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, fluid or gaseous phase into a fluid phase.

KINEMATICA 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.

What sets KINEMATICA apart:

– surplus customer value by professional advice - over 40 years of application knowledge and lead quality - ISO 9001 certified
– continuous improvements in the dispersing technology
– cooperation and work with scientists from Switzerland, Austria, Germany, China, Japan and USA for specific applications
– excellent quality solutions for dispersing applications in the chemical, biochemical, pharmaceutical, cosmetical and food industry
– leading specialist and manufacturer for homogenizers from lab to pilot plant and production with volumes from 0.05 ml up to 10’000 l and 10 l/min up to 150’000 l/h
– results from the lab can be scaled-up to pilot plant and production
– equipment can be built 100% to customer and product specifications including IQ and OQ

KINEMATICA offers also complete processing systems to customer and product specifications including premix vessels, piping, pumps, stirrers, processing tanks and electronic regulators. The advantage is to get a whole plant out of one hand and ready-to-plug-in. The different parts will be well suited to customer wishes.

The solution for your homogenizing, dispersing, emulsifying, suspending, size reduction, wet milling, powder induction and foam producing application is offered by KINEMATICA.

For further information, a quotation or a personal demonstration just get in contact with us or fill-in our applications questionnaire on the web and send it back to us.

Our staff will be glad to assist you!
<table>
<thead>
<tr>
<th>Model / Series</th>
<th>For volumes</th>
<th>Speed max.</th>
<th>Power</th>
<th>Further Description, Options</th>
</tr>
</thead>
</table>
| POLYMIX® Lab Stirrers | PX-MT | Automatic Mortar/Pestle homogenizing system | up to 40 l 2'000 rpm 190 W | - Electronic speed control from 50 up to 2000 rpm  
- Working volume - up to 40 liter (water)  
- Max. torque - 80 Ncm  
- LCD-Display  
- Suitable for liquids with viscosity up to 50'000 mPa•s  
- Chuck can be fixed with only one hand - without tools |
| POLYMIX® Lab Grinding Mills | PX-MFC 90 D | 300 ml (funnel) 6'000 rpm 1000 W | - High power model (1.0 kW, 3-phase motor)  
- Low noise level, <70 db(A) w/o load  
- Integrated speed control with LED for speed indication and status messages  
- Integrated overheating, overload and blocking protection  
- Safety switch for automatic-Off, energy saving through automatic Standby-Mode  
- Base frame made from anodised aluminium with integrated handle |

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**POLYTRON**

**MEGATRON**

**REACTRON**

**POLYMIX**

**MICROTURON**

---

- Dispersing of smallest amounts of plant, animal or human tissues in liquid e.g. for RNA extraction  
- Sample preparation  
- Wet milling and dispersing of solids, fibers, stringy materials, tissues, cells into fluids and polymers  
- Extractions  
- Breaking up of tablets for QC and further more ...  
- Producing of finest emulsions and suspensions with finest droplet and particle sizes  
- Intensive Mixing  
- Gassing of fluids  
- Special versions for foam production (MT-FM)  
- Special versions for powder induction (MT-VP) and further more ...  
- Producing cremes, lotions, emulsions  
- Pharmaceutical or cosmetical products  
- Wet milling and dispersing of solids, fibers, stringy materials, tissues, cells into fluids and polymers  
- Extracting enzymes from biomass and further more ...  
- Basic stirring and mixing tasks in the lab (PX-MT & PX-HT) and further more ...  
- Dry milling / grinding of dried, non-fatty, hard and brittle (cereals, beans, bones, stone,..) or stringy and ductile (wood, straw, fibres) products (PX-MFC) and further more ...  
- Mixing, dispersing, homogenizing, emulsifying and size reduction of cuttable materials and further more ...
POLYTRON® batch homogenizer for lab and pilot plant cover working volumes from about 0.1 ml up to about 50 liters. Basic models up to electronically controlled drive systems with computer interfaces are available and handle reliable different dispersing tasks.

