

# 煉る



## BALL CUTTER

High Speed

Vacuum

Automatic

BC1000 - BC700 - BC420 - BC360 - BCA250/BCZ250 - BC150/BCZ150 - BC120 - BC90 - BC5

● BLOCK CUTTER /CBM420 CBM250 CBM150

From the field of food processing to fine chemical

**Abundant line up from the world's largest cutter to the small cutter for R & D**

# BALL CUTTER

## Action & effective of Ball Cutter

High Speed Vacuum Automation

### Application

Surimi (Fish Paste) Products, Meat Processing Products, Dairy Products, Foods containing vegetable protein and/or egg, mayonnaise, Feed (breeding, bait for fishing)

Brewing (Miso, Soy Sauce), Seasoning

■ Fine-cutting, stirring, emulsifying and mixing for other paste products (chemical products such as cosmetics, medical supplies and ceramics)

### Time Saving

Fine-cutting, mixing and kneading of raw materials are completed in the shortest time by the synergistic effect of the ball type container and the cutter knife which is set aslant, and rotates at high speed. In case of Surimi (Fish Paste) products, it can mix up the material in 8-12 minutes, and it can do in 3-4 minutes depending on the material.

### Stable Quality, Full Automation

Manage numerical values such as temperature, salt charge time (in case of Surimi products) and vacuum thoroughly by computer control, and operate automatically by setting the program patterns. The products of uniform quality can be made.

### Special Texture

Can create and develop the new products with special texture by changing numerical value such as the temperature time, salt charge time, vacuum and so on.

### Excellent Effect by Water

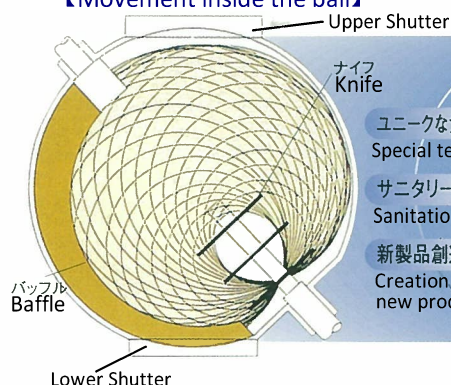
Ball Cutter is distinguished for the effect by adding water in comparison with Silent Cutter. This effect improves quality even as for the same raw materials.

### Sanitation

It gets the high effect on sanitary by complete sealing-up operation which the raw materials don't touch human hands and the shutters do not open and close from the operation start to the end.



### 【Movement inside the ball】



自動運転  
Full Automation

ユニークな食感  
Special texture  
サニタリー  
Sanitation  
新製品創造  
Creation of new products

均一な製品  
Stable quality  
水伸びし効果  
Effect by water adding  
短時間処理  
Time saving

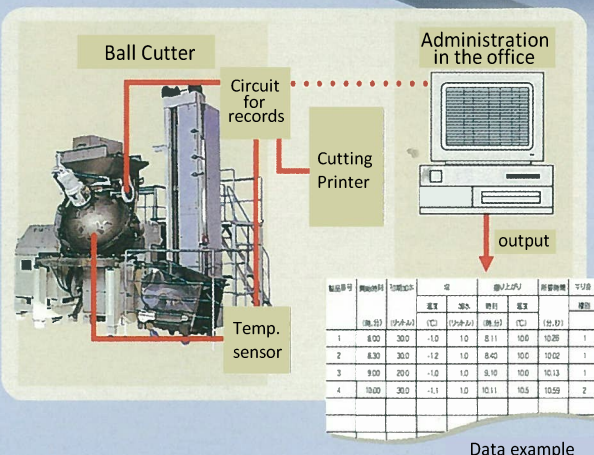


# YANAGIYA supports the system construction with the PC corresponding to HACCP

YANAGIYA suggests the automatic lines in order that the users can use Ball Cutter effectively, supports the temperature control, such as setting of the recorder, PC administration and monitoring, corresponding the quality control system and the mechanical design corresponding the certification of HACCP.

