

BOOSTER TYPE COMPUTER WEIGHER  
**CCW-R-2\*\*B**  
INSTRUCTION MANUAL



 **WARNING**

- Do not carry out installation, operation, service, or maintenance until thoroughly understanding the contents of this manual.
- Keep this manual available at all times for installation, operation, service, and maintenance.

ISHIDA CO., LTD.

## Cautionary Items on Software

Thank you for purchasing the product.

This product is equipped with a special software program to meet user's demands flexibly and promptly. The following contents are to ask the software users for their understandings and the precautions for use.

This software is divided into two main branches:

- (1) Application Program
- (2) OS (Operation System)

Actual operations (such as key input and print) are executed by following the established procedures on the Application Program (1), which is a proprietary program ISHIDA CO., LTD. designed.

The OS (2) has a role to perform the basic function (such as data management) when executing the Application Program. The OS, unlike the Application Program, does not have to be exclusive to each product; rather it can be commonly used to different products. For this reason, a commonly used OS is effective, and ISHIDA CO., LTD. use Windows XP Embedded. The following points need to be noted:

1. Do not copy or transfer (use on other devices) Windows XP Embedded.
2. Do not perform reverse engineering, reverse compiling, reverse assembling, or other translations on Windows XP Embedded.
3. Windows XP Embedded is protected by copyright. Users are licensed to use it, which does not mean that the copyright is transferred to users.
4. ISHIDA CO., LTD. are responsible for the all warranties including the warranty of merchantability and the warranty of fitness for special purpose in the use of Windows XP Embedded. Microsoft Corporation is not liable to any responsibility.

In case that the above four contents are not understood/accepted or followed, ISHIDA CO., LTD. may have to ask to stop using the product.

The actual OS is built in the weigher. Therefore, the above four items are not to be infringed unless the product is disassembled.


\*Windows is a registered trademark of Microsoft Corporation.

## IMPORTANT INFORMATION



**When performing installation, maintenance or inspection of the device, read this manual thoroughly. Be aware of the possible danger of the device and perform operation by following the instructions in this manual.**

1. It is impossible to predict and fully list in an instruction manual all the possible danger which may arise by using this equipment. When operating the equipment or performing operations in any way not specifically described in this manual, please contact the Ishida customer support. Safety countermeasures not specifically described in this manual or indicated on the machine itself should be carefully considered and implemented before installing the device or performing any operation, service, or maintenance procedures.
2. Ishida Co., Ltd. holds the copyright of this manual and the copyright law protects all information contained herein. Any disclosure to third parties or unauthorized copying of the information contained herein is not permitted without prior written approval from Ishida Co., Ltd.
3. Although this manual has been carefully edited, if there are any mistakes or if you have any questions, please check the machine type (model) and machine identification and contact your distributor or Ishida customer support.  
The model and machine identification are indicated on the device plate attached to the device.
4. The information contained herein may be changed without prior notice.

 <b>ISHIDA</b>			
<b>MODEL</b>			
<b>PRODUCT</b>			
<b>WEIGHING RANGE</b>		g ~	g
<b>JOB NUMBER</b>			
<b>NUMBER</b>			
<b>MFG DATE</b>	AC	V	A
<b>POWER SINGLE</b>	AC	V	A
<b>3-PHASE</b>			Hz
<b>FREQUENCY</b>			
<b>ISHIDA CO., LTD.</b>			
<small>MADE IN JAPAN</small>			

Device Plate

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## WARRANTY CONDITIONS

1. Ishida Co., Ltd. only assumes responsibility for repairing or replacing components which are deemed to be defective due to improper materials or manufacturing.  
The measures to be taken for defects with uncertain cause shall be decided by mutual consultation between both parties.  
For detailed warranty information, refer to the warranty statement included with the device.
2. Ishida assumes no responsibility for direct or indirect damage or lost income caused by unforeseeable operational procedures in any improper way or unauthorized modification to the device.
3. The warranty period is stated in the warranty statement.

## OBJECTIVES AND ORGANIZATION OF THIS MANUAL

### 1. Purpose of this manual

This manual is designed to provide users with information about the operation, maintenance, inspection, and installation of the Ishida CCW-R series circular booster type computer weigher.

### 2. How to use this manual and how this manual is organized

Chapters 1 through 4 contain basic information such as safety consideration, structure, and the operation of this device. From chapters 5 and on, more technical information is presented, such as detailed description of the device functions, including various data settings, and maintenance and inspection procedures. In order to acquire information which is necessary for your service, personnel involved in daily production using this device should read the early chapters, and personnel involved in management of the production line or maintenance of the device should read all chapters thoroughly.

The organization of this manual, the contents of each chapter, and the intended readers are described in the table below. All personnel involved in operations with the equipment should select the required information to make effective use of this manual.

#### **Note**

The definition for each intended reader described in the table below is as follows:

- Operator: Personnel who perform basic operations during daily production with the production line (i.e., operator level operations).  
**Do not perform any work in this manual that is targeted to any personnel other than Operators.**
- System administrator: Personnel who, in addition to the operator level operations, perform registration for weighing and adjustment operations (i.e., administrator level operations).  
**Do not perform any work in this manual that is targeted to maintenance engineers or Ishida service engineers.**
- Maintenance engineer: Personnel with specialized knowledge about the equipment who perform maintenance or inspection of the equipment (i.e. installation level operations).  
**Do not perform any work in this manual that is targeted to Ishida service engineers.**
- Ishida Service engineer: Personnel who, in addition to the system administrator level operations, perform tuning when installing the equipment.  
**Unless otherwise noted, there is no limitation in performing any operation described in this manual.**

**OBJECTIVES AND ORGANIZATION OF THIS MANUAL**

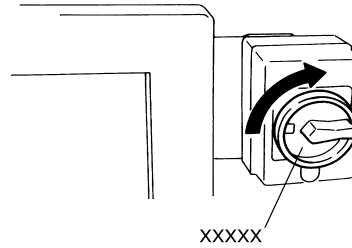
<b>Chapter</b>	<b>Contents</b>	<b>Intention</b>	<b>Intended reader</b>
1. SAFETY PRECAUTIONS	<ul style="list-style-type: none"> <li>• Warning labels and their attached locations</li> <li>• Precautions for the operation of the device</li> <li>• Proper use of the warning terms</li> </ul>	To ensure that the safety maintenance and hazardous areas protocols are thoroughly understood by the personnel dealing with this device. Read this chapter before using the device.	<ul style="list-style-type: none"> <li>• Owner of this device</li> <li>• All users</li> </ul>
2. INTRODUCTION	<ul style="list-style-type: none"> <li>• Usage, features, and specifications of the device</li> <li>• Descriptions of the terms used in this manual</li> <li>• Components of the device and operation outline</li> </ul>	To understand the basic components, outline, usage, application range, and application limit of the device.	<ul style="list-style-type: none"> <li>• All users</li> </ul>
3. OPERATING PANELS	<ul style="list-style-type: none"> <li>• Description of the operation screen contents</li> <li>• General operation instruction for the operation screen</li> </ul>	To understand and master the basic operation method and general operation of the operation screen.	<ul style="list-style-type: none"> <li>• All users</li> </ul>
4. OPERATING PROCEDURES	<ul style="list-style-type: none"> <li>• Outline of the production, preparation work, and actual procedures</li> <li>• Basic adjustment procedures during production</li> </ul>	To understand and master the basic procedures for daily production and the basic adjustment procedures during production.	<ul style="list-style-type: none"> <li>• Operators</li> <li>• System administrators</li> </ul>
5. REGISTERING OF PRODUCTS	<ul style="list-style-type: none"> <li>• Screens for preset functions</li> </ul>	To understand and master the procedures to set product data for weighing a new product.	<ul style="list-style-type: none"> <li>• System administrators</li> </ul>
6. FUNCTIONS OF THE OPERATION SCREENS	<ul style="list-style-type: none"> <li>• Functions of each screen</li> </ul>	To understand the functions and operating procedures of each operation screen, and understand and master the advanced operations.	<ul style="list-style-type: none"> <li>• Operators</li> <li>• System administrators</li> </ul>
7. USEFUL FUNCTIONS	<ul style="list-style-type: none"> <li>• Advanced operations</li> </ul>	To understand and master the functions of the advanced operations.	<ul style="list-style-type: none"> <li>• Operators</li> <li>• System managers</li> </ul>
8. OPTIONAL FUNCTIONS	<ul style="list-style-type: none"> <li>• Count set weighing</li> <li>• Parent and child weighing</li> </ul>	To understand and master the optional functions.	<ul style="list-style-type: none"> <li>• System administrators</li> </ul>
9. CLEANUP PROCEDURES	<ul style="list-style-type: none"> <li>• Cleaning procedures and cycle of the components</li> </ul>	To understand installation, removal, and cleaning procedures of the components in order to prevent foreign matter from entering the product and to maintain the hygiene of the device.	<ul style="list-style-type: none"> <li>• Operators</li> <li>• Maintenance engineers</li> </ul>
10. MAINTENANCE AND INSPECTION	<ul style="list-style-type: none"> <li>• Daily inspection and periodical inspection</li> <li>• Adjustment of components</li> </ul>	To understand the inspection and adjustment procedures for the components in order to maintain the device in good condition and prevent loss of production.	<ul style="list-style-type: none"> <li>• Operators</li> <li>• Maintenance engineers</li> </ul>
11. CAUSES AND ACTIONS FOR ERRORS AND FAILURES	<ul style="list-style-type: none"> <li>• Error display and action</li> <li>• Malfunction of device, cause and action</li> </ul>	To understand and master the handling method and action for the trouble experienced during operation, in order to enhance the operating efficiency of the device.	<ul style="list-style-type: none"> <li>• System administrators</li> <li>• Maintenance engineers</li> </ul>
12. INSTALLATION	<ul style="list-style-type: none"> <li>• Installation conditions, transportation and lifting, and installation procedures</li> </ul>	To understand the appropriate installation environment, safe transport and relocation of the device, and secure installation procedures.	<ul style="list-style-type: none"> <li>• Maintenance engineers</li> <li>• Ishida service engineers</li> </ul>
13. APPENDIX	<ul style="list-style-type: none"> <li>• Board location of the electrical unit</li> <li>• Overall wiring diagram and block wiring diagram</li> </ul>	To provide reference information for repairing the device or replacing parts.	<ul style="list-style-type: none"> <li>• Maintenance engineers</li> <li>• Ishida service engineers</li> </ul>
END OF THE MANUAL	<ul style="list-style-type: none"> <li>• Index</li> </ul>	To search necessary information with a keyword used in this manual.	<ul style="list-style-type: none"> <li>• All users</li> </ul>

### 3. Illustrations and notations used in this manual

#### 1. Illustrations of the equipment

The illustrations used to describe the operation procedures are drawn in the most general shapes.


The actual equipment may differ slightly from the illustrations.



#### 2. Descriptions for key operations









Most operations of the equipment are performed by touching the virtual keys displayed on the operation screen of the remote control unit.

In this manual, the operations by touching these keys displayed on the screen are described as follows:

Example: Press the [XXX] key .

#### 3. Notations used in this manual

In this manual, the following notations are used in order to make understanding of the information easier.

Notation	Description
	Is used for imminent hazardous conditions that could cause death or serious injury, if not prevented.
	Is used for hazardous conditions that could cause death or serious injury, if not prevented.
	Is used for hazardous conditions that could cause light or moderate injury, or that could damage equipment or devices, if not prevented.
	Is used for cautionary or important information to be noted or emphasized.
	Is used to indicate what you must not perform.
	Is used to indicate what you must perform.
	Is used to indicate reference information for operations or information which helps understanding of the device.
	Is used to indicate sections to be referred to during operations.



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# 1 SAFETY PRECAUTIONS

## 1.1 Summary

This chapter describes the proper use of the warning terms, precautions, and warning labels that are attached to the device. The warning terms must be observed by the owners and personnel who install, operate, maintain, and inspect this device.



- **When installing, operating, maintaining, and inspecting the device, always follow the instructions and warnings found within this manual.**
  - **When there are any questions or when anything is unclear, contact the distributor or Ishida customer support staff. Do not proceed with any operations until the required instructions are given.**
- 

### <Contents>

- Warning labels and their attached locations
- Precautions for the operation of the device
- Proper use of the warning terms

### <Purpose>

- To ensure that the safety maintenance and hazardous areas protocols are thoroughly understood by the personnel dealing with this device.

### <Intended reader>




- Owner of this device
- All users

## 1.2 Warning Terms and Meaning

In case the warning indications shown in the instruction manual and the warning labels attached on the device unit are not followed, degree of danger (or scale of accidents) is divided into the following three levels.

Understand the meaning of the warning terms, and follow the contents (instructions) of this manual.




**Table 1-1 Warning Term Descriptions**

<b>Warning Terms</b>	<b>Description</b>
 <b>DANGER</b>	Used for imminent hazardous conditions that could cause death or serious injury, if they are not avoided.
 <b>WARNING</b>	Used for hazardous conditions that could cause death or serious injury, if they are not avoided.
 <b>CAUTION</b>	Used for hazardous conditions that could cause light or moderate injury, or damage equipment or devices, if they are not avoided.







## 1.3 General Precautions

This section describes the general precautions, which need to be observed for safe device operations.




### DANGER

-  When working on the device with the main body cover open, do not touch the current-carrying parts.  
Failure to do so may cause an electrical shock.
-  All electrical work must be performed by electrical contractors or licensed electrical engineering technicians.
-  All electrical maintenance and inspections must be performed by qualified maintenance electricians.  
Maintenance and inspections performed by an unqualified electrician may result in an electrical shock and device malfunction.

### WARNING

-  Do not touch any switches or buttons with wet hands.  
Doing so may cause an electrical shock if the device is not properly grounded or if there is an electric leakage.
-  Do not operate the device with the covers removed.  
Before operating the device, make sure that each cover is installed properly.  
Failure to do so may result in injuries caused by touching the moving parts during operations.
-  Operators must tie up long hair and wear a hat, proper clothing and shoes before operation.  
Failure to do so may result in injuries caused by being caught in the rolling portions of the device.
-  For maintenance and inspections, unless instructed, the operator must turn OFF and lock the main power switch and keep the key in his possession during the work.  
This is to prevent other personnel from starting the device, which may cause an electrical shock or injury.
-  When performing maintenance and inspections, turn the main power switch OFF and wait at least three minutes before starting the work. The device's main body has a portion where electricity is stored even after the power is shut off. When other devices are connected before and after this device, shut off the power for all of the devices.  
Failure to do so may cause an electrical shock.
-  When maintenance and inspections need to be performed with the main power switch turned ON, clearly indicate to other operators that maintenance and inspections are in progress in order to prevent other operators from accidentally starting the device.

 **CAUTION**


-  Do not operate the operation panel of the remote control unit using a pointed object such as a ball point pen or mechanical pencil.  
A pointed object may damage the operation panel. Use fingers to press the operation panel of the remote control unit.
-  When performing maintenance and inspections for the upper part of the device, use a proper scaffold or stepladder in order to avoid a fall.
-  When operating the device, make sure that tools or other objects are not on the device.  
If the objects fall on the moving parts, they may damage the device.









## 1.4 Special Precautions

This section describes the precautions which need to be observed for safe operation, specifically for this device. Follow the special precautions below along with the general precautions.

### WARNING

-  When cleaning the device, the operator must turn OFF and lock the main power switch and keep the key in his possession during the work.  
This is to prevent other personnel from starting the device, which may cause an electrical shock or injury.

### CAUTION

-  Do not share the power source with other devices that may emit noises.  
Failure to do so may cause malfunction or damage to the device.
-  Do not place any foreign matter such as insecticide or liquid inside the protected portions including the device main body, terminal boxes, and motor boxes.  
Doing so may cause malfunction or damage to the device.
-  Do not apply an excessive load to the weigh hopper.  
Doing so may damage the weighing portion.
-  Route the wiring in the way that power voltage fluctuation due to load change does not exceed  $\pm 10\%$ .  
Failure to do so may cause malfunction or damage to the device.
-  Depending on food materials such as raw meat and cut vegetables, the risk of an unhygienic condition may occur through the usage of the device.  
Clean the device properly depending on product type and processing methods. For cleaning methods, read and thoroughly understand Chapter 9 and follow the instructions.
-  When the specification of your machine is WP(waterproof), do not turn off the air supply power. This maintains the supply of dry air to the main body of the machine.  
Failure to do so may cause condensation and erosion.

## 1.5 Warning Label

Warning labels are attached at the locations that require special cautions. Take sufficient time to familiarize yourself with the detailed locations and precaution details of these labels.

### 1.5.1 Warning Label Handling

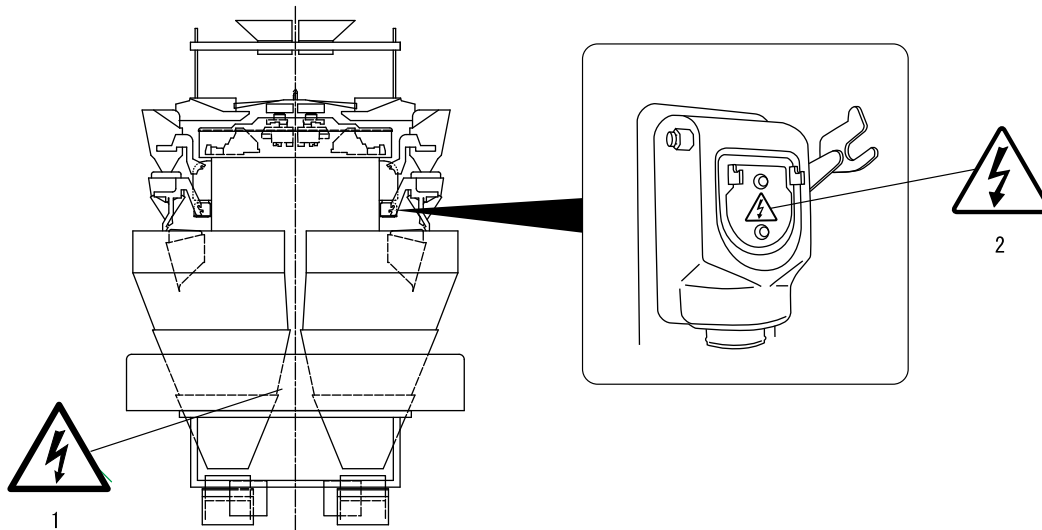
Check if all the warning labels are legible. If any letters or illustrations are unclear, clean or replace such labels.

Clean the warning labels using a cloth, water, and neutral detergent.  
Do not use organic solvents or gasoline.

If the warning labels are damaged, lost, or illegible, replace the labels.  
Check the machine type (model) and machine identification, and contact the distributor or Ishida customer support.

### 1.5.2 Attached Locations of Warning Labels

The locations of attached warning labels are shown in Figure 1-1 Attached Locations of Warning Labels.



**Fig.1-1 Attached Locations of Warning Labels**

**Table 1-2 Attached Locations of Warning Labels**

No.	Attached Location	Precaution Detail
1	Front and back of the device	Electrical shock
2	Two drive units	Electrical shock

## 1.6 Power Supply Shut Off and Indication

This section describes the power supply shut off and its indication.

**⚠ WARNING**

- Before performing maintenance and inspections, shut off the power supply in order to secure operator safety.
- Note that even if the main power switch is turned to the OFF position, the main body circuit to the main power switch is on.

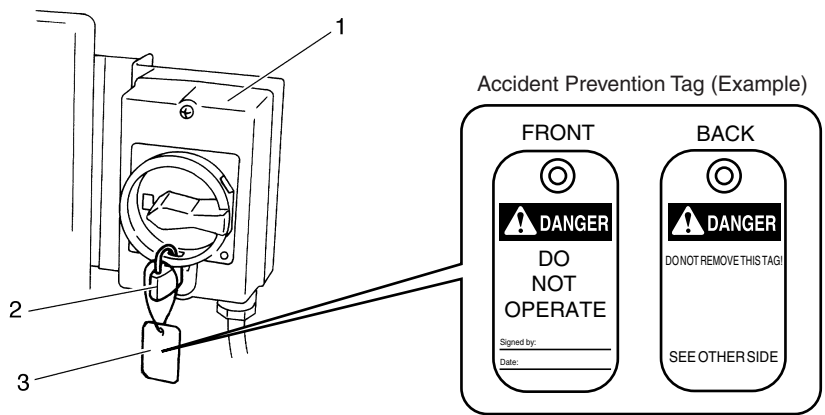
The following is recommended in order to prevent other operators from turning on the power supply during the work:

- Lock the power switch in the OFF position.
- Create an accident prevention tag and place it at the power shut-off location.

For the placement of a main power switch lock and accident prevention tag, refer to the following.

**NOTE**

- A main power switch lock and accident prevention tag are to be prepared by customers.



**Fig.1-2 Main Power Switch**

**Table 1-3 Names of Main Power Switch Parts**

No.	Name
1	Main power switch
2	Lock
3	Accident prevention tag



## 2 INTRODUCTION

### 2.1 Summary

This chapter describes the terms specifically used in this instruction manual, each head condition, components of the device, and operation outline.

Note that this instruction manual is composed based on the device equipped with the software of the following program numbers:

- DMU: PROGRAM No. T0076H
- RCU: PROGRAM No. W0032Y

#### <Contents>

- Usage, features, and specifications of the device
- Descriptions of the terms used in this manual
- Components of the device and operation outline

#### <Purpose>

To understand the basic components, outline, usage, application range, and application limit of the device.

#### <Intended reader>

- All users

### 2.2 Intended Use of the Device

This device is intended to weigh and adjust product weight to a set value through computer-controlled combinational weighing.

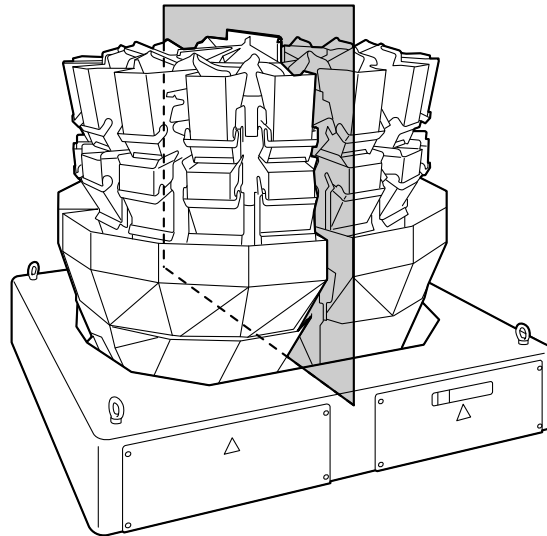
The device can be used as a weighing instrument for a wide range of products from food such as snacks and candies to machine parts. \*1

\*1 Application should be limited to products approved by Ishida Co., Ltd. for design reasons.

## 2.3 Features of the Device

The device consists of two computer weighers, which can be used as follows:

### < Use as a double weigher (Use as two weighers)>

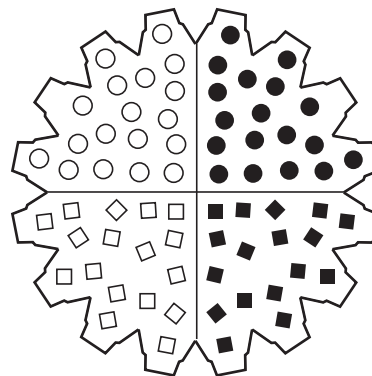


1. The device can be divided into two weighers and weigh two different products simultaneously.  
Example: Weigh 100g of potato chips on one weigher and 80g of corn snack on the other.
2. The device can be divided into two weighers and weigh the same product with the same weighed value simultaneously.  
Example: Weigh 100g of potato chips on each weigher.
3. The device can be divided into two weighers and weigh the same product with different weighed values simultaneously.  
Example: Weigh 90g of potato chips on one weigher and 150g on the other.
4. The device can be divided into two weighers and operated separately as independent weighers.  
Example: One weigher is terminated for set-up change etc. and the other is operated.

### < Use as a mix weigher (Use as a single weigher) >

With the dispersion divided, the device can be used as a mix weigher which supplies and weighs a different product from each dispersion section.

Example: Weigh 50g of each candy with different flavors.



**TIP**

- It is also possible to use the device as a double mix weigher by setting the device as a double weigher and dividing each weigher into two sections.
- 

## 2.4 Specifications of the Device

This section describes the specifications of the device. Understand the details of this section thoroughly before operating the device.

### 2.4.1 Standard Specifications

For the specifications of your own device, refer to the separately attached specifications. For standard specifications, refer to the product catalogue.

### 2.4.2 Outside Dimension

For the outside dimensions of your own device, refer to the separately attached drawing. Design and outside dimensions are subject to change without notice.

### 2.4.3 Operation Environment

Use the device within the operation environment below in order to operate the device effectively and maintain precision as well as to perform weighing safely:

- Indoors
- Ambient temperature between 0 and 40 deg C
- Ambient relative humidity between 35% and 85% (No condensation allowed)
- Steady location without floor vibration, where the device can be horizontally stable
- Sufficient maintenance space around the device
- No source of radio interference or radio equipment in the vicinity

## 2.5 Term Description

The following specific terms are used in this instruction manual.

**Table 2-1 Term Descriptions**

<b>Term</b>	<b>Description</b>
Products	The products weighed with this device.
Infeeder	A front-end device that supplies products to this device.
Packer	A post-process device that packages products after being weighed by this device.
Double discharge	An operation method where one weigher is used as two weighers. For instance, divide the device into two channels, heads 1 to 8 as C1 and heads 9 to 16 as C2, and operate them with different target weights and discharge timings.
Mix weighing	An operation method where multiple products are weighed with each target weight and discharged simultaneously. The number of section divisions can be two, three (optional), or four (optional) depending on the specifications of the device.
Section	The name of the divided head for mix weighing. For instance, when performing double mix weighing with a single CCW-R-216 device, heads 1 to 8 belong to section 1, heads 9 to 16 belong to section 2, and these are referred to as S1 and S2.
Channel	The name of the divided head for double weighing. For instance, when performing double weighing with a single CCW-R-216 device, heads 1 to 8 belong to channel 1, heads 9 to 16 belong to channel 2, and these are referred to as C1 and C2.
Span	To set the span adjustment weight as a standard weight after zero adjustment.
Drain	To drain products remaining in the device without weighing.
Weighed value	Weight that is combinationally weighed.
Target Weight	The target weighed value set for each preset.
Upper Weight Limit	An upper permissible limit, which is relative to the target weight.
Lower Weight Limit	A lower permissible limit, which is relative to the target weight.
Head	A collective term for the radial trough, pool hopper, weigh hopper, booster hopper and weigh drive unit.
Infeed control	A function to turn ON/OFF the feed signals to the infeeder.
Interlock signal (IS)	A product discharging request signal transmitted from the packer to this device.
Overweight	To exceed the upper limit set for the weighed value.
Underweight	To be below the lower limit set for the weighed value.
Proper weight	To be between the upper and lower limits set for the weighed value.
Discharge completion signal (DS)	A signal to inform the outside that the product is discharged.
Overscale	The condition where a product with the weight of (set value + upper limit) or more is supplied to the weigh hopper, or where the weight within the weigh hopper exceeds the head weighing range.
STAGGER	A discharge method where discharge timing is staggered and divided into groups in order to prevent the product from jamming at the discharge chute and packer slot when the products are discharged from selected weigh hoppers all at once.

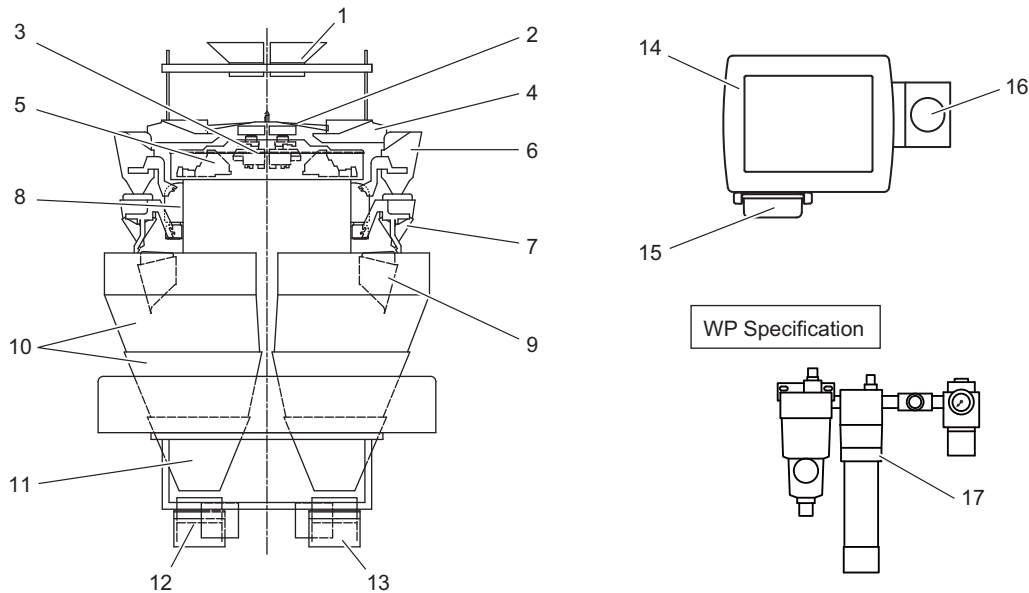


**Table 2-1 Term Descriptions (Continued)**

<b>Term</b>	<b>Description</b>
Master mode	A mode in which, when this device is interlocked with the packer, it discharges upon receiving a (continuous) signal from the packer.
Slave mode	A mode in which, when this device is interlocked with the packer, it discharges upon receiving a one shot signal from the packer.
Stroke On Demand mode	A mode in which, when this device is interlocked with the packer, it discharges by transmitting a weighing completion signal to the packer, while in response the packer transmits an interlock signal.
Bag On Demand mode	A mode in which, when this device is interlocked with the packer, self-calculation is performed until the device discharges a proper amount of product based on a signal from the packer, and a discharge completion signal is transmitted to the packer.
AFV	Stands for Anti Floor Vibration mechanism. With this function, even in a floor vibration environment, the AFV cell detects vibrations, and errors caused by the vibration can be canceled from the load cell output for weighing.
Range	The maximum weight that can be weighed.
Auto zero adjustment	To automatically adjust weight during operations after selecting a head with less operation frequency among the combinationally selected weigh hoppers, so that the weight display indicates zero.
Preset	Product data on weighing, registered in advance.
Combination	A calculation method where small-divided, several weighed values are combined, and the most favorable combination is used as a weighed value to be discharged.
Full scale	A condition where the weighing sensor value exceeds a permissible load due to external factors.
Multiple dump weighing	A weighing method where the target weight is obtained through multiple dumps, when a large amount of product exceeding the weighing range is weighed or when a product overflows from the weigh hopper if weighed all at once.

## 2.6 Components of the Device

This section describes the component names and functions of the device.



**Fig.2-1 Device Overview**

**Table 2-2 Descriptions of Components**

No.	Name	Function and Description
1	Inlet chute (Optional)	A product feeding inlet. This collects the products supplied from the infeeders to the center of the dispersion table.
2	Dispersion table	Supplies products from the inlet chute to the radial troughs.
3	Dispersion feeder (DF)	Vibrates the dispersion table. It is interlocked with the weight sensor and controls the supply by weighing products on the dispersion table.
4	Radial trough	Supplies products from the dispersion table to the pool hoppers.
5	Radial feeder (RF)	Vibrates the radial troughs.
6	Pool hopper (PH)	Temporarily pools products supplied from the radial troughs. It opens and closes in accordance with the weighing operation and supplies products into the weigh hoppers.
7	Weigh hopper (WH)	Weighs supplied products. It opens and closes in accordance with the combinational weighing result and supplies products into the collection chutes or booster hoppers.
8	Weigh drive unit (WDU)	Activates open/close of the pool hopper, weigh hopper, and booster hopper. It weighs products in the weigh hopper.
9	Booster hopper (BH)	Temporarily pools products when the hopper is not included in the combination as a result of the weigh hopper calculation.
10	Collection chute	Collects products discharged from the weigh hopper or booster hopper and supplies them to the discharge chute.
11	Discharge chute	Collects products supplied from the collection chute and supplies them to the following processing device such as the timing hopper and packer.

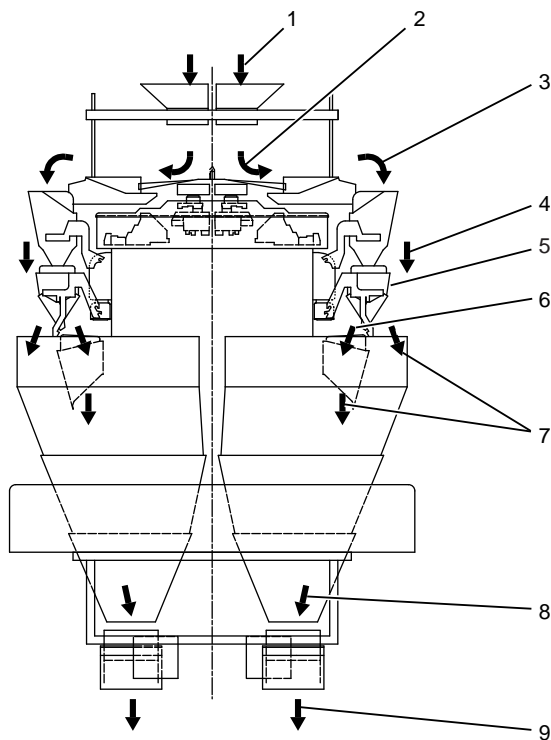
**Table 2-2 Descriptions of Components (Continued)**

<b>No.</b>	<b>Name</b>	<b>Function and Description</b>
12	Timing hopper (TH) (Optional)	Temporarily pools products passed through the discharge chute and discharges them in accordance with the request from the following processing device such as the packer.
13	Timing hopper drive unit (Optional)	Activates open/close of the timing hopper.
14	Remote control unit (RCU)	Performs operation and required setting of the device.
15	Printer	Prints out the total information, including the weighing result.
16	Main power switch	Turns on/off the power supply to the device.
17	Air Dryer	Supplies dry air to the inside of the main body.

## 2.7 Operation Outline

This section describes the operation outline from weighing and combining the product supplied to the inlet chute to discharging from the timing hopper.

### Product flow outline



**Fig.2-2 Operation Outline**

1. The product from the infeeder is supplied to the inlet chute.
2. The product from the inlet chute is supplied to the center of the dispersion table and distributed to the radial troughs.
3. The product from the radial troughs is supplied to the pool hopper.
4. In accordance with the request from the weigh hopper, the product is supplied to the weigh hopper.
5. The product is weighed in the weigh hopper.
6. The weighed product is temporarily pooled in the booster hopper.
7. In order to maintain the closest value to the set weight while preventing underweight, the calculation unit selects an optimized combination of the weigh hoppers or booster hoppers, and the products are discharged.
8. The product is collected at the collection chute and discharged from the discharge chute.
9. When the timing hopper is installed, the timing hopper opens and discharges the product in accordance with the discharge request from the packer.

## 3 OPERATING PANELS

### 3.1 Summary

This chapter describes the remote control unit components and functions required for the device operations, and the basic operation method and display descriptions of the operation panel.



- **Thoroughly understand the contents of this chapter before operating the device.**
- 

**NOTE**

- Refer to “4 OPERATION PROCEDURES” for the operation method.
- 

**< Contents >**

- Description of the operation screen contents
- General operation instruction for the operation screen

**< Purpose >**

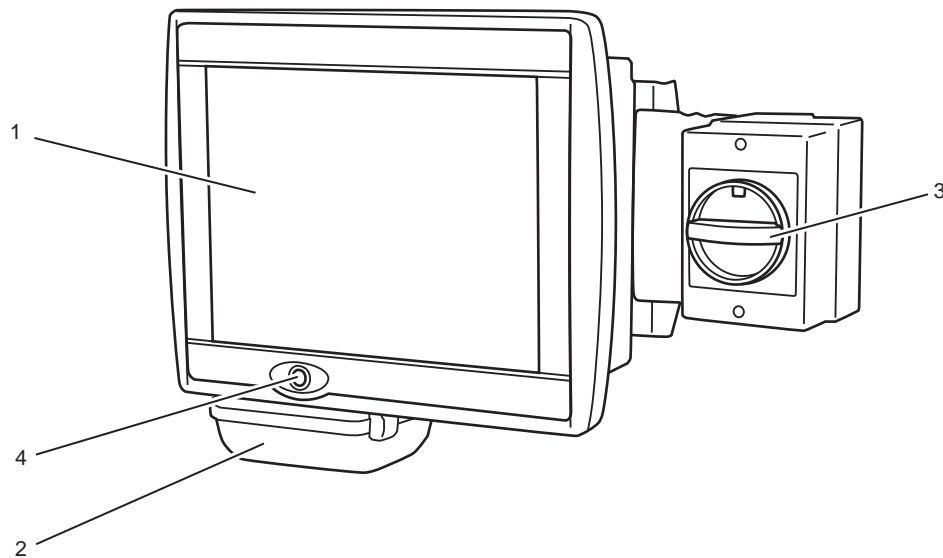
To understand and master the basic operation method and general operation of the operation screen.

**< Intended reader >**

- All users

## 3.2 Items and Functions of Remote Control Unit

This section describes the component names and functions of the remote control unit, using the figure below.



**Fig.3-1 Remote Control Unit Overview**

**Table 3-1 Descriptions of Remote Control Unit Functions**

No.	Name	Function
1	Operation Panel	Used to perform setting and displaying of the menu.
2	Printer	Prints out the production summary and the setting details of individual products.
3	Main power switch	Turns the main power supply to the device ON/OFF.
4	Camera	Takes photos of the products.

### 3.3 Operation Panel and Data Input

The device is operated with the operation panel screens.  
 The operation panel is a touch screen.

**CAUTION**

- Use fingers to press the operation panel. Using a pointed object such as a ball point pen may damage the operation panel.

#### 3.3.1 Operation Panel

This section describes the operation panel screens using the [Main Menu] screen that will be displayed when the power is turned on.

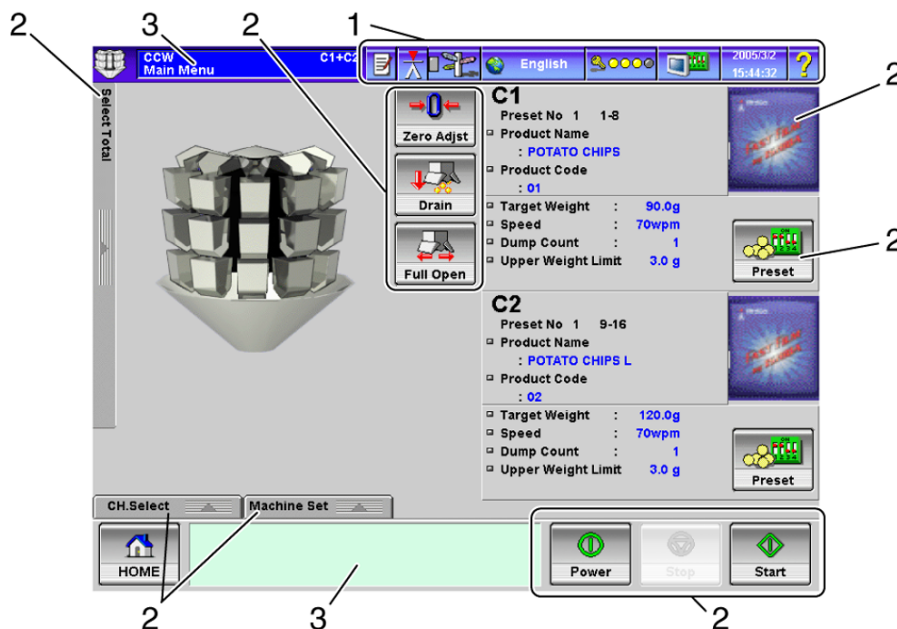


Fig.3-2 Operation Panel

Table 3-2 Functions of the Operation Panel

No.	Name	Function
1	Upper Setting Bar	Always displayed on the upper part of the screen. It is used to set the operation environment of the panel.
2	Menu key	Displayed with a three-dimensional frame. Pressing this part allows for switching of screens and operating of the device.
3	Status display	Displayed with a flat frame. This part displays current operation status and error details.






**NOTE**

- The screen display above is an example. Menu keys and display areas differ depending on each menu and operation level.

**<Menu keys>**

The operation keys include the following along with the standard keys.

**Table 3-3 Types and Display Examples of the Main Operation Keys**



Key Type	Display Example	Function
Lamp key		Each time this key is pressed, the lamp will light up or turn off. This key function is effective while the lamp is on.
Content enter key		Each time this key is pressed, the keyboard or numeric keypad will be displayed. Use the keyboard or numeric keypad to input letters and figures for setting. (Refer to “3.3.2 Data Input”.) The set letters and figures will be reflected on the key.
Drop-down key		Each time this key is pressed, the selection item list will be displayed. Press a key from the displayed list to select, and the list will be closed. The selected item will be reflected.
Pop-up key		Each time this key is pressed, the pop-up list will be displayed. Press a key from the displayed list to select, and the list will be closed. Shapes of the keys and pop-up lists differ depending on the keys. Some keys will reflect the selection result on the key.
Radio button		Selection items are displayed as buttons. Press one of the buttons to select. The selected button will become pushed in and lit in blue.



<Page display keys>

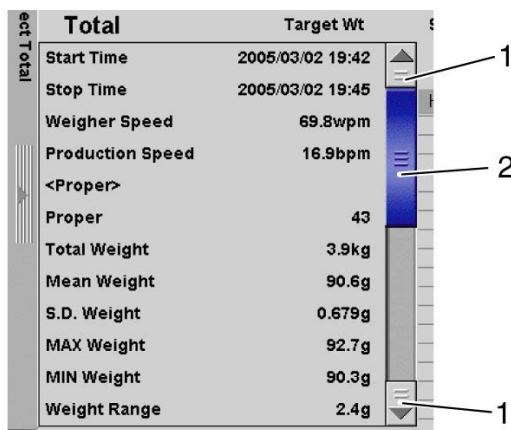
When the operation screen extends to multiple pages, switch the pages by using the following operation keys.

**Table 3-4 Display Examples of Page Selection Keys**

Key Type	Display Example	Function
Index		Displayed on the right side of the screen for the items such as preset. This is used when there are many screens. When one of the keys is pressed, the relevant screen will be displayed.
Tab		Displayed on the bottom of the screen. This is used when there are only a few screens. When one of the keys is pressed, the relevant screen will be displayed.



<Scrolling the screen>

When there are many display items in a menu, the hidden part can be displayed by scrolling the screen. The scroll key and scroll bar are displayed in the upper/lower or right/left direction depending on the displayed screen.



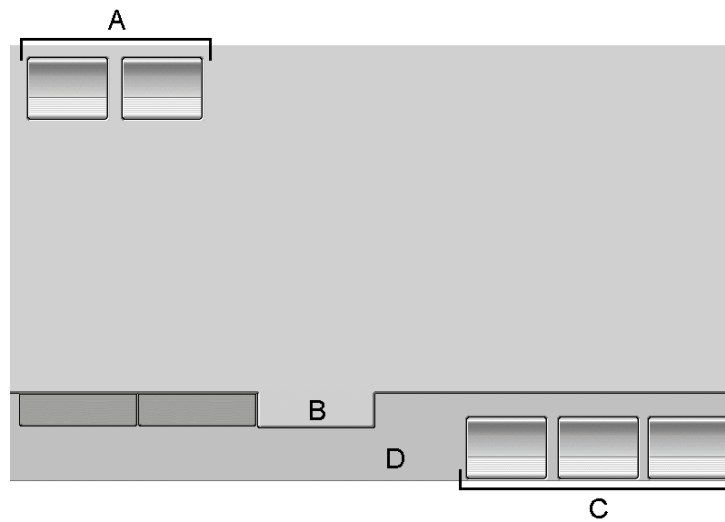
**Fig.3-3 Scroll Display**

**Table 3-5 Keys and Functions of the Scroll Display**

No.	Name	Function
1	Scroll key 	Scrolls the screen in the direction indicated by the key, while pressed.
2	Scroll bar 	Scrolls the screen quickly by holding and moving vertically or horizontally. The length and location of the scroll bar indicates the proportion and position of the viewable screen relative to the entire screen.

### <Hierarchic structure of the screen>

The screens with multiple pages have the following hierarchic structure.

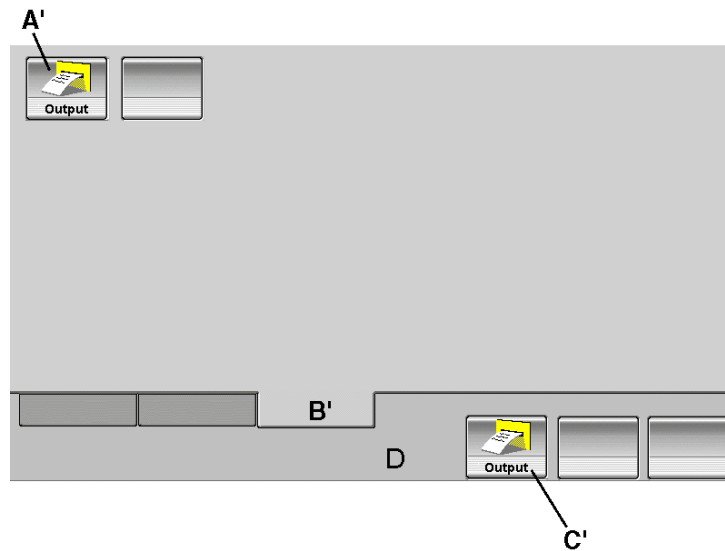


**Fig.3-4 Overview (1)**

Key A belongs to the tab B screen.

Tab B as well as the other displayed tabs, and key C, belong to screen D.

Therefore, the key C function applies to tab B and all other tab screens displayed.



**Fig.3-5 Overview (2)**

When output key A' is pressed, data from tab B' will be output.

When output key C' is pressed, data from tab B' and all other tab screens displayed will be output.

### 3.3.2 Data Input

When inputting figures and product names, use the [Numeric Keypad] screen and [Keyboard] screen. The [Numeric Keypad] screen and [Keyboard] screen are displayed when data input is required. Use the [Numeric Keypad] screen to input figures and the [Keyboard] screen to input alphanumeric characters.

**NOTE**

- In this manual, the term “set” is used to describe the operations from inputting figures, letters, and symbols using the [Numeric Keypad] screen and [Keyboard] screen to saving the data to the device by pressing the [Return] key.
-

### 3.3.2.1 Inputting Figures

When inputting figures, the [Numeric Keypad] screen will be displayed.

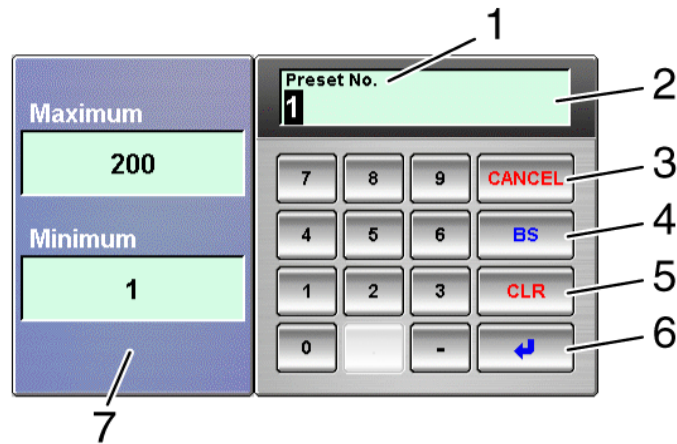







Fig.3-6 [Numeric Keypad] Screen

Table 3-6 Descriptions of [Numeric Keypad] Screen Functions

No.	Name	Function
1	Set item display area	Displays the current input item.
2	Input display area	Displays the input figures.
3	[CANCEL] key 	Cancels the input from the numeric keypad. When pressed, the display returns to the previous screen without any input.
4	[BS] key 	Deletes a single displayed figure.
5	[CLR] key 	Deletes the displayed figures all at once.
6	[Return] key 	Confirms the input figures and returns to the original screen.
7	Entry guide display area	Displays the allowed setting range.

For setting using the [Numeric Keypad] screen, follow the procedures below.

- Press the numeric keys.
  - ▶ The input figure is displayed in the input display area.
- Press the [Return] key .
  - ▶ The input figure will be confirmed.
  - ▶ The [Numeric Keypad] screen disappears, and the display returns to the previous screen.

### 3.3.2.2 Inputting Alphanumeric Characters and Symbols

When the alphanumeric characters and symbols are input, the [Keyboard] screen will be displayed.

#### <Keyboard>

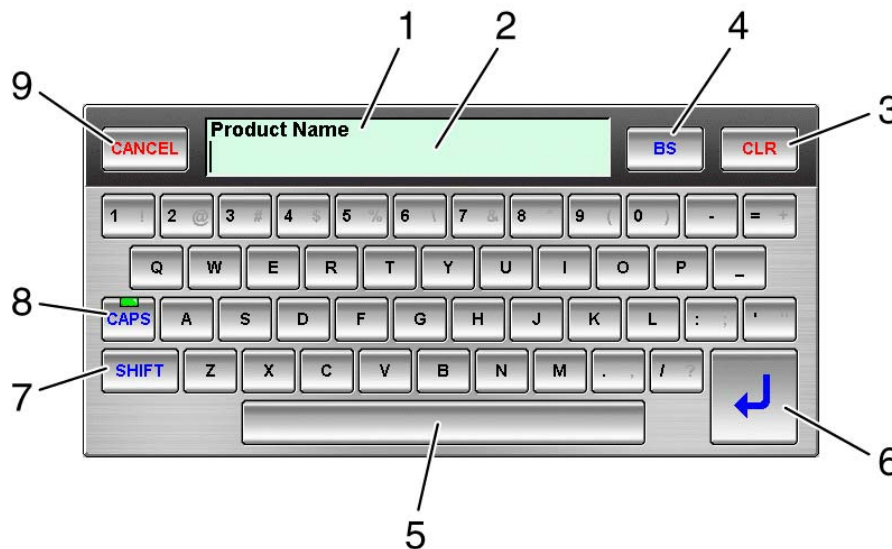









Fig.3-7 [Keyboard] Screen


Table 3-7 Descriptions of [Keyboard] Screen Functions

No.	Name	Function
1	Set item display area	Displays the current set item.
2	Input display area	Displays the input alphanumeric characters and symbols.
3	[CLR] key 	Deletes the displayed alphanumeric characters and symbols all at once.
4	[BS] key 	Deletes a single displayed alphanumeric character or symbol.
5	[Space] key 	Inputs a single blank character.
6	[Return] key 	Confirms the input alphanumeric characters and symbols and returns to the original screen.
7	[SHIFT] key 	Switches two letters on the same key. Alphanumeric characters and symbols that can be input are displayed in black.
8	[CAPS] key 	Switches the uppercase and lowercase. When the [CAPS] key lamp is on, uppercase characters can be input.

**Table 3-7 Descriptions of [Keyboard] Screen Functions (Continued)**

No.	Name	Function
9	[CANCEL] key 	Cancels the input from the keyboard. When pressed, the display returns to the previous screen without any input.

For setting using the [Keyboard] screen, follow the procedures below.

1. Press the alphanumeric keys and/or symbol keys.
  - ▶ The input alphanumeric characters are displayed in the input display area.
2. When inputting symbols, press the [SHIFT] key  and then press keys to be enter.

3. Press the [Return] key .

- ▶ The input alphanumeric characters are confirmed.
- ▶ The [Keyboard] screen disappears, and the display returns to the previous screen.

### 3.3.3 Correcting Confirmed Contents

When the confirmed figures, letters and symbols need to be corrected, repeat the input using the [Numeric Keypad] screen and [Keyboard] screen.

## 4 OPERATION PROCEDURES

### 4.1 Summary

This chapter describes emergency stop procedures, production outline, production procedures, and each operation during production.



- **Thoroughly understand the contents of “3 OPERATING PANELS” before operating the device.**
- 

#### <Contents>

- Outline of the production, preparation work, and actual procedures
- Basic adjustment procedures during production

#### <Purpose>

To understand and master the basic procedures for daily production and the basic adjustment procedures during production.

#### <Intended reader>

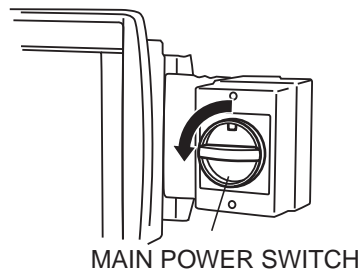
- Operators
- System administrators

## 4.2 Emergency Stop and Restart

Perform the following procedures when stopping the device in the event of an emergency and then restarting it.

### Emergency stop procedures

1. Turn OFF the main power switch on the side of the remote control unit.
  - ▶ Production is terminated.
  - ▶ The display of the control panel disappears.



**Fig.4-1 Main Power Switch**

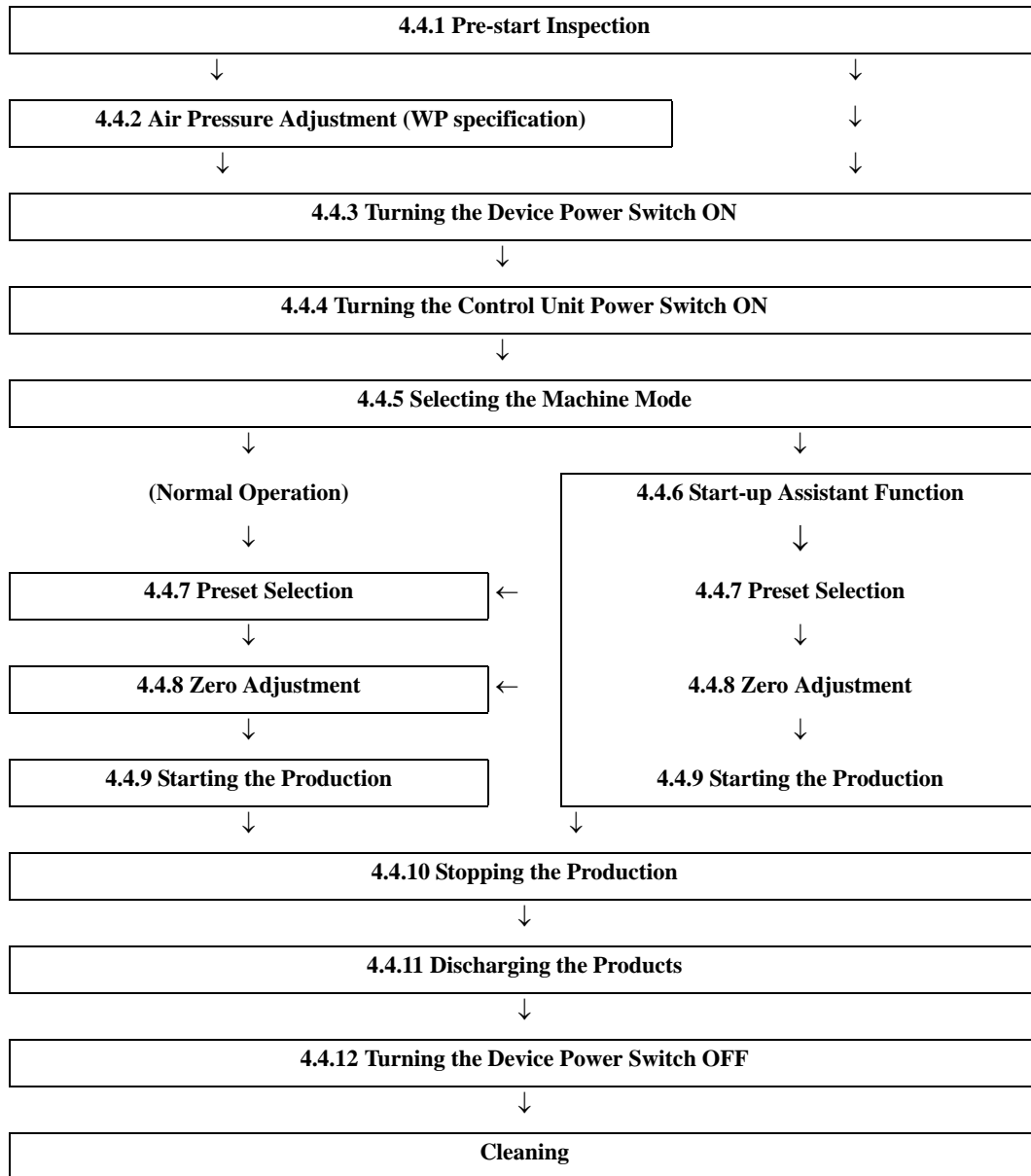
### Restart procedures

1. Eliminate the cause of the emergency stop.
2. Restart the production using normal procedures.



### 4.3 Outline of the Production

This section describes the outline of the production. Refer to “4.4 Production Procedures” and the subsequent sections for details regarding production procedures.



## 4.4 Production Procedures

This section describes the production procedures.

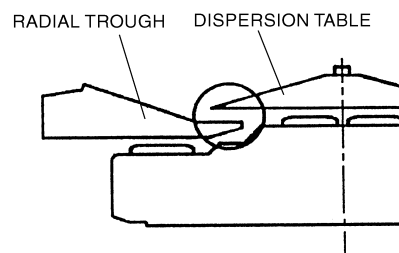
### 4.4.1 Pre-start Inspection

#### CAUTION

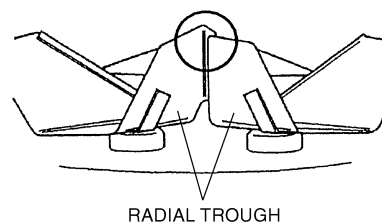
- For maintenance and inspections, unless instructed, the operator must turn OFF and lock the main power switch, and keep the key in his possession during the work.  
(☞ 1.6 Power Supply Shut Off and Indication)
- If any part of the device is not securely installed, it may fall due to the vibration during the production and may damage the device or injure personnel.
- If any problem is found during the pre-start inspection, contact the maintenance engineer and do not start the operation until the problem is solved.

Perform the following pre-start inspection before starting the production to eliminate any cause of the trouble.

1. Make sure that tools and any other irrelevant objects are not placed on top or in the vicinity of the device.
2. Make sure that the dispersion table is securely installed with no play.
3. Make sure that the dispersion table does not make contact with the radial troughs.
4. Make sure that the radial troughs do not make contact with each other.
5. Make sure that the pool hopper, weigh hopper, booster hopper and timing hopper (optional) are securely installed with no play.
6. Make sure that the collection chute is securely installed.
7. Make sure that the timing hopper and the drive unit are securely connected with the drive shaft. (Optional)



**Fig.4-2 Dispersion Table Partial View**



**Fig.4-3 Radial Trough Partial View**

### 4.4.2 Air Pressure Adjustment (WP specification)

1. Shut the air supply cockstop to stop the compressed air supply.
2. Turn the drain to let the remaining air out of the air dryer.

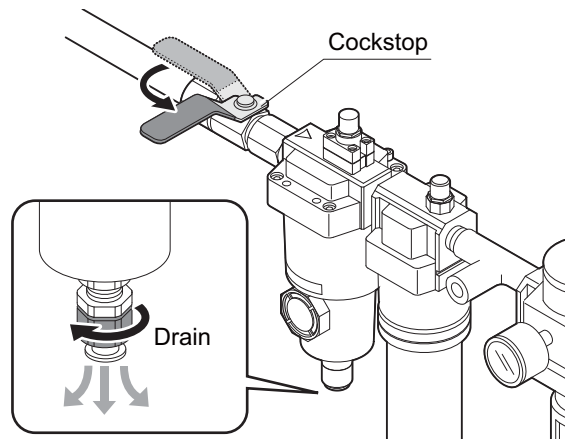


Fig.4-4 Air Pressure Adjustment (1)

3. Check that the pressure gauge reads 0Mpa.
4. Re-tighten the drain and open the air supply cockstop.
5. Check that the pressure gauge reads between 0.01Mpa and 0.02Mpa.

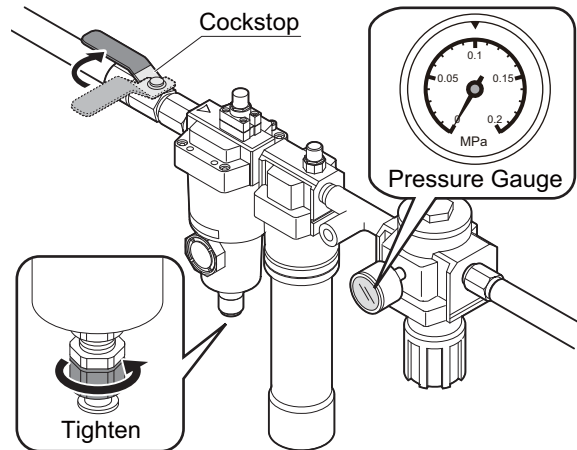


Fig.4-5 Air Pressure Adjustment (2)

- If the gauge does not read between 0.01Mpa and 0.02Mpa, adjust the gauge by turning the pressure adjustment knob to the right or left.

#### **CAUTION**

- When the pressure gauge does not read 0.02Mpa or under, even after manually adjusting, check the pressure supply.
- Do not set the air pressure is too high as this may prevent accurate weighing.

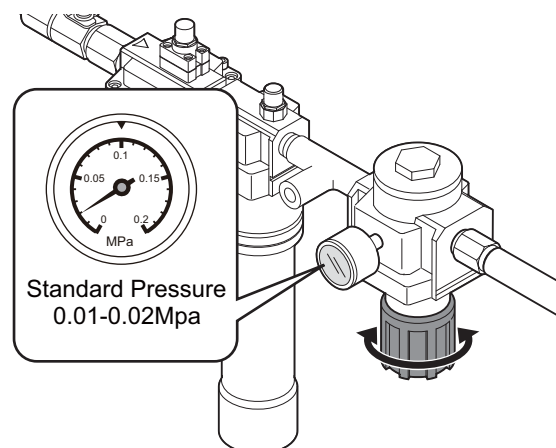


Fig.4-6 Air Pressure Adjustment (3)

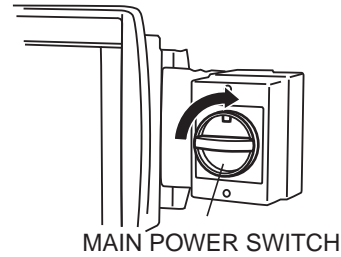
### 4.4.3 Turning the Device Power Switch ON

#### **CAUTION**

- Turn the main power switch ON at least 30 minutes before starting the production in order to get stable weighing results.

This section describes how to supply power to the device.


1. Turn the main power switch ON.
  - ▶ The device is powered on.
2. Wait at least 30 minutes.



**Fig.4-7 Main Power Switch**

### 4.4.4 Turning the Control Unit Power Switch ON

This section describes how to supply power to the device control unit.

1. Press the [Power] key .
  - ▶ The device control unit is powered on.



**Fig.4-8 [Main Menu] Screen**

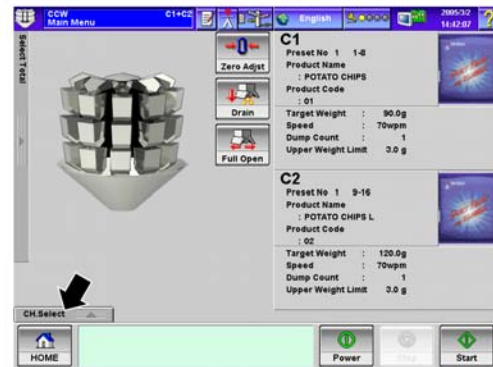
## 4.4.5 Selecting the Machine Mode

Select the machine mode (double weighing or mix weighing) before operating the weigher.

1. Press the [CH.Select] pop-up key



- ▶ The [CH.Select] pop-up menu appears.



**Fig.4-9 [Main Menu] Screen**

2. Select the appropriate mode from [C1+C2], [C1], [C2], or [MIX] depending on the product and weighing method.

When using both channels for double weighing: [C1+C2]

When using single channel for double weighing: [C1] or [C2]

When using as a mix weigher: [MIX]

- ▶ The [Main Menu] screen appears with the channel for the operation displayed.

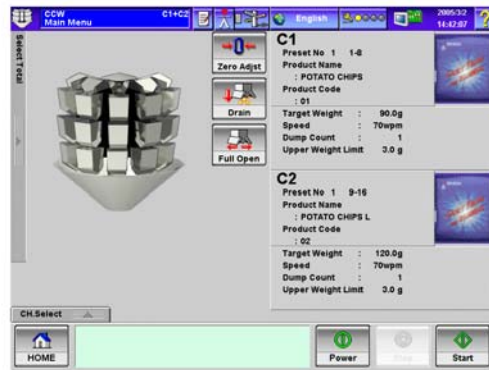


**Fig.4-10 [CH.Select] Screen**

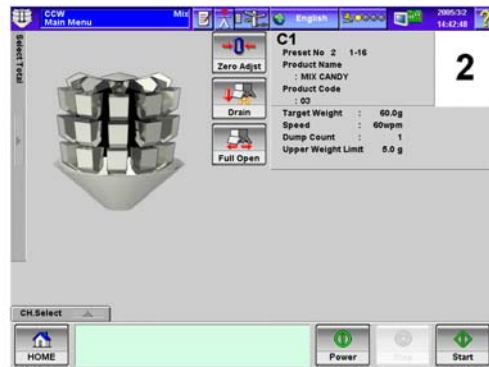
**NOTE**

- The [Main Menu] screen will differ depending on the channel for the operation.  
In this manual, screenshots for double weighing are used for all descriptions.

When using the start-up assistant function, go to “4.4.6 Start-up Assistant Function”.  
Otherwise skip to “4.4.7 Preset Selection”.



**Fig.4-11 [Main Menu] Screen (Double Weigher)**




**Fig.4-12 [Main Menu] Screen (Mix Weigher)**

### 4.4.6 Start-up Assistant Function

The start-up assistant function guides you through the steps up to the production and simplifies them by following the instructions on the screen.

When not using the start-up assistant function, please proceed to “4.4.7 Preset Selection” .

1. Press the [Start-up Assistant] key 

▶ The [Start-Up Assistant] screen appears.

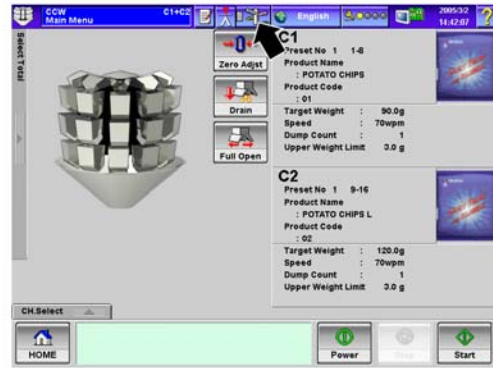


Fig.4-13 [Main Menu] Screen

2. To cancel the start-up assistant function and return to the [Main Menu] screen, press the



Press the [Next] key  to continue.

▶ The [C1 Preset Slct] screen of the start-up assistant menu appears.  
 The key for the next operation is blinking.  
 The outline of the operation performed via the start-up assistant function is displayed on the left side of the screen.



Fig.4-14 [Start-up Assistant] Screen ([Start-Up Assistant] Screen)

3. Scroll the screen by using the scroll key or the scroll bar until the desired preset item is displayed.
4. Press the [Select Preset] key to select.



▶ The [C2 Preset Slct] screen of the start-up assistant menu appears.



Fig.4-15 [C1 Preset Slct] Screen (Start-up Assistant Function)

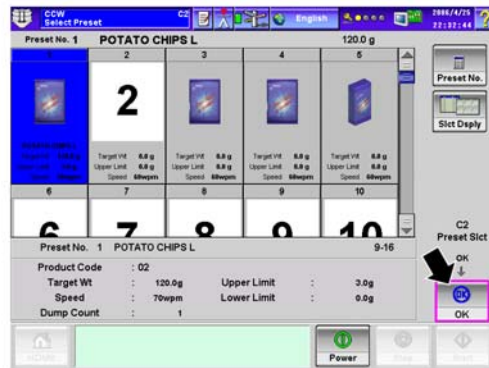
6. Scroll the screen by using the scroll key or the scroll bar until the desired preset item is displayed.

7. Press the [Preset Item] key to select the item.



8. Press the [OK] key

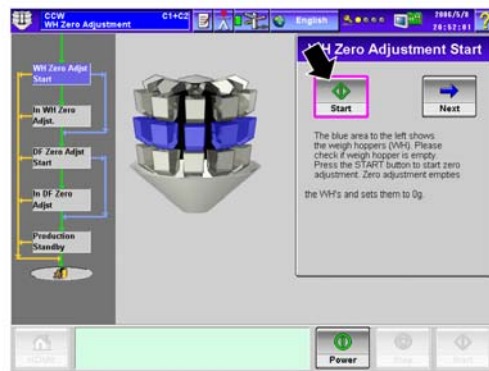
- ▶ The [WH Zero Adjustment Start] screen of the start-up assistant menu appears.




**Fig.4-16 [C2 Preset Slect] Screen (Start-up Assistant Function)**

**NOTE**

- On the [WH Zero Adjustment] screen, the weigh hoppers are displayed in blue. However, they are displayed in red right after power-on or when the zero adjustment is not performed for 30 minutes or more. When the weigh hoppers are displayed in red, it is not possible to proceed to the next step until the zero adjustment is performed.



**Fig.4-17 [WH Zero Adjustment] Screen (Start-up Assistant Function)**

9. Press the [Start] key 

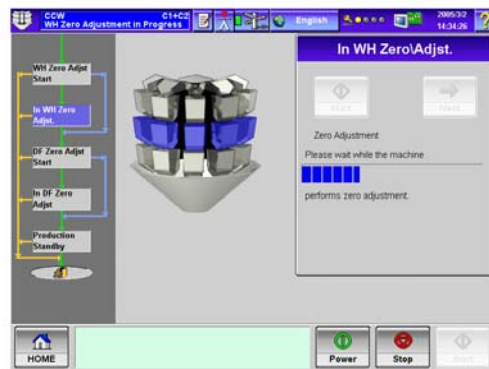
- ▶ Zero adjustment operation for the weigh hopper starts. The progress bar is displayed during zero adjustment.

**NOTE**

- When an error occurs during zero adjustment, the weigh hoppers are displayed in red. In this case, press the



[Start] key again and perform zero adjustment.




**Fig.4-18 [In WH Zero Adjst.] Screen (Start-up Assistant Function)**

- ▶ The [DF Zero Adjustment Start] screen of the start-up assistant menu appears.



**NOTE**


- On the [DF Zero Adjustment] screen, the dispersion table is displayed in blue. When the dispersion table is displayed in red immediately after power-on, it is not possible to proceed to the next step until the zero adjustment is performed.


10. Press the [Start] key .

- ▶ Zero adjustment operation for the dispersion table starts.
- ▶ When the zero adjustment operation for the dispersion table finishes without error, the [Production Standby] screen appears. The progress bar is displayed during zero adjustment.

**NOTE**

- When an error occurs during zero adjustment, the dispersion table is displayed in red. In this case, press the

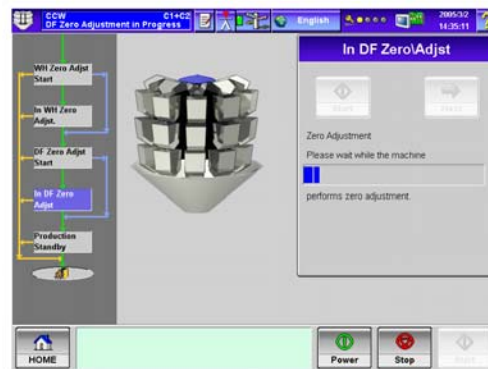
[Start] key  again and perform zero adjustment.

11. Press the [Start] key .

- ▶ The production starts.



**Fig.4-19 [DF Zero Adjustment] Screen (Start-up Assistant Function)**



**Fig.4-20 [In DF Zero Adjust] Screen (Start-up Assistant Function)**



**Fig.4-21 [Production Standby] Screen (Start-up Assistant Function)**

**TIP**

- The start-up assistant function ends when the production starts and the normal operation menu appears.
- The start-up assistant function covers the steps up to “4.4.9 Starting the Production”.

**NOTE**

- The start-up assistant function is available at any time, but the appearance of the screen differs depending on the machine condition just before activating the function.
- When starting the start-up assistant function without selecting the machine mode, the machine mode just before activating the function is applied.

### 4.4.7 Preset Selection

Select and use the preset item to which setting information of the product is registered in advance. This function makes it easy to set the product information.

1. On the [Main Menu] screen, press the photo displayed in the preset detail information area.

▶ The [Select Preset] screen appears.




**Fig.4-22 [Main Menu] Screen**

- Use the scroll key or the scroll bar and press the desired [Preset Item].

**NOTE**

- When using both C1 and C2 in the double weighing, select the preset item for each channel.



- Press the [Exit] key .


- ▶ The display returns to the [Main Menu] screen with the selected preset information set.



Fig.4-23 [Select Preset] Screen

### <Switching the display for the [Select Preset] screen>

There are two display modes in the [Select Preset] screen: the photo mode and the list mode. In the photo mode, you can select the product visually; in the list mode, you can sort the items by product category, weight, etc.

1. Press the [Slct Dsply] key  on the [Select Preset] screen.
  - ▶ The display switches to the list mode.

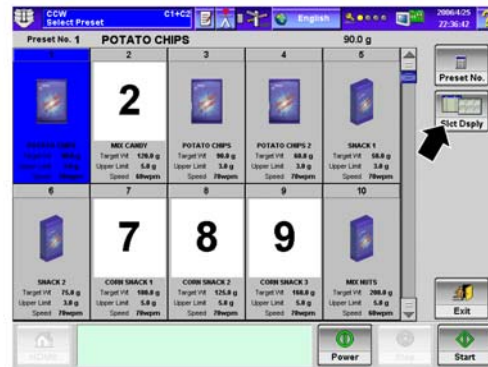


Fig.4-24 [Select Preset] Screen (Photo Mode)

**NOTE**

- Pressing the title of each column ([PresetNo], [PdctClas], [Product Name], [Target Wt], [Speed], [Dump Cnt], and [Record Time]) will sort the preset data by the selected column. For example, when the [Target Wt] key is pressed, the preset data is displayed in ascending order by target weight.

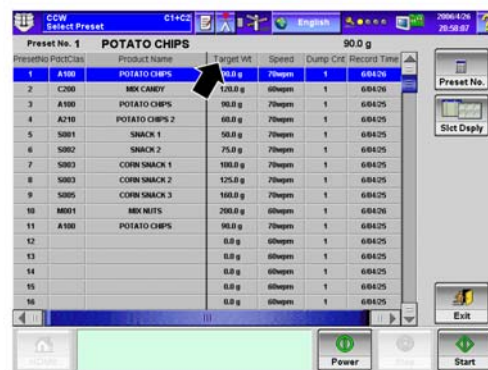


Fig.4-25 [Select Preset] Screen (List Mode)



2. Press the [Slct Dsply] key .
  - ▶ The display returns to the photo mode.



Fig.4-26 [Select Preset] Screen (List Mode)

### <Selecting the preset number directly>

The preset number can be directly selected using the [Numeric Keypad] screen. This function is useful when the preset number is already identified and the number is too large to find by scrolling through the screen.

1. Press the [Preset No.] key  on the [Select Preset] screen.
  - ▶ The [Numeric Keypad] screen appears.
2. Input the desired preset number.
  - ▶ The [Numeric Keypad] screen disappears, and the entered preset number is selected.

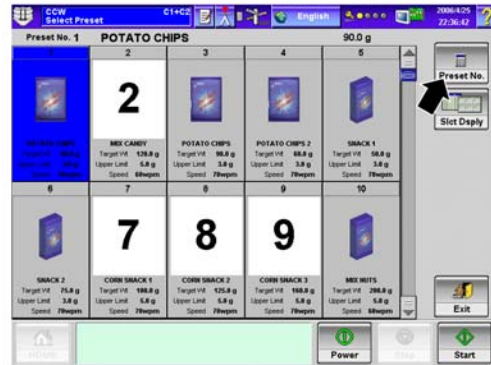


Fig.4-27 [Select Preset] Screen (Photo Mode)

## 4.4.8 Zero Adjustment

Perform zero adjustment for the weigh hopper and dispersion table in order to weigh the product precisely.

### <Zero adjustment for the weigh hopper>

1. Press the [Zero Adjst] key .

- ▶ The [Zero Adjustment] screen appears.
- ▶ All hoppers are selected and displayed in blue.

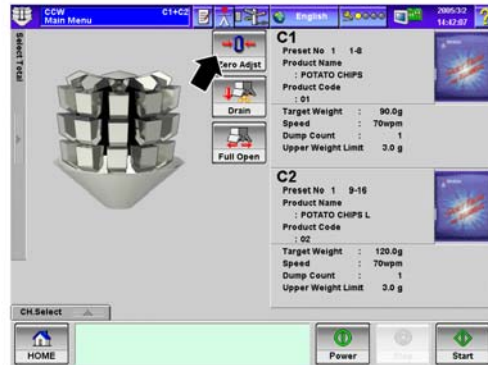



Fig.4-28 [Main Menu] Screen

2. Press the [Start] key .

#### NOTE

- The [Start] key cannot be pressed when the control unit power switch is OFF.

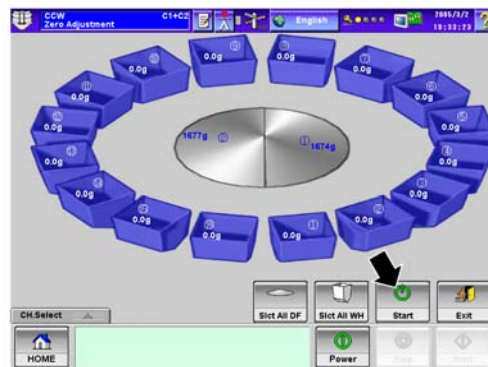


Fig.4-29 [Zero Adjustment] Screen

- ▶ The message “Please wait a moment.” appears on the screen, and zero adjustment starts.

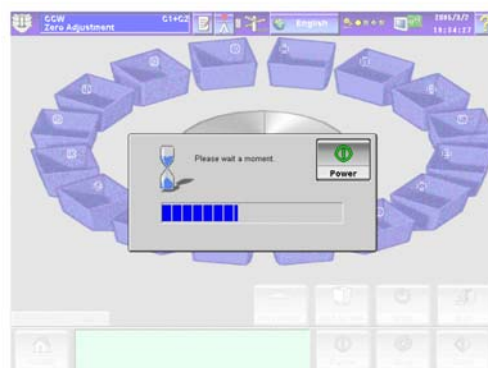


Fig.4-30 [Zero Adjustment] Screen (In Adjustment)

- When zero adjustment operation finishes, each [WH] key displays the respective weight.
3. Make sure that each weight display of the [WH] key is within  $0.0 \pm 0.1$ g.

**NOTE**

- If the weight display reading exceeds 0.1g or falls below -0.1g, perform the zero adjustment again.
- Zero adjustment may not be performed accurately within 30 minutes after turning the power on or when there is air movement around the machine.
- Pressing each [Weigh Hopper] key on the screen can switch the hopper status to selected or unselected.



**Fig.4-31 [Zero Adjustment] Screen  
(Adjustment Complete)**

Next, perform the zero adjustment operation for the dispersion table.

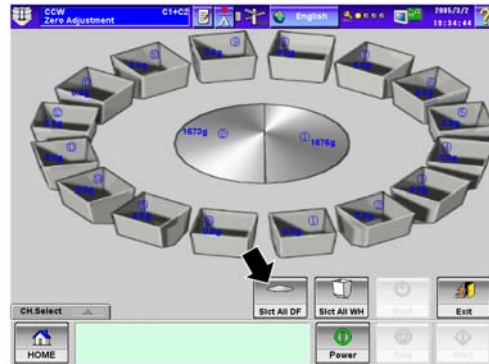
**<Zero adjustment for the dispersion table>**

1. In the [Zero Adjustment] screen, press the [Slot


All DF] key .

► All dispersion tables are displayed in blue.

2. Make sure that there is no product on the dispersion table.



**Fig.4-32 [Zero Adjustment] Screen**

3. Press the [Start] key .

**NOTE**

- The [Start] key cannot be pressed when the control unit power switch is OFF.



**Fig.4-33 [Zero Adjustment] Screen**

- The message “Please wait a moment.” appears on the screen, and zero adjustment starts.



**Fig.4-34 [Zero Adjustment] Screen (In Adjustment)**



- ▶ When zero adjustment operation finishes, each [DF] key displays the respective weight.
4. Make sure that each weight display of the [DF] key is 0g.

### NOTE

- When the weight display reading exceeds 0g or falls below 0g, perform the zero adjustment again.

5. Press the [Exit] key .


- ▶ The [Main Menu] screen appears.



**Fig.4-35 [Zero Adjustment] Screen  
(Adjustment Complete)**

## 4.4.9 Starting the Production

Start the production.

1. Press the [Start] key .

- ▶ The production starts and the [Production] screen appears.

### TIP

- When the feeder is interlocked with this device to automatically supply the product, pressing the [Infeed Control] key to ON will start the product supply.
- Refer to “6 FUNCTIONS OF THE OPERATION SCREENS” for each symbol displayed on the [Production] screen.
- Refer to “4.6 Temporary Stop and Restart” to temporarily stop the production.

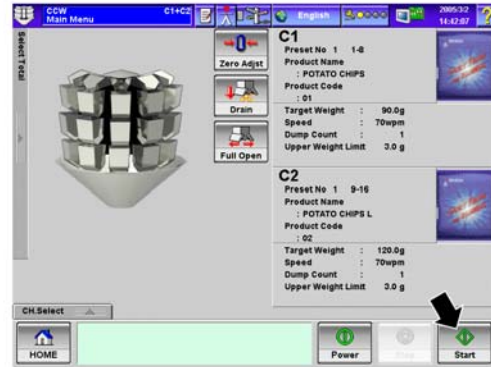


Fig.4-36 [Main Menu] Screen

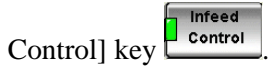
### CAUTION

- **DO NOT, UNDER ANY CIRCUMSTANCES, CLOSE THE HOPPERS WITH HANDS OR TOOLS.** Doing so may damage the drive unit.
- **When the main power switch is turned OFF while the hoppers are open, or when the hoppers remain open due to an electrical power failure, follow the procedures described in “4.9 Handling Drive Unit” for the corrective action.**

### 4.4.10 Stopping the Production

Stop the production.

1. When the infeed control is on, press the [Infeed Control] key



- ▶ The lamp of the [Infeed Control] key



turns off and the product supply to the device is terminated.

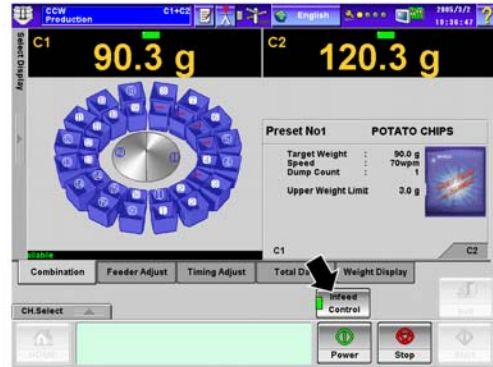


Fig.4-37 [Production] screen

2. Press the [Stop] key



- ▶ The production is terminated.

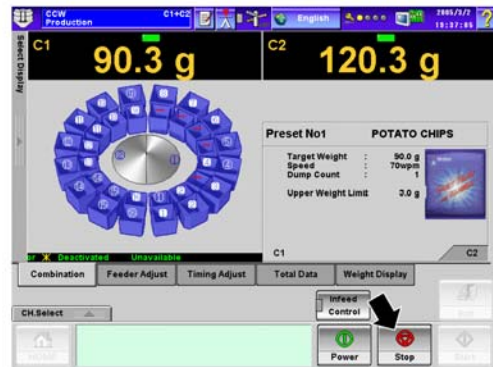
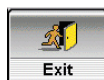


Fig.4-38 [Production] screen

3. Press the [Exit] key



- ▶ The display returns to the [Main Menu] screen.

**NOTE**

- To discharge the product or change the preset item after stopping the production, press the [Exit] key



to return to the [Main Menu] screen before performing any operation.

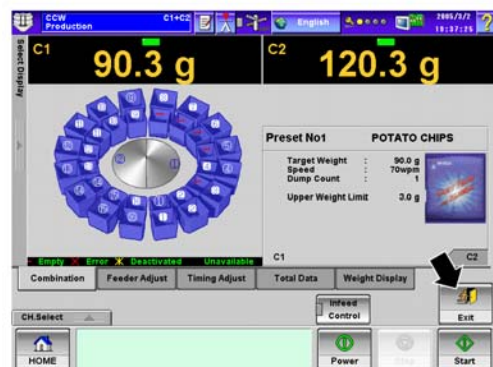



Fig.4-39 [Production] screen

### 4.4.11 Discharging the Products

Discharge the remaining products from the device.

#### <Discharging the products>

1. Press the [Drain] key .
  - ▶ The [Drain] screen appears.
  - ▶ Discharging of the product starts.

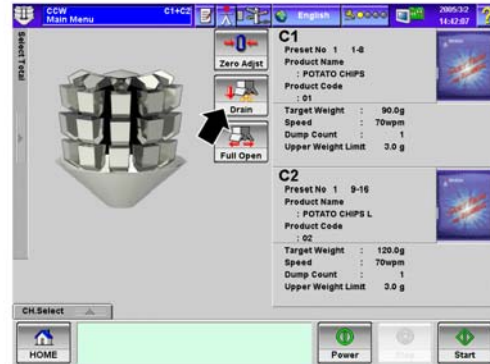


Fig.4-40 [Main Menu] Screen


2. After discharging all products, press the [Drain STOP] key .
  - ▶ Discharging is terminated.



Fig.4-41 [Drain] screen



3. Press the [Exit] key .
  - ▶ The display returns to the [Main Menu] screen.

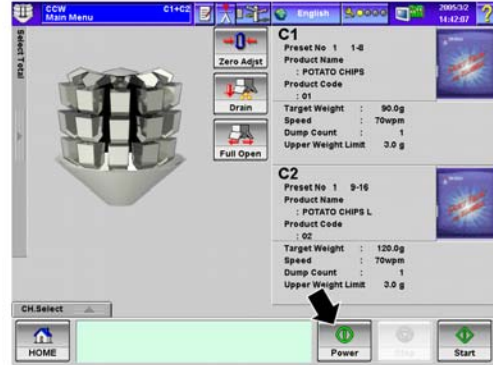


Fig.4-42 [Drain] screen

### 4.4.12 Turning the Device Power Switch OFF

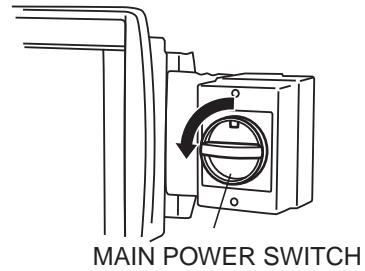
Shut off the power supplied to the device.

