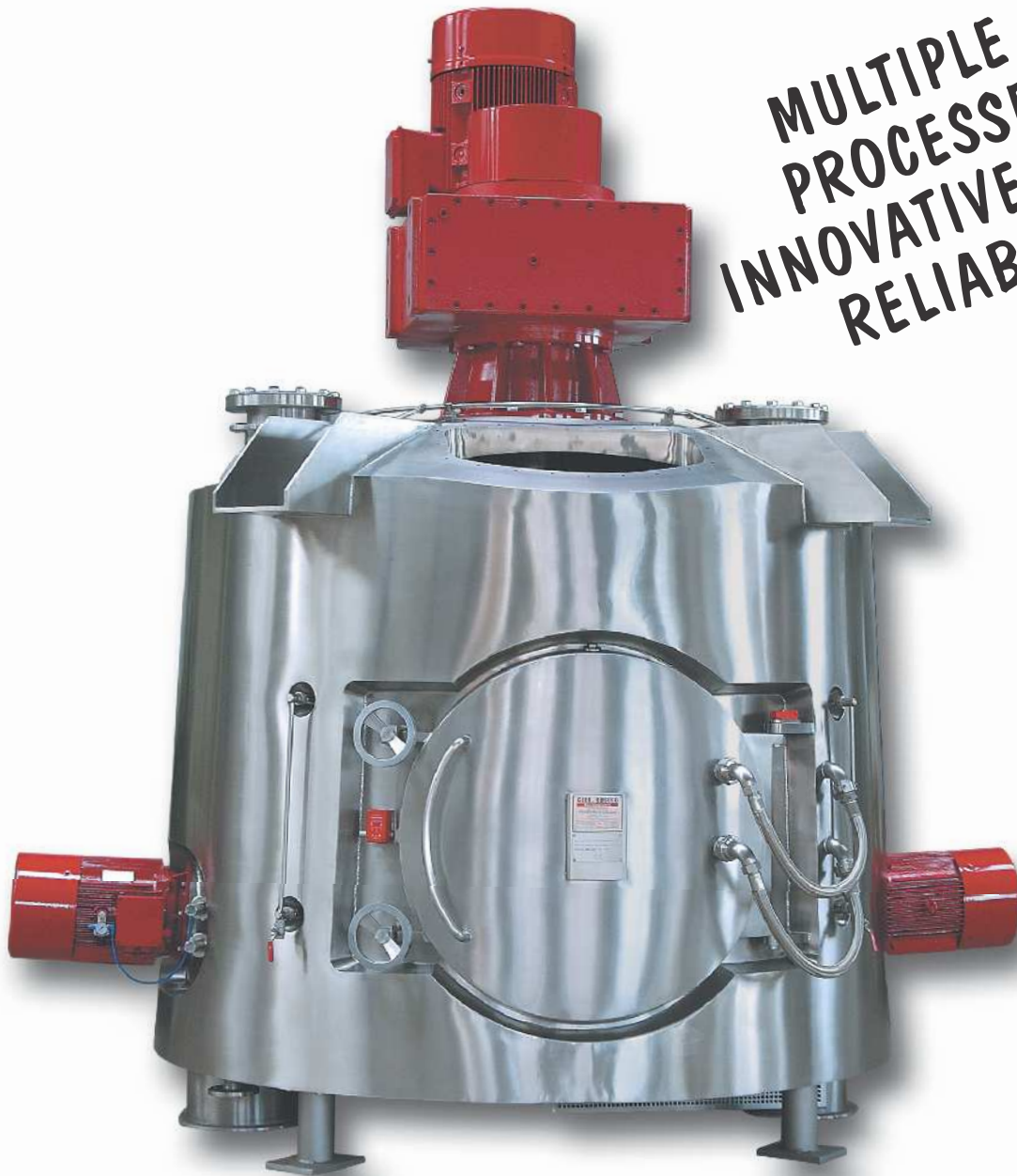


GEBR. RUBERG

Maschinenfabrik

MULTIPLE
PROCESSES
INNOVATIVE AND
RELIABLE



RUBERG Reactor Mixer
RCM line

RUBERG Reactor Mixer

for powder, granulates, from low to highly viscous liquids, ...