The batch homogenizers are classified into lab handheld, small, medium and large benchtop units and pilot plant versions.

All POLYTRON® homogenizers to convince with the following features:
- quick coupling for the dispersing aggregates
- powerful and safe drive systems
- high speed levels / extreme high tip speeds
- intelligent regulations and / or controllers
- digital displays or readable scales
- long working life

From over 40 different and exchangeable POLYTRON® dispersing aggregates the optimum for each specific homogenizing application can be chosen.

The efficiency of POLYTRON® dispersing aggregates is unrivalled until now. Thanks to optimized shear forces and bounce effects the processed medium will be treated at finest level in shortest time.

POLYTRON® dispersing aggregates with EC design (standard) can be disassembled with effortless ease, are easily cleaned and can be sterilised / autoclaved according to all current methods.

Further Descriptions / Options

1. Handheld Homogenizer Lab
2. Benchtop Homogenizer Lab „small“
3. Benchtop Homogenizer Lab „medium“
4. Benchtop Homogenizer Lab „large“
5. Pilot Plant Batch Homogenizer
6. ATEX versions available (standard II2G-T3 - Zone 1)
7. PC connection and User Interface Software available
8. Digital display
9. Quick Coupling type E for Dispersing Aggregates
10. Quick Coupling type F for Dispersing Aggregates (also Dispersing Aggregates with coupling type B can be connected)
11. Dispersing aggregate in EC design; easily disassembled and cleaned or sterilized
12. Dispersing aggregates / shafts available as C (PT-C series) design for CIP
13. Dispersing aggregates available with mechanical seal systems for pressure and vacuum applications
14. Special shaft lengths possible

Technical specification is indicative
KINEMATICA offers a complete series of batch working homogenizers suitable for volumes from 0.05 ml up to 10'000 liters.

Test results obtained with lab units can be used as a reliable data source for a scale-up step to the larger POLYTRON® pilot plant and production machines.

**SCALE-UP**

<table>
<thead>
<tr>
<th>POLYTRON® PT 4000</th>
<th>POLYTRON® PT 10-35 GT</th>
<th>POLYTRON® PT 3100 D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotor/stator with one teeth row each</td>
<td>Rotor/stator with one teeth row each</td>
<td>Rotor/stator with one teeth row each</td>
</tr>
<tr>
<td>Intensive mixing</td>
<td>Pre-crushing of organic materials</td>
<td>Suspending, deagglomeration</td>
</tr>
<tr>
<td>Maximum Tip Speed</td>
<td>Throughput</td>
<td>Throughput</td>
</tr>
<tr>
<td>34 m/s</td>
<td>34 m/s</td>
<td>34 m/s</td>
</tr>
<tr>
<td>200 - 4000 ml</td>
<td>200 - 4000 ml</td>
<td>100 - 2500 ml</td>
</tr>
<tr>
<td>Fine emulsions and suspensions</td>
<td>- Mixes and reduces highly intensive solids into fluids</td>
<td>- Mixes and reduces highly intensive solids into fluids</td>
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<td>- Mixes and reduces highly intensive solids into fluids</td>
<td>- Mixes and reduces highly intensive solids into fluids</td>
<td>- Mixes and reduces highly intensive solids into fluids</td>
</tr>
<tr>
<td>- Sample preparation for extraction and solution of organic material</td>
<td>- Sample preparation for extraction and solution of organic material</td>
<td>- Sample preparation for extraction and solution of organic material</td>
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<tr>
<td>- Intensive mixing</td>
<td>- Intensive mixing</td>
<td>- Intensive mixing</td>
</tr>
<tr>
<td>Dispersing and mixing of particles up to 15 mm in size</td>
<td>Dispersing fibrous, stringy and brittle samples (e.g. flesh)</td>
<td>Dispersing fibrous, stringy and brittle samples (e.g. flesh)</td>
</tr>
<tr>
<td>- Working under pressure / vacuum</td>
<td>- Finest emulsions and suspensions</td>
<td>- Finest emulsions and suspensions</td>
</tr>
<tr>
<td>- Mixes and reduces highly intensive solids into fluids</td>
<td>- Mixes and reduces highly intensive solids into fluids</td>
<td>- Mixes and reduces highly intensive solids into fluids</td>
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<tr>
<td>- Separate fibres and cellular material into very small particles</td>
<td>- Separates fibres and cellular material into very small particles</td>
<td>- Separates fibres and cellular material into very small particles</td>
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<tr>
<td>- Extractions</td>
<td>- Extractions</td>
<td>- Extractions</td>
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<tr>
<td>- Prevents foam built-up</td>
<td>- Prevents foam built-up</td>
<td>- Prevents foam built-up</td>
</tr>
<tr>
<td>- Fine emulsions and suspensions</td>
<td>- High turbulent mixing with low shear forces</td>
<td>- High turbulent mixing with low shear forces</td>
</tr>
<tr>
<td>- Mixes and reduces highly intensive solids into fluids</td>
<td>- Fast dissolving and suspending of solids also at higher viscosity</td>
<td>- Fast dissolving and suspending of solids also at higher viscosity</td>
</tr>
<tr>
<td>- Sample preparation for extraction and solution of organic material</td>
<td>- Intensive mixing</td>
<td>- Intensive mixing</td>
</tr>
</tbody>
</table>

