

One for all **EIRICH CleanLine**

New mixer series for all your needs in
hygienic processing

Groundbreaking process technology meets
hygienic design

**For pharmaceutical, foods,
and high-performance materials applications**



Hygienic design mixer

EIRICH CleanLine



Simple structure,
various applications

While maintaining the unique mixing principle of EIRICH Intensive Mixer, EIRICH CleanLine has been developed for processing raw materials in industries such as pharmaceuticals, foods, and high-performance materials, where a high level of hygienic control is required. This product is designed to be washable and corrosion-resistant, making it easy to maintain hygienic conditions.

EIRICH CleanLine has two major series: the Japanese-made and the German-made. The series made in Japan is designed to meet the needs of customers in the pharmaceutical and health food industries and can meet the requirements of GMP guidelines for equipment design, manufacturing, inspection, installation, and commissioning.

Groundbreaking process technology meets hygienic design:

- Corrosion-resistant hygienic design
- Quick and simple cleaning thanks to simple machine structure
- High durability
- Cooling and heating of mixing pan possible

Effective cleaning:

Thanks to flat machine surface, waterproof equipment design and optimized seal structures, the machines can be cleaned effectively and reproducibly.

Ergonomic and quick handling:

The product contacted components (mixing tools, seals, scrapers) can be assembled and disassembled very quickly.

Extra flexible:

Simple change of mixing tools and parameter adaption allows flexible variation of different production and preparation techniques.

ONE-POT Process

Multiple processes in a single mixer

EIRICH CleanLine is a versatile hygienic mixer for diverse raw material processing.

Due to the unique mixing principle, all process operations such as mixing, granulating, coating, kneading, dispersing, drying and many more are possible with a single machine.



Mixing



Granulating



Coating



Kneading



Dispersing



Drying, Cooling

+ Unique mixing principle

Mixing Principle of EIRICH

Eirich CleanLine consists of a rotating mixing pan, a high-speed rotor tool that rotates in an eccentric position, and a fixed toolset inside the mixing pan, achieving efficient material movement without dead space.

By setting appropriate operating parameters, Eirich Cleanline can achieve highly reproducible processing in a wide range of processes, including mixing, disintegrating, dispersing and granulating. This allows for process integration and short processing times, resulting in space savings for production equipment.

The Eirich mixing system:

The special mixing system consists of three components, which can be adapted flexibly to the requirements of processes.

Rotor Tool (Mixing Tool):

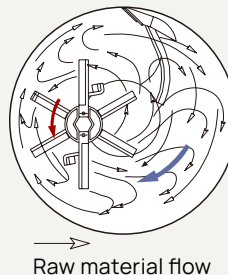
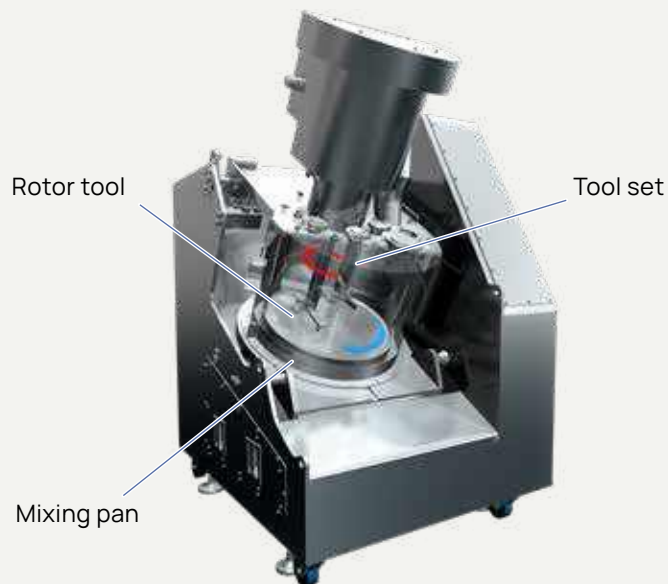
Mixing tool rotating in an eccentric position
Type (shape of mixing tool), direction of rotation, and speed can be optimally adapted to the process.

Mixing Pan (Mixing Vessel):

The rotating mixing vessel conveys the material to be mixed into the mixing tool area at a continuously adjustable vessel speed.