Processes:

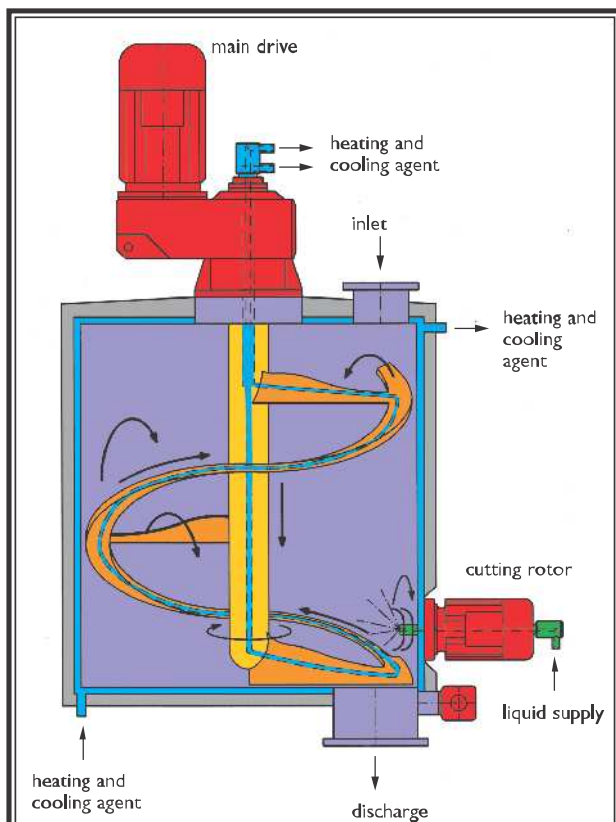
Heating, cooling, drying, conditioning, homogenizing, gasification, degasification, crystallizing, foaming, these are only few process examples for **RUBERG Reactor Mixers**. In such cases they can be used with their high performance and flexibility. Special surfaces, gap-free finish as well as rotation symmetric radii enable a germ-free and sterile production.

The reactor chamber is designed with a mixing tool in accordance with the principle of the **RUBERG Precision Batch Mixer** line and

therefore means an optimum combination of process technologies. Sensitive granulates, fine powders, low to highly viscous liquids, ... are treated absolutely gentle and effectively.

Application Range

The possible application range not only covers the processing of highly sensitive products of the pharmaceutical industry, fine chemical products and food, but also the processing of chemical products, building and plastic materials and animal food. A large selection of design variants with adapted material and processing standards is available.



Method of Operation:

The product to be mixed is supplied through a feed inlet on top of the mixer into the reactor chamber and is distributed immediately. The solid mixing spiral, connected by support and distribution arms with special shape, transports the content from the centre towards the inner wall and upwards. Then the product glides downwards at the centre of the chamber and is simultaneously mixed horizontally and diagonally by the distribution and mixing arms. The complete content is kept in constant motion in alternating directions, without the formation of dead-zones. Optimum process reactions and temperature exchange are warranted. Built-in measurement techniques and sensors integrate the **RUBERG Reactor mixer** into the plant.

Free-floating bearing-suspended mixing spiral

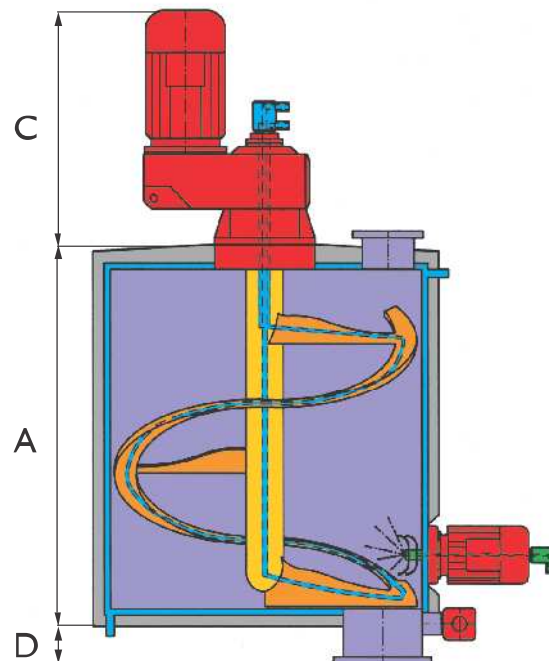
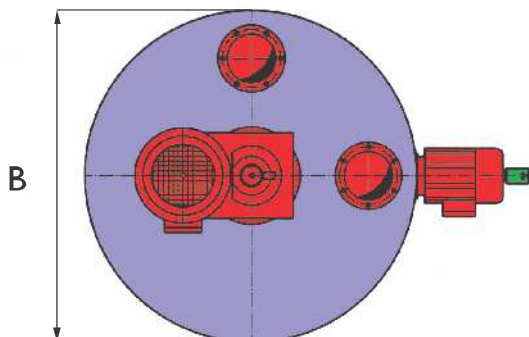
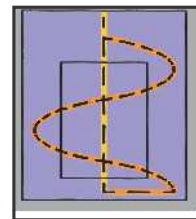
The solid designed mixing spiral is merely bedded on top of the mixer. The agitator drive includes the complete bearing which absorbs all locally acting powers and torques.