**USER SOFTWARE**

- Suitable for PCs using MS-Windows
- Possibility of data logging into MS-Excel-sheets for all parameters
- Programmable Speed-Time-Profiles for automatic operation
- Programmable temperature limits for use as stopping criteria to avoid product overheating
- Graphical parameter visualization in time-based diagram
- Written parameter visualization in text boxes
- Drive health and status is displayed
- Available for PT 3100 D, PT 6100 D and PT 1300 D

**POLYTRON® Batch Homogenizer**

- Working Volume [l] (0.001-10'000)
- Dispersing fibrillar material into very small particles
- Separates fibres and cellular material into very small particles
- Evaporates solutions
- Disperses and dissolves of organic material
- Intensive mixing

**POLYTRON® PT 4000**

- Special generator titan-nitrated
- Rotor/stator with two teeth rows each
- 34 m/s
- 200 - 4000 ml
- Fine emulsions and suspensions
- Mixes and reduces highly intensive solids into fluids
- Sample preparation for extraction and solution of organic material
- Intensive mixing
- Dispersing and mixing of particles up to 15 mm in size
- Sample preparation for extraction and solution of organic material
- Extractions
- Applications with abrasive components

**POLYTRON® PT 3100 D**

- Special generator with inclined slots
- Rotor/stator with three teeth rows each
- 36 m/s
- 200 - 5000 ml
- Fine emulsions and suspensions
- Mixes and reduces highly intensive solids into fluids
- Sample preparation for extraction and solution of organic material
- Intensive mixing
- Dispersing and mixing of particles up to 20 mm in size
- Sample preparation for extraction and solution of organic material
- Extractions
- Intensive mixing
The selection of the right dispersing aggregate and the right drive system depends on the application: treated medium, viscosity, processing time, volume, etc. KINEMATICA don’t leave you alone with these difficult questions. Our applications team would like to discuss with you the right system components for successful working in accordance to a filled-in questionnaire or a test run in our laboratory.

A short overview about available dispersing aggregates and systems shall give you a first information.

<table>
<thead>
<tr>
<th>Aggregates</th>
<th>Systems</th>
<th>Ø 3 mm</th>
<th>Ø 5 mm</th>
<th>Ø 7 mm</th>
<th>Ø 12 mm</th>
<th>Ø 20 mm</th>
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<td>PT 10-35 GT</td>
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<td>PT 7100</td>
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<td>PT-D 36-60 (EX)</td>
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</tr>
</tbody>
</table>

+ limited adapted | ++ well adapted | +++ very well adapted

Which aggregates are available for my drive system?