1. Press the [Power] key .
  - ▶ The control system power supply is turned OFF.



**Fig.4-43 [Main Menu] Screen**

2. Turn the main power switch OFF.
  - ▶ The display of the control panel disappears.
  - ▶ The power supplied to the device is shut off.



**Fig.4-44 Main Power Switch**

### <Cleaning>

Clean the device after shutdown.

## 4.5 Display During the Operation

The screen display during the operation can be switched by selecting a tab from the following: Combination, Feeder Adjust, Timing Adjust, Total Data, and Weight Display. (☞ 6.7 [Production] Screen)

In the [Combination] screen, the display can be switched between the combination display and the expansion display, by using the [Select Display] pop-up key. (☞ 4.5.1.1 [Select Display] Pop-up Menu in [Combination] Screen )

In the combination display, each head weight, head status and preset information in addition to the combination weight value are displayed. In the expansion display, only the combination weight value is displayed.

- Combination weighing (☞ 4.5.1 [Combination] Screen)

For a detailed description of the following functions, refer to the respective section.

- Feeder adjustment (☞ 6.13 [Feeder Adjustment] Screen)
- Timing adjustment (☞ 6.14 [Timing Adjustment] Screen)
- Total data (☞ 6.12 [Select Total] Pop-up Menu)
- Weight display (☞ 6.7.5 [Weight Display] Tab Screen)

### 4.5.1 [Combination] Screen

To display the [Combination] screen, press the [Combination] tab on the [Production] screen.

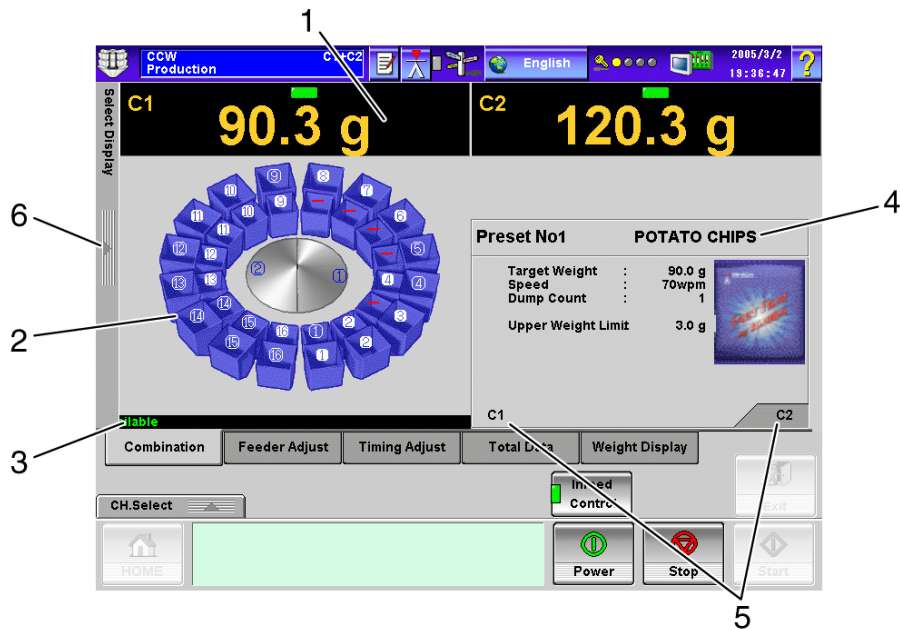


Fig.4-45 [Combination] Screen ([Production] Screen, Double Weigher)

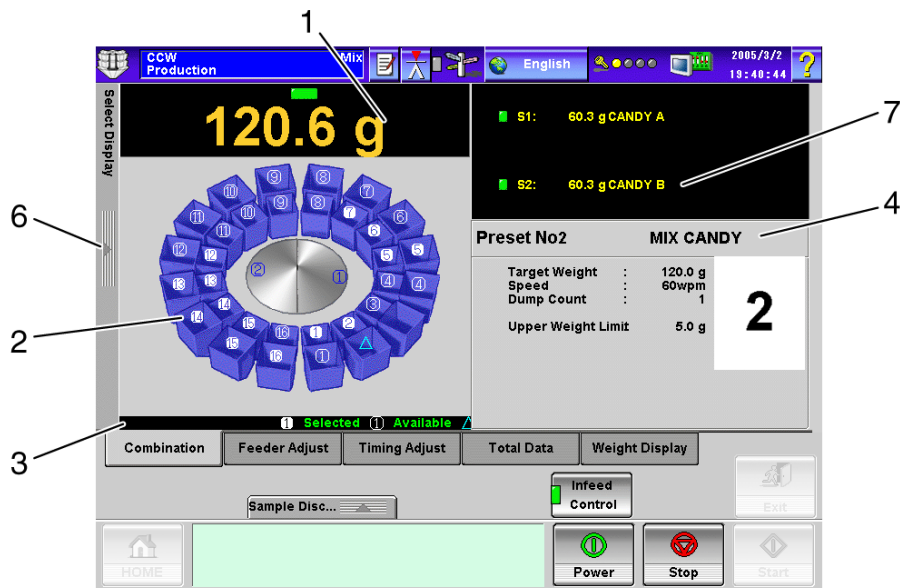

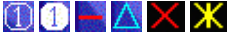









Fig.4-46 [Combination] Screen ([Production] Screen, Mix Weigher)

Table 4-1 Items and Functions of [Combination] Screen

No.	Name	Function
1	Combination weight display 	The combined weight value is displayed on each channel. The lamp indication varies depending on the results. Green lamp: Proper weight Yellow lamp: Over weight Red lamp: Under weight
2	Head condition display 	Displays the combination and weighing status.  : Head which was weighed and is stable.  : Head which was weighed, was selected for combination and discharged products. The color of the circle indicates the head stability, and there are three levels: green (most stable), white (more stable) and yellow (stable).  : Empty head. Blank: Unstable head.  : Head under the auto zero adjustment.  : Head with error of overload or jam.  : Head that is set to be deactivated.
3	Head display guide	Displays the scrolling messages for the descriptions of head symbols.
4	Preset selection display	Displays the selected preset.
5	[C1]/[C2] switching tab (Double weigher only)	Selects the channel to be displayed. Displayed only when the weigher setting is C1 + C2.
6	[Select Display] pop-up key 	Selects the display method from either the combination or expansion display. Combination and expansion display icons are displayed by pressing this key. Pressing either icon will switch the display to the selected method.
7	Section weight display (Mix weigher only)	Displays the weight of each section.



### 4.5.1.1 [Select Display] Pop-up Menu in [Combination] Screen

On the [Combination] screen, either the [Combination] or [Expansion Display] mode can be selected. Press the [Select Display] pop-up key on the [Combination] screen, and select the desired display mode.

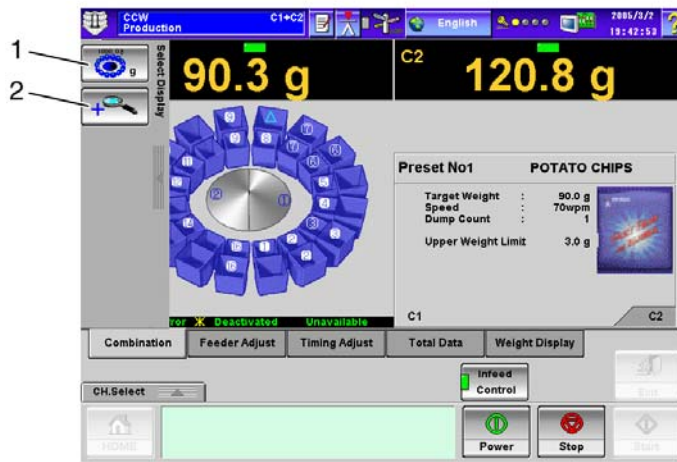


Fig.4-47 [Select Display] Pop-up Menu ([Combination] Screen)

Table 4-2 [Select Display] Pop-up Menu and Functions of the [Combination] Screen


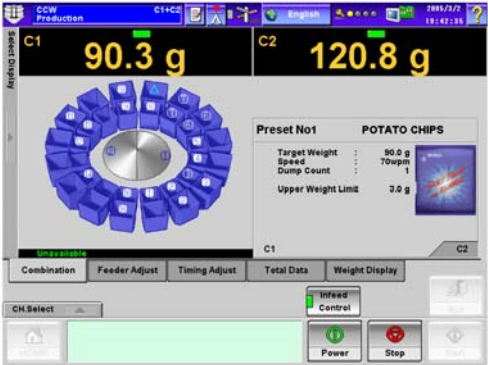
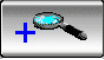

No.	Name	Function
1	[Combination Display] key 	Selects the [Combination Result Display] screen. 

Fig.4-48 [Combination Result Display] screen

Table 4-2 [Select Display] Pop-up Menu and Functions of the [Combination] Screen(Continued)




No.	Name	Function
2	[Expansion Display] key 	Selects the [Expansion Display] screen for the combination weight.   <p style="text-align: center;"><b>Fig.4-49 [Expansion Display] Screen</b></p>

## 4.6 Temporary Stop and Restart

To temporarily stop the production and then restart it, follow the procedures below.

### 4.6.1 Temporary Stopping

Stop the production temporarily.

1. Press the [Stop] key .
  - ▶ The [Stop] key  is greyed out and the [Start] key  appears.
  - ▶ The production is temporarily terminated.

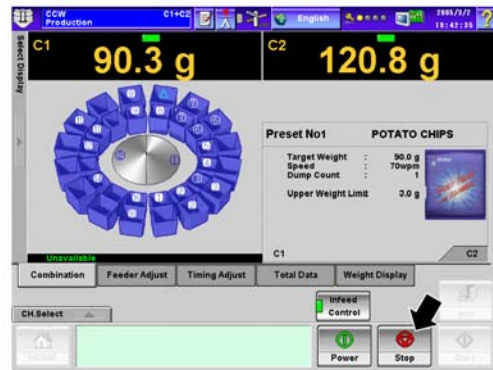





Fig.4-50 [Production] screen

### 4.6.2 Restarting

Restart the production.

1. Press the [Start] key  to restart the production.
  - ▶ The [Start] key  is greyed out and the [Stop] key  appears.
  - ▶ The production restarts.

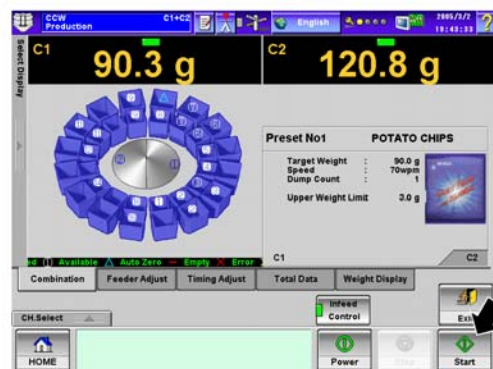


Fig.4-51 [Production] screen

## 4.7 Outputting the Operational Status

During the operation, every combination result or current total result can be output as necessary.

### 4.7.1 Every Combination Output

#### NOTE

- Every combination output can be set by the site engineer or higher level personnel.

This setting outputs the combination weight value during the production. To perform every combination output, follow the procedures below.

#### <Operation procedure>

- In the [Production] screen, press the [Total Data] tab.
  - The [Total Data] screen appears.




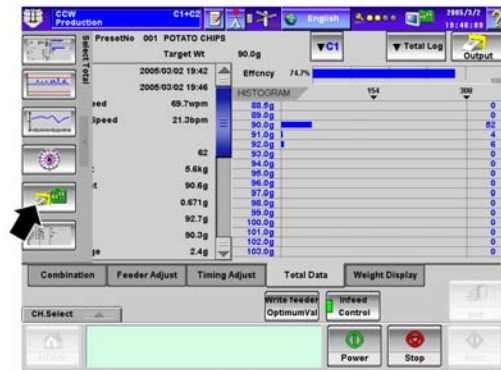
Fig.4-52 [Production] Screen

2. Press the [Select Total] pop-up key.
  - The [Select Total] pop-up menu appears.



Fig.4-53 [Total Data] Screen ([Production] Screen)

3. Press the [Total Setting] key .
  - ▶ The [Total Setting] screen appears.



**Fig.4-54 [Select Total] Pop-up Menu ([Production] Screen)**

4. Select [C1] or [C2] for the [Every Combination Output] option.

**NOTE**

- With this setting, the results are output in every two weighings of the selected channel.  
To cancel this setting, select [Off] for the [Every Combination Output] option.



**Fig.4-55 [Total Setting] Screen ([Production] Screen)**

**NOTE**

- This option is set to [Off] once the power supply to the device is turned off.

## 4.7.2 Current Total Output

This setting outputs the total data of the currently selected product to a printer or as a file. To perform the current total output, follow the procedures below.

### NOTE


- Printing or file output can be set by the [Installation] or higher level personnel via the [Destination ID] Tab Screen of the [Control Panel] screen. (Refer to 6.3.5.3 [Destination ID] Tab Screen)
- The file is output in the text file format and can be opened with the text editor, etc.

### <Operation procedure>

1. In the [Production] screen, press the [Total Data] tab.
  - ▶ The [Total Data] screen appears.



Fig.4-56 [Production] Screen

2. Press the [Output] key .

- ▶ Output starts.



Fig.4-57 [Total Data] Screen

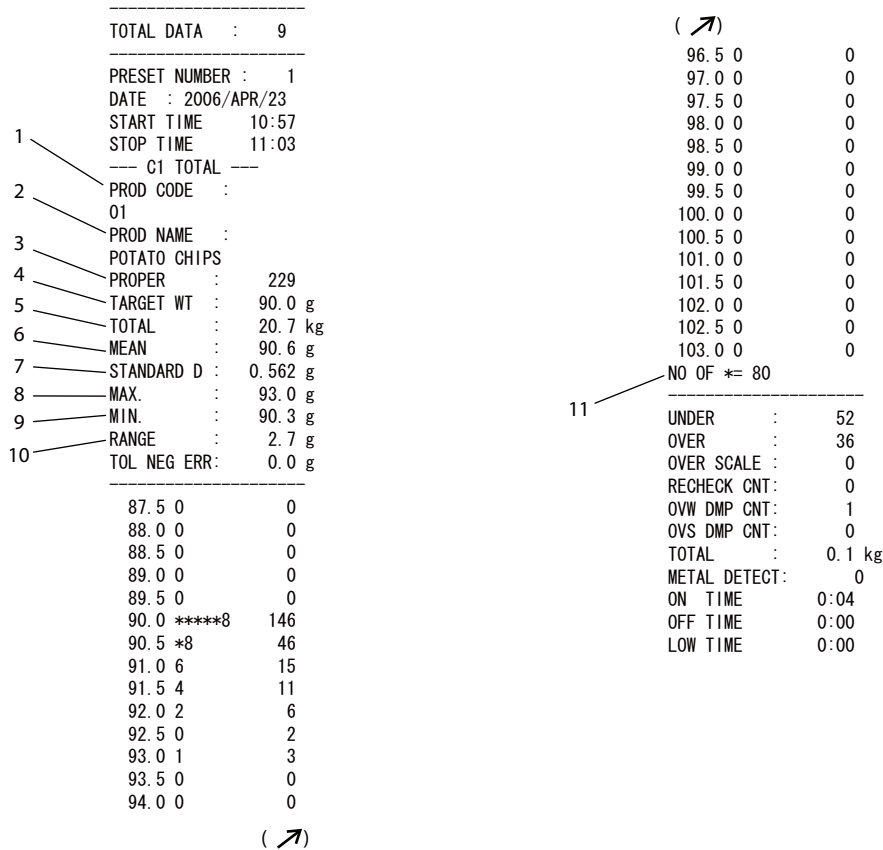


Fig.4-58 Current Total Output (Example)

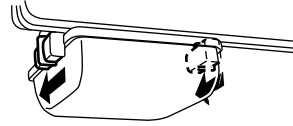
Table 4-3 Output Details

No.	Name	Remarks
1	Product code	---
2	Product name	---
3	Proper weight	Number of times that the proper discharge is performed.
4	Target weight	---
5	Total value	Total discharged weight.
6	Mean value	---
7	Standard deviation	---
8	Maximum weight	---
9	Minimum weight	---
10	Weight range	(Maximum value) - (Minimum value)
11	Quantity per * mark	Weighing results are displayed in order of weight value, histogram, and number of weighing times from the left. The number displayed in the histogram indicates a percentage of * (e.g. number ×10%). If a value of * = 18, when the number of weighing times is 45, it will be displayed as “***5” (18 + 18 + 18 × 50 %).

## 4.8 Loading the Printer Paper

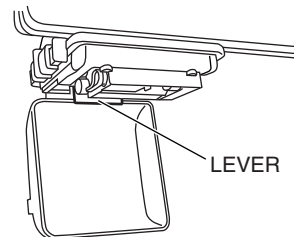
When the message “No Paper” is displayed on the lower part of the screen, follow the procedures below to load the printer paper.

1. Slide the printer cover retainer to open the cover.



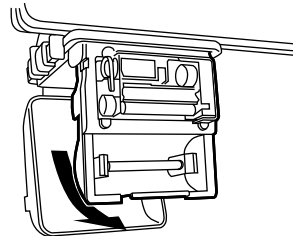
**Fig.4-59 Printer Overview**

2. Pull the printer unit fixed lever to lower the printer unit.

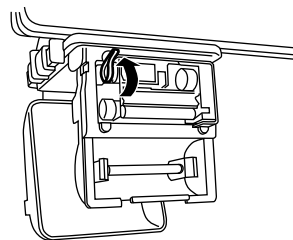


**Fig.4-60 Fixed Lever**

3. Push up the printer head lever.
  - ▶ The printer head uprears.



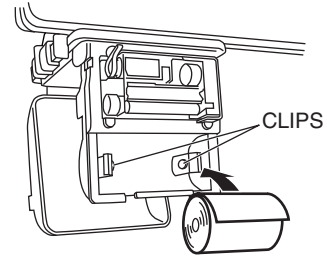
**Fig.4-61 Printer Unit**



**Fig.4-62 Printer Internal View**

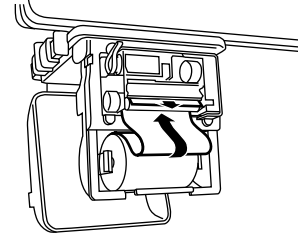


4. Press and open the clips to remove the remaining roll core.
5. Align the roll as shown in the figure and push onto the clips.



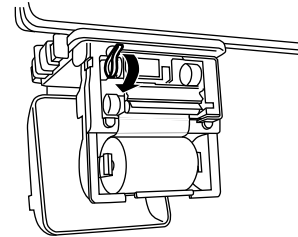
**Fig.4-63 Roll Paper Installation**

6. Insert the end of the roll paper into the printer.
7. Advance the paper until the end of the paper comes out about 1cm from the printer head.



**Fig.4-64 Paper Inserting**

8. Pull down the printer head lever.
  - ▶ The printer head lowers.
9. Push up the printer unit.
10. Close the printer cover.
  - ▶ Loading of paper to the printer is completed.



**Fig.4-65 Printer Internal View**

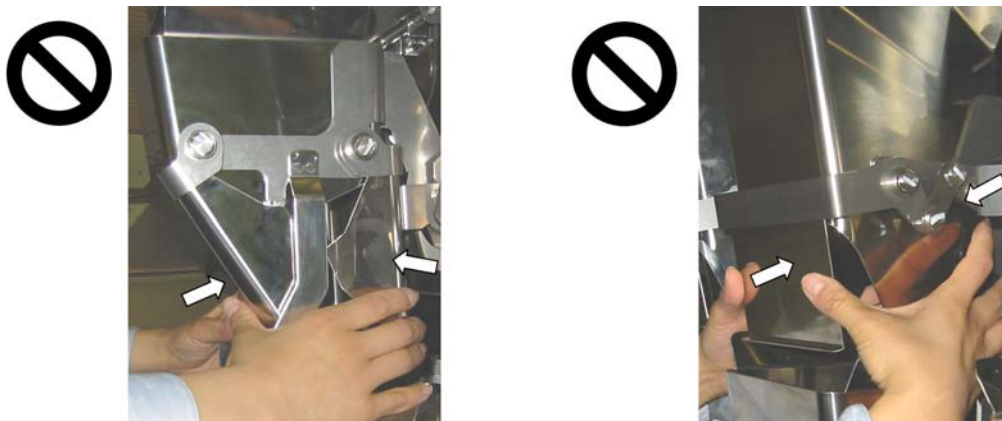
## 4.9 Handling Drive Unit

This section describes how to handle the drive unit.

### CAUTION

- **DO NOT, UNDER ANY CIRCUMSTANCES, CLOSE THE HOPPERS WITH HANDS OR TOOLS AS SHOWN IN THE FIGURE.** Doing so may damage the drive unit.

(Left figure shows the weigh hopper and right figure shows the pool hopper.)



*Fig.4-66 Closing the Hopper by Hand (Bad Example)*

This figure is only for explanation. Your hopper may look different from the above figure.

### CAUTION

- **If the main power switch is turned OFF while the hoppers are open, or the hopper remains open due to an electrical power failure, follow the procedures described below to restore.**

1. Turn on the main power switch.
2. Display the [Full Open Lock] screen. (☞ 6.9 [Full Open Lock] Screen)
3. Select the relevant weigh hopper and pool hopper, and perform the Full Open Lock operation.
4. Close the open hoppers.
5. Make sure that all of the hoppers are closed.
6. If any of the hoppers remain open, repeat steps 3 to 5.

## 5 REGISTERING OF PRODUCTS

### 5.1 Summary

This chapter describes the outline and procedures for registering a new product.



- **Read and thoroughly understand Chapter 1 through to Chapter 4 before registering the product.**
- 

#### <Contents>

Setting screens by product

#### <Purpose>

To understand and master the procedures to set product data for weighing a new product.

#### <Intended reader>

- System administrators

## 5.2 Presetting the Double Weigher

This section describes the preset procedures when this device is used as a double weigher.

### 5.2.1 Registration Details

Items and details to be set in the preset screen are described in “Table 5-1 Preset Details”.

#### CAUTION

- Each set value differs depending on product type, characteristics and setting environments. Perform the actual adjustment while checking the operation status.

#### TIP

- “Initial Value” in “Table 5-1 Preset Details” is the standard value (default value) set to the device in advance.
- “Setting Example” is the example when weighing 90g of potato chips as a normal size and 120g of potato chips as a large size. (☞ 5.2.3 Preset Procedures)

Table 5-1 Preset Details




Setting Item	Setting Detail	Initial Value	Setting Example
CH.Select	Selects either double weighing or mix weighing for the production type.	—	Double (C1 + C2)
Product name	Sets the product name.	—	C1: Potato chips C2: Potato chips (large)
Product code	Sets the product code.	—	01
Product Category	Sets the desired product category.	—	A100
Photo Selection	Selects the photo. When there is no photo data,  is displayed.		
Camera	Takes photos of the products.	—	—
Speed	Sets the number of times that the weighing operation is performed per minute.	60	70
Dump Count	Divides and discharges the product separately to prevent the product from jamming in the packer when the target weight is large or when a product will overflow if weighed all at once. The number of times for division is set here.	1	1
Average Control	Controls the target weight at a regular interval in order to maintain the discharged weight mean value to be close to the target weight. Select [On] or [Off] for this function.	Off	Off

Table 5-1 Preset Details (Continued)

Setting Item	Setting Detail	Initial Value	Setting Example
Interlock Parameter Number	Selects the interlock mode between the device and the packer. There are four different interlock modes.	1	1
Section Parameter Number	Selects the section division pattern when dividing weigh heads into sections and weighing different products in each section. There are eight different division patterns.	2	2
Auto Feed Target	Sets the number of weigh hopper heads to be selected for discharge operation in order to obtain the target weight.	3.8	3.8
Disch.Priority Count	Sets the number of times to give priority in participating in the combination to heads that have not discharged the product.	30	30
AFD Auto adjustment limit amp	Sets the range where the operating intensity is automatically adjusted when the AFD is set to "Auto".	—	—
AFD Auto adjustment limit time	Sets the range where the operating time is automatically adjusted when the AFD is set to "Auto".	—	—
Feed Multiplier	Sets the multiplying factor of feeder operating time set in the [Feeder Adjustment] screen.	1	1
Hopper Drive Setting	Selects parameters to set the open/close operation condition for each hopper including the pool hopper and weigh hopper.	0	0
Photo SW	Selects [On] for models with a photo eye sensor, and [Off] for models without a photo eye sensor.	Off	Off
Shutter Drive	Selects [On] for models with a shutter drive, and [Off] for models without a shutter drive.	Off	Off
Feeder Adjustment	Sets operating intensity of the radial and dispersion feeders, operating time, and dispersion weight. Adjusts the product feed to the pool hopper, radial trough, and dispersion table based on the set value.	<ul style="list-style-type: none"> <li>• AFD mode: Manual</li> <li>• AMP: 50</li> <li>• Time: 25</li> <li>• Target Wt: 500</li> </ul>	<ul style="list-style-type: none"> <li>• AFD mode: Manual</li> <li>• AMP: 50</li> <li>• Time: 25</li> <li>• Target Wt: 500</li> </ul>
Timing Adjustment	Sets the timing value for the opening/closing of each hopper.	<ul style="list-style-type: none"> <li>• IS-DS: 0</li> <li>• IS-TH1: 0</li> <li>• IS-WH: 0</li> <li>• WH-PH: 190</li> <li>• PH-RF: 130</li> <li>• Stagger: 0</li> <li>• WH-BH: 60</li> <li>• BH-WH: 100</li> </ul>	<ul style="list-style-type: none"> <li>• IS-DS: 0</li> <li>• IS-TH1: 0</li> <li>• IS-WH: 0</li> <li>• WH-PH: 190</li> <li>• PH-RF: 130</li> <li>• Stagger: 0</li> <li>• WH-BH: 60</li> <li>• BH-WH: 100</li> </ul>
Target weight	Sets the product weight to be discharged from the device to the packer.	C1: 0 C2: 0	C1: 90 C2: 120
Extended Upper Limit	Sets the tolerance so that products can be discharged as proper weight even if the upper limit is exceeded once in a specified number of proper weight dumps.	0	0

**Table 5-1 Preset Details (Continued)**

<b>Setting Item</b>	<b>Setting Detail</b>	<b>Initial Value</b>	<b>Setting Example</b>
Upper Weight Limit	Sets the upper limit of the proper weight.	0	3
Lower Weight Limit	Sets the lower limit of the proper weight in grams when the average control function is utilized.	0	0

## 5.2.2 Outline of the Registration

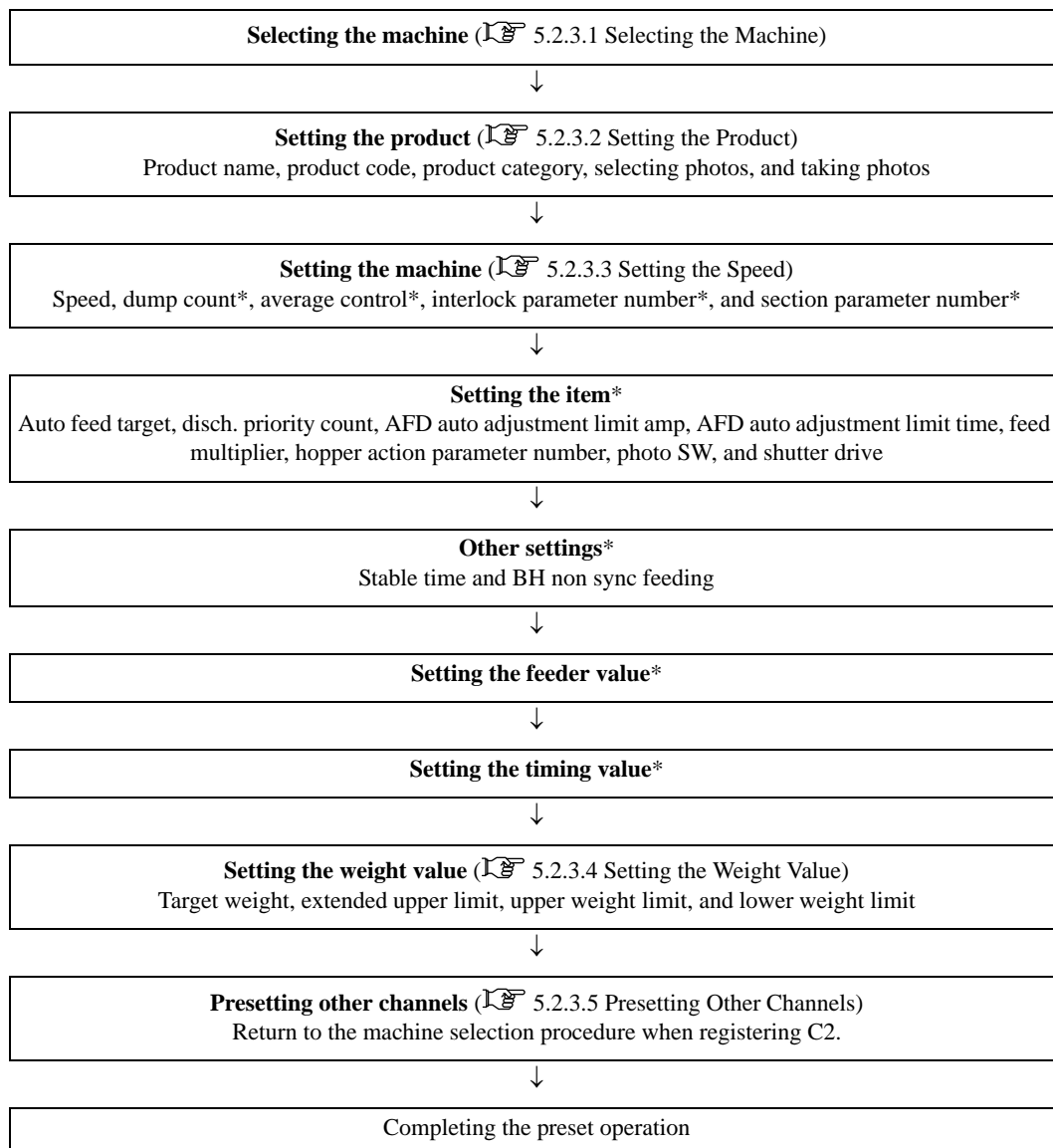
This section describes the outline of the product registration for the double weigher.

Refer to the next section for details regarding the operation procedures.

Items for C1 and C2 should be registered respectively for the double weigher.

For items marked with \* in the following chart, respective initial values are registered. Refer to “5.2.1 Registration Details” for each initial value.

Refer to “6.11 [Preset] Screen” for detailed descriptions of all items in the following chart.



### 5.2.3 Preset Procedures

This section describes the registration procedures using the example shown in “5.2.1 Registration Details”.


Numerical values shown in parentheses are taken from setting examples in “Table 5-1 Preset Details”. The preset procedure is performed by the Site Engineer level or the Installation level personnel. Refer to “6.3.4 Operation Level Selection” for the operation level definitions.

#### NOTE

- Setting procedures for the initial values are not described in this section. Refer to “6 FUNCTIONS OF THE OPERATION SCREENS” for the setting procedures of all values.

#### 5.2.3.1 Selecting the Machine

Switch to the desired machine to preset the double weigher.

- On the [Main Menu] screen, press the [CH.Select] pop-up key .

- ▶ The [CH.Select] pop-up menu appears.

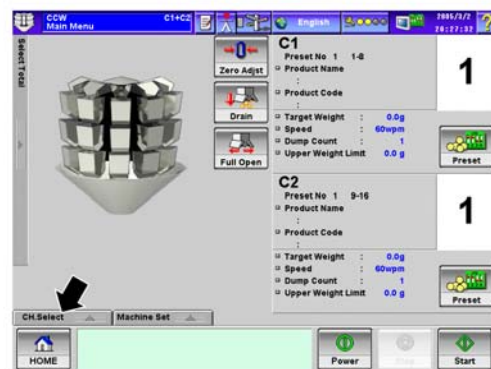



Fig.5-1 [Main Menu] Screen

- Press the [C1+C2] key .

- ▶ The [Main Menu] screen for the double weigher appears.

#### NOTE

- Select the preset number in the [Select Preset] screen before performing the preset operation. (Refer to 4.4.7 Preset Selection)

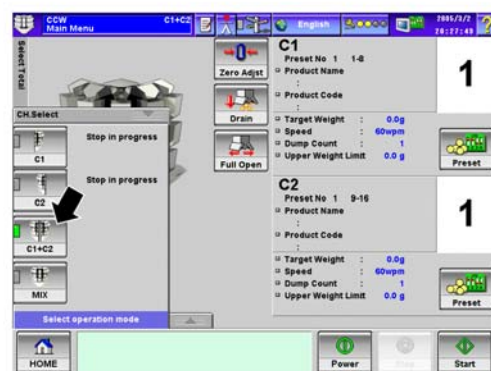



Fig.5-2 [CH.Select] Pop-up Menu



### 5.2.3.2 Setting the Product

#### <Purpose>

To set the product name, product code, and product category of the product to be weighed with this device.

1. Press the [Preset] key  for C1.
  - ▶ The [Product] screen of the [Preset] screen for C1 appears.

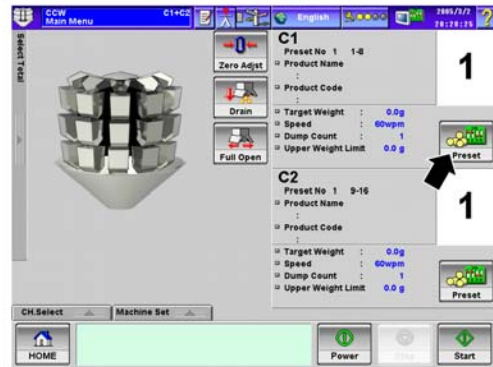



Fig.5-3 [Main Menu] Screen

2. Press the [Product Name] key .
  - ▶ The [Keyboard] screen appears.

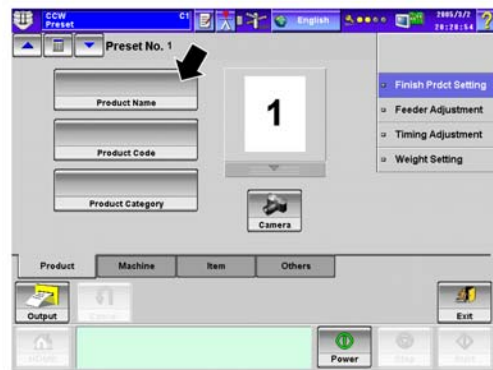




Fig.5-4 [Product] Tab Screen ([Preset] Screen)

3. Set the product name. (POTATO CHIPS)
  - ▶ The [Keyboard] screen disappears.

**NOTE**

- After changing the settings, the

[Cancel] key  becomes operable. To cancel the settings, press the [Cancel] key. To accept the settings,

press the [Exit] key .

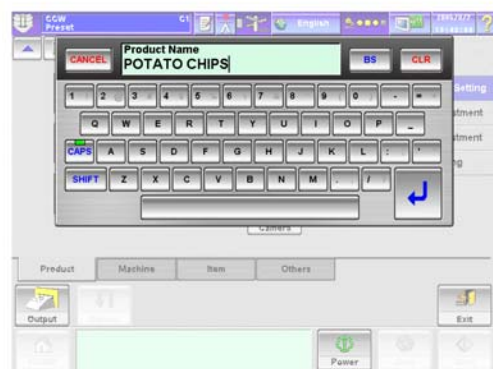
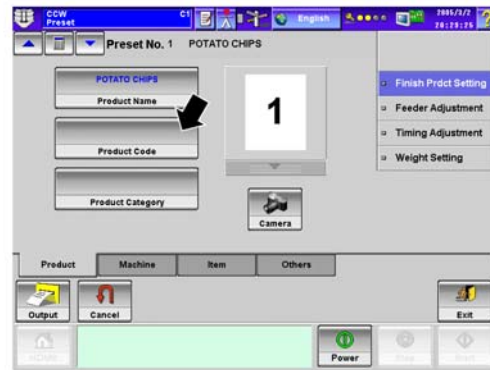


Fig.5-5 [Keyboard] Screen ([Preset] Screen)

4. Press the [Product Code] key



- ▶ The [Keyboard] screen appears.



**Fig.5-6 [Product] Tab Screen ([Preset] Screen)**

5. Set the product code. (01)

- ▶ The [Keyboard] screen disappears.

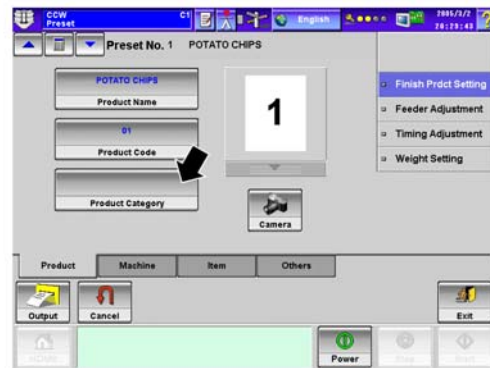


**Fig.5-7 [Keyboard] Screen ([Preset] Screen)**

6. Press the [Product Category] key



- ▶ The [Keyboard] screen appears.



**Fig.5-8 [Product] Tab Screen ([Preset] Screen)**

7. Set the product category. (A100)

- ▶ The [Keyboard] screen disappears.



Fig.5-9 [Keyboard] Screen ([Preset] Screen)

<Selecting the photo>

1. Press the [Photo Selection] drop-down key



- ▶ The [Photo Selection] drop-down list appears.

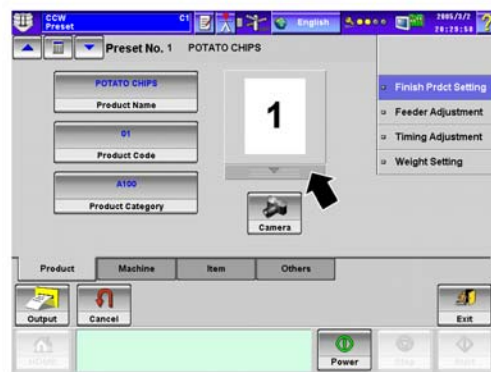


Fig.5-10 [Product] Tab Screen ([Preset] Screen)

2. Select the desired photo.

- ▶ The selected photo is displayed on the screen.

**TIP**

- The selected photo will be reflected to the [Main Menu] screen, [Production] screen, photo display of the [Select Preset] screen, and the [Preset] screen.
- Refer to “Product Photo Taking Procedures” in “6.11 [Preset] Screen” to take photos of the product.



Fig.5-11 [Photo Selection] Drop-down List ([Preset] Screen)

### 5.2.3.3 Setting the Speed

#### <Purpose>

To set the number of packs to be discharged from the device per minute.

Discharge count, average control, interlock parameter number, and sectioning set can be specified when necessary.

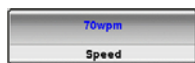
1. Press the [Machine] tab.

▶ The [Machine] screen appears.



Fig.5-12 [Product] Tab Screen ([Preset] Screen)

2. Press the [Speed] key



▶ The [Numeric Keypad] screen appears.



Fig.5-13 [Machine] Screen ([Preset] Screen)

3. Set the speed. (70)

▶ The displayed numerical values are overwritten.

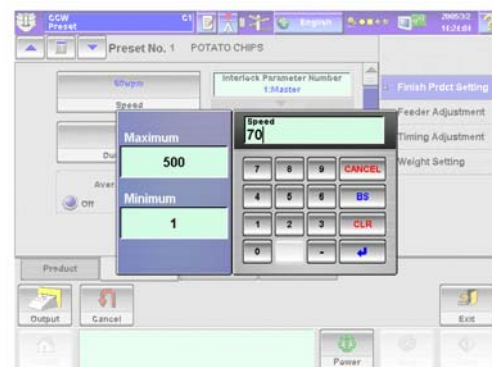


Fig.5-14 [Numeric Keypad] Screen ([Preset] Screen)

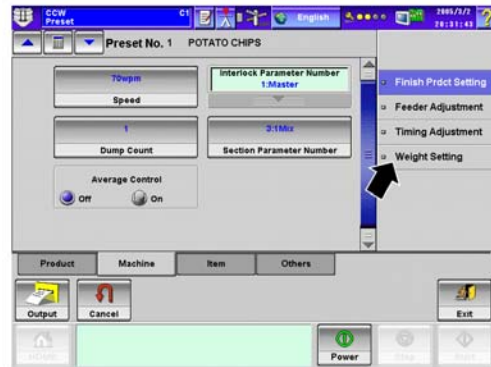
### 5.2.3.4 Setting the Weight Value

**<Purpose>**

To set the weight value and permissible weight value weighed with this device.

1. Press the [Weight Setting] key in the index.

▶ The [Weight Setting] screen appears.



**Fig.5-15 [Machine] Tab Screen ([Preset] Screen)**

2. Press the [Target Weight] key



▶ The [Numeric Keypad] screen appears.



**Fig.5-16 [Weight Setting] Index Screen ([Preset] Screen)**

3. Set the target weight. (90)

▶ The [Numeric Keypad] screen disappears.

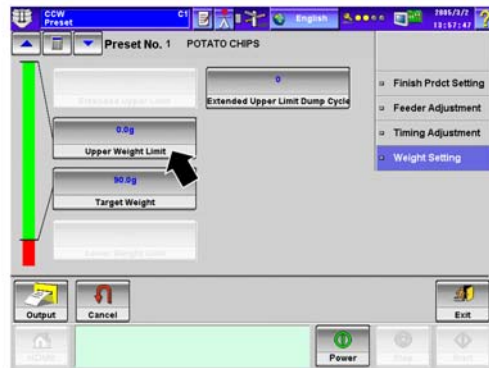


**Fig.5-17 [Numeric Keypad] Screen ([Preset] Screen)**

4. Press the [Upper Weight Limit] key



- The [Numeric Keypad] screen appears.



**Fig.5-18 [Weight Setting] Index Screen ([Preset] Screen)**

5. Set the upper weight limit. (3)


- The [Numeric Keypad] screen disappears.



**Fig.5-19 [Numeric Keypad] Screen ([Preset] Screen)**

### 5.2.3.5 Presetting Other Channels

Preset other channels.

1. Press the [Exit] key .

▶ The [Main Menu] screen appears.



Fig.5-20 [Weight Setting] Index Screen ([Preset] Screen)

**NOTE**

- When the preset number is changed in the [Preset] screen, press the [Exit] key to show the confirmation screen. To accept the settings for the selected preset number, press the [Yes] key.

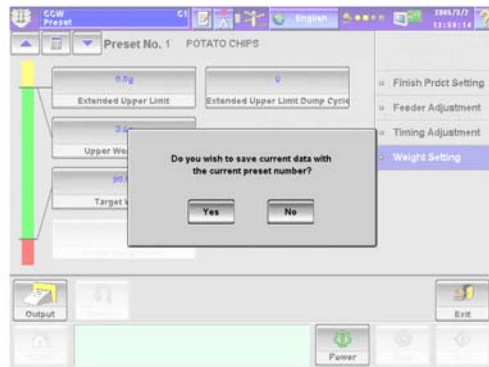




Fig.5-21 Confirmation Screen ([Preset] Screen)

2. Press the [Preset] key  for C2.
  - ▶ The [Preset] screen for C2 appears.
3. Perform the preset operations for C2 by following the procedures described in “5.2.3.2 Setting the Product”.
4. After the preset operations for C1 and C2 are

completed, press the [Exit] key .

▶ The [Main Menu] screen appears.



Fig.5-22 [Main Menu] Screen

## 5.3 Presetting the Mix Weigher

This section describes the preset procedures when this device is used as a mix weigher.

### 5.3.1 Registration Details

Items and details to be set in the preset screen are described in “Table 5-2 Preset Details”.

#### CAUTION

- **Each set value differs depending on product type, characteristics and setting environments. Perform the actual adjustment while checking the operation status.**

#### TIP

- “Initial Value” in “Table 5-2 Preset Details” is the standard value (default value) set to the device in advance.
- “Setting Example” is the example when weighing 60g of candy A and B respectively (unit weight of a candy is approx. 6g) and then mixing those candies together. (☞ 5.3.3 Preset Procedures)

Table 5-2 Preset Details


Setting Item	Setting Detail	Initial Value	Setting Example
CH.Select	Selects either double weighing or mix weighing for the production type.	—	Mix
Product name	Sets the product name.	—	Mix candy
Product code	Sets the product code.	—	03
Product Category	Sets the desired product category.	—	C200
Photo Selection	Selects the photo. When there is no photo data,  is displayed.	<b>1</b>	<b>2</b> (When the preset number has been changed to 2)
Camera	Takes photos of the products.	—	—
Section Select	Function when the device is used as a mix weigher.		Switch between S1 and S2
Product Name	Sets the product name for the selected section.	—	S1: CANDY A S2: CANDY B
Product Code	Sets the product code for the selected section.	—	S1: 03A, S2: 03B
Mix Topping Method	Compensates the product target weight discharged from each section, in order for the mixed product weight to be the closest value to the total target weight set for each section. Select [CNSC TPG] or [Off] for the compensation.	S1: Off S2: Off	S1: CNSC TPG S2: Off



Table 5-2 Preset Details (Continued)

Setting Item	Setting Detail	Initial Value	Setting Example
Speed	Sets the number of packs to be discharged from the device per minute.	60	60
Dump Count	Divides and discharges the product separately to prevent the product from jamming in the packer when the target weight is large or when a product will overflow if weighed all at once. The number of times for division is set here.	1	1
Average Control	Controls the target weight at a regular interval in order to maintain the discharged weight mean value to be close to the target weight. You can select [On] or [Off] for this function.	Off	Off
Interlock Parameter Number	Selects the interlock mode between the device and the packer.	1	1
Section Parameter Number	Selects the section division pattern when dividing weigh heads into sections and weighing different products in each section. There are up to eight different division patterns.	2 (Single weighing of S1)	1 (Double mix weighing of S1 and S2)
Auto Feed Target	Sets the number of weigh hopper heads to be selected for discharge operation in order to obtain the target weight set for the selected section.	S1: 3.8, S2: 3.8	S1: 3.8, S2: 3.8
Disch.Priority Count	Sets the number of times to give priority in participating in the combination to heads in the selected section that have not discharged the product.	S1: 30, S2: 30	S1: 30, S2: 30
Good Efficiency Judgement Value	Sets the efficiency rate judged as good condition.	99.0	99.0
Feed Multiplier	Sets the multiplying factor of feeder operating time set in the [Feeder Adjustment] screen of the selected section.	S1: 1, S2: 1	S1: 1, S2: 1
Hopper Drive Setting	Selects parameters to set the open/close operation condition for each hopper of the selected section including the pool hopper and weigh hopper.	S1: 1, S2: 1	S1: 1, S2: 1
Photo SW	Selects [On] for models with a photo eye sensor, and [Off] for models without a photo eye sensor.	Off	Off
Shutter Drive	Selects [On] for models with a shutter drive, and [Off] for models without a shutter drive.	Off	Off
Feeder Adjustment	Sets operating intensity of the radial and dispersion feeders, operating time, and dispersion weight. Adjusts the product feed to the pool hopper, radial trough, and dispersion table based on the set value.	<ul style="list-style-type: none"> <li>• AFD mode: Manual</li> <li>• AMP: 50</li> <li>• Time: 25</li> <li>• Target Wt: 500</li> </ul>	<ul style="list-style-type: none"> <li>• AFD mode: Manual</li> <li>• AMP: 30</li> <li>• Time: 25</li> <li>• Target Wt: 300</li> </ul>

Table 5-2 Preset Details (Continued)

Setting Item	Setting Detail	Initial Value	Setting Example
Timing Adjustment	Sets the timing value for the opening/closing of each hopper.	<ul style="list-style-type: none"> <li>• WH-DS: 0</li> <li>• IS-WH: 0</li> <li>• WH-PH: 190</li> <li>• PH-RF: 130</li> <li>• WH DELAY: 0</li> <li>• Stagger: 0</li> <li>• WH-BH: 60</li> <li>• BH-WH: 100</li> <li>• WH ON: 450</li> <li>• BH ON: 400</li> <li>• PH ON: 400</li> </ul>	<ul style="list-style-type: none"> <li>• WH-DS: 0</li> <li>• IS-WH: 0</li> <li>• WH-PH: 190</li> <li>• PH-RF: 130</li> <li>• WH DELAY: 0</li> <li>• Stagger: 0</li> <li>• WH-BH: 60</li> <li>• BH-WH: 100</li> <li>• WH ON: 450</li> <li>• BH ON: 400</li> <li>• PH ON: 400</li> </ul>
Target weight	Sets the product weight to be discharged from the selected section to the packer.	S1: 0, S2: 0	S1: 60, S2: 60
Extended Upper Limit	Sets the tolerance so that products can be discharged as proper weight even if the upper limit is exceeded once in a specified number of proper weight dumps of the selected section. Constant cycle means the extended upper limit dump cycle.	0	0
Upper Weight Limit	Sets the upper limit of the proper weight for the selected section.	S1: 0, S2: 0	S1: 5, S2: 5
Lower Weight Limit	Sets the lower limit of the proper weight in grams when the average control function is utilized for the selected section or when mix weighing is performed.	S1: 0, S2: 0	S1: 0, S2: 0

## 5.3.2 Outline of the Registration

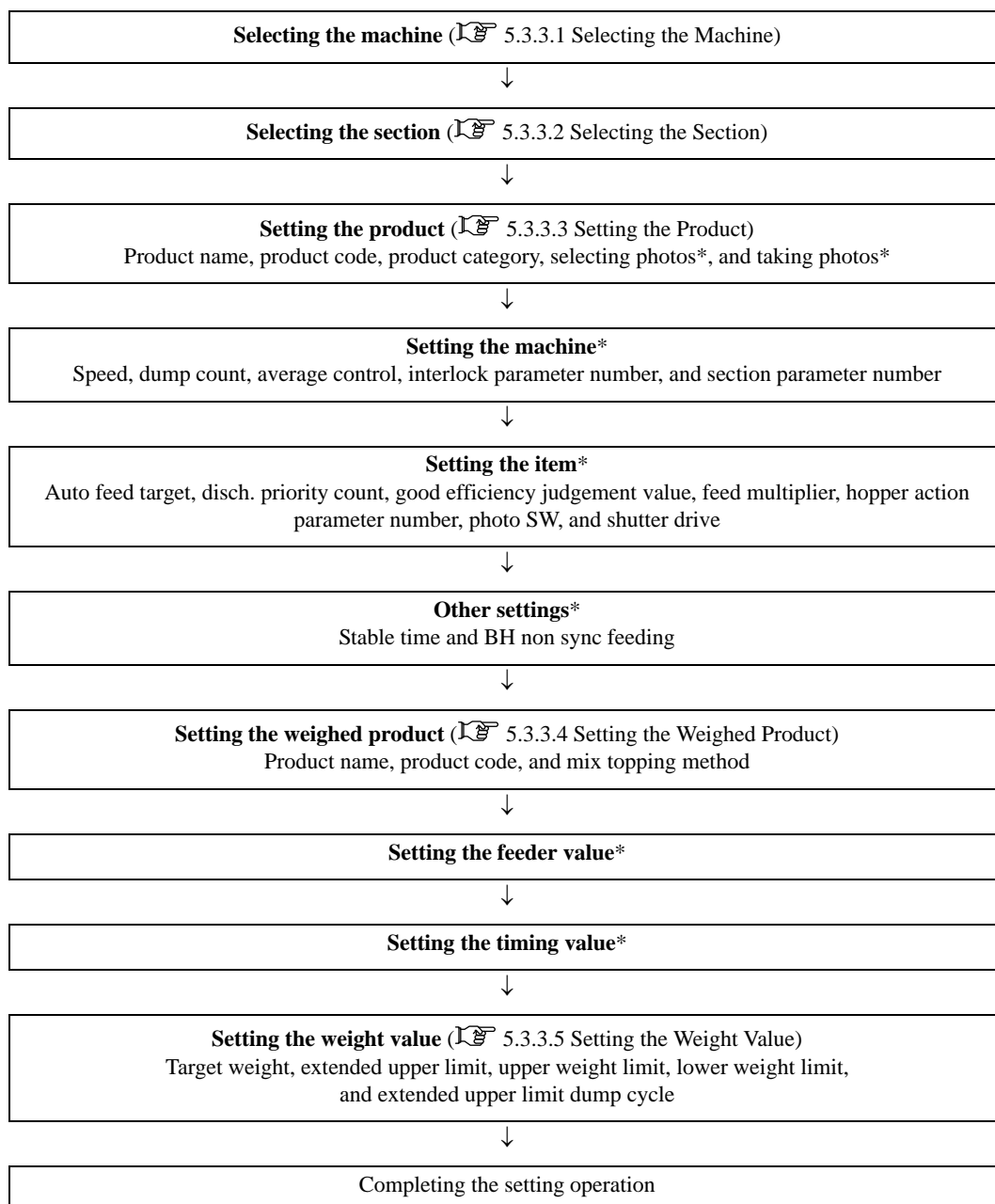
This section describes the outline of the product registration for the mix weigher.

Refer to “5.3.3 Preset Procedures” for details regarding the operation procedures.

For the mix weigher, there are some setting items that apply to the whole mix weigher, and some that apply to each section.

For items marked with \* in the following chart, respective initial values are registered. Refer to “5.3.1 Registration Details” for each initial value.

Refer to “5.3.1 Registration Details” for detailed descriptions of all items in the following chart.



### 5.3.3 Preset Procedures

This section describes the registration procedures using the example shown in “5.3.1 Registration Details”.


Numerical values shown in parentheses are taken from descriptions in “Table 5-2 Preset Details”. The preset procedure is performed by the [Site Engineer] level or the [Installation] level personnel.

#### NOTE

- Setting procedures for the initial values are not described in this section. Refer to “6.11 [Preset] Screen” for the setting procedures of all values.

#### 5.3.3.1 Selecting the Machine

Switch to the desired machine to preset the mix weigher.

- On the [Main Menu] screen, press the [CH.Select] pop-up key .
  - ▶ The [CH.Select] pop-up menu appears.

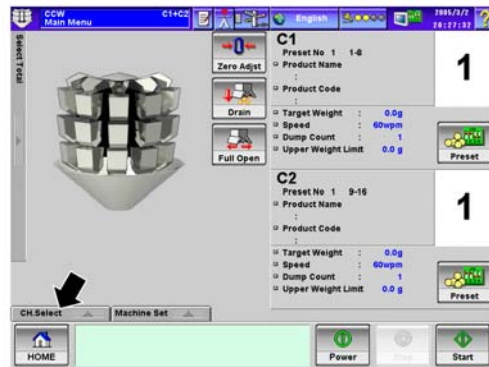



Fig.5-23 [Main Menu] Screen

- Press the [MIX] key .
  - ▶ The [Main Menu] screen for the mix weigher appears.

#### NOTE

- Select the preset number in the [Select Preset] screen before performing the preset operation. (☞ 4.4.7 Preset Selection)



Fig.5-24 [CH.Select] Pop-up Menu

### 5.3.3.2 Selecting the Section

#### <Purpose>

To switch to the desired section and select the sectioning mode as required.

#### <Procedures for selecting the section parameter number>


1. Press the [Preset] key .
  - ▶ The [Preset] screen appears.



Fig.5-25 [Main Menu] Screen

2. Press the [Machine] tab.
  - ▶ The [Machine] screen appears.

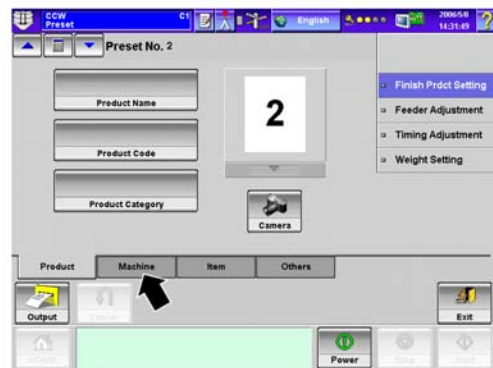



Fig.5-26 [Product] Tab Screen ([Preset] Screen)

3. Press the [Section Parameter Number] key .
  - ▶ The [Section Parameter Number] screen appears.

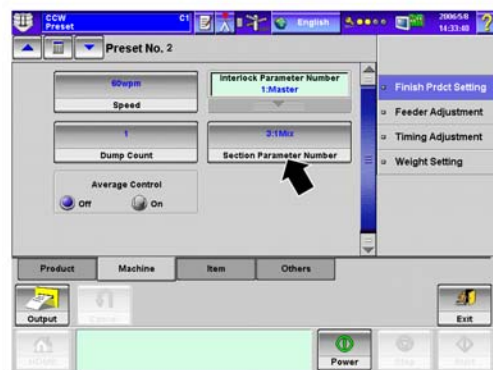
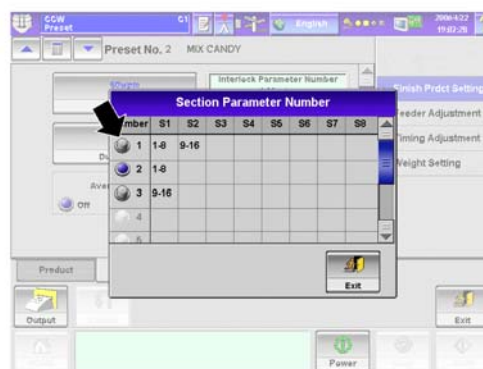


Fig.5-27 [Machine] Tab Screen ([Preset] Screen)

4. Select the section parameter number according to the product.  
Select a valid number from 1 to 8 as the section parameter number.



5. Press the [Exit] key.  
▶ The [Section Parameter Number] screen disappears.



**Fig.5-28 [Section Parameter Number] Screen ([Preset] Screen)**

<Section switching procedures>

**NOTE**

- Section switching is available in the [Item], [Product Setting] and [Weight Setting] screens.

1. Press the [Section Select] drop-down key.
  - ▶ The [Section Select] drop-down list appears.



Fig.5-29 [Product Setting] Index Screen ([Preset] Screen)

2. Press the key of the desired section.
  - ▶ The [Preset] screen for the selected section appears.



Fig.5-30 [Section Select] Drop-down List ([Preset] Screen)

3. Perform the settings by pressing the keys for the desired items (tabs or indices).  
Setting examples are shown in the following section.  
To return to the [Main Menu] screen, press the




Fig.5-31 [Product Setting] Index Screen ([Preset] Screen)

### 5.3.3.3 Setting the Product

#### <Purpose>

To set the product name, product code, and product category of the product to be weighed with this device.

The term “product” here refers to products made by mixing the weighed goods according to the section setting.

1. Press the [Preset] key .
  - ▶ The [Preset] screen appears.

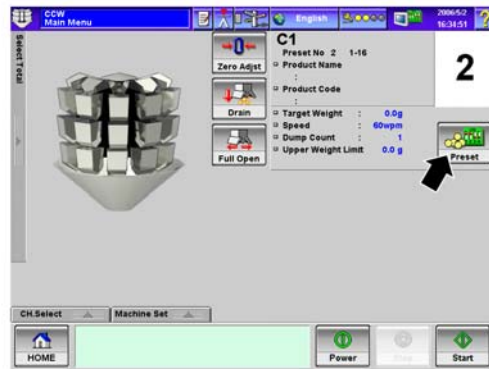



Fig.5-32 [Main Menu] Screen

2. Press the [Product Name] key .
  - ▶ The [Keyboard] screen appears.

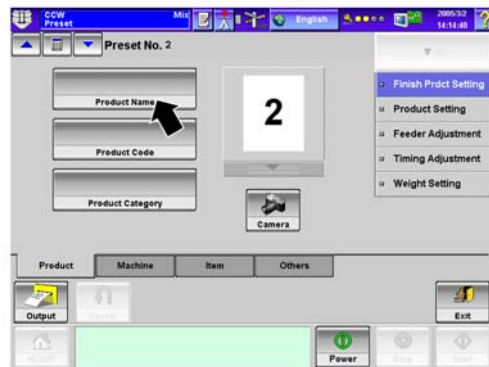


Fig.5-33 [Product] Tab Screen ([Preset] Screen)




3. Set the product name. (MIX CANDY)

► The [Preset] screen appears.

**NOTE**

- After changing the settings, the

[Cancel] key  becomes operable. To cancel the settings, press the [Cancel] key. To accept the settings,


press the [Exit] key .



Fig.5-34 [Keyboard] Screen ([Preset] Screen)

4. Press the [Product Code] key .

► The [Keyboard] screen appears.

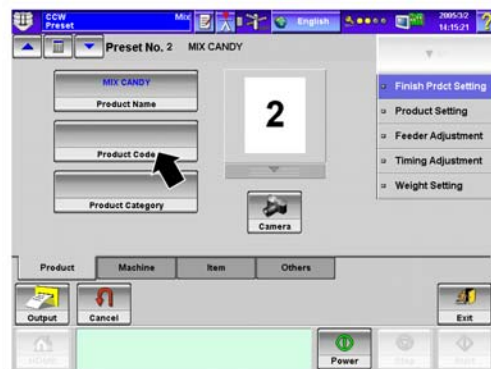


Fig.5-35 [Product] Tab Screen ([Preset] Screen)

5. Set the product code. (03)

► The [Keyboard] screen disappears.

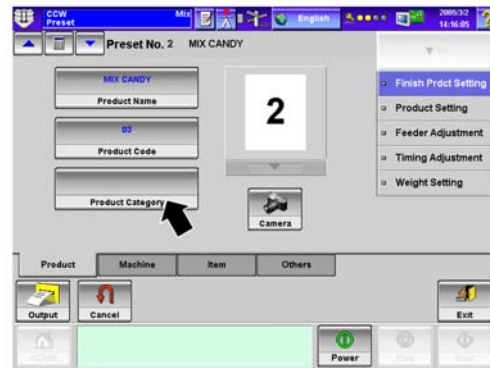


Fig.5-36 [Keyboard] Screen ([Preset] Screen)

6. Press the [Product Category] key



- ▶ The [Keyboard] screen appears.



**Fig.5-37 [Product] Tab Screen ([Preset] Screen)**

7. Set the product category. (C200)

- ▶ The [Keyboard] screen disappears.



**Fig.5-38 [Keyboard] Screen ([Preset] Screen)**

### TIP

- Procedures to display the product photos are the same as those described in “Selecting the photo” of “5.2.3.2 Setting the Product” under “5.2 Presetting the Double Weigher”.

### 5.3.3.4 Setting the Weighed Product

The term “weighed product” here refers to the individual weighed goods that compose the product.

**NOTE**

- When there is only one section, the [Section Select] drop-down key and the [Product Setting] index are not displayed on the screen. Select the section parameter number with the [Section Parameter Number] drop-down key in the [Machine] tab. (☞ 5.3.3.2 Selecting the Section)

1. Press the [Product Setting] key in the index.

- ▶ The [Product Setting] screen appears.



Fig.5-39 [Product] Tab Screen ([Preset] Screen)

2. Press the [Product Name] key



- ▶ The [Keyboard] screen appears.



Fig.5-40 [Product Setting] Index Screen ([Preset] Screen)

3. Set the product name. (S1: CANDY A, S2: CANDY B)

- ▶ The [Keyboard] screen disappears.
- ▶ Perform the settings for the other section by selecting the section from the [Section Select] drop-down key.



Fig.5-41 [Keyboard] Screen ([Preset] Screen)

4. Press the [Product Code] key



- ▶ The [Keyboard] screen appears.



Fig.5-42 [Product Setting] Index Screen ([Preset] Screen)

5. Set the product code. (S1: 03A, S2: 03B)

- ▶ The [Keyboard] screen disappears.



Fig.5-43 [Keyboard] Screen ([Preset] Screen)

- 6. Select [CNSC TPG] or [Off] for the [Mix Topping Method] option.  
(S1: [CNSC TPG], S2: [Off])

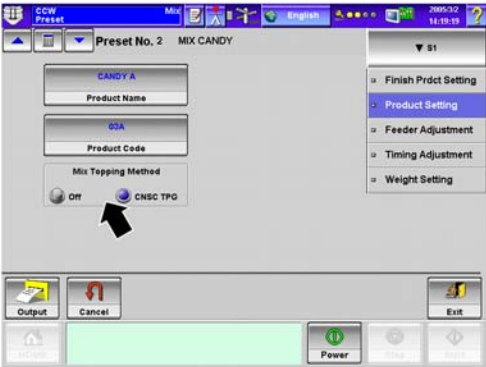


Fig.5-44 [Product Setting] Index Screen ([Preset] Screen)

### 5.3.3.5 Setting the Weight Value

#### <Purpose>

To set the weight value and permissible weight value weighed with this device for each section.

1. Press the [Weight Setting] key in the index.
  - ▶ The [Weight Setting] screen appears.

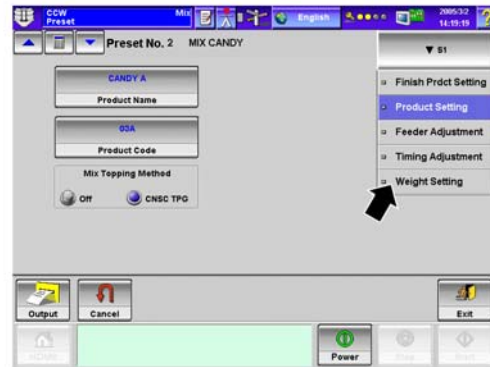



Fig.5-45 [Product Setting] Index Screen ([Preset] Screen)

2. Press the [Target Weight] key .
  - ▶ The [Numeric Keypad] screen appears.

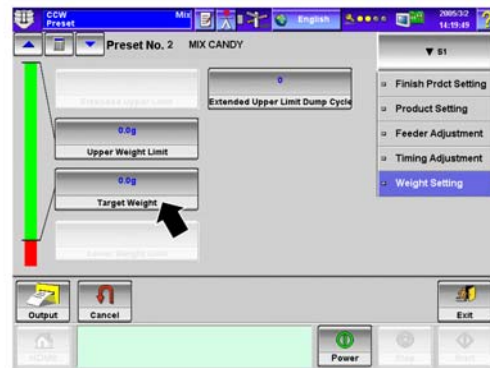


Fig.5-46 [Weight Setting] Index Screen ([Preset] Screen)

3. Set the target weight. (S1: 60, S2: 60)
  - ▶ The [Numeric Keypad] screen disappears.

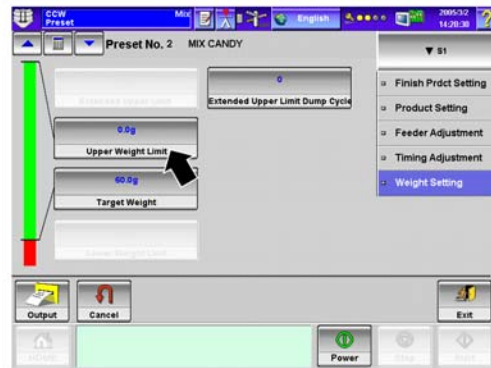


Fig.5-47 [Numeric Keypad] Screen ([Preset] Screen)

- Press the [Upper Weight Limit] key



- ▶ The [Numeric Keypad] screen appears.



**Fig.5-48 [Weight Setting] Index Screen ([Preset] Screen)**

- Set the upper weight limit. (S1: 5, S2: 5)

- ▶ The [Numeric Keypad] screen disappears.




**Fig.5-49 [Numeric Keypad] Screen ([Preset] Screen)**

### 5.3.3.6 Completing Preset Procedures

Complete the preset procedures.

- After the preset operations for all sections are


completed, press the [Exit] key .

- ▶ The [Main Menu] screen appears.



**Fig.5-50 [Preset] screen**

## 5.4 Preset Management

When pressing the [Exit] key  after completing the preset procedures, the preset information is automatically saved to the main body memory.

Preset information saved in a certain preset number can be copied to another preset number.

Detailed preset information can be copied to the memory card in order to maintain backup data or to accept more preset settings.

Preset information created can be output to a printer or as a file for record purpose.

Refer to the following items for the preset management.

- Selecting and copying the preset. (☞ 6.15.3.2.1 Selecting and Copying Preset)
- Copying all preset data. (From memory to card or from card to memory)(☞ 6.15.3.2.2 Copying All Preset)
- Resetting unnecessary preset data to the initial state. (☞ 6.15.3.2.3 Selecting and Initializing Preset)
- Resetting all preset data to the initial state. (☞ 6.15.3.2.4 Initializing All Preset)
- Copying the product data to a different channel. (☞ 7.2.1 Copying C1 Product Data to C2)
- Copying the registered product data to create new product data. (☞ 7.2.2 Copying and Editing Registered Product Data)
- Outputting the preset information to a printer or as a file. (☞ 6.11.8 Preset Output)



## 6 FUNCTIONS OF THE OPERATION SCREENS

### 6.1 Summary

This chapter describes the functions of the [Operation] screen required for production.

The keys displayed in each operation screen include the keys to call functions directly, the keys to input and set numerical values and alphabets with the [Numeric Keypad] screen or [Keyboard] screen, the keys to select items from pop-up keys, drop-down keys or radio buttons, and the keys to switch screens or display modes.

In this chapter, the functions of the keys displayed on the screen are shown in a list, and for the keys with switching and operating functions, the operating procedures are explained in detail.

#### WARNING

- **Thoroughly understand the contents of “3 OPERATING PANELS” before operating the device.**

#### CAUTION

- **For operation of the remote control unit and production, follow the instructions described in “3 OPERATING PANELS” and “4 OPERATION PROCEDURES”.**

#### <Contents>

- Functions of each screen

#### <Purpose>

To understand the functions and operating procedures of each operation screen, and understand and master the advanced operations.

#### <Intended reader>

- Operators
- System administrators

## 6.2 Operation Keys and Operation Levels

The operable levels for each operation key are as follows:

Operation Key	Operation Level			Reference
	Operator	Site Engineer	Installation	
[Message Board] key	*	*	*	6.3
[Information Display] key	*	*	*	6.3
[Start-up Assistant] key	*	*	*	6.3
[Language Selection] key	*	*	*	6.3
[Operation Level Selection] key	*	*	*	6.3
[Control Panel] key			*	6.3
[Screen Control] tab			*	6.3.5
[Backlight Saver] display			*	6.3.5.1
[BL Saver On Time] display			*	6.3.5.1
[Wallpaper] display			*	6.3.5.1
[Characters] display			*	6.3.5.1
[Password Set/LangSlct Set] tab			*	6.3.5
[Site Engineer] level			*	6.3.5.2
[Installation] level			*	6.3.5.2
[Destination ID] tab			*	6.3.5
[Destination ID] drop-down key			*	6.3.5.3
[Access Address] key			*	6.3.5.3
[Exit] key			*	6.3.5
[Date & Time Setting] key			*	6.3
[Help] key	*	*	*	6.3
[Zero Adjst] key	*	*	*	6.4
Each [WH] key	*	*	*	6.6
Each [DF] key	*	*	*	6.6
[Slct All WH] key	*	*	*	6.6
[Slct All DF] key	*	*	*	6.6
[Start] key	*	*	*	6.6
[Exit] key	*	*	*	6.6
[Drain] key	*	*	*	6.4
[Auto Zero] lamp key	*	*	*	6.8
[Infeed Control] lamp key	*	*	*	6.8
[Drain STOP] key	*	*	*	6.8
[Drain START] key	*	*	*	6.8
[Exit] key	*	*	*	6.8
[Weight Display] tab	*	*	*	6.8
[Feeder Adjust] tab	*	*	*	6.8
[Live]/[C.G.] switching tab	*	*	*	6.13
Each [DF] key	*	*	*	6.13
Each [RF] key	*	*	*	6.13
[RF Time] key	*	*	*	6.13
[RF AMP] key	*	*	*	6.13
[Head mean] key	*	*	*	6.13
[Section mean] key	*	*	*	6.13
[Increase] key	*	*	*	6.13
[Decrease] key	*	*	*	6.13
[Feeder] pop-up key	*	*	*	6.13
[Radar chart display switching arrow] key	*	*	*	6.13

\* : Indicates that the item can be operated.

### NOTE

- Some of the keys in the list may not appear depending on the machine status or specifications set by the user.

Operation Key	Operation Level			Reference
	Operator	Site Engineer	Installation	
[Drain] key (Continued)	*	*	*	6.4
[Timing Adjust] tab	*	*	*	6.14
Each [Timing Adjustment Item] key	*	*	*	6.14
[Increase/Decrease] key (10ms)	*	*	*	6.14
[Increase/Decrease] key (100ms)	*	*	*	6.14
[Entr Time] key	*	*	*	6.14
[Auto Cal.] key	*	*	*	6.14
[C1]/[C2] switching radio button	*	*	*	6.14
[Full Open] key	*	*	*	6.4
[Unit Select] tab	*	*	*	6.9
[DF] lamp key	*	*	*	6.9
[RF] lamp key	*	*	*	6.9
[PH] lamp key	*	*	*	6.9
[WH] lamp key	*	*	*	6.9
[BH] lamp key	*	*	*	6.9
[Section Select] pop-up key	*	*	*	6.9
Each [Section head] key	*	*	*	6.9.1
[All Section] key	*	*	*	6.9.1
[Feeder Adjust] tab	*	*	*	6.9
[Live]/[C.G.] switching tab	*	*	*	6.13
Each [DF] key	*	*	*	6.13
Each [RF] key	*	*	*	6.13
[RF Time] key	*	*	*	6.13
[RF AMP] key	*	*	*	6.13
[Head mean] key	*	*	*	6.13
[Section mean] key	*	*	*	6.13
[Increase] key	*	*	*	6.13
[Decrease] key	*	*	*	6.13
[Feeder] pop-up key	*	*	*	6.13
[Radar chart display switching arrow] key	*	*	*	6.13
[Close] key	*	*	*	6.9
[Open] key	*	*	*	6.9
[Exit] key	*	*	*	6.9
[Select Preset] key	*	*	*	6.4
[Select Preset] key	*	*	*	6.10.1
[Slt Dsply] key	*	*	*	6.10.1
[Preset No.] key	*	*	*	6.10.1
[Exit] key	*	*	*	6.10.1
[Preset] key		*	*	6.4
[Change Preset No.] key		*	*	6.11.1
[Preset No. Direct Select] key		*	*	6.11.1
[Finish Prdct Setting] index		*	*	6.11.1
[Product] tab		*	*	6.11.2
[Product Name] key		*	*	6.11.2.1
[Product Code] key		*	*	6.11.2.1
[Product Category] key		*	*	6.11.2.1
[Photo selection] key		*	*	6.11.2.1
[Camera] key		*	*	6.11.2.1
[Machine] tab		*	*	6.11.2
[Speed] key		*	*	6.11.2.2
[Dump Count] key		*	*	6.11.2.2
[Average Control] radio button		*	*	6.11.2.2
[Interlock Parameter Number] drop-down key		*	*	6.11.2.2
[Section Parameter Number] key		*	*	6.11.2.2
[Item] tab		*	*	6.11.2
[Auto Feed Target] key		*	*	6.11.2.3
[Disch.Priority Count] key		*	*	6.11.2.3
[Good Efficiency Judgement Value] key		*	*	6.11.2.3
[Feed Multiplier] key		*	*	6.11.2.3
[Hopper Action Parameter Number] drop-down key		*	*	6.11.2.3
[Photo SW] radio button		*	*	6.11.2.3
[Shutter Drive] radio button		*	*	6.11.2.3

Operation Key	Operation Level			Reference
	Operator	Site Engineer	Installation	
[Preset] key (Continued)		*	*	6.4
[Finish Prdct Setting] index (Continued)		*	*	6.11.1
[Others] tab		*	*	6.11.2
[Stable Time] key		*	*	6.11.2.4
[BH Non Sync Feeding] radio button		*	*	6.11.2.4
[Product Setting] index		*	*	6.11.3
[Product Name] key		*	*	6.11.3
[Product Code] key		*	*	6.11.3
[Mix Topping Method] radio button		*	*	6.11.3
[Section Select] drop-down key		*	*	6.11.3
[Feeder Adjustment] index		*	*	6.11.1
Each [RF] key		*	*	6.11.4
Each [DF] key		*	*	6.11.4
[Time] lamp key		*	*	6.11.4
[AMP] lamp key		*	*	6.11.4
[Target Wt] key		*	*	6.11.4
[Read Default] key		*	*	6.11.4
[Read OptimumVal] key		*	*	6.11.4
[Increase] key		*	*	6.11.4
[Decrease] key		*	*	6.11.4
[Feeder] pop-up key		*	*	6.11.4
[Timing Adjustment] index		*	*	6.11.1
Each [Timing Adjustment Item] key		*	*	6.11.5
[Increase/Decrease] key (10ms)		*	*	6.11.5
[Increase/Decrease] key (100ms)		*	*	6.11.5
[Entr] key		*	*	6.11.5
[Auto Cal.] pop-up key		*	*	6.11.5
[Weight Setting] index		*	*	6.11.1
[Extended Upper Limit] key		*	*	6.11.6
[Upper Weight Limit] key		*	*	6.11.6
[Target Weight] key		*	*	6.11.6
[Lower Weight Limit] key		*	*	6.11.6
[Extended Upper Limit Dump Cycle] key		*	*	6.11.6
[Exit] key		*	*	6.11.1
[Output] key		*	*	6.11.1
[Cancel] key		*	*	6.11.1
[Power] key	*	*	*	6.4
[Start] key	*	*	*	6.4
[Combination] tab	*	*	*	6.7
[Select Display] pop-up key	*	*	*	6.7.1
[Combination Display] key	*	*	*	6.7.1.1
[Expansion Display] key	*	*	*	6.7.1.1
[Feeder Adjust] tab	*	*	*	6.7
[Live]/[C.G.] switching tab	*	*	*	6.13
Each [DF] key	*	*	*	6.13
Each [RF] key	*	*	*	6.13
[RF Time] key	*	*	*	6.13
[RF AMP] key	*	*	*	6.13
[Head mean] key	*	*	*	6.13
[Section mean] key	*	*	*	6.13
[Increase] key	*	*	*	6.13
[Decrease] key	*	*	*	6.13
[Feeder] pop-up key	*	*	*	6.13
[Radarc chart display switching arrow] key	*	*	*	6.13
[Timing Adjust] tab	*	*	*	6.7
Each [Timing Adjustment Item] key	*	*	*	6.14
[Increase/Decrease] key (10ms)	*	*	*	6.14
[Increase/Decrease] key (100ms)	*	*	*	6.14
[Entr Time] key	*	*	*	6.14
[Auto Cal.] key	*	*	*	6.14
[C1]/[C2] switching radio button	*	*	*	6.14

Operation Key	Operation Level			Reference
	Operator	Site Engineer	Installation	
[Start] key (Continued)	*	*	*	6.4
[Total Data] tab	*	*	*	6.7
[C1]/[C2] switching drop-down key	*	*	*	6.7.4
[Total Log] drop-down list key	*	*	*	6.7.4
[Output] key	*	*	*	6.7.4
[Select Total] pop-up key	*	*	*	6.7.4
[Weight Display] tab	*	*	*	6.7
[CH.Select] pop-up key	*	*	*	6.7
[Write feeder OptimumVal] key		*	*	6.7
[Infeed Control] key	*	*	*	6.7
[Exit] key	*	*	*	6.7
[Sample Discharge] pop-up key	*	*	*	6.7
[Stop] key	*	*	*	6.4
[Select Total] pop-up key	*	*	*	6.4
[Current Total] key	*	*	*	6.12
[Output] key	*	*	*	6.12.1
[Exit] key	*	*	*	6.12.1
[Select Total] pop-up key	*	*	*	6.12.1
[Total Log] drop-down key	*	*	*	6.12.1
[C1]/[C2] switching drop-down key	*	*	*	6.12.1
[X-bar Chart] key	*	*	*	6.12
[C1]/[C2] switching drop-down key	*	*	*	6.12.2
[Total Log] drop-down key	*	*	*	6.12.2
[Weigher's Transitional Data] key	*	*	*	6.12
[SelectItem] drop-down key	*	*	*	6.12.3
[C1]/[C2] switching drop-down key	*	*	*	6.12.3
[Per Head - Cmb. Participation Data] key	*	*	*	6.12
[SelectItem] drop-down key	*	*	*	6.12.4
[Total Setting] key		*	*	6.12
[Every Combination Output] radio button		*	*	6.12.5
[Operation Log Output] radio button		*	*	6.12.5
[Error Stop Log] key		*	*	6.12.5
[Warning Log] key		*	*	6.12.5
[Machine Operation Log] key		*	*	6.12.5
[Key Operation Log] key		*	*	6.12.5
[Action for Statistical Mem. Full] radio button		*	*	6.12.5
[BATCH TOTAL INTERVAL] increase/decrease key		*	*	6.12.5
[Data Sampling Interval] increase/decrease key		*	*	6.12.5
[All Total] key		*	*	6.12.5
[Output] key		*	*	6.12.5
[Operation Log] key	*	*	*	6.12
[Error Stop Log] key	*	*	*	6.12.6
[Warning Log] key	*	*	*	6.12.6
[Machine Operation Log] key	*	*	*	6.12.6
[Key Operation Log] key	*	*	*	6.12.6
[CH.Select] pop-up key	*	*	*	6.4
[C1] key	*	*	*	6.5
[C2] key	*	*	*	6.5
[C1+C2] key	*	*	*	6.5
[MIX] key	*	*	*	6.5
[Machine Set] pop-up key		*	*	6.4
[Manual Adjustment] index		*	*	6.15
[Weighing Adjst] tab		*	*	6.15.1
[Head] key		*	*	6.15.1.1
[All Head SLCT/CLR] key		*	*	6.15.1.1
[Zero Adjst] key		*	*	6.15.1.1
[WH Span Adjustment] key		*	*	6.15.1.1
[Combi. CalcItn] tab			*	6.15.1
[Display/Cal Select] pop-up key			*	6.15.1.2
[Combination Result Display] key			*	6.15.1.2
[Combination Status Display with Scale] key			*	6.15.1.2
[Single Combination Weighing] key			*	6.15.1.2
[Discharge After Combination Weighing] key			*	6.15.1.2

Operation Key	Operation Level			Reference
	Operator	Site Engineer	Installation	
[Machine Set] pop-up key (Continued)		*	*	6.4
[Manual Adjustment] index (Continued)		*	*	6.15
[AFV Monitor] tab			*	6.15.1
[Zoom in] key			*	6.15.1.3
[Zoom out] key			*	6.15.1.3
[Drive Start] key			*	6.15.1.3
[Drive Stop] key			*	6.15.1.3
[Exit] key			*	6.15.1.3
[Self-diagnosis] index			*	6.15
[Device Check] tab			*	6.15.2
[SifDiagnosis] radio button			*	6.15.2.1
[Exec.] key			*	6.15.2.1
[In/Output Signal] tab			*	6.15.2
[Relay Unit No.] drop-down key			*	6.15.2.2
[Discharge Completion Signal 1] lamp key			*	6.15.2.2
[Discharge Completion Signal 2] lamp key			*	6.15.2.2
[Error Signal 1] lamp key			*	6.15.2.2
[Error Signal 2] lamp key			*	6.15.2.2
[Infeed Control Signal 1] lamp key			*	6.15.2.2
[Infeed Control Signal 2] lamp key			*	6.15.2.2
[Control Signal 1] lamp key			*	6.15.2.2
[Control Signal 2] lamp key			*	6.15.2.2
[Network Analyze] tab			*	6.15.2
[WCU] key			*	6.15.2.3
[ICU] key			*	6.15.2.3
[DMU] key			*	6.15.2.3
Reconfigure Count [WCU] key			*	6.15.2.3
Reconfigure Count [ICU] key			*	6.15.2.3
Reconfigure Count [DMU] key			*	6.15.2.3
[Output] key			*	6.15.2.3
[Program Number] tab			*	6.15.2
[Output] key			*	6.15.2.4
[Test Drive] tab			*	6.15.2
[Head] key			*	6.15.2.5
[All WH] key			*	6.15.2.5
[DF] lamp key			*	6.15.2.5
[RF] lamp key			*	6.15.2.5
[PH] lamp key			*	6.15.2.5
[WH] lamp key			*	6.15.2.5
[BH] lamp key			*	6.15.2.5
[Drive Start] key			*	6.15.2.5
[Drive Stop] key			*	6.15.2.5
[Out]/[In] radio button			*	6.15.2.5
[Display&Data/Manager] index		*	*	6.15
[Layout Setting] tab		*	*	6.15.3
[Head No 1 Location Setting] key		*	*	6.15.3.1
[C1 Weight Display Position] radio button		*	*	6.15.3.1
[Preset Manager] tab			*	6.15.3
[Initialize] key			*	6.15.3.2
[Source] drop-down key			*	6.15.3.2
[Destination] drop-down key			*	6.15.3.2
[Copy] key			*	6.15.3.2
[All Select] key			*	6.15.3.2
[Machine Set Mngr] tab			*	6.15.3
[Initialize] key			*	6.15.3.3
[Source] drop-down key			*	6.15.3.3
[Destination] drop-down key			*	6.15.3.3
[Copy] key			*	6.15.3.3
[All Select] key			*	6.15.3.3

Operation Key	Operation Level			Reference
	Operator	Site Engineer	Installation	
[Machine Set] pop-up key (Continued)		*	*	6.4
[Various Parameter Setting] index			*	6.15
[Weigh Spec Set] tab			*	6.15.4
[Range] radio button			*	6.15.4.1
[Empty Judgment Weight] key			*	6.15.4.1
[Stable Judgment Weight] key			*	6.15.4.1
[Stable Count] key			*	6.15.4.1
[Auto Zero Tolerance] key			*	6.15.4.1
[Auto Zero Interval] key			*	6.15.4.1
[Filter No.] drop-down key			*	6.15.4.1
[AFV] radio button			*	6.15.4.1
[Output] key			*	6.15.4.1
[Combination Set] tab			*	6.15.4
[Compensation Value] key			*	6.15.4.2
[Auto Compensation Revision] radio button			*	6.15.4.2
[Output] key			*	6.15.4.2
[Zero Error] radio button			*	6.15.4.2
[PH,WH,BH Hopper Error] radio button			*	6.15.4.2
[Overscale Error] radio button			*	6.15.4.2
[Error Stop Head Number] key			*	6.15.4.2
[Overweight Error Stop Count] key			*	6.15.4.2
[Recheck Error] radio button			*	6.15.4.2
[Sectioning Set] tab			*	6.15.4
[Parameter Select] key			*	6.15.4.3
[Output] key			*	6.15.4.3
[Smallest Head No in section] key			*	6.15.4.3
[Largest Head No in section] key			*	6.15.4.3
[Delete] key			*	6.15.4.3
[Weigher Setting] index			*	6.15
[Active head] tab			*	6.15.5
[Head] key			*	6.15.5.1
[All Head SLCT/CLR] key			*	6.15.5.1
[AFD Setting] tab			*	6.15.5
[AFD Stop for Fewer Available Head] key			*	6.15.5.2
[Cleaning Request] radio button			*	6.15.5.2
[Peripheral Equipment Setting] index			*	6.15
[Pckr Intrck Set] tab			*	6.15.6
[Parameter No. Select] drop-down key			*	6.15.6.1
[Pckr Intrck Set] index			*	6.15.6.1
[Dump Confirm Hold] key			*	6.15.6.1.1
[Multi Dump Initiate] radio button			*	6.15.6.1.1
[Multi Dump Confirm] radio button			*	6.15.6.1.1
[Interface] drop-down key			*	6.15.6.1.1
[Manual Dump Initiate] radio button			*	6.15.6.1.1
[Manual Dmp Confirm] radio button			*	6.15.6.1.1
[RingShutter] index			*	6.15.6.1
[Use] radio button			*	6.15.6.1.2
[Parameter Select] drop-down key			*	6.15.6.1.2
[RS] drop-down key			*	6.15.6.1.2
[Minimum Weight Head Number] key			*	6.15.6.1.2
[Maximum Weight Head Number] key			*	6.15.6.1.2
[Pool in Multi Dump] radio button			*	6.15.6.1.2
[Cycle Pool] radio button			*	6.15.6.1.2
[EXC Number] drop-down key			*	6.15.6.1.2
[EXC Port Number] drop-down key			*	6.15.6.1.2
[Discharge Direction] radio button			*	6.15.6.1.2
[Product Hold step] key			*	6.15.6.1.2

Operation Key	Operation Level			Reference
	Operator	Site Engineer	Installation	
[Machine Set] pop-up key (Continued)		*	*	6.4
[Peripheral Equipment Setting] index (Continued)			*	6.15
[Pckr Intrlck Set] tab (Continued)			*	6.15.4
[DivertingTimingHppr] index			*	6.15.6.1
[Use] radio button			*	6.15.6.1.3
[Parameter Select] drop-down key			*	6.15.6.1.3
[DTH] drop-down key			*	6.15.6.1.3
[Minimum Weight Head Number] key			*	6.15.6.1.3
[Maximum Weight Head Number] key			*	6.15.6.1.3
[Pool in Multi Dump] radio button			*	6.15.6.1.3
[Cycle Pool] radio button			*	6.15.6.1.3
[EXC Number] drop-down key			*	6.15.6.1.3
[EXC Port Number] drop-down key			*	6.15.6.1.3
[Discharge Direction] radio button			*	6.15.6.1.3
[Product Hold step] key			*	6.15.6.1.3
[TimingHopper] index			*	6.15.6.1
[Use] radio button			*	6.15.6.1.4
[Parameter Selection] drop-down key			*	6.15.6.1.4
[TH] drop-down key			*	6.15.6.1.4
[Minimum Weight Head Number] key			*	6.15.6.1.4
[Maximum Weight Head Number] key			*	6.15.6.1.4
[Pool in Multi Dump] radio button			*	6.15.6.1.4
[Cycle Pool] radio button			*	6.15.6.1.4
[EXC Number] drop-down key			*	6.15.6.1.4
[EXC Port Number] drop-down key			*	6.15.6.1.4
[Discharge Direction] radio button			*	6.15.6.1.4
[Product Hold step] key			*	6.15.6.1.4
[Output] key			*	6.15.6.1
[Infeedr Cntl Set] tab			*	6.15.6.2
[Infeeder No] key			*	6.15.6.2
[Infeeder No. Select] drop-down key			*	6.15.6.2
[Smallest head number] key			*	6.15.6.2
[Largest Head number] key			*	6.15.6.2
[Infeed Detector] radio button			*	6.15.6.2
[Transient Intrpt.] key			*	6.15.6.2
[Feed Intrpt.] key			*	6.15.6.2



### 6.3 Upper Setting Bar

The upper setting bar is constantly displayed at the top of each screen and can be used to set the basic operational environment.