Tool Set (Bottom/Wall Scrapers):

Prevention of raw material adhesion
Efficient material transfer to Rotor Tool Rotor tool



- Rotating mixing pan conveys materials to rotor tool continuously and efficiently.
- Rotational action of mixing pan and rotor tool generates large velocity differences.
- Efficient material transfer utilizing the mixer tilt and tool set.

Because of these,

High shear force on materials results in short processing time.

Efficient material transfer leads to easy processing of raw materials with poor flowability.

+ Features

- Optimal material processing can be achieved by selecting the appropriate rotor tool shape and adjusting the rotation speed.
- By adjusting the shear force, the particle size and density can be controlled, and the particle size distribution can be adjusted from D50 = less than 200µm to around 1mm.
- Double-jacketed mixing pan for temperature control enables granulation while cooling or heating, and processing of temperature-sensitive materials.
- Excellent movement and dispersion of raw materials are possible in both kneading and subsequent slurry processes.

Various rotor tools according to the applications



Star-type



Pin-type



Microgranulation-type

Applications

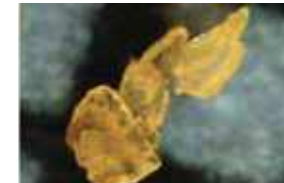
- Dry mixing of raw materials with different bulk densities
- Mixing and dry dispersion of cosmetic raw materials (pigment dispersion)
- Mixing and dispersion of micron-sized powders
- Functionalization of cathode and anode materials for secondary batteries
- Granulation of soluble polysaccharides
- Granulation of granules for tableting
- Granulation of spherical granules for coating
- Kneading of dental materials
- Dispersion of powders into liquids to form slurries



Foods
Granulating (from high density to porous)
e.g. Soluble instant soup powder



Functional ingredients
Coating
e.g. Baking soda



Battery materials
Wet/dry mixing and kneading
e.g. Active material dielectric binder



Fine chemistry
Wet/dry dispersing
e.g. Cosmetic ingredient



Dental materials
Kneading
e.g. Dental compound



Pharmaceuticals
Granulating
e.g. Granulation for tableting

+ Extensive product range



C5(Tabletop type)



C5



C40

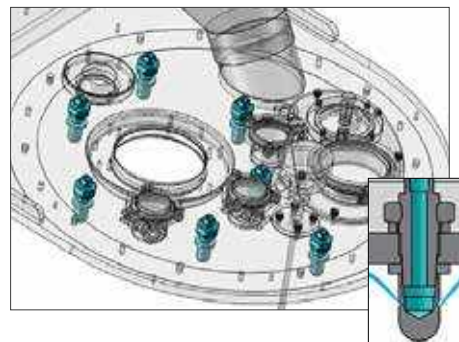


C400

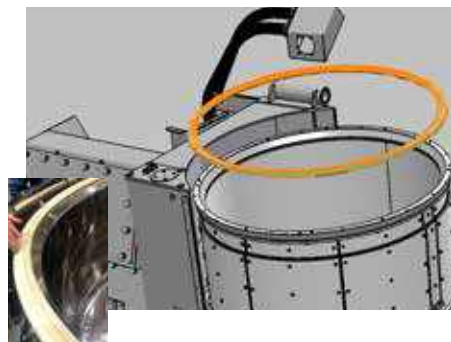
	C5(Tabletop type)	C5	C40	C400
Usable Capacity (L)	1.6 ~ 5 L	5 L	40 L	400 L
Usable Capacity (kg)	8 kg	8 kg	65 kg	650 kg
Size (W x L x H)	1,110 x 830 x 1,040 mm	1,430 x 2,110 x 1,600 mm	1,281 x 1,515 x 1,975 mm	2,817 x 1,900 x 2,680 mm
Weight	180 kg	1,000 kg	1,700 kg	4,000 kg
Pan / Rotor drive motor	0.55 / 1.42 kW	0.75 / 2.2 kW	1.5 / 3.7 kW	11 / 18.5 kW
Inclination	0°, 10°, 20°, 30°	-10° ~ 30°	30°	20°
Control panel	Separate type	Integrated type	Separate type	Separate type