Which designs are available for my dispersing aggregate?

**POLYTRON® Generator PTG**

- PTG 40/2M Special M-Generator
- PTG 40/2W Special W-Generator
- PTG 45/2 Standard generator
- PTG 45/2M Special M-Generator
- PTG 45/6 Standard generator
- BAG 45 BIOTRONA® Generator
- PTG 50/2 Standard generator

**Maximum Tip Speed**

- 36 m/s
- 44 m/s

**Working volume**

- 200 - 4000 ml
- 200 - 10 000 ml

**Applications**

- Dispersing of fibrous, stringy and brittle samples (e.g. flesh)
- Sample preparation for extraction and solution of organic material
- Intensive mixing
- Rotor with knives facilitate the processing of larger cell tissue samples or particles
- Dispersing and mixing of particles up to 22 mm in size
- Sample preparation for extraction and solution of organic material
- Intensive mixing
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- Dispersing and mixing of particles up to 22 mm in size
- Sample preparation for extraction and solution of organic material
- Intensive mixing
- Rotor with knives facilitate the processing of larger cell tissue samples or particles

- High turbulent mixing with low shear forces
- Fast dissolving and suspending of solids also at higher viscosity
- Making finest emulsions and suspensions
- Mixes and reduces highly intensive solids into fluids
- Gases solutions
- Separates fibres and cellular material into very small particles
- Extractions
- Dispersing and mixing of particles up to 25 mm in size
- Sample preparation for extraction and solution of organic material
- Intensive mixing

**BATCH LAB & PILOT PLANT HOMOGENIZERS**

- POLYTRON® DISPERSING AND MIXING TECHNOLOGY BY KINEMATICA
- BIOTRONA® DISPERSING AND MIXING TECHNOLOGY BY KINEMATICA
### POLYTRON® DISPERGING AGGREGATES

<table>
<thead>
<tr>
<th>Design „Stator tube“</th>
<th>Ø 3 mm</th>
<th>Ø 5 mm</th>
<th>Ø 7 mm</th>
<th>Ø 12 mm</th>
<th>Ø 20 mm</th>
<th>Ø 25 mm</th>
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<tr>
<td>EC (Standard)</td>
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<table>
<thead>
<tr>
<th>Design „R/S-Head“</th>
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<th>Ø 5 mm</th>
<th>Ø 7 mm</th>
<th>Ø 12 mm</th>
<th>Ø 20 mm</th>
<th>Ø 25 mm</th>
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<th>Ø 40 mm</th>
<th>Ø 45 mm</th>
<th>Ø 50 mm</th>
<th>Ø 60 mm</th>
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<tbody>
<tr>
<td>_2 (R/S with 1TR each)</td>
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<td>_4 (R/S with 2TR each)</td>
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<tr>
<td>W Stator</td>
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<td>Z Stator</td>
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<tr>
<td>BIOTRONA®</td>
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</tbody>
</table>

+ equippable, TR = teeth row(s), R/S = rotor/stator (= dispersing generator)

### SAFE AND FAST QUICK COUPLINGS

- **EC-Design**
  - Easy-Clean, easy disassembled, easy cleaned or sterilized
- **T-Design**
  - Prevents additional air induction
- **G-Design**
  - Pressure, vacuum, anti-foam, with mechanical seal

### THE RIGHT DISPERISING VESSEL

- **M-Generator**
  - Rotor with knives for precutting
- **W-Generator**
  - For fibrous and stringy material
- **Z-Generator**
  - For hard and brittle material
- **BIOTRONA®**
  - High turbulences, low shear forces