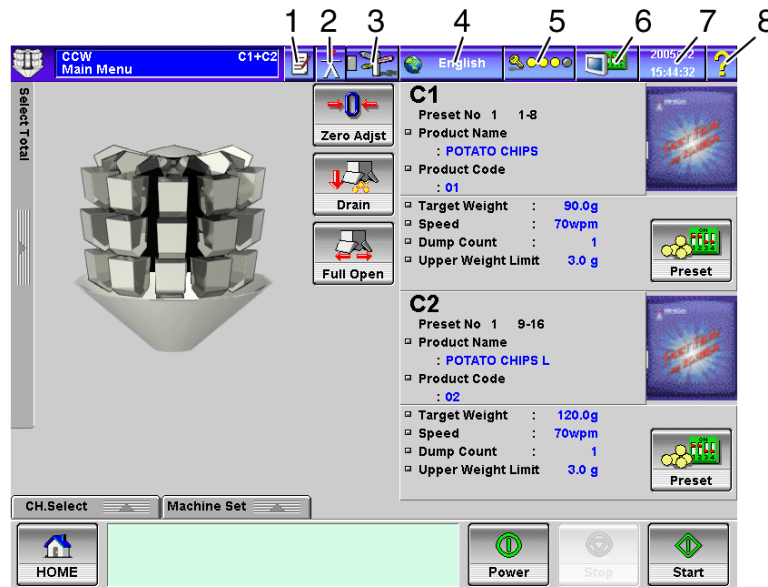










Fig.6-1 Upper Setting Bar (e.g. [Main Menu] Screen)

Table 6-1 Items and Functions of Upper Setting Bar

No.	Name	Function
1	[Message Board] key 	Displays the [Message Board] screen. (☞ 6.3.1 Message Board)
2	[Information Display] key 	Displays the operation manual and other information for this device.
3	[Start-up Assistant] key 	Displays the [Start-Up Assistant] screen. (The start-up assistant function is available only in the main menu.) (☞ 6.3.2 Start-Up Assistant)
4	[Language Selection] key 	Selects the language. (☞ 6.3.3 Language Selection)
5	[Operation Level Selection] key 	Switches the [Operation] level. (☞ 6.3.4 Operation Level Selection)
6	[Control Panel] key 	Sets up the screen control, password and destination ID. (☞ 6.3.5 [Control Panel] Screen)
7	[Date & Time Setting] key 	Sets the date and time. (☞ 6.3.6 [Date & Time Setting] Screen)

**Table 6-1 Items and Functions of Upper Setting Bar(Continued)**

No.	Name	Function
8	[Help] key 	Displays the descriptions for each key. The [Help] key blinks when pressed. If a desired key is pressed after that, the function details of the pressed key appear. If you touch the screen while the Help window is displayed, the Help function terminates. (☞ 6.3.7 Help Function)

### 6.3.1 Message Board

The message board is the function for handwriting notes freely on the operation panel. You can freely input any notes including memos about production or messages to the next operators. When a note is entered, the [Message Board] key blinks. The key keeps blinking even while another screen is displayed, which makes it possible for users to recognize the presence of memo data at a glance.

**CAUTION**

- Use fingertips only for input control. Using a pen or other pointed objects may damage the operation panel.

**NOTE**

- Display may vary depending on the operation speed or the writing pressure. Letters that are too small may not be displayed clearly.

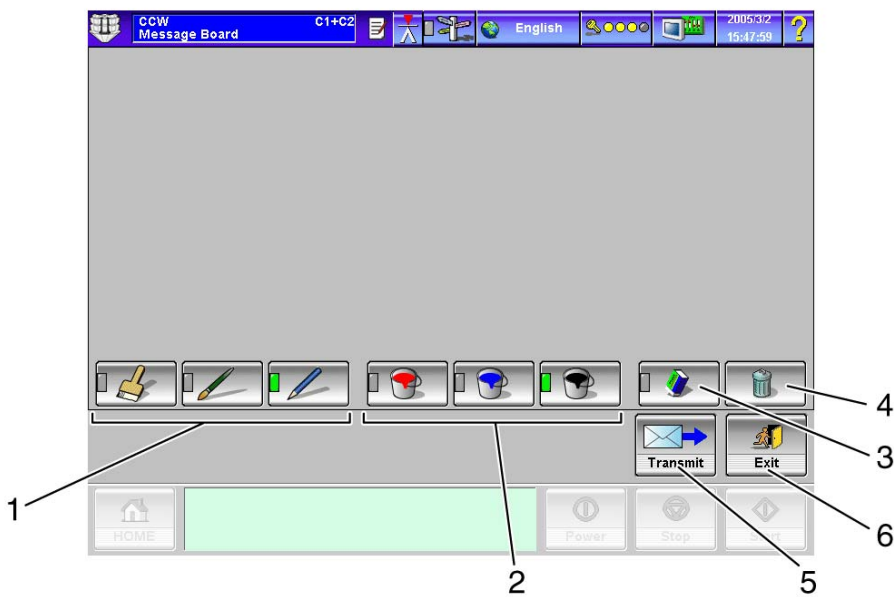


Fig.6-2 [Message Board] Screen

Table 6-2 Items and Functions of [Message Board] Screen












No.	Name	Function
1	[Line Thickness] key	Selects the line thickness.
	  	 : Thick  : Medium  : Thin

Table 6-2 Items and Functions of [Message Board] Screen (Continued)

No.	Name	Function
2	[Line Color] key 	Selects the line color. (Red, blue or black)
3	[Eraser] key 	Erases the area traced with this key.
4	[Delete All] key 	Deletes all memo data being displayed.
5	[Transmit] key 	Transmits the message board by e-mail.
6	[Exit] key 	Returns to the previous screen.

**<Usage>**



- Press the [Message Board] key .
  - ▶The [Message Board] screen appears.



Fig.6-3 [Main Menu] Screen

- Select the line thickness and line color with each selection key.
- Enter letters or drawings with your fingertip.
  - ▶The letters and drawings as entered with your fingertip are displayed.
  - ▶The [Message Board] key  blinks.

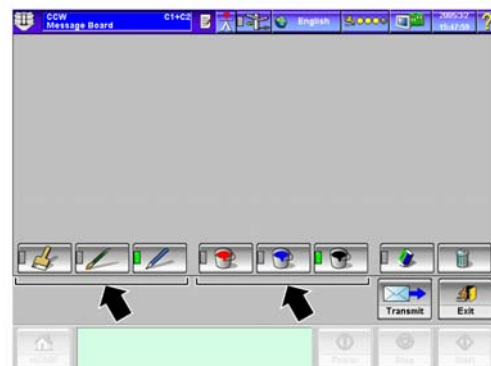



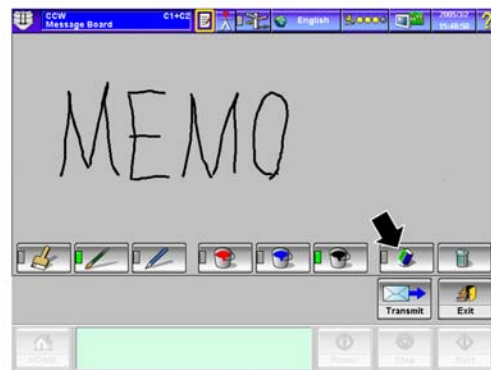
Fig.6-4 [Message Board] Screen


**<To erase a part of message>**

4. Press the [Eraser] key .
5. Trace the part to be erased with your fingertip.
  - ▶ The traced part is erased.



**NOTE**

- Even if the entire message is erased with the [Eraser] key, the entire memo data is not deleted and the [Message Board] key keeps blinking. If the [Delete All] key is used, the entire memo data is deleted and the [Message Board] key blinking is canceled. (See the following.)

**Fig.6-5 [Message Board] Screen****<To delete all memo data>**

6. Press the [Delete All] key .
  - ▶ The confirmation message screen appears.

**Fig.6-6 [Message Board] Screen**

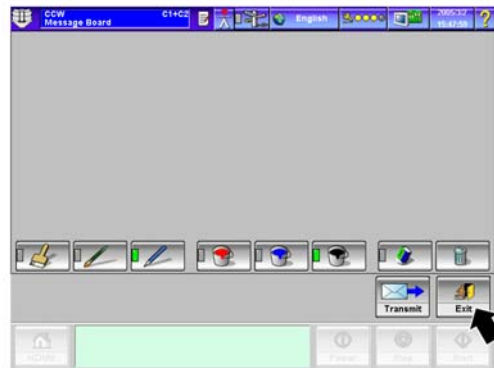
7. When not deleting the message board data, press the [No] key .
  - ▶ Deleting of the entire message board is canceled.
- When deleting the message board data, press the [Yes] key .
  - ▶ All memo data is deleted.
  - ▶ The [Message Board] key stops blinking.

**Fig.6-7 [Confirmation Message] Screen ([Message Board] Screen)**

8. To close the [Message Board] screen, press the

[Exit] key .

- ▶ The screen previously displayed appears.




**Fig.6-8 [Message Board] Screen**

### <To transmit memo data by e-mail>

The message board can be sent as image data attached to e-mail.

The destination of the e-mail can be set in [E-mail Setting] in the [Destination ID] screen of the [Control Panel] screen. (Setting operations are performed by [Maintenance] level personnel, and therefore are not covered in this manual. Refer to the service manual.)

1. In the [Message Board] screen, press the


[Transmit] key .

- ▶ The confirmation message screen appears.




**Fig.6-9 [Message Board] Screen**

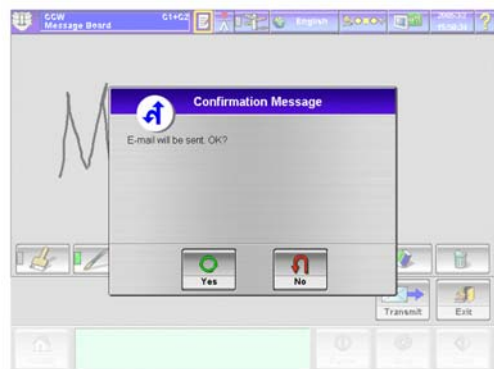
2. When not sending the message board data,

press the [No] key .

When sending the message board data, press

the [Yes] key .

- ▶ The memo data is transmitted.



**Fig.6-10 [Confirmation Message] Screen  
([Message Board] Screen)**


## 6.3.2 Start-Up Assistant

The [Start-Up Assistant] screen is used to guide operations up to production start.

### NOTE

- The start-up assistant function is not available while screens other than the [Main Menu] are displayed. Return to the [Main Menu] to start operations.

- In the [Main Menu] screen, press the [Start-up

Assistant] key .

- The [Start-Up Assistant] screen appears.



Fig.6-11 [Main Menu] Screen

- Until production starts, appropriate messages are displayed as required and the corresponding keys to be operated blink. Follow the guidance for operations displayed on the screen.



Fig.6-12 [Start-up Assistant] Screen  
([Start-Up Assistant] Screen)

### NOTE

- Refer to “4.4.6 Start-up Assistant Function” for start-up assistant operations.

### 6.3.3 Language Selection

Selects a language to be used on the operation panel.

1. Press the [Language Selection] drop-down key



- ▶ The [Language Selection] drop-down list is displayed.



Fig.6-13 [Main Menu] Screen

2. Select the language.

- ▶ The selected language lights up.
- ▶ The operation language is switched.



Fig.6-14 [Language Selection] Drop-down List



### 6.3.4 Operation Level Selection

In the [Main Menu] screen, press the [Operation Level Selection] drop-down key  to display the menu to select the operation level.

There are four operation levels: [Operator] level, [Site Engineer] level, [Installation] level, and [Maintenance] level. Operable items differ depending on the operation level.

In this section, the levels except for the [Maintenance] level are described in “Table 6-3 Operation Level List”.

**Table 6-3 Operation Level List**

Operation Level Name	Authorized User for Operation	Operation Details	Password	
[Operator] level	Operators	Basic operations for daily production line work.	Not required	Lower level ↑  Higher level ↓
[Site Engineer] level	System administrators	In addition to the [Operator] level operations, registration for weighing and adjustment operation.	Required	
[Installation] level	Maintenance engineers	In addition to the [Site Engineer] level operations, adjustment and other operations required for installation of equipment.	Required	

The operation panel is set to the [Operator] level as default when power is turned on.

To switch the [Operator] level to a higher level, a password for the higher level is required.

Passwords are registered as the factory setting shown in the table below. To change the passwords, refer to “6.3.5.2 [Password Set/LangSlct Set] Tab Screen in the [Control Panel] screen.

When switching from higher operation levels to a lower level, no password is required.

**Table 6-4 Factory Default Password**

Operation Level	Password
[Site Engineer] level	1
[Installation] level	2

#### CAUTION

- **Passwords for the [Site Engineer] and higher operation levels are set in order to limit operations to authorized users for each operation. Passwords need to be managed to avoid operation by unauthorized users.**

Refer to the following sections for changing the operation level.

### 6.3.4.1 Switching to [Operator] Level

No password is required for the [Operator] level. For switching to the [Operator] level, follow the procedures below.

1. In the [Main Menu] screen, press the [Operation Level Selection] drop-down key



- ▶ The [Operation Level Selection] drop-down list appears.

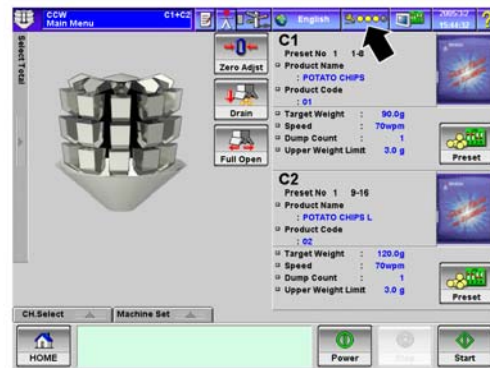


Fig.6-15 [Main Menu] Screen

2. Press [Operator].

- ▶ Switching to the [Operator] level is completed.



Fig.6-16 [Operation Level Selection] Drop-down List

#### NOTE

- The operation level can be switched to the [Operator] level even while a screen for higher levels is displayed.  
If the operation level is switched to the [Operator] level while a screen other than the [Main Menu] screen for higher levels is displayed, the [Main Menu] screen for the [Operator] level appears.

### 6.3.4.2 Switching to [Site Engineer] Level

To switch the [Operator] level to the [Site Engineer] level, the password for the [Site Engineer] level is required.

For switching to the [Site Engineer] level, follow the procedures below.

1. In the [Main Menu] screen, press the [Operation Level Selection] drop-down key



- ▶ The [Operation Level Selection] drop-down list appears.

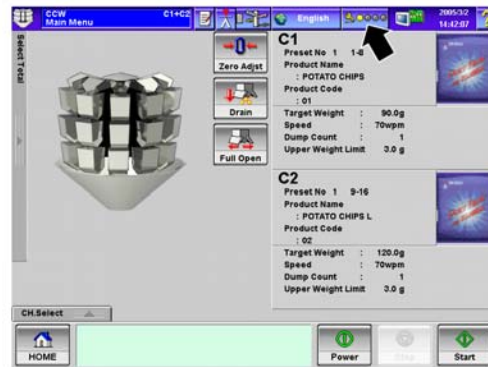


Fig.6-17 [Main Menu] Screen

2. Press [Site Engineer].
  - ▶ The [Password Input Keyboard] screen appears.
3. Enter the password for the [Site Engineer] level.
  - ▶ The [Main Menu] screen for the [Site Engineer] level appears.

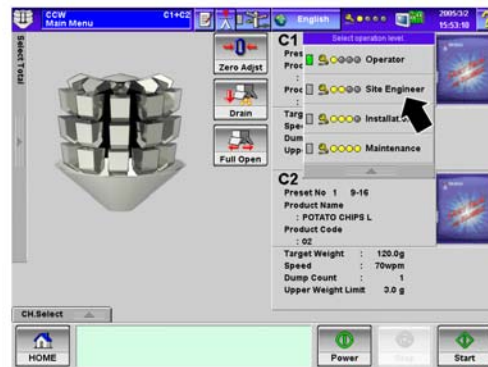


Fig.6-18 [Operation Level Selection] Drop-down List

### 6.3.4.3 Switching to [Installation] Level

To switch the [Operator] level or the [Site Engineer] level to the [Installation] level, the password for the [Installation] level is required.

For switching to the [Installation] level, follow the procedures below.

1. In the [Main Menu] screen, press the [Operation Level Selection] drop-down key



- ▶ The [Operation Level Selection] drop-down list appears.

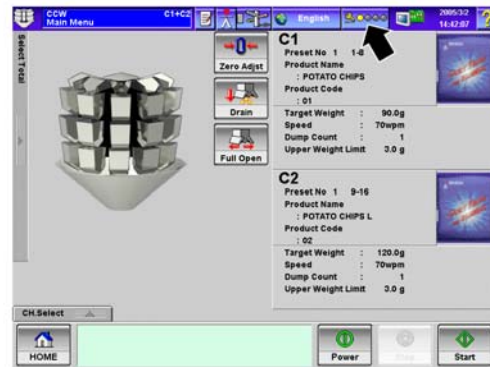


Fig.6-19 [Main Menu] Screen

2. Press [Installation].
  - ▶ The [Password Input Keyboard] screen appears.
3. Enter the password for the [Installation] level.
  - ▶ The [Main Menu] screen for the [Installation] level appears.

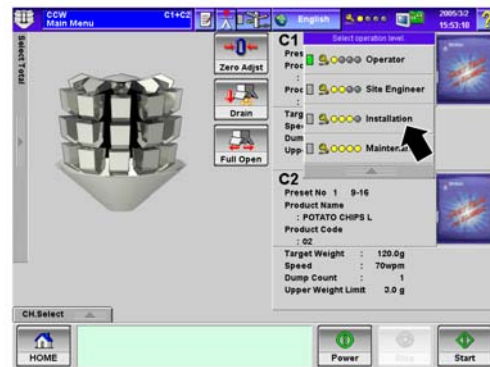


Fig.6-20 [Operation Level Selection] Drop-down List

### 6.3.5 [Control Panel] Screen

The [Control Panel] screen is used to set up the [Screen Control], [Password Set/LangSlct Set] and [Destination ID].

**NOTE**

- All functions displayed in the [Control Panel] screen are available to [Installation] or higher level personnel.

1. Press the [Control Panel] key .

▶ The [Control Panel] screen appears.

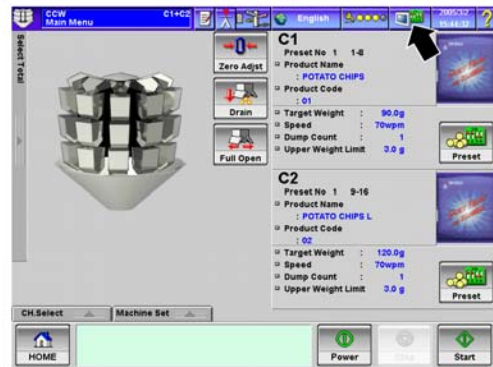


Fig.6-21 [Main Menu] Screen

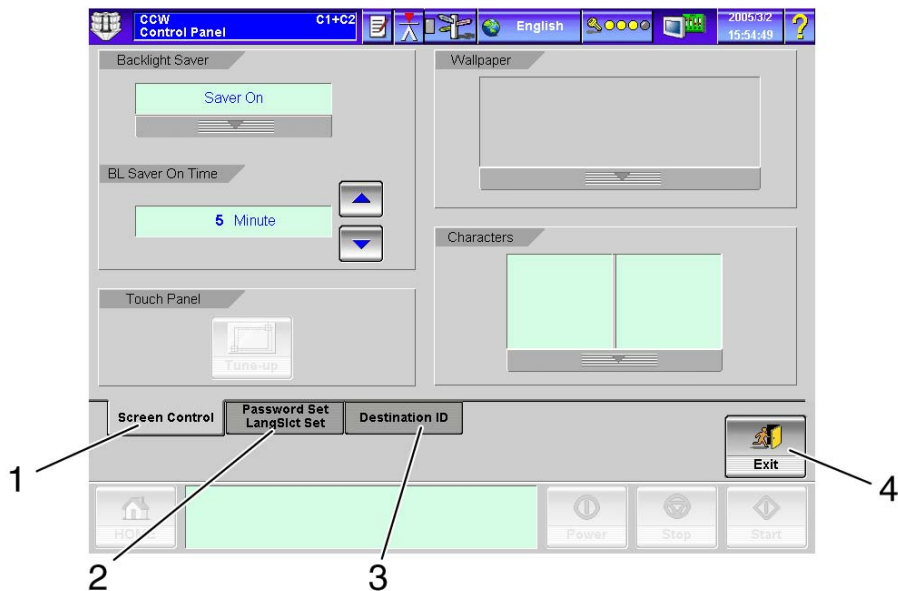




Fig.6-22 [Control Panel] Screen

Table 6-5 5 Items and Functions of [Control Panel] Screen

No.	Name	Function
1	[Screen Control] tab	Changes the screen control settings for the operation panel. (☞ 6.3.5.1 [Screen Control] Tab Screen)
2	[Password Set/LangSlct Set] tab	Changes the password for the operation level. Selects the language to be displayed in the [Language Selection] drop-down list. (☞ 6.3.5.2 [Password Set/LangSlct Set] Tab Screen)
3	[Destination ID] tab	Sets the destination ID and browser settings. (☞ 6.3.5.3 [Destination ID] Tab Screen)
4	[Exit] key 	Closes the [Control Panel] screen and returns to the previous screen.

### 6.3.5.1 [Screen Control] Tab Screen

The [Screen Control] tab screen is used to set and change the screen control settings for the operation panel.

- In the [Control Panel] screen, select the [Screen Control] tab.
  - ▶ The [Screen Control] tab screen appears.
- Set up the items listed in the table below as required.
- To finish the setting operations, select another setting screen or press the [Exit] key .

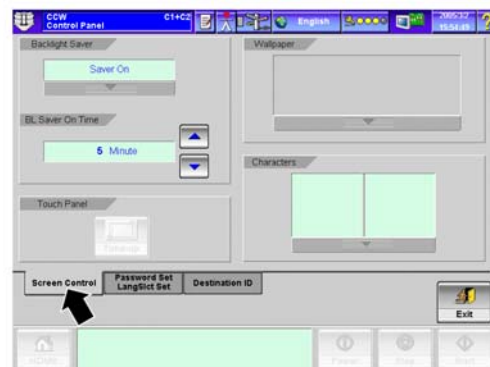
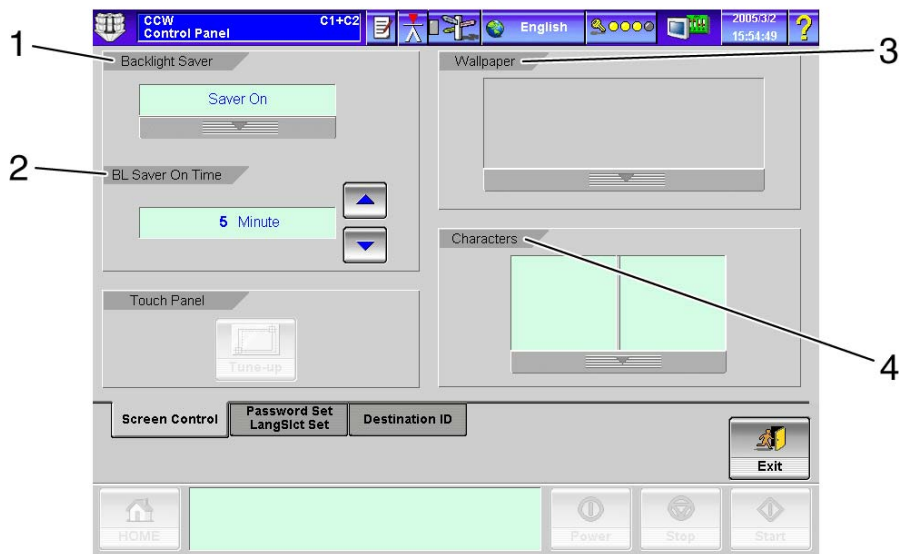


Fig.6-23 [Screen Control] Tab Screen  
([Control Panel] Screen)



**Fig.6-24 [Screen Control] Screen**

**Table 6-6 Items and Functions of [Screen Control] Screen**

No.	Name	Function
1	[Backlight Saver] display	Selects the backlight saver mode from [Saver On], [Half Brightness] and [Full Brightness]. [Saver On]: When the time set for the [BL Saver On Time] has passed after the last screen operation, the screen brightness changes to half brightness. [Full Brightness]: Always displayed in full brightness. [Half Brightness]: Always displayed in half brightness.
2	[BL Saver On Time] display	Sets the time from the last screen operation to the backlight brightness changing to half brightness when the backlight saver mode is set to [Saver On]. Can be set within the range of 0-255 minutes in increments of 1 minute.
3	[Wallpaper] display	Selects the screen wallpaper.
4	[Characters] display	Selects the characters to be displayed in the status display area (lower part of the screen). The device status can be identified by the expression on the character face.

**NOTE**

- Backlight life may become shorter when the ambient temperature is 5 deg C or lower. It is recommended to set to the [Saver On] mode in a low-temperature environment.

### 6.3.5.2 [Password Set/LangSlct Set] Tab Screen

The [Password Set/LangSlct Set] tab screen is used to set and change passwords for each operation level.

#### NOTE

- The language selection function in the same screen cannot be used by [Installation] or lower level personnel.

1. In the [Control Panel] screen, press the [Password Set/LangSlct Set] tab.

- ▶ The [Password Set/LangSlct Set] tab screen appears.

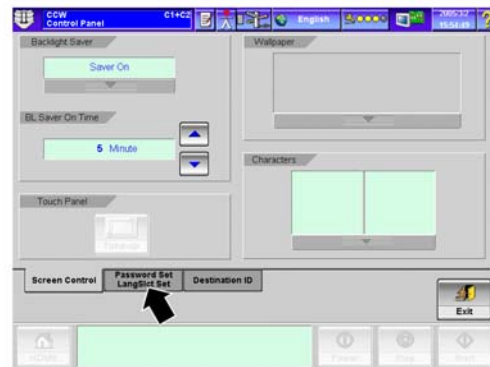


Fig.6-25 [Control Panel] Screen


2. Select the operation level.

- ▶ The [Keyboard] screen appears.

3. Enter the password and press the [Return] key



4. To finish the setting operations, select another

setting screen or press the [Exit] key .

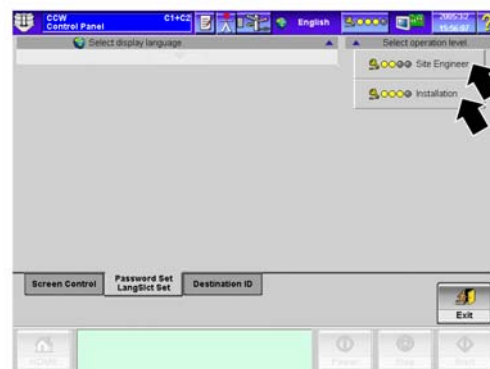


Fig.6-26 [Password Set/LangSlct Set] Tab Screen ([Preset] Screen)



### 6.3.5.3 [Destination ID] Tab Screen

The [Destination ID] tab screen is used to set and change the output destination of data such as preset contents and total contents.

The website address to be displayed on the [Information Display] screen as well as E-mail settings can be set.

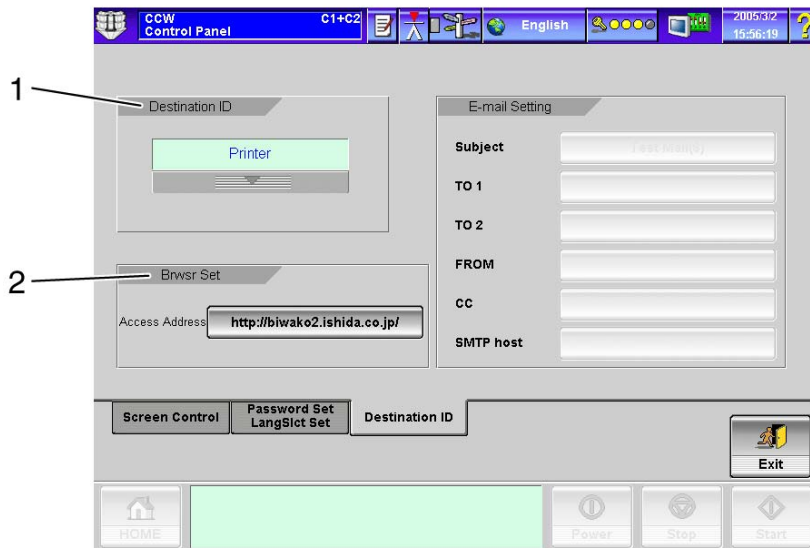




Fig.6-27 [Destination ID] Tab Screen ([Control Panel] Screen)

Table 6-7 Items and Functions of [Destination ID] Tab Screen

No.	Name	Function
1	[Destination ID] drop-down key 	Selects [Printer], [Card] or [E-mail] as the data output destination or selects not to output data. When the [Output] key is pressed in other screens, the data is output according to the selected output method in this menu.
2	[Access Address] key 	Using the [Keyboard] screen, enter the address of the website to be displayed when the [Information Display] key is pressed.

#### NOTE

- E-mail settings are performed by [Maintenance] or higher level personnel.

**<Output destination setting procedure>**

1. In the [Control Panel] screen, select the [Destination ID] tab.
  - ▶ The [Destination ID] tab screen appears.

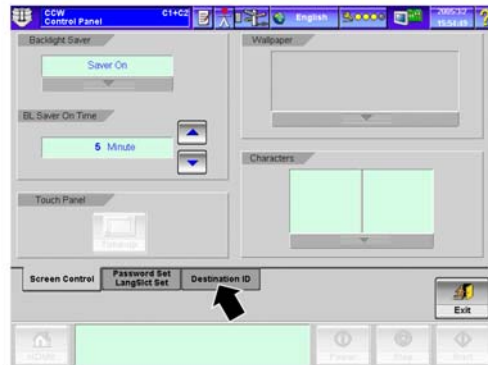




Fig.6-28 [Control Panel] Screen

2. Press the [Destination ID] drop-down key  and select [Printer], [Card] or [E-mail] as the data output destination. When not outputting the data, press [Off].
3. To finish the setting operations, press the [Exit] key .

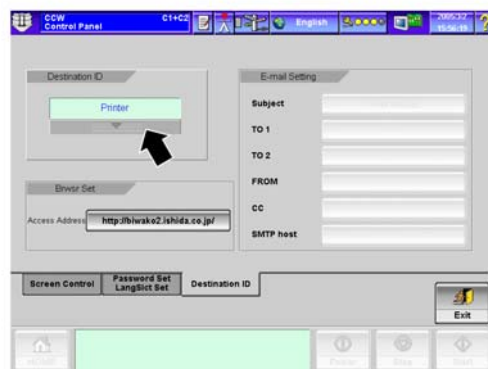


Fig.6-29 [Destination ID] Tab Screen ([Control Panel] Screen)

**<Access address setting procedure>**

1. In the [Destination ID] screen, press the [Access Address] key.
  - ▶ The [Keyboard] screen appears.
2. Enter the Internet address.

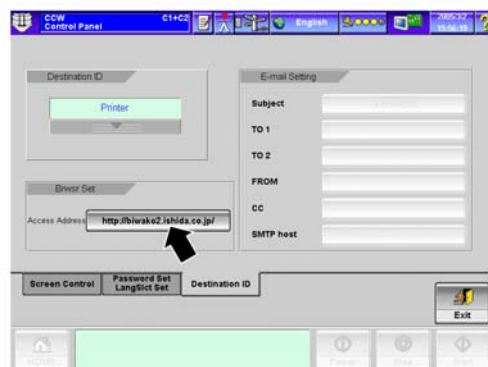


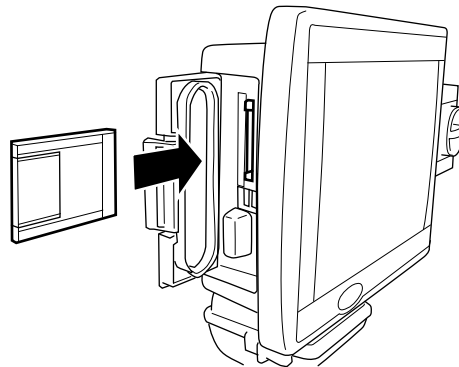
Fig.6-30 [Destination ID] Tab Screen ([Control Panel] Screen)

### 6.3.5.4 Memory Card Handling

This device is equipped with a memory card slot for saving preset data and outputting data such as logs.

1. When saving the output data to a memory card, or when reading preset data from the memory card, writing data to the memory card or copying data between the card and the main unit, insert the memory card into the card slot.

- ▶ If the destination ID is set to [Card] in the [Control Panel] screen, the output data is saved to the memory card.



*Fig.6-31 Card Slot on Main Body*

#### **WARNING**

- Do not eject the card while the read/write operation is being executed (the card is being accessed). If ejected, the data in the memory card may be lost or damaged.

#### **NOTE**

- Use the specified memory card. Other cards cannot be used.

### 6.3.6 [Date & Time Setting] Screen

The [Date & Time Setting] screen is used to set and change the date and time settings for the operation panel.

#### NOTE

- The date and time setting is performed by [Installation] or higher level personnel.



1. Press the [Date & Time Setting] key .

- The [Date & Time Setting] screen appears.



Fig.6-32 [Main Menu] Screen

2. Enter the year, month and day using the

[Up/Down] keys  .

#### TIP

- It is also possible to select the date directly from the calendar.

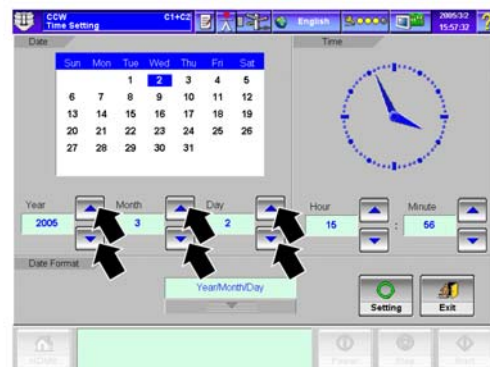



Fig.6-33 [Date & Time Setting] Screen

3. Enter the time using the [Up/Down] keys  or the [Numeric Keypad] screen.

**NOTE**

- Time cannot be entered directly from the clock image.

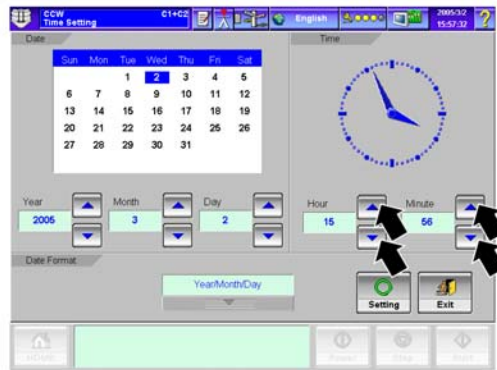
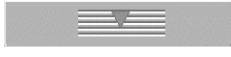



Fig.6-34 [Date & Time Setting] Screen

4. Press the [Date Format] drop-down key  to select the order of year, month and day.

5. Press the [Setting] key .

▶ The clock starts with the set date and time.

**NOTE**

- Second is set to 0 when time is set.

6. To close the [Date & Time Setting] screen, press the [Exit] key .

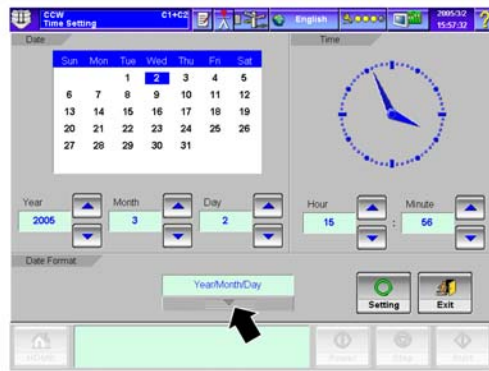


Fig.6-35 [Date & Time Setting] Screen

### 6.3.7 Help Function

This function gives brief explanation about keys on the screen.

1. Press the [Help] key .

▶ The [Help] key blinks.

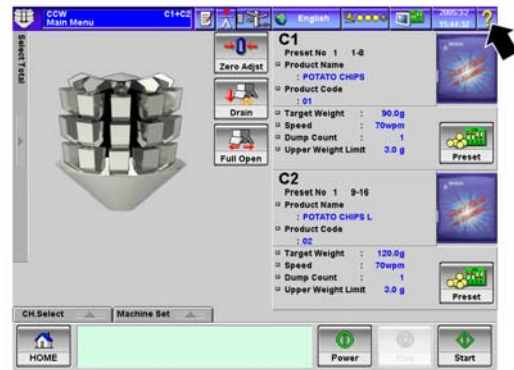


Fig.6-36 [Main Menu] Screen

2. Press the key you want to know about. (In the example, the [Full Open] key is pressed.)

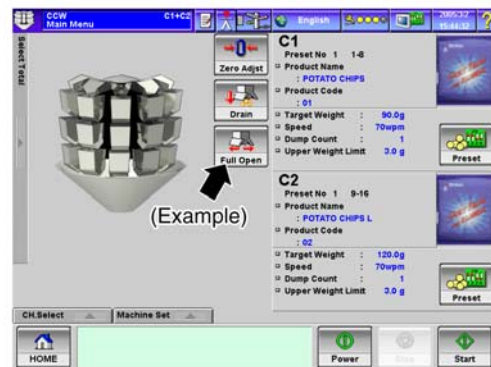


Fig.6-37 [Main Menu] Screen ([Help] Key Blinking)

- ▶ The function description for the pressed key is displayed.
3. The help display disappears by touching any point on the screen.
    - ▶ The [Help] key stops blinking and returns to normal status.

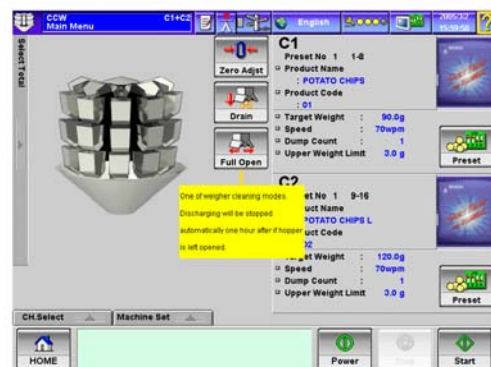


Fig.6-38 Help Display

## 6.4 [Main Menu] Screen

The [Main Menu] screen appears first when the main power switch is turned ON.

**NOTE**

- The figure below shows the screen with the operation level switched to the [Installation] level after the main power switch is turned ON. The system normally starts up on the [Operator] level setting.

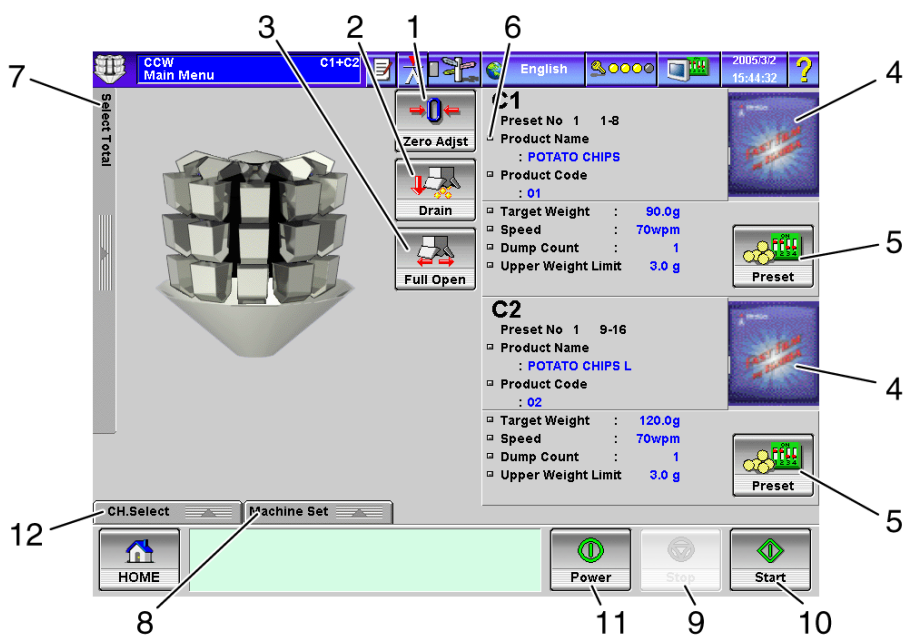


Fig.6-39 [Main Menu] Screen (Double Weigher, C1 + C2)

**NOTE**

- Different channels are displayed depending on the weigher selection status. When only C1 is operating or the device is operated as a mix weigher, the preset for C2 is not displayed. When only C2 is operating, the preset for C1 is not displayed.

Table 6-8 Items and Functions of [Main Menu] Screen













No.	Name	Function
1	[Zero Adjst] key 	Displays the [Zero Adjustment] screen. (☞ 6.6 [Zero Adjustment] Screen)
2	[Drain] key 	Displays the [Drain] screen. (☞ 6.8 [Drain] Screen)


Table 6-8 Items and Functions of [Main Menu] Screen (Continued)

No.	Name	Function
3	[Full Open] key 	Displays the [Full Open Lock] screen. (☞ 6.9 [Full Open Lock] Screen)
4	[Select Preset] key 	Displays the [Select Preset] screen. (☞ 6.10 [Select Preset] Screen) When a photo is registered for the preset, the photo is displayed on the key. (The key indicated here is an example.)
5	[Preset] key 	Displays the [Preset] screen. (☞ 6.11 [Preset] Screen)
6	[Change Preset Item] button 	Changes preset settings easily. (☞ 6.11.7 Preset Change Operation)
7	[Select Total] pop-up key 	Displays the [Select Total] pop-up menu. (☞ 6.12 [Select Total] Pop-up Menu)
8	[Machine Set] pop-up key 	Displays the [Machine Set] pop-up menu. (☞ 6.15 [Machine Set] Pop-up Menu)
9	[Stop] key* 	Stops production.
10	[Start] key* 	Starts production.
11	[Power] key* 	Turns on/off the control power.
12	[CH.Select] pop-up key 	Selects the machine mode (switching double weighing/mix weighing). (☞ 4.4.5 Selecting the Machine Mode)

\* The [Stop], [Start] and [Power] keys are displayed in any screen, but are not available when they are greyed out.



## 6.5 [CH.Select] Pop-up Menu

To display the [CH.Select] pop-up menu, press the [CH.Select] pop-up key  on the [Main Menu] screen.

The [CH.Select] pop-up menu is used to select the mode to be used for production between double weighing (C1, C2, C1+C2) and mix weighing.

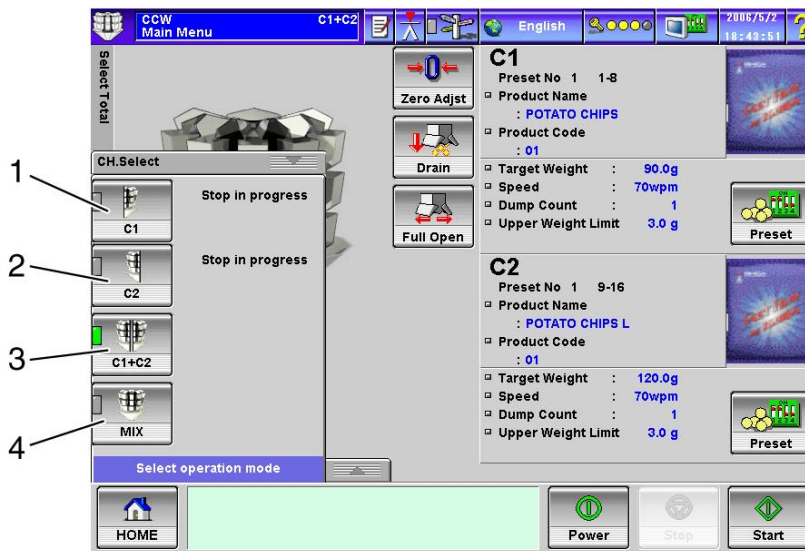







Fig.6-40 [CH.Select] Pop-up Menu

Table 6-9 Items and Functions of [CH.Select] Pop-up Menu

No.	Name	Function
1	[C1] key 	Selects the channel C1.
2	[C2] key 	Selects the channel C2.
3	[C1+C2] key 	Selects the double weigher (C1+C2).
4	[MIX] key 	Selects the mix weigher.

- On the [Main Menu] screen, press the [CH.Select] pop-up key .

▶ The [CH.Select] pop-up menu appears.

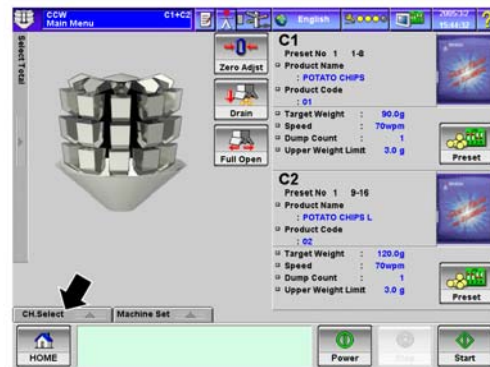


Fig.6-41 [Main Menu] Screen

- Press the key for the machine to be selected.

▶ The selected key lights up.

#### NOTE


- If the [MIX] key  is pressed, C1 is automatically selected and the display returns to the [Main Menu] screen.



Fig.6-42 [CH.Select] Pop-up Menu

- Check that the selected machine mode is displayed on the top of the screen.



Fig.6-43 Selected Machine Mode Display

#### TIP

- If C1 is selected while C1+C2 is in operation, the [Production] screen for C1 is displayed. In this case, only C1 can be operated.

## 6.6 [Zero Adjustment] Screen

The zero adjustment is the function to set the weight with no products on the weigh hopper or dispersion table as 0g. For accurate weighing, be sure to perform zero adjustment before starting production.

To display the [Zero Adjustment] screen, press the [Zero Adjust] key  on the [Main Menu] screen.

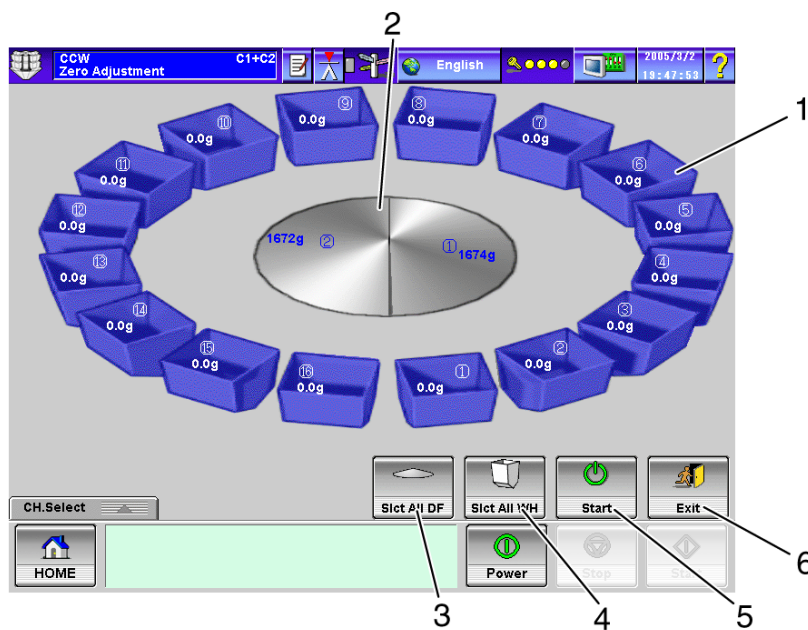









Fig.6-44 [Zero Adjustment] Screen

Table 6-10 Items and Functions of [Zero Adjustment] Screen

No.	Name	Function
1	Each [WH] key 	Selects the hopper to be adjusted.
2	Each [DF] key 	Selects the dispersion table.
3	[Slect All DF] key 	Selects or deselects the dispersion table.
4	[Slect All WH] key 	Selects or deselects all the weigh hoppers.
5	[Start] key 	Starts zero adjustment.

**Table 6-10 Items and Functions of [Zero Adjustment] Screen(Continued)**

<b>No.</b>	<b>Name</b>	<b>Function</b>
6	[Exit] key 	Returns to the [Main Menu] screen.

Refer to “ 4.4.8 Zero Adjustment” for zero adjustment procedures.

## 6.7 [Production] Screen

To display the [Production] screen, press the [Start] key  in any screen.

### WARNING

- **When the [Start] key is pressed, the feeders and hoppers start to move. Perform a safety check around the device before pressing the key.**

### NOTE

- The [Start] key cannot be pressed when the control power is off. Press the [Power] key to turn on the control power.
- The [Start] key cannot be pressed while presetting. After setting is completed, press the [Exit] key to accept the preset.

### CAUTION

- **DO NOT, UNDER ANY CIRCUMSTANCES, CLOSE THE HOPPERS WITH HANDS OR TOOLS. Doing so may damage the drive unit.**
- **When the main power switch is turned OFF while the hoppers are open, or when the hoppers remain open due to an electrical power failure, follow the procedures described in “4.9 Handling Drive Unit” for the corrective action.**

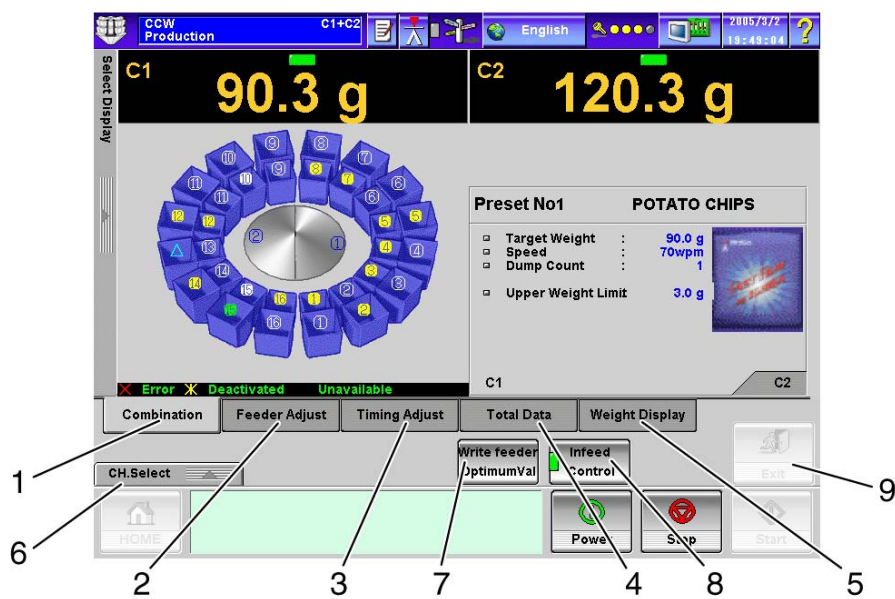


Fig.6-45 [Production] Screen (Double Weigher)

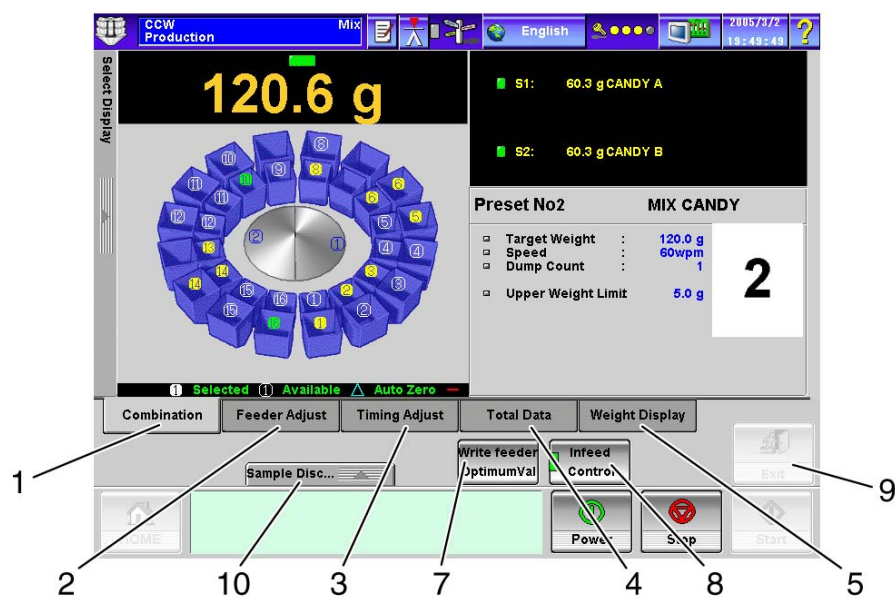








Fig.6-46 [Production] Screen (Mix Weigher)

Table 6-11 Items and Functions of [Production] Screen

No.	Name	Function
1	[Combination] tab	Displays the [Combination] screen.
2	[Feeder Adjust] tab	Displays the [Feeder Adjust] screen.
3	[Timing Adjust] tab	Displays the [Timing Adjust] screen.
4	[Total Data] tab	Displays the [Total Data] screen.
5	[Weight Display] tab	Displays the [Weight Display] screen.

Table 6-11 Items and Functions of [Production] Screen(Continued)

No.	Name	Function
6	[CH.Select] pop-up key 	Selects the machine mode.
7	[Write feeder OptimumVal] key 	Registers the feeder value currently set. The registered feeder value can be called using [Read OptimumVal] in the preset screen.
8	[Infeed Control] key 	Selects whether to stop or to automatically control product infeed to the device. Each time the key is pressed, the lamp turns on and off in turn. When the lamp is on, automatic product infeed to the device is performed. When the lamp is off, automatic product infeed to the device is stopped.
9	[Exit] key 	Returns to the [Main Menu] screen. Cannot be used while the weigher is in operation.
10	[Sample Discharge] pop-up key 	Selects the section to discharge samples. (Mix weigher only) (  7.5 Comparing Values on Remote Control and Actual Values)

**NOTE**

- [Write feeder OptimumVal] is available to [Site Engineer] or higher level personnel.

### 6.7.1 [Combination] Tab Screen

To display the [Combination] tab screen, press the [Combination] tab on the [Production] screen.

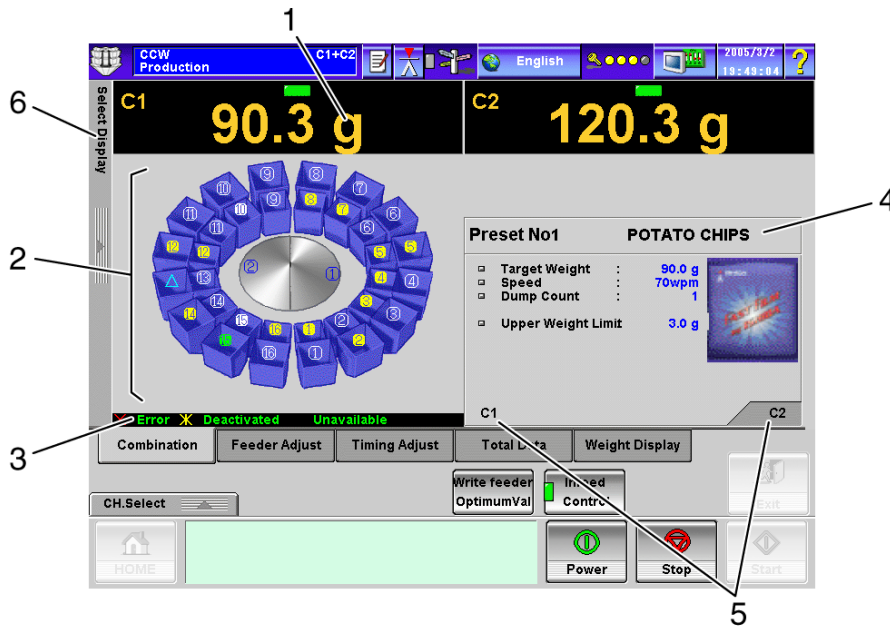


Fig.6-47 [Combination] Tab Screen ([Production] Screen, Double Weigher)

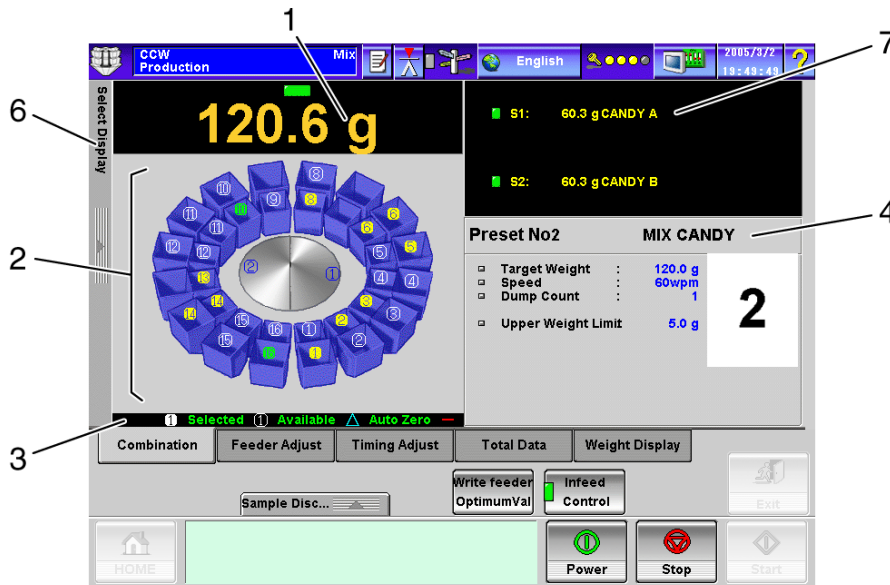

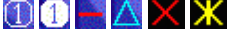









Fig.6-48 [Combination] Tab Screen ([Production] Screen, Mix Weigher)



Table 6-12 Items and Functions of [Combination] Tab Screen

No.	Name	Function
1	Combination weight display 	The combined weight value is displayed on each channel. The lamp indication varies depending on the results. Green lamp: Proper weight Yellow lamp: Overweight Red lamp: Underweight
2	Head condition display 	Displays the combination and weighing status.  : Head which was weighed and is stable.  : Head which was weighed, was selected for combination and discharged products. The color of the circle indicates the head stability, and there are three levels: green (most stable), white (more stable) and yellow (stable).  : Empty head. Blank: Unstable head.  : Head under the auto zero adjustment.  : Head with error of overload or jam.  : Head that is set to be deactivated.
3	Head display guide	Displays the scrolling messages for the descriptions of head symbols.
4	Preset selection display	Displays the selected preset. If the square on the left of each item ([Change Preset Item] button) is pressed, the displayed setting values can be temporarily changed. (☞ 6.11.7 Preset Change Operation)
5	[Display Channel Selection] tab (Double weigher only)	Selects the channel to be displayed. Displayed only when the weigher setting is C1 + C2.
6	[Select Display] pop-up key 	Selects the display method from either the combination or expansion display. Standard and expansion display icons are displayed by pressing this key. Pressing either icon will switch the display to the selected method.
7	Section weight display (Mix weigher only)	Displays the weight of each section.

### 6.7.1.1 Select Display Pop-up Menu

On the [Select Display] pop-up menu, either the [Combination Display] or [Expansion Display] mode can be selected.

Press the [Select Display] pop-up key on the [Combination] screen, and select the desired display mode.

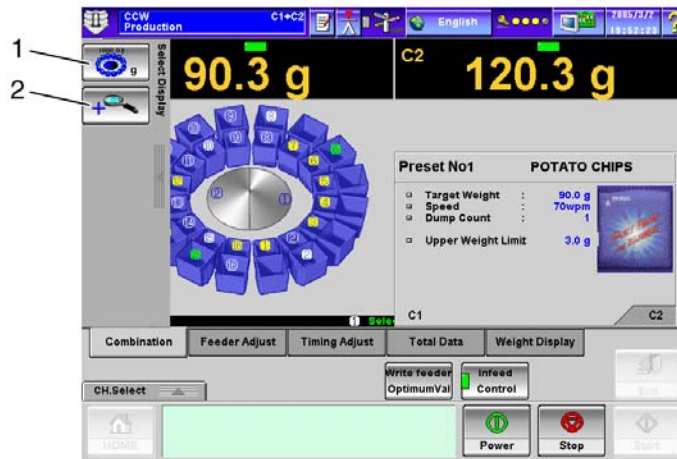


Fig.6-49 [Select Display] Pop-up Menu ([Production] Screen)

Table 6-13 Keys and Functions of [Select Display] Pop-up Menu


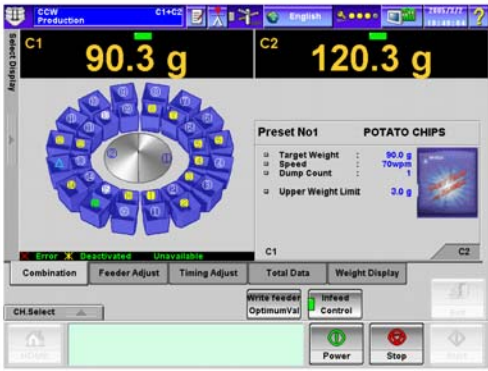
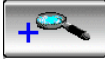

No.	Name	Function
1	[Combination Display] key 	Selects the [Combination Result Display] screen. 

Fig.6-50 [Combination Result Display] screen.

Table 6-13 Keys and Functions of [Select Display] Pop-up Menu(Continued)

No.	Name	Function
2	[Expansion Display] key 	Selects the [Expansion Display] screen for the combination weight.   <p><i>Fig.6-51 [Expansion Display] Screen</i></p>

### **6.7.2 [Feeder Adjust] Tab Screen**

To display the [Feeder Adjust] tab screen, press the [Feeder Adjust] tab on the [Production] screen.

Refer to “6.13 [Feeder Adjustment] Screen” for feeder adjustment.

Feeder values changed during production are reflected in the preset.

### **6.7.3 [Timing Adjust] Tab Screen**

To display the [Timing Adjust] tab screen, press the [Timing Adjust] tab on the [Production] screen.

Refer to “6.14 [Timing Adjustment] Screen” for timing adjustment.

Timing values changed during production are reflected in the preset.

### 6.7.4 [Total Data] Tab Screen

To display the [Total Data] tab screen, press the [Total Data] tab on the [Production] screen.

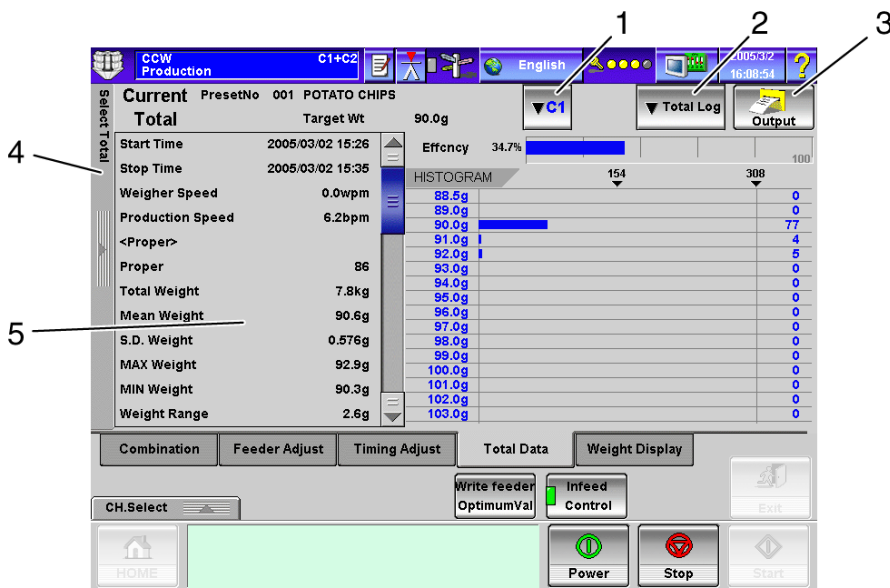






Fig.6-52 [Total Data] Tab Screen ([Production] Screen)

Table 6-14 Items and Functions of [Total Data] Screen

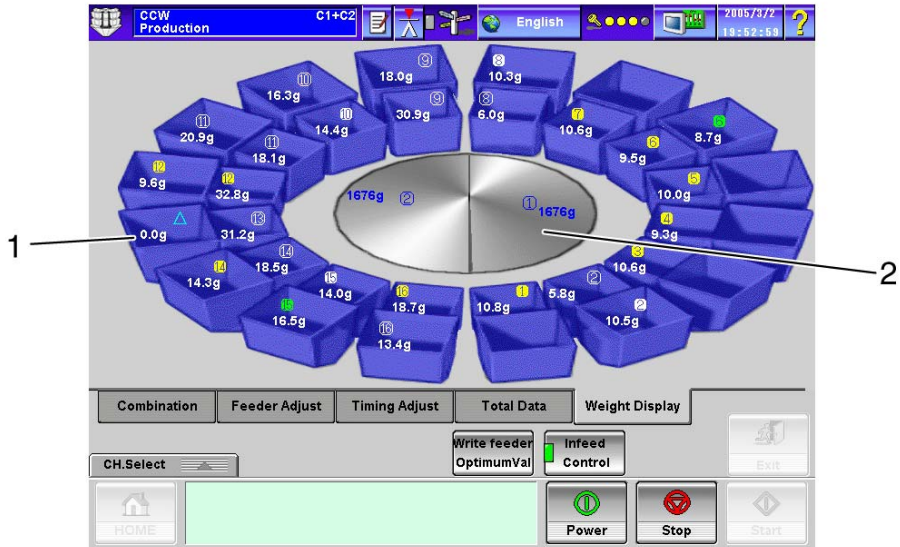
No.	Name	Function
1	[C1]/[C2] switching drop-down key (Double weigher only) 	Selects the channel for which total data is to be displayed.
2	[Total Log] drop-down key 	Selects the total log to be displayed. Displayed when a total log exists.
3	[Output] key 	Outputs total data to a printer or as a file.
4	[Select Total] pop-up key 	Displays the [Select Total] pop-up menu.
5	Total data	Total data is displayed in this area. * Displayed total data depends on the selection.

**NOTE**

- Total data contents are the same as in the [Select Total] pop-up menu in the [Main Menu] screen. Refer to “6.12 [Select Total] Pop-up Menu” for details on total data.
  - Total data cannot be cleared during production.
-

### 6.7.5 [Weight Display] Tab Screen

To display the [Weight Display] tab screen, press the [Weight Display] tab on the [Production] screen.



**Fig.6-53 [Weight Display] Tab Screen ([Production] Screen)**

**Table 6-15 Items and Functions of [Weight Display] Tab Screen**

No.	Name	Function
1	Head	Displays the weight of each head.
2	Dispersion table	Displays the weight of each dispersion table.

**NOTE**

- Meaning of each head status display is identical to those displayed in the [Combination] tab.

## 6.8 [Drain] Screen

To display the [Drain] screen, press the [Drain] key  on the [Main Menu] screen.

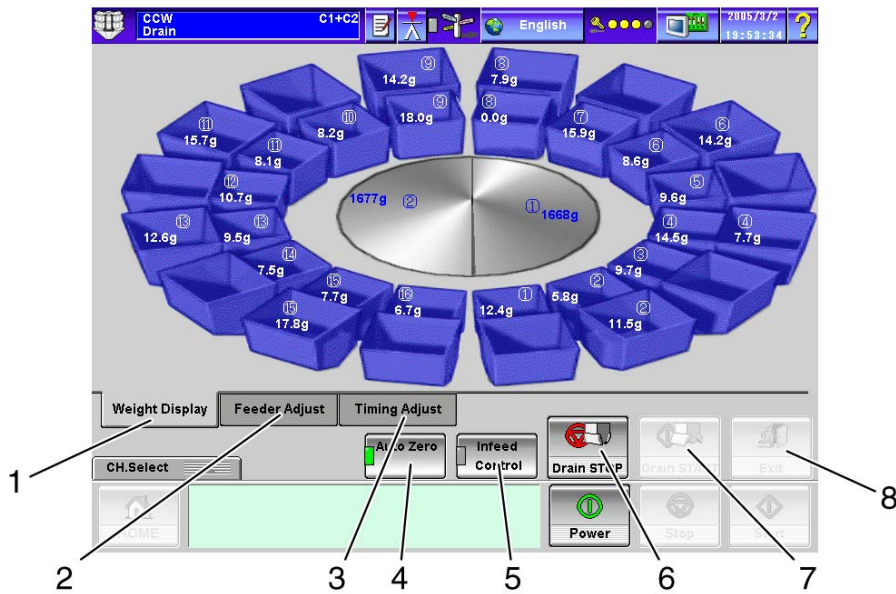







Fig.6-54 [Drain] screen

Table 6-16 Items and Functions of [Drain] Screen

No.	Name	Function
1	[Weight Display] tab	Displays the [Weight Display] tab screen.
2	[Feeder Adjust] tab	Displays the [Feeder Adjust] tab screen. (☞ 6.13 [Feeder Adjustment] Screen)
3	[Timing Adjust] tab	Displays the [Timing Adjust] tab screen. (☞ 6.14 [Timing Adjustment] Screen)
4	[Auto Zero] lamp key 	Selects whether or not to perform auto zero adjustment. Each time the key is pressed, the lamp turns on and off in turn. ON: Auto zero adjustment is performed. OFF: Auto zero adjustment is not performed.
5	[Infeed Control] lamp key 	Selects whether to stop or to automatically control product infeed to the device. Each time the key is pressed, the lamp turns on and off in turn. ON: Automatic product infeed to the device is performed. OFF: Automatic product infeed to the device is stopped.
6	[Drain STOP] key 	Stops drain temporarily.
7	[Drain START] key 	Starts drain.




**Table 6-16 Items and Functions of [Drain] Screen (Continued)**

No.	Name	Function
8	[Exit] key 	Stops drain and displays the [Main Menu] screen.


**NOTE**

- Refer to “4.4.11 Discharging the Products” for basic drain procedures.
  - Refer to “6.13 [Feeder Adjustment] Screen” and “6.14 [Timing Adjustment] Screen” for feeder adjustment and timing adjustment.
  - Feeder values and timing values changed during drain are not reflected in the preset.
-

## 6.9 [Full Open Lock] Screen

To display the [Full Open Lock] screen, press the [Full Open] key  on the [Main Menu] screen. For mix weighers, select the section to be operated from the [Section Select] pop-up menu.

### NOTE

- Do not use the [Power] key  during full open lock. Doing so may damage the device.

### CAUTION

- DO NOT, UNDER ANY CIRCUMSTANCES, CLOSE THE HOPPERS WITH HANDS OR TOOLS.** Doing so may damage the drive unit.
- When the main power switch is turned off while the hoppers are open, or when the hoppers remain open due to an electrical power failure, follow the procedures described in “4.9 Handling Drive Unit” for the corrective action.**

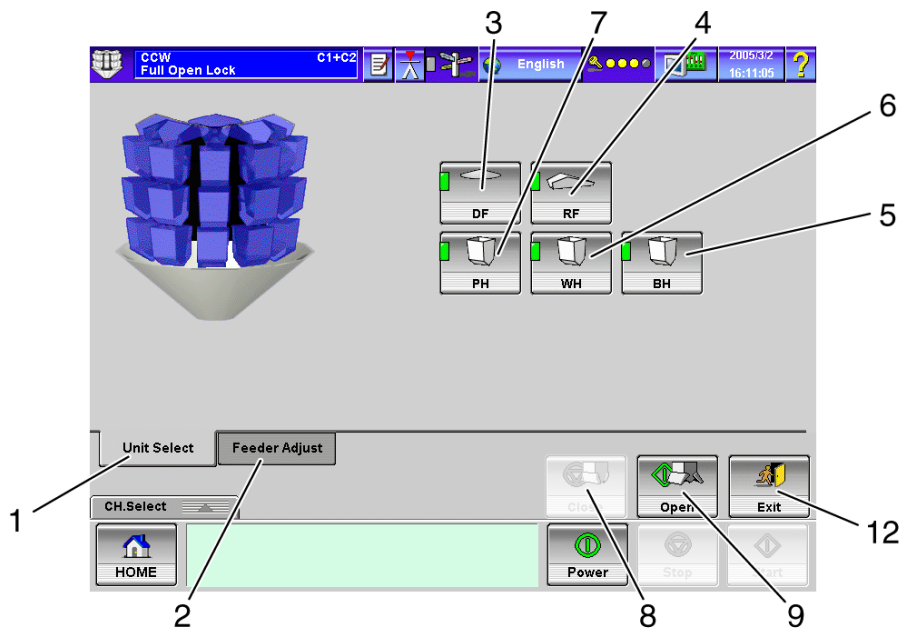


Fig.6-55 [Full Open Lock] Screen (Double Weigher)

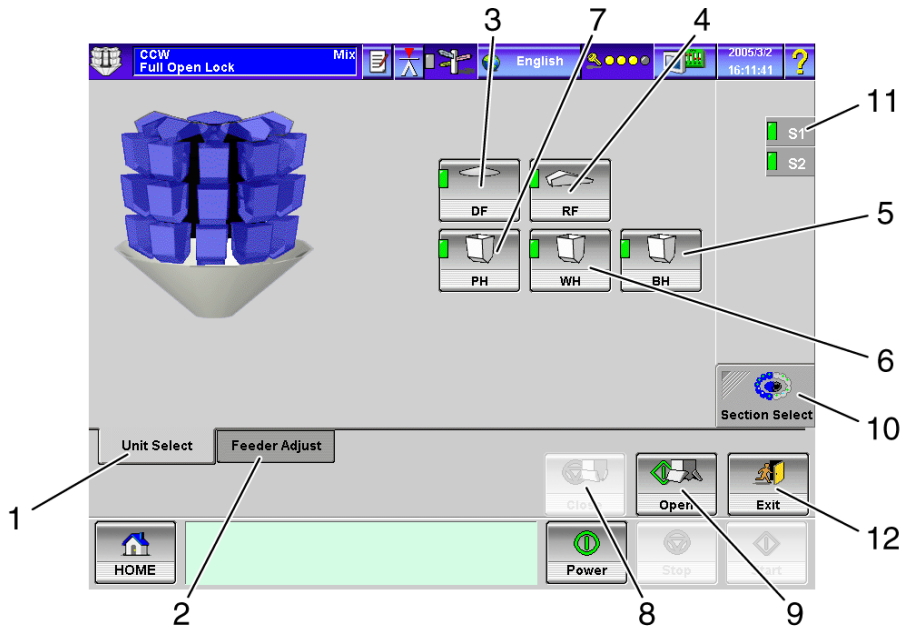


Fig.6-56 [Full Open Lock] Screen (Mix Weigher)

Table 6-17 Items and Functions of [Full Open Lock] Screen











No.	Name	Function
1	[Unit Select] tab	Displays the [Unit Select Tab] screen.
2	[Feeder Adjust] tab	Displays the [Feeder Adjust] tab screen. (☞ 6.13 [Feeder Adjustment] Screen)
3	[DF] lamp key 	Selects whether or not to perform dispersion feeder operation.
4	[RF] lamp key 	Selects whether or not to perform radial feeder operation.
5	[BH] lamp key 	Selects whether or not to fully open the booster hoppers.
6	[WH] lamp key 	Selects whether or not to fully open the weigh hoppers.
7	[PH] lamp key 	Selects whether or not to fully open the pool hoppers.
8	[Close] key 	Fully closes the hoppers.
9	[Open] key 	Fully opens the hoppers.

Table 6-17 Items and Functions of [Full Open Lock] Screen (Continued)

No.	Name	Function
10	[Section Select] pop-up key (Mix weigher only) 	Selects the section to be opened/closed.
11	Section selection status display (Mix weigher only) 	The selected section lights up.
12	[Exit] key 	Closes the [Full Open Lock] screen.

**NOTE**

- When the ring shutter, diverting timing hopper or timing hopper is attached as an option, the [RS], [DTH] or [TH] key is added respectively.

## 6.9.1 Full Open Lock Operation

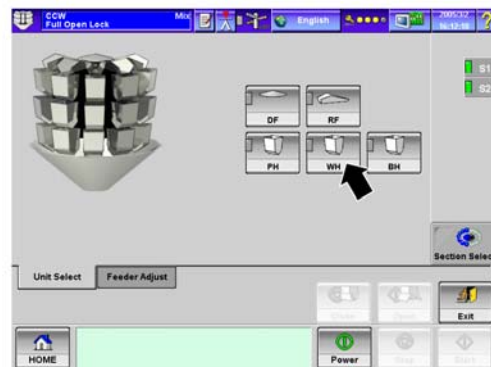
### <Function>

The full open lock is the function to retain the pool hoppers, weigh hoppers, and booster hoppers open. This function is used to check the operation of each unit.

When multiple sections are used, hoppers can be fully opened for each section. (Mix weigher only)

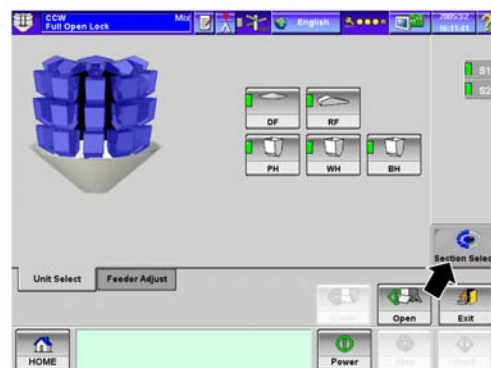
### <Operation procedure>

1. In the [Full Open Lock] screen, press the lamp key of the hopper to be fully opened or the lamp key of the feeder to be operated.
  - ▶ The pressed lamp key of the hopper or feeder lights up in green.



**Fig.6-57 [Unit Select] Tab Screen  
([Full Open Lock] Screen)**


2. Mix weigher only) Press the [Section Select] pop-up key.
  - ▶ The [Section Select] pop-up menu appears.

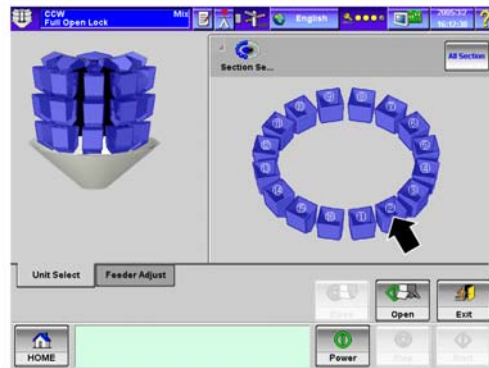


**Fig.6-58 [Unit Select] Tab Screen  
([Full Open Lock] Screen)**

3. (Mix weigher only) Press the head number to be operated.

- ▶ All heads of the section containing the selected head are selected.

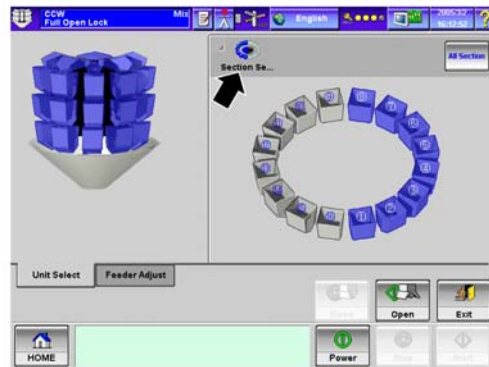
Pressing the [All Section] key  will select all sections.



**Fig.6-59 [Section Select] Pop-up Menu ([Full Open Lock] Screen, Mix Weigher)**

4. (Mix weigher only) Press the [Section Select] pop-up key.

- ▶ The [Section Select] pop-up menu closes.




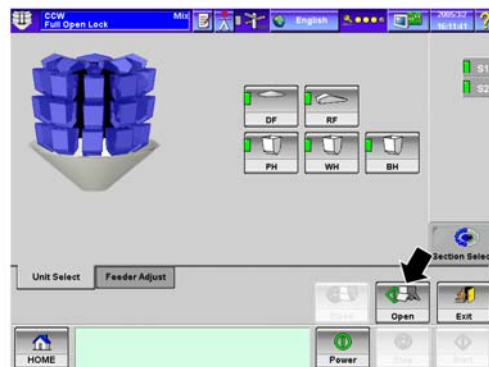
**Fig.6-60 [Section Select] Pop-up Menu ([Full Open Lock] Screen, Mix Weigher)**

5. Press the [Open] key .


- ▶ The specified hoppers are held open. Or, the specified feeder starts to operate.

**NOTE**

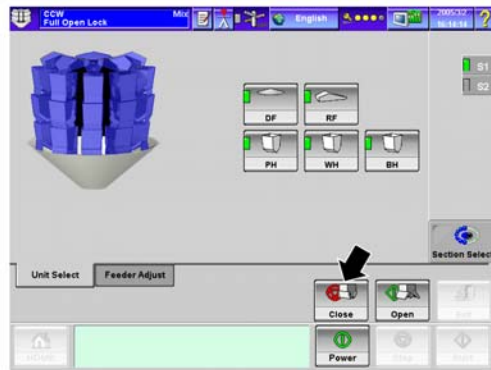
- Feeder amplitude conforms to the settings in the feeder adjustment (  6.13 [Feeder Adjustment] Screen).