Cooling and heating of mixing vessel
by liquid



Reverse jet nozzle



Easily replaceable pan seal



EIRICH Smart Discharger (ESD),
suction-type product discharge device

	C5(Tabletop type)	C5	C40	C400
Rotor drive	Direct	Timing belt	Direct	Timing belt
Cooling and heating medium	Liquid	Air / Liquid	Air / Liquid	Air / Liquid
Product discharging	Detachable mixing pan / Tilting mixing pan	Detachable mixing pan	Tilting mixing pan / ESD (option)	ESD
Reverse jet nozzle	×	×	○	○
Explosion-proof (option)	○	○	○	○
Raw material temperature sensor (option)	○	○	○	○
Injection nozzle (option)	×	○	○	○
Conformity to GMP (option)	×	○	○	○

C5 (Tabletop type)

+ For research
and development

- **Mixing pan with tilt function**

Mixing pan with tilt function

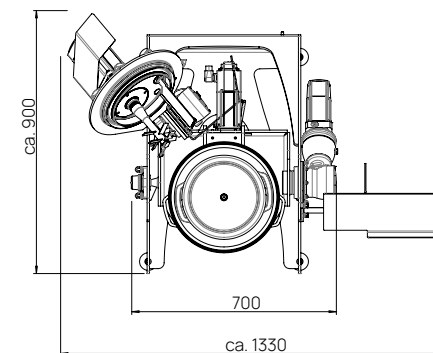
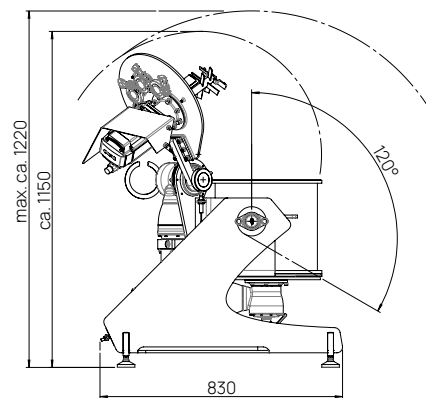
Mixer Integrated motorized tilt adjustment : 0°, 10°, 20°, and 30°

- **Simple structure, high cleanability**

Easy cleanable with removable components

- **Web-based tablet control**

For data recording, analysis, and intuitive operation



Standard specifications

- Stainless steel construction
- Surface finish : RA < 0.8 μm
- Web-based tablet control
(with operation data logging function)
- Mixing pan with tilt function
during operation : 0°, 10°, 20°, 30° (forward tilt)
during discharge : -120° (backward tilt)
- Rotor tool : star-type (without wear protection)
- Rotor speed : infinitely adjustable
- Rotor drive motor capacity : 1.42 kW

Optional specifications

- Double-jacketed mixing pan for product temperature control
- Rotor tool : pin-type, microgranulation-type
- Rotor tool : with wear protection
- Tool set : PTFE
- Temperature sensor
- Explosion-proof (ATEX version)
- Vacuum version and vacuum peripherals (for degassing, vacuum evaporating cooling, vacuum drying)

Model	C5 (Tabletop type)
Capacity (L)	1.6 ~ 5
Capacity (kg)	8
W (mm)	1,110
L (mm)	830
H (mm)	1,040
Weight (kg)	180

Type C5

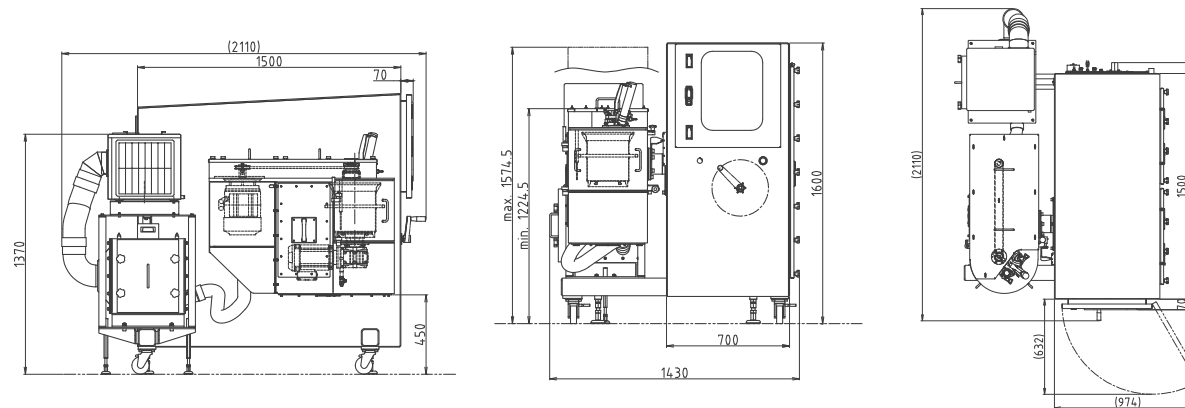
+ For research and development

• Mixing vessel with tilt function

Tilt adjustment : -10°, 0°, 10°, 20°, and 30°
Mixing pan angle adjustable during operation, allowing for a wider range of processing variations

