

POLYTRON® PT 10-35 GT



Powerful stand-disperser (Ecoline)

FLEXIBLE-USE DISPERSER

For a variety of applications

«Working volume 0.1 to 10,000 ml»



KINEMATICA
DISPERSING AND MIXING TECHNOLOGY

POLYTRON® - Efficient and powerful

PT 10-35 GT features high drive power and a sleek design. With its large reserve capacity, it can be used for sample with large volumes as easily as preparing samples with small volumes.

TECHNICAL INFORMATION

Processing volume (water)
0.1 up to 10,000 ml

Tip speed
Up to max. 34 m/s

Applicable aggregates
ø 5 mm to ø 36 mm

Speed range
500 to 30,000 rpm

Drive coupling
Aggregates with F coupling

Noise level (drive without aggregate)
75 dB(A) at 25,000 rpm
82 dB(A) at 30,000 rpm

Motor
Universal with carbon brushes

Drive power
1200W

Connection voltage
90 - 230 V ± 10%, 50Hz / 60Hz

Relative humidity (max.)
80% during storage
80% during operation

Operating temperature
0 - 40 °C

Protection class acc. to DIN
IP 20

Dimensions (L x W x H)
Drive: 95 x 210 x 247 mm

Weight
Drive: 3200 g

EMC standards
IEC/EN 61000-6-2 / EN 61000-6-3

Safety standard
IEC/EN 61010-2-51

THE EXPERT FOR YOUR LABORATORY

For more than 60 years, we have been perfecting the rotor/stator technology, working in close cooperation with users and universities. When using our technology, your test samples will be dispersed into homogeneous, chemical systems. Depending on the type of samples you will get homogeneous emulsions, dispersions or suspensions.

This is the best foundation for all subsequent analyses or formulations.

ERGONOMICS:

- Easy operation with an on-off switch and speed control
- Intelligent variable speed control for long equipment life
- Speed stability even with changes in viscosity
- Easy adjustment of motor height
- Switch aggregate quickly with Click & Go coupling
- Easy aggregate clean-up with EasyClean Design



RESULTS ARE CONVINCING

SMALLEST SIZES OF PARTICLES/DROPLETS
because precise analysis require homogeneous samples

EFFICIENT SAMPLE PREPARATION
because fast dispersion saves time

STANDARD OR CUSTOM-MADE AGGREGATES
perfected for and in cooperation with the users

CLEANING AND DISASSEMBLY
EasyClean Design makes it very simple

QUICK ENGAGEMENT OF THE AGGREGATES by using Click & Go

BEST MATERIALS AVAILABLE
because without them, we could not call it Swiss Made

DURABILITY is a Swiss virtue



Users / Application ranges



General homogenizer applications

Dispersions, suspensions, and emulsions

Dispersion of plant, animal and human tissue samples in various liquids and volumes

Dissolving solids even at higher viscosities

Formulation of food products

Formulation of lotions, creams and foodstuffs

Extraction of active pharmaceutical ingredients (API) in pills and tablets

Preparation of samples for quality assurance/control

This list provides a small selection of possible applications.

Kinematic dispersion using the rotor/stator system

Who is the founder of it?

The roots of today's KINEMATICA began in the former chemical/physical research institute of Prof. P. Willems in Lucerne Switzerland, the inventor of the modern rotor/stator dispersion technology.

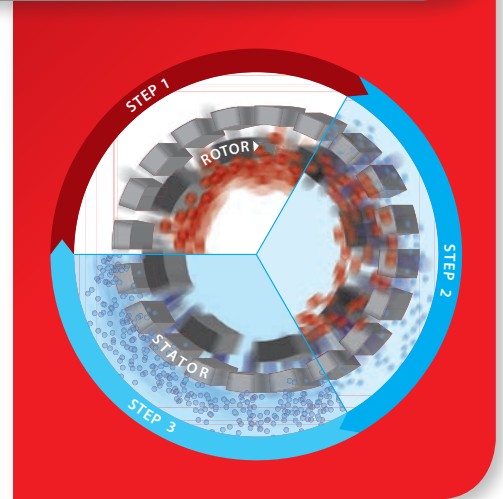
THE PRINCIPLE:

The spinning rotor generates a vacuum. The sample is drawn in and discharged to the outside through the stator's slots. Between the rotor/stator (shear gap), the product is subject to high deceleration-tangential and radial acceleration forces. The individual particles/droplets are torn apart and thus reduced in size; they are reduced several micrometers in size through additional cutting and crashing effects.