<table>
<thead>
<tr>
<th>Design</th>
<th>Ø 3 mm</th>
<th>Ø 5 mm</th>
<th>Ø 7 mm</th>
<th>Ø 12 mm</th>
<th>Ø 20 mm</th>
<th>Ø 25 mm</th>
<th>Ø 30 mm</th>
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<th>Ø 45 mm</th>
<th>Ø 50 mm</th>
<th>Ø 60 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTG 10/2M Special M-Generator</td>
<td>44 m/s</td>
<td>44 m/s</td>
<td>47 m/s</td>
<td>50 m/s</td>
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<tr>
<td>PTG 50/6G Special G-Generator</td>
<td>44 m/s</td>
<td>44 m/s</td>
<td>47 m/s</td>
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<td>50 m/s</td>
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<tr>
<td>PTG 58 DI Special dissolver disk</td>
<td>44 m/s</td>
<td>44 m/s</td>
<td>47 m/s</td>
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<tr>
<td>PTG 60/2 Standard generator</td>
<td>44 m/s</td>
<td>44 m/s</td>
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<tr>
<td>PTG 60/2W Special W-Generator</td>
<td>44 m/s</td>
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<tr>
<td>PTG 60/2M Standard generator</td>
<td>44 m/s</td>
<td>44 m/s</td>
<td>47 m/s</td>
<td>50 m/s</td>
<td>50 m/s</td>
<td>50 m/s</td>
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<td>44 m/s</td>
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<td>47 m/s</td>
<td>50 m/s</td>
<td>50 m/s</td>
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<td>50 m/s</td>
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</tbody>
</table>

- Dispersing and mixing of particles up to 25 mm in size
- Sample preparation for extraction and solution of organic material
- Intensive mixing
- Rotor with knives facilitate the processing of larger cell-tissue samples or particles

- Fast mixing and homogenizing of solid material into fluid
- Preparing highly viscous products

- Dispersing and mixing of particles up to 30 mm in size
- Sample preparation for extraction and solution of organic material
- Intensive mixing
- Dispersing of fibrous, stringy and brittle samples (e.g. flesh)
- Sample preparation for extraction and solution of organic material
- Intensive mixing
- Rotor with knives facilitate the processing of larger cell-tissue samples or particles
- Extractions

- Making finest emulsions and suspensions
- Mixes and reduces highly intensive solids into fluids
- Gasses solutions
- Separates fibres and cellular material into very small particles
- Extractions
The MEGATRON® family can be divided into three branches with high, medium and low shear rates. With decades of experience KINEMATICA can be your reliable partner and advisor on choosing the right level of shear rate for your application and product.

Inline homogenizer for pilot plant and production:
- Throughputs from 50 l/h up to approx. 150,000 l/h
- high speed levels and tip speeds up to approx. 50 m/s
- adjustable drive systems with power levels between approx. 1.2 kW and 100 kW
- dispersing generators with rotor diameters between 15 mm and 300 mm; with fineness steps from coarse to medium to fine to super fine for reaching particle sizes within the lowest micrometer range respectively the upper nano meter range depending on the properties of the treated products
- vertically or horizontally installed single- or multi-staged working chambers
- single or double acting mechanical sealing systems including supply systems
- Sterile versions, as well as CIP / SIP, 3A and ATEX versions can be supplied
- product wetted parts made from high-alloyed stainless steel and sealing materials conform with the product

MEGATRON® MT and MEGATRON® MT-V KINEMATICA has set standards once more for the inline homogenizing technology regarding efficiency, safe operation and long working life of the machinery for a broad application area within almost every industry field.

The market of foamed products in the field of chemistry, pharma and food has heavily increased over the last few years. This not least because through the foaming process various product features can be adapted easier to modern trends and the quality and life time has considerably increased. In collaboration with the ETH Zürich KINEMATICA has brought to the market a new generation of foam processors with the series of MEGATRON FM.

A striking feature of this series is the generation of smallest micro bubbles in the scale of 5 - 10 µm and its narrow distribution due to a brandnew rotor stator geometry. The extremely effective foam processor MEGATRON FM works constantly and is available in different versions for laboratory and pilot plant size for product and recipe development with some liters throughput and in various sizes/performances for the production up to several 1000 liters throughput considering different working and environmental conditions.

