-60 (Selection)

8162136002	PT-D 36/2	up to 4 000 ml	1/1 (coarse)	36 mm
8162136004	PT-D 36/4	up to 4 000 ml	2/2 (medium)	36 mm
8162145006	PT-D 45/6	up to 6 000 ml	3/3 (fine)	45 mm
8162160006	PT-D 60/6	up to 10 000 ml	3/3 (fine)	60 mm
8162136100	PT-D 36/BA	up to 15 000 ml	BIOTRONA®	36 mm
8162165200	PT-D 65/Di	up to 60 000 ml	Dissolver	65 mm

#### Complete unit with:

- drive system, motor 2.2 kW
- incl. frequency inverter
- stand
- aggregate, length 250 mm

### POLYTRON® Systems PT-D 36-60 ex (Selection)

8162145012	PT-D 45/2 ex	bis zu 10 000 ml	1/1 (coarse)	45 mm
8162150016	PT-D 50/6 ex	bis zu 7 000 ml	3/3 (fine)	50 mm
8162160012	PT-D 60/2 ex	bis zu 15 000 ml	1/1 (coarse)	60 mm
8162145101	PT-D 45/BA ex	bis zu 30 000 ml	BIOTRONA®	45 mm

#### Complete unit with:

- ex-proof motor 2.0 kW
- stand
- aggregate, length 250 mm

Other Aggregates with special designed generators, with mechanical seals and with knives for pre-cutting or from other materials are available. Special aggregate lengths on request.