- Variable circumferential speeds from "slow move" (explosion hazardous products) to "turbulent" (creamy to liquid products)
- No bearings and no sealing elements in the mixing product
- The mixing spiral does not contact the base
- Mixing and discharging arm in evolvent shape
- Rotation symmetric radii
- No friction and adherence
- Tidy cleaning of the reactor chamber
- Sterile processes, bacteriologically controllable
- No complicated sealing systems with pressure or vacuum operation



Mixing Spiral
RCM-ZG 6000-SR

RUBERG Reactor Mixer Line RCM-ZE



Pharmaceutical industry, chemical industry, food...

■ Sophisticated mixing operations can be carried out regarding products with many different densities, granulation and consistency in highly sensitive production areas.

- Cylindrical design with flat bottom and cover
- Short CIP and SIP cycles when product is changed
- One-piece jointless mixing chamber, suitable for vacuum and pressure
- Free-floating bearing-suspended heatable or coolable mixing spiral
- Especially shaped mixing and distribution arms
- GMP, FDA, EHEDG conformity meeting highest hygiene standards
- Diffusion tight heating or cooling insulation jacket

Effective volume in litres	Type	A in mm	B in mm	C in mm	D in mm
100	RCM-ZE 100	700	750	480	200
200	RCM-ZE 200	800	800	550	200
300	RCM-ZE 300	950	1000	560	200
500	RCM-ZE 500	1100	1200	630	200
750	RCM-ZE 750	1200	1300	660	200
1000	RCM-ZE 1000	1400	1400	740	250
1500	RCM-ZE 1500	1500	1600	800	250
2000	RCM-ZE 2000	1650	1750	850	250
3000	RCM-ZE 3000	1800	1950	960	250
4000	RCM-ZE 4000	2000	2100	550	250
5000	RCM-ZE 5000	2100	2300	550	250
6000	RCM-ZE 6000	2200	2400	550	250
7000	RCM-ZE 7000	2400	2500	650	400
8000	RCM-ZE 8000	2500	2600	650	400
10000	RCM-ZE 10000	2700	2800	900	400
15000	RCM-ZE 15000	2900	3200	900	600
20000	RCM-ZE 20000	3200	3500	900	600
25000	RCM-ZE 25000	3200	3500	900	600

RUBERG Reactor Mixers of all sizes can be made to individual requirements. The inlets and outlets as well as the arrangement of the inspection door if required can be freely selected.

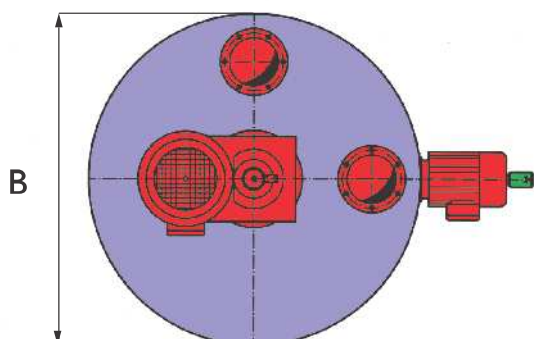
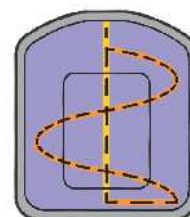


Type RCM-ZE 5000

Stainless steel, Material: 1.4539.

Explosion proof design according to ATEX, class of sterility 5, nitrogen addition, bottom and jacket cooling by half tube coils using water, Discharge with high performance ball valve, CIP cleaning system, designed for ceiling mounting, as cooling mixer for pharmaceutical products.

