

Coating machine for food (snacks, health foods) and pharmaceutical industries

Coaterow®

コータロー

**Centrifugal coating machine has further evolved!!
A fusion device of revolving pan and multi-spin coating machine
pioneers the brand new coating style!!**

Four types of *Coaterow*® series available



Conventional type
Rotary Coating Machine
Coaterow® TRP
レボルピンクパン



Multi-Spin Coating Machine
Coaterow® NEXT
コータロー・ネクスト



Standard type
Centrifugal Coating Machine
Coaterow® Standard
コータロー・スタンダード



Exclusive for powder coating
Vibratory Coating Machine
Coaterow® CCM
キャンティコーティング

✓Effective ✓Versatile ✓Easy use

Food Coating Machine

Model ECX / ECS
Coaterow®
 コーター

Shifting from revolving pans to centrifugal type

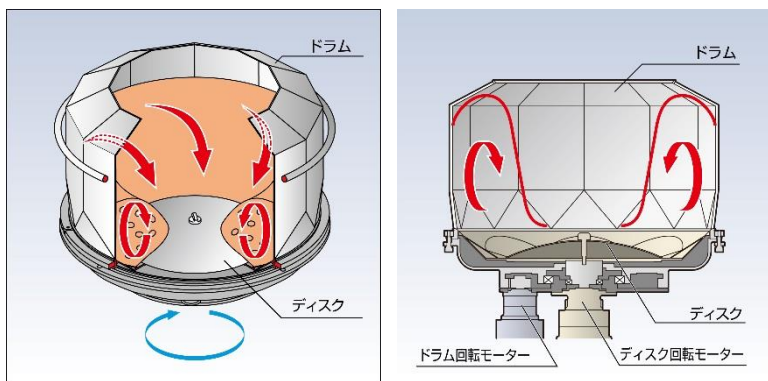


■ Feature of centrifugal type

- **Productivity**
Fast spreading speed of coating powder and liquid more than doubles productivity rate compared to the conventional type.
- **Labor saving, no special skill necessary**
Anyone can perform uniform spreading with constant quality. Upper opening facilitates collaborative work with charging device which supports automation system.
- **Quality improvement**
Each center to be coated keeps moving without stagnation. Avec, adhesion and the loss of powder and liquid will be greatly reduced.

[Avec: sticking between centers.]
 [Adhesion: Centers' sticking to tub.]

■ Principle of centrifugal coating



Centers to be coated will first roll and then are transferred to the disc's outside due to the centrifugal force caused by high speed rotation, and will rise along the inner side of the drum. The centers which reached to the maximum height will roll and disperse over the wide surface area to return to the center part of the disc. Cycle of this centers' movement create vortex flow.

Conventional revolving pans tend to create rotational flow only on the surface of the lump of centers. On the other hands, centrifugal coating machine constantly creates rotational flow in three-dimension, so that coating materials will be widely spread and each center will be rapidly coated.

● Example of applications



(Square gum)

(Round gum)

(Puff chocolate)

(Almond chocolate)

(Beans snack)

- * Shorten coating time from 1/3 to 1/2 compared to the conventional machine.
- * Several coating is possible (sugar coating/ chocolate coating/ powder coating/ kanbai powder coating.)
- * Can change candy shape from round to square, and vice versa.

● Multi-spin coating Coaterow Next



* Unique shape, lumpy shape, longer axis shape can be coated finely without any overlaps.

Wide variety of shapes can be coated. Dead-zone of the revolving pan is eliminated and whole working area is now able to perform efficiently.

● Easy automated operation

Once recipe is instructed, it is easy to operate with this machine automatically.

Standard: Centrifugal Disk Type Coating Machine

Centrifugal coating machine renewed model from ECM to ECS

■ Features

New centrifugal type machine with smaller size and higher performance.

- High spreading speed produced by the centrifugal force.
- Special uniformity produced by the vortex flow.

Patent No.3425536
Patent No. 3254440

■ Workability, operability

Compact and user friendly

- Requires the same or smaller installation area than the revolving pans.
- No special skills needed to handle two buttons for the operation.
- Tilted movement of coating tank makes charging and discharging easier.

Meets sanitary standard

- Obtained HACCP, Food safety standard.
- Food contact parts are all made of stainless.
- Parts can be easily disassembled for cleaning.



Compact production device & test device



Coaterow® NEXT
コータロー・ネクスト
Model ECX 40



Coaterow® Standard
コータロー・スタンダード
Model ECS 40

* Air heater and cooler may be equipped as an option.