We are happy to provide you with professional advise and to offer you all desirable accessories e.g. metering pumps with premixing container and mixer, cooling aggregate, process control.

Some typical applications in food are: foamed protein, foamed milk products, foamed ice cream, mousse-products, foamed confectionary, bread pastries and foamed filling products.

MEGATRON® Generator MTG Type MTG 30/2 FFV generator
- Standard modell, available for system MT 3100 S
- Rotor/stator with one teeth row each

Maximum Tip Speed
24 m/s
Up to 11 l/min (depends on the medium)
Applications
- Dispersing, mixing and dissolving of solids in liquids
- Suspending, deglomeration, extraction
- Pre-crushing of organic materials in liquids
- intensive mixing

Throughput l/h
11 l/min
42 m/s
30'000 rpm
15 - 26 mm
1
1.2 kW

Model / Series
Throughput max.
Tip speed max.
Rotor speed max.
Rotor-Ø
Disp. Genera-
tor Stages
Power
MT 3100 S
11 l/min
42 m/s
30'000 rpm
15 - 26 mm
1
1.2 kW
MT 5100 S
65 l/min
37 m/s
21'000 rpm
30 - 40 mm
1
1.5 kW
MT-V 45 (EX)
40 l/min
41 m/s
12'000 rpm
45 mm
1, 2 or 3
up to 4.0 kW

FOAM PRODUCTION
Model / Series
Drive Power
Rotor-Ø
Teeth rows/ stages 2/6
Throughput l/h
liquid
MT-FM 30
1.5 kW
30 mm
8/5
10

MT-FM 50
4.0 kW
50 mm
12/8
40

Technical specification is indicative
KINEMATICA offers also a range of complete homogenizing and mixing plants for different applications in the chemical, pharmaceutical, cosmetic and food industry - known under the brand name REACTRON®.

REACTRON® systems are designed to customer specifications and consist of the following components: processing tank with POLYMIX® stirring system for macro mixing, POLYTRON® / MEGATRON® homogenizing system for downsizing and micro mixing, piping, process control and further specific equipment like vacuum pumps, heating / cooling thermostats in accordance with the customer, the product and the process.

REACTRON® systems are available for batch and semi-batch operation with volumes starting from 1 liter up to several 100 liters. They can be designed and manufactured according to customer and application specifications, incl. pressure / vacuum, CIP / SIP, clean room design and ATEX regulations.

Some application examples:
- Producing of cremes, lotions, emulsions
- Pharmaceutical or cosmetic products
- Dispersing of fine solids into a liquid or molten phase
- Suspending of additives and solid polymers in mineral oils
- Wet milling and dispersing of solids, fibers, stringy materials, tissues, cells into fluids and polymers
- Producing of diary products and diet food
- Polymerisations
- Extracting of enzymes from biomass
- and further more...

After several years of development KINEMATICA succeeded in introducing the market an extremely efficient powder dispersing machine with the series MEGATRON MT-VP.

Advantages of the new developed system are above all, that due to a strongly improved suction capacity unwanted lumps can be avoided during powder sucking and wetting; this averts for one thing a plugging of the powder supply line and improves at the same time the add-on homogeneous dispersing.

The generated high vacuum with a simultaneous high suction capacity is substantially independent of the liquid throughput and to a certain extent, also independent of the pressure at the outlet; this grants a dust-free incorporation into the liquid. It has been shown that the generatable suction capacity is sufficiently high that heavy powders, e.g. metal containing powders, can also be sucked in.

So enlarges the new MEGATRON MT-VP powder dispersing machine with its convective powder wetting system and a wide range of various dispersing generators the application in the field of chemistry, pharma and food.

The series includes at present six various sizes with a throughput related to water and depending on the used dispersing generator from approx. 1'000 l/h to 80'000 l/h.