## Administration of production control & operation control

- Required time
- Salt grinding time
- Vacuum time
- Grinding temp.
- No-load operation time
- Starch charge time
- Salt charge temp.
- Lowest temp.



Data example

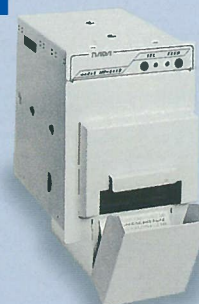
## Temperature record preservation system

Process, time, temperature

### 【Out put example】

01年 1月11日  
開始 9時36分  
塩投入 0.2℃  
3分 0秒  
塩上り 8.5℃  
7分21秒  
終了 9時43分

### 【Use example】



## Automatic raw materials measurement & charge system



It is the automation line to measure all raw materials such as Surimi, additive and seasoning automatically, and charge into Ball Cutter

■ The ball cutter is so arranged that the material is treated inside the spherical vessel. As shown in sketch on the left, the knives are set aslant and the baffle is located at the opposite position and the material inside of this circumstance, the material moves downwards with knife rotation and spreads on all circumferences along the spherical surface. On the other hand, the baffle turns along the inner surface of the vessel and causes the material to be forced to the center of vessel again, the material touches the knife and move downwards. Thus, this movement is repeated. The feature of this ball cutter is in a spherical vessel and in setting the knives aslant. In case of a machine in which a rotating shaft is set horizontally or vertically, it is almost ordinary that the material moves only horizontally or vertically. But in this ball cutter, the material is well stirred and mixed without retuning to initial position by the complicated movement plus gravity.

■ Any intended taste can be produced by changing the program's pattern. Also variable texture can be added. The knives are of two-speed mechanism of 3000 rpm and 1500 rpm for BC1000-BC250, for BC150, 3600 rpm/1800 rpm (60Hz) and 3000 rpm/1500 rpm (50 Hz). (There is no variation due to frequency because of belt driving and number of revolutions may also be changed.) The baffle is of two-speed mechanism and each number of revolutions can be adequately selected in the range of 0~55. (For example, 35 rpm and 50 rpm.) Vacuum is also selected at any degree. The material can be ground with any fineness, gloss, air baffle ingress, elasticity, etc. by combining these elements. Each element is programmed and the products have a uniform product by automatic operation.



3 types for mass production. Manifest strong power in food processing.

World's Largest Ball Cutter

# BC1000

Ball Cutter BC1000

Largest one especially for mass production. It is active in production of a lot of Imitation Crab Meat, hams and sausages.



# BALL CUTTER



BC420

Ball Cutter

# BC700

Ball Cutter BC700

# BC420

Ball Cutter BC420

It has collected such as fine-cutting, grinding, mixing, time saving, etc.

Specification of BC1000/BC700/BC420

type	ball capacity	processing capacity	knife speed	knife motor	total motor power	source	weight	size (mm)
BC1000	1000ℓ	650~750kg	3000:1500rpm(50/60Hz)	200:100KW	219.8 KW440/400V	more than 500KVA	8000kg	4700×4200×4300
BC 700	700ℓ	450~500kg	3000:1500rpm(50/60Hz)	160 : 80KW	180.4 KW440/400V	more than 400KVA	7900kg	4560×3910×3990
BC 420	420ℓ	250~280kg	3000:1500rpm(50/60Hz)	110 : 55KW	124.0 KW440/400V	more than 300KVA	5400kg	3585×3790×3595

※ Size includes Lift Boy, safety fence and control board.

※ Processing capacity is different according to the recipe.



# Three-position system improved workability and performance of Ball Cutter

## Ball Cutter

# BC360

Ball Cutter BC360

All the know-how is integrated

- Charge of materials

There are 2 ways to charge materials by Lift Boy and Block Cutter.

- Energy saving & Cost saving

The knife motor is an automatic variable system which can change revolutions of the baffle according to load current. The energy-saving type can aim at reduction of the running cost.