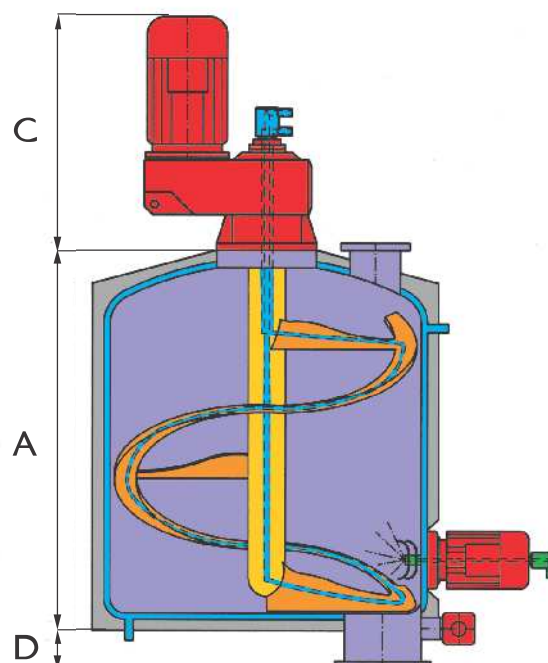
RUBERG Reactor Mixer Line RCM-ZG



Pharmaceutical industry, chemical industry, food...

■ Sophisticated mixing operations can be carried out regarding products with many different densities, granulation and consistency in highly sensitive production areas.

- Cylindrical design with dished cover
- Short CIP and SIP cycles when product is changed
- Flat bottom with rounded corners
- One-piece jointless mixing chamber, suitable for vacuum and pressure
- Drop-free drying of the mixing chamber
- Free-floating bearing-suspended heatable or coolable mixing spiral
- Especially shaped mixing and distribution arms
- GMP, FDA, EHEDG conformity meeting highest hygiene standards
- Diffusion tight heating or cooling insulation jacket



Effective volume in litres	Type	A in mm	B in mm	C in mm	D in mm
100	RCM-ZG 100	650	750	480	200
200	RCM-ZG 200	850	850	550	200
300	RCM-ZG 300	950	1000	560	200
500	RCM-ZG 500	1150	1200	630	200
750	RCM-ZG 750	1300	1300	660	200
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5000	RCM-ZG 5000	2300	2100	550	250
6000	RCM-ZG 6000	2400	2400	550	250
7000	RCM-ZG 7000	2600	2500	650	400
8000	RCM-ZG 8000	2700	2600	650	400
10000	RCM-ZG 10000	2900	2800	900	400
15000	RCM-ZG 15000	3200	3200	900	600
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25000	RCM-ZG 25000	3500	3500	900	600

RUBERG Reactor Mixers of all sizes can be made to individual requirements. The inlets and outlets as well as the arrangement of the inspection door if required can be freely selected.



Type RCM-ZG 1000-SR

Stainless steel, material: 1.4571.

With cutting rotor, vacuum pump, insulated heating and cooling jacket, liquid dosing system, manual feeding-in device, filling level sensors, CIP cleaning system, electrical control and supply pump for the production of washing lotions.

RUBERG Reactor Mixer

Injector lance:

A dismantlable lance with a redrop-free spraying nozzle injects the liquid into the mixing product. The cooperation of mixing spiral and cutting rotor makes it possible to add very small to very large quantities of liquids to dry substances and to distribute them precisely and homogeneously.

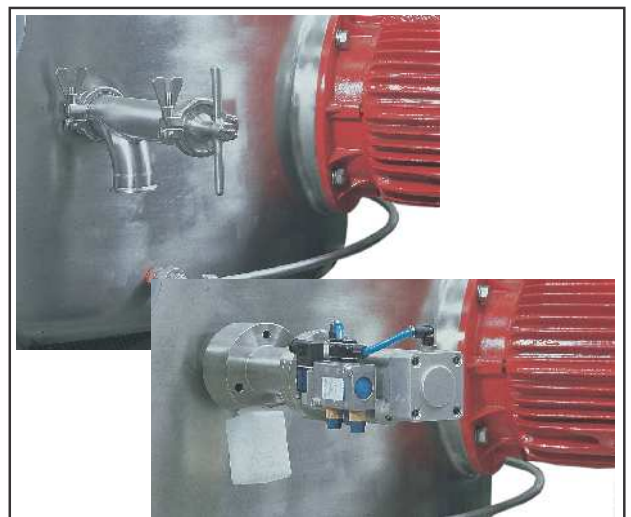


IS-system:

With especially critical components e.g. highly viscous liquids the patented IS-system (Injection Spraying system) has proved best functionality in addition to the cutting rotor. Through a lance in the drive of the cutting rotor the liquid is supplied directly into the rotating blade head. Here it is distributed turbulently and micro-finely into the product. The blades prevent agglomeration. Injections can be added either of large quantities or of smallest portions.