<table>
<thead>
<tr>
<th>POWDER INDUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model / Series</strong></td>
</tr>
<tr>
<td>MT-VP 45</td>
</tr>
<tr>
<td>MT-VP 65</td>
</tr>
</tbody>
</table>

Technical specification is indicative.
POLYMIX® PX-MT (Medium-throughput) stirrer for simple and efficient homogenising applications, includes the drive with a light and well-readable LCD-Display showing speed, actual number of rotations, torque and remaining time of processing.

The POLYMIX® PX-HT (High-throughput) stirrer for processing of high viscous products includes drive and unique KINEMATICA POLYMIX® KD-stirrer, drive holder, vessel holder and ST-P 20/600 plate-stand.

The lab mill POLYMIX® PX-MFC 90 D with exchangeable milling attachments and sieves with mesh sizes from 0.2 to 6 mm is suitable for all dry milling applications in the lab. Thanks to the powerful drive unit with LED display and high speed level the mill can process dried, non-fatty, hard and brittle products such as Cereals, corn, roasted coffee, beans, bones, stone, mortar, etc., as well as dried, non-fatty, stringy and ductile products such as Wood, leaves, straw, dried degreased meat, wool, cotton, paper, synthetic materials, etc.

The systems MICROTRON® MB 550 and MB 800 are specially designed for mixing, dispersing, homogenizing, emulsifying and size reduction of cuttable materials. The MB 550 is available with different attachments made from glass for volumes between 125 and 1000 ml. The MB 800 is available with mixing attachments made from stainless steel with volumes of 2 l and 4 l. The systems MB 550 and MB 800 are safety laboratory devices – grounded, double safety isolated, radio screened. A safety system prevents uncontrolled starting and therewith personal injuries.

<table>
<thead>
<tr>
<th>Model / Series</th>
<th>For volumes</th>
<th>Speed max.</th>
<th>Power</th>
<th>Further Description, Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLYMIX® Lab Stirrers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PX-MT</td>
<td>up to 40 l</td>
<td>2’000 rpm</td>
<td>190 W</td>
<td>Electronic speed control from 50 up to 2000 rpm – Working volume - up to 40 liter (water) – Max. torque - 80 Ncm – LCD-Display – Suitable for liquids with viscosity up to 50’000 mPa·s – chuck can be fixed with only one hand - without tools</td>
</tr>
<tr>
<td>PX-HT</td>
<td>up to 70 l</td>
<td>1’200 rpm</td>
<td>190 W</td>
<td>Electronic speed control from 20 up to 1200 rpm – Working volume - up to 70 liter (water) – Max. torque - 120 Ncm – Suitable for liquids with viscosity up to 100’000 mPa·s – Softstart for avoiding splashing and bubbles – Chuck can be fixed with only one hand - without tools</td>
</tr>
<tr>
<td>POLYMIX® Lab Grinding Mills</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>PX-MFC 90 D</td>
<td>300 ml (funnel)</td>
<td>6’000 rpm</td>
<td>1000 W</td>
<td>High power model (1.0 kW, 3-phase motor) – Low noise level, &lt;70 db(A) w/o load – Integrated speed control with LED for speed indication and status messages – Integrated overheating, overload and blocking protection – Safety switch for automatic-Off, energy saving through automatic Standby-Mode – Base frame made from anodised aluminium with integrated handle</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other POLYMIX® Stirrers</th>
<th>Turbine stirrer</th>
<th>Dissolver</th>
<th>Centrifugal stirrer</th>
<th>Flat stirrer</th>
<th>Anchor stirrer</th>
<th>Potter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard stirrer</td>
<td>Standard stirrer, Ø 30 mm</td>
<td>Standard stirrer, Ø 80 mm</td>
<td>Standard stirrer, Ø 60/15 mm</td>
<td>Standard stirrer, Ø 70 mm</td>
<td>Standard stirrer, Ø 45 mm</td>
<td>Special stirrers, Ø 8-25 mm available with / without cooling jacket</td>
</tr>
<tr>
<td>Maximum Speed</td>
<td>2000 rpm</td>
<td>2000 rpm</td>
<td>2000 rpm</td>
<td>1000 rpm</td>
<td>1000 rpm</td>
<td>1000 rpm</td>
</tr>
<tr>
<td>Working volume</td>
<td>up to 25’000 ml</td>
<td>up to 10’000 ml</td>
<td>up to 10’000 ml</td>
<td>up to 10’000 ml</td>
<td>up to 10’000 ml</td>
<td>up to 10’000 ml</td>
</tr>
</tbody>
</table>
### POLYMIX® PX-MFC 90 D

