KINEMATICA

Homogenizing perfected.

REACTRON®

LABORATORY LINE

REACTRON® RT 1 and RT 2

Reaction and mixing processes at a laboratory level, modular design laboratory reactors

REACTRON® RT 1 and RT 2

Efficient and economic.

REACTRON® laboratory systems consist of process vessels (single and multiple wall, standard and customer-specific designs), stirring systems for macro-mixing (e.g. with anchor stirrer), POLYTRON® / MEGATRON® homogenisers and mixing systems for crushing and micro-mixing, pipe-work, process controls and accessories, in alignment with the customer, product and process.

THE EXPERTS FOR YOUR LABORATORY

We have perfected rotor / stator technology over 60 years, in close collaboration with users and universities. With our technology, your samples are dispersed efficiently into homogeneous materials systems. Depending on the type of experiment, e.g. solids with liquids can be processed into the finest possible emulsions, dispersions or suspensions. This is the ideal basis for all subsequent analysis or implementation of formulae. From your laboratory into production or the technical centre.

IN SUMMARY

The REACTRON® RT 1 and RT 2 systems are modular laboratory reactors for the optimisation and reproduction of chemical reaction, mixing, dispersion and homogenisation processes at the laboratory level.

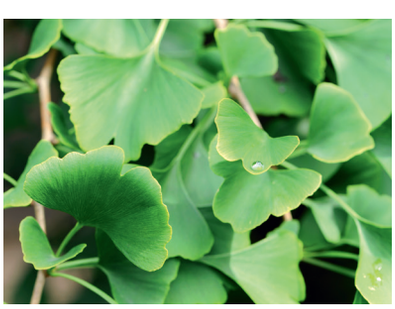
REACTRON® systems are available for batch and semi-batch processes, with a working volume of 1 litre to several hundred litres. CIP / SIP, clean room and ATEX versions are available on request.

ALL PROCESS PERFECTLY ALIGNED WITH EACH OTHER

By integrating our POLYTRON® PT homogenizer and the stirring elements, you can create the perfect unit. For further dispersion processes, you can also connect our MEGATRON® laboratory in-line disperser in addition to the batch disperser.

MODULAR CONSTRUCTION

- Mixing vessels, single wall or double wall: for the optimum application temperature
- Mixing vessels in borosilicate, glass or steel: when the vacuum is critical
- Range of dispersers drives and generators: give you the flexibility you want
- Cleaning and dismantling: is child's play with the integrated (electro-) telescopic stand
- Simple change of aggregate: with Click & Go
- Best possible materials: otherwise it's not Swiss Made
- Durability is a Swiss virtue



TECHNICAL INFORMATION

Working volume (vessel)	1000 ml and 2000 ml
Usable aggregates	ø 20 mm to ø 25 mm for RT 1 ø 30 mm to ø 36 mm for RT 2 With / without mechanical seal
Vacuum	Up to 25 mbar (a) without homogenizer Up to 250 mbar (a) with homogenizer
Input voltage	90 – 230 V ± 10 %, 50Hz / 60Hz
Maximum relative density	80 % storage 80 % operation
Max. temperature	Standard max. 90 °C On request >120 °C
Protection class as per DIN	IP 20
Standard's EMV	IEC / EN 61000-6-2 / EN 61000-6-3
Safety norm	IEC / EN 61010-2-51

USERS / APPLICATION RANGES

- Manufacture of creams, lotions, emulsions, chemical raw materials and fine chemicals
- Pharmaceutical or cosmetic products
- Dispersions of fine solids in liquids or molten phases
- Suspensions of solids in liquids (e.g. liquid polymers)
- Production of dairy products and diet foodstuffs
- Suspension of additives and solid polymers in mineral oils
- Cell disruption of animal and plant cells / polymerisation
- Wet grinding and dispersion of solids, fibres, sinewy materials, tissue, cells in liquids
- Extraction of enzymes from bio-mass

This list provides a small selection of possible applications.

POLYMIX® Stirrers for RT systems.

For macro-mixing.

In REACTRON® systems, the stirrer guarantee macro-mixing of the product in the reactor vessel. In laboratories, we use a digital laboratory stirrer with a high revolution speed, permanent torque. LCD revolution indicator, plus overload and overheating protection.

Design with two special dispersing aggregates

Tri clamp connectors and dosage funnel on the lid

Dispersing aggregates, PTFE anchor stirrer and temperature probe

POLYTRON® Homogenizer for RT systems.

For macro-mixing.

POLYTRON® dispersing aggregates are powered using POLYTRON® dispersing units from our standard laboratory range. This means your existing Kinematica dispersing devices can be easily incorporated into REACTRON® systems. The POLYTRON® drive systems are universal and can be used for tasks from a few millimetres up to 2 000 ml. They deliver convincing performance, with simple operation, powerful motors and revolution speeds up to 30 000 rpm.

In our REACTRON® RT 1 and RT 2 laboratory reactors, we generally use POLYTRON® disperser aggregates type G (with mechanical seal), which allow a hermetic seal of the reactor vessel, or vacuum operation. Along with the POLYTRON® disperser aggregates, which can be coupled to the drive quickly and without any tools, the product in the reactor vessel can be processed very finely in the micro range.