**Fig.6-61 [Unit Select] Tab Screen ([Full Open Lock] Screen)**

6. Press the [Close] key .

- ▶ The hoppers close. Or, the feeder operation stops.



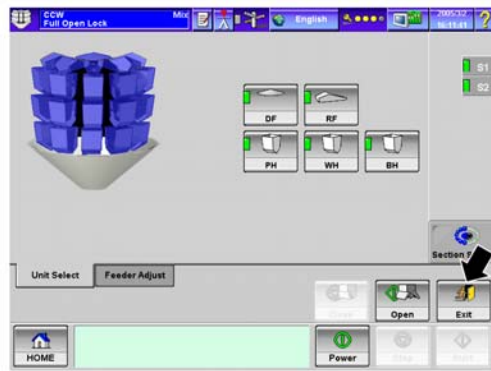
**Fig.6-62 [Full Open Lock] Screen (During Operation)**

7. Press the [Exit] key .

- ▶ The [Main Menu] screen appears.

**NOTE**

- The menu cannot be closed unless all hoppers are closed.



**Fig.6-63 [Full Open Lock] Screen**

## 6.9.2 [Feeder Adjustment] Tab Screen

To display the [Feeder Adjust] tab screen, press the [Feeder Adjust] tab on the [Full Open Lock] screen.

**NOTE**

- Refer to “6.13 [Feeder Adjustment] Screen” for feeder adjustment.
  - Feeder values changed during full open lock are not reflected in the preset.
-




## 6.10 [Select Preset] Screen

The [Select Preset] screen is used to display and select the preset data registered in the memory.

### 6.10.1 Photo Display

To display the [Select Preset] screen, press the [Select Preset] key (display area of photos or other

images)  on the [Main Menu] screen.

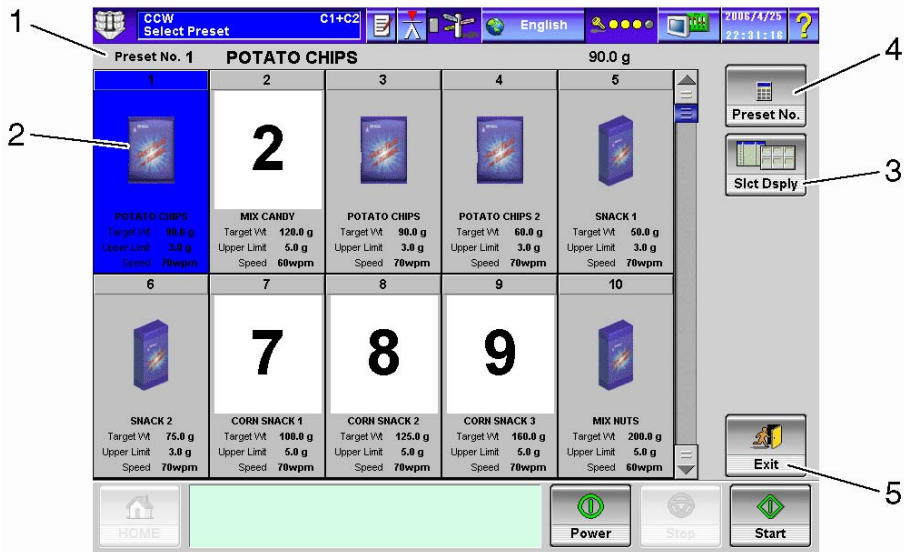






Fig.6-64 [Select Preset] Screen (Photo Mode)

Table 6-18 Items and Functions of [Select Preset] Screen

No.	Name	Function
1	[Preset No.] display	Displays the selected preset number, product name and target weight.
2	[Select Preset] key 	Calls the preset. The key displays the preset number, product name, target weight (or target count), upper weight limit (or upper count limit) and speed. It also displays a photo when it has photo data.
3	[Slct Dsply] key 	Switches the display mode to the list display.
4	[Preset No.] key 	Selects the preset number directly using the [Numeric Keypad] screen.
5	[Exit] key 	Returns to the [Main Menu] screen.




## 6.10.2 List Display

The screen switches to the list display when the [Slct Dsply] key  is pressed in the [Select Preset] screen.



**Fig.6-65 [Select Preset] Screen (List Mode)**

**Table 6-19 Items and Functions of [Select Preset] Screen**

No.	Name	Function
1	[Preset No.] display	Displays the selected preset number, product name and target weight.
2	Preset selection area	Each row can be used as a key to call the preset. Displays the [PdctClas], [PresetNo], [Product Name], [Target Wt] (or [Target Cnt]), [Speed], [Dump Cnt] and [Record Time].
3	[Slct Dsply] key 	Switches the display mode to the photo display.
4	[Preset No.] key 	Selects the preset number directly using the [Numeric Keypad] screen.
5	[Exit] key 	Returns to the [Main Menu] screen.
6	Row header	Rearranges the preset data on the basis of the pressed row.

List items can be rearranged. If each row header (e.g. [Product Name]) is pressed, the items will be rearranged in ascending order on the basis of the pressed row.



Fig.6-66 [Select Preset] Screen

## 6.11 [Preset] Screen

To display the [Preset] screen, press the [Preset] key  on the [Main Menu] screen.

### NOTE

- The preset function is available to [Site Engineer] or higher level personnel.

### 6.11.1 Preset Basic Function

This is the screen that appears first in the [Preset] screen. When switching the indices in this screen, you can move to each setting screen. In addition, in the [Preset] screen, you can change the preset number and output the preset contents to a printer or as a file.

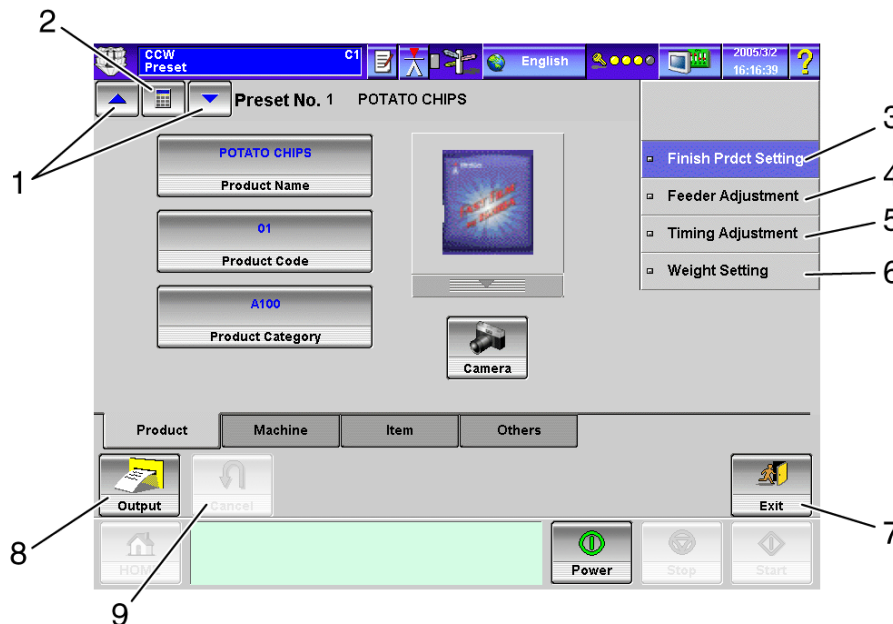







Fig.6-67 [Preset] screen

Table 6-20 Items and Functions of [Preset] Screen

No.	Name	Function
1	[Change Preset No.] key 	Selects the desired preset number. If the preset contents have been changed, the confirmation message “Do you wish to save current data with the current preset number?” appears.
2	[Preset No. Direct Select] key 	Selects the desired preset number directly using the [Numeric Keypad] screen.
3	[Finish Prdct Setting] index	Configures the settings for the product to be preset.
4	[Feeder Adjustment] index	Performs feeder adjustment.

**Table 6-20 Items and Functions of [Preset] Screen(Continued)**

No.	Name	Function
5	[Timing Adjustment] index	Performs timing adjustment.
6	[Weight Setting] index	Configures the settings for weight.
7	[Exit] key 	Returns to the [Main Menu] screen.
8	[Output] key 	Outputs the preset information to a printer or as a file.
9	[Cancel] key 	Cancels the preset changes. This key becomes available when the settings are changed.

**NOTE**

- When the [Preset] screen is closed using the [Exit] key, the entered preset contents are accepted and set. If the [Cancel] key is pressed before the [Exit] key is pressed, the preset contents that have been entered will be lost.
- If power supply is shut down within 1 second due to an electrical power failure after the settings are changed, the changes may not be stored.

## 6.11.2 [Finish Prdct Setting] Index Screen

To display the [Finish Prdct Setting] index screen, press the [Finish Prdct Setting] index on the [Preset] screen. When switching the tabs in this screen, you can move to each setting screen.

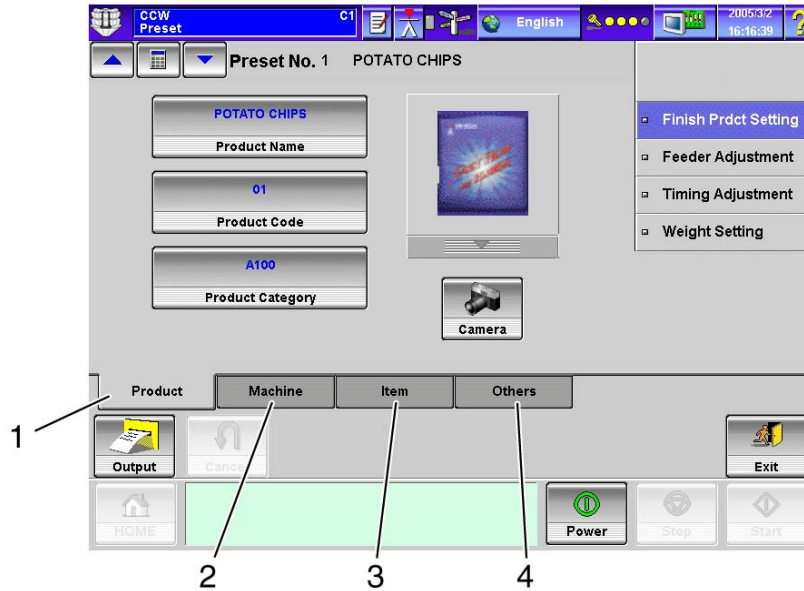


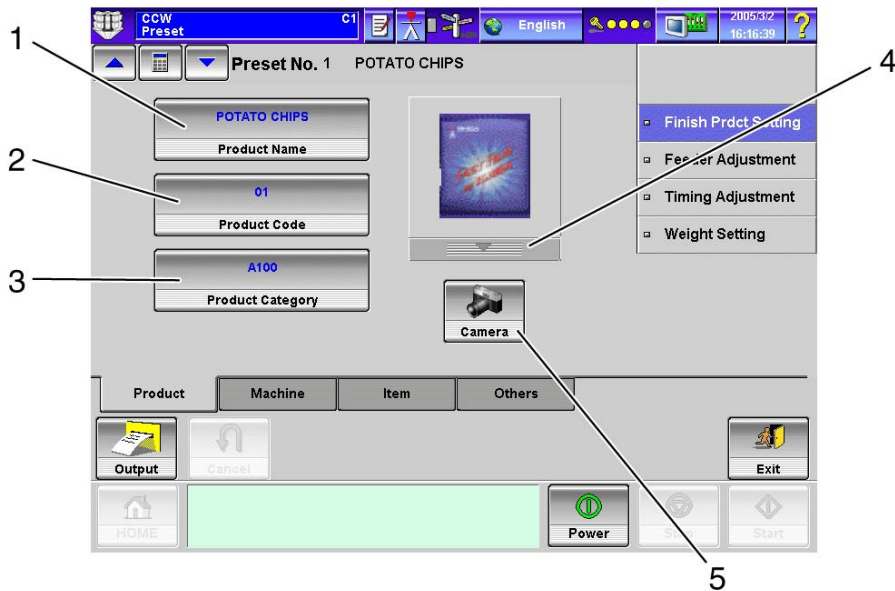
Fig.6-68 [Finish Prdct Setting] Index Screen ([Preset] Screen)

Table 6-21 Items and Functions of the [Finish Prdct Setting] Index Screen

No.	Name	Function
1	[Product] tab	Configures the settings for the product to be preset. (☞ 6.11.2.1 [Product] Tab Screen)
2	[Machine] tab	Configures the settings for the weigher in accordance with the product to be preset. (☞ 6.11.2.2 [Machine] Tab Screen)
3	[Item] tab	Configures the advanced settings for the weighing environment. (☞ 6.11.2.3 [Item] Tab Screen)
4	[Others] tab	Configures other settings. (☞ 6.11.2.4 [Others] Tab Screen)






### 6.11.2.1 [Product] Tab Screen

The [Product] tab screen is the screen that appears first in the [Preset] screen. While another [Preset] screen is displayed, press the [Product] tab screen in the [Finish Prdct Setting] index screen to display the [Product] screen.



**Fig.6-69 [Product] Tab Screen ([Preset] Screen)**


**Table 6-22 Items and Functions of the [Product] Tab Screen**

No.	Name	Function
1	[Product Name] key 	Sets the product name by inputting it from the [Keyboard] screen. The set product name is displayed on the key. Up to 24 characters can be specified.
2	[Product Code] key 	Sets the product code by inputting it from the [Keyboard] screen. The set product code is displayed on the key. Up to 12 characters can be specified.
3	[Product Category] key 	Sets the product category by inputting it from the [Keyboard] screen. The set product category is displayed on the key. Up to 4 characters can be specified.
4	[Photo Selection] drop-down key 	Selects the product photo or illustration.
5	[Camera] key 	Takes photos of the products.

**TIP**

- For the product category, desired alphanumeric characters can be entered. Utilize it for product management.

### 6.11.2.1.1 Product Photo Taking Procedures

- Press the [Camera] key .
  - The photograph confirmation message screen appears.

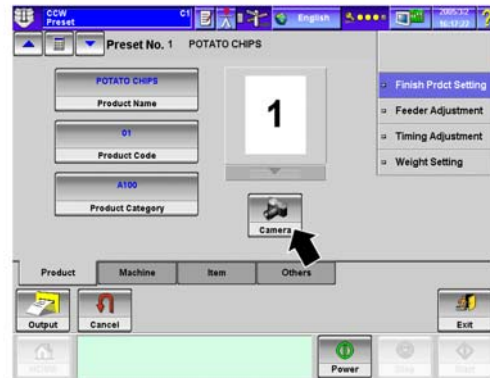



Fig.6-70 [Product] Tab Screen ([Preset] Screen)

- Press the [Yes] key .
  - The [Photograph] screen appears. The image being taken by the camera is displayed on the left, and the image previously taken is displayed on the right.

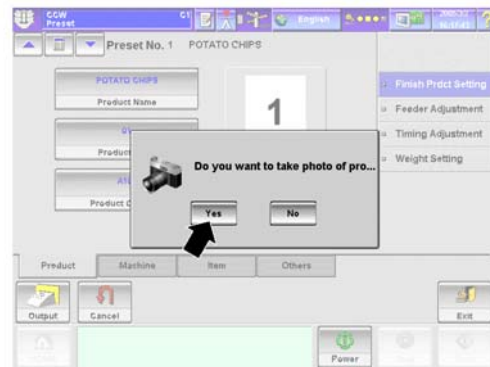


Fig.6-71 Photograph Confirmation Message Screen ([Preset] Screen)



3. When not taking photos, press the [Exit] key



. When taking a photo, point the product at the camera and press the [Photograph] key



The [Photograph] key functions as the shutter.

- ▶ If the [Exit] key is pressed, the display returns to the previous screen without taking a photo.

When the [Photograph] key is pressed, the photo is taken and the photographed image is displayed on the right.

4. To retake the photo, press the [Cancel] key



. To save the photo, press the [Save] key



- ▶ The photographed image is saved.

5. Press the [Exit] key



- ▶ Returns to the previous screen.

- ▶ The photographed image is registered to the photo list.

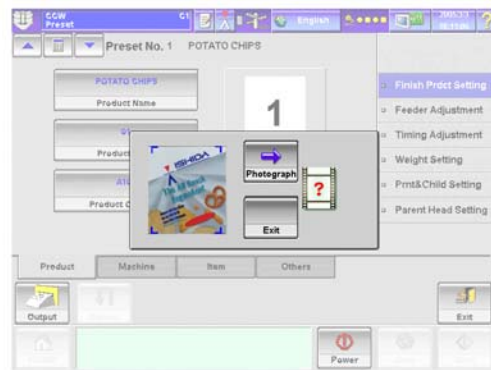


Fig.6-72 [Photograph] Screen ([Preset] Screen)



Fig.6-73 [Photograph] Screen ([Preset] Screen)

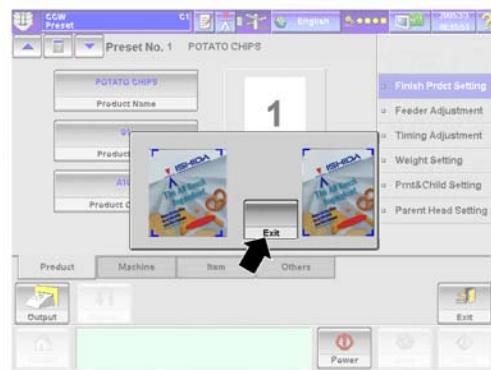


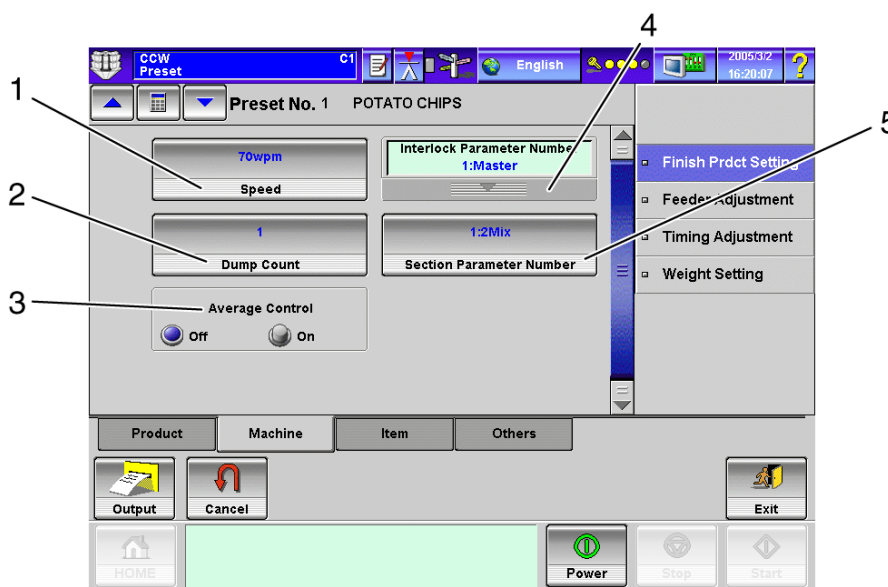
Fig.6-74 [Photograph] Screen ([Preset] Screen)

**NOTE**

- When the camera is not connected, no image is displayed.
- Take a photo of a product with sufficient light. Photos taken in insufficient light may be inferior in image quality.
- Only 1 photo data can be registered per preset.  
If a photo is taken for a preset number which already has a photo registered for it, the new photo will replace the previously registered photo.



**6.11.2.2 [Machine] Tab Screen**

To display the [Machine] tab screen, press the [Machine] tab on the [Finish Prdct Setting] index screen.





**Fig.6-75 [Machine] Tab Screen ([Preset] Screen)**

**Table 6-23 Items and Functions of [Machine] Tab Screen**

No.	Name	Function
1	[Speed] key 	Sets the speed from the [Numeric Keypad] screen. <ul style="list-style-type: none"> <li>• The set value is displayed on the key.</li> <li>• This sets the number of packs to be discharged from the device per minute.</li> <li>• The setting value for speed is determined by factors such as product characteristics, target weight and capacity of the packer.</li> </ul>
2	[Dump Count] key 	Sets the dump count from the [Numeric Keypad] screen. <ul style="list-style-type: none"> <li>• The set value is displayed on the key.</li> <li>• This divides and discharges the product separately to prevent the product from jamming in the packer when the target weight is large or when a product will overflow if weighed all at once. The number of times for division is set here.</li> </ul> <p>(☞ Table 6-24 Optimum Dump Count)</p>

**Table 6-23 Items and Functions of [Machine] Tab Screen (Continued)**

No.	Name	Function
3	[Average Control] radio button	<p>Selects whether or not to perform average control.</p> <ul style="list-style-type: none"> <li>• This controls the target weight at a regular interval in order to maintain the discharged weight mean value to be close to the target weight.</li> <li>• If this button is set to [On] in mix weighing, the lower limit value set for the section is used as the lower limit for the target weight of the mixed products.</li> <li>• If [Off] is selected, products of a weight lower than the target weight are controlled so as not to be dumped.</li> </ul>
4	<p>[Interlock Parameter Number] drop-down key</p> 	<p>Selects the packer interlock method.</p> <p>(☞ Table 6-25 Packer Interlock Setting (Example))</p>
5	<p>[Section Parameter Number] key</p> 	<p>Selects the section parameter number from the list.</p> <p>This selects the section division pattern when dividing weigh heads into sections and weighing different products in each section.</p> <p>There are eight different division patterns (1-8).</p> <p>The section division patterns are set at the [Installation] level in advance.</p>

**Table 6-24 Optimum Dump Count**

Range	Optimum Dump Count (Fractions rounded up)
400/800	Set target ÷ 2277.7
800/1600	Set target ÷ 5461.2
1000/2000	Set target ÷ 7192.7
2000/4000	Set target ÷ 15384.5

**Table 6-25 Packer Interlock Setting (Example)**

Parameter No.	Mode	Description
1	[Master]	(☞ 2.5 Term Description)
2	[Slave]	
3	[Stroke On Demand]	
4	[Bag On Demand]	

### 6.11.2.3 [Item] Tab Screen

To display the [Item] tab screen, press the [Item] tab on the [Finish Prdct Setting] index screen.

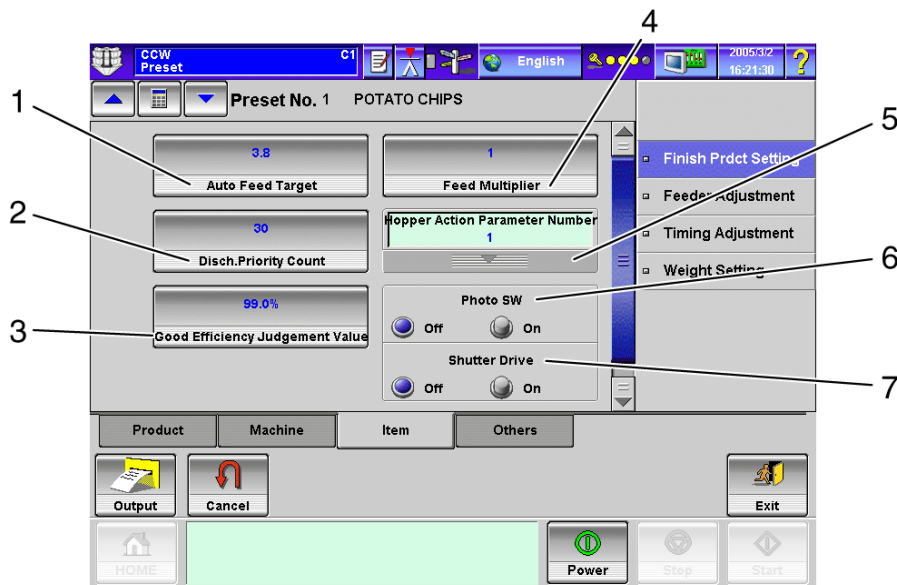


Fig.6-76 [Item] Tab Screen ([Preset] Screen)

Table 6-26 Items and Functions in the [Item] Tab Screen






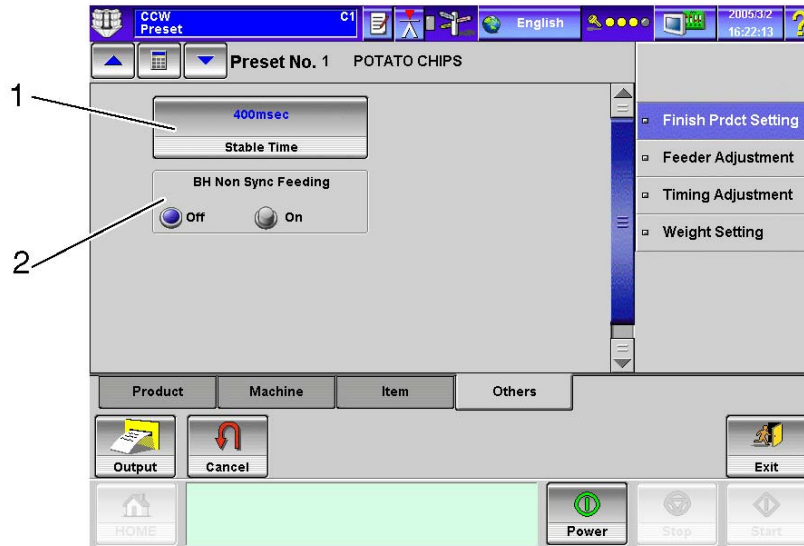
No.	Name	Function
1	[Auto Feed Target] key 	Sets the auto feed target from the [Numeric Keypad] screen. <ul style="list-style-type: none"> <li>This sets the number of weigh hopper heads to be selected for discharge operation in order to obtain the target weight.</li> <li>When feeder control is not manual, product infeed quantity (feeder value) is automatically controlled so that the target weight is met with the auto feed target.</li> <li>To enable automatic control of product infeed, set the auto feed target, and then set the feeder control to a mode other than manual.            (☞ 6.13 [Feeder Adjustment] Screen)</li> </ul>
2	[Disch. Priority Count] key 	Sets the discharge priority count from the [Numeric Keypad] screen. <ul style="list-style-type: none"> <li>This is the function to give priority in participating in combination to the heads having no discharge.</li> <li>The priority is given to the heads that have not discharged products even after weighing the number of times (5-30) set for the discharge priority count.</li> </ul>
3	[Good Efficiency Judgement Value] key 	Sets the efficiency rate judged as good condition from the [Numeric Keypad] screen.
4	[Feed Multiplier] key 	Sets the multiplying factor for the feeder operation time. This sets the multiplying factor for the feeder operation time set in the [Feeder Adjustment] screen within the range of 1-8. <ul style="list-style-type: none"> <li>When the feed multiplier is “2”:                One pitch of feeder operation time will be 40.0msec at 50Hz and 33.2msec at 60Hz.</li> </ul>

Table 6-26 Items and Functions in the [Item] Tab Screen (Continued)

No.	Name	Function
5	[Hopper Action Parameter Number] drop-down key 	Selects the parameter for open/close operation conditions for pool hoppers and weigh hoppers. This can be selected among 3 types of parameters (0, 1, 2) which set open/close operation conditions for each hopper, including the pool hopper and weigh hopper. These parameter conditions are set at the factory.
6	[Photo SW] radio button	Selects On/Off for the photo SW. [On]: Select it when using the photo eye sensor. [Off]: Select it when not using the photo eye sensor.
7	[Shutter Drive] radio button	Selects On/Off for the shutter drive. [On]: Select it when using the shutter drive. [Off]: Select it when not using the shutter drive.


### 6.11.2.4 [Others] Tab Screen

To display the [Others] tab screen, press the [Others] tab on the [Finish Prdct Setting] index screen.



**Fig.6-77 [Others] Tab Screen ([Preset] Screen)**

**Table 6-27 Items and Functions of [Others] Tab Screen**

No.	Name	Function
1	[Stable Time] key 	Sets the time up to judgment on whether weighing has been stabilized from the [Numeric Keypad] screen. Weighing for a period of time less than the time set with this key is not regarded as stable.
2	[BH Non Sync Feeding] radio button	Selects whether or not to perform non-synchronous feed of products to BH (booster hopper) from WH (weigh hopper) when the BH (booster hopper) has no products. [On]: Performs non-synchronous feed of products from WH to BH. [Off]: Does not perform non-synchronous feed of products from WH to BH.

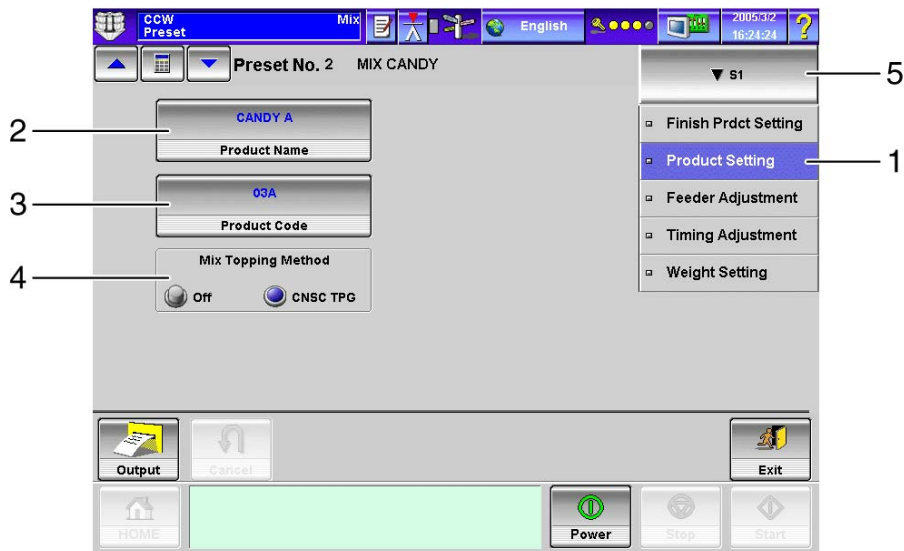
### 6.11.3 Product Setting (Only When Selecting Section with Two or More Divisions in Mix Mode)

To display the [Product Setting] index screen, press the [Product Setting] index on the [Preset] screen. When the weigher is used in the mix mode, product information for each section is set in this screen.

**NOTE**



- This index is displayed only when a section with two or more divisions is selected in the mix mode.

If two or more sections are set, a drop-down key to select the desired section appears.




**Fig.6-78 [Product Setting] Index Screen ([Preset] Screen)**

**Table 6-28 Item and Functions of the [Product Setting] Index Screen**

No.	Name	Function
1	[Product Setting] index	Displays the [Product Setting] screen in the preset. (Mix weigher only)
2	[Product Name] key 	Sets the product name for the selected section. Up to 24 characters can be specified.
3	[Product Code] key 	Sets the product code for the selected section. Up to 12 characters can be specified.
4	[Mix Topping Method] radio button	Selects whether or not to perform correction when mixing. [Off]: Correction is not performed. [CNCS TPG]: Weight correction is performed when mixing.

**Table 6-28 Item and Functions of the [Product Setting] Index Screen(Continued)**

<b>No.</b>	<b>Name</b>	<b>Function</b>
5	[Section Select] drop-down key 	Selects the section to set the product. (Available only when two or more sections are set)



### 6.11.4 [Feeder Adjustment] Index Screen

To display the [Feeder Adjustment] index screen, press the [Feeder Adjustment] index on the [Preset] screen.

**NOTE**

- Refer to “6.13 [Feeder Adjustment] Screen” for feeder adjustment procedures. For feeder adjustment from the [Production] screen, refer to “6.13 [Feeder Adjustment] Screen”.

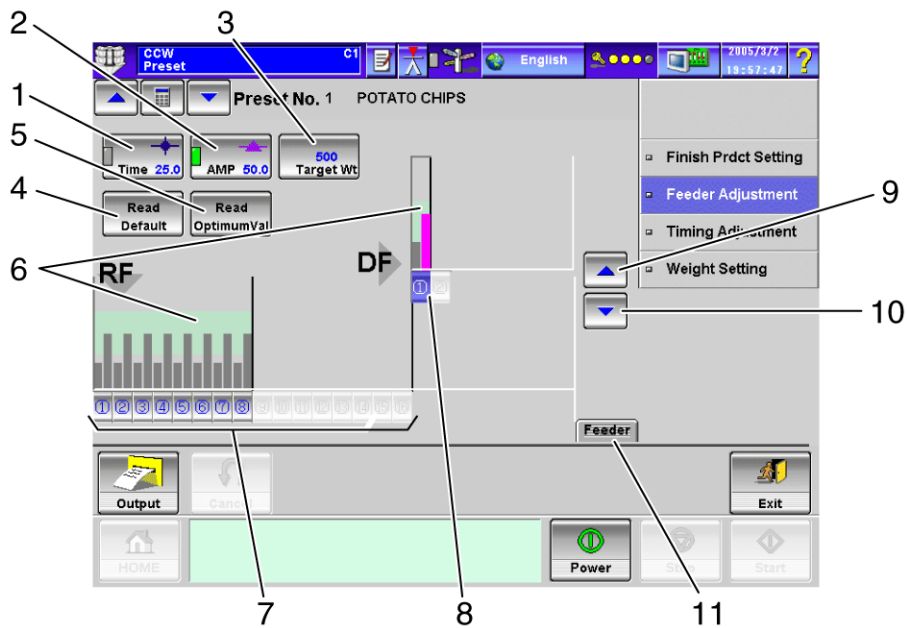












Fig.6-79 [Feeder Adjustment] Index Screen ([Preset] Screen)

Table 6-29 Items and Functions of [Feeder Adjustment] Index Screen

No.	Name	Function
1	[Time] key 	ON: Enables adjustment of radial feeder operation time.
2	[AMP] key 	ON: Enables adjustment of radial feeder amplitude.
3	[Target Wt] key 	Appears if DF is selected. Sets the optimum weight for the dispersion table.
4	[Read Default] key 	Calls the feeder default value.
5	[Read OptimumVal] key 	Calls the feeder optimum value. Available only when the feeder optimum value is registered in the [Production] screen. (Refer to 6.7 [Production] Screen)

**Table 6-29 Items and Functions of [Feeder Adjustment] Index Screen (Continued)**

No.	Name	Function
6	Feeder adjustment graph	The relative graph of time and amplitude of radial feeder and dispersion feeder.
7	Each [RF] key 	Selects the radial feeder head to be adjusted. The selected heads are displayed in blue. Each time the key is pressed, it is selected and released in turn.
8	Each [DF] key 	Selects the dispersion table. If selected, the key is displayed in blue. Each time the key is pressed, it is selected and released in turn.
9	[Increase] key 	Increases the feeder value (RF time or RF amplitude) of the selected head.
10	[Decrease] key 	Decreases the feeder value (RF time or RF amplitude) of the selected head.
11	[Feeder] pop-up key 	Displays the [Feeder] pop-up menu.

### 6.11.5 [Timing Adjustment] Index Screen

To display the [Timing Adjustment] index screen, press the [Timing Adjustment] index on the [Preset] screen.

**NOTE**

- Refer to “6.14 [Timing Adjustment] Screen” for timing adjustment procedures. For feeder adjustment from the [Drain] screen, refer to “6.14 [Timing Adjustment] Screen”.

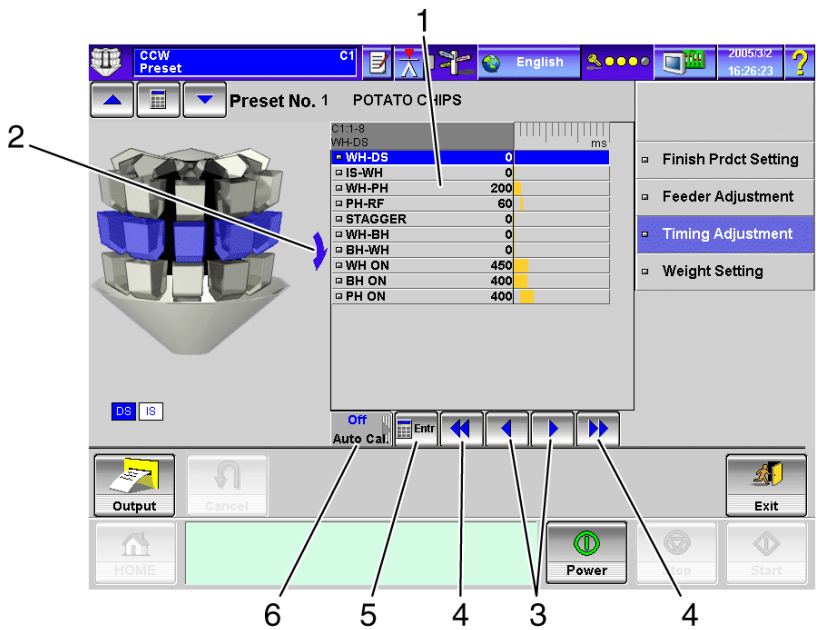






Fig.6-80 [Timing Adjustment] Index Screen ([Preset] Screen)

Table 6-30 Items and Functions of the [Timing Adjustment] Index Screen

No.	Name	Function
1	Individual timing adjustment items	Selects the item for which timing is to be adjusted.
2	Adjustment direction	Indicates the direction of adjustment between the units displayed in blue.
3	[Increase/Decrease] key (10ms) 	Increases/decreases a value in units of 10ms.
4	[Increase/Decrease] key (100ms) 	Increases/decreases a value in units of 100ms.
5	[Entr] key 	Sets the timing value directly from the [Numeric Keypad] screen.
6	[Auto Cal.] pop-up key 	Displays the [Auto Cal.] pop-up menu for the timing value.

## 6.11.6 [Weight Setting] Index Screen

To display the [Weight Setting] index screen ([Preset] screen), press the [Weight Setting] index on the [Preset] screen.

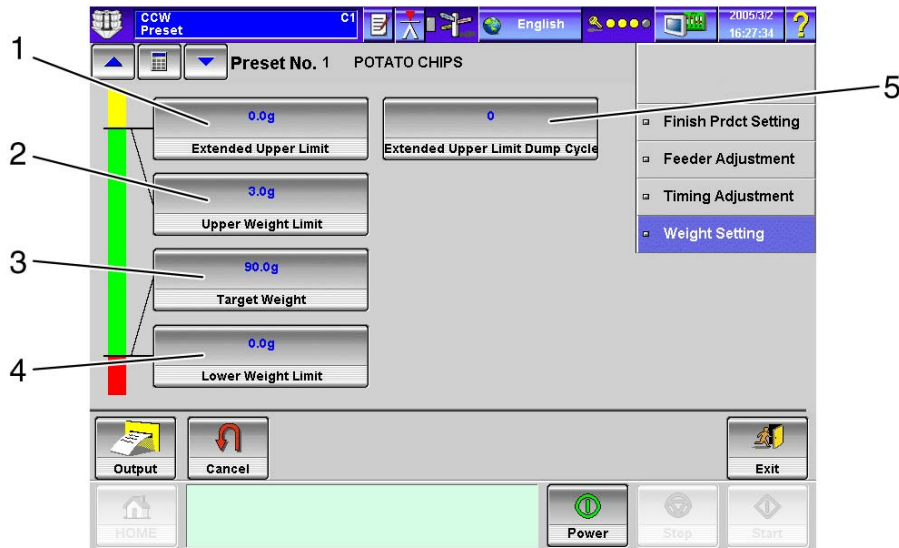







Fig.6-81 [Weight Setting] Index Screen ([Preset] Screen)

Table 6-31 Items and Functions of the [Weight Setting] Index Screen

No.	Name	Function
1	[Extended Upper Limit] key 	Aiming at efficiency improvement, sets the tolerance for a certain proper weight from the [Numeric Keypad] screen so that products can be discharged as proper weight even if the upper limit is exceeded once in a specified number of proper weight dumps. The key is unavailable when the upper weight limit is 0.0g.
2	[Upper Weight Limit] key 	Sets the upper limit of proper weight from the [Numeric Keypad] screen.
3	[Target Weight] key 	Sets the target weight from the [Numeric Keypad] screen.
4	[Lower Weight Limit] key 	Sets the lower limit of proper weight from the [Numeric Keypad] screen. This key is unavailable while the average control is set to [Off].
5	[Extended Upper Limit Dump Cycle] key 	Sets the upper limit of the number of cycles of proper discharge with the tolerance set for the extended upper limit (Item No.1).

### 6.11.6.1 Target Weight

The target weight sets the weight of products to be discharged from the device to the packer. The maximum setting value and the setting unit for target weight are as shown below.

**Table 6-32 Target Weight Setting Range**

<b>Head Weighing Capacity</b>	<b>Standard (400g/800g)</b>	<b>Medium (800g/1600g)</b>
Maximum setting value	99999.0g	99999.0g
Setting unit	0.1/0.2g	0.2/0.5g

### 6.11.6.2 Upper Weight Limit

The upper weight limit sets the upper limit of the proper weight. The upper weight limit can be set within the range of 0.0g-999.0g. If 0.0g is set, the upper weight limit is infinite. The maximum setting value and the minimum setting unit for upper weight limit are as shown below.

**Table 6-33 Upper Weight Limit Setting Range**

<b>Head Weighing Capacity</b>	<b>Standard (400g/800g)</b>	<b>Medium (800g/1600g)</b>
Maximum setting value	999.0g	999.0g
Setting unit	0.1/0.2g	0.2/0.5g

(e.g.) If the target weight is set to 100.0g and the upper weight limit to 5.0g, discharge is performed with the proper weight at 100.0g-105.0g.

### 6.11.6.3 Lower Weight Limit

The lower weight limit sets the lower limit of the proper weight for using average control. When average control is used, the lower weight limit is automatically set by entering the target weight. In the lower weight limit setting, the automatically set lower limit can be changed as required. However, the range of change is from 0.0g to “the automatically set lower weight limit value”. The maximum setting value and the minimum setting unit for lower weight limit are as shown below.

**Table 6-34 Lower Weight Limit Setting Range**

Head Weighing Capacity	Standard (400g/800g)	Medium (800g/1600g)
Maximum setting value	999.0g	999.0g
Setting unit	0.1/0.2g	0.2/0.5g

(e.g.) If the target weight is set to 100.0g and the upper and lower weight limit to 5.0g, discharge is performed with the proper weight at 95.0g-105.0g.

**Table 6-35 Automatically Set Lower Weight Limit Value**

Target Weight (g)	Automatically Set Value
5.0 - 50.0	9% of the target weight
50.0 - 100.0	4.5g
100.0 - 200.0	4.5% of the target weight
200.0 - 300.0	9g
300.0 - 500.0	3% of the target weight
500.0 - 1000.0	15g
1000.0 - 10000.0	1.5% of the target weight

### 6.11.7 Preset Change Operation

For some of the preset items, the setting values can be changed directly from the [Main Menu] or the [Production] screen.

(☞ 6.4 [Main Menu] Screen, 6.7 [Production] Screen)

Items that can be changed from the [Main Menu] screen:

Product name, Product code, Target weight, Speed, Dump count, Upper weight limit

Items that can be changed from the [Production] screen:

Target weight, Speed, Dump count, Upper weight limit

**NOTE**

- This function is available to [Site Engineer] or higher level personnel.
- The setting values changed in the [Production] screen, which is only a temporary change of preset data during production, are not reflected to the preset data. If preset selection is performed or power is turned off after a setting change in the [Production] screen, the changed data will be invalid.

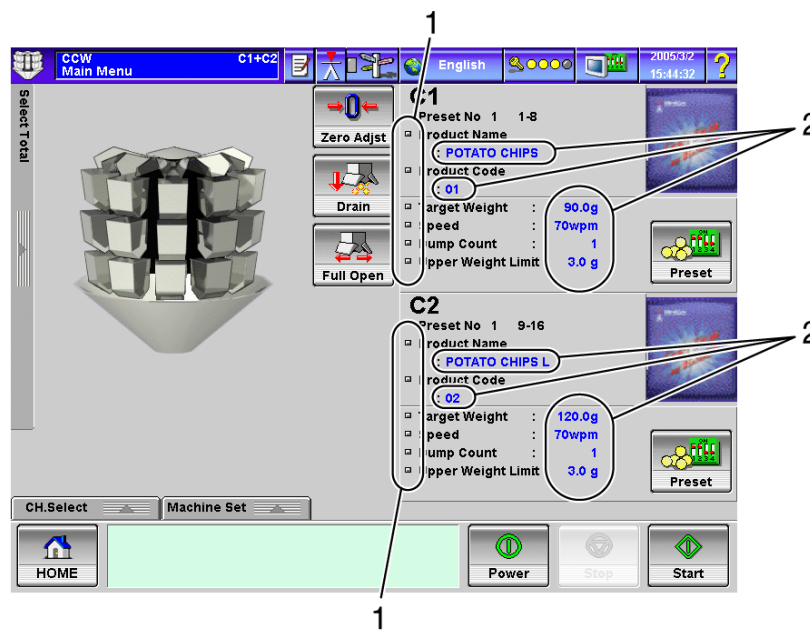



Fig.6-82 [Main Menu] Screen

Table 6-36 Keys and Functions Used for Preset Change Operation

No.	Name	Function
1	[Change Preset Item] button 	Displays the [Numeric Keypad] screen or the [Keyboard] screen to be used for changing preset data. The areas that can actually be pressed are the square buttons and the item names.
2	Setting value display	Displays the set values. When setting change is available, the set values are displayed in blue.

**NOTE**

- In the [Operator] level, the [Change Preset Item] buttons are not displayed and the settings cannot be changed. In this case, the set values are displayed in black.

### 6.11.8 Preset Output

The preset contents can be output to a printer or as a file.

Outputting the preset contents can facilitate preset management.

For outputting the preset contents, follow the procedures below.

**NOTE**

- Set the output method from the [Destination ID] screen (☞ 6.3.5.3 [Destination ID] Tab Screen Tab Screen) in the [Control Panel] screen.

1. In the [Preset] screen, press the [Output] key.

- ▶ The preset contents are output to a printer or as a file.



**Fig.6-83 [Preset] Screen**



```

-----
PRODUCT SET
-----
PRESET NO. 1
===== C 1 =====
PROD NAME : POTATO CHIPS
PROD CODE : 01
PHOTO NO. : 2
TARGET WT : 90.0 g
UPPER WT : 3.0 g
TOL NEG ERR: 0.0 g
EX. UPPER WT: 0.0 g
SPEED : 60 bpm
DUMP COUNT : 1
INTLK MODE : 1
AV. CONTROL : OFF
SECT. SET : 1
STABLE TIME: 480 ms
METAL HEAD : 0
0 ms
JAW CLOSE TIME:
  AMP  TIME
RF 1  50  25
RF 2  50  25
RF 3  50  25
RF 4  50  25
RF 5  50  25
RF 6  50  25
RF 7  50  25
RF 8  50  25
D 1  50  25
-- DF 1 --
INFEED WT : 500 g
  UPPER :+ 20 %
  LOWER :- 20 %
          500 g
AFD DF UPPER WT :
          0 g
AFD DF LOWER WT :
AFD STOP DF LOWER WT: 50 % (↗)
WH-DS : 0 MS
IS-WH : 0 MS (↗)

(↘) --- OPTIMUM VALUE ---
      AMP  TIME
RF 1  50  25
RF 2  50  25
RF 3  50  25
RF 4  50  25
RF 5  50  25
RF 6  50  25
RF 7  50  25
RF 8  50  25
DF 1  50  25
-- DF 1 --
INFEED WT : 500 g
  UPPER :+ 20 %
  LOWER :- 20 %
          500 g
AFD DF UPPER WT :
          0 g
AFD DF LOWER WT :
AFD STOP DF LOWER WT: 50 %
WH-DS : 0 MS
IS-WH : 0 MS (↗)

(↘) -- SECTION 1 --
HEADS : 1-8
PROD NAME :
PROD CODE :
WH-PH : 190 ms
PH-RF : 130 ms
WH-BH : 60 ms
BH-WH : 100 ms
BH ON : 400 ms
WH ON : 450 ms
STAGGER : 0 ms
TARGET WT : 90.0 g
UPPER WT : 3.0 g
TOL NEG ERR: 0.0 g
EX. UPPER WT: 0.0 g
HOP ACTION : 1
FEEDER MULTIPLY : 1
AUTO FD TARGET :
          3.8
PHOTO : OFF
SHUTTER : OFF
PRIORITY PARTIC. : 30
AFD :
Manual
AUTO AMP :
MIN. : 0
MAX. : 99
AUTO TIME :
MIN. : 0
MAX. : 99
GOOD EFFCNCY LMT:99.0%
    
```

Fig.6-84 Preset Output (Example)

## 6.12 [Select Total] Pop-up Menu

To display the [Select Total] pop-up menu, press the [Select Total] pop-up key on the [Main Menu] screen.

From the displayed keys, select the total data to be displayed.

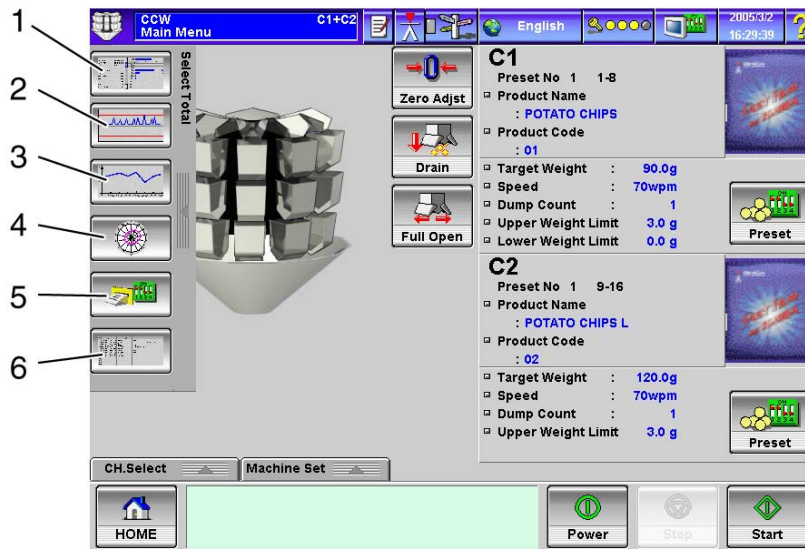








Fig.6-85 [Select Total] Pop-up Menu

Table 6-37 Keys and Functions of [Select Total] Pop-up Menu

No.	Name	Function
1	[Current Total] key 	Displays the total and histogram for the period from all total clear to the present.
2	[X-bar Chart] key 	Displays the X-bar chart.
3	[Weigher's Transitional Data] key 	Displays the operational transition data of the weigher.
4	[Per Head - Cmb. Participation Data] key 	Displays the status of each head.
5	[Total Setting] key 	Displays the [Total Setting] screen.
6	[Operation Log] key 	Displays the operation log.

**NOTE**

- The [Total Setting] key is available to [Site Engineer] or higher level personnel.
-

## 6.12.1 [Current Total] Screen

Check the total results in the [Current Total] screen.

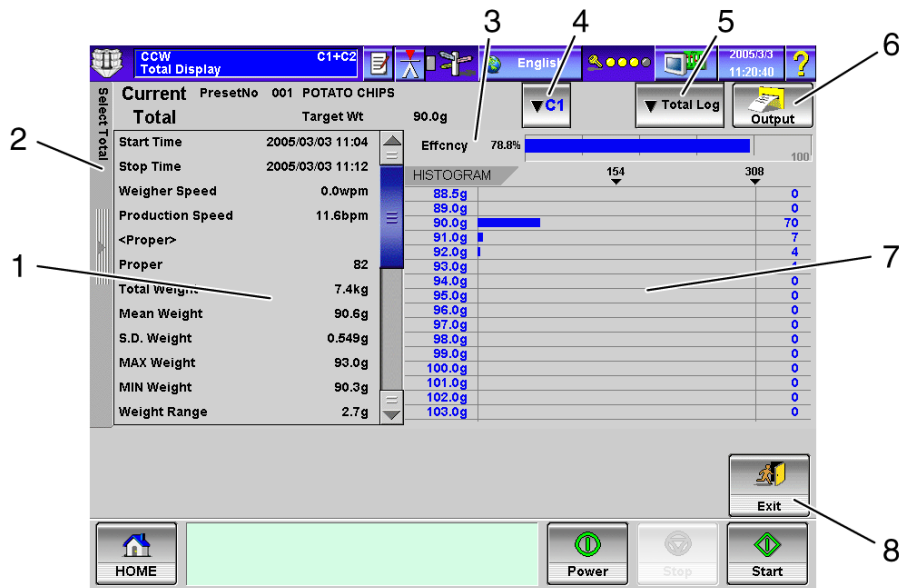


Fig.6-86 [Current Total] Screen ([Total Display] Screen)

Table 6-38 Items and Functions of [Current Total] Screen





No.	Name	Function
1	Total data	Displays the production status for the period from the start time of total up to the present.
2	[Select Total] pop-up key 	Displays the [Select Total] pop-up menu.
3	[Effcnycy] display	Displays the efficiency for the period from the start time of total up to the present.
4	[C1]/[C2] switching drop-down key 	Selects the channel for which total data is to be displayed.
5	[Total Log] drop-down key 	Displayed when a total log exists. Selects the total log to be displayed.
6	[Output] key 	Outputs total data to a printer or as a file.
7	[HISTOGRAM] display	Displays the histogram.

Table 6-38 Items and Functions of [Current Total] Screen(Continued)


No.	Name	Function
8	[Exit] key 	Returns to the previous screen.

Table 6-39 Total Data Items

Item Name	Description
[Start Time]	The time when the first proper dump occurred since combination weighing is started. Display: year/month/day hour:minute
[Stop Time]	The time when combination weighing is stopped or total data output is performed. Display: year/month/day hour:minute
[Weigher Speed]	The frequency of combination weighing in 1 minute every 10 minutes. Unit: wpm
[Production Speed]	The number of productions during operation time. Unit: wpm
[Proper]	The number of proper dumps that occur between the start time and stop time. Displays the proper dump count for the channel during channel total display. Displays the proper dump count for the section during section total display.
[Total Weight]	The total weight of proper dumps that occur between the start time and stop time. Unit: kg ("lb" is used in case of ounce supported) Displays the total weight of proper dumps for the channel during channel total display. Displays the total weight of proper dumps for the section during section total display.
[Mean Weight]	The mean weight of proper dumps that occur between the start time and stop time. Unit: g ("oz" is used in case of ounce supported) Displays the mean weight for the channel during channel total display. Displays the mean weight for the section during section total display.
[S.D. Weight]	The standard deviation weight of proper dumps that occur between the start time and stop time. Unit: g ("oz" is used in case of ounce supported) Displays the standard deviation weight for the channel during channel total display. Displays the standard deviation weight for the section during section total display.
[MAX Weight]	The maximum weight of proper dumps that occur between the start time and stop time. Unit: g ("oz" is used in case of ounce supported) Displays the maximum weight for the channel during channel total display. Displays the maximum weight for the section during section total display.
[MIN Weight]	The minimum weight of proper dumps that occur between the start time and stop time. Unit: g ("oz" is used in case of ounce supported) Displays the minimum weight for the channel during channel total display. Displays the minimum weight for the section during section total display.
[Weight Range]	The difference between the maximum weight and minimum weight of proper dumps that occur between the start time and stop time. Unit: g ("oz" is used in case of ounce supported) Displays the weight range for the channel during channel total display. Displays the weight range for the section during section total display.
[Total Count] * Displayed during count set weighing only.	The total count of proper dumps that occur between the start time and stop time. Unit: pcs Displays the total count of proper dumps for the channel during channel total display. Displays the total count of proper dumps for the section during section total display.

**Table 6-39 Total Data Items (Continued)**

Item Name	Description
[Mean Count] * Displayed during count set weighing only.	The mean count of proper dumps that occur between the start time and stop time. Unit: pcs Displays the mean count for the channel during channel total display. Displays the mean count for the section during section total display.
[S.D. Count] * Displayed during count set weighing only.	The standard deviation count of proper dumps that occur between the start time and stop time. Unit: pcs Displays the standard deviation count for the channel during channel total display. Displays the standard deviation count for the section during section total display.
[MAX Count] * Displayed during count set weighing only.	The maximum count of proper dumps that occur between the start time and stop time. Unit: pcs Displays the maximum count for the channel during channel total display. Displays the maximum count for the section during section total display.
[MIN Count] * Displayed during count set weighing only.	The minimum count of proper dumps that occur between the start time and stop time. Unit: pcs Displays the minimum count for the channel during channel total display. Displays the minimum count for the section during section total display.
[Count Range] * Displayed during count set weighing only.	The difference between the maximum count and minimum count of proper dumps that occur between the start time and stop time. Unit: pcs Displays the count range for the channel during channel total display. Displays the count range for the section during section total display.
[Mean Piece Weight] * Displayed during count set weighing only.	The mean piece weight of proper dumps that occur between the start time and stop time. Unit: g ("oz" is used in case of ounce supported) This is not displayed in case of mix weighing during channel total display. The mean piece weight is displayed during single weighing or section total display. This is not displayed while section switching is available during channel total display.
[S.D. Piece Weight] * Displayed during count set weighing only.	The standard deviation piece weight of proper dumps that occur between the start time and stop time. Unit: g ("oz" is used in case of ounce supported) This is not displayed in case of mix weighing during channel total display. The standard deviation piece weight is displayed during single weighing or section total display. This is not displayed while section switching is available during channel total display.
[MAX Piece Weight] * Displayed during count set weighing only.	The maximum piece weight of proper dumps that occur between the start time and stop time. Unit: g ("oz" is used in case of ounce supported) This is not displayed in case of mix weighing during channel total display. The maximum piece weight is displayed during single weighing or section total display. This is not displayed while section switching is available during channel total display.
[MIN Piece Weight] * Displayed during count set weighing only.	The minimum piece weight of proper dumps that occur between the start time and stop time. Unit: g ("oz" is used in case of ounce supported) This is not displayed in case of mix weighing during channel total display. The minimum piece weight is displayed during single weighing or section total display. This is not displayed while section switching is available during channel total display.

**Table 6-39 Total Data Items (Continued)**

Item Name	Description
[Parent 1 Total Wt] * Displayed during parent and child weighing only.	The total weight of parent head proper dumps that occur between the start time and stop time. Unit: kg ("lb" is used in case of ounce supported) This is not displayed in case of mix weighing during channel total display. The total weight of parent head dumps is displayed during single weighing or section total display. This is not displayed while section switching is available.
[Parent 2 Total Wt] * Displayed during parent and child weighing only.	The total weight of parent head proper dumps that occur between the start time and stop time. Unit: kg ("lb" is used in case of ounce supported) This is not displayed in case of mix weighing during channel total display. The total weight of parent head dumps is displayed during single weighing or section total display. This is not displayed while section switching is available.
[Parent 3 Total Wt] * Displayed during parent and child weighing only.	The total weight of parent head proper dumps that occur between the start time and stop time. Unit: kg ("lb" is used in case of ounce supported) This is not displayed in case of mix weighing during channel total display. The total weight of parent head dumps is displayed during single weighing or section total display. This is not displayed while section switching is available.
[Parent 4 Total Wt] * Displayed during parent and child weighing only.	The total weight of parent head proper dumps that occur between the start time and stop time. Unit: kg ("lb" is used in case of ounce supported) This is not displayed in case of mix weighing during channel total display. The total weight of parent head dumps is displayed during single weighing or section total display. This is not displayed while section switching is available.
[Under]	The number of underweight cases that occur between the start time and stop time. Displays the number of underweight cases for the channel during channel total display. Displays the number of underweight cases for the section during section total display.
[Over Weight] <Under/Over>	The number of overweight cases that occur between the start time and stop time as a result of combination. Displays the number of overweight cases for the channel during channel total display. Displays the number of overweight cases for the section during section total display.
[Over Scale] <Under/Over>	The number of over-scale cases that occur between the start time and stop time. Displays the number of over-scale cases for the channel during channel total display. Displays the number of over-scale cases for the section during section total display.
[Recheck Error]	The number of recheck errors that occur between the start time and stop time. Displays the number of recheck errors for the channel during channel total display. Displays the number of recheck errors for the section during section total display.
[Over Weight] <Over Dump>	The number of overweight dumps that occur between the start time and stop time as a result of combination. Displays the number of overweight dumps for the channel during channel total display. Displays the number of overweight dumps for the section during section total display.
[Over Scale] <Over Dump>	The number of over-scale dumps that occur between the start time and stop time. Displays the number of over-scale dumps for the channel during channel total display. Displays the number of over-scale dumps for the section during section total display.

**Table 6-39 Total Data Items (Continued)**

Item Name	Description
[Total Weight] <Over Dump>	The total weight of overweight dumps that occur between the start time and stop time. Unit: kg ("lb" is used in case of ounce supported) Displays the total weight of overweight dumps for the channel during channel total display. Displays the total weight of overweight dumps for the section during section total display.
[Metal Detect]	The number of times metal is detected between the start time and stop time. Unit: times When no metal is detected, this item is not displayed.
[Product On Time]	The accumulated time of production between the start time and stop time. Display: hour/minute
[Product Off Time]	The accumulated time of production halt between the start time and stop time. Display: hour/minute
[Low Product Time]	The accumulated time of supply shortage during operation. Display: hour/minute

**NOTE**

- Parent and child weighing and count set weighing are optional functions.  
(☞ 8.2 Parent and Child Weighing, 8.3 Count Set Weighing)



### 6.12.2 [X-bar Chart] Screen

The [X-bar Chart] screen displays how weighing result averages change using an X-bar chart.

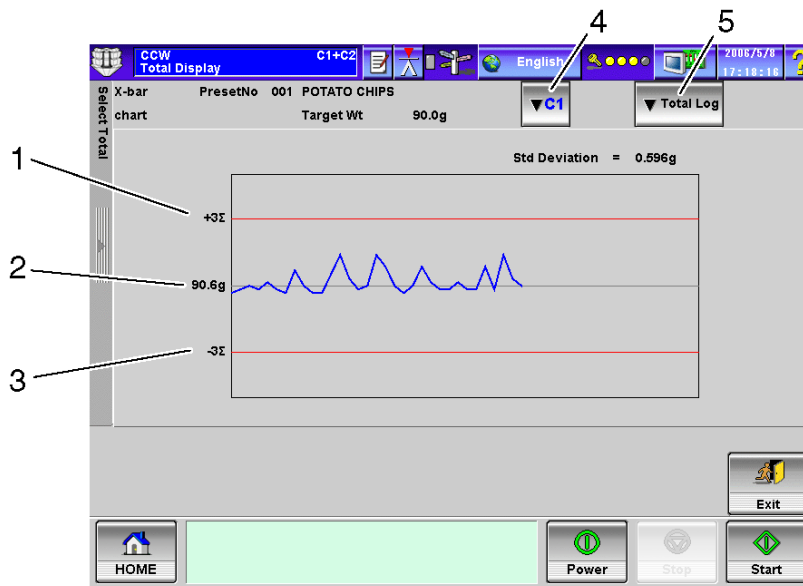




Fig.6-87 [X-bar Chart] Screen ([Total Display] Screen)

Table 6-40 Items and Functions of [X-bar Chart] Screen

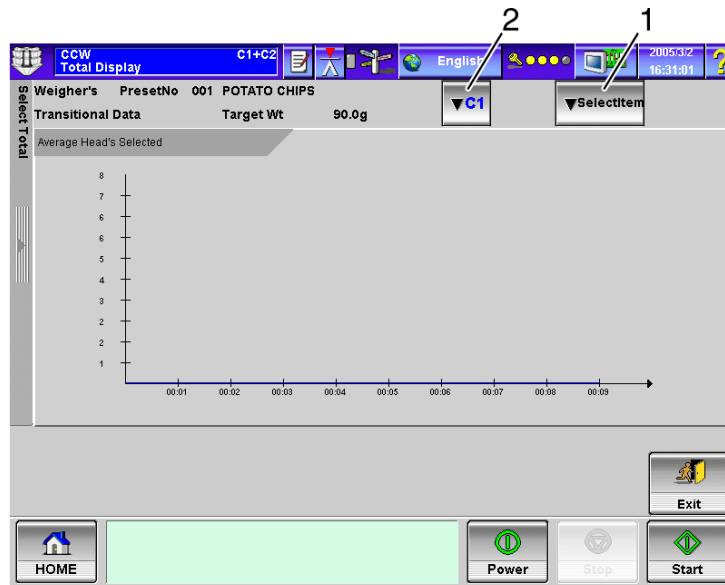
No.	Name	Function
1	Upper limit	Set as $+3\sigma$ ( $\sigma$ = standard deviation).
2	Mean value	Displays the average of the sum of every weighing result from the total start, per 250 cycles.
3	Lower limit	Set as $-3\sigma$ ( $\sigma$ = standard deviation).
4	[C1]/[C2] switching drop-down key 	Selects the channel for which total data is to be displayed.
5	[Total Log] drop-down key 	Displayed when a total log exists. Selects the total log to be displayed.

### 6.12.3 [Weigher's Transitional Data] Screen

The [Weigher's Transitional Data] screen displays the operational status transition of the device with time.



The horizontal axis indicates the time and the vertical axis indicates each value.

Up to 4 graphs can be displayed at a time.



**Fig.6-88 [Weigher's Transitional Data] Screen ([Total Display] Screen)**

**Table 6-41 Items and Functions of [Weigher's Transitional Data] Screen**

No.	Name	Function
1	[SelectItem] drop-down key 	Selects the items to be displayed from the following. (Up to 4 items can be selected) <ul style="list-style-type: none"> <li>• [Average Head's Selected]</li> <li>• [Average Stable Heads]</li> <li>• [Average Empty Heads]</li> <li>• [Proper/Over Wt/Under/Over Scale]</li> <li>• [Efficiency]</li> <li>• [Mean]</li> <li>• [Standard Deviation]</li> <li>• [Speed]</li> <li>• [Average Weight per Head]</li> <li>• [Piece Weight Revision]</li> <li>• [Parent Dump Weight]</li> </ul>
2	[C1]/[C2] switching drop-down key 	Selects the channel for which total data is to be displayed.

### 6.12.4 [Per Head - Cmb. Participation Data] Screen

The [Per Head - Cmb. Participation Data] screen displays the operational status of the device for each head.

Up to 4 graphs can be displayed at a time.

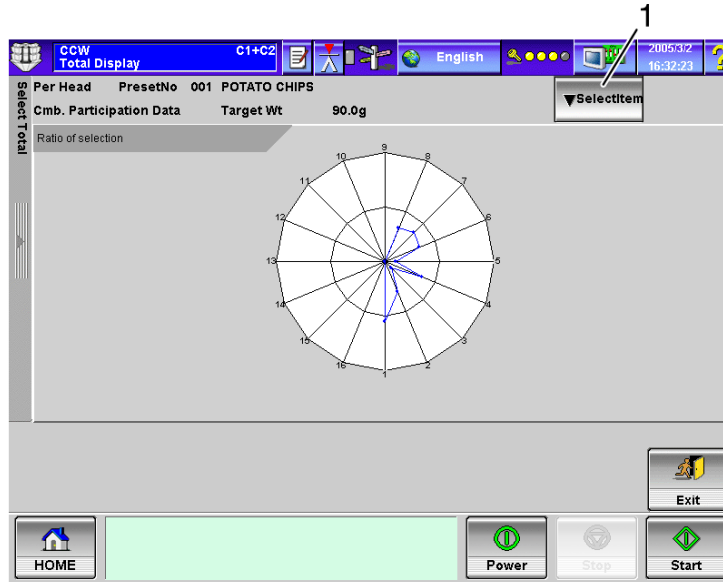



Fig.6-89 [Per Head - Cmb. Participation Data] Screen ([Total Display] Screen)

Table 6-42 Items and Functions of [Per Head - Cmb. Participation Data] Screen

No.	Name	Function
1	[SelectItem] drop-down key 	Selects the items to be displayed from the following. (Up to 4 items can be selected) <ul style="list-style-type: none"> <li>• [Selected Ratio]</li> <li>• [Stable Ratio]</li> <li>• [Empty Ratio]</li> <li>• [Auto Zero Ratio]</li> <li>• [Error Ratio]</li> <li>• [Over Scale Ratio]</li> <li>• [Plus Full Scale Ratio]</li> <li>• [Minus Full Scale Ratio]</li> <li>• [3rd filter Selected Ratio]</li> <li>• [4th filter Selected Ratio]</li> <li>• [Unstable Ratio]</li> <li>• [Average Infeed Product Amount]</li> <li>• [SD Infeed Product Amount]</li> </ul>

## 6.12.5 [Total Setting] Screen

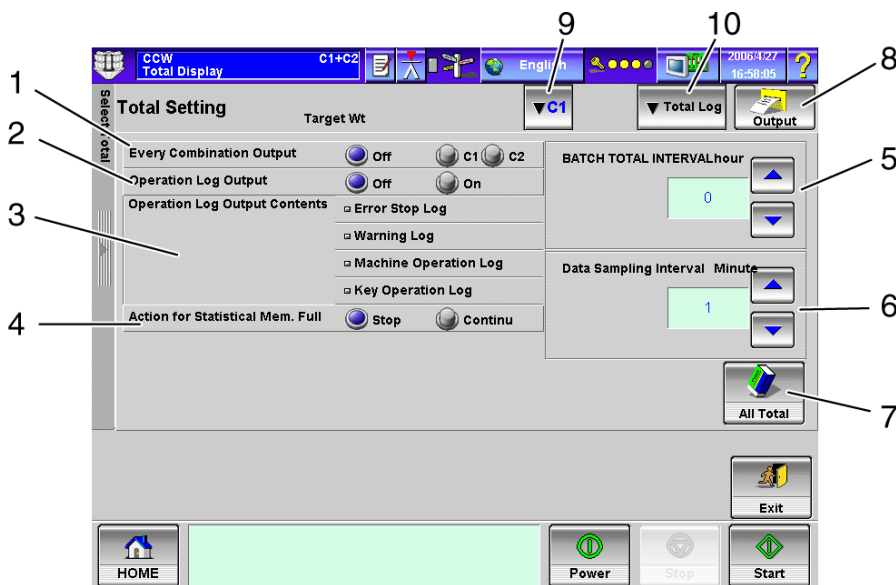








Fig.6-90 [Total Setting] Screen ([Total Display] Screen)

Table 6-43 Items and Functions of [Total Setting] Screen

No.	Name	Function
1	[Every Combination Output] radio button	Selects whether or not to output the combination weight in production. [C1]/[C2]: Outputs the combination weight in production in the selected channel. [Off]: Does not output the combination weight in production.
2	[Operation Log Output] radio button	Selects whether or not to output the operation log. [On]: Outputs the operation log. [Off]: Does not output the operation log.
3	[Operation Log Output Contents]	Selects the contents to be logged, such as the log of commands executed by the device and the errors that occurred during production.
4	[Action for Statistical Mem. Full] radio button	Selects the action to be taken when the memory of total data is full. [Stop]: Stops production. [Continue]: Deletes old data and continues production.
5	[BATCH TOTAL INTERVAL] increase/decrease key 	Sets the total data printing interval in increments of 1 hour.
6	[Data Sampling Interval] increase/decrease key 	Sets the data sampling interval in increments of 1 minute.
7	[All Total] key 	Clears all total data up to the present. Total data cannot be cleared during production.

**Table 6-43 Items and Functions of [Total Setting] Screen(Continued)**

No.	Name	Function
8	[Output] key 	Outputs total data to a printer or as a file.
9	[C1]/[C2] switching drop-down key 	Selects the channel for which total data is to be displayed.
10	[Total Log] drop-down key 	Displayed when a total log exists. Selects the total log to be displayed.

## 6.12.6 [Operation Log] Screen

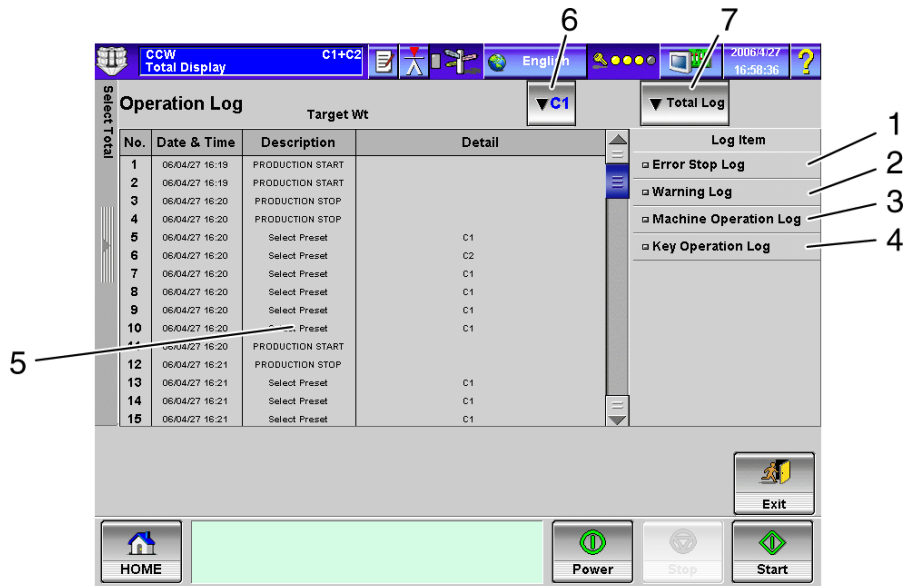




Fig.6-91 [Operation Log] Screen ([Total Display] Screen)

Table 6-44 Items and Functions of [Operation Log] Screen

No.	Name	Function
1	[Error Stop Log] key	Displays the error stop log of the device.
2	[Warning Log] key	Displays the log of warnings issued by the device.
3	[Machine Operation Log] key	Displays the operation log of the device.
4	[Key Operation Log] key	Displays the log of key operations performed for the device.
5	Operation log display area	Displays the contents of the specified log item.
6	[C1]/[C2] switching drop-down key 	Selects the channel for which total data is to be displayed.
7	[Total Log] drop-down key 	Displayed when a total log exists. Selects the total log to be displayed.

## 6.13 [Feeder Adjustment] Screen

The feeder adjustment is the function to adjust the amount of product infeed to the pool hoppers, radial troughs and dispersion tables depending on the operation amplitude and operation time of radial feeder and the operation amplitude, operation time and dispersion weight of dispersion feeder.

The feeder adjustment values depend on the product shape and the target weight. Feeder adjustment is required when the amount of product delivered from the dispersion table to the pool hoppers is too large or too small.

The [Feeder Adjustment] screen appears when the [Feeder Adjust] tab or the [Feeder Adjustment] index is pressed in the following screens:

- [Production] screen
- [Drain] screen
- [Full Open Lock] Screen
- [Preset] screen

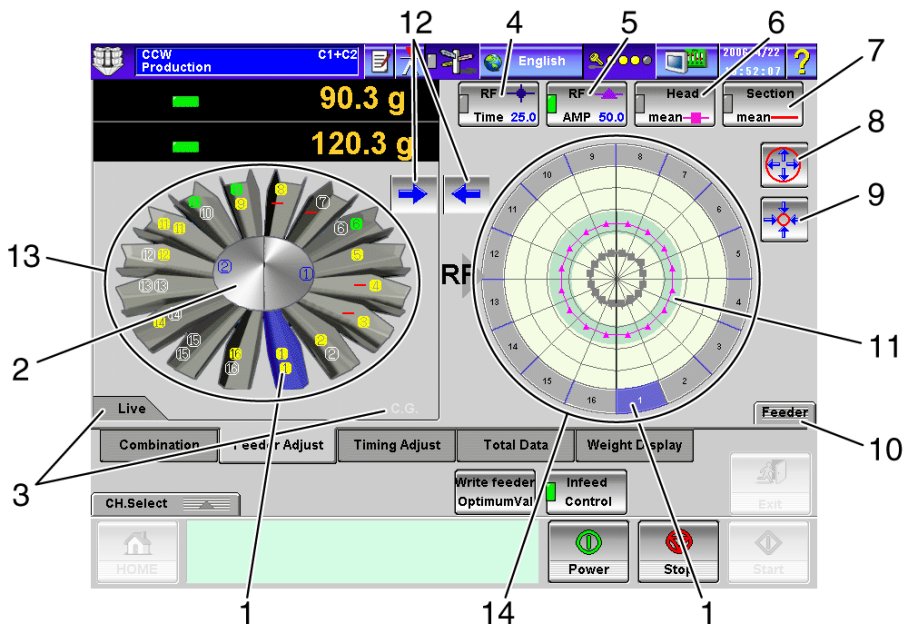


Fig.6-92 [Feeder Adjust] Tab Screen ([Production] Screen)

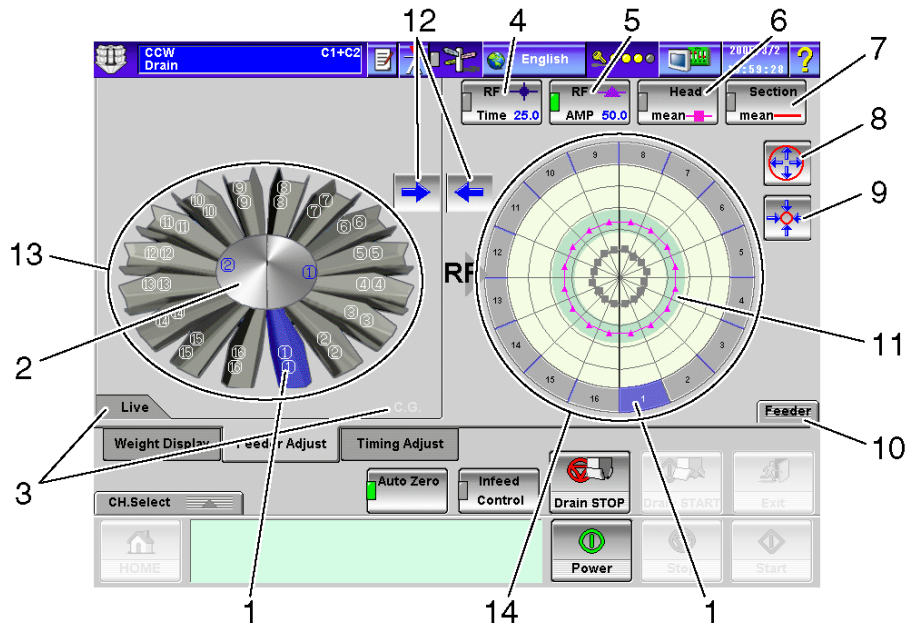


Fig.6-93 [Feeder Adjust] Tab Screen ([Drain] Screen)

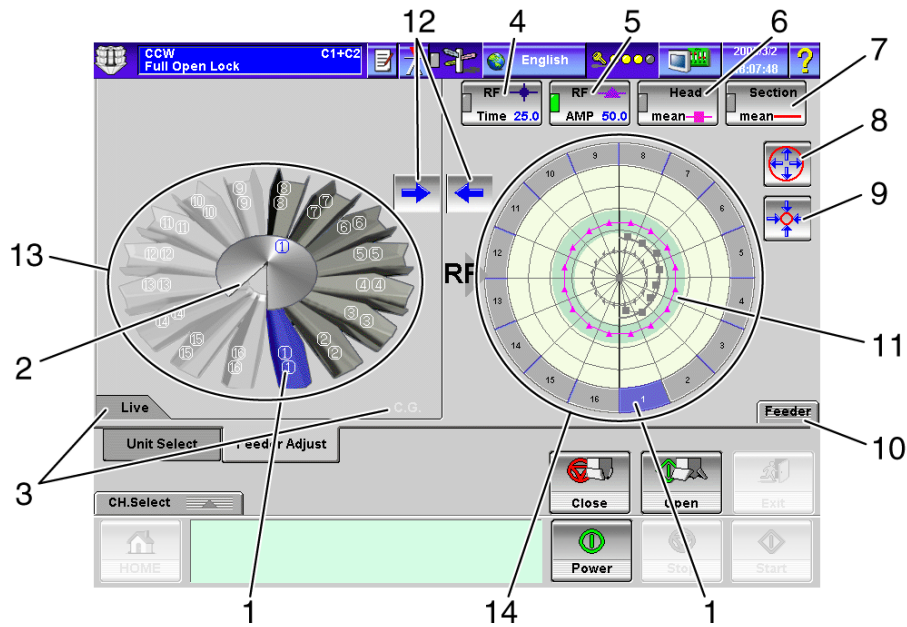


Fig.6-94 [Feeder Adjust] Tab Screen ([Full Open Lock] Screen)



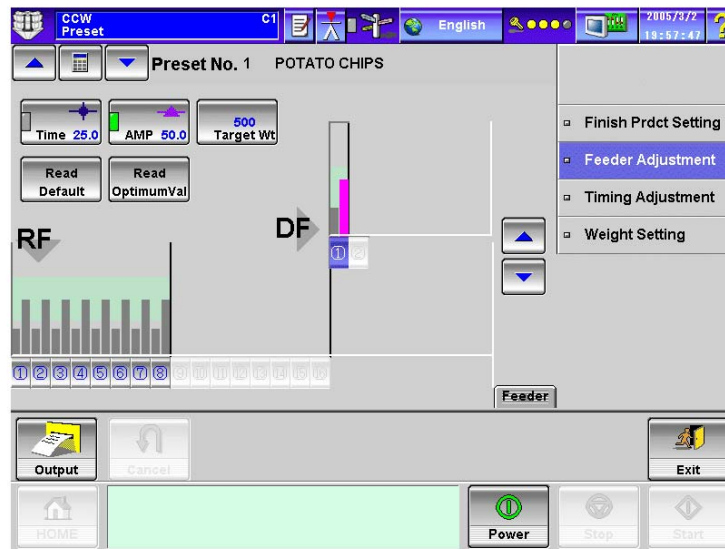


Fig.6-95 [Feeder Adjustment] Index Screen ([Preset] Screen)

**NOTE**

- For keys and functions of the [Feeder Adjustment] index screen during preset, refer to “6.11.4 [Feeder Adjustment] Index Screen” of the [Preset] Screen.

Table 6-45 Items and Functions of [Feeder Adjustment] Screen










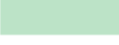

No.	Name	Function
1	Each [RF] key 	Selects the number for the head to be adjusted. Head selection in the bird’s-eye view and the radar chart operates in conjunction with each other.
2	Each [DF] key 	Selects the number for the dispersion table to be adjusted. Dispersion table selection in the bird’s-eye view and the radar chart operates in conjunction with each other. The feeder adjustment radar chart appears.
3	[Live]/[C.G.] switching tab	Switches the display between the head illustration and the photo taken by the camera.
4	[RF Time] key 	ON: Enables adjustment of radial feeder operation time. After turning the key ON, press the [Increase] or [Decrease] key to change the operation time.
5	[RF AMP] key 	ON: Enables adjustment of radial feeder amplitude. After turning the key ON, press the [Increase] or [Decrease] key to change the feeder amplitude.
6	[Head mean] key 	ON: Displays the graph of the average infeed product amount for each WH. The values are displayed in pink on the graph while the [Average Infeed Product Amount] key for each WH is selected. If the key is not selected, the values are displayed in grey. The values are indicated by a line connecting each point.

Table 6-45 Items and Functions of [Feeder Adjustment] Screen (Continued)

No.	Name	Function
7	[Section mean] key 	ON: Displays the graph of the average infeed product amount for each section. The graph is graduated from the center to the periphery to indicate from 0% to 200% of WH capacity, setting the optimum quantity at 100%. The values are displayed in red on the graph while the [Average Infeed Product Amount] key for each section is selected. If the key is not selected, the values are displayed in grey. The values are indicated by a circle.
8	[Increase] key 	Increases the feeder value (RF time or RF amplitude) of the selected head.
9	[Decrease] key 	Decreases the feeder value (RF time or RF amplitude) of the selected head.
10	[Feeder] pop-up key 	Changes display of the [Feeder Adjustment] screen. Displays the AFD setting menu in pop-up. (☞ 6.13.1 Switching Display in [Feeder Adjust] Screen)
11	Optimum feeder value range 	Displays the optimum feeder value range in pale green while the bar graph and circle graph is displayed. Make adjustment so that the head average and section average is within this range.
12	[Radar chart display switching arrow] key 	Switches on/off the radar chart display also on the bird's-eye view.
13	Bird's-eye view	Displays the selection status of the head or dispersion table to be adjusted.
14	Radar chart	Displays the selection status of the head or dispersion table to be adjusted. Displays the feeder time and amplitude of each head or dispersion table.

**NOTE**

- Feeder values changed during production are reflected in the preset.
- Feeder values changed during drain or full open lock are not reflected in the preset.
- For the [Feeder Adjustment] index screen during preset, refer to “6.11.4 [Feeder Adjustment] Index Screen”.
- The following procedure is explained taking the [Feeder Adjust] tab screen of the [Production] screen as an example.

### Feeder adjustment procedure


1. In the [Feeder Adjust] tab screen, press the number for the head to be adjusted. (Multiple selection allowed)


▶ The selected heads are displayed in blue.



Fig.6-96 [Feeder Adjust] Tab Screen ([Production] Screen)

2. To adjust the feeder driving time, press the [RF Time]



key . To adjust the amplitude,

press the [RF AMP] key . (Both can be selected)

▶ The lamp of the pressed key lights up.



Fig.6-97 [Feeder Adjust] Tab Screen ([Production] Screen)

3. Press the [Increase] key  and [Decrease] key  to adjust the time or amplitude.

▶ The feeder time or amplitude is changed.

▶ The radar chart changes according to the adjusted value.



Fig.6-98 [Feeder Adjust] Tab Screen ([Production] Screen)


**TIP**


- When less than 4 heads are selected, the settings will influence the weighing accuracy. Set both of the feeder amplitude and operation time to values about 5 points lower than normal and wait for 1-2 minutes to check the condition.
- 

**NOTE**

- When feeder control is automatic, the feeder amplitude and feeder operation time settings are used only temporarily and automatic control will be prioritized as time passes.
-

### 6.13.1 Switching Display in [Feeder Adjust] Screen

The [Feeder] pop-up menu appears when the [Feeder] pop-up key  is pressed in the [Feeder Adjust] tab screen. From the [Feeder] pop-up menu, the screen can be switched to any of the following displays: production status information, feeder circle graph, feeder bar graph and AFD setting.