- Improvement of sanitation

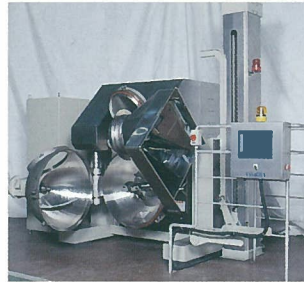
Cleaning is improved since the ball is inclined; the hopper is detachable to also make cleaning easier.



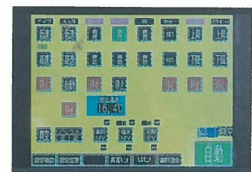
At material charge



At operating/At material discharge (the angle is changeable)



At washing



Touch panel with easy operation

## Ball Cutter

# BCA250

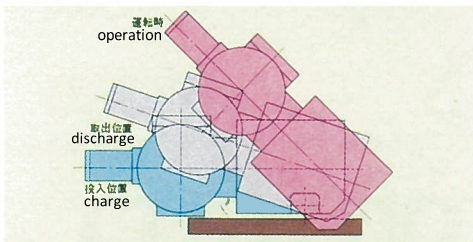
Ball Cutter BCA250

## Ball Cutter

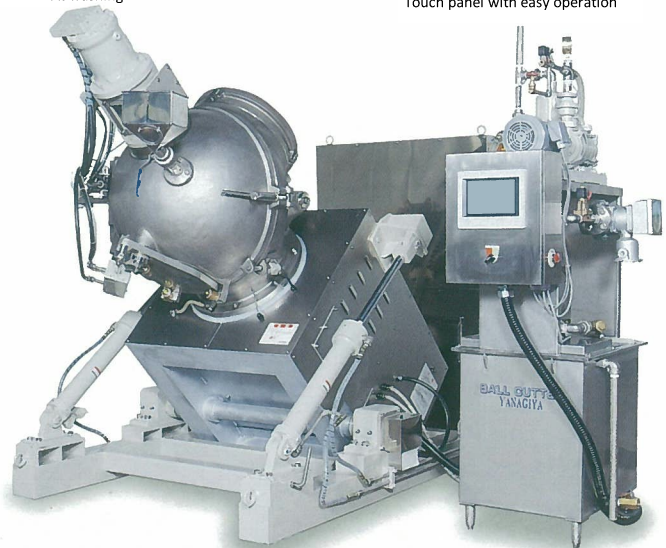
# BC150

Ball Cutter BC150

It has 3 positions at the time of material charge, operation and the material discharge, and is enriched both workability and performance.



3-position system (BCA250 BC150)



BC150



Ball open



material inlet



material outlet

### Specification of BC360/BCA250/BC150

type	ball capacity	processing capacity	knife speed	knife motor	total motor power	source	weight	size (mm)
BC 360	360ℓ	220~250kg	3000:1500rpm(50/60Hz)	75:37KW	85.3 KW220/200V	more than 200KVA	5000kg	4530×3420×3515
BCA250	250ℓ	150~180kg	3000:1500rpm (60Hz)	55:28KW	65.2 KW220/200V	more than 150KVA	3500kg	3065×3305×2220
BC 150	150ℓ	90~110kg	3600:1800rpm (60Hz)	37:18KW	42.3 KW220/200V	more than 100KVA	2000kg	2540×3205×1955

※ Size includes Lift Boy, safety fence and control board.

※ Processing capacity is different according to the recipe.



## Various lineup which can be used for reserch and small-lot production

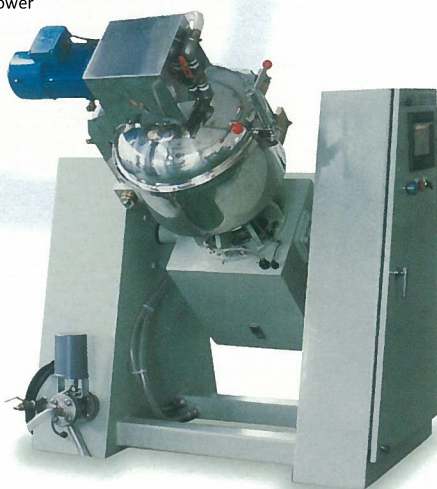
### Ball Cutter

## BC120

Ball Cutter BC120

**Energy-saving design and the failure-diagnosis system**

- Since the rotation of the baffle changes automatically according to the load current of the knife motor, there is little load to the knife motor and big electric power is not consumed at once.
- Failure diagnosis can be done easily since with the failure-diagnosis system.