• Integrated control panel

Integrated control panel and wheels for easy transportation



Standard specifications

- Stainless steel structure (SUS304 and others)
- Surface finish :
Non-product contacting surface : Buff #320
- Control panel with touch panel monitor (with operation data logging function)
- Mixing pan with tilt function
during operation : 0°, 10°, 20°, 30° (forward tilt)
during maintenance : -10° (backward tilt)
- Rotor tool : star-type (without wear protection)
- Rotor speed : infinitely adjustable
- Rotor drive motor capacity : 2.2 kW

Optional specifications

- Mixing pan cooling and heating mechanism
- Rotor tool : pin-type, microgranulation-type
- Rotor tool : with wear protection
- Temperature sensor
- Mixing pan seal with high sealing performance
- Double-lip rubber sealant
- PC for data logging
- Bag filter
- Injection nozzle
- Explosion-proof
- Conformity to GMP
- Rotor drive motor capacity : up to 2.2kW

Model	C5
Capacity (L)	5
Capacity (kg)	8
W (mm)	1,430
L (mm)	2,110
H (mm)	1,600
Weight (kg)	1,000

Type C40



From research and development
to small-scale production

- **Cooling and heating of mixing pan**

Cooling and heating of mixing vessel by liquid.

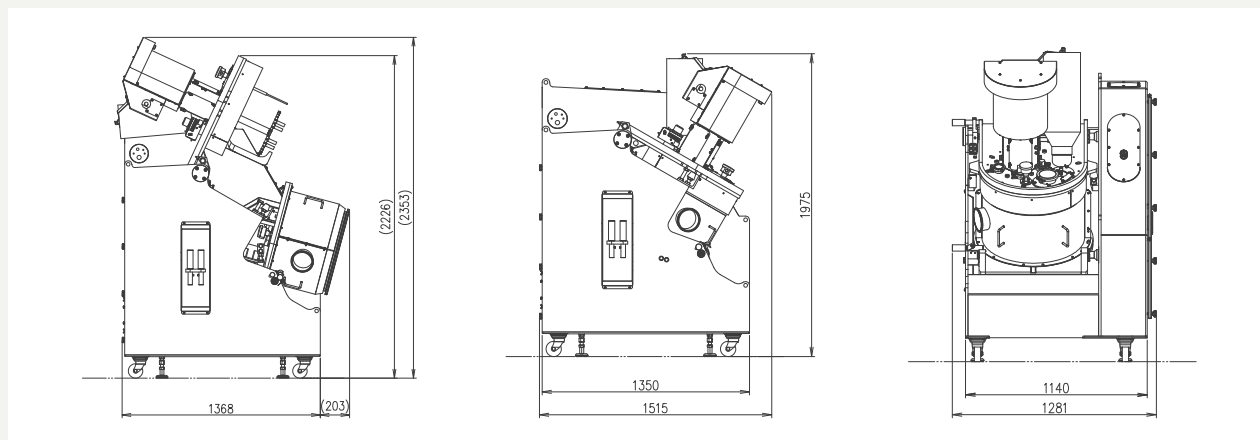
- **Less material adhesion and less residue**

Reverse jet nozzle : Reducing raw material adhesion and residue on the underside of the crosshead by spraying compressed air.

Tool set : Reduction of adhesion and improvement of yield thanks to target-guided structure.
With clearance adjustment mechanism with mixing pan.

- **Easy-to-replace pan seal**

No tools required for assembly and disassembly.