THE RESULT:

Microscopic dispersions, emulsions, suspensions, and foams are generated. Droplets, particles, and gas bubbles are reduced to several micrometers or smaller. Small and large substances are dispersed more economically, faster, and better than with any other system.

Your samples are efficiently «**POLYTRONIZED**».



Aggregate Technology

Unrivalled!

The high efficiency and the uniqueness of our POLYTRON® dispersing aggregate can only be achieved through superior manufacturing precision and the sophisticated KINEMATICA design method. This is 100% Swiss Made.

STANDARD AGGREGATES (EC DESIGN, WITH TWO OR MORE SPROCKETS)

This is all you need for popular applications in the preparation of samples and formulation development. The cutting teeth embedded in the head of the tool optimize the pre-crushing of the sample. An enclosed ring design provides optimum protection for those teeth and prevents them from bending.

SPECIAL AGGREGATES (W, M, B, DS, Z DESIGN)

Specializations in the chemical, pharmaceutical, cosmetic, and food industry, as well as the life sciences, makes new designs inevitable. These aggregates are based on state-of-the-art technology and only available from KINEMATICA. The highly specialized tool is subject to further development that involves close cooperation with our customers and universities. Thus, it is continuously perfected for specific applications.

MATERIALS

Whether you need a tool with standard or special geometry, all aggregates are manufactured from high-alloy stainless steel 316L, electrolytically polished and made in Switzerland.

BEARINGS

Depending on the diameter, our aggregates are made with high-quality plastic, special carbide or bronze/carbide bearings. They have excellent mechanical properties and chemical resistance and have FDA approvals. Super high-speed ball bearings are used in the couplings to provide stability at speeds of up to 30,000 rpm.

CLEANING AND DISASSEMBLY

EasyClean: Our technology ensures the simplest removal and fast cleaning, either by hand, dishwasher, or autoclave. Disassembling the precisely fitting components is simple and fast.

LOCKING SYSTEM

All our POLYTRON® aggregates are fitted with a high-precision quick-release system: The Click & Go

Dispersing aggregates for PT 10-35 GT

Your applications, our response

KINEMATICA aggregates solve all problems you are faced with every day in the laboratory. Using our Click & Go quick release makes the changing of aggregates very easy.



EC «STANDARD DISPERSING AGGREGATE»



Design

The universal geometry uses two rows of teeth, is suitable for a large spectrum of laboratory applications, and it is reliable and efficient

Selection and applications

- All standard dispersing tasks
- Grinding of animal and human tissue samples in a variety of fluids and volumes
- Sample preparation for the extraction and dissolution of organic materials

- Sample preparation for medical diagnostic procedures as well as DNA analysis
- Extractions of systems/substances from vegetable-derived samples
- Disruption of animal and human cells
- Deagglomeration of united cell structures
- Intensive mixing

Sales No.:	Description	ø/length mm	Volume ml	max. Tip speed m/s
11030297	PT-DA 05/2EC-F078	5 / 78	0.1 - 5	5
11030298	PT-DA 07/2EC-F101	7 / 101	0.3 - 10	8
11030299	PT-DA 12/2EC-F154	12 / 154	3 - 250	14
11030302	PT-DA 20/2EC-F193	20 / 193	20 - 2'000	22
11030305	PT-DA 30/2EC-F250	30 / 250	100 - 4'000	30
11030311	PT-DA 30/4EC-F250	30 / 250	100 - 4'000	30
11030313	PT-DA 36/2EC-F250	36 / 250	200 - 4'500	34
11030317	PT-DA 36/4EC-F250	36 / 250	200 - 4'500	34

M «OUTSIDE CUTTING BLADES»



Design

Outside blades pre-crush samples that are larger than the rotors diameter. Subsequently, they can be dispersed inside the generator

Selection and applications

- Dispersing of large samples made simple
- All standard dispersing applications similar to EC aggregate

Sales No.:	Description	ø/length mm	Volume ml	max. Tip speed m/s
11030300	PT-DA 12/2MEC-F154	12 / 154	3 - 250	14
11030303	PT-DA 20/2MEC-F193	20 / 193	20 - 2'000	22
11030307	PT-DA 30/2MEC-F250	30 / 250	100 - 4'000	30
11030308	PT-DA 30/2MG-F273*	30 / 273	100 - 4'000	30
11030315	PT-DA 36/2MEC-F250	36 / 250	200 - 4'500	34