### Ball Cutter

## BC90

Ball Cutter BC90

**Compact size for small-lot production  
Easy to use with space-saving**

- The optional model which can be used for emulsification of vegetable protein is available.



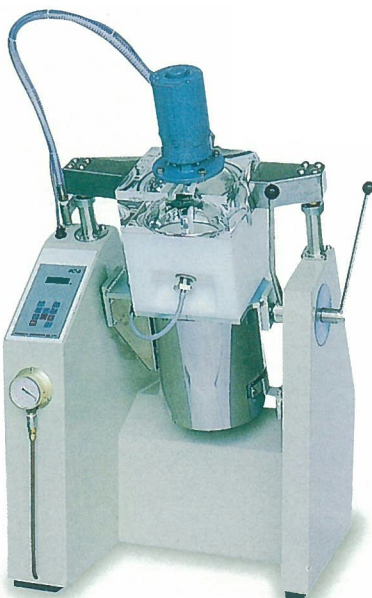
### Ball Cutter

## BC5

Ball Cutter BC5

**Smallest size of Reserch & Development**

- It was miniaturized as a model for R&D.
- Performance is not different from other types of Ball Cutter although the capacity is small.
- The optional clear container can be checked the grinding condition.



### ブロックカッター

## CBM420 CBM250 CBM150

Block Cutter CBM420

Block Cutter CBM250

Block Cutter CBM150

**Easy operation. Durability improved.**

- Durability and silence improved.
- Easy washing and operating.
- Easy Surimi block insert.



#### Specification of BC120/BC90/BC5

type	ball capacity	processing capacity	knife speed	knife motor	total motor power	weight	size (mm)
BC120	120ℓ	80kg	3600:1800rpm(60Hz)	22:11KW	22.4 KW	1000kg	1460×1582×1780
BC 90	90ℓ	35~42kg	3600:1800rpm(60Hz)	22:11KW	23.5 KW	850kg	1155×1185×1695
BC 5	5ℓ	2kg	3600:1800rpm(60Hz)	2.2:1.1KW	2.7 KW	250kg	768× 600×1211

※ Processing capacity is different according to the recipe.

#### Specification of CBM420/CBM250/CBM150

type	belt width	processing capacity	total power	weight	size (mm)
CBM420/250/150	450mm	1200~1800kg/h	2.3 KW	750kg	1670×950×1568(1628/1443)



#### Snake Type

### Feeding Pump

**PUY240**

Feeding Pump PUY240

**PUY230**

Feeding Pump PUY230

### Labor saving of production Line

- The manpower saving & sanitization of the production line can be performed by conveying materials which grinding by Ball Cutter or Silent Cutter to the next process without using human hands.
- The optional Inline Strainer can remove the foreign substances.



#### Rotary Type

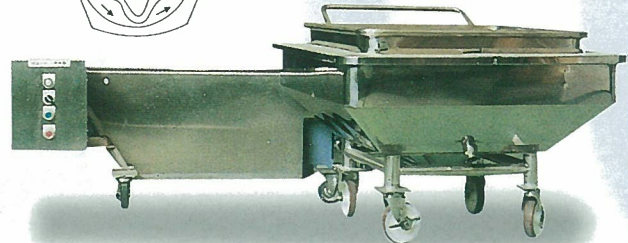
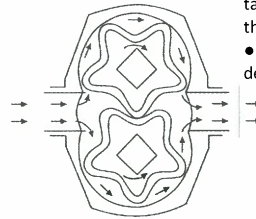
### Feeding Pump

**PUC322**

Feeding Pump PUC322

### Easy dismantling & cleaning

- It is a pump which feed out the super- high viscosity substance by high pressure. Since the feeding is done by high pressure, the long distance feeding is possible and it does not crush the materials contained solids and can feed them.
- The capacity of the hopper is producible on demand.