Standard specifications

- Stainless steel structure (SUS304)
- Surface finish
 - Non-product contacting surface : Buff #320
 - Product contacting surface : Buff #400
- Stand-alone control panel
- Mixing pan tilting angle
 - during operation : 30°
 - during discharging : 105° (forward tilt)
- Rotor tool : star-type (without wear protection)
- Rotor speed : infinitely adjustable
- Rotor drive motor capacity : 3.7kW
- Explosion-proof motor
- Air purge function in machine frame

Optional specifications

- Rotor tool : pin-type, microgranulation-type
- Rotor tool : with wear protection
- Temperature sensor
- Mixing pan seal with high sealing performance
- Double-lip rubber sealant
- Wheels for easy transportation
- PC for data logging
- Bag filter
- Injection nozzle
- Explosion-proof
- Conformity to GMP
- EIRICH Smart Discharger (ESD)

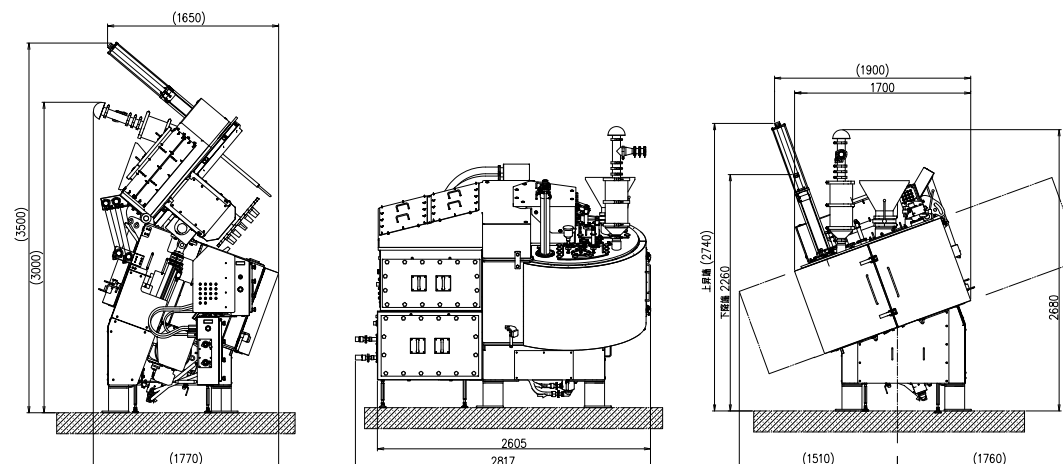
Model	C40
Capacity (L)	40
Capacity (kg)	65
W (mm)	1,281
L (mm)	1,515
H (mm)	1,975
Weight (kg)	1,700

Type C400



For mass production
Compatible with integration into
automated lines

- **Cooling and heating of mixing pan**
Cooling and heating of mixing vessel by liquid.
- **Less material adhesion and less residue**
Reverse jet nozzle : Reducing raw material adhesion and residue on the underside of the crosshead by spraying compressed air.
Tool set : Reduction of adhesion and improvement of yield thanks to target-guided structure.
With clearance adjustment mechanism with mixing pan.
- **Easy-to-replace pan seal**
No tools required for assembly and disassembly.
- **Compatible for automation**
Material feed with automatic weighing, automatic product discharge by EIRICH Smart Discharger.



Standard specifications

- Stainless steel structure (SUS304)
- Surface finish
Non-product contacting surface : Buff #320
Product contacting surface : Buff #400
- Stand-alone control panel
- Mixing pan tilting angle : 20°
- Rotor tool : star-type (without wear protection)
- Rotor speed : infinitely adjustable
- Rotor drive motor capacity : 18.5 kW
- Explosion-proof motor
- Air purge function in machine frame
- EIRICH Smart Discharger (ESD)

Optional specifications

- Rotor tool : pin-type, microgranulation-type
- Rotor tool : with wear protection
- Temperature sensor
- Mixing pan seal with high sealing performance
- Double-lip rubber sealant
- PC for data logging
- Bag filter
- Injection nozzle
- Explosion-proof
- Conformity to GMP

Model	C400
Capacity (L)	400
Capacity (kg)	650
W (mm)	2,817
L (mm)	1,900
H (mm)	2,680
Weight (kg)	4,000

The Eirich Group, with the Gustav Eirich machine factory as a strategic center in Hardheim, is a supplier of machines, systems and services for mixing technology, granulating/pelleting, drying and fine grinding. Our core competencies are procedures and processes for the treatment of loose materials, sludge and mud. We are a family-run company with 15 locations worldwide.

Nippon Eirich Co., Ltd.

3-9-37, Meieki, Nishi-ku, Nagoya-shi,

Aichi 451-0045 JAPAN

TEL: +81-(0)52-533-2577

E-mail: eigyo@nippon-eirich.co.jp

You can find more information at:
www.nippon-eirich.co.jp/en