1. Press the [Feeder] pop-up key .
  - ▶ The [Feeder] pop-up menu appears.



**Fig.6-99 [Feeder Adjust] Tab Screen  
([Production] Screen)**

2. Select the item to be displayed from the list below.



**Fig.6-100 [Feeder] Pop-up Menu  
([Production] Screen)**

Table 6-46 Displays of [Feeder] Pop-up Menu


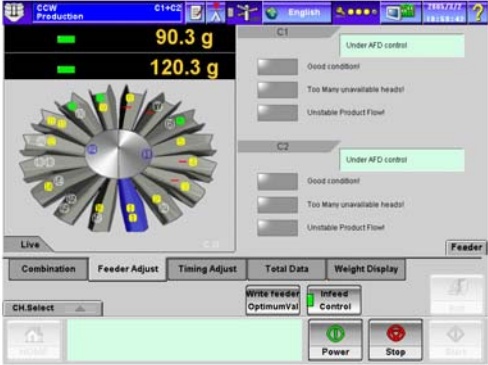

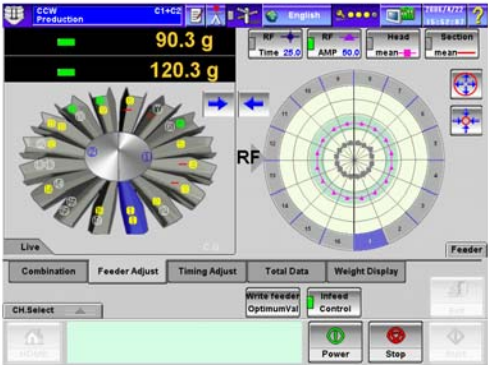

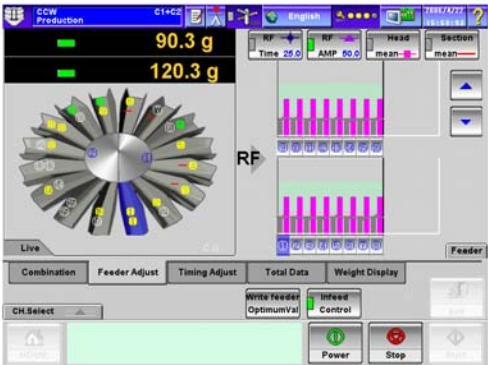


No.	Name	Function
1	[Production status information] key 	Displays the AFD status and production status.   <p style="text-align: center;"><b>Fig.6-101 Production Status Information</b></p>
2	[Circle graph display] key 	Displays the feeder value in a circle graph.   <p style="text-align: center;"><b>Fig.6-102 Circle Graph</b></p>
3	[Bar graph display] key 	Displays the feeder value in a bar graph.   <p style="text-align: center;"><b>Fig.6-103 Bar Graph</b></p>

Table 6-46 Displays of [Feeder] Pop-up Menu(Continued)

No.	Name	Function
4	[AFD setting] key 	Displays the [AFD Setting] screen. (☞ 6.13.2 AFD Ctroll Mode)  <p style="text-align: center;"><b>Fig.6-104 AFD Setting</b></p>

## 6.13.2 AFD Ctroll Mode

### <Function>

This function selects the control method for feeder amplitude, time and dispersion weight. The following 8 modes of control method are available. By referring to the descriptions for each mode mentioned below, select the mode depending on the product characteristics, product infeed status and speed.

**Table 6-47 Parameters for Auto Control of Each Feeder**

Control Parameter		RF Time	RF AMP	DF Time	DF AMP	DF Weight	Mode
Manual							[Manual]
Auto	Per head		✓			Selectable	[Efficiency Ref. Control]
		✓	✓	✓	✓		[Auto Multi Control]
		✓		✓			[Auto Time Multi Control]
			✓		✓		[Auto AMP Multi Control]
	All heads	✓	✓	✓	✓		[Auto Single Control]
		✓		✓			[Auto Time Single Control]
			✓		✓		[Auto AMP Single Control]

### TIP

- Items indicated by blank in the list above are controlled manually.

### <For better utilization>

For better utilization of the auto control to realize more stable production, note the following points:

**Table 6-48 Notes on Auto Control**

Keyword	Points
Preceding infeed status	Stable preceding infeed status is required. In particular, when infeed amount changes drastically, using the auto control may lower the efficiency in some cases. In this case, select the manual mode.
Dispersion of products	It is important that products are delivered as evenly as possible with no omissions from the dispersion feeder to each radial feeder. Adjust the position of the infeed, feed speed, position of inlet chute, etc., so that products fall onto the center of the dispersion feeder from the infeed and are dispersed as evenly as possible. During feeder parameter setting operations, or when starting production or production operation is unstable, check the flow of the products on the dispersion feeder visually or with a dispersion camera (optional). When there is a problem, take corrective measures such as adjustment of the position of the infeed.
Operating head count	It is required that all heads are ready to operate. If not, the problem has to be solved.
Stable head count	When stable heads required for combination are inadequate due to floor vibration or other causes, the auto control may not work efficiently. In such cases, it is important to have adequate stable heads based on review of speed and filter selection.



**Table 6-48 Notes on Auto Control (Continued)**

Keyword	Points
Proper cleaning	The auto control function adjusts the feeder capacity in accordance with the changes in flow of products caused by deposits on the table and trough. However, in the case of product flow being stopped by excessive deposits, the auto control cannot solve the problem. It is important to perform proper cleaning in order to maintain high efficiency.
Feeder capacity	The auto control function is based on the assumption that the feed amount of products is increased/decreased in proportion to changes in feeder amplitude. When this condition is not satisfied due to some factors such as products or target weight, the auto control may not operate properly. In this case, select the manual or the auto time control mode.

### <Explanation of each control mode>

#### 1. [Manual]

This mode operates with the feeder amplitude, feeder operation time and dispersion weight values as set. It is not possible to automatically respond to changes in external conditions, such as changes in the amount of supply and the condition of the product on the table and trough which are affected by accumulated deposits. This mode is best suited when making adjustments while checking the status changes in external conditions, when the infeed and product flow is stable. Since it is unlikely that external condition changes will considerably deteriorate the production status, select this mode when the auto control cannot realize stable production.

#### 2. [Efficiency Ref. Control]

The aim of this mode is to perform automatic adjustment corresponding to differences in product characteristics, slight variance in product infeed amount, and changes in infeed amount and flow of products on the table and trough. This mode has the following features (To examine the auto control performance, try this mode first.):

- Controls properly in consideration of weigher status.
- Can automatically adjust amount of products delivered from the dispersion feeder to the radial feeder when the dispersion weight adjustment is selected.
- The control stops during stable status in which the efficiency (6.12.1 [Current Total] Screen) set for the good efficiency judgement value is achieved. However, the control automatically resumes if efficiency lowers due to external condition changes.
- Adjusts feeding capacity of the dispersion feeder to reduce flow increase when the weight of products on the dispersion feeder is larger than the value set for the dispersion weight if the DF adjust for overfeed is selected.

Note the following points in setting up this control mode.

- Set the RF time within the valid time mentioned below in accordance with the product, speed, etc. However, to operate DF continuously, set a value over the valid time below.  

$$[\text{Valid DF (RF) time}] = 3600 / (\text{Weigher speed})$$
- Set the DF amplitude so that products can be delivered to all radial troughs, by actually checking the product dispersion status visually or with a dispersion camera (optional).
- Set the AFD range (6.13.3 AFD Range Setting) referring to the list below.

Table 6-49 AFD Range

Item Name	Example of Recommended Setting
RF AMP upper limit	Set a larger value based on the average of all RF amplitude values. As the RF amplitude is raised, the corresponding WH weight generally increases accordingly but does not increase over a certain level due to the limit of amount of products delivered from dispersion. Based on this level of amplitude, set a value less than the level.
RF AMP lower limit	Product infeed may stop even if the amplitude is larger than 0 in some cases. Set the lower limit so that such a stop can be prevented.
RF time upper limit, RF time lower limit	Upper limit: 99, Lower limit: 0
DF AMP upper limit, DF AMP lower limit	Upper limit: 99, Lower limit: 0
DF time upper limit	Use the figure set for the DF time as an index.
DF time lower limit (Valid only when the DF adjust for overfeed is selected)	Input a value slightly smaller than the value set for the DF time. This mode is effective for maintaining flow volume from DF to RF using products with good dispersion performance, because the DF adjust for overfeed function works in a wide range when the lower limit value is considerably smaller than the specified DF time. For products with poor dispersion performance, set the lower limit to a value as close to the specified DF time as possible.
DF weight upper limit (Valid only when the DF weight adjustment is selected)	It is ideal to set the lower limit to the lowest weight value with which products are stably dispersed from the dispersion feeder to RF and to set the upper limit to the highest weight value with which no unstable factors such as over scale can occur even when the layer thickness is large. However, such conditions are hardly found in actual situations. One of the best ways is to set a range smaller based on the set target weight and then expand it gradually if any problem occurs.
AFD control stop DF weight lower limit [%]	Limit of DF actual weight which stops automatic control. When the DF actual weight is less than the set value, the auto control operation stops. It is considered appropriate to set it to around 50% in normal operation. However, when a low product problem frequently occurs due to unstable infeed, set a smaller value to stop automatic control sooner.

- If layer thickness on the dispersion feeder does not change, even if the DF weight setting is increased, for example, when layer thickness is maintained at a constant level with inlet chute, turn off the DF weight adjustment function. In this case, adjust the DF amplitude/time or inlet chute height so that appropriate amount of products are delivered from the dispersion feeder to the radial feeder.
- This mode is not suitable when the feeder amplitude needs to be fixed to a certain value, for example, in the case that products cannot move unless high feeder amplitude is set. In this case, select the manual or other auto time control mode.

3. [Auto Multi Control], [Auto Time Multi Control], [Auto AMP Multi Control]

Controls each RF independently, as with 2. [Efficiency Ref. Control]. These modes can be selected when automatic and detailed control is desired when infeed and dispersion to each radial feeder are stable.

Especially when the feeder amplitude needs to be fixed to a certain value in cases that products cannot move unless high feeder amplitude is set, select [Auto Time Multi Control]. When the feeder time needs to be fixed during high-speed production or other cases, select [Auto AMP Multi Control].


As an instruction for use, adjust layer thickness on the dispersion feeder by adjusting DF weight or inlet chute height to adjust only the amount of product infeed from the dispersion feeder to the radial feeder, as these modes do not control RF/DF amplitude and time independently. When infeed or dispersion to each radial feeder is unstable or tends to be uneven, the efficiency may be lowered. In this case, select other mode.

4. [Auto Single Control], [Auto Time Single Control], [Auto AMP Single Control]

Unlike other auto control modes, these modes control the whole RF. When 2. [Efficiency Ref. Control] or 3. [Auto Multi Control] is selected, extremely uneven infeed may occur or frequent empty head may occur at a specific head. In such cases, selecting these modes will enable response only to overall status changes generated over a long time due to such causes as influence by deposits. As with 3. [Auto Multi Control], select Auto AMP Single Control when the feeder time needs to be fixed to a certain value during high-speed production or other cases, and select [Auto Time Single Control] when the feeder amplitude needs to be fixed in cases that products cannot move unless high feeder amplitude is set.

As an instruction for use, set the RF amplitude and RF time balance between heads manually in consideration of infeed variance, etc. As with 3. [Auto Multi Control], adjust the amount of product infeed on the dispersion feeder by adjusting DF weight or inlet chute height to adjust only the amount of product infeed from the dispersion feeder to the radial feeder, as these modes do not control RF/DF amplitude and time independently.

**<Operation procedure>**

1. Press the [Feeder] pop-up key .
  - ▶ The [Feeder] pop-up menu appears.



**Fig.6-105 [Feeder Adjust] Tab Screen ([Production] Screen)**

2. Press the [AFD Setting] key.
  - ▶ The [AFD Setting] screen appears.



**Fig.6-106 [Feeder] Pop-up Menu ([Production] Screen)**

3. Select the AFD control mode and press the button.
  - ▶ The selected AFD control mode is confirmed.



**Fig.6-107 [AFD Setting] Screen ([Production] Screen)**

### 6.13.3 AFD Range Setting

#### <Function>

This function sets the limitations in operation when the auto control is selected. When the auto control function is highly responsive to significant external condition changes, the control may not work properly. To prevent such a situation, the control operation can be limited with the AFD range setting. However, bear in mind that the auto control may not work efficiently if the range is too small. The control values apply to the parameters for auto control of each feeder described in “6.13.2 AFD Ctrroll Mode”.

#### 1.RF

**Table 6-50 AFD Range Setting List (RF)**

Item Name	Function
AMP upper limit, AMP lower limit	RF amplitude is operated within the range between the set upper and lower limits during auto control.
Time upper limit, Time lower limit	RF time is operated within the range between the set upper and lower limits during auto control.

#### 2.DF

**Table 6-51 AFD Range Setting List (DF)**

Item Name	Function
AMP	DF amplitude is operated within the range between the set upper and lower limits during auto control.
Time	DF time is operated within the range between the set upper and lower limits during auto control.
Weight [g]	DF weight is operated within the range between the set upper and lower limits during auto control.
AFD control stop DF weight lower limit [%]	Limit of DF actual weight which stops automatic control. When the DF actual weight is less than the set value, the auto control operation stops. e.g.) If the DF target weight is set to 300g and the AFD control stop DF weight lower limit is set to 60%, the auto control operation stops when the DF actual weight is less than 120g.

#### NOTE

- If the setting procedure is described in “6.13.2 AFD Ctrroll Mode”, follow the descriptions.
- When the RF amplitude and DF amplitude is decreased, product infeed may stop even if the amplitude is larger than 0 in some cases. Set the lower limit so that such a stop can be prevented.
- Note that the DF operates continuously if the DF time is set to a value over the valid time below.

$$[\text{Valid DF time}] = 3600 / (\text{Weigher speed})$$

**<Operation procedure>**

## 1) RF AFD range

1. In the [Feeder Adjust] screen, press any RF as the head to be adjusted.
2. Press the [Feeder] pop-up key.
  - ▶ The [Feeder] pop-up menu appears.
3. Press the number for the item to be set from the AFD range setting list.
  - ▶ The [Numeric Keypad] screen appears.
4. Enter a value within the setting range.
  - ▶ The [Numeric Keypad] screen disappears, and the entered figures are displayed in the list.



**Fig.6-108 [Feeder Adjust] Tab Screen  
([Production] Screen)**

## 2) DF AFD range

1. In the [Feeder Adjust] screen, press any DF as the head to be adjusted.
2. Press the [Feeder] pop-up key.
  - ▶ The [Feeder] pop-up menu appears.
3. Press the number for the item to be set from the AFD range setting list.
  - ▶ The [Numeric Keypad] screen appears.
4. Enter a value within the setting range.
  - ▶ The [Numeric Keypad] screen disappears, and the entered figures are displayed in the list.



**Fig.6-109 [Feeder Adjust] Tab Screen  
([Production] Screen)**

## 6.14 [Timing Adjustment] Screen

Timing adjustment is the function to adjust the operation timing of each drive unit of the equipment, aiming at efficient product infeed, weighing and discharge.

The [Timing Adjustment] screen appears when the [Timing Adjust] tab or the [Timing Adjustment] index is pressed in the following screens:

- [Production] screen
- [Drain] screen
- [Preset] screen

**NOTE**

- The following is explained taking the [Timing Adjust] tab screen of the [Drain] screen as an example.

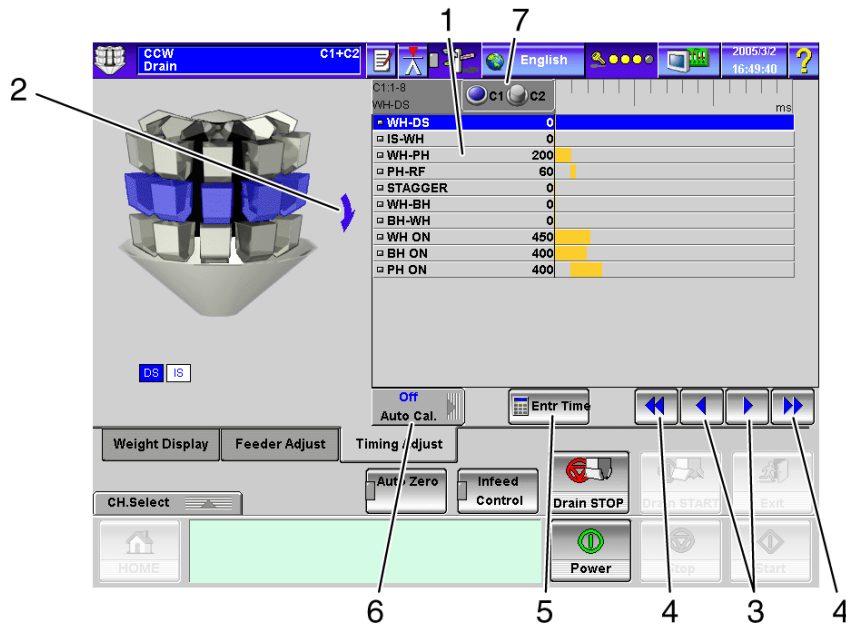





Fig.6-110 [Timing Adjust] Tab Screen ([Drain] Screen)

Table 6-52 Items and Functions of Each Timing Adjustment Item

No.	Name	Function
1	Each timing adjustment item	Each item can be used as a key to select the item for which timing is to be adjusted.
2	Adjustment direction	Indicates the direction of adjustment between the units displayed in blue.
3	[Increase/Decrease] key (10ms)	Increases/decreases a value in units of 10ms.

Table 6-52 Items and Functions of Each Timing Adjustment Item(Continued)


No.	Name	Function
4	[Increase/Decrease] key (100ms) 	Increases/decreases a value in units of 100ms.
5	[Entr Time] key 	Sets the timing value directly from the [Numeric Keypad] screen.
6	[Auto Cal.] pop-up key 	Displays the auto calculation menu for the timing value. [On]: Performs timing auto calculation. [Off]: Does not perform timing auto calculation.
7	[C1]/[C2] switching radio button	Selects the channel to be adjusted. This is displayed only when weigher setting is C1+C2.

1. Press the [C1]/[C2] switching radio button to select the channel to be adjusted.

▶ Timing adjustment for the selected channel will be enabled.

2. Press each timing adjustment item to select the part to be adjusted.

3. Press  ·  or  ·  to adjust the timing value.

It is also possible to enter the timing value after pressing the [Entr Time] key .

If necessary, press the [Auto Cal.] pop-up key to select the auto calculation item.

4. To adjust other adjustment items, repeat steps 2 and 3.

To start each function in production, drain or full open lock, you can press the corresponding key at this point to start the operation.


5. To finish the adjustment and return to the [Main Menu] screen, press the [Exit] key .

Table 6-53 Timing Adjustment Items

No.	Item Name	Function
1	WH-DS	Sets the time from the discharge request signal input from the packer up to the discharge completion signal output.
2	IS-WH	Sets the time from the discharge request signal input from the packer up to the WH (weigh hopper) operation start.
3	WH-PH	Sets the time from the WH (weigh hopper) operation start up to the PH (pool hopper) operation start.
4	PH-RF	Sets the time from the PH (pool hopper) operation start up to the RF (feeder) operation start.
5	STAGGER	This item is available when the timing hopper is not used. Used to prevent products from jamming in the packer. Sets the interval for discharging when discharge of the selected head is divided into three times. When not performing staggered discharge, set this item to 0msec.
6	WH-BH	Sets the time from the WH (weigh hopper) outside operation start up to the BH (booster hopper) operation start.
7	BH-WH	Sets the time from the BH (booster hopper) operation start up to the WH (weigh hopper) inside operation start.



**Table 6-53 Timing Adjustment Items(Continued)**

No.	Item Name	Function
8	WH ON	Sets the operation time of WH (weigh hopper).
9	BH ON	Sets the operation time of BH (booster hopper).
10	PH ON	Sets the operation time of PH (pool hopper).

**NOTE**

- Timing values changed during production are reflected in the preset.
  - Timing values changed during drain are not reflected in the preset.
  - Set these parameters with careful attention as they are important parameters.
-


## 6.15 [Machine Set] Pop-up Menu

The [Machine Set] pop-up menu is used to configure the settings for the whole device. To display the [Machine Set] pop-up menu, press the [Machine Set] pop-up key on the [Main Menu] screen. From the menu, select the item to be set and call a desired setting menu. The items that can be set in the [Machine Set] pop-up menu are as follows:

- Manual Adjustment (☞ 6.15.1 [Manual Adjustment] Screen)
- Self-diagnosis (☞ 6.15.2 [Self-diagnosis] Screen)
- Display & Data Manager (☞ 6.15.3 [Display & Data Manager] Screen)
- Various Parameter Setting (☞ 6.15.4 [Various Parameter Setting] Screen)
- Weigher Setting (☞ 6.15.5 [Weigher Setting] Screen)
- Peripheral Equipment Setting (☞ 6.15.6 [Peripheral Equipment Setting] Screen)

### NOTE

- The [Machine Set] pop-up key is available to [Site Engineer] or higher level personnel.

1. On the [Main Menu] screen, press the [Machine Set] pop-up key .

- ▶ The [Machine Set] pop-up menu appears.

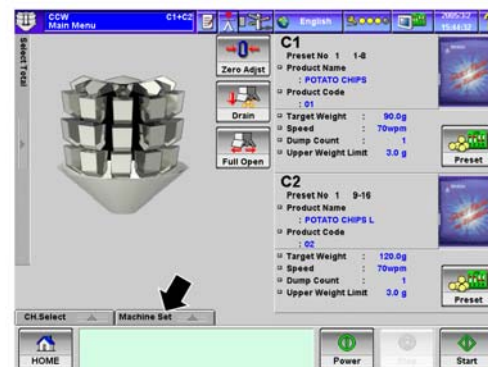


Fig.6-111 [Main Menu] Screen

2. Press the item to be set.

- ▶ The setting screen for the selected item appears.



Fig.6-112 [Machine Set] Pop-up Menu

After completing the setting, press the [Exit] to return to the [Main Menu] screen.

## 6.15.1 [Manual Adjustment] Screen

To display the [Manual Adjustment] screen, select [Manual Adjustment] in the [Machine Set] pop-up menu.

The [Manual Adjustment] screen is used to adjust and display items in the weighing adjustment and the combination calculation screens. Select the screen to be displayed with the tab.

### 6.15.1.1 [Weighing Adjst] Tab Screen

The [Weighing Adjst] tab screen is used for WH manual zero adjustment and span adjustment.

#### NOTE

- The [Weighing Adjst] tab screen is available to [Installation] or higher level personnel.

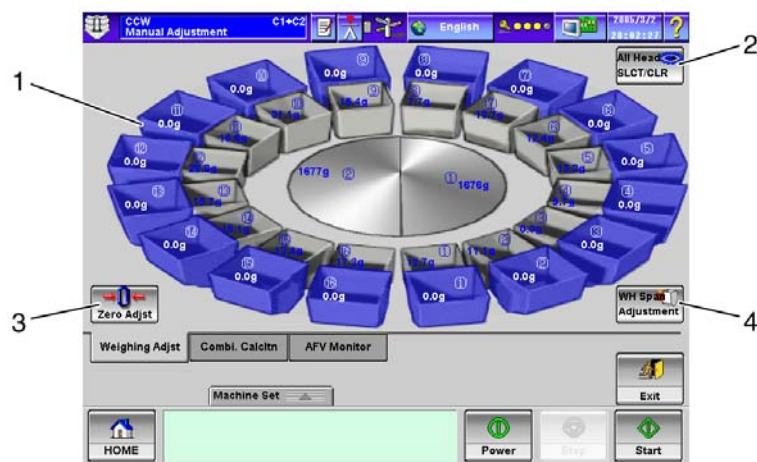






Fig.6-113 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)

Table 6-54 Items and Functions of [Weighing Adjst] Tab Screen

No.	Name	Function
1	[Head] key 	Selects or deselects the head to be adjusted.
2	[All Head SLCT/CLR] key 	Selects or deselects all WHs.
3	[Zero Adjst] key 	Starts zero adjustment for the selected WH.
4	[WH Span Adjustment] key 	Starts span adjustment for the selected WH.

## Zero adjustment procedure

1. Press the [ALL Head SLCT/CLR] key



- ▶ All the weigh heads are selected.

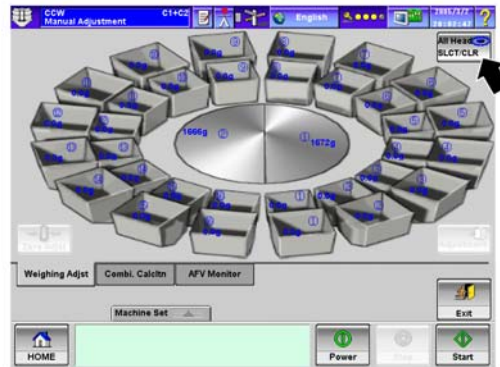


Fig.6-114 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)

2. Press the [Zero Adjst] key



- ▶ The hopper opens/closes, and along with the message “Please wait a moment”, the zero adjustment starts.



Fig.6-115 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)

3. After the zero adjustment is completed, check that the weight display of each weigh head is within  $0.0g \pm 0.1g$ .

### NOTE


- If the weight display of each head exceeds  $0.1g$  or falls below  $-0.1g$ , repeat the procedure from step 3.
- The operation details of the zero adjustment procedures (☞ 6.6 [Zero Adjustment] Screen)
- Then, perform the span adjustment. (See the following.)



Fig.6-116 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)

**NOTE**

About zero adjustment

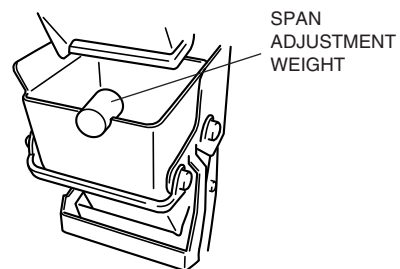
- Zero adjustment is performed while the [Power] key  is on.
- Zero adjustment is performed for the weigh head displayed in blue.
- Zero adjustment cannot be executed for the weigh unit and dispersion unit simultaneously.
- When [Multi Dump Initiate] in [Pckr Intrlck Set] is set to [Sync], zero adjustment does not operate without interlock signal from the packer. In this case, interlock the device with the packer.
- Before starting zero adjustment for the weigh unit, products in the weigh hopper are automatically discharged.
- In addition, check the span. (See the following.)

**Span adjustment procedure**


1. Place the span adjustment weight on the weigh hopper for which span is to be adjusted.

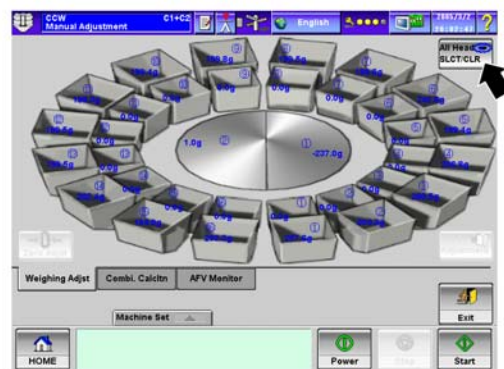
**NOTE**

- Normally the span adjustment weight is 200g. However, it may vary depending on the specifications.



**Fig.6-117 Weigh Hopper**

2. Select the head to be adjusted.
  - ▶ The selected heads are displayed in blue. To adjust all heads, press the [All Head SLCT/CLR] key .



**Fig.6-118 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

3. Press the [WH Span Adjustment] key



- ▶ The span adjustment starts.



Fig.6-119 [Weighing Adjst] Tab Screen  
([Manual Adjustment] Screen)

4. Make sure that the weight display of the selected head is  $200.0 \pm 0.1$ g.

#### NOTE

- Make sure that the weight display of the selected head is  $200.0 \pm 0.1$ g. If the weight display reading exceeds 200.1g or falls below 199.9g, repeat the procedure from step 2.

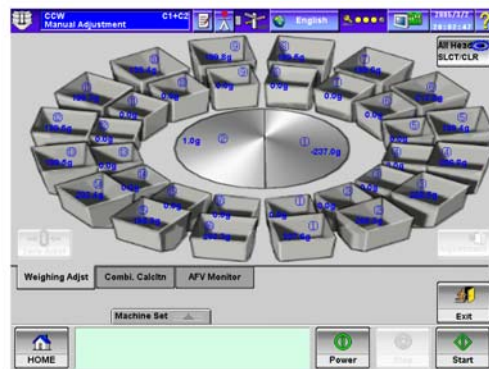


Fig.6-120 [Weighing Adjst] Tab Screen  
([Manual Adjustment] Screen)

5. Remove the span adjustment weight from the weigh hopper.

- ▶ Make sure that the weight display of the selected head is in the proximity of  $0.0 \pm 0.1$ g.

#### NOTE

- If the weight display of the selected head exceeds 0.1g or falls below -0.1g, repeat the procedure from step 2 in “4.4.8 Zero Adjustment”.



Fig.6-121 [Weighing Adjst] Tab Screen  
([Manual Adjustment] Screen)

### 6.15.1.2 [Combi. Calcltn] Tab Screen

To display the [Combi. Calcltn] tab screen, press the [Combi. Calcltn] tab on the [Manual Adjustment] screen.

The [Combi. Calcltn] tab screen displays the results of combination weighings.

#### NOTE

- The [Combi. Calcltn] screen is available to [Installation] or higher level personnel.

The functions of the [Combi. Calcltn] can be selected from the [Display/Cal Select] pop-up menu.

1. Press the [Display/Cal Select] pop-up key.

►The [Display/Cal Select] pop-up menu appears.

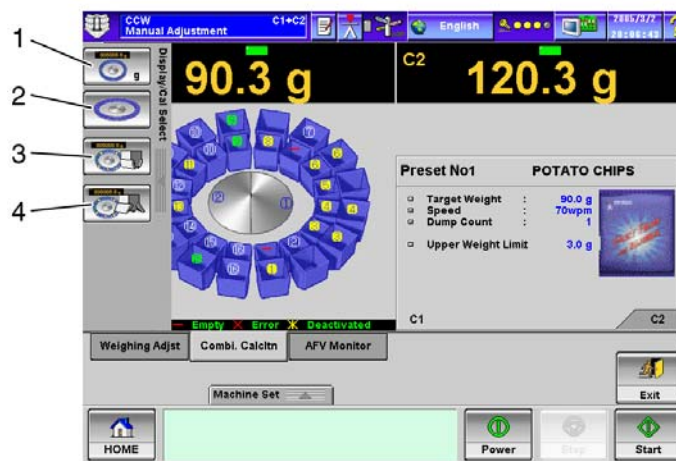

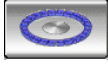




Fig.6-122 [Combi. Calcltn] Tab Screen ([Manual Adjustment] Screen)

Table 6-55 Items and Functions of [Combi. Calcltn] Tab Screen

No.	Name	Function
1	[Combination Result Display] key 	Displays the combination result weight.
2	[Combination Status Display with Scale] key 	Displayed in the [Weight Display] screen.
3	[Single Combination Weighing] key 	Performs combination weighing only once. (Without discharge)
4	[Discharge After Combination Weighing] key 	Performs combination weighing only once and discharge after calculation.

### 6.15.1.3 [AFV Monitor] Tab Screen

To display the [AFV Monitor] tab screen, press the [AFV Monitor] tab on the [Manual Adjustment] screen.

The output result of four AFV sensors is indicated in a line graph, from which the weigher vibration status can be checked visually to confirm whether the floor and scaffold where the device is installed are vibrating or not. It is also possible to check the output result of the AFV cell by opening/closing the hoppers or by shaking the weigher.

#### NOTE

- The [AFV Monitor] tab screen is available to [Installation] or higher level personnel.

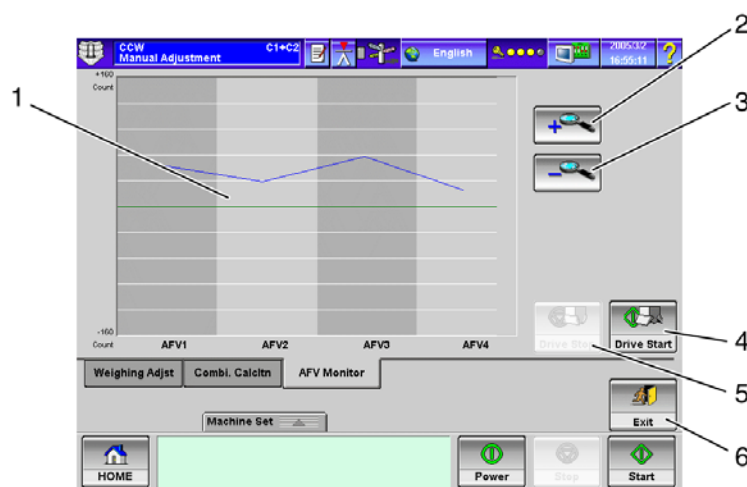
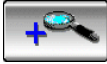
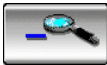





Fig.6-123 [AFV Monitor] Tab Screen ([Manual Adjustment] Screen)

Table 6-56 Items and Functions of [AFV Monitor] Tab Screen

No.	Name	Function
1	AFV monitor graph	Displays the AFV monitor graph. Display range default value: +160 counts to -160 counts.
2	[Zoom in] key 	Each time this key is pressed, the display range is halved. Minimum: +40 counts to -40 counts.
3	[Zoom out] key 	Each time this key is pressed, the display range is doubled. Maximum: +1560 counts to -1560 counts.
4	[Drive Start] key 	Starts drain.
5	[Drive Stop] key 	Stops drain.



**Table 6-56 Items and Functions of [AFV Monitor] Tab Screen(Continued)**

<b>No.</b>	<b>Name</b>	<b>Function</b>
6	[Exit] key 	Returns to the [Main Menu] screen.


## 6.15.2 [Self-diagnosis] Screen

To display the [Self-diagnosis] screen, select [Self-diagnosis] in the [Machine Set] pop-up menu.

### NOTE

- The self-diagnosis is available to [Installation] or higher level personnel.

The [Self-diagnosis] screen is used to check operation of the device.

To close the [Self-diagnosis] screen, press the [Exit] key .

The items that can be diagnosed in the [Self-diagnosis] screen are as follows:

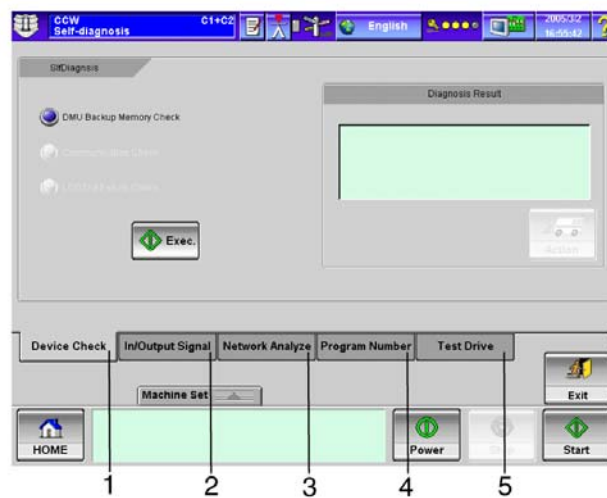


Fig.6-124 [Self-diagnosis] Screen

Table 6-57 Items and Functions of [Self-diagnosis] Screen

No.	Name	Function
1	[Device Check] tab	Displays the [Device Check] tab screen. (☞ 6.15.2.1 [Device Check] Tab Screen)
2	[In/Output Signal] tab	Displays the [In/Output Signal] tab screen. (☞ 6.15.2.2 [In/Output Signal] Tab Screen)
3	[Network Analyze] tab	Displays the [Network Analyze] tab screen. (☞ 6.15.2.3 [Network Analyze] Tab Screen)
4	[Program Number] tab	Displays the [Program Number] tab screen. (☞ 6.15.2.4 [Program Number] Tab Screen)
5	[Test Drive] tab	Displays the [Test Drive] tab screen. (☞ 6.15.2.5 [Test Drive] Tab Screen)

### 6.15.2.1 [Device Check] Tab Screen

Performs device check.

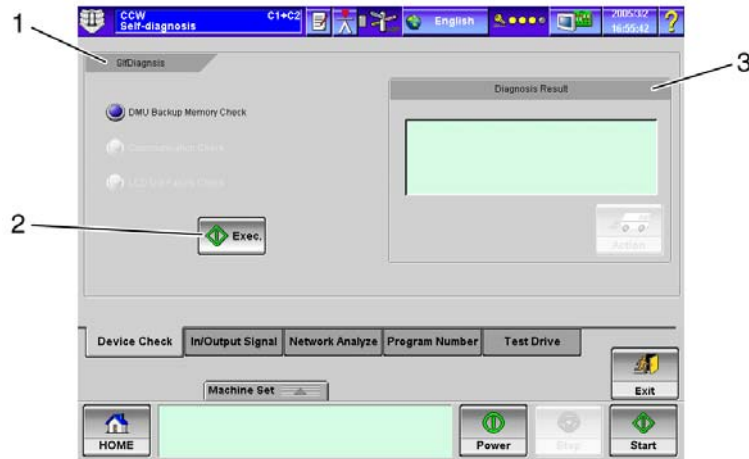




Fig.6-125 [Device Check] Tab Screen ([Self-diagnosis] Screen)

Table 6-58 Items and Functions of the [Device Check] Tab Screen

No.	Name	Function
1	[SlfDiagnosis] radio button	<p>Selects the item to be diagnosed.</p> <ul style="list-style-type: none"> <li>• [DMU Backup Memory Check]: Performs DMU checksum. If no problem is found as a result of the check, the message “No Problem” is displayed. If there is a problem, the message “DMU Memory Failure. Please initialize memory.” and the problem details are displayed.</li> <li>• [Communication Check]: This is the system in which a network map request is made to WCU and WCU returns network map to DMU. If normal, the message “No Problem” is displayed. If not normal, the message “Some part of Network is disconnected” is displayed.</li> <li>• [LCD Dot Failure Check]: All light up in white for 3 seconds, then all turn off for 2 seconds. Repeats this process 3 times.</li> </ul>
2	[Exec.] key 	Starts diagnosis for the selected item.
3	[Diagnosis Result] display	<p>Displays the diagnosis result. If a problem is found, the problem details are displayed in this area and the</p> <p>[Action] key  becomes active. If the [Action] key is pressed, the display jumps to the related screen.</p>

### 6.15.2.2 [In/Output Signal] Tab Screen

Checks input and output contact signals.

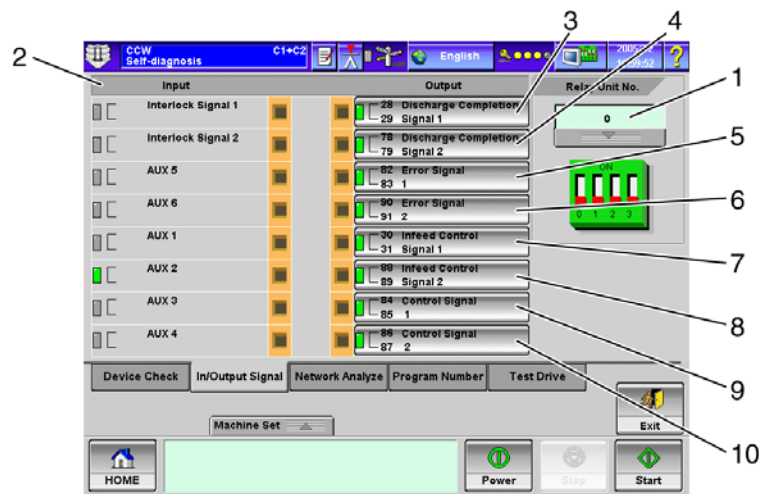

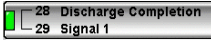
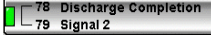








Fig.6-126 [In/Output Signal] Tab Screen ([Self-diagnosis] Screen)

Table 6-59 Items and Functions of the [In/Output Signal] Tab Screen

No.	Name	Function
1	[Relay Unit No.] key 	Selects the relay unit number. If a relay unit is selected, the position of the dip switch on the screen changes. The relay unit numbers that can be set are 0-15.
2	Input/output signal display	Displays the relay unit selected in the previous item. On the output side, the output name and the output signal to be tested are selected with the lamp key and the test result is displayed with the lamp. On the input side, the input name and lamp are displayed.
3	[Discharge Completion Signal 1] lamp key 	Selects ON/OFF of Discharge Completion Signal 1.
4	[Discharge Completion Signal 2] lamp key 	Selects ON/OFF of Discharge Completion Signal 2.
5	[Error Signal 1] lamp key 	Selects ON/OFF of Error Signal 1.
6	[Error Signal 2] lamp key 	Selects ON/OFF of Error Signal 2.
7	[Infeed Control Signal 1] lamp key 	Selects ON/OFF of Infeed Control Signal 1.
8	[Infeed Control Signal 2] lamp key 	Selects ON/OFF of Infeed Control Signal 2.

**Table 6-59 Items and Functions of the [In/Output Signal] Tab Screen(Continued)**

<b>No.</b>	<b>Name</b>	<b>Function</b>
9	[Control Signal 1] lamp key 	Selects ON/OFF of Control Signal 1.
10	[Control Signal 2] lamp key 	Selects ON/OFF of Control Signal 2.

### 6.15.2.3 [Network Analyze] Tab Screen

This screen is used to diagnose the network status of each unit.

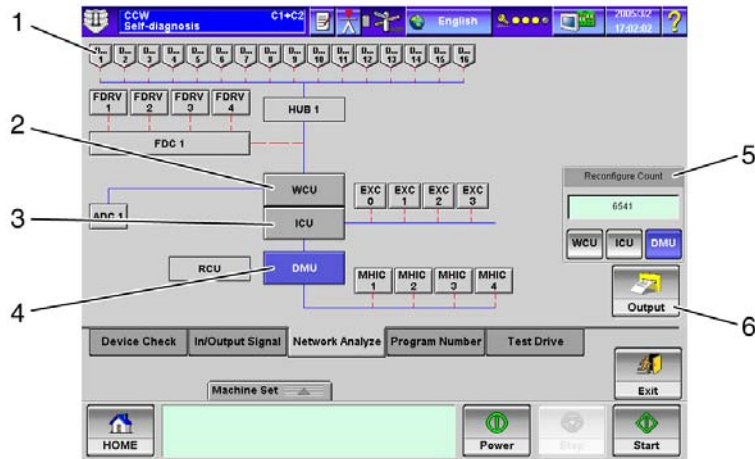






Fig.6-127 [Network Analyze] Tab Screen ([Self-diagnosis] Screen)

Table 6-60 Items and Functions of the [Network Analyze] Tab Screen

No.	Name	Function
1	Network map	Displays the network map and a block diagram. Displays each network status of WCU, ICU and DMU. The network status is displayed in the following line colors and line types: Blue line: Normal. Red line: Abnormal. (Connected) Red broken line: Abnormal. (Disconnected)
2	[WCU] key 	Creates the network map around WCU. This includes WCU, ICU, FRDV, FDC, DUC and ADC.
3	[ICU] key 	Creates the network map around ICU. This includes ICU, DMU, WCU and EXC.
4	[DMU] key 	Creates the network map around DMU. This includes DMU, ICU and MHIC.
5	Reconfigure Count	Displays the number of times each unit communication is reconfigured.
6	[Output] key 	Outputs the status of each unit communication in a two-dimensional graph and the reconfiguration count. *: Network exists. -: No network exists.

### 6.15.2.4 [Program Number] Tab Screen

The [Program Number] screen displays the software information used for this device.

Using this function, program information can be checked without seeing each board mounted on the device. In addition, the information, which is retained until the main power is turned off, can be used to check connection of each unit by comparing it with the network map information.

The [Program Number] screen displays the program number for each participating network in the order of information received by DMU.

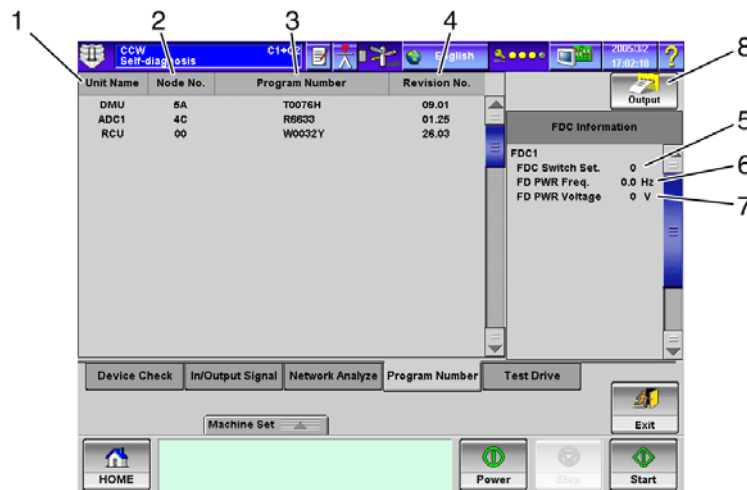



Fig.6-128 [Program Number] Tab Screen ([Self-diagnosis] Screen)

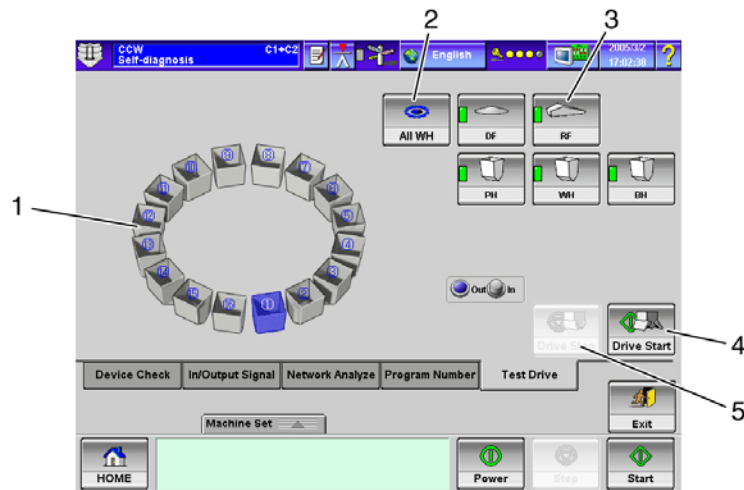
Table 6-61 1 Items and Functions of the [Program Number] Tab Screen

No.	Name	Function
1	[Unit Name] display	Displays the unit names of the node numbers listed in the network map table.
2	[Node No.] display	Displays the node numbers. The numbers are hexadecimal numbers that are identical to the numbers indicated in the network map. For instance, “5” in “5a” corresponds to the vertical axis of the network map and “a” to the horizontal axis.
3	[Program Number] display	Displays the program numbers. When a program has been upgraded, the version number is attached to the program number.
4	[Revision No.] display	Displays the revision number of the program in the format of “**.*”.
5	[FDC Switch Set.]	Displays the FDC switch number for each FDC. Displays the FDC board dip switch settings. The value for the switch is “0” or “4”, indicating as follows: 0: FDC not checked, or no phase distributed. 4: Phase distributed.
6	[FD PWR Freq.]	Displays the feeder frequency value for each FDC.
7	[FD PWR Voltage]	Displays the feeder voltage value for each FDC.
8	[Output] key 	Outputs the program number information to a printer or as a file.

When the received program information is not correct, the incorrect part is indicated with [-----]. The values for the FDC switch, frequency and voltage are all indicated as “0” after the main power is turned on and until the power is turned on.





### 6.15.2.5 [Test Drive] Tab Screen

The test drive is used to check feeder operations and hopper opening/closing operations. The test drive should be started after selecting the heads and parts to be used for test drive.



**Fig.6-129 [Test Drive] Tab Screen ([Self-diagnosis] Screen)**

**Table 6-62 Items and Functions of the [Test Drive] Tab Screen**

No.	Name	Function
1	[Head] key 	Selects the weigh head.
2	[Slect All WH] key 	Selects or deselects all the weigh heads.
3	[Drive Unit] key	Selects the hopper or feeder to be driven. Different keys are displayed depending on the specifications.
4	[Drive Start] key 	Starts test drive. (Greyed out during drive)
5	[Drive Stop] key 	Stops test drive. (Greyed out during drive stop)

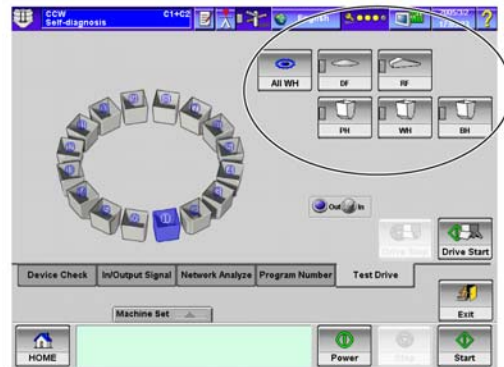


**NOTE**


- When the ring shutter, diverting timing hopper or timing hopper is attached as an option, the [RS], [DTH] or [TH] key is added respectively.

**Test drive procedure**

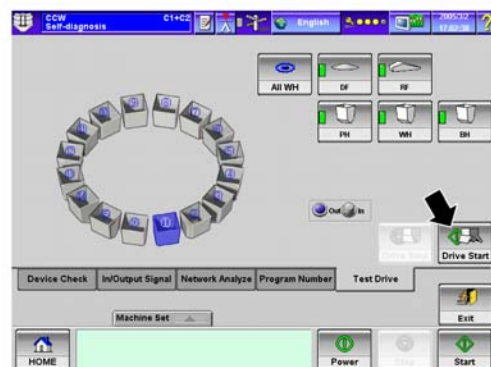
- In the [Test Drive] tab screen, select the hopper or feeder to be driven by pushing the corresponding key.
  - ▶ The selected hopper or feeder is displayed in blue.



**Fig.6-130 [Test Drive] Tab Screen  
([Self-diagnosis] Screen)**

- Press the [Drive Start] key .

- ▶ The test drive starts.

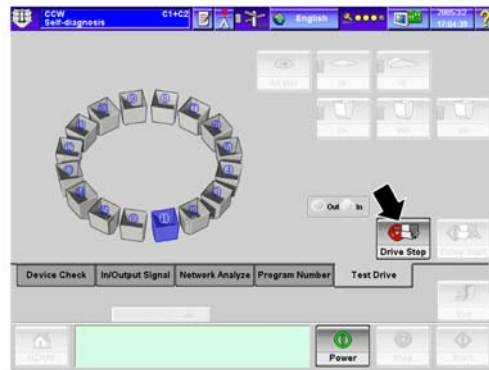


**Fig.6-131 [Test Drive] Tab Screen  
([Self-diagnosis] Screen)**

3. To stop the test drive, press the [Drive Stop] key



- ▶ The hopper or feeder drive stops.



**Fig.6-132 [Test Drive] Tab Screen  
([Self-diagnosis] Screen, During Drive)**

### 6.15.3 [Display & Data Manager] Screen

To display the [Display & Data Manager] screen, select [Display & Data Manager] in the [Machine Set] pop-up menu.

The [Display & Data Manager] screen is used for layout setting, preset editing and machine configuration editing. Select the screen to be displayed with the tab.

#### 6.15.3.1 [Layout Setting] Tab Screen

The layout setting screen is used to set the display method in accordance with the location of the remote control unit.

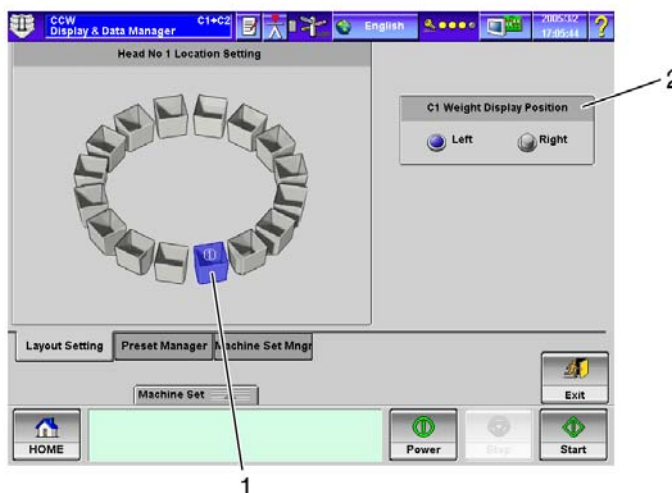



Fig.6-133 [Layout Setting] Tab Screen ([Display & Data Manager] Screen)

Table 6-63 Items and Functions of the [Layout Setting] Tab Screen

No.	Name	Function
1	[Head No 1 Location Setting] key 	Sets the head to be displayed as head 1 seen from the remote control unit position. Each hopper illustration can be used as a key and is displayed in blue if pressed. With this setting, you can adjust the weigher visually.
2	[C1 Weight Display Position] radio button	Sets whether to display C1 combination result with the remote control unit on the left or on the right.

### 6.15.3.2 [Preset Manager] Tab Screen

Performs preset copy and initialization.

#### NOTE

- The [Preset Manager] tab screen is available to [Installation] or higher level personnel.

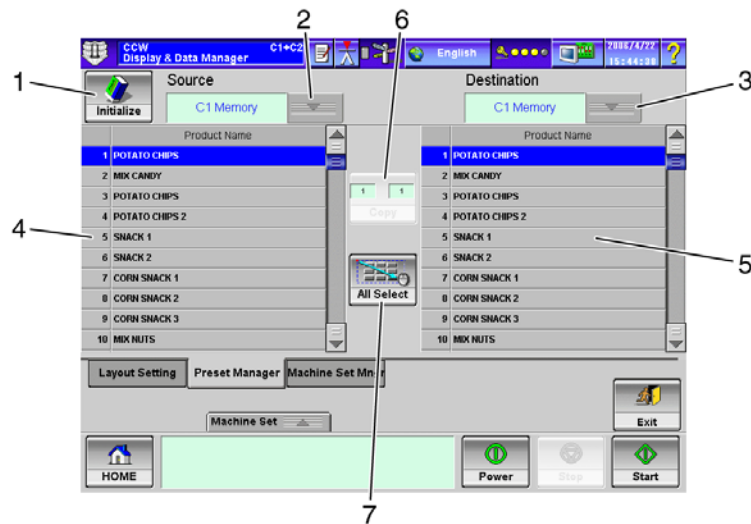







Fig.6-134 [Preset Manager] Tab Screen ([Display & Data Manager] Screen)

Table 6-64 Items and Functions of [Preset Manager] Tab Screen


No.	Name	Function
1	[Initialize] key 	Initializes the preset contents of the selected preset number.
2	[Source] drop-down key 	Selects [Memory] or [Card] as the copy source. For double weighers, selects from the following: [C1 Memory], [C2 Memory], [C1 Card] or [C2 Card].
3	[Destination] drop-down key 	Selects [Memory] or [Card] as the copy destination. For double weighers, selects from the following: [C1 Memory], [C2 Memory], [C1 Card] or [C2 Card].
4	Copy source preset list	Selects the preset number of the copy source.
5	Copy destination preset list	Selects the preset number of the copy destination.
6	[Copy] key 	Copies the preset contents from the source to the destination.
7	[All Select] key 	Selects all copy source items.

### 6.15.3.2.1 Selecting and Copying Preset

This section describes the procedure to select and copy the preset data registered in the memory or card.

#### NOTE

- When data is already registered in the specified copy destination, the data is overwritten by the copied data if [Copy] is executed.

- Press the [Source] drop-down key  and select the copy source from the following: [C1 Memory], [C2 Memory], [C1 Card] or [C2 Card].




**Fig.6-135 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

- From the copy source preset list, press the preset number to be used as the copy source.
  - ▶ The selected copy source preset item is displayed in blue.
  - ▶ On the left of the [Copy] key, the selected copy source preset number is displayed.



**Fig.6-136 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

3. Press the [Destination] drop-down key  and select the copy destination from the following: [C1 Memory], [C2 Memory], [C1 Card] or [C2 Card].



**Fig.6-137 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

4. From the copy destination preset list, press the preset number to be used as the copy destination.

- ▶ The selected copy destination preset item is displayed in blue.
- ▶ On the right of the [Copy] key, the selected copy destination preset number is displayed.



**Fig.6-138 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

5. Press the [Copy] key .

- ▶ The confirmation message screen appears.

6. Press the [Yes] key .

- ▶ The message “Please wait a moment.” appears and then copy is performed.



**Fig.6-139 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

- ▶ The copied preset is displayed in the selected copy destination.
- ▶ The selected preset copy is completed.




**Fig.6-140 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

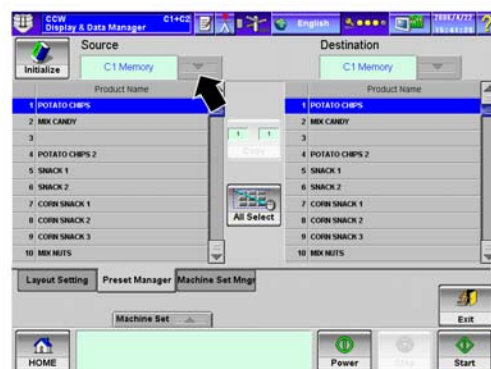
### 6.15.3.2.2 Copying All Preset

This section describes the procedure to copy all the preset data registered in the memory or card. In all preset copy, data is copied from memory to card or from card to memory.

#### NOTE

- If all the preset data is copied, original data is overwritten by the copied data and is lost.

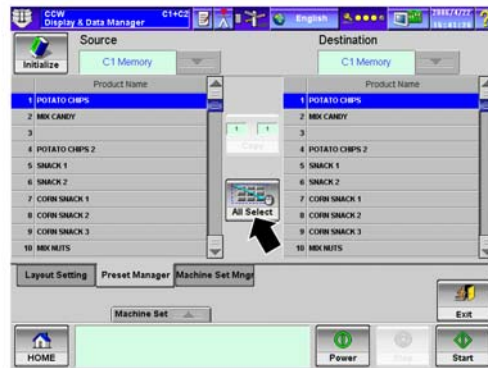
1. Press the [Source] drop-down key  and select the copy source from the following: [C1 Memory], [C2 Memory], [C1 Card] or [C2 Card].




**Fig.6-141 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

2. Press the [All Select] key .

▶ All preset items are displayed in blue.



**Fig.6-142 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

3. Press the [Destination] drop-down key  and select the copy destination from the following: [C1 Memory], [C2 Memory], [C1 Card] or [C2 Card].



**Fig.6-143 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

4. Press the [Copy] key .

▶ The confirmation message screen appears.

5. Press the [Yes] key .

▶ The message “Please wait a moment.” appears and then copy is performed.



**Fig.6-144 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**




- ▶ The all preset copy is completed.



**Fig.6-145 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

### 6.15.3.2.3 Selecting and Initializing Preset

This section describes the procedure to initialize specific preset data. For initializing preset, the copy source preset list is used.

1. Press the [Source] drop-down key  and select the media to be initialized from the following: [C1 Memory], [C2 Memory], [C1 Card] or [C2 Card].




**Fig.6-146 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

2. From the copy source preset list, press the preset number to be initialized.
  - ▶ The selected copy source preset item is displayed in blue.



**Fig.6-147 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

3. Press the [Initialize] key .

▶ The confirmation message screen appears.

4. Press the [Yes] key .


▶ The message “Please wait a moment.” appears and then initialization is performed.



**Fig.6-148 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

### 6.15.3.2.4 Initializing All Preset

This section describes the procedure to initialize all preset data.  
For initializing all preset, the copy source preset list is used.

1. Press the [Source] drop-down key  and select the copy source from the following: [C1 Memory], [C2 Memory], [C1 Card] or [C2 Card].




**Fig.6-149 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**


2. Press the [All Select] key .

▶ All preset items are displayed in blue.



**Fig.6-150 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

3. Press the [Initialize] key .
  - ▶ The confirmation message screen appears.

4. Press the [Yes] key .
  - ▶ The message “Please wait a moment.” appears and then initialization is performed.



**Fig.6-151 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

- ▶ The all preset initialization is completed.



**Fig.6-152 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

### 6.15.3.3 [Machine Set Mngr] Tab Screen

The [Machine Set Mngr] tab screen is used to copy and initialize the machine configuration.

#### NOTE

- The [Machine Set Mngr] tab screen is available to [Installation] or higher level personnel.

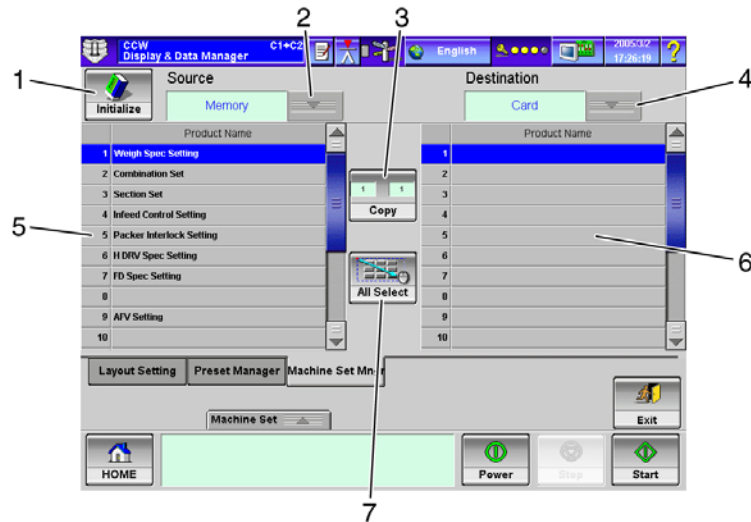







Fig.6-153 [Machine Set Mngr] Tab Screen ([Display & Data Manager] Screen)

Table 6-65 Items and Functions of [Machine Set Mngr] Tab Screen

No.	Name	Function
1	[Initialize] key 	Initializes the selected machine configuration.
2	[Source] drop-down key 	Selects [Memory] or [Card] as the copy source.
3	[Copy] key 	Copies the machine setting items from the source to the destination.
4	[Destination] drop-down key 	Selects [Memory] or [Card] as the copy destination.
5	Copy source machine setting item list	Selects the machine setting item of the copy source. The machine setting items that can be copied are listed below.
6	Copy destination machine setting item list	Displays the machine setting items of the copy destination.
7	[All Select] key 	Selects all copy source items.

**Table 6-66 Machine Set Manager Items**

No.	Machine Selection Item
1	[Weigh Spec Setting]
2	[Combination Set]
3	[Section Set]
4	[Infeed Control Setting]
5	[Packer Interlock Setting]
6	[H DRV Spec Setting]
7	[FD Spec Setting]
8	(Not used)
9	[AFV Setting]
10	(Not used)
11	[Network setting]
12	[Input Output setting]
13	[Auto timing setting]
14	[Drive Count]
15	[Option setting]
16	[AFD Setting]

**NOTE**

- Some of the machine setting items cannot be set by the user. Especially in initialization, pay careful attention in selecting items.
- If items that cannot be set by the user are initialized by accident, please contact Ishida service center.


### 6.15.3.3.1 Selecting and Copying Machine Setting Items

This section describes the procedure to select and copy the machine setting items registered in the memory or card.

Data is copied from memory to card or from card to memory. The machine setting item number is fixed, and it is not possible to copy to a different number.

#### NOTE

- When an item is already registered, it is overwritten by the copied item.

- Press the [Source] drop-down key  and select the copy source between [Memory] and [Card].

It is also possible to press the [Destination] drop-down key and select the copy destination between [Memory] and [Card].



Fig.6-154[Machine Set Mngpr] Tab Screen  
([Display & Data Manager] Screen)

- Select the machine setting item to be copied.



- ▶ The selected items in both copy source and copy destination are displayed in blue.
- ▶ In the displays on both sides of the [Copy] key, the selected machine setting item number is displayed.

#### NOTE

- Only one item can be selected at a time.



Fig.6-155 [Machine Set Mngpr] Tab Screen  
([Display & Data Manager] Screen)

3. Press the [Copy] key .
  - ▶ The confirmation message screen appears.
4. Press the [Yes] key .
  - ▶ The selected machine setting item is copied.



**Fig.6-156 [Machine Set Mngr] Tab Screen  
([Display & Data Manager] Screen)**


### 6.15.3.3.2 Copying All Machine Setting Items

This section describes the procedure to copy all the machine setting items registered in the memory or card.

In all preset copy, data is copied from memory to card or from card to memory.


#### NOTE

- If all the preset data is copied, original data is overwritten by the copied data and is lost.

1. Press the [Source] drop-down key  and select the copy source between [Memory] and [Card].  
It is also possible to press the [Destination] drop-down key and select the copy destination between [Memory] and [Card].



**Fig.6-157 [Machine Set Mngr] Tab Screen  
([Display & Data Manager] Screen)**

2. Press the [All Select] key .

- ▶ All the machine setting items are displayed in blue.
- ▶ In the displays on both sides of the [Copy] key, [All] is displayed.



**Fig.6-158 [Machine Set Mngr] Tab Screen  
([Display & Data Manager] Screen)**

3. Press the [Copy] key .

- ▶ The confirmation message screen appears.

4. Press the [Yes] key .

- ▶ All the machine setting items are copied.



**Fig.6-159 [Machine Set Mngr] Tab Screen  
([Display & Data Manager] Screen)**




### 6.15.3.3.3 Selecting and Initializing Machine Setting Items

This section describes the procedure to initialize specific machine setting data. For initializing machine setting items, the copy source machine setting item list is used.

**NOTE**

- Once initialization is performed, the data cannot be restored. Before performing initialization, make sure that it will cause no problems.

- Press the [Source] drop-down key  and select the media to be initialized between [Memory] and [Card].

**NOTE**

- If copy destination media is changed, copy source media is also changed. If not noticing this, media that is not to be initialized may be initialized. To prevent accidental deletion of data, do not use the [Destination] drop-down key.




Fig.6-160 [Machine Set Mngr] Tab Screen ([Display & Data Manager] Screen)

- Select the machine setting item to be initialized.
  - ▶ The selected item is displayed in blue.



Fig.6-161 [Machine Set Mngr] Tab Screen ([Display & Data Manager] Screen)

3. Press the [Initialize] key .

▶ The confirmation message screen appears.

4. Press the [Yes] key .

▶ The selected machine setting item is initialized.




**Fig.6-162 [Machine Set Mngr] Tab Screen  
([Display & Data Manager] Screen)**

#### 6.15.3.3.4 Initializing All Machine Setting Items

This section describes the procedure to initialize all machine setting data. For initializing all items, the copy source machine setting item list is used.

#### NOTE

- If initialization is performed, all the machine setting data is lost. Before performing initialization, make sure that it will cause no problems.


1. Press the [Source] drop-down key  and select the media to be initialized between [Memory] and [Card].

#### NOTE

- If copy destination media is changed, copy source media is also changed. If not noticing this, media that is not to be initialized may be initialized. To prevent accidental deletion of data, do not use the [Destination] drop-down key.





**Fig.6-163 [Machine Set Mngr] Tab Screen  
([Display & Data Manager] Screen)**

2. Press the [All Select] key .
  - ▶ All the machine setting items are displayed in blue.



**Fig.6-164 [Machine Set Mngr] Tab Screen ([Display & Data Manager] Screen)**

3. Press the [Initialize] key .
  - ▶ The confirmation message screen appears.
4. Press the [Yes] key .
  - ▶ All the machine setting items are initialized.



**Fig.6-165 [Machine Set Mngr] Tab Screen ([Display & Data Manager] Screen)**

## 6.15.4 [Various Parameter Setting] Screen

This screen is used for weigher setting to perform combination weighing inside the weigher.

### NOTE

- The [Various Parameter Setting] screen is available to [Installation] or higher level personnel.

The items that can be set are as follows:

- Weigh Spec Set (☞ 6.15.4.1 [Weigh Spec Set] Tab Screen)
- Combination Set (☞ 6.15.4.2 [Combination Set] Tab Screen)
- Sectioning Set (☞ 6.15.4.3 [Sectioning Set] Tab Screen)

### 6.15.4.1 [Weigh Spec Set] Tab Screen

To display the [Weigh Spec Set] screen, press the [Weigh Spec Set] tab in the [Various Parameter Setting] menu.

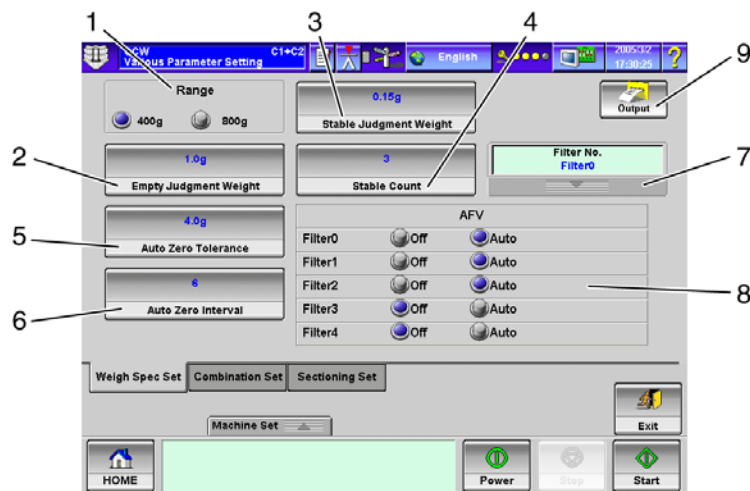


Fig.6-166 [Weigh Spec Set] Tab Screen ([Various Parameter Setting] Screen)

Table 6-67 Items and Functions of [Weigh Spec Set] Tab Screen

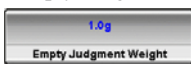

No.	Name	Function
1	[Range] radio button	Selects the weighing capacity. Selects 400g or 800g.
2	[Empty Judgment Weight] key 	Sets the weight from which the weigh hopper is judged as empty from the [Numeric Keypad] screen.
3	[Stable Judgment Weight] key 	Sets the weight from which weighing is judged as stable from the [Numeric Keypad] screen.

Table 6-67 Items and Functions of [Weigh Spec Set] Tab Screen (Continued)






No.	Name	Function
4	[Stable Count] key 	Sets the number of times to check the stable judgment weight from the [Numeric Keypad] screen.
5	[Auto Zero Tolerance] key 	Sets the tolerance weight to cause no zero error from the [Numeric Keypad] screen. The auto zero tolerance value can be set in increments of 0.1g.
6	[Auto Zero Interval] key 	Sets the interval of auto zero correction from the [Numeric Keypad] screen. The auto zero interval is set to "5" in normal operation. If the auto zero interval is set to "0", no auto zero correction is performed.
7	[Filter No.] drop-down key 	Sets the digital filter number. In selecting the filter, consider the cut-off frequency and the weighing time. If a lower cut-off frequency value is set, influence of vibration decreases but the weighing time increases, resulting in lower weighing speed. In selecting the filter number, refer to "Table 6-68 Filter Number List".
8	[AFV] radio button	Selects [Off] or [Auto] on the AFV function for each filter number. Sets up each item for Filter 0 - Filter 4. (Only for the models with the function)
9	[Output] key 	Outputs the set information to a printer or as a file.

Table 6-68 Filter Number List

Filter Number	Cut-off Frequency [Hz]	Filtering Time [msec]	Weighing Time [msec]*
0	18	160	670
1	15	210	720
2	11	290	800
3	9	370	880
4	7	460	970

\* The weighing time means the minimum time that a weigh head can participate in combination weighing.

Even if interlock signals are input at a shorter interval than the weighing time shown in "Table 6-68 Filter Number List", the head cannot participate in weighing every time. The weighing time in "Table 6-68 Filter Number List" is based on the calculation below.

(Weighing time)

$$= (\text{WH - PH delay time}) + (\text{Combination weighing time}) + (\text{Stable time}) + (\text{Filtering time})$$

$$= 130+20+360+(\text{Filtering time})$$

### 6.15.4.2 [Combination Set] Tab Screen

The [Combination Set] tab screen is used to set detailed settings related to combination weighing and actions against errors.

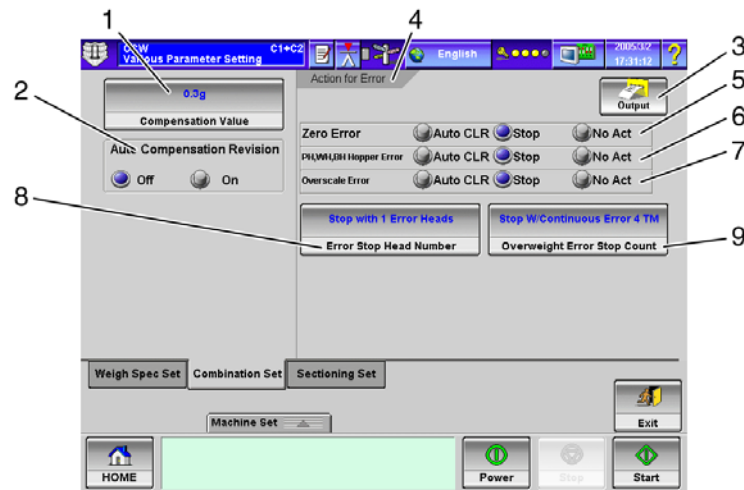


Fig.6-167 [Combination Set] Tab Screen ([Various Parameter Setting] Screen)

Table 6-69 Items and Functions of [Combination Set] Tab Screen





No.	Name	Function
1	[Compensation Value] key 	Sets the compensation value to offset the influence of external vibration from the [Numeric Keypad] screen. If the weighed value is set to 100.0g and the compensation value to 0.3g, combination weighing is performed with the target weight as 100.3g. The compensation value can be set within the range from 0.0 to 25.5g, with the minimum setting unit of 0.1g. The compensation value is set to 0.3g in normal operation.
2	[Auto Compensation Revision] radio button	Selects whether or not to perform auto compensation revision. The auto compensation revision is the function to minimize reduction in efficiency caused by external vibration as well as to find the optimum compensation value for yield rate and to automatically update it. [On]: Performs auto compensation revision. [Off]: Does not perform auto compensation revision.
3	[Output] key 	Outputs the set information to a printer or as a file.
4	[Action for Error]	See the list below.

Table 6-70 Items and Functions of [Action for Error]

No.	Name	Function
5	[Zero Error] radio button	Selects the action for zero error from [Auto CLR], [Stop] and [No Act].
6	[PH,WH,BH Hopper Error] radio button	Selects the action for PH, WH, BH hopper error from [Auto CLR], [Stop] and [No Act].
7	[Overscale Error] radio button	Selects the action for overscale error from [Auto CLR], [Stop] and [No Act].

**Table 6-70 Items and Functions of [Action for Error] (Continued)**

No.	Name	Function
8	[Error Stop Head Number] key 	Sets the number of permissible head errors from the [Numeric Keypad] screen. If the number of errors exceeds the set count, production stops. If "0" is set, [AutoDump] is performed.
9	[Overweight Error Stop Count] key 	Sets the action for overweight error (i.e. when there are only combination weighing results exceeding the upper limit). If "0" is set, overweight combination discharge is performed regardless of the upper limit. If "1-15" is set, production stops when overweight occurs the specified number of times or more consecutively. This is set to "4" in normal operation.

### 6.15.4.3 [Sectioning Set] Tab Screen

The [Sectioning Set] tab screen is used to set the weigh heads to be operated in each section. This setting is normally unnecessary because it is set according to the customer's specification at delivery.

The parameter numbers that can be set for sectioning are determined depending on the selection of the double or mix weigher. Before sectioning, select the machine.

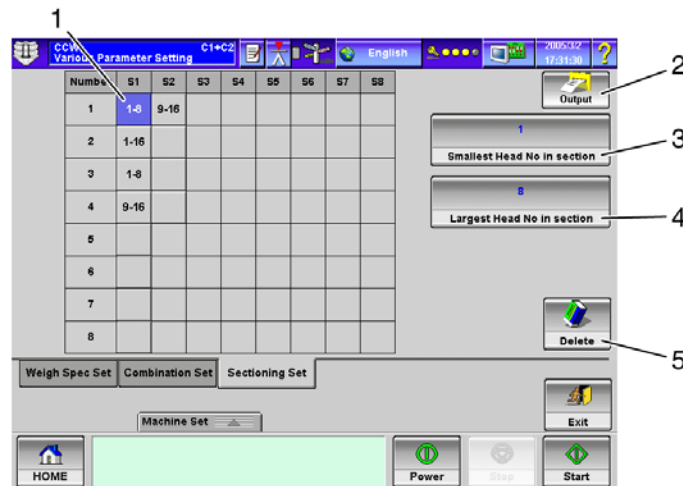


Fig.6-168 [Sectioning Set] Tab Screen ([Various Parameter Setting] Screen)

Table 6-71 Items and Functions of [Sectioning Set] Tab Screen

No.	Name	Function
1	[Parameter Select] key 	Selects the section of the desired parameter number.
2	[Output] key 	Outputs the set information to a printer or as a file.
3	[Smallest Head No in section] key 	Sets the smallest head number of the heads to be operated in the section from the [Numeric Keypad] screen. Setting range: 1 to max head count.
4	[Largest Head No in section] key 	Sets the largest head number of the heads to be operated in the section from the [Numeric Keypad] screen. Setting range: 1 to max head count.
5	[Delete] key 	Deletes the selected section setting.



### 6.15.5 [Weigher Setting] Screen

To display the [Weigher Setting] screen, press [Weigher Setting] in the [Machine Set] pop-up menu.

**NOTE**

- The [Weigher Setting] screen is available to [Installation] or higher level personnel.



#### 6.15.5.1 [Active head] Tab Screen

This screen is used to select the hoppers to participate in weighing. This function is used to exclude specific hoppers from participation due to failures or other reasons.



Fig.6-169 [Active head] Tab Screen ([Weigher Setting] Screen)

Table 6-72 Items and Functions of the [Active head] Tab Screen

No.	Name	Function
1	[Head] key 	The head of the number pressed participates in weighing. The participating head is displayed in blue.
2	[All Head SLCT/CLR] key 	Selects or deselects all heads.

### 6.15.5.2 [AFD Setting] Tab Screen

To display the [AFD Setting] tab screen, press the [AFD Setting] tab in [Weigher Setting]. The [AFD Setting] tab screen is used to configure the AFD setting for the whole weigher.



**Fig.6-170 [AFD Setting] Tab Screen ([Weigher Setting] Screen)**

**Table 6-73 Items and Functions of the [AFD Setting] Tab Screen**

No.	Name	Function
1	[AFD Stop for Fewer Available Head] key	Sets the number of heads to stop the feeder auto control. The feeder auto control is stopped if the number of heads participating in weighing lowers to the set value or less as a result of non-participation due to a failure, etc. or because weigh hoppers are removed.
2	[Cleaning Request] radio button	If empty head frequently occurs at a certain head, it is judged as defective infeed and a warning is displayed in the [Production Status Information] screen. (Refer to 6.13.1 Switching Display in [Feeder Adjust] Screen) [On]: Issues the warning. [Off]: Does not issue the warning.

### 6.15.6 [Peripheral Equipment Setting] Screen

To display the [Peripheral Equipment Setting] screen, select [Peripheral Equipment Setting] in the [Machine Set] pop-up menu.

The items that can be set in the [Peripheral Equipment Setting] screen are [Pckr Intrlck Set] and [Infeedr Cntl Set]. Select the screen to be displayed with the tab.

**NOTE**

- The [Peripheral Equipment Setting] screen is available to [Installation] or higher level personnel.

#### 6.15.6.1 [Pckr Intrlck Set] Tab Screen

This screen is used to set the configurations for interlocking this device and the packer.

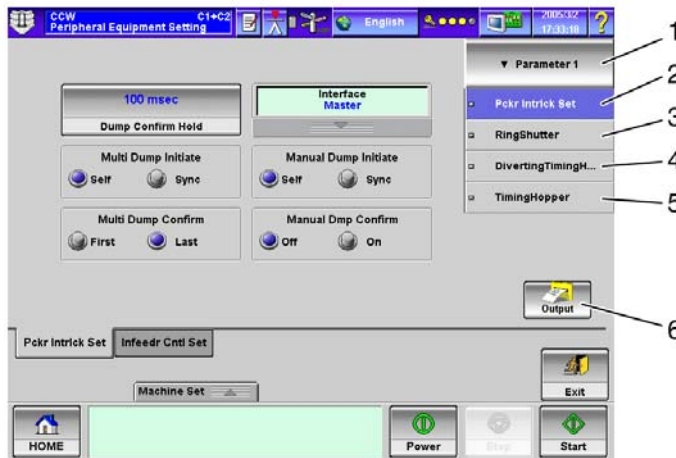


Fig.6-171 [Pckr Intrlck Set] Tab Screen ([Peripheral Equipment Setting] Screen)

Table 6-74 Items and Functions of the [Pckr Intrlck Set] Tab Screen




No.	Name	Function
1	[Parameter No. Select] drop-down key 	Selects the parameter number of the packer interlock setting to be set or referred to.
2	[Pckr Intrlck Set] index	Displays the [Pckr Intrlck Set] index screen. (☞ 6.15.6.1.1 [Pckr Intrlck Set] Index Screen)
3	[RingShutter] index	Displays the [RingShutter] screen. (☞ 6.15.6.1.2 [RingShutter] Index Screen)
4	[DivertingTimingHppr] index	Displays the [DivertingTimingHppr] screen.
5	[TimingHopper] index	Displays the [TimingHopper] screen.

Table 6-74 Items and Functions of the [Pckr Intrck Set] Tab Screen (Continued)

No.	Name	Function
6	[Output] key 	Outputs the setting contents to a printer or as a file.

**TIP**

- For diverting timing hopper setting and timing hopper setting, the same procedure is used with the ring shutter setting. Refer to the ring shutter setting ( 6.15.6.1.2 [RingShutter] Index Screen) for setting procedures.

### 6.15.6.1.1 [Pckr Intrck Set] Index Screen

This screen is used to set the configurations for interlocking this device and the packer.

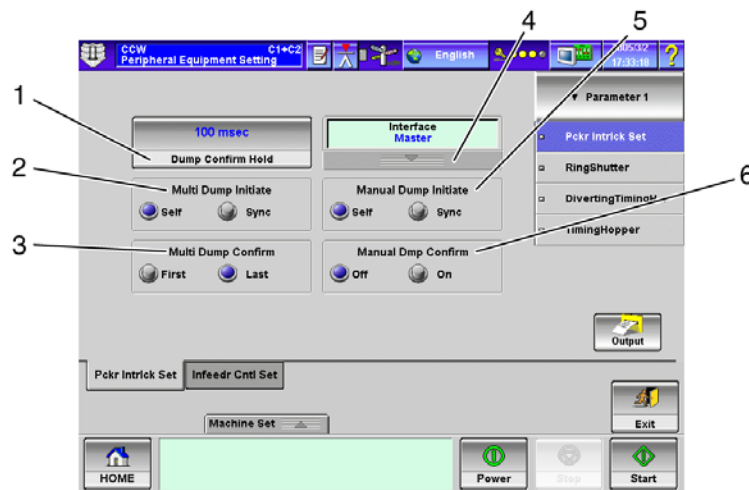




Fig.6-172 [Pckr Intrck Set] Index Screen ([Peripheral Equipment Setting] Screen)

Table 6-75 Items and Functions of the [Pckr Intrck Set] Index Screen

No.	Name	Function
1	[Dump Confirm Hold] key 	Sets the output time of discharge completion signals from the [Numeric Keypad] screen. Can be set in increments of 10 msec.
2	[Multi Dump Initiate] radio button	Selects the interlock operation signal to use when the dump count is 2 or more (multiple dump weighing), from [Self] or [Sync]. [Self]: Performs only the first discharge based on the interlock signal from the packer, and the later discharges based on the self-driven timer on this device. [Sync]: Performs all discharges based on the interlock signal from the packer.
3	[Multi Dump Confirm] radio button	Selects the timing to output the discharge completion signal when the dump count is 2 or more (multiple dump weighing), from [First] or [Last]. [First]: Outputs the discharge completion signal after the first discharge. [Last]: Outputs the discharge completion signal after the last discharge.

**Table 6-75 Items and Functions of the [Pckr Intrlck Set] Index Screen (Continued)**

No.	Name	Function
4	[Interface] drop-down key 	Selects the interface for interlocking this device and the packer from [Slave], [Master], [Stroke On Demand] and [Bag On Demand].
5	[Manual Dump Initiate] radio button	Selects the operation of discharge based on the manual interlock signal, from [Self] or [Sync]. [Self]: Performs discharge automatically without input of the interlock signal. [Sync]: Performs discharge based on the interlock signal from the packer.
6	[Manual Dmp Confirm] radio button	Selects whether or not to output the discharge completion signal during drain, zero adjustment and error discharge. [Off]: Does not output the discharge completion signal during drain, zero adjustment and error discharge. [On]: Outputs the discharge completion signal during drain, zero adjustment and error discharge.

## 6.15.6.1.2 [RingShutter] Index Screen

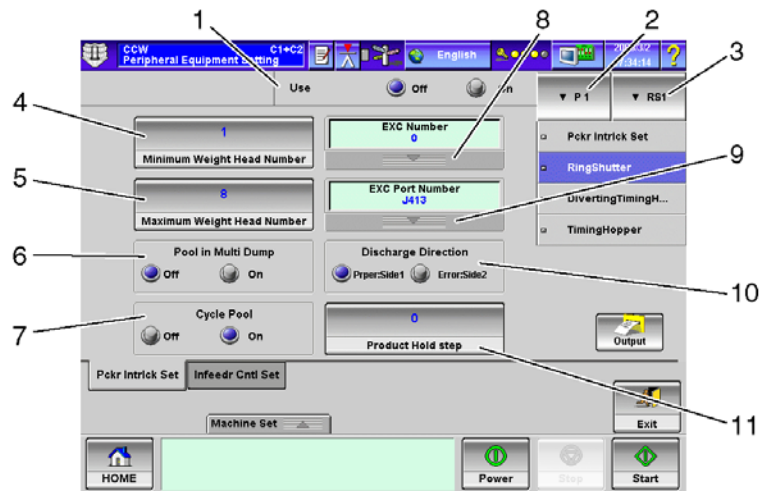




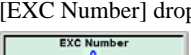
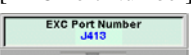



Fig.6-173 [RingShutter] Index Screen ([Peripheral Equipment Setting] Screen)

Table 6-76 Items and Functions of the [RingShutter] Index Screen

No.	Name	Function
1	[Use] radio button	Selects whether or not to use the ring shutter.
2	[Parameter Select] drop-down key 	Selects the parameter of packer interlock setting.
3	[RS] drop-down key 	Selects the ring shutter setting parameter. (See Note)
4	[Minimum Weight Head Number] key 	Sets the minimum weight head number from the [Numeric Keypad] screen. Setting range: 1 to max head count.
5	[Maximum Weight Head Number] key 	Sets the maximum weight head number from the [Numeric Keypad] screen. Setting range: 1 to max head count.
6	[Pool in Multi Dump] radio button	Selects whether or not to pool products of amount for one weighing before dump when the dump count is set in the [Preset] screen. [Off]: Does not pool before dump. [On]: Pools products of amount for one weighing before dump.
7	[Cycle Pool] radio button	Selects whether or not to pool products of amount for one cycle before dump. [Off]: Does not pool before dump. [On]: Pools products of amount for one weighing before dump.
8	[EXC Number] drop-down key 	Selects the EXC number set in the network setting (available to [maintenance] or higher level personnel).
9	[EXC Port Number] drop-down key 	Selects the EXC port number from [J411], [J412], [J413] and [J414].