* M-design aggregate in gas-tight model

W «W-DESIGN»



Design

The W design prevents fibrous, stringy or solid samples from clogging the aggregate

Selection and applications

- Dispersing fibrous, stringy or solid samples (e.g., pieces of meat)
- All standard dispersing applications similar to EC aggregate

Sales No.:	Description	ø/length mm	Volume ml	max. Tip speed m/s
11030301	PT-DA 12/2WEC-F154	12 / 154	3 - 250	14
11030304	PT-DA 20/2WEC-F193	20 / 193	20 - 2'000	22
11030294	PT-DA 20/2G-F210*	20 / 210	20 - 2'000	30
11030309	PT-DA 30/2WEC-F250	30 / 250	100 - 4'000	30
11030345	PT-DA 30/2WMEC-F250**	30 / 250	100 - 4'000	30
11030319	PT-DA 36/2WEC-F250	36 / 250	200 - 4'500	34
11030346	PT-DA 36/2WMEC-F250**	36 / 250	100 - 4'500	34

* W-design aggregate in gas-tight model

** W-Design aggregate with knives

G «GAS TIGHT»

Design

Integrated mechanical seals

Selection and applications

- Under pressure or vacuum
- Preventing air from being added to emulsions
- Corrosive acid mixtures



Sales No.:	Description	ø/length mm	Volume ml	max. Tip speed m/s
11030295	PT-DA 20/2G-F210	12 / 210	20 - 2'000	22
11030306	PT-DA 30/2G-F273	30 / 273	100 - 4'000	30
11030312	PT-DA 30/4G-F273	30 / 273	100 - 4'000	30
11030316	PT-DA 36/2G-F273	36 / 273	200 - 4'500	34
11030318	PT-DA 36/4G-F273	36 / 273	200 - 4'500	34

Z «Z-DESIGN»

Design

Breaking up of hard samples, with integrated V-notch technology. Additional, integrated holes for cleaning

Selection and applications

- Hard and brittle material
- Sweet corn and grain
- Breaking, open and dispersing of pills
- Breaking, hard grains



Sales No.:	Description	ø/length mm	Volume ml	max. Tip speed m/s
11030310	PT-DA 30/2ZEC-F250	30 / 250	100 - 4'000	29

B «BIOTRONA® HIGH-TURBULENCE MIXER»

Design

High-turbulence mixing head with the least possible shear forces and energy inputs

Selection and applications

- Quick removal and suspension of solid particles; also suitable for high viscosity applications



Sales No.:	Description	ø/length mm	Volume ml	max. Tip speed m/s
11030296	PT-DA 20/BEC-F193	20 / 193	100 - 2'000	21
11030314	PT-DA 36/BEC-F250	36 / 250	500 - 10'000	34

DS «DISSOLVER»

Design

A processing head with teeth. The product is radially accelerated

Selection and applications

- Fast mixing and homogenizing of solids in liquid
- Processing of highly viscous products



Sales No.:	Description	ø/length mm	Volume ml	max. Tip speed m/s
11030344	PT-DA 30/DS-F250	30 / 250	500 - 10'000	30

TIN «TITANIUM NITRATED» - UPGRADE

Design

Rotor and/or stator with up to three rows of teeth with a titanium nitrated (TiN) coating

Selection and applications

- All dispersing applications with abrasive samples



Sales No.:	Description
11035050	TiN rotor for the selected dispersing aggregate, ø 12-36 mm
11035150	TiN stator for the selected dispersing aggregate, ø 12-36 mm

Order information and accessories

Depending on your specific requirements, it is possible to expand the PT 10-35 GT drive with our functional accessories. Our expert personnel will be happy to assist you and answer all the questions you might have.

ADAPTER

Adapters for use with dispersing aggregate with A coupling

Sales No.:	Designation
11035001	Adapter PT-DA / PTA (F/A)

Description

This adapter connects older A-coupling dispersing aggregates such as PT-K / PT-G with this PT 10-35 GT motor (with F-coupling).