- 300 ml (funnel)
- 6'000 rpm
- 1000 W
- Milling chamber with attached funnel and rotary slide for product inlet; intercepting tubes and NS29 vessels can be attached to milling chamber outlet
- Milling chamber can be equipped with hammer grinding or blade grinding attachment
- Grinding attachments can be exchanged
- Milling chamber can be equipped with sieves in different mesh sizes from 0.2 up to 6 mm
- Milling chamber parts in contact with the product are made from stainless steel hardened
- Packing unit consists of drive unit with milling chamber, grinding attachment, sieve 2.0 mm and tool set

### MICROTRON® MB 550

- 125 - 1'000 ml
- 14'000 rpm
- 550 W
- 550 W high temperature safe universal motor with fan
- Speed variable from 600–14000 rpm, soft start, speed scale
- Thermostatic drive safety switch, electronic surveillance and stabilisation of the speed
- Safety regulation for attachment surveillance, grounded with extra double safety isolation, radio screened
- Mixing attachments made from glass available for volumes 125, 250, 500 and 1000 ml (safety huts to be ordered separately)

### MICROTRON® MB 800

- 2 l - 4 l
- 14'000 rpm
- 800 W
- As above but 800 W high temperature safe universal motor with fan
- Mixing attachments made from stainless steel for volumes 2 and 4 liters

### Hammer grinding attachment

Consisting of rotor with 3 impact hammers and stator with place for one exchangeable sieve

### Blade grinding attachment

Consisting of rotor with 3 attached blades and stator with place for one exchangeable sieve

### Sieves

Available with mesh sizes from 0.2 mm up to 6 mm, for PX-MFC 90 D

### Mixing attachments

Consisting of mixing head and vessel from glass (MB 550) or stainless steel (MB800), safety huts for MB 550 mixing attachments to be ordered separately

### Applications

- The impact grinding mill attachment is designed for processing dried, non-fatty, hard and brittle products such as:
  - Cereals, corn, malt, pectin, raw & roasted coffee, beans, oats, nutshell, bones, fins (fish), gravel, stone, amber, mortar, etc.

- The blade grinding mill attachment is designed for processing dried, non-fatty, stringy and ductile products such as:
  - Wood, bark, roots, leaves, straw, cork, dried fruits, dried degreased meat, adenoids, fish, feathers, leather, dermis, wool, cotton, leashes, paper, coal, turf, dried resins, synthetic materials, fibre glass, plastic pellets, different textiles, felt, etc.
YOUR APPLICATION IS OUR FOCUS!

KINEMATICA is a leading manufacturer of dispersing and mixing technology for standard and customized applications in the lab, pilot plant and production areas of pharmaceutical, chemical, food, cosmetic and biotech or life science companies worldwide.

Our POLYTRON® batch and MEGATRON® In-line Homogenizers are suitable for many applications:

- Dispersing of non-soluble liquids or solids into liquids to finest emulsions/multiple emulsions or suspensions
- Induction and dispersion of powders into liquids
- Foaming by gas induction into liquids
- Disintegration of tissue samples for preparation in further analysis
- Dispersing of various samples for quality control

We also deliver POLYMIX® Micro Dry Grinding Mills and a variety of POLYMIX® and MICROTRON® Overhead Stirrers and Mixers.

Whatever your application, we are confident that our team of specialists, with over 60 years of experience, will provide the best solution for you.

YOUR SATISFACTION IS OUR GOAL!