**Table 6-76 Items and Functions of the [RingShutter] Index Screen (Continued)**

No.	Name	Function
10	[Discharge Direction] radio button	Selects the discharge direction between [Prper:Side1] and [Error:Side2].
11	[Product Hold step] key 	Sets the number of steps seen from WH using the [Numeric Keypad] screen. Setting range: 0-8.

**NOTE**

- The number of RS parameters that can be set is as follows:
- For the minimum weight head number, the maximum weight head number, the pool in multi dump and the cycle pool, 8 patterns can be set for each parameter of packer interlock setting (32 patterns in total).
- For the EXC number, the EXC port number, the discharge direction and the product hold step, a pattern can be set for each parameter of packer interlock setting (4 patterns in total).

The pooling operation depends on the combination of multi dump and cycle as shown below.

**Table 6-77 Combination of Multi Dump and Cycle**

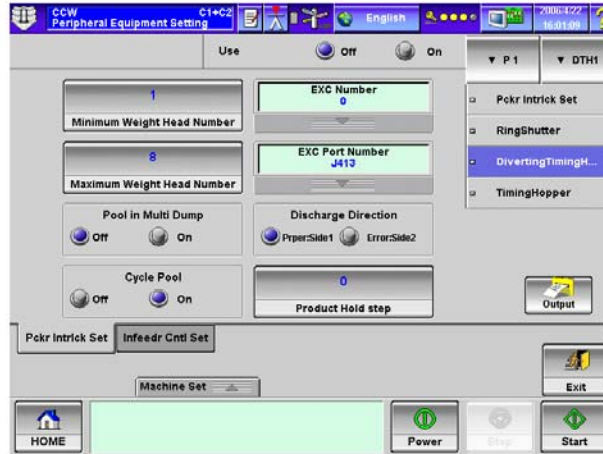
Pool in Multi Dump	Cycle Pool	Operation
[Off]	[Off]	Products are not pooled.
[Off]	[On]	Products of amount for 1 cycle are pooled but not for 1 weighing (multiple dumps).
[On]	[On]	Products of amount for 1 weighing (multiple dumps).
[On]	[Off]	-

**TIP**

- A cycle refers to a series of process from weighing to dump.  
For example, when the dump count is set to "3" for multiple dump weighing, 3 cycles make 1 weighing (corresponding to the target weight).  
When the dump count is "1", 1 cycle makes 1 weighing.

### 6.15.6.1.3 [DivertingTimingHppr] Index Screen

This screen is used to set the configurations when using the diverting timing hopper.



**Fig.6-174 [DivertingTimingHppr] Index Screen ([Peripheral Equipment Setting] Screen)**

To configure settings, use the ring shutter setting procedure.

### 6.15.6.1.4 [TimingHopper] Index Screen



**Fig.6-175 [TimingHopper] Index Screen ([Peripheral Equipment Setting] Screen)**

To configure settings, use the ring shutter setting procedure.



### 6.15.6.2 [Infeedr Cntl Set] Tab Screen

This screen is used to set the configurations for interlocking this device and the infeeder.

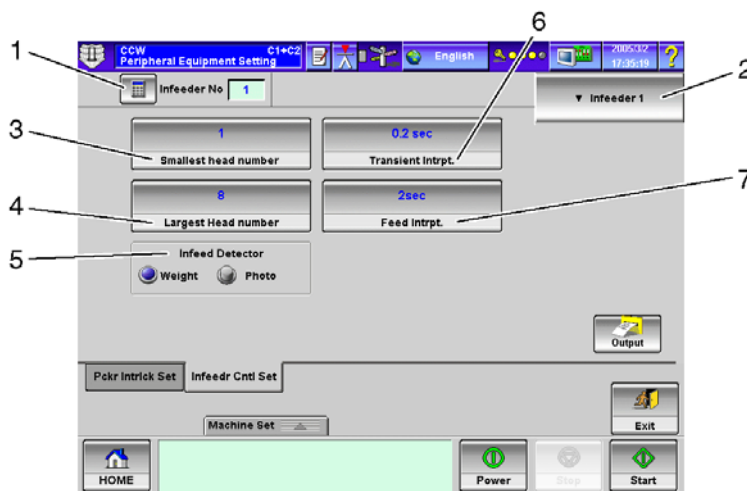








Fig.6-176 [Infeedr Cntl Set] Tab Screen ([Peripheral Equipment Setting] Screen)

Table 6-78 Items and Functions of [Infeedr Cntl Set] Tab Screen

No.	Name	Function
1	[Infeeder No] key 	Sets the number of infeeders to be used for product infeed from the [Numeric Keypad] screen.
2	[Infeeder No. Select] drop-down key 	Selects the infeeder number subject to the following settings.
3	[Smallest head number] key 	Sets the smallest head number of the heads in the section to which infeeder 1 or 2 supplies products from the [Numeric Keypad] screen. Setting range: 1 to max head count.
4	[Largest Head number] key 	Sets the largest head number of the heads in the section to which infeeder 1 or 2 supplies products from the [Numeric Keypad] screen. Setting range: 1 to max head count.
5	[Infeed Detector] radio button	Selects whether to control the products delivered to the Dispersion Table based on weight or volume. [Weight]: Controls the products delivered to the Dispersion Table based on weight. [Photo]: Controls the products delivered to the Dispersion Table based on volume.
6	[Transient Intrpt.] key 	Sets the minimum time to judge that the products are loaded on the Dispersion Table from the [Numeric Keypad] screen. If excess or shortage of products is detected after the set time has passed, the infeeder turns on/off automatically. However, shorter time than the set time is disregarded to prevent the infeeder from turning on/off frequently. Setting range: 0.0-25.5 sec. This setting is available only when the infeed detector is in photo mode.

**Table 6-78 Items and Functions of [Infeedr Cntl Set] Tab Screen(Continued)**

No.	Name	Function
7	[Feed Intrpt.] key 	<p>Sets the time to judge that product infeed from the infeed to the device is interrupted.</p> <p>If product shortage is detected even after the set time has passed, it is judged as interrupted product infeed, and the device stops production, displaying the message "Low Product".</p> <p>When not performing automatic stop, set "0".</p> <p>Setting range: 0-255 sec.</p>

# 7 USEFUL FUNCTIONS

## 7.1 Summary

This chapter describes the useful functions available for this device.  
Use the functions as required.

### < Contents >

- Advanced operations

### < Purpose >

- To understand and master the functions of the advanced operations.

### < Intended reader >

- Operators
- System administrators

## 7.2 New Product Registration by Using Registered Product Data

This section describes how to register new products by using registered product data.

### 7.2.1 Copying C1 Product Data to C2

When using this device in the double mode, the product data registered in C1 can be copied to C2 for use. To copy product data, follow the procedures below.


1. On the [Main Menu] screen, press the [Machine Set] pop-up key .
  - ▶ The [Machine Set] pop-up menu appears.



Fig.7-1 [Main Menu] Screen

2. Press [Display & Data Manager].
  - ▶ The [Display & Data Manager] screen appears.
3. Press the [Preset Manager] tab.
  - ▶ The [Preset Manager] tab screen appears.

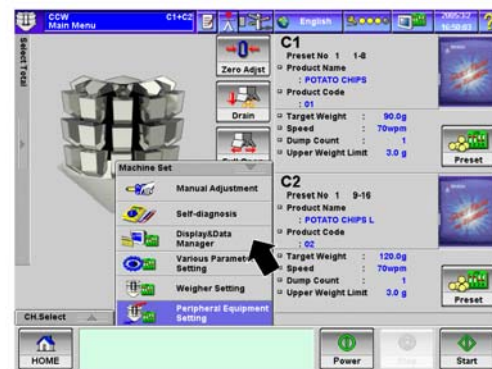

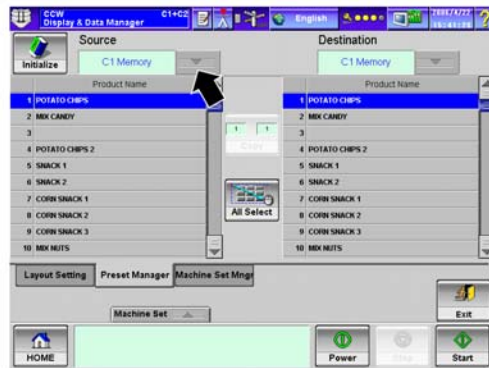


Fig.7-2 [Machine Set] Pop-up Menu

4. Press the [Source] drop-down key  and select [C1 Memory].




**Fig.7-3 [Preset Manager] Tab Screen ([Display & Data Manager] Screen)**

5. From the [Source] preset list, press the preset number to be used as the copy source.
  - ▶ The selected copy source preset item is displayed in blue.
  - ▶ On the left of the [Copy] key, the selected copy source preset number is displayed.



**Fig.7-4 [Preset Manager] Tab Screen ([Display & Data Manager] Screen)**

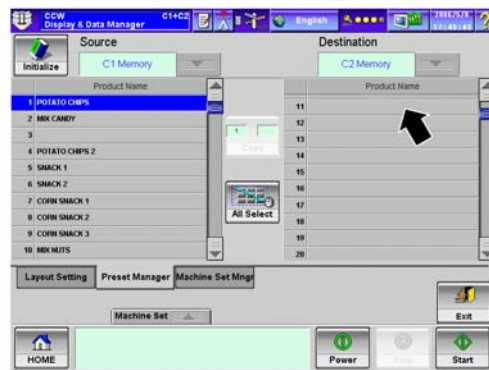
6. Press the [Destination] drop-down key  and select [C2 Memory].



**Fig.7-5 [Preset Manager] Tab Screen ([Display & Data Manager] Screen)**

7. From the copy destination preset list, press the preset number to be used as the copy destination.

- ▶ The selected copy destination preset item is displayed in blue.
- ▶ On the right of the [Copy] key, the selected copy destination preset number is displayed.



**Fig.7-6 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

8. Press the [Copy] key .

- ▶ When the message “Performs copying of preset contents from copy source to copy destination.” is displayed, press the [Yes] key to start copying.
- ▶ The message “Please wait a moment.” appears and then copy is performed.



**Fig.7-7 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

- ▶ The copied preset is displayed in the selected copy destination.
- ▶ The selected preset copy is completed.



**Fig.7-8 [Preset Manager] Tab Screen  
([Display & Data Manager] Screen)**

## 7.2.2 Copying and Editing Registered Product Data

### <Purpose>

The product data already registered can be copied and registered as new product data. To copy and edit product data, follow the procedures below.

1. After creating copy data following the procedure described in “6.15.3.2.1 Selecting and Copying Preset”, press the [Exit] key



- ▶ The [Main Menu] screen appears.



Fig.7-9 [Preset Manager] Tab Screen ([Display & Data Manager] Screen)

2. Press the [Select Preset] key 

- ▶ The [Select Preset] screen appears.



Fig.7-10 [Main Menu] Screen

3. Select the preset number copied in step 1. (No. 3)

- ▶ The [Main Menu] screen appears with the selected preset number displayed.



Fig.7-11 [Select Preset] Screen

4. Press the [Preset] key .

▶ The [Preset] screen appears.



Fig.7-12 [Main Menu] Screen

5. Change the desired preset item setting.  
(e.g. Target weight: 90→100)



Fig.7-13 [Preset] Screen



## 7.3 Reducing Product Change Time

This section describes how to discharge remaining products more quickly in order to reduce time for product change after weighing is completed.

### 7.3.1 Using Feeder Adjustment of Drain Function

Remaining products can be discharged using the drain function. For the drain function setting, follow the procedures below.

1. On the [Main Menu] screen, press the [Drain]



- ▶ The [Drain] screen appears.
- ▶ The drain starts.



Fig.7-14 [Main Menu] Screen

2. Press the [Feeder Adjust] tab.
  - ▶ The [Feeder Adjust] tab screen appears.

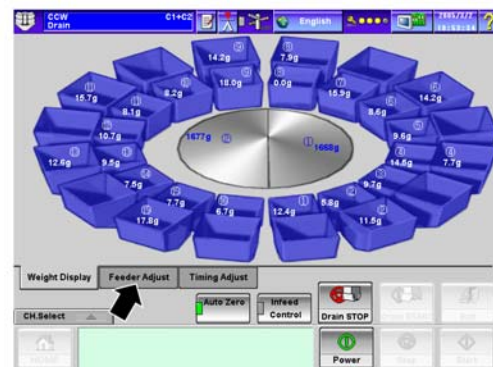





Fig.7-15 [Drain] Screen

3. Press the [RF Time] lamp key  and the [RF AMP] lamp key  to select the operation time and operation amplitude, and press the [Increase] key  to set a larger value for each setting.

**TIP**

- Setting a larger value can discharge products faster.

**NOTE**

- Set the maximum value so that no product jam will occur in the collection chute or packer.
- Feeder values changed during drain are not reflected in the preset.

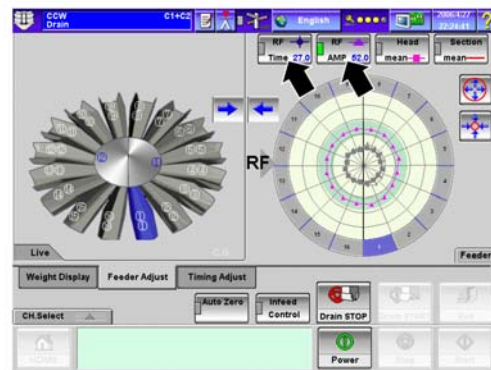


Fig.7-16 [Feeder Adjust] Tab Screen ([Drain] Screen)

### 7.3.2 Using Full Open Lock Function

Products of a size that cause no jam in a hopper or collection chute can be discharged using the full open lock function.

For the full open lock function setting, follow the procedures below.

- On the [Main Menu] screen, press the [Full

Open] key .

- ▶ The [Full Open Lock] screen appears.

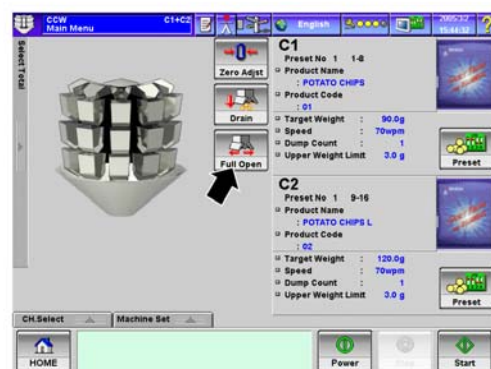
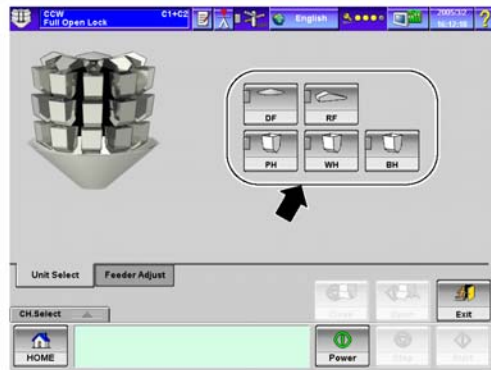



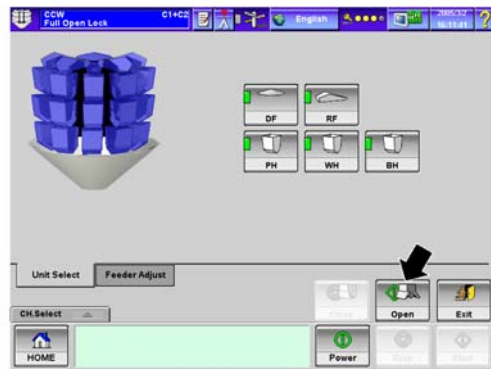
Fig.7-17 [Main Menu] Screen

2. Select all feeders and hoppers.



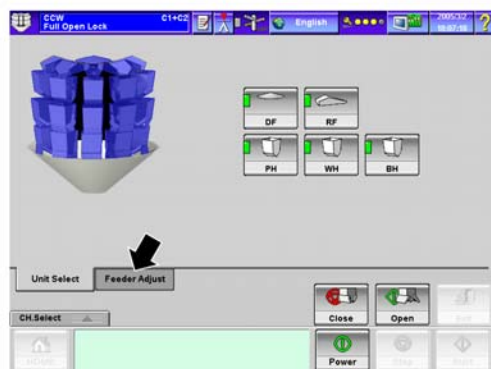
**Fig.7-18 [Unit Select] Tab Screen ([Full Open Lock] Screen)**

3. Press the [Open] key .
  - ▶ All hoppers open.






**Fig.7-19 [Full Open Lock] Screen**

4. Press the [Feeder Adjust] tab.
  - ▶ The [Feeder Adjust] tab screen appears.



**Fig.7-20 [Full Open Lock] Screen**

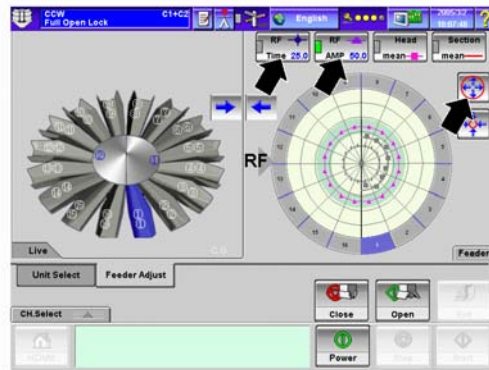
5. Press the [RF Time] lamp key  and the [RF AMP] lamp key  to select the operation time and operation amplitude, and press the [Increase] key  to set a larger value for each setting.

**TIP**

- Setting a larger value can discharge products faster.

**NOTE**

- Feeder values changed during full open lock are not reflected in the preset.



**Fig.7-21 [Feeder Adjust] Tab Screen  
([Full Open Lock] Screen)**

## 7.4 Stopping Production of C1 Alone During C1 and C2 Production (One-side Production Stop)


When using this device in the double mode and both C1 and C2 are in operation, it is possible to stop operation of only one side in order to weigh another product.

This section describes the procedure to stop production on the C1 side alone when both C1 and C2 are in production and to continue production on the C2 side.

### TIP

- The C2 side alone can be stopped by executing the similar procedure.

### 7.4.1 Stopping Production of C1 Alone

- On the [Production] screen, press the [CH.Select] pop-up key .
  - ▶ The [CH.Select] pop-up menu appears.

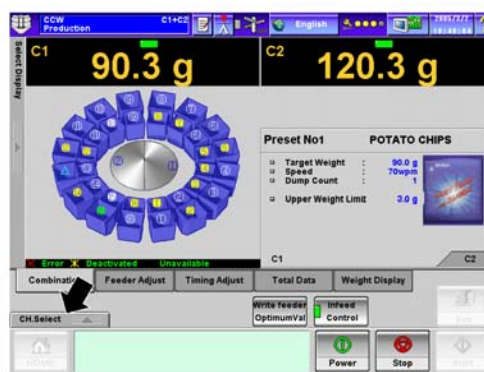


Fig.7-22 [Production] Screen

- Select the channel to be stopped. (C1)
  - ▶ The [Production] screen with only C1 displayed appears.

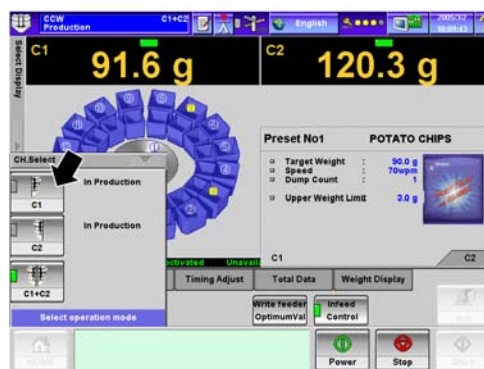


Fig.7-23 [CH.Select] Pop-up Menu



3. Press the [Stop] key .
- ▶ Only C1 stops production.



Fig.7-24 [Production] Screen

### <To check status of C1 and C2>

1. On the [Main Menu] screen, press the [CH.Select] pop-up key .
  - ▶ The [CH.Select] pop-up menu appears.

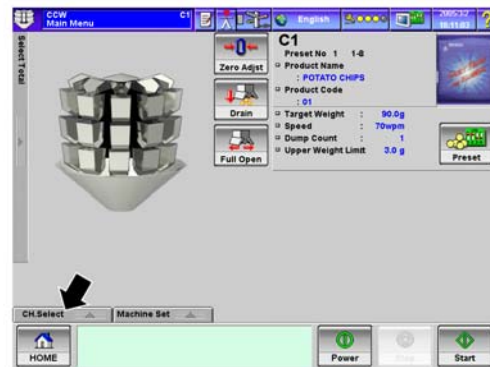


Fig.7-25 [Main Menu] Screen

2. Check that C1 operation has stopped and that C2 is still in operation.



Fig.7-26 [CH.Select] Pop-up Menu

## 7.5 Comparing Values on Remote Control and Actual Values

During mix weighing, it is possible to discharge products for each section as a sample of actual weighing. For the process, follow the procedures below.

### TIP

- This function is used to confirm whether there is no difference between the values weighed at each section and the values displayed on the remote control unit when the device is used in the mix mode.

### 7.5.1 Checking Each Section in Mix Weigher


- On the [Production] screen, press the [Sample Discharge] pop-up key .
  - The [Sample Discharge] pop-up menu appears.



Fig.7-27 [Production] Screen (Mix Weigher)

- Select the section to discharge samples. (ALL)
  - The selected item is displayed in blue.
  - Samples are discharged from the device.

### TIP

- If weighing for sample discharge is performed, the weight values for each section are displayed in the [Sample Discharge] pop-up menu.
- After discharge, the displayed values for the corresponding sections are reset to 0.0g.
- If any area outside the [Sample Discharge] pop-up menu is pressed, the sample discharge function will end.



Fig.7-28 [Sample Discharge] Pop-up Menu ([Production] Screen)





## 8 OPTIONAL FUNCTIONS

### 8.1 Summary

This chapter describes the optional functions set for this device.

#### <Contents>

- Count set weighing
- Parent and child weighing

#### <Purpose>

- To understand and master the optional functions.

#### <Intended reader>

- System administrators

## 8.2 Parent and Child Weighing

Parent and child weighing is a weighing method that performs mix weighing by discharging the product of a certain weigh head (parent head) without fail.

### TIP

- Heads other than the parent head are referred to as “child head”.  
When performing the parent and child weighing, mechanical measures must be taken to prevent the product weighed by the parent head from mixing with products weighed by child heads.

### 8.2.1 Types of Parent and Child Weighing

The parent and child weighing is a weighing method that performs mix weighing based on the parent head weighing results, while the standard mix weighing is based on the combination results of each weighed product.

There are two types of parent and child weighing: “Parent and child mix weighing” and “Bonus adding”.

#### 8.2.1.1 Parent and Child Mix Weighing

“Parent and child mix weighing” is a weighing method in which the parent head weight is included into the target weight (the parent head participates in the combination weighing).

The device first weighs the product in the parent head. The target weight for child heads is calculated based on the parent head weight.

Target weight for child heads = Target weight - Parent head weight

Example: When the target weight is 200.0g and the parent head weight is 30.5g, the target weight for child heads will be:

$$200.0 - 30.5 = 169.5 \text{ (g)}$$

The combination weighing will be performed with the child head target weight set to 169.5g.

The discharged product weight will be the sum of the combination weighing result with the child head target weight of 169.5g, and the parent head weight.

For instance, when the combination weighing result of the child head is 170.5g, the discharged product weight will be  $170.5 + 30.5 = 201.0$ (g).

### 8.2.1.2 Bonus Adding

“Bonus adding” is a weighing method in which the parent head weight is not included into the target weight (the parent head does not participate in the combination weighing).

The target weight for child heads will be the target weight of the device.

Target weight for child heads = Target weight

Example: When the target weight is 200.0g and the parent head weight is 30.5g:

$$200.0 + 30.5 = 230.5 \text{ (g)}$$

The discharged product weight will be the sum of the combination weighing result with the child head target weight of 200.0g, and the parent head weight.

For instance, when the combination weighing result of the child head is 200.5g, the discharged product weight will be 200.5+30.5=231.0(g).

### 8.2.2 Setting Items of Parent and Child Weighing

The [Preset] screen is used to configure the parent and child weighing settings. Setting items for the parent and child weighing are added to the [Preset] screen.

Refer to the following figure and table for setting items.

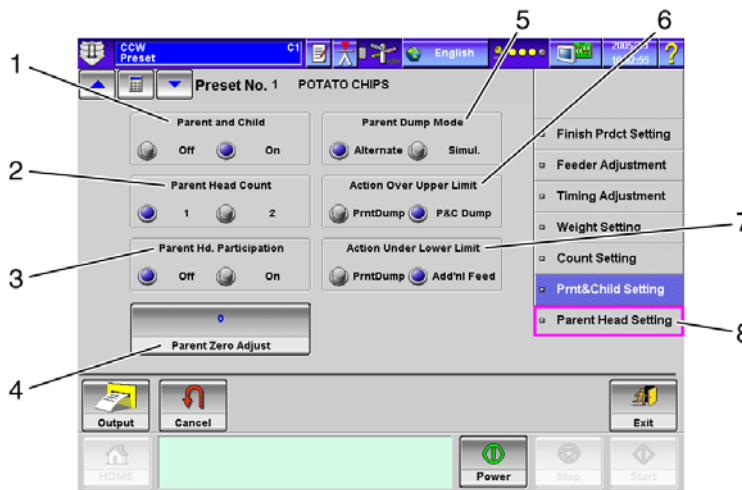



Fig.8-1[Prnt&Child Setting] Index Screen ([Preset] Screen)

Table 8-1 Items and Functions of [Prnt & Child Setting] Screen

No.	Name	Function
1	[Parent and Child] radio button	Selects [On] or [Off] for the parent and child weighing. [On]: Activates the parent and child weighing. [Off]: The device performs normal weighing.
2	[Parent Head Count] radio button	Sets “1” or “2” as the number of parent head(s).
3	[Parent Hd. Participation] radio button	Selects [On] or [Off] for the participation of the parent head in the combination weighing. [On]: Switches into the parent and child mix weighing mode. [Off]: Switches into the bonus adding mode.

Table 8-1 Items and Functions of [Prnt &amp; Child Setting] Screen (Continued)

No.	Name	Function
4	[Parent Zero Adjust] key 	Sets the interval to perform zero adjustment for the parent head. 0: Zero adjustment operation is not performed for the parent head. Other than 0: Interval for the zero adjustment is set. The number of times that the parent head discharges products is counted. For example, when “100” is set as the interval, zero adjustment is performed in every 100 discharges from the parent head.  <b>NOTE</b> <ul style="list-style-type: none"> <li>When the automatic zero adjustment interval is set to “0” in the weigher specification setting screen, the zero adjustment interval for the parent head cannot be specified.</li> </ul>
5	[Parent Dump Mode] radio button	When the number of parent heads is set to “2”, selects discharging mode from [Alternate] or [Simul.]. [Alternate]: Products are discharged first from P1 parent head and then from P2 parent head. [Simul.]: Each parent head discharges products simultaneously.
6	[Action Over Upper Limit] radio button	Selects the action when the parent head weight exceeds the upper weight limit that is described later in this section. [PrntDump]: Discharges products from the parent head only. [P & C Dump]: Discharges products from both parent head and child heads.  <b>NOTE</b> <ul style="list-style-type: none"> <li>If the parent head weight reaches the full scale, the alarm buzzer sounds and the discharge operation is not performed.</li> </ul>
7	[Action Under Lower Limit] radio button	Selects the action when the parent head weight falls below the lower weight limit that is described later in this section. [PrntDump]: Discharges products from the parent head only. [Add’nl Feed]: Does not discharge products and supplies additional products.  <b>NOTE</b> <ul style="list-style-type: none"> <li>If the parent head weight is judged as an under scale, the alarm buzzer sounds without supplying additional products.</li> </ul>
8	[Parent Head Setting] index	Displays the [Parent Head Setting] screen.

When the parent head count is set to “2”, the following items must be set to each parent head respectively. When the parent head count is changed to “2” and the parent head setting is not yet completed, the parent head setting index blinks to prompt you to complete the setting.

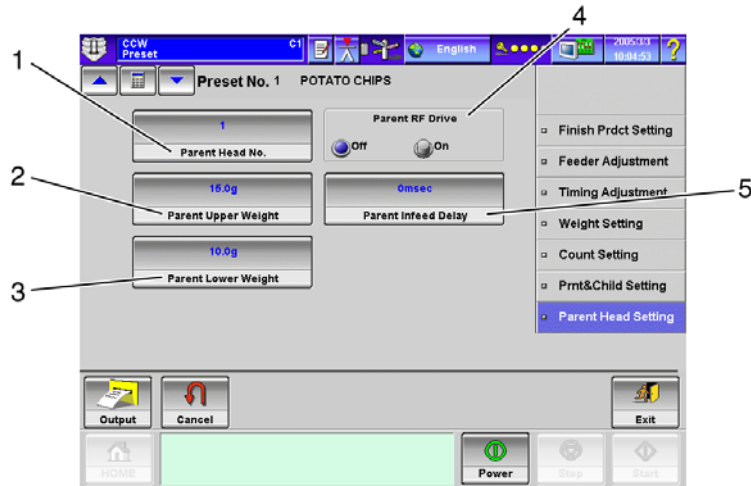


Fig.8-2 [Parent Head Setting] Index Screen ([Preset] Screen)

Table 8-2 Items and Functions of [Parent Head Setting] Screen





No.	Name	Function
1	[Parent Head No.] key 	Sets the weigh head number of the parent head. <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>Specify the weigh head number that is included in the section. If the weigh head number of a different section is specified, an error message will appear.</li> </ul>
2	[Parent Upper Weight] key 	Sets the upper weight limit for the parent head. Products are discharged when the parent head weight is within the specified range. <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>If the specified value is smaller than the value set for the parent lower weight limit, both the parent upper weight key and the parent lower weight key blink to prompt you to modify the setting.</li> </ul>
3	[Parent Lower Weight] key 	Sets the lower weight limit for the parent head. Products are discharged when the parent head weight is within the specified range. <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>If the specified value is larger than the value set for the parent upper weight limit, both the parent upper weight key and the parent lower weight key blink to prompt you to modify the setting.</li> </ul>

Table 8-2 Items and Functions of [Parent Head Setting] Screen(Continued)

No.	Name	Function
4	[Parent RF Drive] radio button	<p>Selects [On] or [Off] for activation of the parent head radial feeder.            [On]: Activates the parent head radial feeder.            [Off]: Does not activate the parent head radial feeder.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>The parent head radial feeder is not automatically controlled.</li> </ul>
5	[Parent Infeed Delay] key 	<p>Specifies the time from when the parent head pool hopper opens until when the feed signal is output to the external device.            Setting range: 0 to 2550 msec (in 10 msec).</p>

### 8.2.3 Setting Procedures of Parent and Child Weighing

For setting the parent and child weighing, follow the procedures below.

1. On the [Main Menu] screen, press the [Preset]



key

- ▶ The [Preset] screen appears.



Fig.8-3 [Main Menu] Screen

2. Press the [Prnt & Child Setting] key in the index.

- ▶ The [Prnt & Child Setting] screen appears.

**TIP**

- Delay amount of the parent head can be specified via the [Timing Adjustment] screen in the index.
- WH DELAY amount can be specified via the [Timing Adjustment] screen in the index.



Fig.8-4 [Preset] Screen

3. Press the [Parent and Child] radio button and select [On].
4. Press the [Parent Head Count] radio button and select [1] or [2].
5. Press the [Parent Hd. Participation] radio button and select [On] or [Off].
6. Press the [Parent Zero Adjust] key



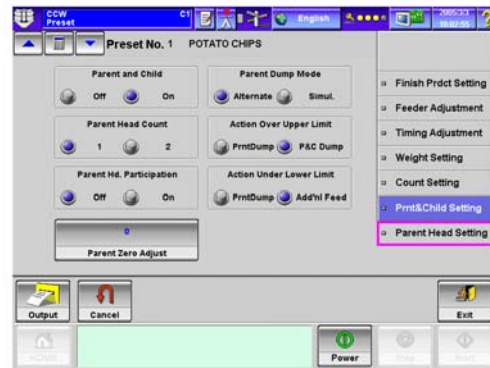
and input the numerical value with the [Numeric Keypad] screen displayed on the screen.

7. Press the [Parent Dump Mode] radio button and select [Alternate] or [Simul.].
8. Press the [Action Over Upper Limit] radio button and select [PrntDump] or [P & C Dump].
9. Press the [Action Under Lower Limit] radio button and select [PrntDump] or [Add'nl Feed].
10. Press the [Parent Head Setting] key in the index.

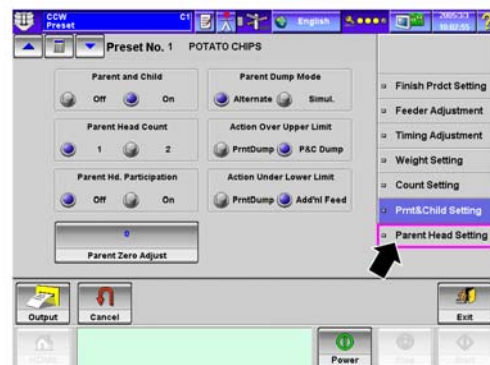
► The [Parent Head Setting] screen appears.

#### TIP

- When the number of parent heads is set to [2], the [Parent Head Selection] drop-down key appears.



**Fig.8-5 [Prnt&Child Setting] Index Screen ([Preset] Screen)**



**Fig.8-6 [Prnt&Child Setting] Index Screen ([Preset] Screen)**



11. Press the [Parent Head No.] key



, and input the numerical value with the [Numeric Keypad] screen displayed on the screen.

12. Press the [Parent Upper Weight] key



, and input the numerical value with the [Numeric Keypad] screen displayed on the screen.

13. Press the [Parent Lower Weight] key



, and input the numerical value with the [Numeric Keypad] screen displayed on the screen.

14. Press the [Parent RF Drive] radio button and select [On] or [Off].

15. Press the [Parent Infeed Delay] key



, and input the numerical value with the [Numeric Keypad] screen displayed on the screen.

16. Press the [Exit] key 

► The display returns to the [Main Menu] screen.

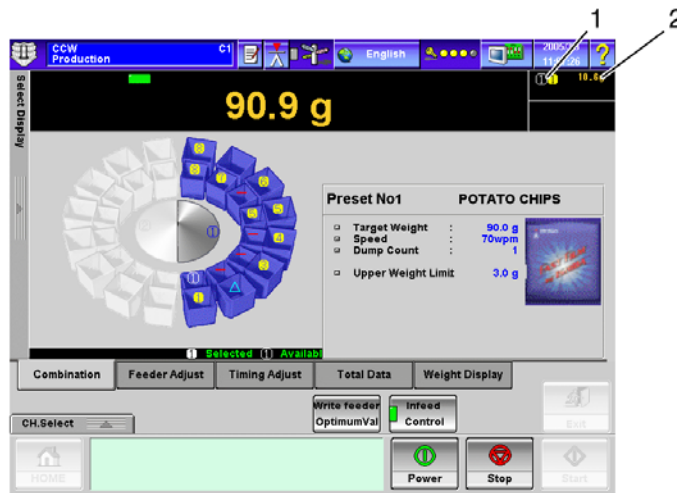


**Fig.8-7 [Parent Head Setting] Index Screen ([Preset] Screen)**

### 8.2.4 [Production] Screen of Parent and Child Weighing

On the [Production] screen for the parent and child weighing, the parent head weight is displayed on the [Combination] tab screen as shown in the figure.

**<Production screen when only the C1 side, for which the parent and child weighing is set, performs production>**



**Fig.8-8 Parent and Child [Combination] Tab Screen ([Production] Screen, C1)**

**Table 8-3 Parent and Child [Combination] Screen (C1) List**

No.	Name
1	Parent head number
2	Parent head weight

<Production screen when both C1 and C2 perform production with the parent and child weighing>

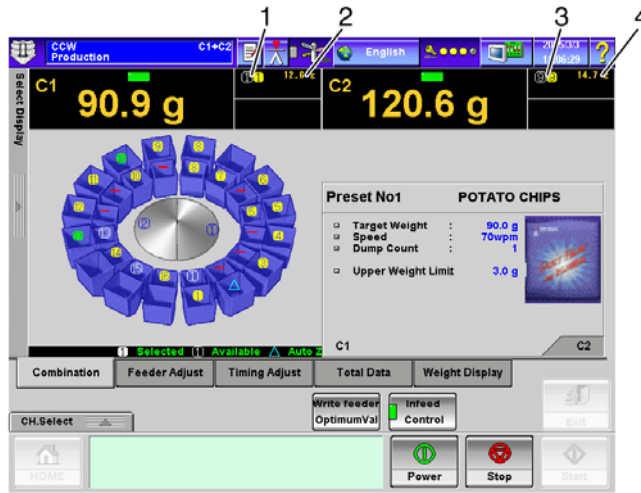


Fig.8-9 Parent and Child [Combination] Tab Screen ([Production] Screen, C1+C2)

Table 8-4 Parent and Child [Combination] Screen (C1, C2) List

No.	Name
1	C1 parent head number
2	C1 parent head weight
3	C2 parent head number
4	C2 parent head weight

## 8.3 Count Set Weighing

Count set weighing is a method in which the number of pieces of product is set as the target value, while the product weight is set as the target in normal weighing. The weight of the product supplied to each weigh hopper is divided by the mean piece weight and converted to the number of pieces for combination.

### 8.3.1 Setting Items of Count Set Weighing

The [Count Setting] index screen of the [Preset] screen is used to configure the count set weighing settings. Setting items for the count set weighing are added to the [Preset] screen.

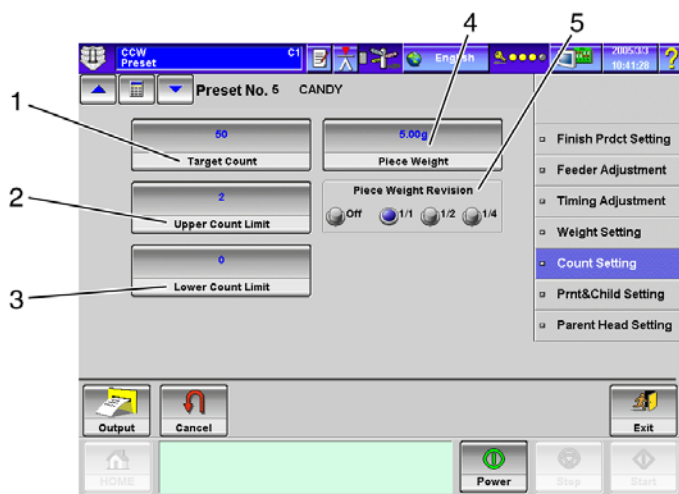






Fig.8-10 [Count Setting] Index Screen ([Preset] Screen)

Table 8-5 Items and Functions of [Count Setting] Index Screen

No.	Name	Function
1	[Target Count] key 	Sets the target number of pieces. <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block; margin-top: 10px;"><b>NOTE</b></div> <ul style="list-style-type: none"> <li>When not performing the count set weighing, set to “0”.</li> </ul>
2	[Upper Count Limit] key 	Sets the upper count limit which is the number of permissible pieces exceeding the target value. When the upper count limit is set to “0”, weighing results that exceed the target count are not accepted.
3	[Lower Count Limit] key 	Sets the lower count limit which is the number of permissible pieces below the target value. When the lower count limit is set to “0”, weighing results that fall below the target count are not accepted.

**Table 8-5 Items and Functions of [Count Setting] Index Screen (Continued)**

No.	Name	Function
4	[Piece Weight] key 	Sets the weight for a single piece of product. The number of pieces supplied to each hopper is calculated based on this piece weight value.
5	[Piece Weight Revision] radio button	Specifies whether the device automatically updates the piece weight ([1/1], [1/2], [1/4]) or not ([Off]). When set to [Off], the number of pieces supplied to each weigh hopper is calculated based on the specified piece weight value. When the piece weight varies, set this field to perform update so that the piece weight is automatically updated and the number of pieces supplied to each weigh hopper is calculated based on the updated piece weight value. Furthermore, there are three options for the update setting ([1/1], [1/2], and [1/4]) depending on the range to which the updated operation can be performed. Set this option to [1/1] in normal operation. [1/1]: Use this option if no error occurs in converting to the number of pieces when the target amount of product is supplied to one head. [1/2]: Use this option if no error occurs in converting to the number of pieces when half of the target amount of product is supplied to one head. [1/4]: Use this option if no error occurs in converting to the number of pieces when one quarter of the target amount of product is supplied to one head. <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block; margin-top: 10px;"><b>TIP</b></div> <ul style="list-style-type: none"> <li>• Refer to “8.3.2 Piece Weight Revision” for details regarding the piece weight update.</li> </ul>

**NOTE**

- In count set weighing, after the combination weighing is completed, the weighing result is checked to see if it is within “target weight + upper weight limit” and “target weight - lower weight limit”.

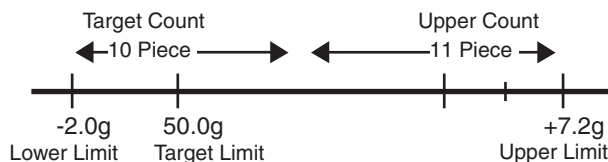
Products will not be discharged if the value is not within this range, so care must be taken in setting upper and lower weight limits. A setting example is shown below.

Example: When the target count is 10, the upper count limit is 1, and the piece weight is 5.00g (4.80 to 5.20g)

Target weight: 50g (5.00 × 10)

Lower weight limit: 2g (50.0 - 4.80 × 10)

Upper weight limit: 7.2g (5.20 × 11 - 50.0)



**TIP****Auto settings of [Target Count] / [Upper Count Limit] / [Lower Count Limit]**

- When entering the values for the target count, upper count limit, lower count limit, piece weight and piece weight revision, the target weight, upper weight limit and lower weight limit values are automatically set as follows. (Values other than "0" should be specified for the target count and piece weight.)

**Target weight** = Target count × Piece weight

**Upper weight limit** = Upper count limit × Piece weight + Piece weight / 2 (When the piece weight revision is set to [1/1])

= Upper count limit × Piece weight + Piece weight (When the piece weight revision is set to [1/2])

= Upper count limit × Piece weight + 2 × Piece weight (When the piece weight revision is set to [1/4])

= Upper count limit × Piece weight + 2 × Piece weight (When the piece weight revision is set to [Off])

**Lower weight limit** = Lower count limit × Piece weight + Piece weight / 2 (When the piece weight revision is set to [1/1])

= Lower count limit × Piece weight + Piece weight (When the piece weight revision is set to [1/2])

= Lower count limit × Piece weight + 2 × Piece weight (When the piece weight revision is set to [1/4])

= Lower count limit × Piece weight + 2 × Piece weight (When the piece weight revision is set to [Off])

Upper weight limit and lower weight limit values set by the auto calculation are not rechecked when the piece weight varies within the range where conversion to the number of pieces is performed without error.

**8.3.2 Piece Weight Revision**

When this function is activated, the piece weight is updated within the range where the device can recognize the number of pieces of product supplied to each weigh hopper automatically until the product amount reaches the target count.

This range is called the piece weight revision range.

Usually, the piece weight revision range can be calculated as follows, where:

TC: Target count

PW: Piece weight

PWRev: Piece weight revision (1/1, 1/2, 1/4)

$$PW (1 - (1 / (2TC \times PWRev))) < \text{Piece weight revision range} < PW (1 + (1 / (2TC \times PWRev)))$$

For example, the piece weight revision range can be calculated as follows, where:

Target count value: 20

Piece weight: 5g

Piece weight revision: 1/1

$$5 (1 - (1 / (2 \times 20 \times 1/1))) < \text{Piece weight revision range} < 5 (1 + (1 / (2 \times 20 \times 1/1)))$$

$$4.875g < \text{Piece weight revision range} < 5.125g$$

In this example, update operation will be automatically performed in every 5 cycles with the piece weight range between 4.875g and 5.125g. Also the number of pieces of product supplied into each hopper can be identified within the range between 1 and 20 (target count value).

If the updated piece weight exceeds the piece weight revision range, [PIECE WEIGHT ERROR] is displayed and the device stops the production.

Each piece weight revision range in this example is shown in “Table 8-6 Piece Weight Revision Range List”.

**Table 8-6 Piece Weight Revision Range List**

<b>Setting Value for Piece Weight Revision</b>	<b>Piece Weight Revision Range (Target count: 20, piece weight: 5g)</b>	<b>Recognition Range</b>
1/1	4.875g < Piece weight revision range < 5.125g	1 to 20
1/2	4.75g < Piece weight revision range < 5.25g	1 to 10
1/4	4.5g < Piece weight revision range < 5.5g	1 to 5

When the value for the piece weight revision is set to 1/1, the piece weight revision range is more restricted, but more products supplied into each hopper can be identified (maximum target count value). When set to 1/4, the piece weight revision range broadens, but the amount of products supplied into each hopper and identified by the device is more restricted.

### 8.3.3 Setting Procedures of Count Set Weighing

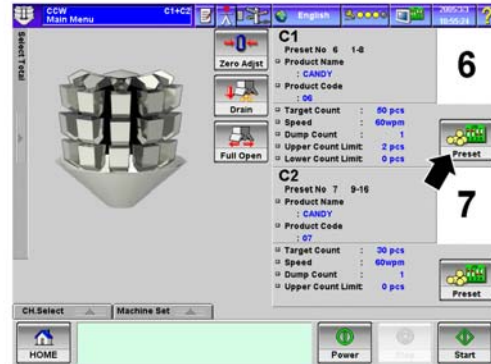
For setting the count set weighing, follow the procedures below.

1. On the [Main Menu] screen, press the [Preset]



key

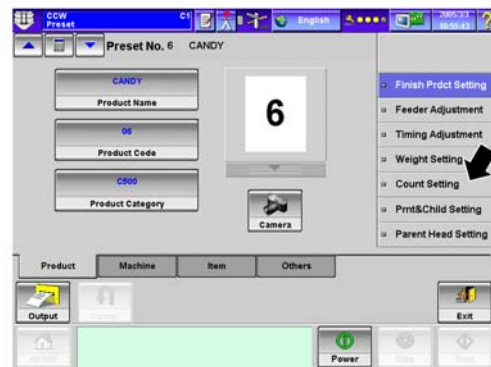
- ▶ The [Preset] screen appears.



**Fig.8-11 [Main Menu] Screen**


2. Press the [Count Setting] key in the index.

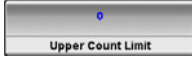
- ▶ The [Count Setting] index screen appears.





**Fig.8-12 [Preset] Screen**



3. Press the [Target Count] key , and input the numerical value with the [Numeric Keypad] screen displayed on the screen.


4. Press the [Upper Count Limit] key , and input the numerical value with the [Numeric Keypad] screen displayed on the screen.

5. Press the [Lower Count Limit] key , and input the numerical value with the [Numeric Keypad] screen displayed on the screen.

6. Press the [Piece Weight] key , and input the numerical value with the [Numeric Keypad] screen displayed on the screen.

7. Press the [Piece Weight Revision] radio button and select [Off], [1/1], [1/2], or [1/4].

▶ Set this option to [1/1] in normal operation.

8. Press the [Exit] key .

▶ The display returns to the [Main Menu] screen.



**Fig.8-13 [Count Setting] Index Screen ([Preset] Screen)**

### 8.3.4 [Select Display] Pop-up Menu (Count Set Weighing)

The count display of the [Combination Result Display] screen and the [Piece Weight Display] screen are added to the [Combination] tab screen for the count set weighing.

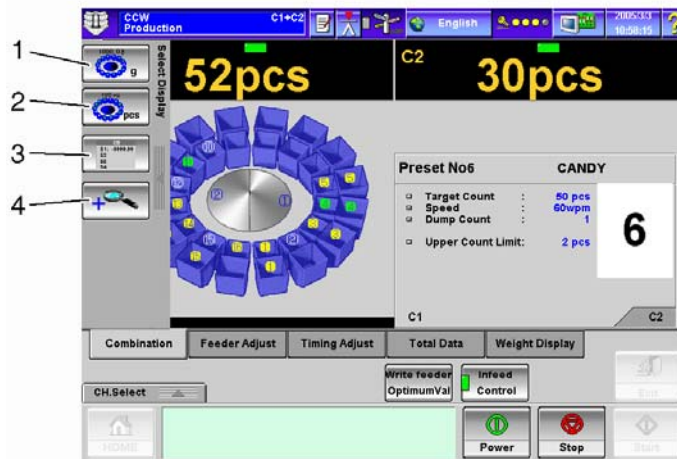


Fig.8-14 [Select Display] Pop-up Menu ([Production] Screen)

Table 8-7 [Select Display] Pop-up Menu in Count Setting [Combination] Screen



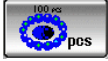
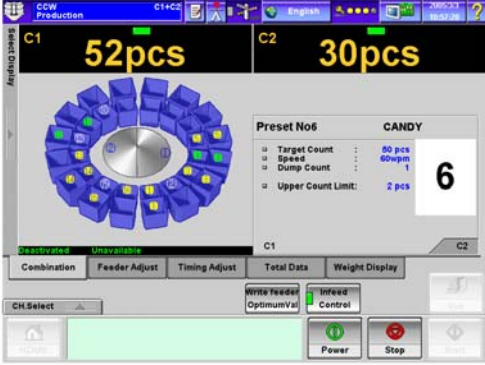



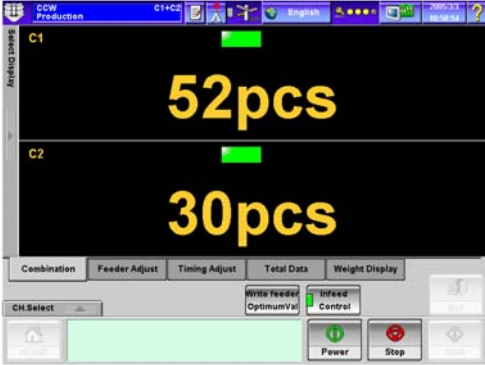
No.	Name	Function
1	[Combination Display] key (Weight display) 	Selects the weight display of the [Combination Result Display] screen. 

Fig.8-15 [Combination Result Display] Screen (Weight Display)

Table 8-7 [Select Display] Pop-up Menu in Count Setting [Combination] Screen (Continued)

No.	Name	Function
2	<p>[Combination Display] key (Count display)</p> 	<p>Selects the count display of the [Combination Result Display] screen.</p>  <p><i>Fig.8-16 [Combination Result Display] Screen (Count Display)</i></p>
3	<p>[Piece Weight] key</p> 	<p>Selects the [Piece Weight] screen.</p>  <p><i>Fig.8-17 [Piece Weight] Screen</i></p>
4	<p>[Expansion Display] key</p> 	<p>Selects [Expansion Display] of the [Combination] screen.</p>  <p><i>Fig.8-18 [Expansion Display] Screen</i></p>

### 8.3.5 Output During Count Set Production

During the count set weighing, output data display mode is changed from the weight display to the count display as shown in the following.

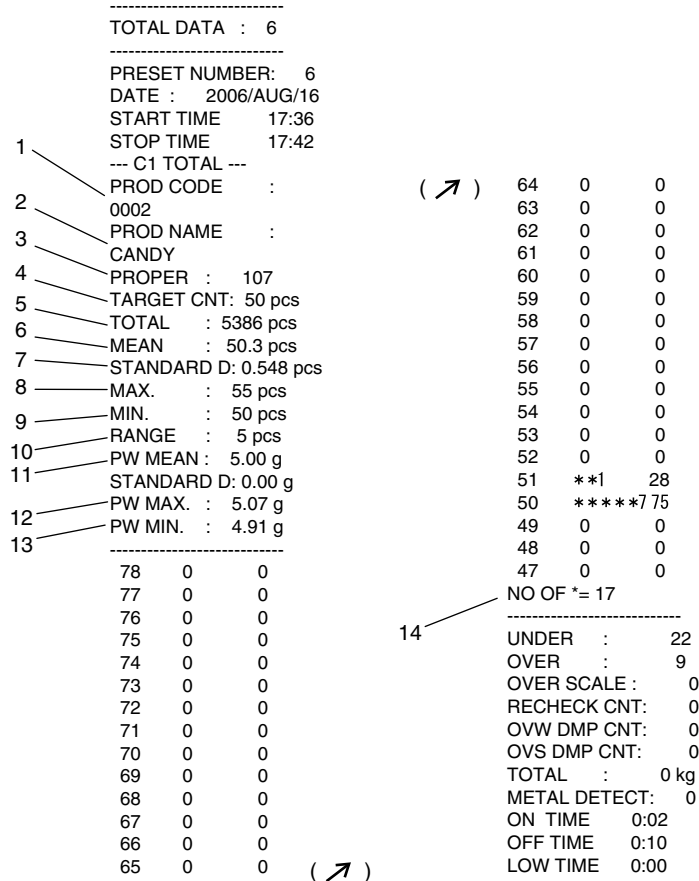


Fig.8-19 Current Total Output (Example)

Table 8-8 Output Details

No.	Name	Remarks
1	Product code	---
2	Product name	---
3	Proper weight	Number of times that the proper discharge is performed.
4	Target weight	---
5	Total value	Total discharged weight.
6	Mean value	---
7	Standard deviation	---

**Table 8-8 Output Details (Continued)**

No.	Name	Remarks
8	Maximum weight	—
9	Minimum weight	—
10	Weight range	(Maximum value) - (Minimum value)
11	Average piece weight	—
12	Maximum piece weight	—
13	Minimum piece weight	—
14	Quantity per * mark	Weighing results are displayed in order of weight value, histogram, and number of weighing times from the left. The number displayed in the histogram indicates a percentage of * (e.g. number $\times$ 10%). If a value of * = 18, when the number of weighing times is 45, it will be displayed as “**5” (18 + 18 + 18 $\times$ 50%).



## 9 CLEANUP PROCEDURES

### 9.1 Summary

This chapter describes cleaning procedures for each component. Clean the components properly, depending on weighed product types and dirt conditions. Before cleaning, drain any weighed products remaining in the device.  
(☞ 6.8 [Drain] Screen)

**WARNING**

- **When cleaning each component, the operator must turn OFF and lock the main power switch, and keep the key in his possession during the work.**
- 

**<Contents>**

- Cleaning procedures and cycle of the components

**<Purpose>**

To understand installation, removal, and cleaning procedures of the components in order to prevent foreign matter from entering the product and to maintain the hygiene of the device.

**<Intended reader>**

- Operators
- Maintenance engineers

## 9.2 Washing and Sterilization

Although the weigher has a water proof structure (IP-66), physical damage may occur if the weigher is washed outside the specified range or is incorrectly handled.

The maintenance supervisor should understand the washing methods, and check that the components are cleaned by the operators in accordance with the washing methods.

### WARNING

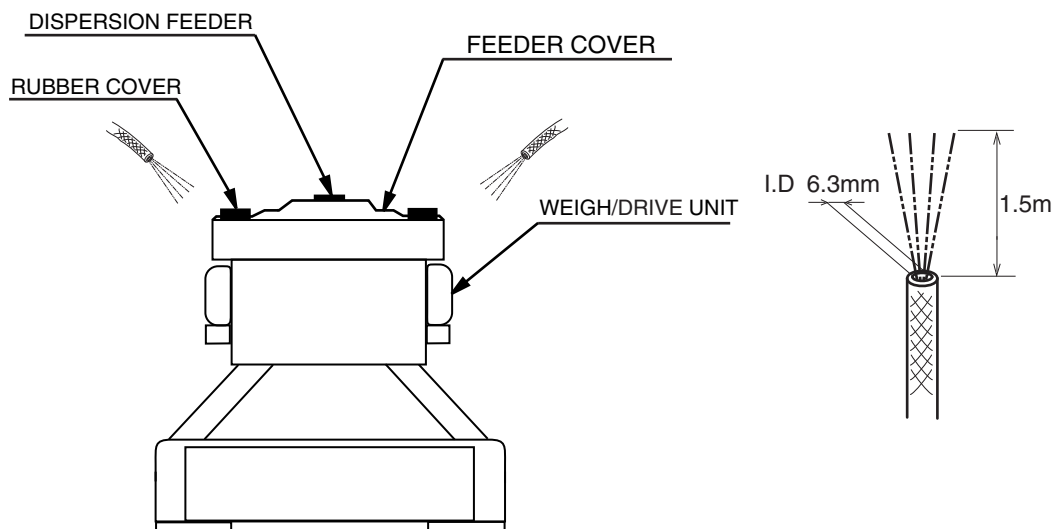
- Do not wash the components using any methods other than as instructed below.

### Washing and drying methods

This device consists of removable units and unremovable units.

For the cleaning of the removable units, always remove from the device, and wash and dry by following the relevant washing method described in “9.4.1 Washing Removable Unit”.

For the unremovable unit, wash and dry by following the relevant washing method described in “9.4.2 Cleaning the Unremovable Unit” and in accordance with the items below.



**Fig.9-1 Washing of Main Body**

1. Use a soft cloth to remove the residue from each component surface.
  2. Washing method
    - a. Wipe the surface first with a soft cloth soaked with the specified detergent (neutral detergent), and then with a damp cloth with water.
    - b. When using a hose, spray the specified detergent (neutral detergent), rinse with the following amount of water and wipe with a soft cloth.
- Use the hose with 6.3 mm in inner diameter. Set the water so that it rises up to 1.5 m when the hose end is directed upward.  
(Water volume that collects approximately 10.5 l/min at water pressure of approximately 18 kPa)



**CAUTION**

- Use a neutral detergent for washing. Choose a detergent that does not affect silicon materials.

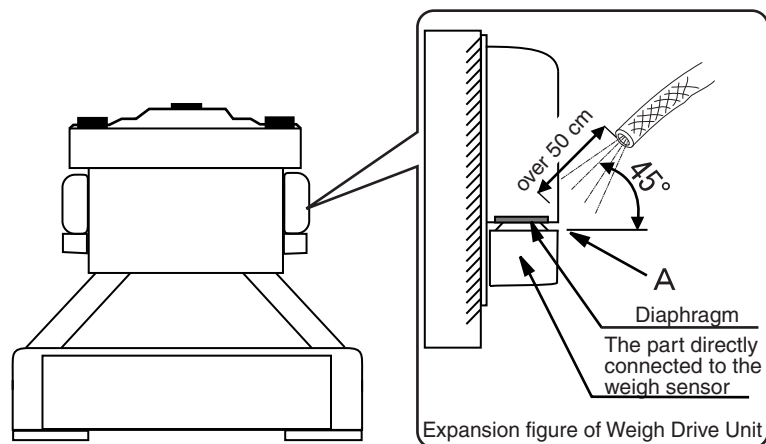
3. To dry after washing, wipe the surface with a soft cloth.
4. To prevent product residue from adhering, wash and dry the components daily.

**CAUTION**

- Avoid overload to the weigh drive unit and dispersion feeder. These components are interlocked to the weight sensor.
- For cleaning of the rubber cover installed on the feeder cover, do not use tools such as a brush or any tools with sharp parts.

**Washing and drying methods in the vicinity of the weigh drive unit**

The previous section described the washing and drying methods for the unremovable units. As for the weigh drive unit, especially because precision parts are installed around the unit, wash and dry following the precautions below, in addition to the washing and drying methods for components.



**Fig.9-2 Washing of Weigh Drive Unit**

Maintain a hose angle of approximately 45° during washing, and keep a distance of 50 cm or more from the components.

**NOTE**

- At position A in the above drawing, a diaphragm is connected to the weight sensor. This part is extremely sensitive. When any washing method other than instructed is used, malfunctions may occur due to liquid intrusion.
1. Do not use air apparatus with nozzles to dry out position A. It may break the diaphragm.
  2. Do not use tools such as a brush or any tools with sharp parts to dry out position A. It may break the diaphragm.

## 9.3 Washing and Sterilization Methods

The recommended standard methods for washing and sterilizing are described in “Table 9-1 Washing and Sterilizing Methods”.

For the details of each component, read “9.4 Washing and Sterilizing of Components” thoroughly.

**CAUTION**

- **Washing and sterilizing methods differ depending on product types, processing methods, and bacterial conditions.**  
**Create a washing and sterilization manual, and perform washing and sterilization work daily. For creating a manual, refer to Table 9-1.**  
**For details, contact the distributor or Ishida customer support.**
- **For the unremovable units and parts, washing and sterilization methods differ depending on the machine specifications (mainly the specifications of waterproof and dustproof construction).**  
**This can be verified by determining whether the name of your device ends with “WP”, “PB” or “SS”.**  
**For details, contact the distributor or Ishida customer support.**  
**[Example]**  
**CCW-R-\*-WP: equivalent to IP66**  
**CCW-R-\*-PB, SS: equivalent to IP50**
- **After washing and sterilization, always dry. Failure to do so may cause microorganism development.**
- **If spot welding causes the development of bacteria, contact the distributor or Ishida customer support.**

Table 9-1 Washing and Sterilizing Methods

Unit and Parts		Washing method	Sterilization method
<p>&lt;Removable unit&gt;</p> <ul style="list-style-type: none"> <li>• Inlet chute</li> <li>• Dispersion table</li> <li>• Radial trough</li> <li>• Pool hopper</li> <li>• Weigh hopper</li> <li>• Booster hopper</li> <li>• Collection chute</li> <li>• Discharge chute</li> <li>• Timing hopper</li> </ul>		<p>&lt;Immersion cleaning&gt;</p> <p>Soak the unit and parts in the specified detergent (neutral detergent). After removing, brush and rinse with water.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Use a soft brush.</li> </ul>	<p>&lt;Immersion sterilization&gt;</p> <p>Soak the unit and parts in warm water or disinfectant for sterilization, then rinse with water and dry.</p> <ol style="list-style-type: none"> <li>1. Warm water Soak approximately 30 minutes in 80 to 90 deg C water.</li> <li>2. Disinfectant Soak approximately 20 minutes in sodium hypochlorite (available chlorine concentration 250 ppm, 20 to 25 deg C).</li> </ol>
<p>&lt;Unremovable unit&gt;</p> <ul style="list-style-type: none"> <li>• Dispersion feeder</li> <li>• Dispersion cover</li> <li>• Weigh drive unit</li> <li>• Main body, parts other than above</li> <li>• Remote control unit</li> </ul>	<p>WP specification (IP66)</p>	<p>&lt;Brushing wash or wipe wash&gt;</p> <ol style="list-style-type: none"> <li>1. Brushing wash Using a brush with the specified detergent (neutral detergent), brush the surface, and then wipe with a damp cloth in water.</li> <li>2. Wiping wash Wipe with a cloth with the specified detergent (neutral detergent), and then wipe with a damp cloth in water.</li> </ol> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Use a soft brush.</li> <li>• For the remote control unit, wipe wash only.</li> <li>• Do not use a brush to the rubber cover of the radial feeder.</li> <li>• Avoid overload to the dispersion feeder and the weigh hopper hanger portion of the weigh drive unit. These components are interlocked to the weight sensor.</li> </ul>	<p>&lt;Spray sterilization or wipe sterilization&gt;</p> <ol style="list-style-type: none"> <li>1. Spray sterilization Spray the disinfectant by a sprayer.</li> <li>2. Wiping sterilization Wipe with a cloth with disinfectant. * Disinfectant</li> </ol> <ul style="list-style-type: none"> <li>• Sodium hypochlorite (available chlorine concentration 250 ppm)</li> <li>• Alcohol: 80% only</li> </ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Avoid overload to the dispersion feeder and the weigh hopper hanger portion of the weigh drive unit. These components are interlocked to the weight sensor.</li> <li>• For the remote control unit, wipe and sterilize with alcohol: 80% only.</li> <li>• After sterilizing, dry out.</li> </ul>

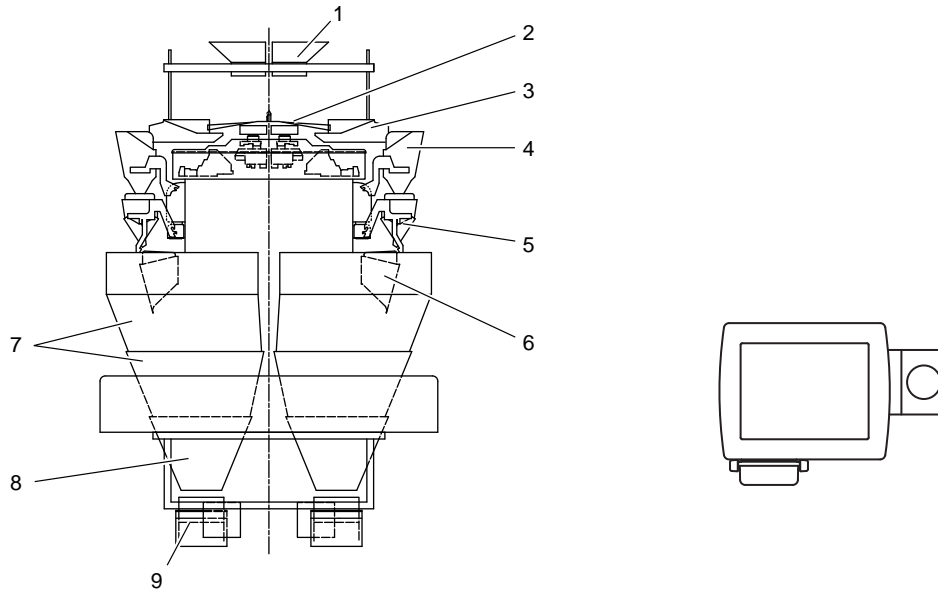
Table 9-1 Washing and Sterilizing Methods (Continued)

Unit and Parts		Washing method	Sterilization method
<p>&lt;Unremovable unit&gt;</p> <ul style="list-style-type: none"> <li>• Dispersion feeder</li> <li>• Dispersion cover</li> <li>• Weigh drive unit</li> <li>• Main body, parts other than above</li> <li>• Remote control unit</li> </ul>	<p>PB, SS specification (IP50)</p>	<p>&lt;Wipe wash&gt;</p> <p>1. Wiping wash</p> <p>Wipe with a cloth with the specified detergent (neutral detergent), and then wipe with a damp cloth in water.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Avoid overload to the dispersion feeder and the weigh hopper hanger portion of the weigh drive unit. These components are interlocked to the weight sensor.</li> </ul>	<p>&lt;Wipe sterilization&gt;</p> <p>1. Wiping sterilization</p> <p>Wipe with a cloth with disinfectant.</p> <ul style="list-style-type: none"> <li>* Disinfectant</li> <li>• Alcohol: 80%<sub>v/v</sub></li> </ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Avoid overload to the dispersion feeder and the weigh hopper hanger portion of the weigh drive unit. These components are interlocked to the weight sensor.</li> <li>• After sterilizing, dry out.</li> </ul>

## 9.4 Washing and Sterilizing of Components

This section describes how to wash and sterilize components.

### 9.4.1 Washing Removable Unit



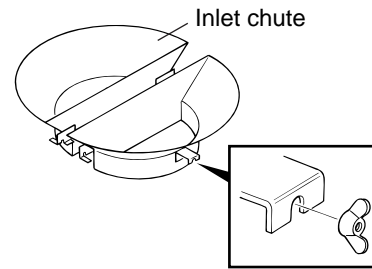
**Fig.9-3 Removable Unit and Parts**

**Table 9-2 Removable Unit and Parts List**

No.	Name
1	Inlet Chute
2	Dispersion table
3	Radial trough
4	Pool hopper
5	Weigh hopper
6	Booster hopper
7	Collection chute
8	Discharge chute
9	Timing hopper

### 9.4.1.1 Inlet Chute

1. Loosen the butterfly nut to remove the inlet chute.
2. After washing and sterilizing, dry. (For the washing and sterilization methods, refer to “Table 9-3 Washing and Sterilization Methods of Inlet Chute”)
3. Reinstall in the reverse order of the removal.
4. Make sure the inlet chute is installed securely.



**Fig.9-4 Inlet Chute**

**Table 9-3 Washing and Sterilization Methods of Inlet Chute**

Washing method	Immersion cleaning (Neutral detergent)
Sterilization method	Immersion sterilization. Warm water (80 to 90 deg C): 30 minutes. Or, sodium hypochlorite (available chlorine concentration 250 ppm): 20 minutes.

### 9.4.1.2 Dispersion Table

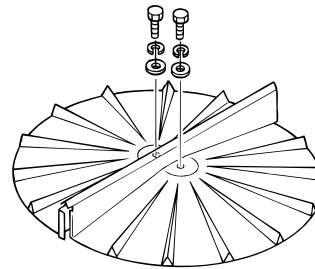
**CAUTION**

- **When cleaning the dispersion table, do not push it down. Doing so may damage the weight sensor.**

1. Remove the hexagon bolts from the dispersion table, and remove the dispersion table from the device.

**WARNING**

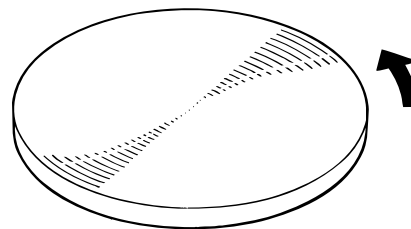
- **For the separate type dispersion table, the operator should not perform this procedure.**



*Fig.9-5 Separate Type Dispersion Table*

**NOTE**

- For the non-separate type dispersion table, turn the dispersion table counterclockwise (turn to the left) to remove.



*Fig.9-6 Non-separate Type Dispersion Table*

2. After washing and sterilizing, rinse with water and dry. (For the washing and sterilization methods, refer to “Table 9-4 Washing and Sterilization Methods of Dispersion Table”.)
3. Reinstall in the reverse order of the removal.
4. Make sure the dispersion table is installed securely.

**NOTE**

- Perform the installation of the dispersion table after installing the radial troughs.

**Table 9-4 Washing and Sterilization Methods of Dispersion Table**

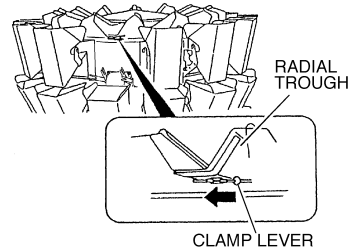
Washing method	Immersion cleaning (Neutral detergent)
Sterilization method	Immersion sterilization. Warm water (80 to 90 deg C): 30 minutes. Or, sodium hypochlorite (available chlorine concentration 250 ppm): 20 minutes.

### 9.4.1.3 Radial Trough

**NOTE**

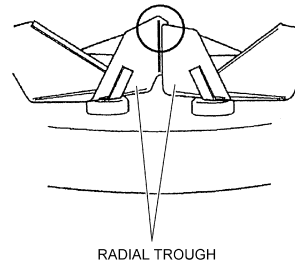
- Remove the radial troughs after removing the pool hoppers.

- Pull up the clamp lever at the bottom of the radial trough, and remove the radial trough.
- After washing and sterilizing, rinse with water and dry. (For the washing and sterilization methods, refer to “Table 9-5 Washing and Sterilization Methods of Radial Trough”)



**Fig.9-7 Radial Trough Removal**

- Reinstall in the reverse order of the removal.
- Make sure the radial troughs are not touching each other.
- If there is any contact, repeat installation so that they do not touch each other.



**Fig.9-8 Radial Trough Installation**

**Table 9-5 Washing and Sterilization Methods of Radial Trough**

Washing method	Immersion cleaning (Neutral detergent)
Sterilization method	Immersion sterilization Warm water (80 to 90 deg C): 30 minutes. Or, sodium hypochlorite (available chlorine concentration 250): 20 minutes.



### 9.4.1.4 Pool Hopper, Weigh Hopper, and Booster Hopper

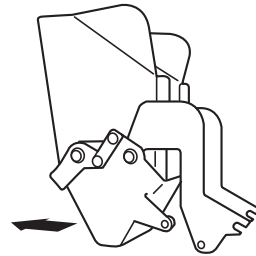
#### CAUTION

- When installing and removing the weigh hopper, do not apply an excessive load. Doing so may damage the weight sensor.

#### NOTE

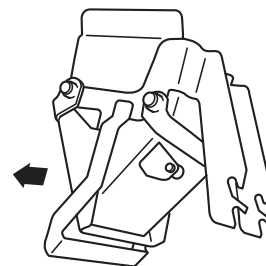
- When installing and removing the hoppers, securely support the side of the hoppers with both hands.

1. Pull the pool hopper forward to remove.



**Fig.9-9 Pool Hopper Removal**

2. Pull the weigh hopper forward to remove.

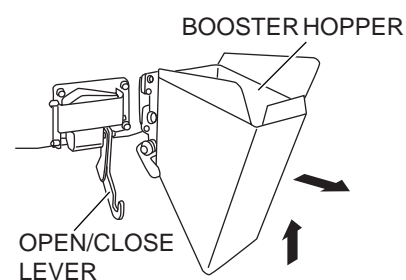


**Fig.9-10 Weigh Hopper Removal**

#### NOTE

- Remove the booster hopper before removing the collection chute.

3. Hold the side of the booster hopper, and slightly lift and pull the hopper to remove.



**Fig.9-11 Booster Hopper Removal**

4. After washing and sterilizing, rinse with water and dry. (For the washing and sterilization methods, refer to “Table 9-6 Washing and Sterilization Methods of Pool Hopper, Weigh Hopper, and Booster Hopper”)

**NOTE**

- When the radial troughs are removed, install them first.

5. Reinstall in the reverse order of the removal.
6. Make sure the roller of each hopper fits into the switching lever.
7. If not, install it again.

**Table 9-6 Washing and Sterilization Methods of Pool Hopper, Weigh Hopper, and Booster Hopper**

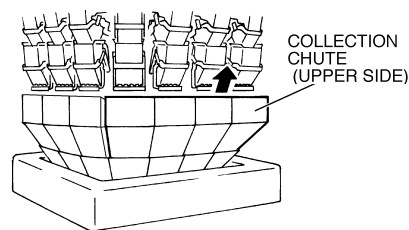
Washing method	Immersion cleaning. (Neutral detergent)
Sterilization method	Immersion sterilization. Warm water (80 to 90 deg C): 30 minutes. Or, sodium hypochlorite (available chlorine concentration 250 ppm): 20 minutes.

**9.4.1.5 Collection Chute**

**NOTE**

- Install the collection chute after installing the discharge chute.

1. Pull up the collection chute upper portion, and lift up to remove.
2. After washing and sterilizing, rinse with water and dry. (For the washing and sterilization methods, refer to “Table 9-7 Washing and Sterilization Methods of Collection Chute”)
3. Reinstall in the reverse order of the removal.
4. Make sure that the collection chute is securely installed.



**Fig.9-12 Collection Chute Removal**

**Table 9-7 Washing and Sterilization Methods of Collection Chute**

Washing method	Immersion cleaning. (Neutral detergent)
Sterilization method	Immersion sterilization. Warm water (80 to 90 deg C): 30 minutes. Or, sodium hypochlorite (available chlorine concentration 250 ppm): 20 minutes.

### 9.4.1.6 Discharge Chute

**NOTE**

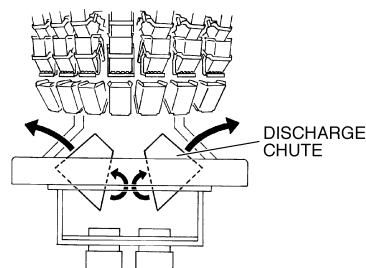
- Remove the discharge chute after removing the collection chute.
- Removal procedures of the discharge chute differ depending on the devices.

1. Lift up the discharge chute, and remove between the legs.  
 For the type that the discharge chute cannot be removed between the legs, remove the timing hopper first, and then remove the discharge chute from underneath. (Refer to 9.4.1.7 Timing Hopper)

2. After washing and sterilizing, rinse with water and dry. (For the washing and sterilization methods, refer to “Table 9-8 Washing and Sterilization Methods of Discharge Chute”)

3. Reinstall in the reverse order of the removal.

4. Make sure the discharge chute is installed securely.



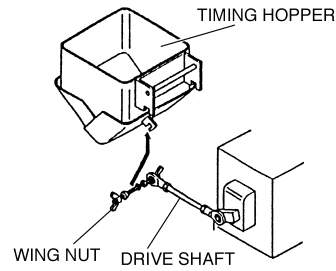
**Fig.9-13 Discharge Chute Removal**

**Table 9-8 Washing and Sterilization Methods of Discharge Chute**

Washing method	Immersion cleaning. (Neutral detergent)
Sterilization method	Immersion sterilization. Warm water (80 to 90 deg C): 30 minutes. Or, sodium hypochlorite (available chlorine concentration 250 ppm): 20 minutes.

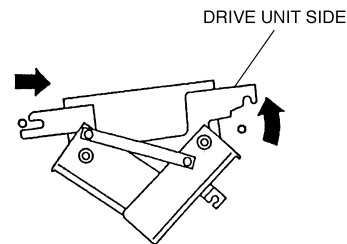
### 9.4.1.7 Timing Hopper

1. Loosen the butterfly nut of the drive shaft, and disconnect the timing hopper from the drive unit.



**Fig.9-14 Timing Hopper Overview**

2. Slightly lift the drive unit side of the timing hopper, and remove the timing hopper.
3. After washing and sterilizing, rinse with water and dry. (For the washing and sterilization methods, refer to “Table 9-9 Washing and Sterilization Methods of Timing Hopper”)
4. Reinstall in the reverse order of the removal.
5. Make sure the timing hopper is installed securely.

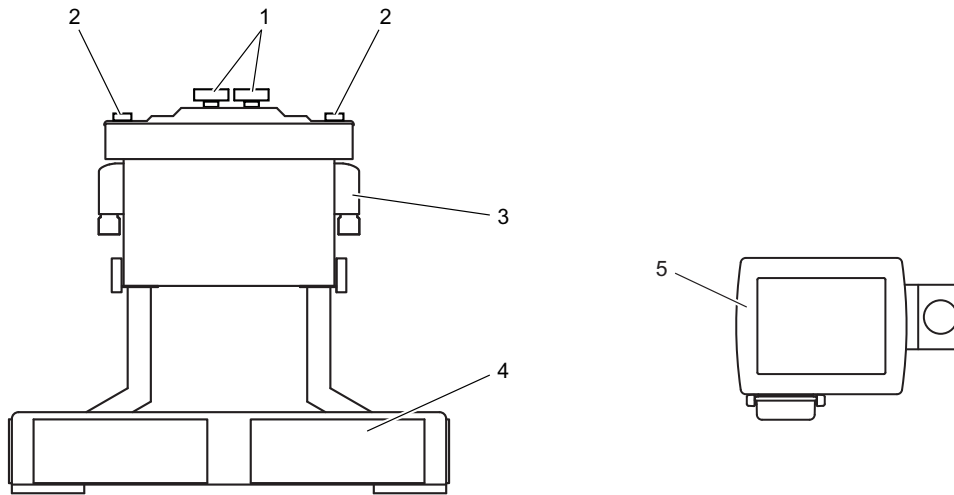


**Fig.9-15 Timing Hopper Removal**

**Table 9-9 Washing and Sterilization Methods of Timing Hopper**

Washing method	Immersion cleaning. (Neutral detergent)
Sterilization method	Immersion sterilization. Warm water (80 to 90 deg C): 30 minutes. Or, sodium hypochlorite (available chlorine concentration 250 ppm): 20 minutes.

### 9.4.2 Cleaning the Unremovable Unit



**Fig.9-16 Unremovable Unit and Parts**

**Table 9-10 Unremovable Unit and Parts List**

No.	Name	Reference
1	Rubber cover of the dispersion feeder	9.4.2.1 Main Body, Dispersion Portion, and Drive Unit
2	Rubber cover of the radial feeder	9.4.2.1 Main Body, Dispersion Portion, and Drive Unit
3	Drive unit	9.4.2.1 Main Body, Dispersion Portion, and Drive Unit
4	Main body	9.4.2.1 Main Body, Dispersion Portion, and Drive Unit
5	Remote control unit	9.4.2.2 Remote Control Unit

### 9.4.2.1 Main Body, Dispersion Portion, and Drive Unit

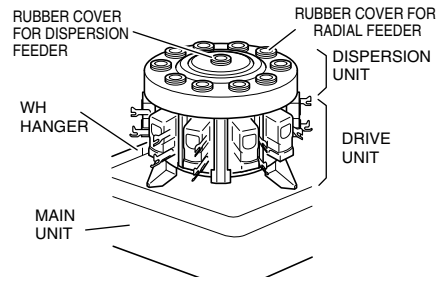
**CAUTION**

- The precautions on washing of the main body and drive portion are shown in “9.2 Washing and Sterilization”. Wash and dry following the instructions.
- 

**NOTE**

- Do not use a brush to wash the rubber covers of the dispersion feeder and radial feeder.
  - Avoid overload to the dispersion feeder and WH hanger. These components are interlocked to the weight sensor.
-

1. Remove the parts below by following the procedures in 9.4.1.1 to 9.4.1.7.
  - Inlet chute
  - Dispersion table
  - Radial trough
  - Pool hopper
  - Weigh hopper
  - Booster hopper
  - Collection chute
  - Discharge chute
  - Timing hopper
2. In accordance with the specifications, wash, sterilize and dry the device. (For the washing and sterilization methods, refer to “Table 9-11 Washing and Sterilization Methods of Main Body, Dispersion Portion, and Drive Portion (WP Specification)” and “Table 9-12 Washing and Sterilization Methods of Main Body, Dispersion Portion, and Drive Portion (PB, SS Specification)”)
3. Reinstall in the reverse order of the removal.
4. Make sure that each part is installed securely.



**Fig.9-17 Main Body, Dispersion Portion, and Drive Portion**

**Table 9-11 Washing and Sterilization Methods of Main Body, Dispersion Portion, and Drive Portion (WP Specification)**

Washing method	Brushing wash or wipe wash. (Neutral detergent)
Sterilization method	Spray sterilization or wipe sterilization. Alcohol: 80% <sub>v/v</sub> . Or, sodium hypochlorite (available chlorine concentration 250 ppm).

**Table 9-12 Washing and Sterilization Methods of Main Body, Dispersion Portion, and Drive Portion (PB, SS Specification)**

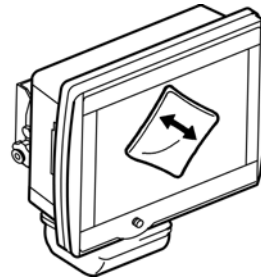
Washing method	Wipe wash. (Neutral detergent)
Sterilization method	Wipe sterilization. Alcohol: 80% <sub>v/v</sub> .

### 9.4.2.2 Remote Control Unit

#### CAUTION

- Do not rub hard or use adhesive tape to remove dirt when cleaning the operation screen.
- Do not clean the operation screen with organic solvents such as thinner or benzin.
- Do not pour detergent directly over the operation screen.

1. After washing and sterilizing, wipe with a damp cloth in water and dry. (For the washing and sterilization methods, refer to “Table 9-13 Washing and Sterilization Methods of Remote Control Unit”)

**Fig.9-18 Remote Control Unit Cleaning****Table 9-13 Washing and Sterilization Methods of Remote Control Unit**

Washing method	Wipe wash. (Neutral detergent)
Sterilization method	Wipe sterilization. Alcohol: 80% <sub>v/v</sub> .



# 10 MAINTENANCE AND INSPECTION

## 10.1 Summary

This chapter describes the maintenance and inspection procedures in order to maintain the weighing machine in good condition.



- **For maintenance and inspections, unless instructed, the operator must turn OFF and lock the main power switch, and keep the key in his possession during the work.**
- 

### <Contents>

- Daily inspection and periodical inspection
- Adjustment of components

### <Purpose>

- To understand the inspection and adjustment procedures for the components in order to maintain the weighing machine in good condition and prevent loss of production.

### <Intended reader>

- Operators
- Maintenance engineers

## 10.2 Daily Inspection

This section describes the daily inspection items.

### 10.2.1 Pre-start Inspection

Perform the following pre-start inspection before production.




#### WARNING

- **If any part of the weighing machine is not securely installed, it may fall due to vibration during the production and may damage the weighing machine or injure personnel.**

#### NOTE

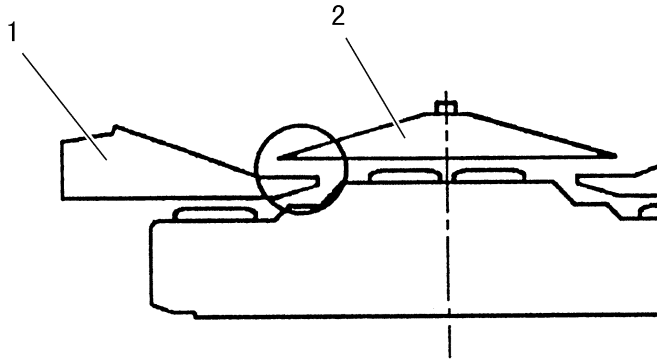
- The installation methods for each part are explained in “12.4 Installation Procedure”.

**Table 10-1 Pre-start Inspection List**

Inspection Item	Inspection detail
Weighing machine and vicinity of weighing machine	Make sure that tools and any other irrelevant objects are not placed on top of or in the vicinity of the weighing machine.
Installing dispersion table	Make sure that the dispersion table is securely installed with no play.
Interference between dispersion table and radial trough	Make sure that the dispersion table does not make contact with the radial troughs. (  10.2.1.1 Dispersion table)
Interference between radial troughs	Make sure the radial troughs are not touching each other. (  10.2.1.2 Radial trough)
Installing hoppers	Make sure that the roller of each hopper securely fits into the U-shape groove of the switching lever.
Installing collection chute	Make sure that the collection chute is securely installed.
Installing timing hopper	Make sure that the timing hopper and the drive unit are securely connected with the drive lever.
Confirming the dew-point checker of the air dryer(WP specification)	Confirm performance of the air dryer by checking the grain color of the dew point checker. (  10.2.1.3 Confirming the dew-point checker of the air dryer (WP specification))

### 10.2.1.1 Dispersion table

For interference between the dispersion table and radial trough, check the circled portion shown in the figure below.