Powder Coating: Vibratory Type Coating Machine

Vibratory coating machine especially suitable for powder coating

■ Coating principle

Vibrating tank facilitates centers to move into spiral flow.
Uniform powder coating needs only powder charging.

■ Features

- Vibration frequency and the amplitude can be adjusted according to centers property and coating purpose.
- Extremely effective for fragile centers.
- Available for labor saving, automation.

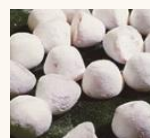
■ Workability, operability

- Has less tendency to create cracks.
- Coats uniformly even on the uneven surface.
- High yield rate allows mass production.
- Available for automatic discharge.

Patent No. 3605654



Coating application



Granulated sugar, vitamin C, baking soda coating on hard candies. Powder coating on gummi candies, or caramels.



For all purpose: Multi-spin Coating Machine

Multi-spine Coating Machine

Integrated revolving pan with centrifugal coating machine

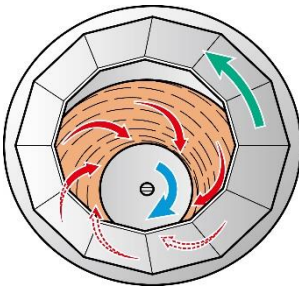

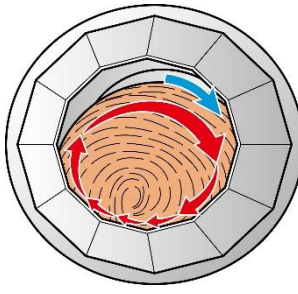

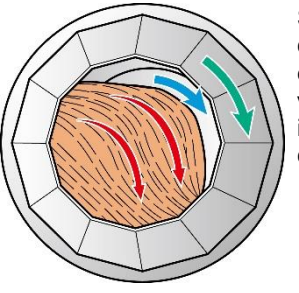
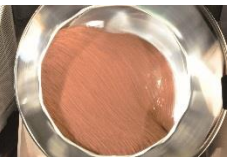
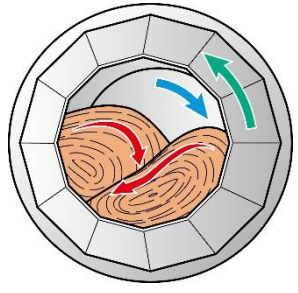

■ Features

Drum and disc independently rotate!
Pioneering new coating technology that prevents generation of dead space is now available!!

Patent No.5603808
Patent No. 4740419
Patent No. 4685959



Flow structure of multi-spin coating machine

Centrifugal mode (Horizontal)	Centrifugal mode (Slope)
 <p>Suitable for slippery centers. Counter-rotating drum accelerates the vertically spinning flow and enhances the flow.</p>  <p>Drum: counter-rotation / Disc: forward rotation</p>	 <p>The beginning of coating is the most essential process. Centers will be coated with low speed if their tips are difficult to be coated.</p>  <p>Drum: Stop / Disc: forward rotation</p>
Revolving pan mode (Slope)	Agitating mode (Slope)
 <p>Synchronizing the rotation or changing the disc rotation eliminates the difference in flow velocity between outside and inside that prevents variations in coating.</p>  <p>Drum: forward rotation / Disc: forward rotation</p>	 <p>Several flows (e.g. with high agitation capacity) for each different purpose can be created accordingly.</p>  <p>Drum: counter-rotation / Disc: forward rotation</p>

Tumbling fluidizing including these flows can be mutually and continuously created.

■ Effect

Fast, uniform, compact vortex coating machine has been innovated to ensure the best flow!

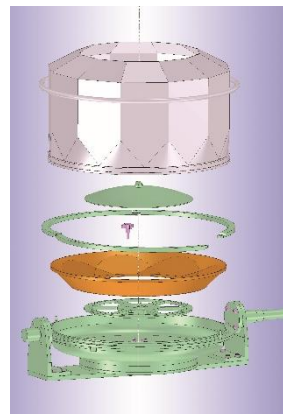
- Utilizes each advantage of revolving pans and cortex machine to allow wide variety of coating.
- Realizes both centrifugal fast and uniform coating, and revolving pans' smooth finishing.
- Contributes to new product development due to the creatability of several flow structure.

■ Workability, operability

- Simple display facilitates easy operation.
- Recipes can be easily registered into the program.
- Inclined coating tank facilitates charging and discharging.
- Meets HACCP (food safety requirements), and parts are easy to clean.