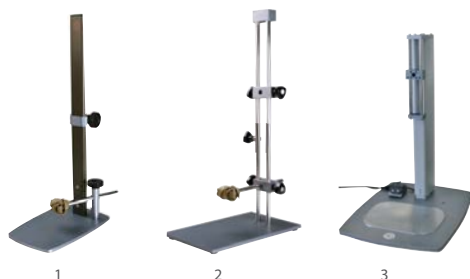
DRIVES / COMPLETE SYSTEMS

Sales No.:	Description
Motor	
11010104	POLYTRON® PT 10-35 GT, 230 V / EU -Power cord, extension rod, if stands ST-P 20/600 are preferred
11010105	POLYTRON® PT 10-35 GT, 230 V / CH -Power cord, extension rod, if stands ST-P 20/600 are preferred
11010106	POLYTRON® PT 10-35 GT, 230 V / UK -Power cord, extension rod, if stands ST-P 20/600 are preferred
11010103	POLYTRON® PT 10-35 GT, 100-120 V / Power cord, extension rod, if stands ST-P 20/600 are preferred
Motor is sold with stand and accessories	
11090070	PT 10-35 GT, 230 V , EU -Power cord, stand ST-P11/600 with vessel holder and safety ring
11090071	PT 10-35 GT, 230 V , CH -Power cord, stand ST-P11/600 with vessel holder and safety ring
11090073	PT 10-35 GT, 230 V , UK -Power cord, stand ST-P11/600 with vessel holder and safety ring
11090072	PT 10-35 GT, 100-120 V , Power cord, stand ST-P11/600 with vessel holder and safety ring



STANDS

Figure	1	2	3			
Sales no.:	11040050	11040051	11040033	11040036	11040037	11040034
Designation	ST-P10/600	ST-P20/600	ST-P 14/590+500, 230 V (EU-plug)	ST-P 14/590+500, 230 V (CH-plug)	ST-P 14/590+500, 230 V (UK-plug)	ST-P 14/590+500, 100-120 V
Description	Plate stand for safe and easy height adjustment of the motor. The head clamp with a knurled nut is secured to motor and prevents rotation around the extension.	Plate stand with two support rods. The motor's height can be adjusted. For more security, the motor cannot be adjusted horizontally.	Electric plate stand with lifting telescopic bar for more ease of use. Incl. up/down button and mat to prevent slipping. The electronics are designed for ambient temperatures of +5°C to +40°C and were tested per EN 60335-1 and UL 962.			



STAND ACCESSORIES

Sales no.:	Designation	Description
11045013	Vessel holder for ST-P 10/600	Vessel holder for fixing any mixing vessels
11045035	Safety ring for stand ST-P 10/600	The safety ring prevents uncontrolled lowering of the motor. Can also be used to fixing the motor height
11045011	Vessel holder with boss head clamp for ST-P 20/600	
11045031	Safety ring for stand ST-P 20/600	
11036005	Vessel holder with guide for ST-P 14/590+500	
11036002	Extension rod	Short extension rod for PT 10-35 GT. Required for use with the ST-P 14/590+500 telescopic stand

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!



KINEMATICA
DISPERSING AND MIXING TECHNOLOGY



Headquarters
KINEMATICA AG
Dispensing and Mixing Technology

Luzernerstrasse 147a
6014 Luzern
Switzerland

Tel. +41 41 259 65 65
Fax +41 41 259 65 75
E-Mail info@kinematica.ch

Subsidiaries
KINEMATICA, INC.
Dispensing and Mixing Technology

155 Keyland Court
Bohemia, NY 11716
USA

Tel. +1 631 750 66 53
Fax +1 631 750 66 57
E-Mail info@kinematica-inc.com

KINEMATICA AG
Dispensing and Mixing Technology

Office Eastern Europe
Prosp. Akad. Palladina 44
UA – Kyiv 03680

Tel./Fax +38 044 422 61 27
E-Mail info@kinematica.com.ua
web www.kinematica.com.ua

KINEMATICA GMBH
Dispensing and Mixing Technology

Münstertäler Str. 12
79427 Eschbach
Germany

Tel. +49 7634 504 800 0
Fax +49 7634 504 800 22
E-Mail info@kinematica.de

BRAND NAMES WITH HISTORY



Batch dispersing/homogenizing units



High turbulent mixing



Inline dispersing/homogenizing units



Dispersing/homogenizing Reactors



Stirrers and dry Mills



Mixer/Blender



Viscometers