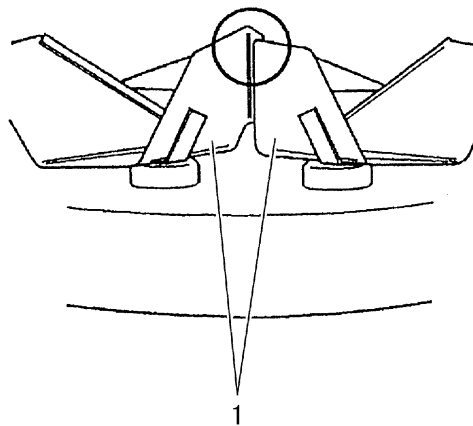
**Fig.10-1 Dispersion Table Partial View**

**Table 10-2 Names of Dispersion Table Parts**

No.	Name
1	Radial trough
2	Dispersion table

### 10.2.1.2 Radial trough

For interference between the radial troughs, check the circled portion shown in figure below.



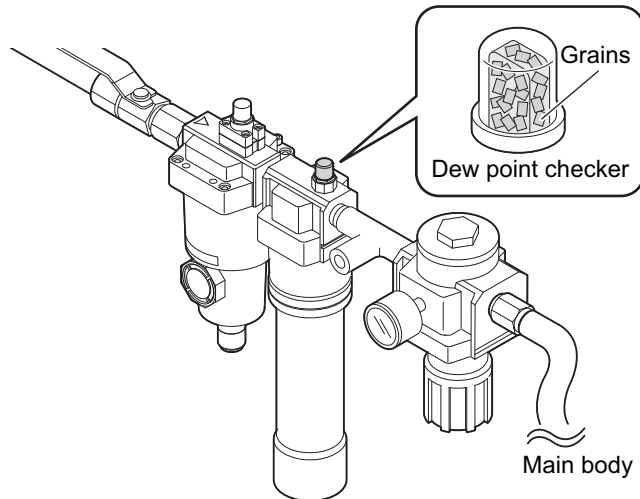
**Fig.10-2 Radial Trough Partial View**

**Table 10-3 Names of the Radial Trough Parts**

No.	Name
1	Radial trough

### 10.2.1.3 Confirming the dew-point checker of the air dryer (WP specification)

Confirm performance of the air dryer by checking the grain color of the dew point checker. When the color is blue, the performance is normal. When the color is either pink, white, or brown, the performance is degraded. Refer to “11.4 Troubleshooting” for detailed handling.













#### NOTE

- It takes about an hour from starting to supplying the air to the reaction of the grain color.

## 10.3 Periodical Inspection

Perform maintenance and inspections by following “Table 10-4 Periodical Inspection Items” in order to maintain the weighing machine in good condition and enhance the product efficiency.

**Table 10-4 Periodical Inspection Items**


<b>Inspection Item</b>	<b>Cycle</b>	<b>Reference Section</b>
Inspection of the span	Monthly	 10.3.1 Inspection of Span (Monthly)
Inspection of the open/close for each hopper gate	Monthly	 10.3.3 Inspection of Open/Close for Hopper Gate (Monthly)
Inspection of the open/close roller for each hopper	Monthly	 10.3.4 Inspection of Open/Close Roller for Hopper (Monthly)
Inspection of the amplitude strength for radial feeder	Monthly	 10.3.5 Inspection of Amplitude Strength for Radial Feeder (Monthly)
Inspection for cracks	Annually	 10.3.6 Inspection for Cracks (Annually)
Inspection of the rubber cover	Annually	 10.3.7 Inspection of Rubber Cover (Annually)
Replacement of the memory backup battery	Approx. every five years	 10.3.8 Replacement of Memory Backup Battery
Replacement of fuses	As needed	 10.3.9 Replacement of Fuses
Replacement of the air dryer element(WP specification)	Annually	 10.3.10 Replacement of the Air Dryer Element (WP specification)
Replacement of the air dryer module set(WP specification)	Annually	 10.3.11 Replacement of the Air Dryer Module Set (WP specification)

### 10.3.1 Inspection of Span (Monthly)

The [Zero Adjustment] screen is used to check the span.

**NOTE**

- Make sure the control unit power switch is ON. If not, press the [Power]

key  to turn the control unit power switch ON.

1. On the [Main Menu] screen, press the [Zero Adjst] key .

- ▶ The [Zero Adjustment] screen appears.
- ▶ All hoppers are selected and displayed in blue.

2. Press the [Start] key .

- ▶ The message “Please wait a moment.” appears on the screen, and zero adjustment starts.

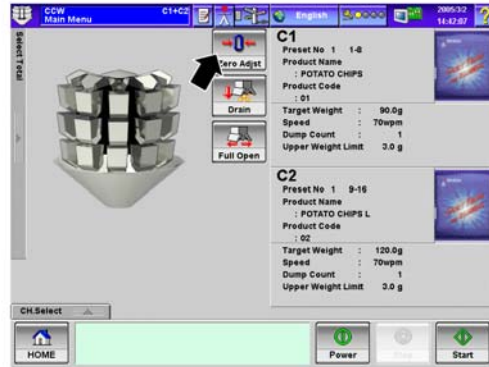


Fig.10-3 [Main Menu] Screen

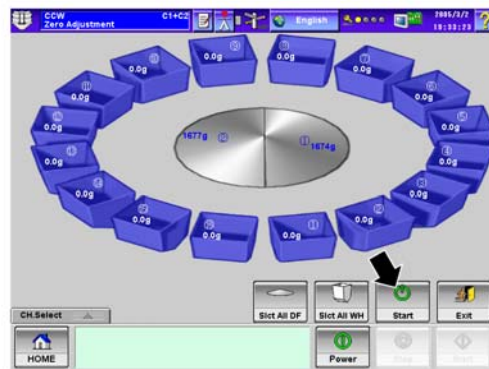


Fig.10-4 [Zero Adjustment] Screen

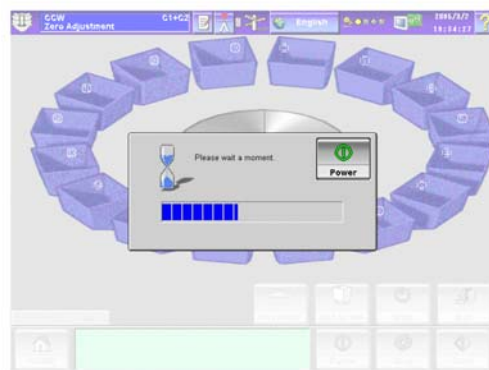


Fig.10-5 [Zero Adjustment] Screen (In Progress)

- ▶ When zero adjustment operation finishes, each head displays the respective weight.
3. Make sure that weight display of each head is within  $0.0 \pm 0.1$ g.

**NOTE**

- If the weight display reading exceeds 0.1g or falls below -0.1g, perform the zero adjustment again.
- Pressing each [Head] key on the screen can switch the hopper status to selected or unselected.



Fig.10-6 [Zero Adjustment] Screen (On Completion)

4. Place the span adjustment weight on all of the weigh hoppers.

**NOTE**

- Make sure that the weight does not make contact with other portions.
- Normally the span adjustment weight is 200g. However, it may vary depending on the weighing machine specifications.

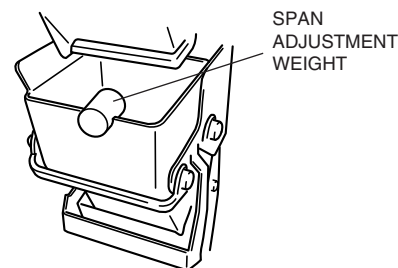



Fig.10-7 Weigh Hopper

- ▶ The weight of each head is displayed.
- ▶ Make sure that weight display of each head is  $200.0 \pm 0.1$ g.

**NOTE**

- If the weight display exceeds 200.1g or falls below 199.9g, perform the span adjustment.  
(☞ 10.3.2 Span Adjustment)

5. Remove the span adjustment weight.

6. Press the [Exit] key .

- ▶ The screen previously displayed appears.
- ▶ The inspection for span is completed.



**Fig.10-8 [Zero Adjustment] Screen**



### 10.3.2 Span Adjustment

**NOTE**

- The span adjustment is performed by the [Site Engineer] or higher level personnel.

The span adjustment is performed in order to store the weight with the span adjustment weight (normally 200g/piece) set to the weigh hopper, into the weighing instrument as 200.0g. It needs to be adjusted when the weight display shows outside the specified value at the span inspection.

For the span adjustment, follow the procedures below.

1. Check that there are no objects in the weigh hopper.
2. Display the [Main Menu] screen for the [Site Engineer] level or higher.
3. Press the [Machine Set] pop-up key



- ▶ The [Machine Set] pop-up menu appears.

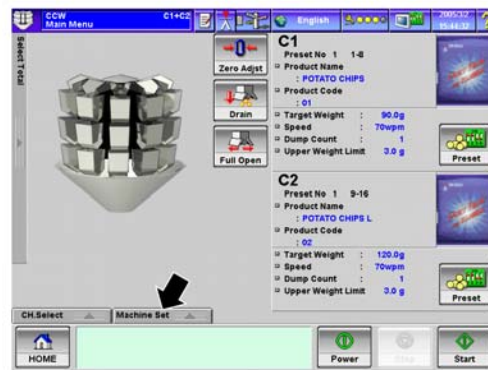


Fig.10-9 [Main Menu] Screen

4. Select [Manual Adjustment].
  - ▶ The [Manual Adjustment] screen appears.
5. If the [Weighing Adjst] tab is not selected, press the [Weighing Adjst] tab.
  - ▶ The weight of each head is displayed.

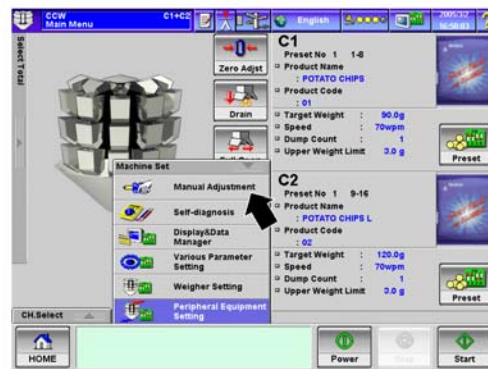


Fig.10-10 [Machine Set] Pop-up Menu

6. To perform the zero adjustment for all weigh hoppers, press [All Head SLCT/CLR] key.

- ▶ All [Head] keys are displayed in blue.

**TIP**

- To perform the zero adjustment for the selected weigh hopper, press the [Head] key of the relevant hopper.



**Fig.10-11 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

7. Press the [Zero Adjst] key .

- ▶ The zero adjustment will begin.
- ▶ The display of the zero-adjusted [Head] key becomes normal, and the weight is displayed.

8. Make sure that the weight display is  $0.0 \pm 0.1g$ .

- ▶ The zero adjustment is completed.

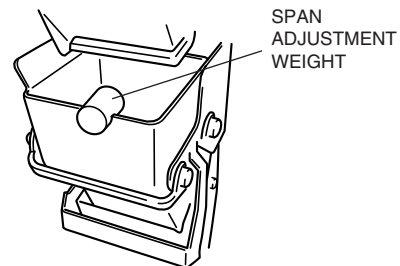


**Fig.10-12 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

**NOTE**

- Make sure that the span adjustment weight does not make contact with other portions.

9. Place the span adjustment weight (normally 200g/piece) on the weigh hopper that needs the span adjustment.



**Fig.10-13 Weigh Hopper**

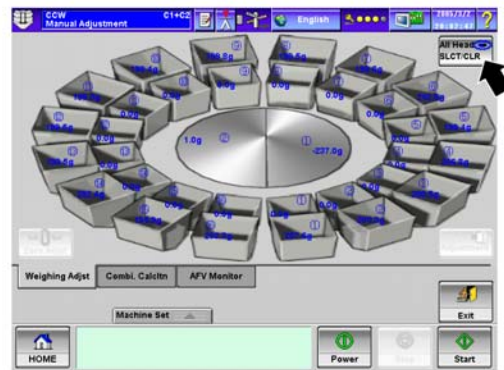
10. To perform the span adjustment for all the weigh hoppers, press the [All Head SLCT/CLR]



► All [Head] keys are displayed in blue.

**TIP**

- To perform the span adjustment for the selected weigh hopper, press the [Head] key of the relevant hopper.



**Fig.10-14 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

11. Press the [WH Span Adjustment] key



- The span adjustment starts.
- The display of the span-adjusted [Head] key becomes normal, and the weight is displayed.

12. If the weight display exceeds 200.1g or falls below 199.9g, perform the span adjustment, following steps 10 and 11.



**Fig.10-15 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

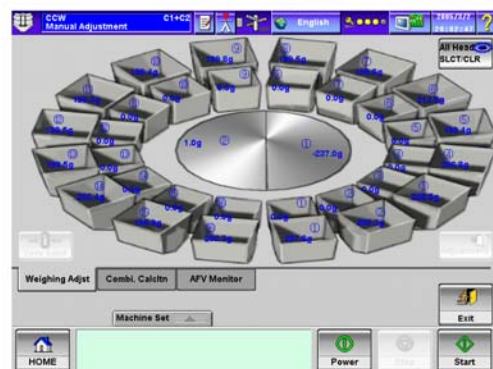
13. When the weight display is within 200.0±0.1g, remove the span adjustment weight from the weigh hopper.

14. Perform the zero adjustment (steps 6 to 8).

15. Press the [Exit] key



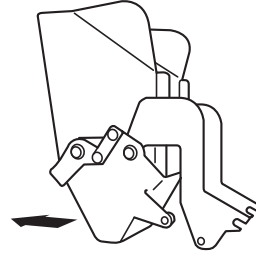
- The [Main Menu] screen appears.
- The span adjustment is completed.



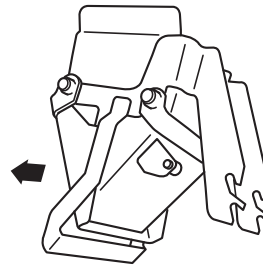
**Fig.10-16 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

### 10.3.3 Inspection of Open/Close for Hopper Gate (Monthly)

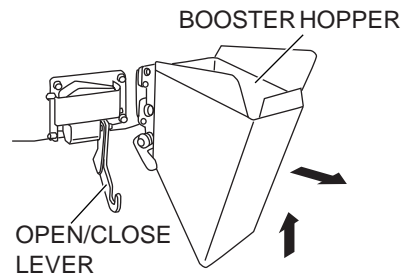
1. Remove the pool hopper, weigh hopper, and booster hopper.



**Fig.10-17 Pool Hopper Removal**

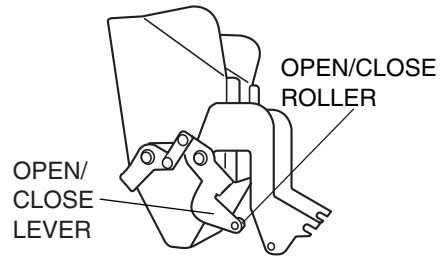


**Fig.10-18 Weigh Hopper Removal**

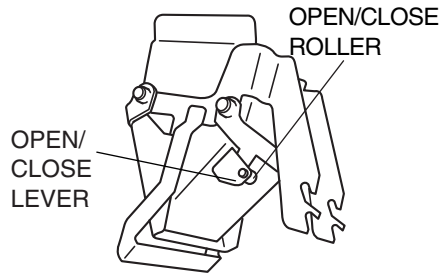


**Fig.10-19 Booster Hopper Removal**

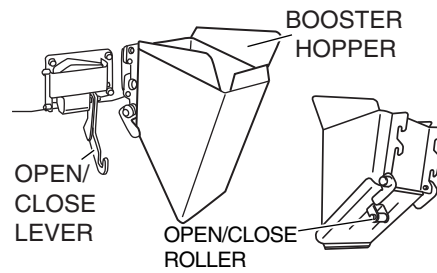
2. Push and pull the open/close lever of the open/close roller for each hopper, and check that each gate opens/closes smoothly.
3. If each gate does not open/close smoothly, check for the distortion of the hopper.
4. Check the wear condition of the bushing used for the supporting point of each gate. If any, replace with new parts.



**Fig.10-20 Pool Hopper Open/Close Roller and Lever**



**Fig.10-21 Weigh Hopper Open/Close Roller and Lever**



**Fig.10-22 Booster Hopper Open/Close Roller and Lever**

### 10.3.4 Inspection of Open/Close Roller for Hopper (Monthly)

1. Turn the open/close roller for each hopper by hand, and check that it turns smoothly. (Refer to the figure in the previous section.)
2. If it does not turn smoothly, check the following items.  
Check if the roller has any uneven wear.  
Check if the open/close roller has any dirt.
3. If the open/close roller does not turn smoothly even after being cleaned, or if it has uneven wear, replace with new parts.

### 10.3.5 Inspection of Amplitude Strength for Radial Feeder (Monthly)

**NOTE**

- If there is a failure in transferring the product on the radial trough, it is possible that the radial trough and trough installation portion have cracks.  
Check for cracks.
- When the amplitude strength differs, take the amplitude strength value into account when making a judgment.

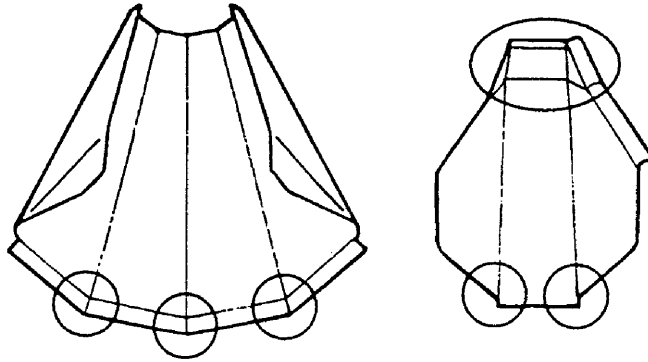
1. Set the amplitude time to the same value for all the radial feeders using the feeder adjustment function.
2. Start the operation, and check the transfer condition of the products on the radial trough.

**NOTE**

- Feeders with especially slow transfer speeds need to be adjusted. Contact the distributor or Ishida customer support.

### 10.3.6 Inspection for Cracks (Annually)

1. Check for cracks on the pool hopper, weigh hopper, and radial trough.
2. Replace the pool hopper, weigh hopper and/or radial trough that have cracks.
3. For possible crack portions, check the circled areas shown in the figure below.



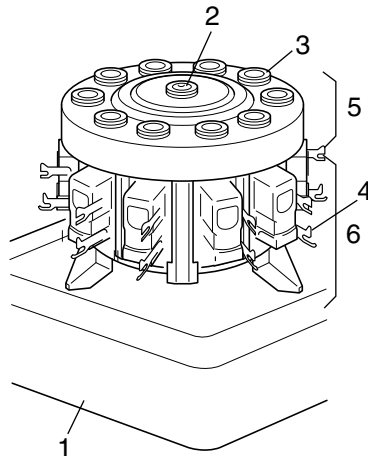
*Fig.10-23 Crack Inspection*

### 10.3.7 Inspection of Rubber Cover (Annually)

Check for wear, distortion, chap and cracks on the rubber cover of the radial feeder.

#### NOTE

- The rubber cover with the failure above needs to be replaced. Contact the distributor or Ishida customer support.



**Fig.10-24 Dispersion Feeder Cover**

**Table 10-5 Names of the Dispersion Feeder Cover Parts**

No.	Name
1	Main body
2	Rubber cover of the dispersion feeder
3	Rubber cover of the radial feeder
4	WH hanger
5	Dispersion portion
6	Drive unit



### 10.3.8 Replacement of Memory Backup Battery

This weighing machine uses a primary battery as a backup battery in order to store presettings. When the battery voltage decreases due to the battery life, presettings will be deleted.

The weighing machine has a check function for battery voltage, but by the time the battery voltage decrease is detected, presettings may already be deleted.

In order to protect presettings by replacing the battery before the battery voltage decrease due to battery life is detected, it is recommended to periodically contact and ask the distributor or Ishida customer support to replace the battery for your weighing machine.

The rough standard for the battery replacement is every five years. However, the battery life may become less than five years depending on the operation environment.



- **The replacement of the memory backup battery should be performed by the Ishida service department.  
Contact the distributor or Ishida customer support.**
-

### 10.3.9 Replacement of Fuses

The following fuses are used for the weighing machine. If a fuse blows out, check the cause, and replace with a new fuse.

Ø5 × 20	250V	5A
Ø5 × 20	250V	3.15A

#### DANGER

- **A licensed engineer should always perform the procedures.**

#### WARNING

- **Before starting the procedures, always turn off the main power switch.**
- **Wait for five minutes after shutting the power off, and then start the procedures.**

For fuse replacement, follow the procedures below.

- Fuses are used for the AC fuse board (P-5507\*) and DC fuse board (P-5508\*). Refer to the appendix for the details of each board.
  - Use the tester for the energization check.
1. Remove the fuse board cover.
  2. Turn the fuse holder to the left, and remove the blown-out fuse.
  3. Install a new fuse.
  4. Put the fuse holder back to its original position.

#### NOTE

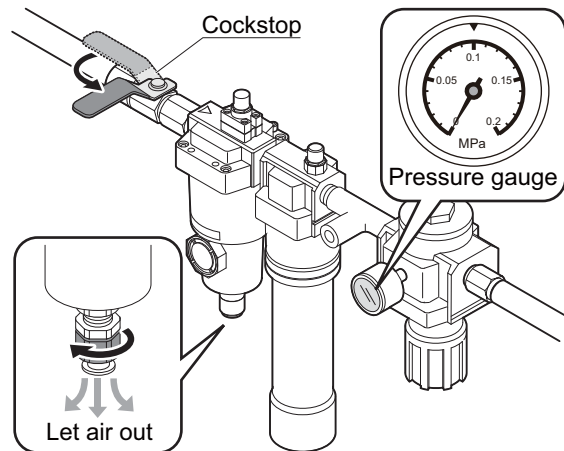
- Turn ON the main power switch at this point. If the LED for the fuse is off, the fuse is normal. If the LED lights up, it means a fuse is still blown out.

5. Reattach the cover.

- ▶ The replacement of the fuse is completed.

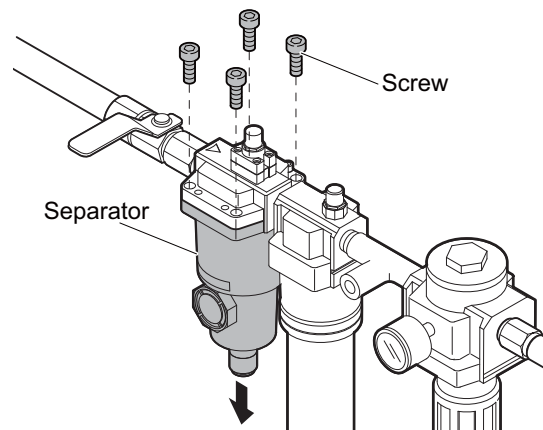
### 10.3.10 Replacement of the Air Dryer Element (WP specification)

1. Shut the air supply cockstop and turn the drain outlet to let the air inside the air dryer, then confirm that the pressure gauge reads 0MPa.



**Fig.10-25 Replacing Element (1)**

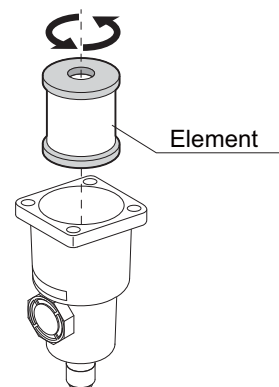
2. Unscrew the four screws to remove the separator.



**Fig.10-26 Replacing Element (2)**

3. Turn the old element counterclockwise to remove from the body. Attach a new element by turning it clockwise.
4. Re-screw the screws in the reverse order of the step 2.

► Replacement of the air dryer element is completed.



**Fig.10-27 Replacing Element (3)**

### 10.3.11 Replacement of the Air Dryer Module Set (WP specification)

1. Shut the air supply cockstop and turn the drain to let the air inside the air dryer, then confirm that the pressure gauge reads 0Mpa.

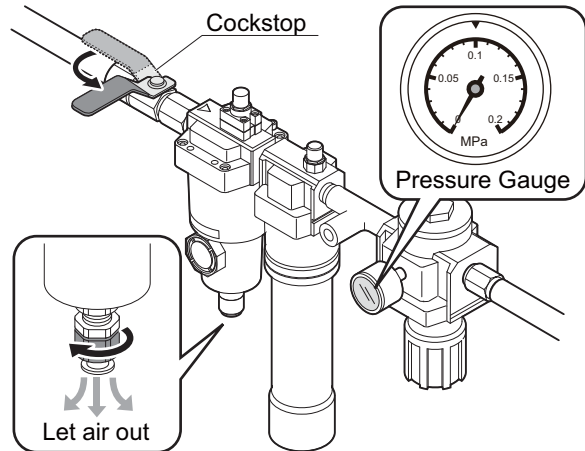


Fig.10-28 Replacing Module Set (1)

2. Unscrew the four screws to remove the separator.

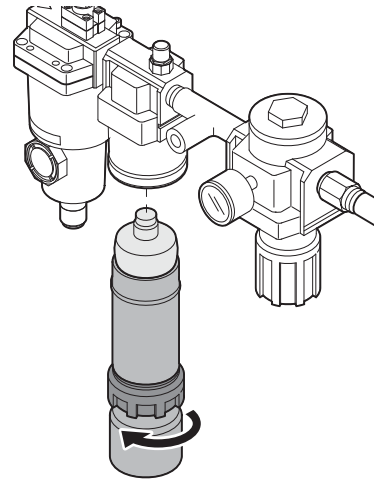


Fig.10-29 Replacing Module Set (2)

3. Check the packing and spacer are attached, then set the new module to the case.

Ensure round hole of module is not seen from slot hole.

#### NOTE

- Set the packing properly into the end face of case. Do not insert the packing all the way.

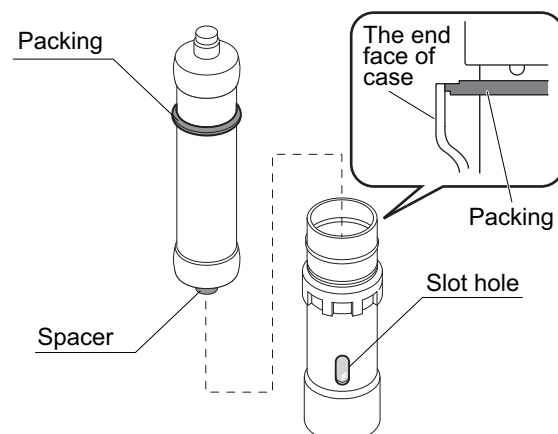


Fig.10-30 Replacing Module Set (3)

4. Re-screw the screws in the reverse order of the step 2.

► Replacement of the air dryer module set is completed.

# 11 CAUSES AND ACTIONS FOR ERRORS AND FAILURES

## 11.1 Summary

This chapter describes the causes of abnormality and malfunction and corrective action.

When the weighing machine fails and an error message is displayed on the remote control unit, refer to “11.2 Error Display and Action”. When the weighing machine fails but no error message is displayed, refer to “11.3 Failure and Malfunction of the Weighing Machine”.


For further technical actions, refer to “11.4 Troubleshooting”.

If unable to discover the cause or appropriate action for the abnormality or malfunction, or when the weighing machine does not return to normal condition, contact the distributor or Ishida customer support.

### DANGER

- **All inspection and servicing of the main body, control panel or operation panel must be performed by qualified maintenance electricians.**
- **When working on the weighing machine with the main body cover open, do not touch current-carrying parts.**

### WARNING

- **For inspection and repair, unless instructed, the operator must turn OFF and lock the main power switch, and keep the key in his possession during the work.**  
( 1.6 Power Supply Shut Off and Indication)
- **When performing inspection or repair, clearly indicate to other operators that inspection and repair are in progress.**
- **When performing inspection and repair for the main body of the weighing machine, turn OFF the main power switch, and wait at least five minutes before starting the work.**
- **When performing inspection and repair for the upper part of the weighing machine, use a proper scaffold or stepladder in order to avoid a fall.**

### <Contents>

- Error display and action
- Malfunction of weighing machine, cause and action

### <Purpose>

- To understand and master the handling method and action for the trouble experienced during operation, in order to enhance the operating efficiency of the weighing machine.

**<Intended reader>**

- System administrators
- Maintenance engineers

## 11.2 Error Display and Action

If an error occurs during operation, draining, or zero adjustment, an error message is displayed on the screen of the remote control unit.

There are eight error message screen patterns depending on the display method, alarm sound or weighing machine status. (☞ Table 11-1 Error Screen Patterns )

Actions for errors differ depending on the error screen pattern. Check the screen pattern of the error and refer to details of each pattern described in “11.2.1 Pattern 1” through “11.2.8 Pattern 8”, to cancel the error display and perform the correcting action.

**Table 11-1 Error Screen Patterns**

<b>Error Screen Pattern</b>	<b>Error Name</b>	<b>weighing machine Condition</b>
Pattern 1	<ul style="list-style-type: none"> <li>• [ZERO ERROR] (Auto zero adjustment)</li> <li>• [OVERWEIGHT ERROR]</li> <li>• [OVERSCALE ERROR]</li> <li>• WH, PH, RS, TH, and DTH ERROR</li> <li>• [PIECE WEIGHT ERROR] (Count set weighing specification)</li> </ul>	<ul style="list-style-type: none"> <li>• Error alarm sounds</li> <li>• Operation stops</li> </ul> ☞ 11.2.1 Pattern 1
Pattern 2	<ul style="list-style-type: none"> <li>• [ZERO ERROR] (Manual zero adjustment)</li> <li>• [SPAN ERROR]</li> <li>• [NETWORK ERROR]</li> <li>• [RECHECK ERROR] (Count set weighing specification)</li> <li>• [FDRV ERROR]</li> </ul>	<ul style="list-style-type: none"> <li>• Error alarm sounds</li> <li>• Operation stops</li> </ul> ☞ 11.2.2 Pattern 2
Pattern 3	<ul style="list-style-type: none"> <li>• [WARNING: NO TRANSMISSION]</li> <li>• [WARNING: NO RESPONSE]</li> <li>• [LOW PRODUCT]</li> <li>• [WARNING: OVERSCALE]</li> <li>• [WARNING: DETACHED HEAD]</li> <li>• [WARNING: OVERWEIGHT ERROR]</li> <li>• [RCU fan stopped. Contact to factory service.]</li> <li>• [WARNING: AUTO ZERO ERROR]</li> <li>• [WARNING: COMMUNICATION ERROR]</li> <li>• [WARNING: RECHECK ERROR]</li> <li>• WARNING: PH, WH, and BH ERROR</li> </ul>	<ul style="list-style-type: none"> <li>• Error alarm sounds</li> </ul> ☞ 11.2.3 Pattern 3
Pattern 4	<ul style="list-style-type: none"> <li>• [The memory of &lt;Product Set&gt; may be corrupt.]</li> <li>• [The memory of &lt;Weigh Spec. Set&gt; may be corrupt.]</li> <li>• [The memory of &lt;Combi.Calc.Spec.Set&gt; may be corrupt.]</li> <li>• [The memory of &lt;Sectioning Method Setting&gt; may be corrupt.]</li> <li>• [The memory of &lt;Infeeder Control SET&gt; may be corrupt.]</li> <li>• [The memory of &lt;Packer Interlock Setting&gt; may be corrupt.]</li> <li>• [COPY / Initialize error]</li> </ul>	<ul style="list-style-type: none"> <li>• Warning alarm</li> <li>• Operation stops</li> </ul> ☞ 11.2.4 Pattern 4 This error is displayed only when weighing machine operation is stopped.
Pattern 5	<ul style="list-style-type: none"> <li>• [AFV ZERO ERROR]</li> <li>• [AFV PARAMETER ERROR]</li> <li>• [AFV COMPENSATION ERROR]</li> <li>• [AFV OUTPUT ERROR]</li> <li>• [AFV OVERFLOW ERROR]</li> </ul>	<ul style="list-style-type: none"> <li>• Error alarm sounds</li> <li>• Operation stops</li> <li>• Power OFF</li> </ul> ☞ 11.2.5 Pattern 5
Pattern 6	<ul style="list-style-type: none"> <li>• [Total Overflow!]</li> </ul>	<ul style="list-style-type: none"> <li>• Error alarm sounds</li> <li>• Operation stops</li> </ul> ☞ 11.2.6 Pattern 6

**Table 11-1 Error Screen Patterns (Continued)**

<b>Error Screen Pattern</b>	<b>Error Name</b>	<b>weighing machine Condition</b>
Pattern 7	<ul style="list-style-type: none"> <li>• [ADC firmware error]</li> </ul>	<ul style="list-style-type: none"> <li>• Operation stops</li> <li>• Power OFF</li> <li>☞ 11.2.7 Pattern 7</li> </ul>
Pattern 8	<ul style="list-style-type: none"> <li>• [FILE TRANSFER ERROR]</li> </ul>	<ul style="list-style-type: none"> <li>• Error alarm sounds</li> <li>☞ 11.2.8 Pattern 8</li> </ul>



### 11.2.1 Pattern 1

If an error occurs during operation, draining, or zero adjustment, warning alarm sounds and the weighing machine stops automatically.

In addition, error name, error location, error description and result, cause of the error and its action are displayed on the screen of the remote control unit.

When a pattern 1 error occurs, refer to “Table 11-2 Error Display List (Pattern 1)” to eliminate the cause of the error and clear the error.

**Table 11-2 Error Display List (Pattern 1)**

Error Name/ Error Description	Cause	Action
[ZERO ERROR]	1. Weighed product is remaining in weigh hopper. 2. Weighed product is spilling from the pool hopper.  <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block;"><b>TIP</b></div> <ul style="list-style-type: none"> <li>• This error occurs when the zero adjustment exceeds the zero adjustment permissible limit due to the above cause.</li> </ul>	After checking the following points, perform the manual zero adjustment. 1. Remove the products remaining in the weigh hopper. 2. Inspect for looseness, breakage or loss of the screws of the weigh hopper. If unable to repair, contact the distributor or Ishida customer support to request repair service. 3. If repair cannot be achieved by the above actions 1 and 2, there is a possibility of malfunctioning of the ADC board or power. Contact the distributor or Ishida customer support. ⓘ Table 11-11
[OVERWEIGHT ERROR] /Proper combination was not obtained from calculation.	1. Excessive product fed into weigh hopper. 2. Excessive product fed into dispersion table or dispersion feeder. 3. The set value of the upper weight limit is small.  <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block;"><b>TIP</b></div> <ul style="list-style-type: none"> <li>• This error occurs when a proper result of combination weighing cannot be obtained and all combination weights are underweight or overweight, or when overweight occurs repeatedly due to vibration, etc. for the set number of times during rechecking. If overweight is set to be automatically discharged, production will not be stopped due to this error, and a warning message will be displayed on the lower side of the screen of the remote control unit.</li> </ul>	1. If 1-3 heads are selected for combination, the amount of supplied product is excessive. In this case, decrease the feeder amplitude or time. 2. In order to prevent an excessive supply of products, decrease the amount of products supplied from the infeed conveyor, or lower the position of the infeed control phototube, or decrease the dispersion weight. 3. For products with large piece weight, increase the upper weight limit.

**Table 11-2 Error Display List (Pattern 1) (Continued)**



Error Name/ Error Description	Cause	Action
<p>[OVERSCALE ERROR] /A weight exceeding TW + UL is detected.</p>	<p>1. Excessive product fed into weigh hopper. 2. Infeed position from the infeed is one-sided. 3. Position of the infeed control phototube is not proper.</p> <p><b>TIP</b></p> <ul style="list-style-type: none"> <li>This error occurs when weighted product over “target weight + upper weight limit” or “set target count + upper count limit” is supplied to one head, and when the number of overscale heads becomes more than the set value. If an overscale head exists during operation, an overscale error will occur when the operation is stopped, even if the number of overscale heads is less than the set value. Also for full scale heads (when the weighted product exceeding the weight limit is supplied to one head), an overscale error will occur when the operation is stopped.</li> <li>If overscale is set to be automatically discharged, production will not be stopped due to this error, and a warning message will be displayed on the lower side of the screen of the remote control unit. However, for full scale heads that do not discharge products automatically during operation, an overscale error will occur when the operation is stopped.</li> </ul>	<p>1. Decrease the feeder amplitude or time by making feeder adjustment. 2. Adjust the position of the infeed (supply chute) so that the infeed position comes to the center of the dispersion table. 3. Too many products are pooled in the dispersion unit because the position of the infeed control phototube is too high. Lower the position of the infeed control phototube.</p> <p> Table 11-11</p>
<p>**ERROR /STEPPING MOTOR DRIVE ERROR Hopper does not open/close properly. (**: PH, WH, BH, RS, TH, and DTH)</p>	<p>1. Product is jammed.</p> <p><b>TIP</b></p> <ul style="list-style-type: none"> <li>This error occurs in the event of the hopper malfunction in cases that the products are jammed in the hopper or the motor does not operate properly due to excessive load.</li> </ul>	<p>1. Remove the jammed products from the hopper. 2. Inspect for looseness, breakage or loss of the screws of the hopper. If unable to repair, contact the distributor or Ishida customer support to request repair service. 3. If the error occurs again after the error is once cleared, check the timing. If this error still occurs, turn off the main power switch and turn it on again.</p> <p> Table 11-11</p>

Table 11-2 Error Display List (Pattern 1) (Continued)

Error Name/ Error Description	Cause	Action
<p>**ERROR /POWER ERROR There is no power supplied to the motor. (**): PH, WH, BH, RS, TH, and DTH)</p>	<p>1. The fuse in the main body is blown.</p> <p><b>TIP</b></p> <ul style="list-style-type: none"> <li>This error occurs when the power is not supplied to the drive unit.</li> </ul>	<p>1. Replace the fuse.</p>
<p>**ERROR /DRIVE PATTERN CALC ERROR (**): PH, WH, BH, RS, TH, and DTH)</p>	<p>1. Setting of the hopper action parameter is improper.</p>	<p>1. Initialize the setting of the drive specification.</p>
<p>**ERROR /DRIVE PARAMETER NON-RECEPTION ERROR (**): PH, WH, BH, RS, TH, and DTH)</p>	<p>1. Communication is interfered due to momentary power loss of the power supply. (A failure in the communication line inside the weigher.) 2. The drive unit was requested to drive before receiving the drive parameters from the remote control unit.</p>	<p>1. Turn off the main power switch and turn it on again.</p>
<p>**ERROR /CYCLE OVERLAP ERROR (**): PH, WH, BH, RS, TH, and DTH)</p>	<p>Hopper opening and closing are overlapped.</p> <p><b>TIP</b></p> <ul style="list-style-type: none"> <li>This error occurs when attempting to operate the running drive unit of TH, DTH or RS in the next cycle.</li> </ul>	<p>1. The setting of the weigher speed is too high. Lower the weigher speed.</p>
<p>[PIECE WEIGHT ERROR] /Please check current piece weight.</p>	<p>1. The updated piece weight exceeds the piece weight revision range.</p> <p><b>TIP</b></p> <ul style="list-style-type: none"> <li>This error occurs when the count set weighing (optional) is used.</li> </ul>	<p>1. The setting of the weigher speed is too high. Lower the weigher speed.</p>

### 11.2.2 Pattern 2

If an error occurs during operation, draining, or zero adjustment, warning alarm sounds and the weighing machine stops automatically.

In addition, error name, error location, error description and result, cause of the error and its action are displayed on the screen of the remote control unit.

When a pattern 2 error occurs, refer to “Table 11-3 Error Display List (Pattern 2)” to eliminate the cause of the error and clear the error.

**Table 11-3 Error Display List (Pattern 2)**

Error Name/ Error Description	Cause	Action
[ZERO ERROR]	1. Weighed product is remaining in weigh hopper. 2. Weighed product is spilling from the pool hopper.  <b>TIP</b> <ul style="list-style-type: none"> <li>This error occurs when the reading is not within the permissible range. This error also occurs when extremely heavy hoppers are mounted or excessive load is applied to the cell in the plus or minus direction.</li> </ul>	After checking the following points, perform the manual zero adjustment. 1. Remove the products remaining in the weigh hopper. 2. Adjust the open/close timing of the hopper. Inspect for looseness, breakage or loss of the screws of the weigh hopper. If unable to repair, contact the distributor or Ishida customer support to request repair service. 3. If repair cannot be achieved by the above actions 1 and 2, there is a possibility of malfunctioning of the ADC board or power. Contact the distributor or Ishida customer support.
[SPAN ERROR]	1. Span adjustment weight is not ***g.  <b>TIP</b> <ul style="list-style-type: none"> <li>This error occurs when the reading is not within the permissible range due to an improper span adjustment weight.</li> </ul>	After checking the following points, perform the span adjustment. 1. Place a proper span adjustment weight. Standard capacity specification: 200g 2. If repair cannot be achieved by the above action 1, there is a possibility of malfunctioning of the ADC board or power. Contact the distributor or Ishida customer support to request repair service.  📖 Table 11-11
[NETWORK ERROR] /DUC CIRCUIT DISCONNECTION ERROR	1. Error has occurred in the communication network.  <b>TIP</b> <ul style="list-style-type: none"> <li>This error occurs when the weigher is affected by external noise.</li> </ul>	1. There is a possibility that the CPU or board is damaged. Contact the distributor or Ishida customer support to request repair service.

Table 11-3 Error Display List (Pattern 2) (Continued)


Error Name/ Error Description	Cause	Action
[NETWORK ERROR] /DUC NODE SETTING ERROR	1. Error has occurred in the communication network.  <div style="border: 1px solid black; border-radius: 15px; padding: 2px; display: inline-block;"><b>TIP</b></div> <ul style="list-style-type: none"> <li>• This error occurs when the CPU or board is damaged.</li> </ul>	1. Contact the distributor or Ishida customer support to request repair service.
[RECHECK ERROR]	1. The result of the combination by count is not within “target weight - lower weight limit” and “target weight + upper weight limit”.  <div style="border: 1px solid black; border-radius: 15px; padding: 2px; display: inline-block;"><b>TIP</b></div> <ul style="list-style-type: none"> <li>• This error occurs when the count set weighing (optional) is used.</li> </ul>	1. Check the set value of the upper and lower weight limits.
[FDRV ERROR]	1. Error has occurred in the communication network.  <div style="border: 1px solid black; border-radius: 15px; padding: 2px; display: inline-block;"><b>TIP</b></div> <ul style="list-style-type: none"> <li>• This error occurs when there is a failure in the communication line.</li> </ul>	1. Contact the distributor or Ishida customer support.

### 11.2.3 Pattern 3


If an error occurs during operation, draining, or zero adjustment, warning alarm sounds and the error name is displayed.

When a pattern 3 error occurs, refer to “Table 11-4 Error Display List (Pattern 3)” to perform the correcting action. When the action is completed, the error name disappears.

**Table 11-4 Error Display List (Pattern 3)**

<b>Error Name/ Error Description</b>	<b>Cause</b>	<b>Action</b>
[WARNING: NO TRANSMISSION]	1. Poor connection in the communication line between the remote control unit and the main unit. (Unable to transmit data from the remote control unit to the main unit.)	1. Check that the communication line between the remote control unit and the main unit is properly connected. 2. There is a possibility that the ADC, FDC or WCU board is damaged. Contact the distributor or Ishida customer support.  Table 11-11
[WARNING: NO RESPONSE]	1. Poor connection in the communication line between the remote control unit and the main unit. (The remote control unit was unable to receive the communication data transmitted from the main unit every second for more than 5 seconds.) 2. The power is not being supplied to the WCU.	1. Check that the communication line between the remote control unit and the main unit is properly connected. 2. There is a possibility that the WCU board is damaged. Contact the distributor or Ishida customer support.
[LOW PRODUCT]	1. The product counts on the dispersion table are small.	1. Supply products to the dispersion table. 2. If continued operation with low products is desired, set the [Infeed Control] key to OFF.
[WARNING: OVERSCALE]	1. This error occurs when weighted product over “target weight + upper weight limit” or “set target count + upper count limit” is supplied to one head. A warning message will be displayed only when the overscale head count is less than the set head count or the head count is set to “0”.	1. Decrease the feeder amplitude or time by making feeder adjustment. 2. Decrease the amount of products supplied to the dispersion table. (Decrease the dispersion weight.)
[WARNING: DETACHED HEAD]	1. The weigh hopper is not installed. 2. Zero adjustment was performed with a product stuck to the weigh hopper, and the weighted product came out of the weigh hopper.	1. Make sure that the weigh hopper is properly installed. 2. Check that there is no product stuck to the weigh hopper, then perform zero adjustment.

**Table 11-4 Error Display List (Pattern 3) (Continued)**

Error Name/ Error Description	Cause	Action
[WARNING: OVERWEIGHT ERROR]	1. A proper result of combination weighing cannot be obtained, and all combination weights are underweight or overweight. 2. During rechecking, overweight occurs due to vibration, etc.  <b>TIP</b> <ul style="list-style-type: none"> <li>This error is displayed when overweight dump count is less than the set count or the dump count is set to "0".</li> </ul>	1. Decrease the feeder amplitude or time by making feeder adjustment. 2. Decrease the amount of products supplied to the dispersion table. 3. Increase the set value of the upper weight limit.
[RCU fan stopped. Contact to factory service.]	1. The RCU fan connector is disconnected. 2. The RCU fan is broken.	1. Turn off the main power switch to avoid damaging the boards. Contact the distributor or Ishida customer support to request repair service.
[WARNING: AUTO ZERO ERROR]	1. The weigh hopper is constantly loaded.	1. Check the weigh hopper. 2. There is a possibility of malfunctioning of the weight sensor. Contact the distributor or Ishida customer support.
[WARNING: COMMUNICATION ERROR]	1. Error has occurred in the communication network.	1. Contact the distributor or Ishida customer support to request repair service.
[WARNING: RECHECK ERROR]	1. The result of the combination by count is not within "target weight - lower weight limit" and "target weight + upper weight limit".  <b>TIP</b> <ul style="list-style-type: none"> <li>This error occurs when the count set weighing (optional) is used.</li> </ul>	1. Check the set value of the upper and lower weight limits.
**ERROR /STEPPING MOTOR DRIVE ERROR Hopper does not open/close properly. (**: PH, WH, and BH)	1. Product is jammed.  <b>TIP</b> <ul style="list-style-type: none"> <li>This error occurs in the event of the hopper malfunction in cases that the products are jammed in the hopper or the motor does not operate properly due to excessive load.</li> </ul>	1. Remove the jammed products from the hopper. 2. Inspect for looseness, breakage or loss of the screws of the hopper. If unable to repair, contact the distributor or Ishida customer support to request repair service. 3. If the error occurs again after the error is once cleared, check the timing. If this error still occurs, turn off the main power switch and turn it on again.  Table 11-11

**Table 11-4 Error Display List (Pattern 3) (Continued)**

Error Name/ Error Description	Cause	Action
<p>**ERROR /POWER ERROR There is no power supplied to the motor. (** : PH, WH, and BH)</p>	<p>1. The fuse in the main body is blown.</p> <p><b>TIP</b></p> <ul style="list-style-type: none"> <li>This error occurs when the power is not supplied to the drive unit.</li> </ul>	<p>1. Replace the fuse.</p>
<p>**ERROR /DRIVE PATTERN CALC ERROR (** : PH, WH, and BH)</p>	<p>1. Setting of the hopper action parameter is improper.</p>	<p>1. Initialize the setting of the drive specification.</p>
<p>**ERROR /DRIVE PARAMETER NON-RECEPTION ERROR (** : PH, WH, and BH)</p>	<p>1. Communication is interfered due to momentary power loss of the power supply. (A failure in the communication line inside the weigher.)</p> <p>2. The drive unit was requested to drive before receiving the drive parameters from the remote control unit.</p>	<p>1. Turn off the main power switch and turn it on again.</p>
<p>**ERROR /CYCLE OVERLAP ERROR (** : TH, DTH, and RS)</p>	<p>1. Hopper opening and closing are overlapped.</p> <p><b>TIP</b></p> <ul style="list-style-type: none"> <li>This error occurs when attempting to operate the running drive unit of TH, DTH or RS in the next cycle.</li> </ul>	<p>1. The setting of the weigher speed is too high. Lower the weigher speed.</p>



## 11.2.4 Pattern 4

When an error occurs in data when opening the data from memory or memory card, warning alarm sounds and the error message is displayed.

In addition, an error screen is displayed on the screen of the remote control unit.

When a pattern 4 error occurs, press the [Exit] key to exit the error screen and refer to “Table 11-5 Error Display List (Pattern 4)” to perform the correcting action.

**Table 11-5 Error Display List (Pattern 4)**

<b>Error Name/ Error Description</b>	<b>Cause</b>	<b>Action</b>
[The memory of <Product Set> may be corrupt.]	1. The internal data is damaged.	1. Initialize the memory.
[The memory of <Weigh Spec. Set> may be corrupt.]	1. The internal data is damaged.	1. Initialize the memory.
[The memory of <Combi.Calc.Spec.Set> may be corrupt.]	1. The internal data is damaged.	1. Initialize the memory.
[The memory of <Sectioning Method Setting> may be corrupt.]	1. The internal data is damaged.	1. Initialize the memory.
[The memory of <Infeeder Control SET> may be corrupt.]	1. The internal data is damaged.	1. Initialize the memory.
[The memory of <Packer Interlock Setting> may be corrupt.]	1. The internal data is damaged.	1. Initialize the memory.
[COPY / Initialize error]	1. The data in the memory card is damaged.	1. Initialize the memory card.

## 11.2.5 Pattern 5

If an error occurs during operation or draining, warning alarm sounds and the weighing machine stops automatically and the power is turned off automatically.

In addition, an error screen is displayed on the screen of the remote control unit.

Refer to “Table 11-6 Error Display List (Pattern 5)” for details on the error screen displayed in Pattern 5. When a Pattern 5 error occurs, press the [Exit] key to exit the error screen and refer to “Table 11-6 Error Display List (Pattern 5)” to perform the correcting action.

**Table 11-6 Error Display List (Pattern 5)**

<b>Error Name/ Error Description</b>	<b>Cause</b>	<b>Action</b>
[AFV ZERO ERROR]	1. When performing manual zero adjustment or auto zero adjustment of AFV cell, zero cannot be obtained.	1. Perform manual zero adjustment.
[AFV PARAMETER ERROR]	1. Improper weighing data.	1. Check the weigher specification setting.
[AFV COMPENSATION ERROR]	1. AFV compensation is not operating properly.	1. Contact the distributor or Ishida customer support to request repair service.
[AFV OUTPUT ERROR]	1. Poor connection of the connector. 2. Contact with the spacers. 3. Improper sensitivity of the AFV cell.	1. Contact the distributor or Ishida customer support to request repair service.
[AFV OVERFLOW ERROR]	1. Poor connection of the connector. 2. Contact with the spacers. 3. Improper sensitivity of the AFV cell.	1. Contact the distributor or Ishida customer support to request repair service.

## 11.2.6 Pattern 6

If an error occurs during operation, warning alarm sounds and the weighing machine stops automatically. In addition, an error screen is displayed on the screen of the remote control unit.

When a Pattern 6 error occurs, press the [Exit] key to exit the error screen and refer to “Table 11-7 Error Display List (Pattern 6)” to perform the correcting action.

**Table 11-7 Error Display List (Pattern 6)**

<b>Error Name/ Error Description</b>	<b>Cause</b>	<b>Action</b>
[Total Overflow!]	1. There is not enough memory for total data backup.	1. Clear all of the totals or change the “Action for Statistical Mem. Ful” from “Stop” to “Continue” in order to continue the operation.

### 11.2.7 Pattern 7

If an error occurs during operation or draining, the weighing machine stops automatically and the power is turned off automatically.

In addition, an error screen is displayed on the screen of the remote control unit.

When a Pattern 7 error occurs, refer to “Table 11-8 Error Display List (Pattern 7)” to perform the correcting action.

If the error still occurs, contact the distributor or Ishida customer support to request repair service.

**Table 11-8 Error Display List (Pattern 7)**

<b>Error Name/ Error Description</b>	<b>Cause</b>	<b>Action</b>
[ADC firmware error]	1. System error.	1. Turn off the main power switch and turn it on again. 2. If repair cannot be achieved by the above action 1, contact the distributor or Ishida customer support to request repair service.

### 11.2.8 Pattern 8

When the file transfer fails, warning alarm sounds.

In addition, an error screen is displayed on the screen of the remote control unit.

When a Pattern 8 error occurs, refer to “Table 11-9 Error Display List (Pattern 8)” to perform the correcting action.

**Table 11-9 Error Display List (Pattern 8)**

<b>Error Name/ Error Description</b>	<b>Cause</b>	<b>Action</b>
FILE TRANSFER ERROR	1. The ftp server is down. 2. The network is disconnected.	1. Contact the network administrator.

## 11.2.9 Error Clear and Action

When an error occurs, follow the procedure described below to eliminate the cause of the error and to clear the error display.

This section describes the [Power] key, [Err Clr & Stop] key and [E Clr & Restr] key displayed in the error screen of patterns 1 and 2.

These keys are used to clear the errors of patterns 1 and 2 as shown below.

### **Error clear and action**

Clearing error by using the [E Clr & Restr] key:

Method for restarting the operation after removing the cause of the error.

Clearing error by using the [Err Clr & Stop] key:

Method for stopping the operation after removing the cause of the error.

Clearing error by using the [Power] key:

Method for forcibly clearing the error when the cause of the error cannot be removed or when the error cause is unknown and the error repeatedly occurs even after the error clear operation is performed.

## 11.3 Failure and Malfunction of the Weighing Machine

When the weighing machine fails but no error message is displayed, perform the correcting action by referring to “Table 11-10 Failure and Malfunction List”.

**Table 11-10 Failure and Malfunction List**













Status	Cause	Action
The main power breaker shuts down.	Electric leakage of the weighing machine.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12
	Short circuit in the electrical circuit of the weighing machine.	
The products are discharged at a timing other than the discharging.	Foreign matter or product is caught in the pool hopper, weigh hopper or timing hopper.	<ul style="list-style-type: none"> <li>• Remove the obstruction.</li> </ul>
Nothing is displayed on the screen of the remote control unit.	The main switch is not turned on.	<ul style="list-style-type: none"> <li>• Turn on the main switch. (Customer’s equipment)</li> </ul>
	Power switch is turned OFF.	<ul style="list-style-type: none"> <li>• Turn ON the breaker. (PS-0 unit)</li> <li>• Turn ON the circuit protector of the PS-0 unit.</li> </ul>
	Breaking or poor connection.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12
	Chattering when turning on the power.	<ul style="list-style-type: none"> <li>• Turn OFF the power and turn ON again.</li> </ul>
	Display malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12
The weigher does not operate when the power of the remote control unit is turned ON.	RCU board malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12
	The interlock signal is not input. Interlock between the relay units. LED for switch monitor does not blink (abnormal).	<ul style="list-style-type: none"> <li>• Turn on the packer.</li> <li>• Make sure that the interlock signal cable is not broken. (Is the interlock signal DC24V input to the external connection terminal?)</li> </ul>  Table 11-12
	The interlock signal is not input. Interlock between the relay units. LED for switch monitor blinks (normal).	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12
	FDC board malfunction. The hourglass continues to rotate and the [Power] key cannot be set to ON.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12


Table 11-10 Failure and Malfunction List (Continued)

Status	Cause	Action
Underweight occurs frequently.	The amount of product supplied to a hopper is insufficient.	<ul style="list-style-type: none"> <li>• If 6-9 heads are selected for combination, the amount of supplied product is insufficient. In this case, increase the feeder amplitude or time.</li> <li>• Increase the set value of the dispersion weight.</li> </ul>
	The amount of product supplied to the dispersion unit is insufficient.	<ul style="list-style-type: none"> <li>• Increase the amount of products supplied from the infeed conveyor and raise the position of the infeed control phototube in order to prevent the shortage of the product supply.</li> </ul>
	Affected by vibration.	<ul style="list-style-type: none"> <li>• Reinforce the scaffold.</li> <li>• Increase the compensation value.</li> </ul>
	The speed is too high.	<ul style="list-style-type: none"> <li>• The set speed is too high for the product type and volume. Decrease the speed.</li> </ul>
The weight of the product is significantly different from the displayed weight.	The products are spilling from the hopper.	<ul style="list-style-type: none"> <li>• Clean the hopper.</li> </ul>
	The weigh hoppers make contact with an object.	<ul style="list-style-type: none"> <li>• Adjust the open/close timing of the hopper (PH, WH).</li> </ul>
	A product is stuck to the chute or the hopper.	<ul style="list-style-type: none"> <li>• Eliminate the object.</li> <li>• Clean the chute and the hopper.</li> </ul>
	Improper interlock timing with the packer.	<ul style="list-style-type: none"> <li>• Adjust the timing.</li> </ul>
	The products pass through the hopper.	<ul style="list-style-type: none"> <li>• Check the hopper timing adjustment set at the remote control unit.</li> </ul>
	The setting of the head specification switch on the DUC board is incorrect.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12
The feeder does not operate.	The fuse is blown.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12
	Board malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12
	KM01 (electromagnetic contactor) is not operating.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12
The line of a part or the entire display lights up or goes out.	LCD unit malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> </ul>  Table 11-12

**Table 11-10 Failure and Malfunction List (Continued)**

Status	Cause	Action
The display is blank.	LCD unit malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
	LCD power malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
	RCU power malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
The content of the data memory is deleted or changed.	Battery charge failure.	<ul style="list-style-type: none"> <li>• Charge the battery.</li> </ul>
	RCU board malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
	DMU board malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
The displayed weight data is not stable.	Affected by wind.	<ul style="list-style-type: none"> <li>• Prevent the weigher from being directly blown by the wind. (It is recommended to perform zero adjustment for all heads and leave the display screen as is.)</li> </ul>
	Affected by vibration.	<ul style="list-style-type: none"> <li>• Reinforce the scaffold, etc.</li> </ul>
	Load cell malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
	Preamp board malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
	ADC board malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
The displayed weight data is the maximum or minimum value of the range.	ADC board malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
Unintelligible letters are printed on the data sheet, or the data sheet cannot be printed.	RCU board malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
	DMU board malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
	Printer control board malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>
	Printer malfunction.	<ul style="list-style-type: none"> <li>• Contact the distributor or Ishida customer support.</li> <li>☞ Table 11-12</li> </ul>

**Table 11-10 Failure and Malfunction List (Continued)**

<b>Status</b>	<b>Cause</b>	<b>Action</b>
Reading from or writing to the memory card cannot be performed.	RCU board malfunction.	<ul style="list-style-type: none"><li>• Contact the distributor or Ishida customer support.</li></ul>  Table 11-12
	Memory card malfunction.	<ul style="list-style-type: none"><li>• Replace the memory card.</li></ul>
Condensation is seen on the inside of main body. (WP specification)	The dry air supply is stopped.	<ul style="list-style-type: none"><li>• Check the air supply power. Supply dry air to the inside of the main body immediately. Do not turn on the main power until the inside of main body is dried out.</li></ul>



## 11.4 Troubleshooting

This section describes corrective action to take at the time when an error, failure or malfunction occurs, and corrective action is targeted for maintenance engineers or Ishida service engineers who manage the weighing machine.

### <Trouble with error display>

Table 11-11 Error, Failure and Malfunction List

Status	Cause	Action
[WARNING: NO TRANSMISSION] (error display)	Connector breaking or poor connection.	Check the conductivity of the following connectors: <ul style="list-style-type: none"> <li>• J350 (ADC board P-5576*)</li> <li>• XT601 (PS-0 unit)</li> <li>• XJ455 (relay board P-5506*)</li> <li>• XJ453 (relay board P-5506*)</li> <li>• XJ384 (DMU board P-5562*)</li> </ul>
[WARNING: NO RESPONSE] (error display)	Connector breaking or poor connection.	Check the conductivity of the following connectors: <ul style="list-style-type: none"> <li>• XJ384 (DMU board P-5562*)</li> </ul>
[ZERO ERROR] (error display)	Board malfunction.	<ul style="list-style-type: none"> <li>• Replace the ADC board (P-5576*).</li> <li>(When zero is unable to be obtained even when J320 to J322 are disconnected)</li> <li>• Replace the preamp board (P-5527*).</li> </ul>
	Weigh mechanism malfunction.	<ul style="list-style-type: none"> <li>• Replace the load cell.</li> </ul>
	±15V power malfunction.	<ul style="list-style-type: none"> <li>• Check the ADC board (P-5576*) J324 connector.</li> <li>• Replace the PS-CAL unit.</li> </ul>
[SPAN ERROR] (error display)	Board malfunction.	<ul style="list-style-type: none"> <li>• Replace the ADC board (P-5576*).</li> </ul>
Hopper Error (PH, WH) (error display)	There is a loose screw on the cam sensor inside the weigh drive unit.	<ul style="list-style-type: none"> <li>• Repair the weigh drive unit.</li> </ul>
	Board malfunction.	<ul style="list-style-type: none"> <li>• Replace the cam sensor board (P-5207*).</li> <li>• Replace the DUC board (P-5579*/P-5524*).</li> </ul>
	Connector breaking or poor connection.	<ul style="list-style-type: none"> <li>• Check the conductivity of the DUC board (P-5579*/P-5524*) connector.</li> </ul>
	The fuse in the main body is blown. (PS-0 unit)	<ul style="list-style-type: none"> <li>• Replace the midget fuse on the DC fuse board (P-5508*) (PS-0 unit). (125V 5A)</li> </ul>
	Weigh drive unit malfunction.	<ul style="list-style-type: none"> <li>• Repair or replace the weigh drive unit.</li> </ul>

**Table 11-11 Error, Failure and Malfunction List (Continued)**

Status	Cause	Action
Hopper Error (BH, RS, TH, DTH) (error display)	There is a loose screw on the cam sensor inside the drive unit.	<ul style="list-style-type: none"> <li>• Repair the drive unit.</li> </ul>
	Board malfunction.	<ul style="list-style-type: none"> <li>• Replace the cam sensor board (P-5207*).</li> <li>• Replace the DUC board (P-5579*/P-5524*).</li> </ul>
	Connector breaking or poor connection.	<ul style="list-style-type: none"> <li>• Check the conductivity of the DUC board (P-5579*/P-5524*) connector.</li> <li>• Check the WCU board (P-5561*) connector.</li> </ul>
	The fuse in the main body is blown. (PS-0 unit)	<ul style="list-style-type: none"> <li>• Replace the midget fuse on the DC fuse board (P-5508*) (PS-0 unit). (125V 5A)</li> </ul>
	Drive unit malfunction.	<ul style="list-style-type: none"> <li>• Repair or replace the drive unit.</li> </ul>
[OVERSCALE ERROR]	Infeed control phototube malfunction.	<ul style="list-style-type: none"> <li>• Replace the phototube to avoid pooling of the product caused by not being able to control the amount of product supplied to the feeder.</li> </ul>

<Trouble without error display>

Table 11-12 Error, Failure and Malfunction List

Status	Cause	Action
The main power breaker shuts down.	Electric leakage of the weighing machine.	<ul style="list-style-type: none"> <li>• Check for electric leakage and short circuit.</li> </ul>
	Short circuit in the electrical circuit of the weighing machine.	
Nothing is displayed on the screen of the remote control unit.	Breaking or poor connection.	Make sure that there is no breaking or poor connection of the following: <ul style="list-style-type: none"> <li>• XC21 connector. (PS-RCU unit)</li> <li>• XJ1 connector. (Remote control BOX unit)</li> </ul>
	Display malfunction.	<ul style="list-style-type: none"> <li>• Replace the switching power. (PS-RCU unit U01)</li> <li>• Replace the RCU board (P-970*).</li> <li>• Replace the LCD.</li> </ul>
The weigher does not operate when the power of the remote control unit is turned ON.	RCU board malfunction.	<ul style="list-style-type: none"> <li>• Replace the RCU board (P-970*).</li> </ul>
	Component malfunction.	<ul style="list-style-type: none"> <li>• Replace the KM01 (electromagnetic contactor). (PS-0 unit)</li> </ul>
	The fuse is blown.	<ul style="list-style-type: none"> <li>• Replace fuses f601 through f604 of the AC fuse board (P-5507*).</li> <li>Standard machine midget fuse. (250V 3.15A)</li> <li>(PS-0 unit)</li> </ul>
	The interlock signal is not input. Interlock between the relay units. LED for switch monitor does not blink (abnormal).	<ul style="list-style-type: none"> <li>• Replace the relay board (P-5506*).</li> </ul>
	The interlock signal is not input. Interlock between the relay units. LED for switch monitor blinks (normal).	<ul style="list-style-type: none"> <li>• Replace the relay board (P-5506*).</li> <li>• Check the connection between the relay board (P-5506*) XJ454 and WCU board (P-5561*) J305.</li> </ul>
	FDC board malfunction. The [Power] key cannot be turned ON.	<ul style="list-style-type: none"> <li>• Replace the FDC board (P-5532*).</li> </ul>
The weight of the product is significantly different from the displayed weight.	The setting of the head specification switch on the DUC board is incorrect.	<ul style="list-style-type: none"> <li>• Check the test drive and set correctly by SW1 on the DUC board (P-5579*/P-5524*).</li> <li>(DUC unit)</li> </ul>
The feeder does not operate.	The fuse is blown.	<ul style="list-style-type: none"> <li>• Replace fuses f601 through f604 of the AC fuse board (P-5507*).</li> <li>Standard machine midget fuse. (250V 3.15A)</li> <li>(PS-0 unit)</li> </ul>
	Board malfunction.	<ul style="list-style-type: none"> <li>• Replace the FDRV board (P-5578*) or FDC board (P-5532*).</li> <li>(Main electrical unit)</li> </ul>
	KM01 (electromagnetic contactor) is not operating.	<ul style="list-style-type: none"> <li>• Check the relay board (P-5506*), WCU board (P-5561*) and harness.</li> </ul>
The line of a part or the entire display lights up or goes out.	LCD unit malfunction.	<ul style="list-style-type: none"> <li>• Replace the LCD unit.</li> </ul>

**Table 11-12 Error, Failure and Malfunction List (Continued)**

Status	Cause	Action
The display is blank.	LCD unit malfunction.	• Replace the LCD unit.
	LCD power malfunction.	• Replace the LCD power.
	RCU power malfunction.	• Replace the power of PS-RCU unit U01.
The content of the data memory is deleted or changed.	Battery voltage decrease.	<ul style="list-style-type: none"> <li>• Replace the battery. RCU board (P-970*) (Remote control BOX unit)</li> <li>• Replace the battery. DMU board (P5562*) (CAL unit)</li> </ul>
	RCU board malfunction.	• Replace the RCU board (P-970*). (Remote control BOX unit)
	DMU board malfunction.	• Replace the DMU board (P-5562*). (CAL unit)
The displayed weight data is not stable.	Load cell malfunction.	• Replace the weigh drive unit.
	Preamp board malfunction.	• Replace the preamp board (P-5527*). (Weigh drive unit)
	ADC board malfunction.	• Replace the ADC board (P-5576*). (CAL unit)
The displayed weight data is the maximum or minimum value of the range.	ADC board malfunction.	• Replace the ADC board (P-5576*). (CAL unit)
Unintelligible letters are printed on the data sheet, or the data sheet cannot be printed.	RCU board malfunction.	• Replace the RCU board (P-970*). (Remote control BOX unit)
	DMU board malfunction.	• Replace the DMU board (P-5562*). (CAL unit)
	Printer malfunction.	• Replace the printer. (Remote control BOX unit)
Reading from or writing to the memory card cannot be performed.	RCU board malfunction.	• Replace the RCU board (P-970*). (Remote control BOX unit)
	Memory card malfunction.	• Replace the memory card.
Condensation is seen on the inside of main body. (WP specification)	The dry air supply is stopped.	• Check the air supply power. Supply dry air to the inside of the main body immediately. Do not turn on the main power until the inside of main body is dried out.
Color of grains in the dew point checker are turning pink, white or brown. (WP specification)	Water and/or oil flows into the membrane air dryer.	<ul style="list-style-type: none"> <li>• Check the operating condition of separators, and if the drain piping rises or bends.</li> <li>• Check if the element has been replaced properly.</li> <li>• When the color of the dew point checker is brown, replace the dew point checker and module set.</li> </ul>
Grains in the dew point checker are crashed. (WP specification)		• Replace the dew point checker.

**Table 11-12 Error, Failure and Malfunction List (Continued)**

<b>Status</b>	<b>Cause</b>	<b>Action</b>
Color of grains in the dew point checker is turning pink or white. (WP specification)	Inlet air temperature is high.	<ul style="list-style-type: none"> <li>• Lower inlet air temperature. (use conditions: -5 to 50C; no freezing)</li> </ul>
	Ambient temperature is high.	<ul style="list-style-type: none"> <li>• Improve ventilation to lower the ambient temperature. (use conditions: -5 to 50C; no freezing)</li> </ul>
	Air flow rate is large.	<ul style="list-style-type: none"> <li>• Reduce the flow rate to rated flow rate at reference performance: 375L/min(ALR) or under.</li> </ul>
	Inlet air pressure is low.	<ul style="list-style-type: none"> <li>• Set the air pressure between 0.3Mpa and 1.0 Mpa.</li> </ul>
	Purging air volume is small.	<ul style="list-style-type: none"> <li>• Check if the outlet for purging air is clogged.</li> </ul>



# 12 INSTALLATION

## 12.1 Summary

This chapter describes the installation of the device.

The installation and test operation of the device are performed by Ishida service engineers. Before the installation, check the installation location and prepare the power source.

Additionally follow instructions in this chapter when relocating or moving the device.

### WARNING

- **No one other than Ishida service engineers should perform the installation.**

### CAUTION

- **When relocating the device, contact the distributor or Ishida customer support.  
When the installation is not appropriate, accurate weighing may not be achieved.**

### <Contents>

- Installation conditions, transportation and lifting, and installation procedures

### <Purpose>

To understand the appropriate installation environment, safe transport and relocation of the device, and secure installation procedures.

### <Intended reader>

- Maintenance engineers
- Ishida service engineers

## 12.2 Installation Condition

When installing the weighing machine, satisfy the following installation conditions in order to operate the weighing machine effectively, maintain precision and perform weighing safely.

### CAUTION

- **When installing the weighing machine, observe the installation conditions. Inappropriate installation may cause malfunction or damage to the weighing machine.**

### NOTE

- The power source specifications vary depending on customer. Observe the power specifications in the contract.
- The weighing machine weight varies depending on the customer. Refer to the specifications issued at the order.

**Table 12-1 Installation Conditions**

Item	Condition
Operation environment	Avoid direct sunlight. <ul style="list-style-type: none"> <li>• Room temperature: 0 to 40 deg C.</li> <li>• Room humidity: 35 to 85% R.H. (No condensation is allowed.)</li> </ul> No dust is allowed. There should be sufficient light to take product photos with a camera.
Installation surface	The floor should have a steady, horizontal surface without vibrations.
Installation space	There should be a working space around the weighing machine for maintenance and inspections.
Static electricity	Make sure to install the parts appropriately in order to avoid unearthed metal pieces.
Radio interference	Do not place the weighing machine close to radio equipment or sources of radio interference.
Air (For WP specifications)	Dry air. Pressure: 0.5 MPa to 0.6 MPa. (5 kgf/cm <sup>2</sup> to 6 kgf/cm <sup>2</sup> )
Power (For standard specifications)	200 to 240V, 50/60 Hz. (Single phase) Voltage fluctuation: within $\pm 10\%$ . Frequency fluctuation: within $\pm 5\%$ . Do not share the power source with weighing machines that may emit noises.
Weight (For standard specifications)	750 kg.



## 12.3 Transportation and Lifting

This section describes the precautions for the transporting and lifting of the weighing machine and lifting procedures. Understand them beforehand in order to avoid accidents during the installation of the weighing machine.

**WARNING**

- **When transporting or lifting the weighing machine, always observe the following safety precautions, customer safety standard, and relevant national and local laws. If they are not observed, injuries, fatal accidents or damage to the weighing machine may occur.**
- 

### 12.3.1 Precaution for Transporting

When transporting the weighing machine, observe the following items:

1. Place a “match mark” on the pipes, connections, and fitting portions, and do not remove the “match mark” during transportation.
2. Seal the pipes and openings with removable sealing caps, and remove the caps on site immediately before reassembling. Protect the protruding part of the male screws with cloth or similar material.
3. When it is necessary to disconnect the electric cables for transportation, tie the cable ends by groups, cover with vinyl or similar material for protection, and transport to the site. Remove the cover immediately before the installation of the weighing machine.
4. When moving the packaged weighing machine by forklift, securely insert the fork into the specified positions.

### 12.3.2 Precaution for Lifting

When lifting the weighing machine, observe the following items.

**NOTE**

- For the weight of the weighing machine, refer to the specifications issued at the order. For the weight when the optional specifications are additionally installed, contact the distributor or Ishida customer support.

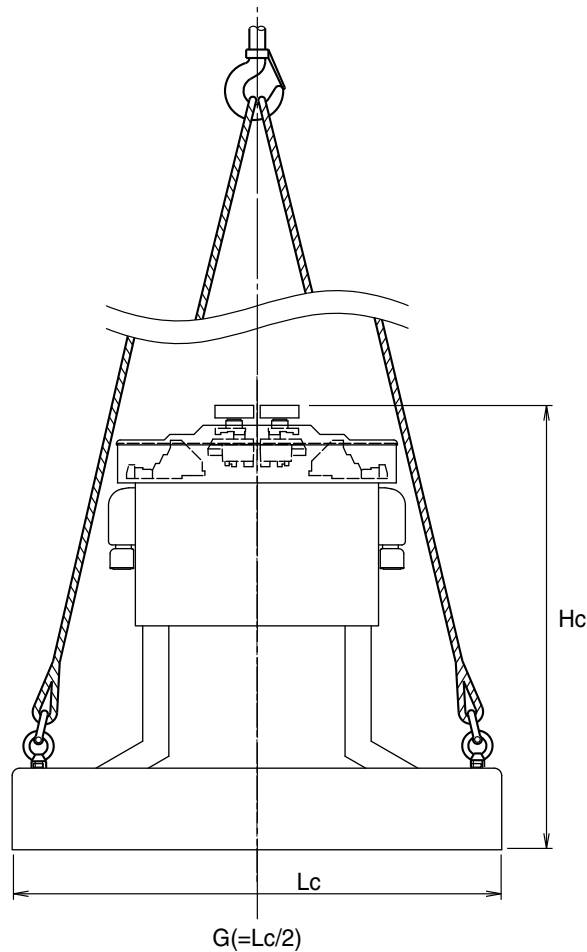
1. Take into account the weight of the weighing machine, and the center of gravity when lifting.
2. Select the lifting equipment within the safety load limit in accordance with the weight of the weighing machine.
3. Check items before lifting
  - There should be no twist or damage on the wire ropes.
  - The wire ropes should have a sufficient length.
  - The eyebolts should be securely installed.
4. Check items during lifting
  - Only a licensed personnel should perform the slinging work and operate a lifting weighing machine.
  - Select and use an appropriate lifting weighing machine in accordance with the load weight.
  - Apply patches or cloth for the protruding parts and edges in order to avoid damage to the weighing machine.
  - When starting the lifting work, give a sign to the other workers on the site.
  - Check the inclination and balance of the load while lifting the weighing machine.
  - Check the conditions of the lifting equipment and wire ropes while lifting the weighing machine.
5. Precautions for moving while lifting
  - Stay out from under the load.
  - Do not move the lifted load above the aisles.
6. Precautions for unloading
  - Remove objects from the unloading area, and observe the specified lifting point and slinging methods.

### 12.3.3 Weight of Device, Center of Gravity, and Dimensions

The center of gravity of the weighing machine is as follows.

#### NOTE

- For details such as the weight and dimensions of the weighing machine, refer to the specifications issued for the contract, or contact the distributor or Ishida customer support. When lifting the weighing machine, use an appropriate lifting weighing machine in accordance with the weighing machine weight, and take into account the center of gravity of the load when lifting.



**Fig.12-1 Lifting Diagram**

### 12.3.4 Lifting Procedure

Lift the weighing machine in accordance with the following procedures.

#### WARNING

- **Make sure that there are no other employees in the vicinity of the weighing machine that is to be lifted.**
- **Stay out from under the lifted weighing machine.**

1. Make sure the hook is positioned above the center of gravity of the unit.
2. Before lifting the load, instruct all employees in the vicinity to stay away from the lifting site.
3. Inform the co-operator of the lift initiation with an arm signal.

#### CAUTION

- **Slowly lift the weighing machine. If the load is lifted quickly, it may damage the weighing machine and the lifting equipment such as the wire ropes.**

4. Begin the lift by removing slack from the lift cables.
5. Continue the lift until the weighing machine is off the ground. Check for inclination of the load. If the load is inclined, lower the weighing machine to the ground, eliminate the cause of the inclination, adjust and lift again.

#### NOTE

Possible causes of load inclination are below:

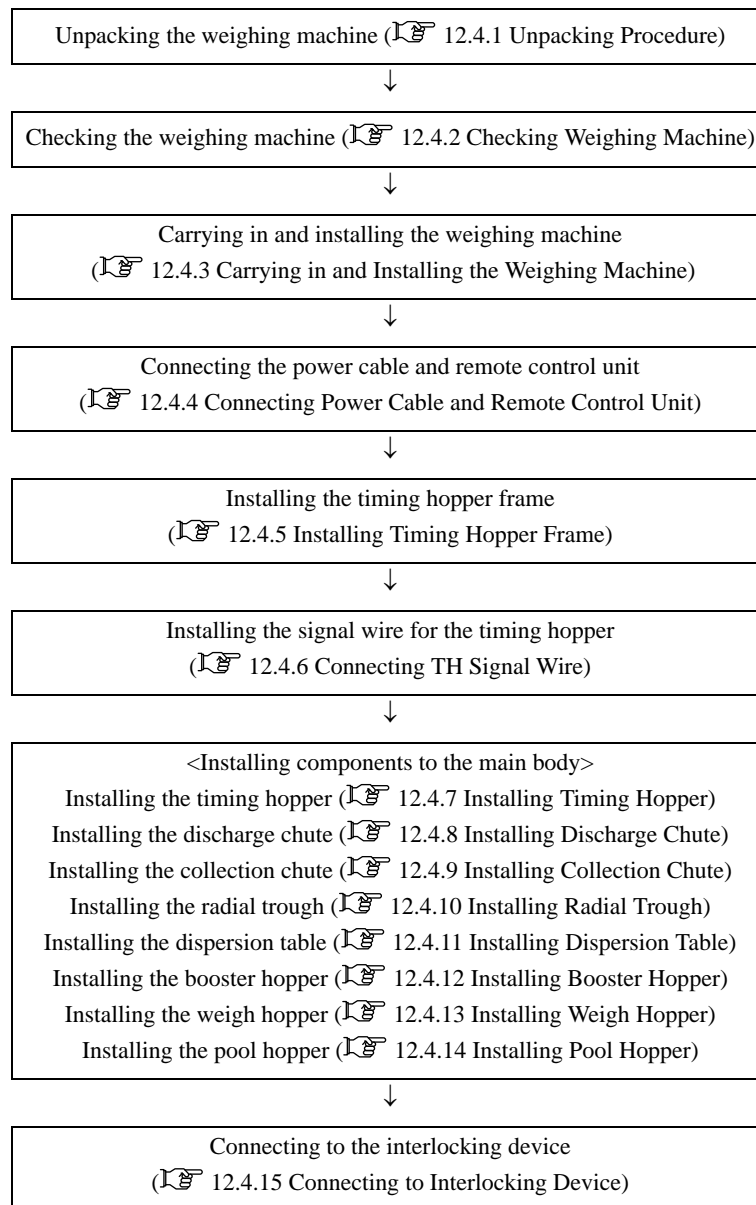
- Uneven wire length
- Inappropriate positioning between the center of gravity and wire rope lifting point

6. During the lifting of the weighing machine, check for failures of the wire ropes and lifting equipment, and load inclination.
7. After the unloading is complete and the eyebolts are removed, install the bolt hole caps.

## 12.4 Installation Procedure

The overview for the weighing machine installation procedure is described below. For details of each procedure, refer to the following reference section.

**Table 12-2 Installation Procedures**



### NOTE

- After installing the weighing machine, perform check and adjustment of the installation condition.  
(12.5 Check and Adjustment After Installation)

## 12.4.1 Unpacking Procedure

### CAUTION

- **When unpacking the weighing machine, wear protective gloves to avoid injury from the cardboard or crate.**

The weighing machine is packed in a cardboard box. (For import only)  
When unpacking, first remove the top lid of the package, then remove the side cardboard and crate.

## 12.4.2 Checking Weighing Machine

After unpacking, check the following items:

1. Damages to the weighing machine from shipping.
2. Parts shortage.

### NOTE

- If there is any damage or shortage of the parts, contact the distributor or Ishida customer support.

## 12.4.3 Carrying in and Installing the Weighing Machine

### WARNING

- **When lifting the weighing machine, follow the instructions in “12.3.1 Precaution for Transporting” for safety. If they are not observed, injuries, fatal accidents or damage to the weighing machine may occur.**
- **When working on a scaffold, wear a safety belt in order to avoid a fall.**

Install the weighing machine using a crane or similar equipment to the scaffold. (☞ 12.3 Transportation and Lifting)

## 12.4.4 Connecting Power Cable and Remote Control Unit

After installing the weighing machine to the predetermined location, perform wire routing and installation position adjustment of the remote control unit in accordance with the following procedures.

### WARNING

- **Connecting work between the weighing machine and the power supplies should be performed by a licensed electrician in accordance with the national and local electrical regulations.**

### CAUTION

- **Before connecting to the plant power terminal, use a tester to check if the power specifications of the weighing machine match with the plant power supply. When power of different specifications is accidentally supplied, serious damage to the weighing machine may occur.**

1. Fix the main power switch in accordance with the following procedures.
  - a. Install the fixing metallic fitting (E) of the main power switch to the base metallic part of the remote control unit (A), using two screws (E1).
  - b. Fix the main power switch (B) to the fixing metallic fitting (E), using two screws (E2).
2. Adjust the remote control unit angle in accordance with the following procedures.
  - a. Fix the installation bracket (D) of the remote control unit to the specified position, using four screws (D1).
  - b. Adjust the remote control unit to an easily viewable angle, using the knob bolts (D3) and angle adjustment screws (D2), and fix it in the position.

### CAUTION

- **Before connecting to the plant power terminal, make sure that the electricity is shut off, and then connect the power cable (H) to the plant power terminal. Before connecting to the plant power terminal, connect the remote control cable (F) and the power cable (G). Make sure that the power circuit breaker of the weighing machine is turned OFF.**

3. Guide the power cable (G) inside of the main body frame, and fix the flexible tube to the main body frame.
4. Connect the power cable (G) to terminals L11 and L31 of the terminal block XT601.
5. Guide the remote control cable (F) inside of the main body frame, and fix the flexible tube to the main body frame.
6. Connect the communication cable XJ02 of the remote control cable (F) to the relay connector of the CAL unit located in the main body frame.

7. Connect the RCU power cable XC21 of the remote control cable (F) to U01 of the PS-0 unit located in the main body frame. Connect the ground wire to the PS-0 unit grounding block.
8. Connect the customer power source side of the power cable (H) to the plant power terminal (outlet) that is closest to the weighing machine.

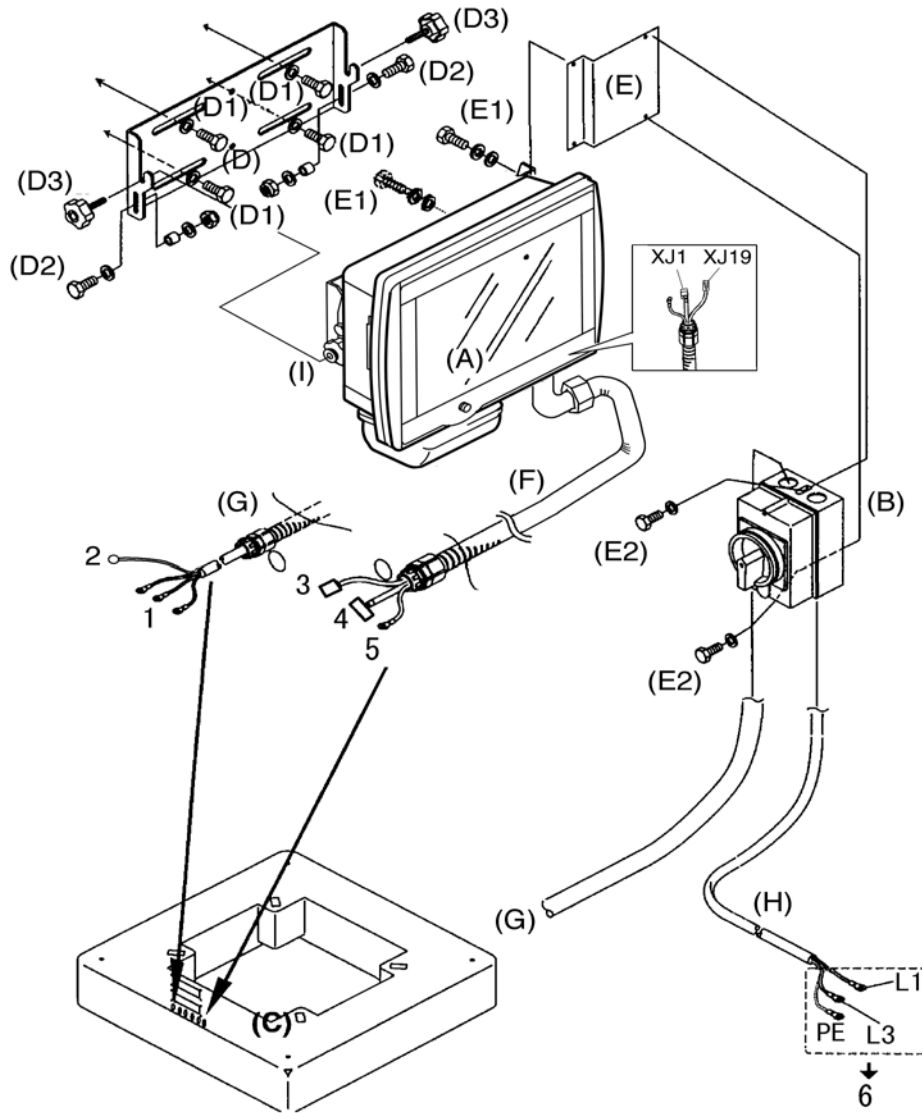


Fig.12-2 Wiring Diagram for Power Cable Remote Control Unit

Table 12-3 Power Cable Connecting Locations

No.	Connecting Location
1	PS-0 unit (Terminal block XT601)
2	PS-0 unit (QF2, primary side)
3	PS-0 unit (U01-XC21 connector)
4	Ethernet relay connector
5	Ground terminal block

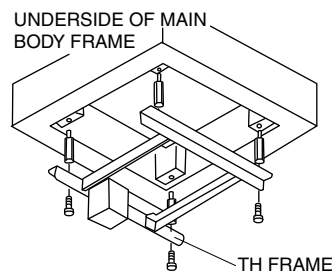


**Table 12-3 Power Cable Connecting Locations (Continued)**

No.	Connecting Location
6	Customer power terminal

### 12.4.5 Installing Timing Hopper Frame

1. Install the timing hopper frame to the bottom of the main body, using four bolts.

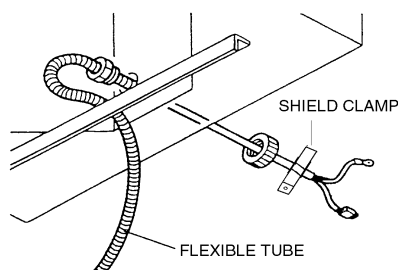
**Fig.12-3 Timing Hopper Frame**

### 12.4.6 Connecting TH Signal Wire

1. Fix the flexible tube for the timing hopper to the main body frame from inside of the main body frame.
2. Insert the TH signal wire to the relay connector of the DUC board.