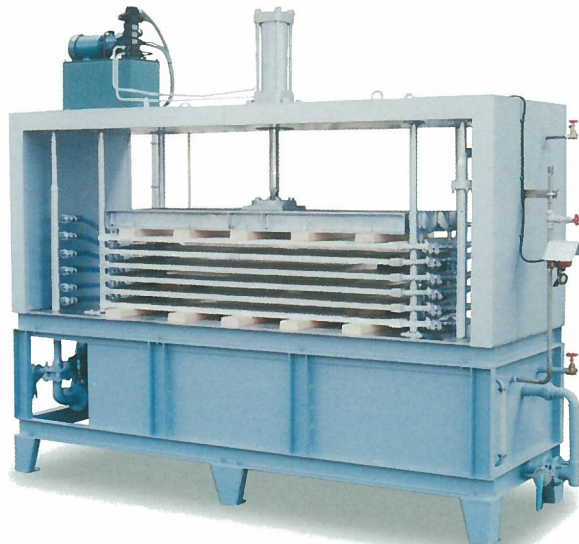
### Thawing Machine

**温水解凍機**

Thawing Machine

### Support the stable grinding

- By the plate thawing method with warm water, it's not affected by environmental change such as Summer or Winter, and stable performance is possible through the year. The initial running cost is cheaper than the high frequency thawing method and more stable grinding by Ball Cutter or Silent Cutter is possible.



その他、  
生産ラインを  
サポートする  
アイテムを  
ラインナップ。

### Starch Mixer

**澱粉混合機**

Starch Mixer

- The starch water and/or the liquid seasoning to Ball Cutter or Silent Cutter can be supplied. Especially the precipitated subsidiary materials like starch is supplied uniformly and full automatic supply by the optional automatic control is also possible.



### Safety Cart

**スリ身用昇降式運搬台車**

Safety Cart

### Easy movement

- No operation skill is needed.
- When the Surimi blocks are piled up, the lift descends gradually according to load. Besides, the lift elevates when the Surimi blocks are taken away.



Stable mixing, fine-cutting and pasting can be performed for a short time.

Ball Cutter  
**BCZ250**  
Ball Cutter BCZ 250

Ball Cutter  
**BCZ150**  
Ball Cutter BCZ 150



BCZ250



**The newest model of air driving system**  
**The new functions from energy-saving & space-saving designs.**

• Air driving system

The existing Ball Cutter is used hydraulic driving for the baffle revolution and the rise-and-fall equipment for the ball, but the new model is used the electric motor for the baffle revolution, and the air driving for the rise-and-fall for the ball and each shutter.

• High efficient and energy saving

When the load of the knife main motor is heavy, it makes the baffle revolution "lower" or "inversion", and then the load is reduced.

On the contrary, when the load of the knife main motor is not heavy, it raises the baffle revolution and realizes the improvement in efficiency.

This leads to the decreased of the running cost.

• 1/2 installation space

• Easy washing

(reverse side of baffle/ball)

• Simple structure

• Easy knife desorption

• Easy ball open & close

• High vacuum pressure structure



BCZ150

Specification of BCZ250/BCZ150

type	ball capacity	processing capacity	knife speed	baffle motor	knife motor	total motor power	source	necessary air	weight	size (mm)
BCZ250	250ℓ	150~180kg	3600:1800rpm(60Hz)	3.7KW	45:22.5KW	51.1KW 220/200V	more than 150KVA	200L/min	2500kg	1840×2745×2023
BCZ150	150ℓ	80~100kg	3600:1800rpm(60Hz)	2.2KW	37:18.5KW	40.9KW 220/200V	more than 100KVA	200L/min	2000kg	1765×2572×1906



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