■ Exposed view when cleaning

(* Food contact parts can all be disassembled.)



How to Use

Revolving type (revolving pan)



Synchronous rotation or mutually reverse rotation of drum and disc

Centrifugal type



Using tilted movement

Synchronous rotation of drum with disc allows revolving pan's function.
Longitudinal direction of the flow can be controlled by changing the disc rotation.
Constant and uniform quality is ensured.

Using horizontal movement

By rotating the disc with high speed, vortex flow is created. When rotating the drum reversely, vertical spinning flow will be enhanced and will be suitable for slippery centers. Coating is completed in a short time using centrifugal force.

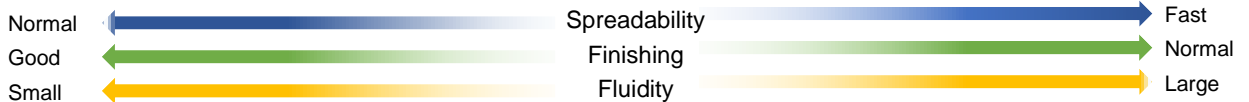
Other usage

- Fragile centers or centers which is difficult to flow can be well coated with revolving type. ⇒ Subsequently centrifugal type quickly finishes the coating.
- Centrifugal quickly does the first coating ⇒ Revolving does the finishing coating later.

Line-up of coating tank shape for ECX model

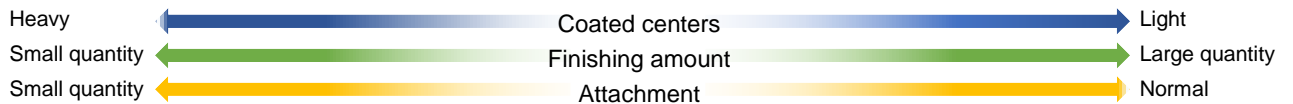
Drum	Type	C (Cylinder)	B (Blend)	P (Polygon)
	Shape	Cylindrical	Cylindrical + dodecagon	dodecagon + dodecagon
	Image			

Selection consideration



Brilliant Disc	Type	S (Shallow)	M (Medium)	D (Deep)
	Shape	Octagon petal	Heptagon petal	Heptagon petal
	Image			

Selection consideration



* Both drum and disc materials are SUS304 (entire buffing).

* Brilliant disc is a patented disc which creates high centrifugal force. (Patent No.3425536)

Options

- Sanitary draining valve
- Tank lid
- Drum rotation guard bar
- Air blow to prevent powder fall
- Caster
- Painting specified color

● Example of ④



Powered by air to prevent powder fall



* Compatible also with a special device and custom-built devices.

As an option, air blow may be equipped which prevents powder falls. Lower disc has almost no powder fallen on it.

Solved conventional users' unsatisfactory points Improved and more useful revolving pan

■ Features

- Inside of coating pan is smooth enough to prevent the adhesion.
- High strength, high durability.

■ Customized order

- We will create any pans' shape been requested.
- Accept the change in pan's capacity and the request for all-SUS specification.



Coaterow® Line-up

Model/item	Max charge weight (kg x L)	Dimension (W x D x H)mm	Drum rotation	Fully automatic	Auto discharge	Type
ECX200	100 / 100	1450 x 1100 x 1300	○	○	○	Multi-spin type
ECX40	20 / 20	860 x 550 x 950	○			Multi-spin type
ECS200	100 / 100	1220 x 1100 x 1160			○	Centrifugal type
ECS100	50 / 50	1020 x 900 x 1100			○	Centrifugal type
ECS40	25 / 20	755 x 600 x 1200				Centrifugal type
CCM200	150 / 160	1310 x 1400 x 1185		○	○	Vibratory type
TRP350	100 / 100	975 x 1940 x 1575	○			Rotary type

* Product's specification is subject to modifications for the sake of improvement without notice.

* Please contact us for each option specifications.

Manufacture:  **Tipton Corp.**

Tipton Corp.

3-19-21, Toyoda, Minami-Ku, Nagoya, Aichi Prefecture
 457-8566 Japan

Tel: +81-52-692-6666

E-mail: sales-department@tipton.co.jp

Website: <http://www.tipton.co.jp>

Visit our website for the coating video.

Tipton USA Inc.

2450 W Broadway Rd. Suite 108, Mesa, AZ 85202, USA
 Tel: +1-480-795-2647