STANDARD AGGREGATE (EC DESIGN, WITH TWO OR MULTIPLE SPROCKETS)

These cover all common applications in formula development. The saw teeth fitted to the head mean that pre-crushing of the sample is optimised. An enclosed ring design protects these teeth perfectly from bending.

SPECIAL AGGREGATES

Specialisation in the chemical, pharmaceutical, cosmetic and food industries, as well as the life-science area, have meant that innovative, adapted designs have become indispensable. These aggregates are technically unique specialists, only available from us. This high level of specialisation is continually enhanced by close collaboration with our customers and universities, and has been perfected for daily application.

PT 2500 E

PT 3100 D

PT 6100 D

Production and pilot plant systems / scale-up.

Construction is carried out according to customer requirements and application.

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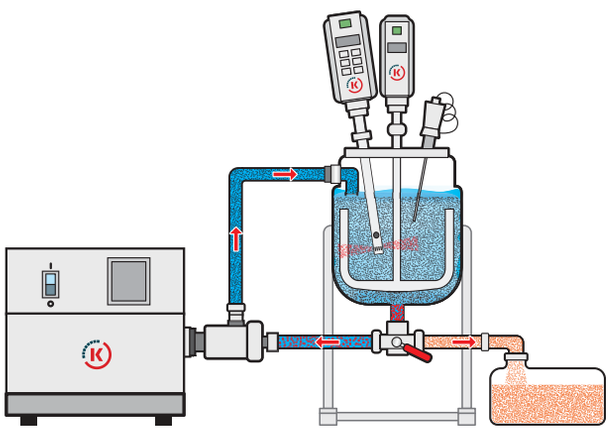
Test results achieved using REACTRON® laboratory reactors can be used as a reliable source of data for scale-up to the larger REACTRON® pilot plant and production units.

COMPLETE SOLUTIONS AS YOU WISH

Expandability is a key aspect of our REACTRON® systems. So, for example, we can also supply tempering units including thermostat / cryostat, temperature measurement and control and vacuum units, including vacuum pumps and vacuum controllers.

Research demands modular, adaptable systems. We can offer solutions which are easy to handle with flexible setup, so there is no limit to your creativity. Combined with our MEGATRON® Inline systems, you can design a turnkey «Mini Plant» facility with all the equipment you need.
Client-side equipment can also be integrated into our systems, depending on the design.



LABORATORY

LABORATORY & PILOT PLAN

PRODUCTION

Order information and accessories.

Authorized extension of your system.

Our REACTRON® systems can be put together completely in line with your wishes and requirements, because of our functional accessories. Our experts will be happy to help you with any application questions or other concerns you may have.

RT 1 – STANDARD SYSTEM

Jacketed vessel with useable capacity 1 liter made from borosilicate glass, vessel cover made from stainless steel 316L with four NS29 / 32 conical fittings and sealed, centrical lead-through fitting for stirrer tool, telescopic stand, POLYMIX® digital overhead stirrer with maintenance free gearbox 1 : 5 (high torque) and anchor stirrer. Upgrade options and complete accessory range on request.

Sales No.	Product	Description
14090010	RT 1, 230 V	With EU-power cable
14090011	RT 1, 230 V	With CH-power cable
14090012	RT 1, 100 – 120 V	With power cable

RT 2 – STANDARD SYSTEM

Jacketed vessel with useable capacity 2 liter made from borosilicate glass, vessel cover made from stainless steel 316L with four clamp connections (Tri-clamp 1 1 / 2") and sealed centrical lead-through fitting for stirrer tool, telescopic stand, POLYMIX® digital overhead stirrer with maintenance free gearbox 1 : 5 (high torque) and anchor stirrer. Upgrade options and complete accessory range on request.

Sales No.	Product	Description
14090020	RT 2, 230 V	With EU-power cable
14090021	RT 2, 230 V	With CH-power cable
14090022	RT 2, 100 – 120 V	With power cable

RT 2E – STANDARD SYSTEM

Jacketed vessel with useable capacity 2 liter made from stainless steel, vessel cover made from stainless steel 316L with four clamp connections (Tri-clamp 1 1 / 2") and sealed centrical lead-through fitting for stirrer tool, economic telescopic stand, POLYMIX® digital overhead stirrer with maintenance free gearbox 1 : 5 (high torque) and anchor stirrer. Upgrade options and complete accessory range on request.

Sales No.	Product	Description
14090030	RT 2E, 230 V	With EU-power cable
14090031	RT 2E, 230 V	With CH-power cable
14090032	RT 2E, 100 – 120 V	With power cable

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Our mission. Your solution.

Homogenizing perfected: for every industry.

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Kinematica's broad portfolio of solutions can address almost every dispersing application for the pharmaceutical, cosmetic, chemical, food and life science industry. Innovative powder-induction systems, solutions for completely sterile environments, or fully-compliant ATEX architecture are just some examples of the broad portfolio that Kinematica can offer with true scalability from pilot-plant to large plant configurations.

Our state-of-the-art technology, in addition to a professional consulting and engineering suite of services, can address a variety of processes such as blending / mixing / stirring, emulsifying, deagglomerating, foaming, crushing and homogenizing with particle size reduction from a few micrometers down to nanometers in size: the proprietary design and innovative geometry of our aggregates / generators can downsize and provide perfect statistical particle distribution for the finest emulsions / suspensions and foam dispersions.

PHARMA

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COSMETICS

FOOD

LIFE SCIENCE

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