Cutting rotors:

As a high-speed rotating counterpart to the main mixing spiral achieves crumbling and crushing of agglomerates. Depending on the process the blades could be either of cutting / hitting design or be designed according to the rotor / stator principle. Variable speeds support the gentle treatment of the products.



Sample taking device:

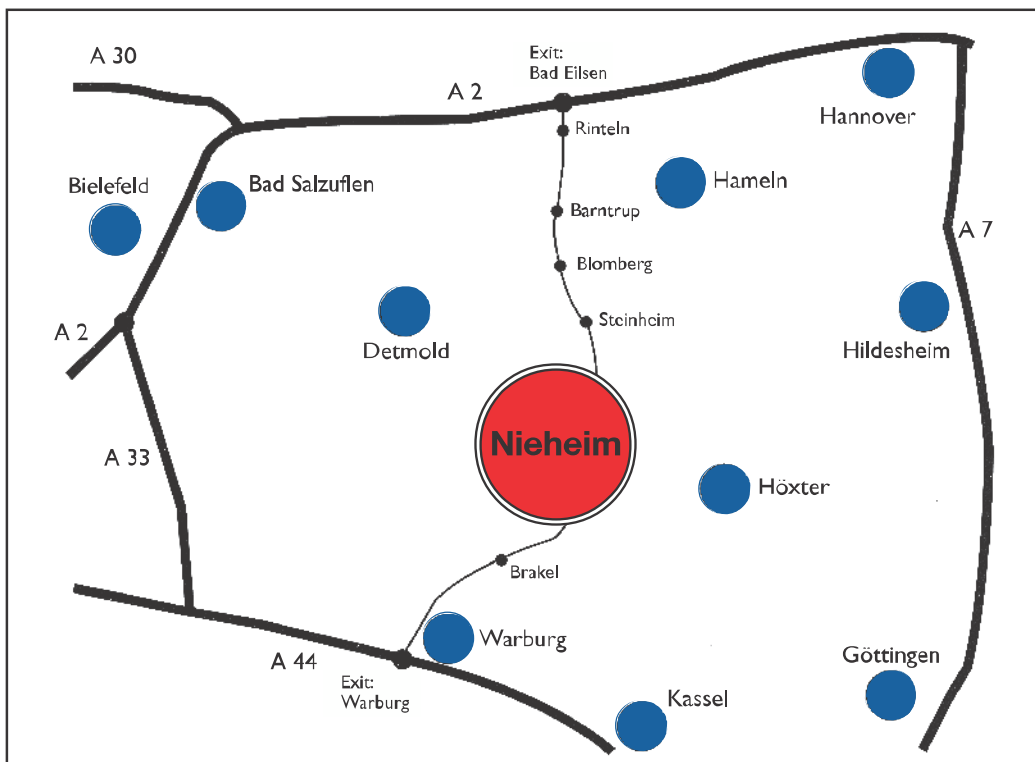
Representative samples are the basis of the the process progress and preparation of production reports. For manual operation hand actuated sample takers and for automated processes electro-pneumatically actuated sample taking devices are available. Easy cleaning is maintained because of the convenient design using lockable sterile-clamp-connections.

RUBERG Precision Batch Mixer CM-ZG 2000

Stainless steel, material: 1.4301 (AISI 304). With cutting rotor, ISR-system, injection lance, sample taking device, CIP cleaning system with mixing chamber drying system, integrated weighing system and triple discharge dosing. With RUBERG Containers, 750 litres, for filling and emptying, for a containerised and automated production, inclusive container emptying station and triple weighing station.



As a factory for machinery, the company Gebr. Ruberg GmbH & Co. KG was founded as a family concern in 1848. From the then production of primarily wind- and watermills there arose through the decades a modern machinery production facility. Our machines are used for chemicals, foodstuffs, pharmaceuticals, construction and plastic materials and our production programme extends over the complete planning, production and installation of complete plants and individual machines. A specialized staff of about fifty members have made innovation and progress our business. The tests and trials conducted in our testing centre allows us to develop systems and machines to the most advanced level of technology and standards.



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