#### NOTE

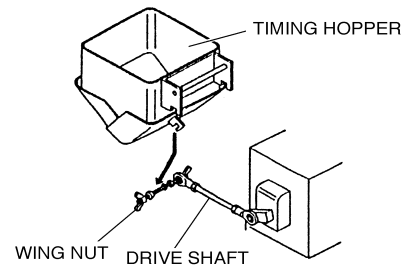
- Connect in accordance with the connector number of the TH signal wire, and the relay connector indication of the DUC board.

**Fig.12-4 TH Signal Wire**

3. Fix the shield coating portion of the TH signal wire to the main body with the shield clamp and bolts.

### 12.4.7 Installing Timing Hopper

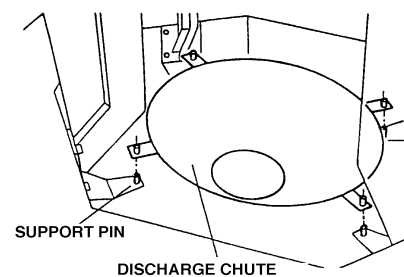
1. Install the timing hopper installation shaft by hanging the shaft to the hook of the main body.
2. Check that the lever of the timing hopper fits appropriately.



**Fig.12-5 Timing Hopper**

### 12.4.8 Installing Discharge Chute

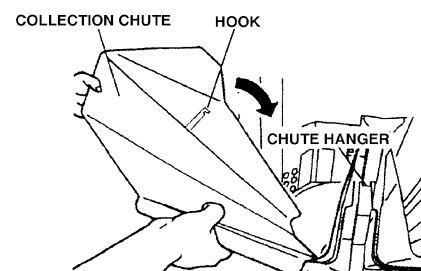
1. Insert the arm holes of the discharge chutes over the four supporting pins of the main body frame.



**Fig.12-6 Discharge Chute**

### 12.4.9 Installing Collection Chute

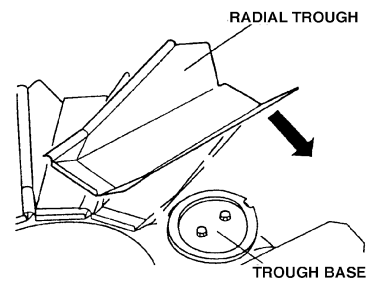
1. Hang the hooks on both sides of the collection chute to the chute hanger of the main body frame support column.



**Fig.12-7 Collection Chute**

### 12.4.10 Installing Radial Trough

1. Place the radial trough on the trough base.
2. Tighten the clamp lever to fix the radial trough.



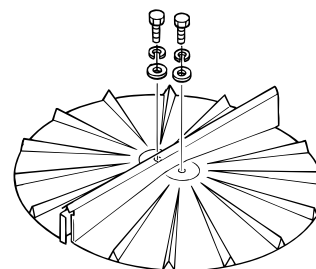
**Fig.12-8 Radial Trough**

### 12.4.11 Installing Dispersion Table

1. Attach the dispersion table, and tighten the four pinches.

#### NOTE

- When installing the dispersion table, check that it does not make contact with the trough.



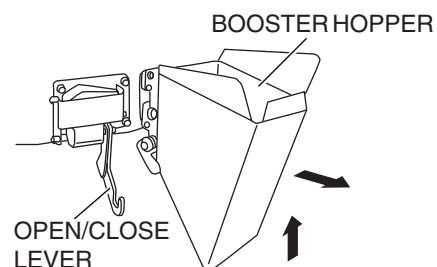
**Fig.12-9 Dispersion Table**

### 12.4.12 Installing Booster Hopper

#### NOTE

- The booster hoppers do not have matching numbers. The booster hoppers can be installed to any of the heads.

1. Hang the hook of the booster hopper to the booster hopper hanger of the weigh drive unit.
2. Make sure that the open/close roller of the booster hopper fits into the switching lever.



**Fig.12-10 Booster Hopper**

### 12.4.13 Installing Weigh Hopper

#### CAUTION

- When installing the weigh hopper, do not give a shock to the weigh hopper hanger of the weigh drive unit. Doing so may cause malfunction of the weigh sensor.

#### NOTE

- The weigh hoppers do not have matching numbers. The weigh hoppers can be installed to any of the heads.

1. To install the weigh hopper, apply the hooks of the installation portions to the installation pins of the main unit.
2. Make sure that the open/close roller of the weigh hopper fits securely into the switching lever of the main body.

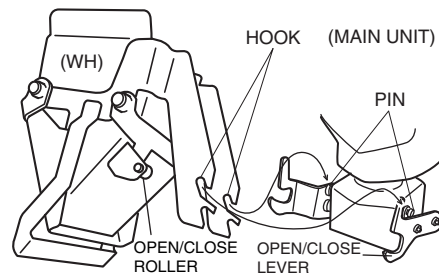


Fig.12-11 Weigh Hopper

### 12.4.14 Installing Pool Hopper

#### NOTE

- The pool hoppers do not have matching numbers. The pool hoppers can be installed to any of the heads.

1. To install the pool hopper, apply the hooks of the installation portions to the installation pins of the main unit.
2. Make sure that the open/close roller of the pool hopper fits securely into the switching lever of the main body.

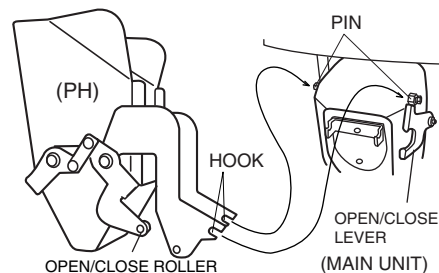


Fig.12-12 Pool Hopper

### 12.4.15 Connecting to Interlocking Device

Connect the interlock signal wires of the relay unit to the interlocking device such as packer and feeder.

**⚠ WARNING**

- When other devices need to be connected before and after this weighing machine, shut off the power for all of the devices. Failure to do so may cause an electrical shock.

**⚠ CAUTION**

- In order to prevent malfunction of the weighing machine, route the interlock signal wire away from the power cables. When using relays and contactors as a load, prevent induction noise by using a surge killer or other methods.

#### (1) Specifications of the interlocking device signal

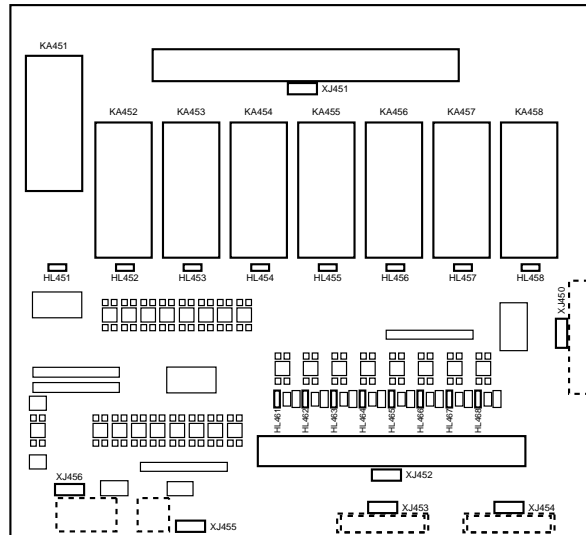
For the interlocking device signals, follow the specifications below.

Table 12-4 Specifications of the Interlocking Device Signal

Interlock Target	Signal	Input/Output Characteristics of the weighing machine
1. Packer	<ul style="list-style-type: none"> <li>• Interlock signal. The interlock signal from the packer to the weigher should output a no-voltage contact signal.</li> </ul>	<ul style="list-style-type: none"> <li>• Input characteristics. Circuit: opto-isolator. Voltage: 24VDC. Current: approx. 15 mA. Signal width: min. 50 msec.</li> </ul>
	<ul style="list-style-type: none"> <li>• Discharge completion signal. The discharge completion signal from the weigher to the packer outputs a no-voltage contact signal.</li> </ul>	<ul style="list-style-type: none"> <li>• Output characteristics. Circuit: relay contact. Rating: connect 250V, the load of AC5A or lower. Signal width: set arbitrary with the remote control. (Default value is 100 msec)</li> </ul>
2. Infeeder	<ul style="list-style-type: none"> <li>• Infeed control signal. The feed signal from the weigher outputs a no-voltage contact signal.</li> </ul>	<ul style="list-style-type: none"> <li>• Output characteristics. Circuit: relay contact. Rating: connect 250V, the load of AC5A or lower.</li> </ul>
3. Other	<ul style="list-style-type: none"> <li>• Error signal. The error signal from the weigher outputs a no-voltage contact signal.</li> </ul>	<ul style="list-style-type: none"> <li>• Output characteristics. Circuit: relay contact. Rating: connect 250V, the load of AC5A or lower.</li> </ul>

## (2) Signal name and connecting location of relay unit external connection terminal

The signal names and connecting locations of the external connection terminals of the relay unit are as follows.



**Fig.12-13 Relay Unit External Connection Terminal and Connecting Terminal Block Layout Drawing**

**Table 12-5 Relay Unit External Connection Terminals**

Terminal No.	Terminal Block No.	Signal Name	Connecting Location
28-29	XJ451/1-2	Discharge completion signal 1	Packer
78-79	XJ451/3-4	Discharge completion signal 2	Packer
82-83	XJ451/5-6	Error signal 1	
90-91	XJ451/7-8	Error signal 2	
30-31	XJ451/9-10	Infeed control signal 1	Infeeder
88-89	XJ451/11-12	Infeed control signal 2	Infeeder
84-85	XJ451/13-14	Control 1	* Optional
86-87	XJ451/15-16	Control 2	* Optional
20-21	XJ452/1-2	Interlock signal 1	Packer
21-72	XJ452/2-3	Interlock signal 2	Packer
22-21	XJ452/4-5	Input signal 5	* Optional
21-73	XJ452/5-6	Input signal 6	* Optional
25-26	XJ452/7-8	Input signal 1	* Optional
26-102	XJ452/8-9	Input signal 2	* Optional
104-105	XJ452/10-11	Input signal 3	* Optional
105-106	XJ452/11-12	Input signal 4	* Optional
53-54	XJ452/13-14	DC+24V	

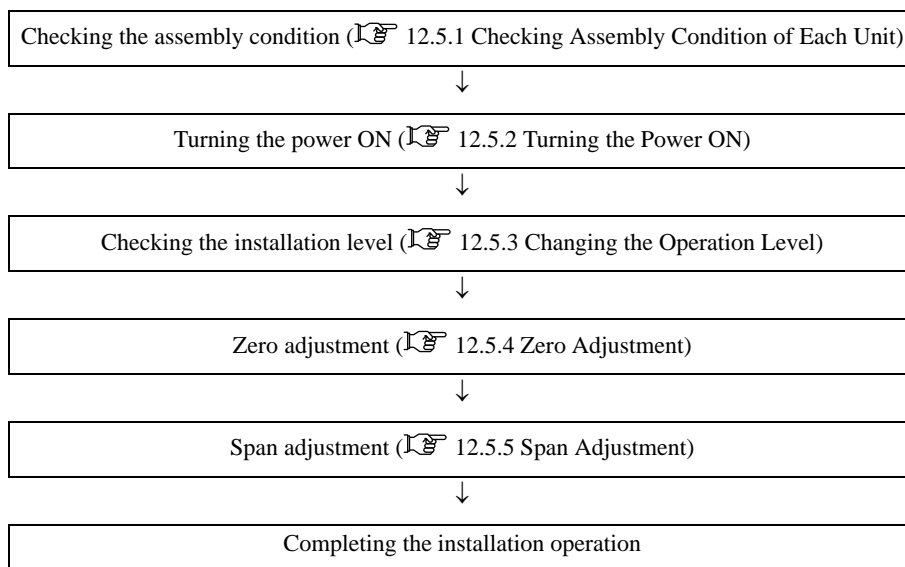
## 12.5 Check and Adjustment After Installation

After installing the unit and components, and routing the wiring, check the installation condition.

### WARNING

- **When entering the weighing machine to check the installation condition, the operator must turn OFF and lock the main power switch, and keep the key in his possession during the work.**

Table 12-6 Outline of Check and Adjustment After Installation

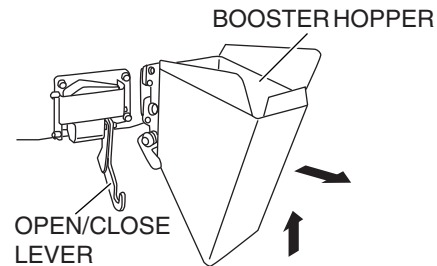


## 12.5.1 Checking Assembly Condition of Each Unit

Check that each unit such as the dispersion table, radial trough, discharge chute and hoppers are securely installed in accordance with the following procedures:

### 1. Booster hopper

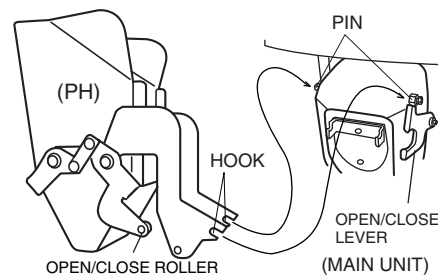
Make sure that the open/close roller of the booster hopper in the weigh drive unit fits securely into the groove of the switching lever of the booster hopper.



**Fig.12-14 Booster Hopper**

### 2. Checking secure installation of the pool hopper.

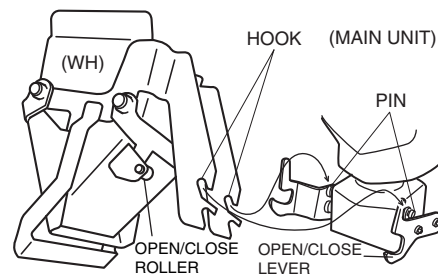
Make sure that the open/close roller of the pool hopper fits securely into the switching lever of the main body.



**Fig.12-15 Pool Hopper**

### 3. Checking secure installation of the weigh hopper.

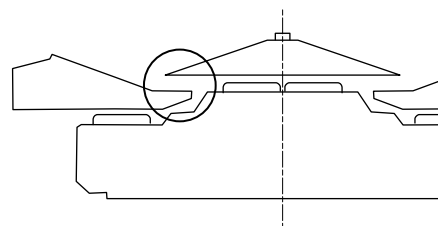
- Make sure that the open/close roller of the weigh hopper fits securely into the switching lever of the main body.



**Fig.12-16 Weigh Hopper**

### 4. Checking secure installation of the dispersion table.

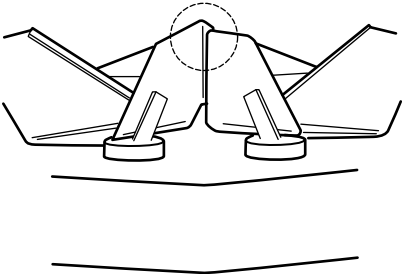
- Make sure that the dispersion table is fixed securely.
- Make sure that there is no interference between the dispersion table and radial trough.



**Fig.12-17 Dispersion Table Partial View**



- 5. Checking for the interference between radial troughs.  
Make sure that there is no interference between radial troughs.  
If there is interference, reinstall the radial troughs.



**Fig.12-18 Radial Trough Partial View**

## 12.5.2 Turning the Power ON

### CAUTION

- Before connecting to the plant power terminal, use a tester to check if the power specifications of the weighing machine match with the plant power supply.  
When power of different specifications is accidentally supplied, serious damage to the weighing machine may occur.

Turn the power ON in accordance with the following procedures.

Connect the power outlet, and turn the main power switch next to the remote control unit ON. The [Main Menu] screen of the [Operator] level is displayed automatically.

1. Check the wiring of terminal block PS-0.
2. Check that the breaker is ON.

### NOTE

- Keep the breaker inside the main body ON all of the time.



MAIN POWER SWITCH

**Fig.12-19 Main Power Switch**

3. Turn ON the main power switch of the factory side, and turn ON the main power switch next to the remote control unit.

▶ The [Main Menu] screen appears.

4. Press the [Power] key .

▶ The power will be supplied to the hopper drive circuit and feeder drive circuit.



**Fig.12-20 [Main Menu] Screen**

### 12.5.3 Changing the Operation Level

Change to the [Installation] level in accordance with the following procedures.

1. Press the [Operation Level Selection] key



- ▶ The [Operation Level Selection] menu appears.

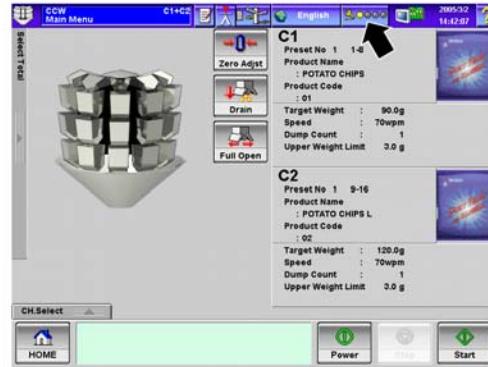


Fig.12-21 [Main Menu] Screen

2. Press [Installation].

- ▶ The [Password Input Keyboard] screen appears.

3. Enter the password.

- ▶ The [Main Menu] screen for the [Installation] level appears.

**NOTE**

- The factory default password set for the [Installation] level is “2”.
- The entered password is displayed as “\*”.

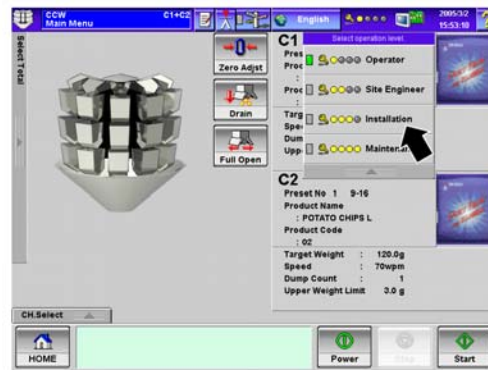


Fig.12-22 [Operation Level Selection] Drop-down List

## 12.5.4 Zero Adjustment

Check the [Installation] level in accordance with the following procedures.

1. Press the [Machine Set] pop-up key



- ▶ The [Machine Set] pop-up menu appears.

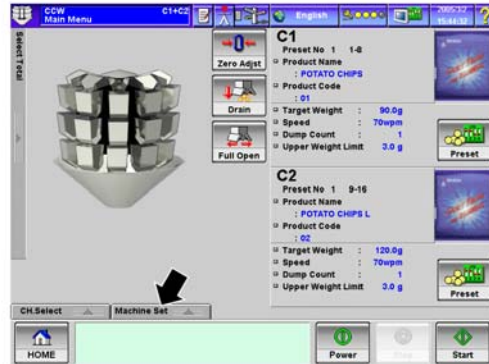


Fig.12-23 [Main Menu] Screen

2. Select [Manual Adjustment].

- ▶ The [Manual Adjustment] screen appears.

3. If the [Weighing Adjst] tab is not selected, press the [Weighing Adjst] tab.

- ▶ The weight of each head is displayed.

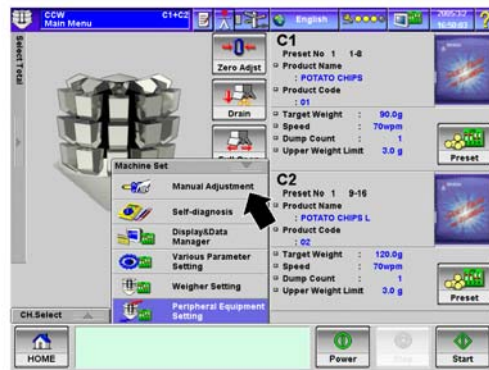


Fig.12-24 [Machine Set] Pop-up Menu

4. Press the [ALL Head SLCT/CLR] key



- ▶ All heads are selected.



Fig.12-25 [Weighing Adjst] Tab Screen  
([Manual Adjustment] Screen)

5. Press the [Zero Adjst] key .


- ▶ The hopper opens/closes, and along with the message “Please wait a moment,” the zero adjustment starts.



**Fig.12-26 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

6. After the zero adjustment is complete, check that the weight display of each weigh head is within  $0.0g \pm 0.1g$ .

#### NOTE

- If the weight display of each head exceeds  $0.1g$  or falls below  $-0.1g$ , repeat the procedure from step 3.
- The operation details of the zero adjustment procedures  
( 6.6 [Zero Adjustment] Screen)
- Then, perform the span adjustment.  
(See the following.)



**Fig.12-27 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

### 12.5.5 Span Adjustment

For the span adjustment, follow the procedures below.

1. Place the span adjustment weight on all of the weigh hoppers.

**NOTE**

- Normally the span adjustment weight is 200g. However, it may vary depending on the specifications.

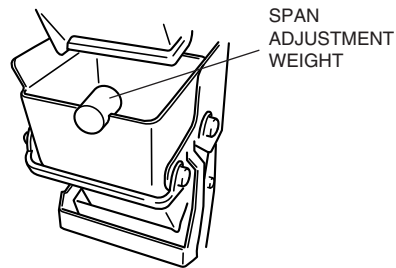


Fig.12-28 Weigh Hopper

2. Press the [ALL Head SLCT/CLR] key



- ▶ All heads are selected.

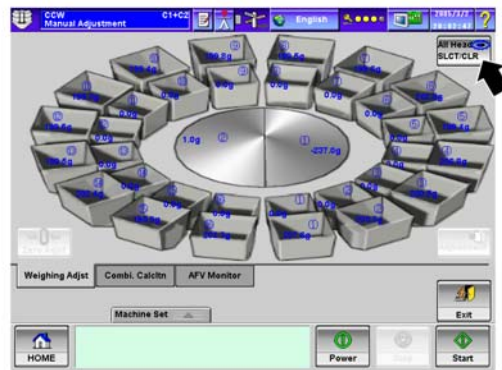


Fig.12-29 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)

3. Press the [WH Span Adjustment] key



- ▶ The span adjustment starts.

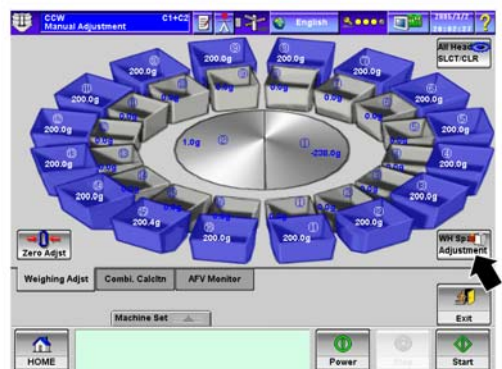
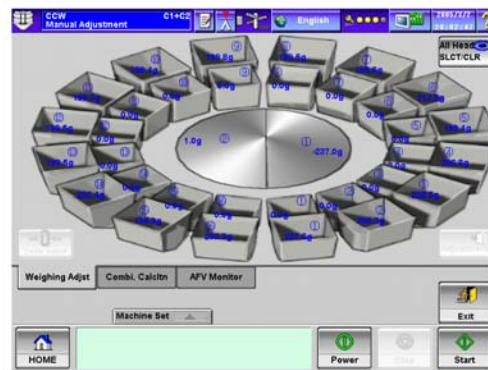


Fig.12-30 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)

4. Make sure that the weight display of each head is within 200.0g±0.1g.

**NOTE**

- Make sure that the weight display of each head does not exceed 200.0g±0.1g. If it exceeds 200.1g, or falls below 199.9g, repeat from step 2.



**Fig.12-31 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

5. Remove the span adjustment weight from the weigh hopper.


- ▶ Make sure that the weight display of each head is within 0.0g±0.1g.

**NOTE**

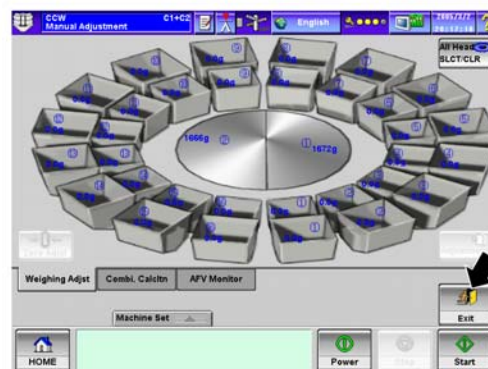
- If the weight display of each head exceeds 0.1g, or falls below -0.1g, repeat from step 3 of “12.5.4 Zero Adjustment”



**Fig.12-32 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

6. Press the [Exit] key .

- ▶ The display returns to the [Main Menu] screen.



**Fig.12-33 [Weighing Adjst] Tab Screen ([Manual Adjustment] Screen)**

## 12.5.6 Check Items at Installation

Check the following items during installation.

**Table 12-7 Check Items at Installation**

Item	Contents	Procedures	Criteria
1. Check model	Compare machine with type (model) written in the instructions.	Check with model block diagram and standard specifications.	• They should match. (Check visually)
2. Check power	Voltage and frequency.	Verify with mechanical, electrical, and manufacturing instructions and requests.	• They should match. (Check visually)
3. Check vicinity of main body	1. Check breaker.	Press button.	• Check operation panel display visually.
	2. Check wiring of terminal block PS-0 and PS-2.	Pull the code using hands. (Do not pull strongly.)	• Code should not be pulled out.
4. Check operations (Continue to next page)	1. Check operation panel display.	Check for errors on display.	• No display fluctuation or missing dots detected.
	2. Check memory card.	Insert the card to the remote control BOX, and write/read out presettings.	• Check with remote control display.
	3. Check printer.	Set to preset, and press [Output] key to print out.	• Display and printed contents should match.
	4. Check zero adjustment.	Perform zero adjustment, and check zero point of each head.	• Weigher is in stable condition, and zero point is within $\pm 0.1\text{g}$ . ( $\pm 1$ graduation)
	5. Check span adjustment.	After zero adjustment, place span adjustment weight on each head, and perform span adjustment. <u>Cell Span adjustment weight</u> Standard capacity spec. 6 L 200.0g	• Weigher is in stable condition, and span value is within $\pm 1$ graduation. <u>Span adjustment value</u> 200.0 $\pm$ 0.1g
	6. Check radial feeder and dispersion feeder operations.	Put weigher into operation.	• Vibrate. (Check with hands) • At feeder value of 99, vibration display is within $3.0\pm 0.25$ mm at strong vibration.
	7. Check smooth flow between pool hopper, weigh hopper, and booster hopper.	Check parallelism between pool hopper, weigh hopper, and booster hopper. (Parallelism between the weigh hopper and booster hopper is unadjustable.) Open the gate of the pool hopper and check for a smooth flow.	• Difference between left and right should be within 1.5 mm. • Pool hopper gate does not make contact with weigh hopper.



Table 12-7 Check Items at Installation (Continued)

Item	Contents	Procedures	Criteria
4. Check operations (Continued)	8. Check operations and stop positions of pool hopper lever, weigh hopper lever, and booster hopper lever.	Put weigher into operation, place weights on each weigh hopper sequentially to activate pool hopper, weigh hopper, and booster hopper.	<ul style="list-style-type: none"> <li>• Check for the smooth operation of each lever.</li> <li>• Check if it stops at the home position.</li> </ul>
	9. Check gate noise and opening condition of pool hopper, weigh hopper, and booster hopper.	Put weigher into operation, place weights on each weigh hopper sequentially to activate pool hopper, weigh hopper, and booster hopper.	<ul style="list-style-type: none"> <li>• Check that noise is at a minimum when the gate is closed.</li> <li>• There should be no metallic sound.</li> </ul>
	10. Check actual weighed value and display value.	Set to print the weighing result every time.	<ul style="list-style-type: none"> <li>• Actual weighed value <math>\pm 5</math> graduations or more should not be printed more than twice in a row.</li> </ul>
5. Check external signals	1. Check interlock signal.	Short-circuit interlock signal wire.	<ul style="list-style-type: none"> <li>• Relay board LED should light up.</li> </ul>
	2. Check discharge completion signal.	Place weights on weigh hopper according to set value, and perform discharging operations.	<ul style="list-style-type: none"> <li>• Check with relay board if LED lights up or by tester.</li> </ul>
	3. Check infeed control signal.	Press dispersion table by hand.	<ul style="list-style-type: none"> <li>• Check with relay board if LED lights up or by tester.</li> </ul>
6. Check errors	1. Check for incorrect zero point.	Set auto zero interval, and perform discharging operations.	<ul style="list-style-type: none"> <li>• Verify zero error and head number with remote control display.</li> <li>• Check with relay board if LED lights up.</li> </ul>
	2. Check error with pool hopper.	Remove pool hopper, and press switching lever of pool hopper using hands during the discharge operation.	<ul style="list-style-type: none"> <li>• Verify pool hopper error and head number with remote control display.</li> </ul>
	3. Check error with weigh hopper.	Remove weigh hopper, and press switching lever of weigh hopper using hands during the discharge operation.	<ul style="list-style-type: none"> <li>• Verify weigh hopper error and head number with the remote control display.</li> </ul>
	4. Check error with booster hopper.	Remove booster hopper, and press switching lever of booster hopper using hands during the discharge operation.	<ul style="list-style-type: none"> <li>• Verify booster hopper error and head number with the remote control display.</li> </ul>

**Table 12-7 Check Items at Installation (Continued)**

<b>Item</b>	<b>Contents</b>	<b>Procedures</b>	<b>Criteria</b>
7. Check documents	1. Check mechanical manufacturing instructions.	—	• Verify visually.
	2. Check electrical manufacturing instructions.	—	• Verify visually.
	3. Check manufacturing requests and order specifications.	Check main model of branch number, and specifications.	• Verify visually.
	4. Check specifications.	—	• Verify visually.
	5. Check layout diagram.	Installation position and dimensions of remote control BOX. (Height, width, discharge height, etc.)	• Check visually and by actual measurement.
	6. Check attachments and spare parts.	Check tool box, weights, weigher, and attachments.	

# 13 APPENDIX

## 13.1 Summary

This chapter provides electric-related information based on CCW-R-216B\* model device for reference. Your device may be different from the one described in this chapter.

**NOTE**

- Do not repair the device or replace parts on your own. Contact the distributor or Ishida customer support.
- 

**<Contents>**

- Board location of the electrical unit
- Overall wiring diagram and block wiring diagram

**<Purpose>**

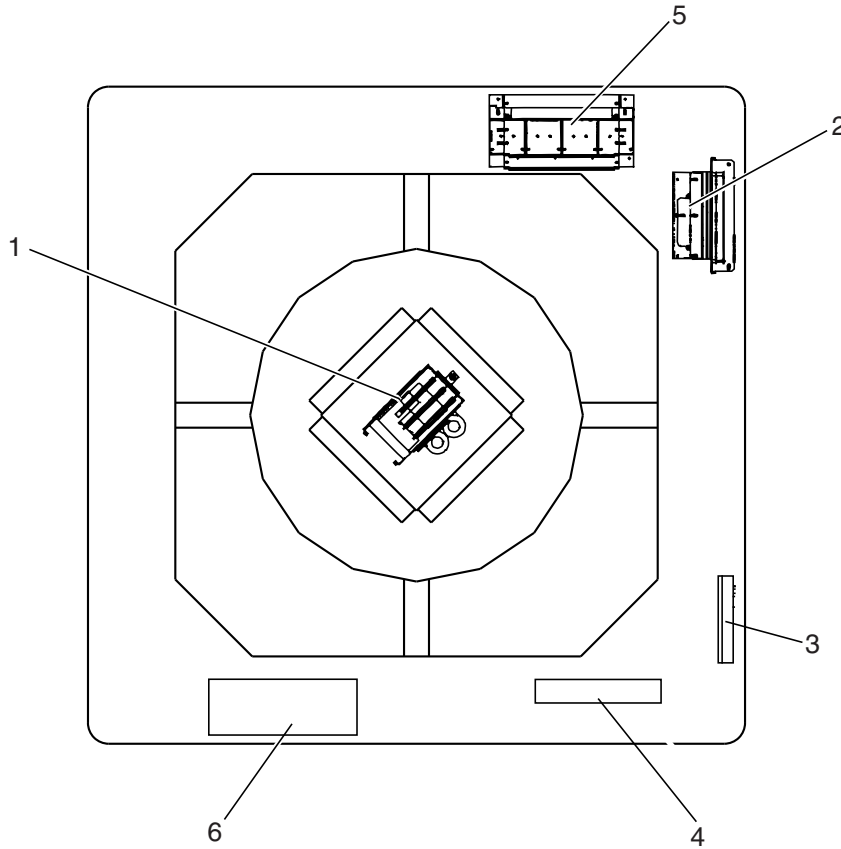
To provide reference information for repairing the device or replacing parts.

**<Intended reader>**

- Maintenance engineers
- Ishida service engineers

## 13.2 Electrical Unit Layout Drawing

### 13.2.1 Electrical Unit Layout Drawing (CCW-R-216B)



**Fig.13-1 Electrical Unit Layout Drawing**

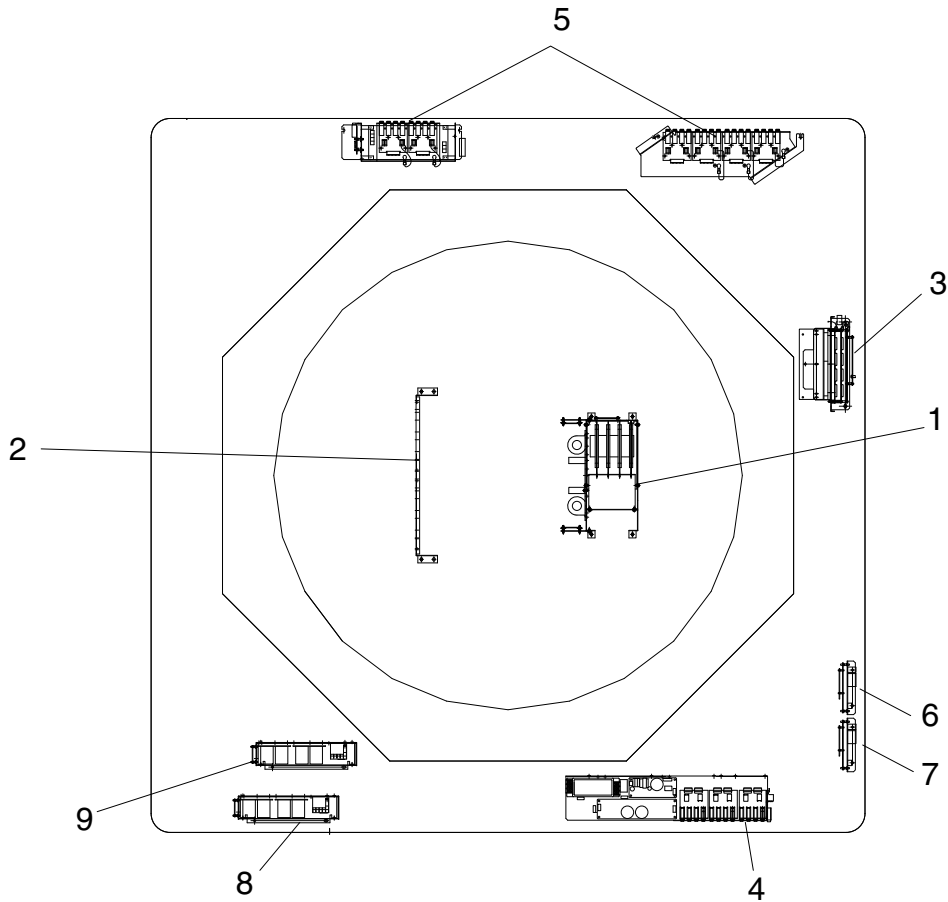
**Table 13-1 Names of Electrical Unit Parts**

No.	Name
1	Main Electrical Unit (HUB board, MPS board, FDRV board, FDC board)
2	CAL unit (ADC board, WCU board, DMU board)
3	RELAY unit (EXC board, RELAY board)
4	PS-0 Unit
5	PS-2 Unit
6	PS-FEEDER unit

#### NOTE

- Layout of the electrical unit differs depending on the model.

### 13.2.2 Electrical Unit Layout Drawing (CCW-R-224B)



**Fig.13-2 Electrical Unit Layout Drawing**

**Table 13-2 Names of Electrical Unit Parts**

No.	Name
1	Electrical unit 1 (HUB board, FDRV board, FDC board)
2	Electrical unit 2 (MPS board)
3	CAL unit (ADC board, WCU board, DMU board)
4	PS-0 Unit
5	PS-2 Unit
6	RELAY unit (EXC board, RELAY board)
7	SUB RELAY unit
8	PS-FEEDER unit 1
9	PS-FEEDER unit 2

### 13.3 Overall Block Diagram

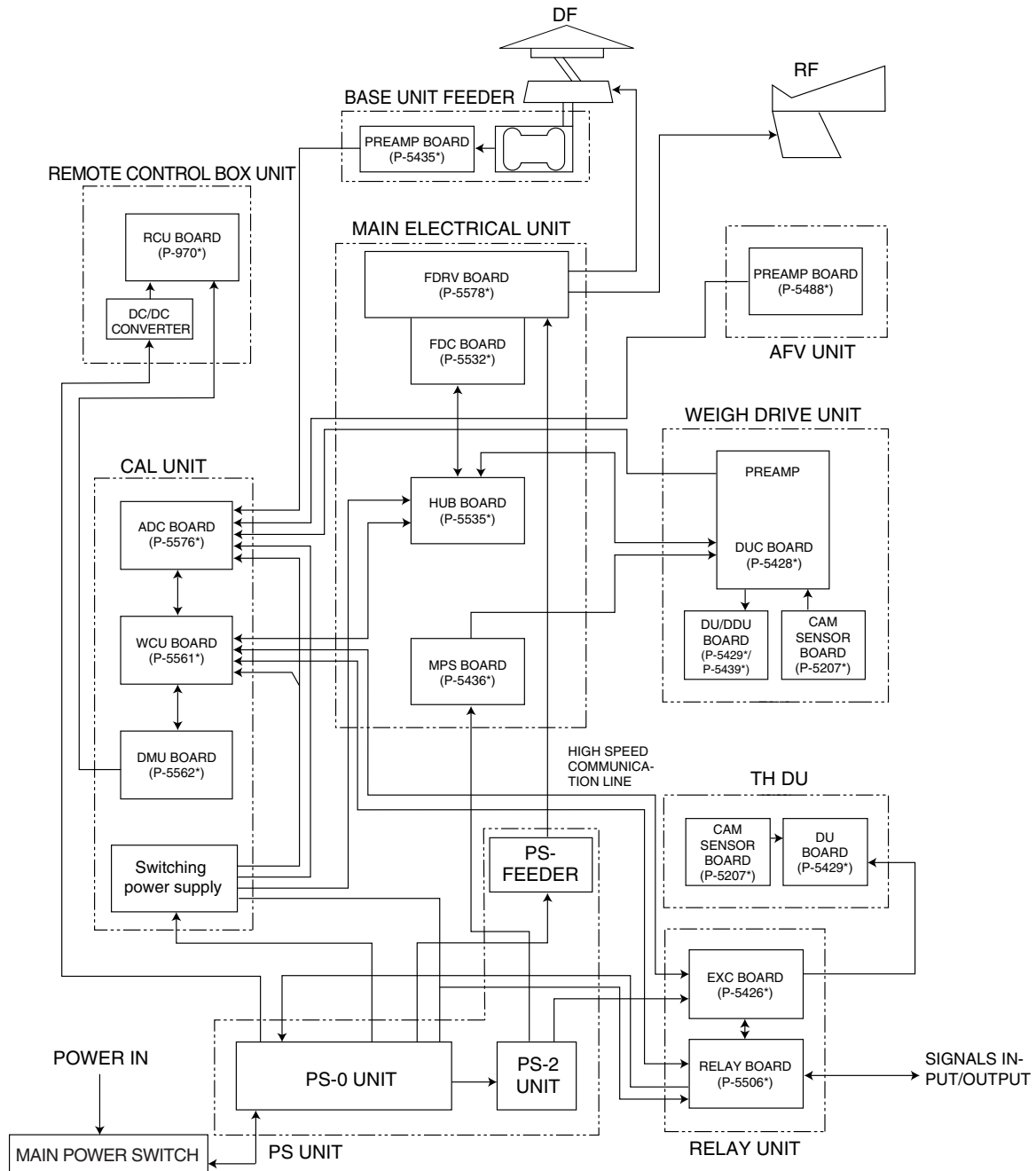
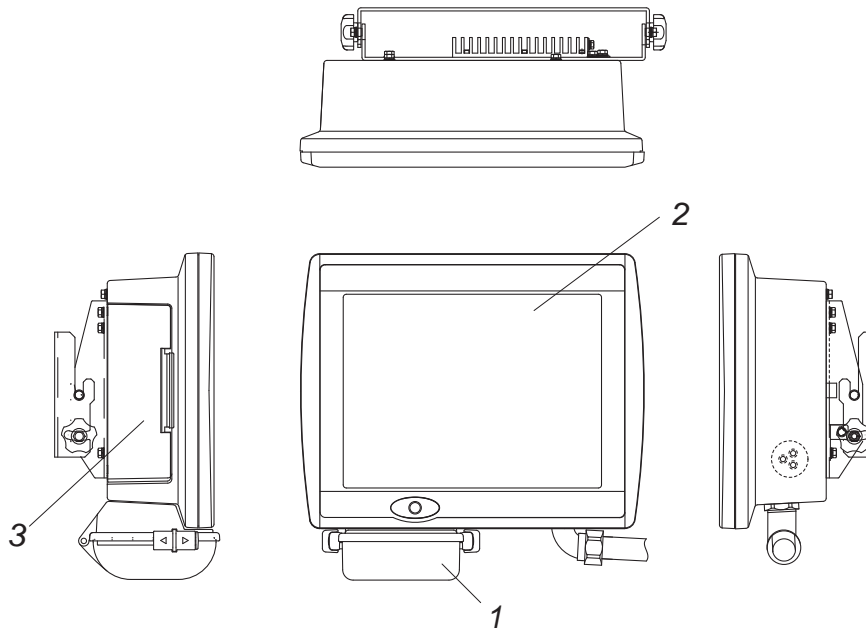


Fig.13-3 Overall Block Diagram

## 13.4 Remote Control BOX Unit



**Fig.13-4 Remote Control BOX Unit**

**Table 13-3 Names of Remote Control BOX Unit Parts**

No.	Name
1	Printer unit
2	Touch panel display
3	Memory card insertion slot

### 13.4.1 RCU Board (P-970\*)

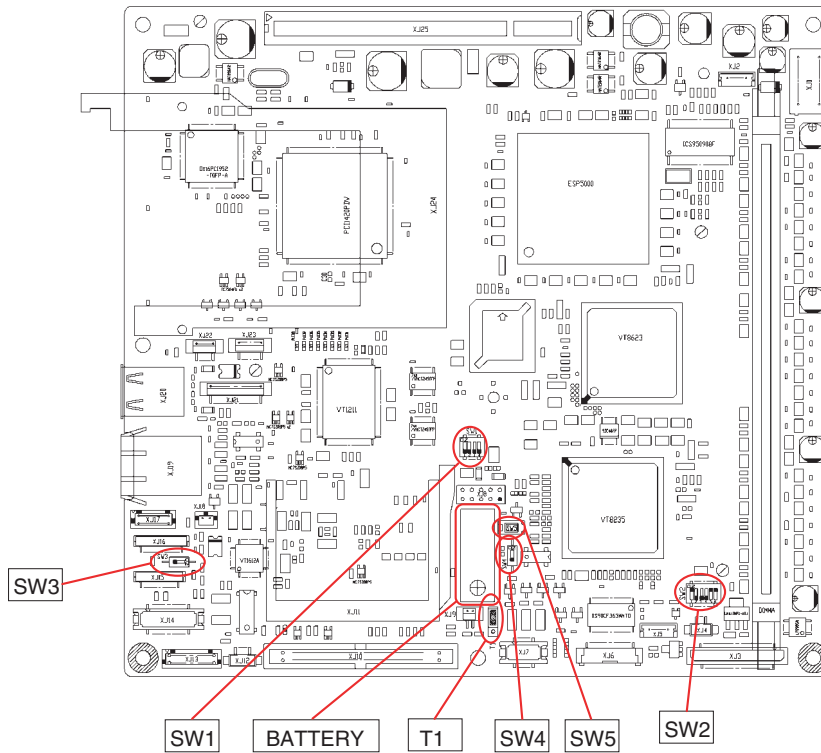


Fig.13-5 RCU Board

#### Functions of the board

1. Input control and display control of the touch panel.
2. Printer control and statistic calculation processing.
3. Communication with the CAL unit (DMU board) via a high-speed communication line.
4. Input and output control of the memory card.

#### <DIP-SW settings>

#### SW1: Multipurpose DIP-SW

Table 13-4 Setting Items and Functions of SW1

No.	Function	Default Setting
1	ON: Debug mode	OFF
2	Not used	OFF
3		OFF
4		OFF



**SW2: LCD panel type setting DIP-SW**

Table 13-5 Setting Items and Functions of SW2

No.	Function	Default Setting
1	4 = OFF, 3 = OFF, 2 = OFF, 1 = ON, ... 800 × 600	ON
2	4 = OFF, 3 = OFF, 2 = ON, 1 = OFF, ... 1024 × 768	OFF
3		OFF
4		OFF
5		Reverse display -2 (XJ3-41pin) OFF: High level ON: Low level
6	Reverse display -1 (XJ3-38pin, XJ6-3pin) OFF: High level ON: Low level	OFF

**SW3: COM2 port setting SW**

Table 13-6 Setting Items and Functions of SW3

Function	Default Setting
OFF: COM2 port is RS-232C level (XJ16 used) ON: COM2 port is C-MOS level (XJ21 used)	ON

**SW4: Power setting SW**

Table 13-7 Setting Items and Functions of SW4

Function	Default Setting
OFF: ATX type power used and started by power SW ON: AT type power is not used and started by turning the power ON	ON

**SW5: Onboard power SW**

This is power SW.  
Connected with XJ9 (external power SW) line.

**T1: Jumper plug for CMOS clear**

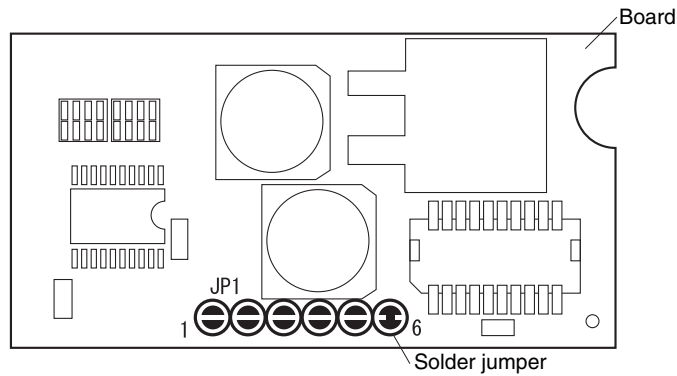
Table 13-8 Setting Items and Functions of T1

Function	Default Setting
1-2 : Normal operation 2-3 : CMOS, RTC clear	1-2 side

**CAUTION**

- Refer to “10.3.8 Replacement of Memory Backup Battery” for replacing battery.

## 13.4.2 PRN Board



*Fig.13-6 PRN Board*

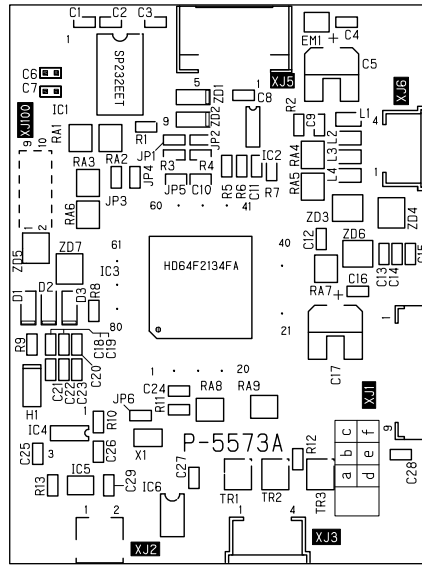
### Functions of the board

1. Control of the thermal printer. (Printing or paper feeding)

### Setting of board jumper

Set the data input format using the solder jumpers JP1 to JP6.  
Set JP1 to JP5 to open, and JP6 to short.

### 13.4.3 TP-I/F Board (P-5573\*)

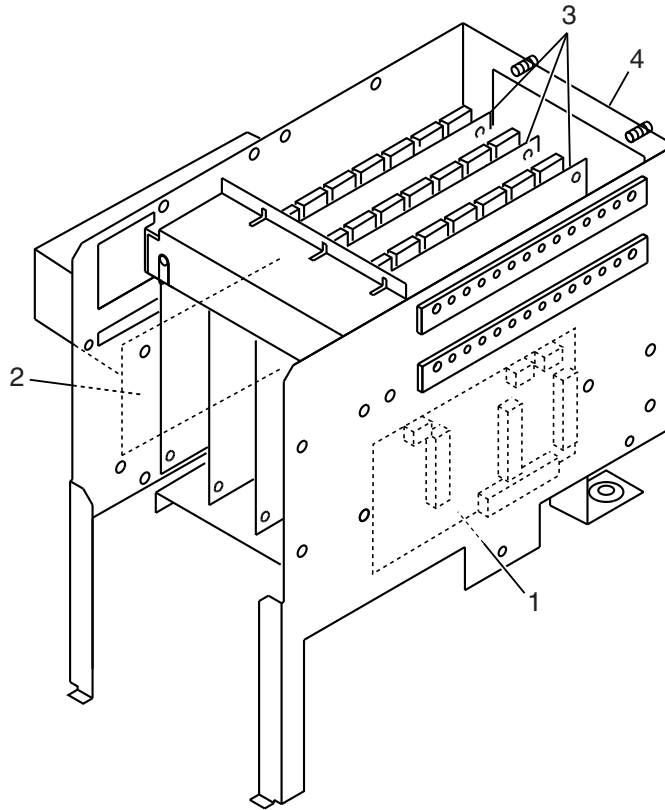


**Fig.13-7 TP-I/F Board**

#### Functions of the board

1. Control of the touch panel.

## 13.5 Main Electrical Unit



**Fig.13-8 Main Electrical Unit**

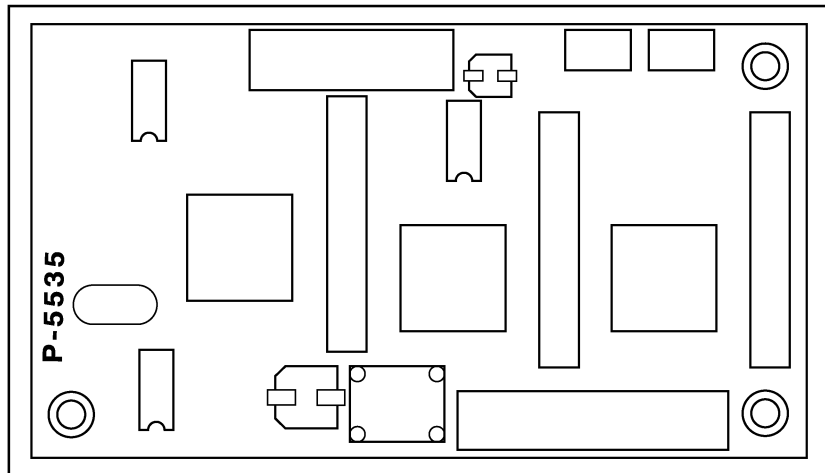
**Table 13-9 Names of Main Electrical Unit Parts**

No.	Name
1	HUB board (P-5535*)
2	MPS board (P-5436*)
3	FDRV board (P-5578*)
4	FDC board (P-5532*)

### NOTE

- The drawing is an example of CCW-R-216B-D.

### 13.5.1 HUB Board (P-5535\*)



*Fig.13-9 HUB Board*

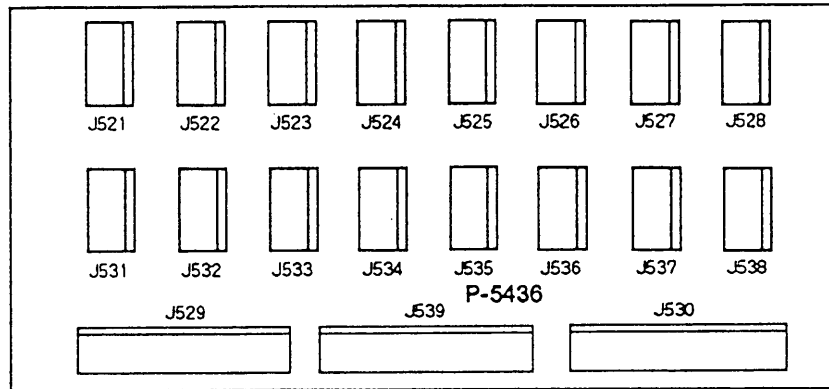
#### Functions of the board

1. Relay and distribution of communication between WCU board, DUC board and FDC board via a high-speed communication line.

#### NOTE

- Check the suffix number when replacing the board.

### 13.5.2 MPS Board (P-5436\*)

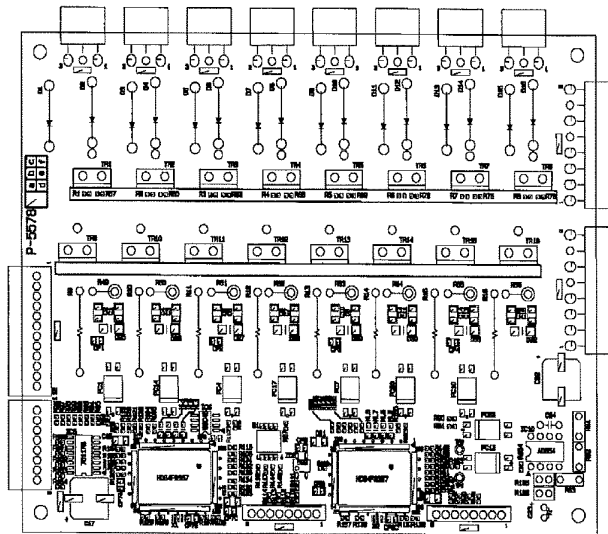


*Fig.13-10 MPS Board*

#### Functions of the board

1. Relay and distribution of DC39V power supply from PS-2 unit to DUC board.

### 13.5.3 FDRV Board (P-5578\*)



*Fig.13-11 FDRV Board*

#### Functions of the board

1. Drive control of the radial feeder.
2. Relay and distribution of power supply from PS feeder unit to radial feeder.

### 13.5.4 FDC Board (P-5532\*)

#### NOTE

- When replacing the board, set the DIP-SW to the setting as it was before the replacement.

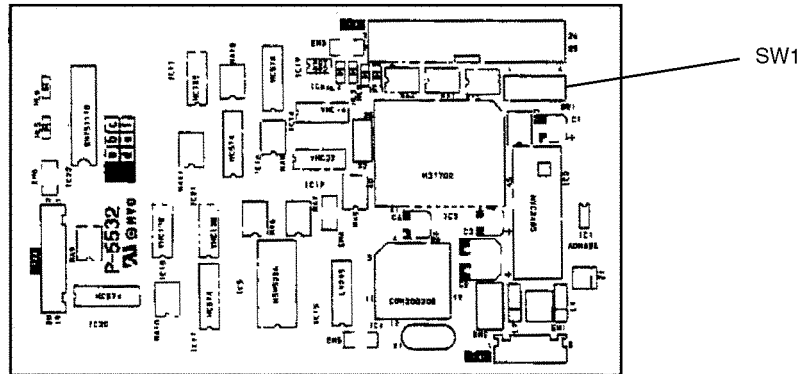


Fig.13-12 FDC Board

#### Functions of the board

- Drive control of the radial feeder.

#### Setting of the board switches

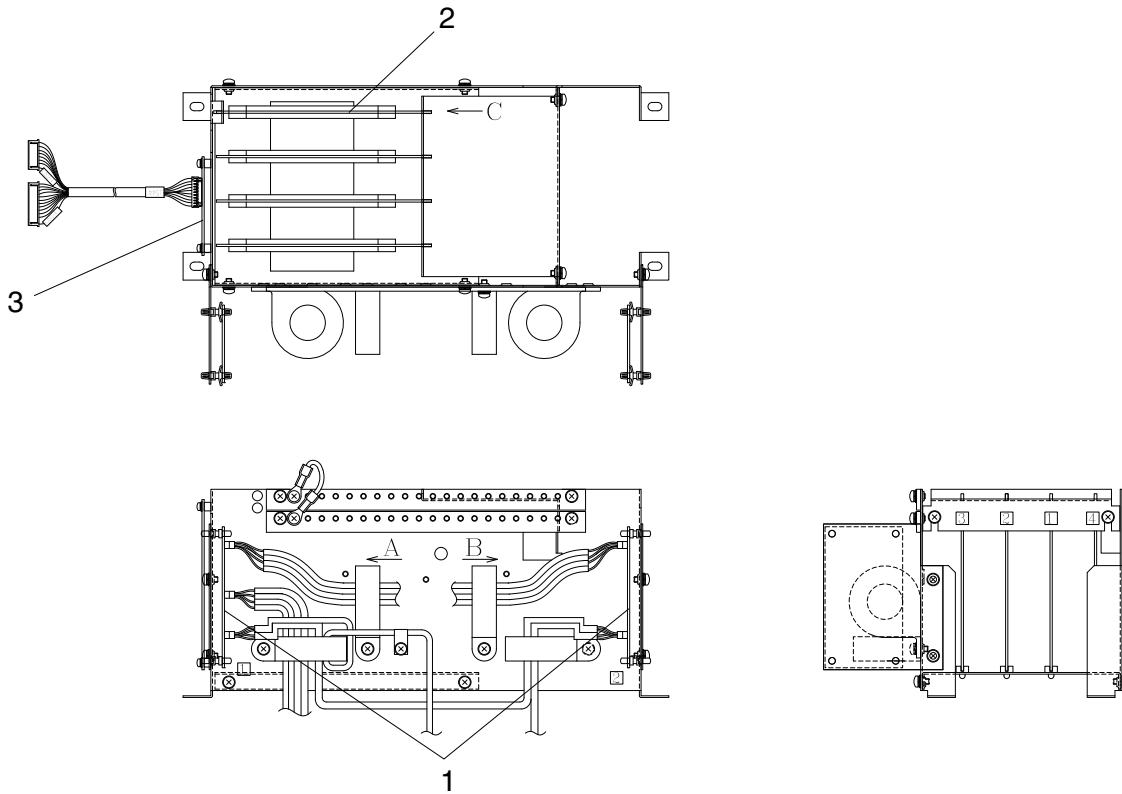
Table 13-10 Setting Items of DIP-SW

DIP-SW	Setting
SW 1-1	OFF
SW 1-2	OFF
SW 1-3	OFF
SW 1-4	OFF



## 13.6 Main Electrical Unit (CCW-R-224B)

### 13.6.1 Main Electrical Unit 1

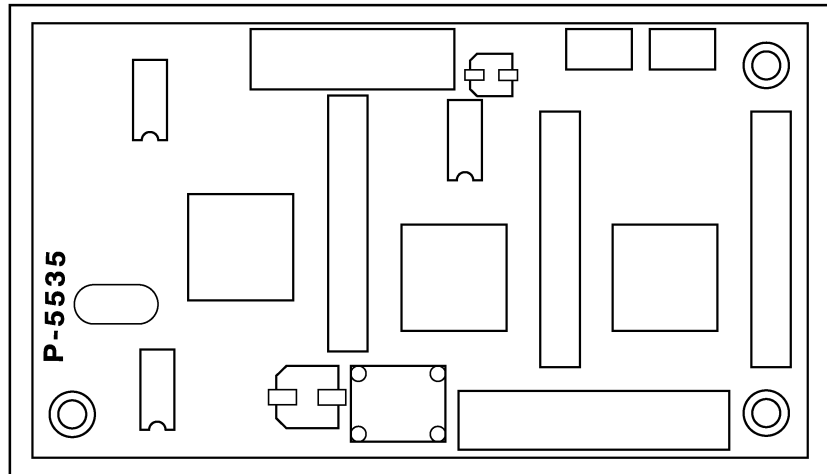


**Fig.13-13 Main Electrical Unit**

**Table 13-11 Names of Main Electrical Unit Parts**

No.	Name
1	HUB board (P-5535*)
2	FDRV board (P-5578*)
3	FDC board (P-5532*)

### 13.6.1.1 HUB Board (P-5535\*)



*Fig.13-14 HUB Board*

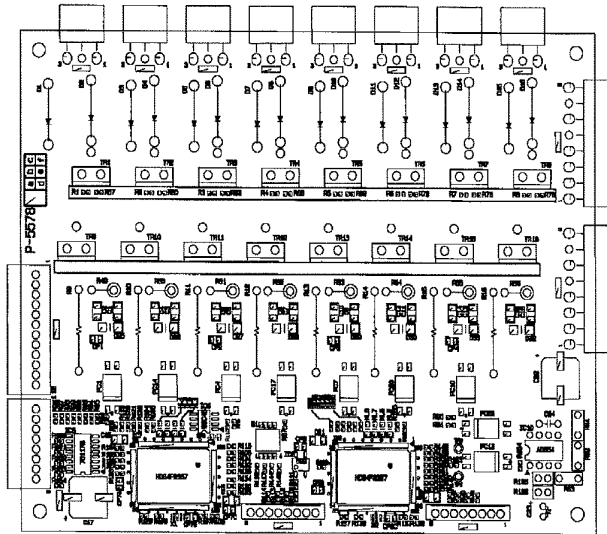
#### Functions of the board

1. Relay and distribution of communication between WCU board, DUC board and FDC board via a high-speed communication line.

#### NOTE

- Check the suffix number when replacing the board.

### 13.6.1.2 FDRV Board (P-5578\*)



**Fig.13-15 FDRV Board**

#### Functions of the board

1. Drive control of the radial feeder.
2. Relay and distribution of power supply from PS feeder unit to radial feeder.

#### NOTE

- Check the suffix number when replacing the board.

### 13.6.1.3 FDC Board (P-5532\*)

#### NOTE

- When replacing the board, set the DIP-SW to the setting as it was before the replacement.

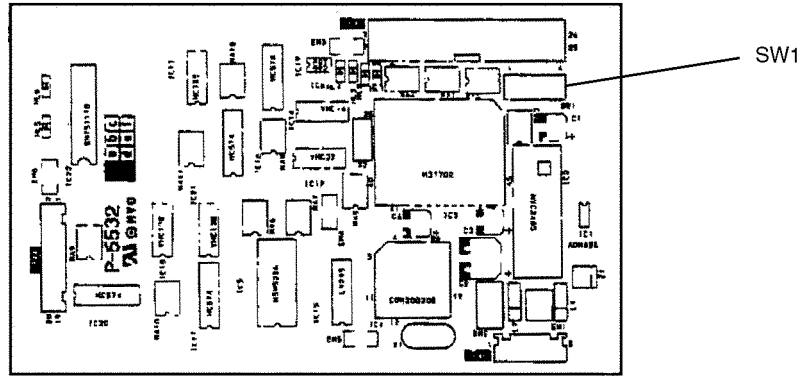


Fig.13-16 FDC Board

#### Functions of the board

- Drive control of the radial feeder.

#### Setting of the board switches

Table 13-12 Setting Items of DIP-SW

DIP-SW	Setting
SW 1-1	OFF
SW 1-2	OFF
SW 1-3	OFF
SW 1-4	OFF

#### NOTE

- When replacing the board, set as it was before the replacement.

### 13.6.2 Main Electrical Unit 2

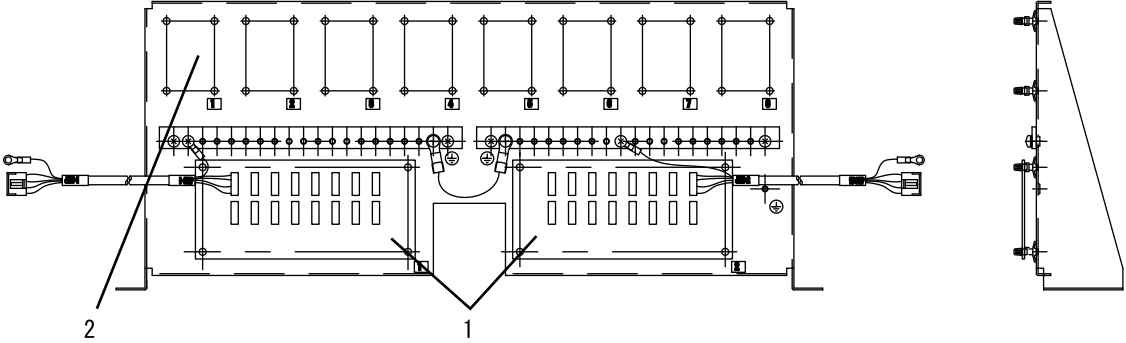
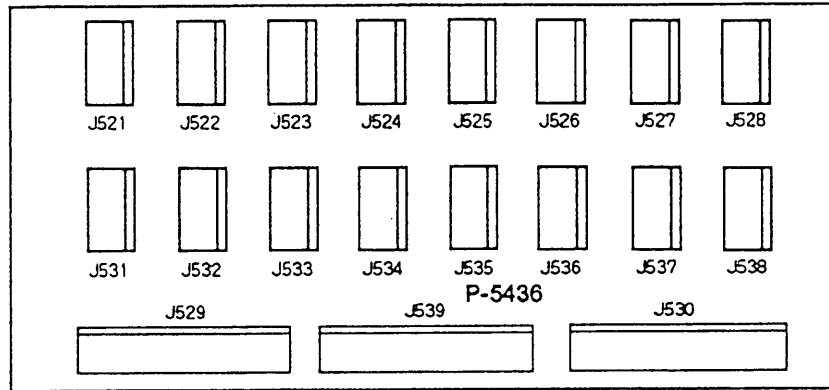


Fig.13-17 Main Electrical Unit 2

Table 13-13 Names of Main Electrical Unit 2 Parts

No.	Name
1	MPS Board (P-5436*)
2	PRE-AMP board (P-5435*)

### 13.6.2.1 MPS Board (P-5436\*)

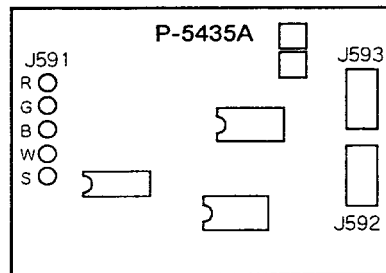


*Fig.13-18 MPS Board*

#### Functions of the board

1. Relay and distribution of DC39V power supply from PS-2 unit to DUC board.

### 13.6.2.2 Preamp Board (P-5435\*)



*Fig.13-19 Preamp Board*

#### Functions of the board

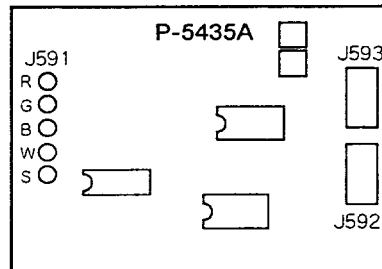
1. Amplification of the dispersion feeder load cell output.

#### NOTE

- Check the suffix number when replacing the board.

## 13.7 Base Unit Feeder

### 13.7.1 Preamp Board (P-5435\*)



*Fig.13-20 Preamp Board*

#### Functions of the board

1. Amplification of the dispersion feeder load cell output.

#### NOTE

- Check the suffix number when replacing the board.



## 13.8 AFV Unit

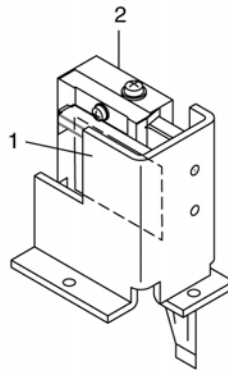


Fig.13-21 AFV Unit

Table 13-14 Names of AFV Unit Parts

No.	Name
1	PRE-AMP Board
2	Load cell (HAS-0.5L)

### 13.8.1 AFV Preamp Board (P-5488\*)

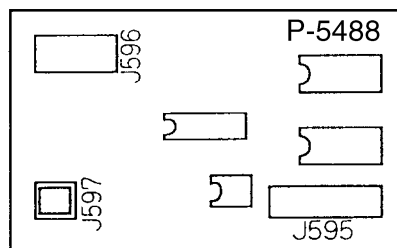
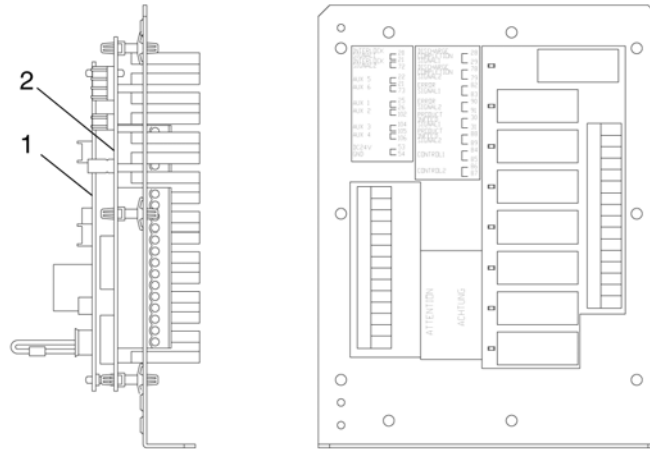


Fig.13-22 AFV Preamp Board

#### Functions of the board

1. Amplification of the AFV load cell output.

## 13.9 Relay Unit

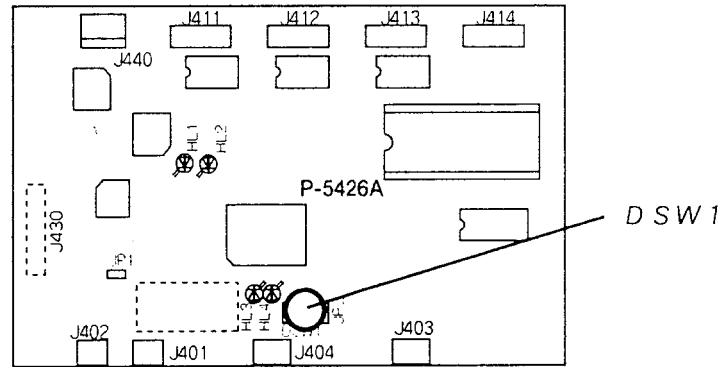


**Fig.13-23 Relay Unit**

**Table 13-15 Names of Relay Unit Parts**

No.	Name
1	EXC board (P-5426*)
2	RELAY board (P-5506*)

### 13.9.1 EXC Board (P-5426\*)



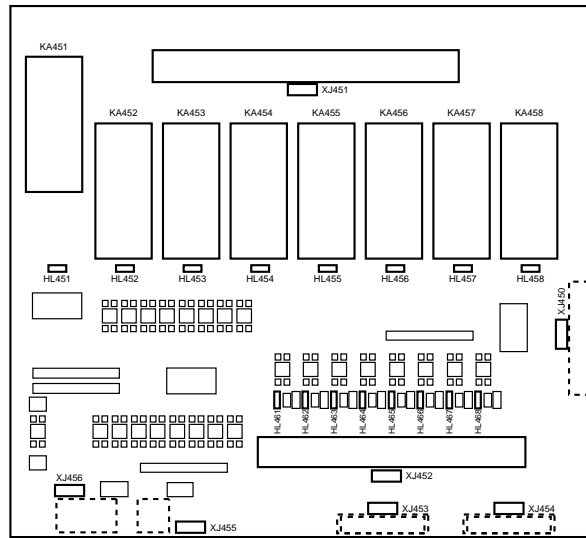
**Fig.13-24 EXC Board**

\* In most instances, set all DSW1 switches to OFF.

#### **Functions of the board**

1. Communication with the CAL unit.
2. Control of the timing hopper. (Optional)

## 13.9.2 Relay Board (P-5506\*)



**Fig.13-25 Relay Board**

### Functions of the board

1. Input and input monitoring of the interlock signal from the packer.
2. Output and output monitoring of the discharge completion signal to the packer.
3. Output and output monitoring of the error signal.
4. Output and output monitoring of the infeed control signal to the infeeder.
5. Input and input monitoring of the optional signal.
6. Output and output monitoring of the optional signal.

### Functions of Monitoring LED

**Table 13-16 Functions of Monitoring LED**

LED	Function	LED	Function
HL 451	Discharge completion signal 1	HL 461	Interlock signal 1
HL 452	Discharge completion signal 2	HL 462	Interlock signal 2
HL 453	Error signal 1	HL 463	Input signal 5
HL 454	Error signal 2	HL 464	Input signal 6
HL 455	Infeed control signal 1	HL 465	Input signal 1
HL 456	Infeed control signal 2	HL 466	Input signal 2
HL 457	Control 1	HL 467	Input signal 3
HL 458	Control 2	HL 468	Input signal 4

### 13.10 Relay Unit (CCW-R-224B)

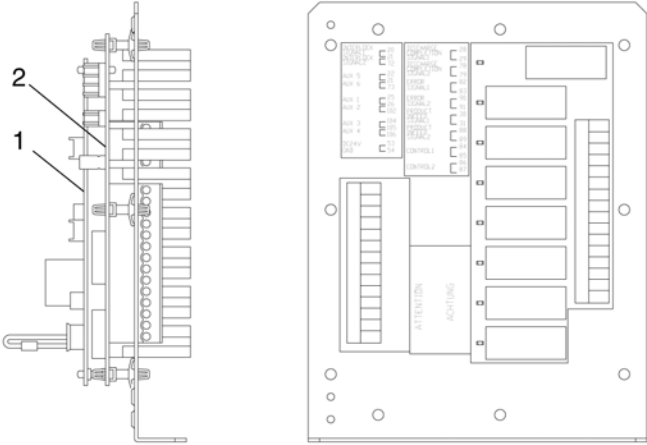
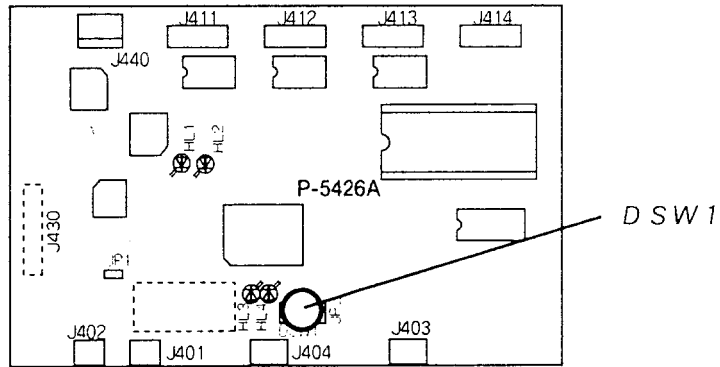


Fig.13-26 Relay Unit

Table 13-17 Names of Relay Unit Parts

No.	Name
1	EXC board (P-5426*)
2	Relay board (P-5506*)

### 13.10.1 EXC Board (P-5426\*)



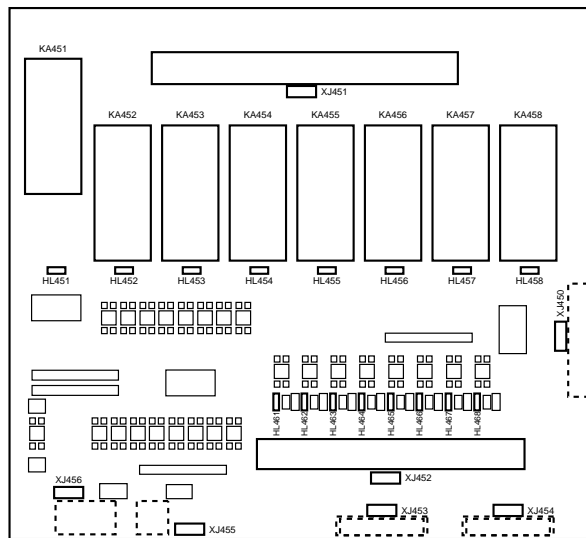
**Fig.13-27 EXC Board**

\* Set only the DSW1 No.1 switch to ON.

#### **Functions of the board**

1. Communication with the CAL unit.
2. Control of the timing hopper.

### 13.10.2 Relay Board (P-5506\*)



**Fig.13-28 Relay Board**

#### Functions of the board

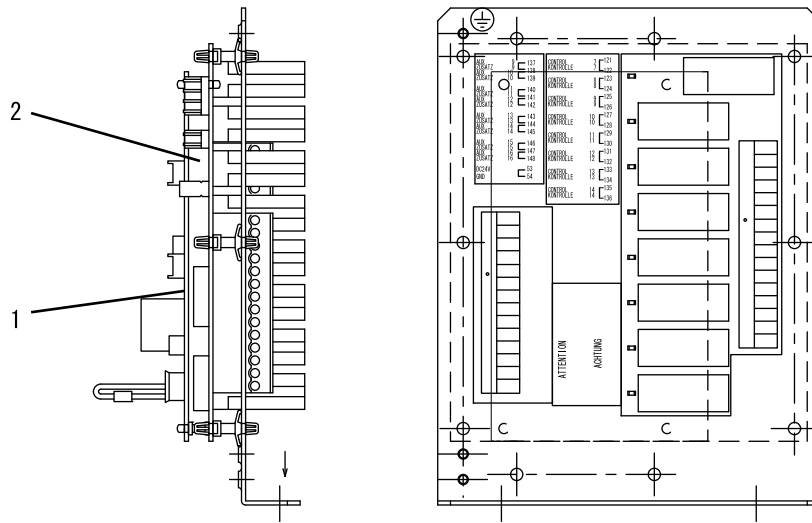
1. Input and input monitoring of the interlock signal from the packer.
2. Output and output monitoring of the discharge completion signal to the packer.
3. Output and output monitoring of the error signal.
4. Output and output monitoring of the infeed control signal to the infeeder.
5. Input and input monitoring of the optional signal.
6. Output and output monitoring of the optional signal.

#### Functions of Monitoring LED

**Table 13-18 Functions of Monitoring LED**

LED	Function	LED	Function
HL 451	Discharge completion signal 1	HL 461	Interlock signal 1
HL 452	Discharge completion signal 2	HL 462	Interlock signal 2
HL 453	Error signal 1	HL 463	Input signal 5
HL 454	Error signal 2	HL 464	Input signal 6
HL 455	Infeed control signal 1	HL 465	Input signal 1
HL 456	Infeed control signal 2	HL 466	Input signal 2
HL 457	Control 1	HL 467	Input signal 3
HL 458	Control 2	HL 468	Input signal 4

## 13.11 Additional Relay Unit (CCW-R-224B)



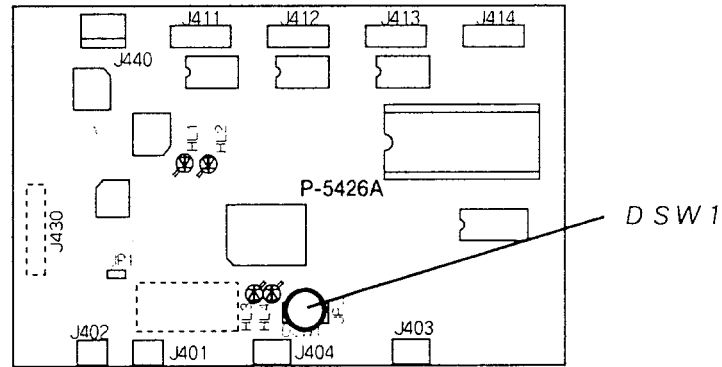
**Fig.13-29 Additional Relay Unit**

**Table 13-19 Names of Additional Relay Unit Parts**

No.	Name
1	EXC board (P-5426*)
2	Relay board (P-5506*)



### 13.11.1 EXC Board (P-5426\*)



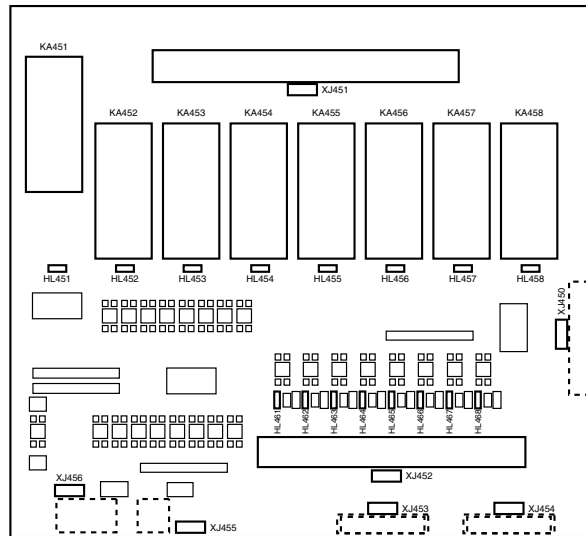
**Fig.13-30 EXC Board**

\* Set only the DSW1 No.1 switch to ON.

#### **Functions of the board**

1. Communication with the CAL unit.
2. Control of the timing hopper.

### 13.11.2 Relay Board (P-5506\*)



**Fig.13-31 Relay Board**

#### Functions of the board

1. Input and input monitoring of the optional signal.
2. Output and output monitoring of the optional signal.

**Table 13-20 Functions of Monitoring LED**

LED	Function	LED	Function
HL 451	Control 7	HL 461	Input signal 9
HL 452	Control 8	HL 462	Input signal 10
HL 453	Control 9	HL 463	Input signal 11
HL 454	Control 10	HL 464	Input signal 12
HL 455	Control 11	HL 465	Input signal 13
HL 456	Control 12	HL 466	Input signal 14
HL 457	Control 13	HL 467	Input signal 15
HL 458	Control 14	HL 468	Input signal 16

### 13.12 PS-0 Unit

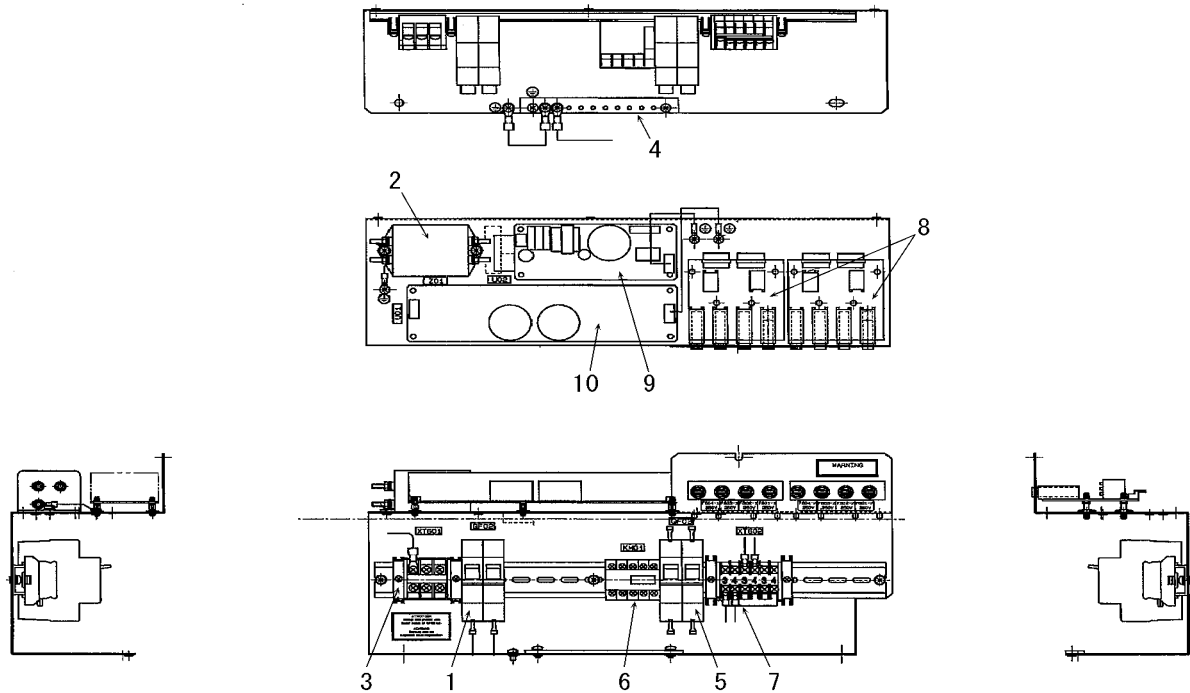


Fig.13-32 PS-0 Unit

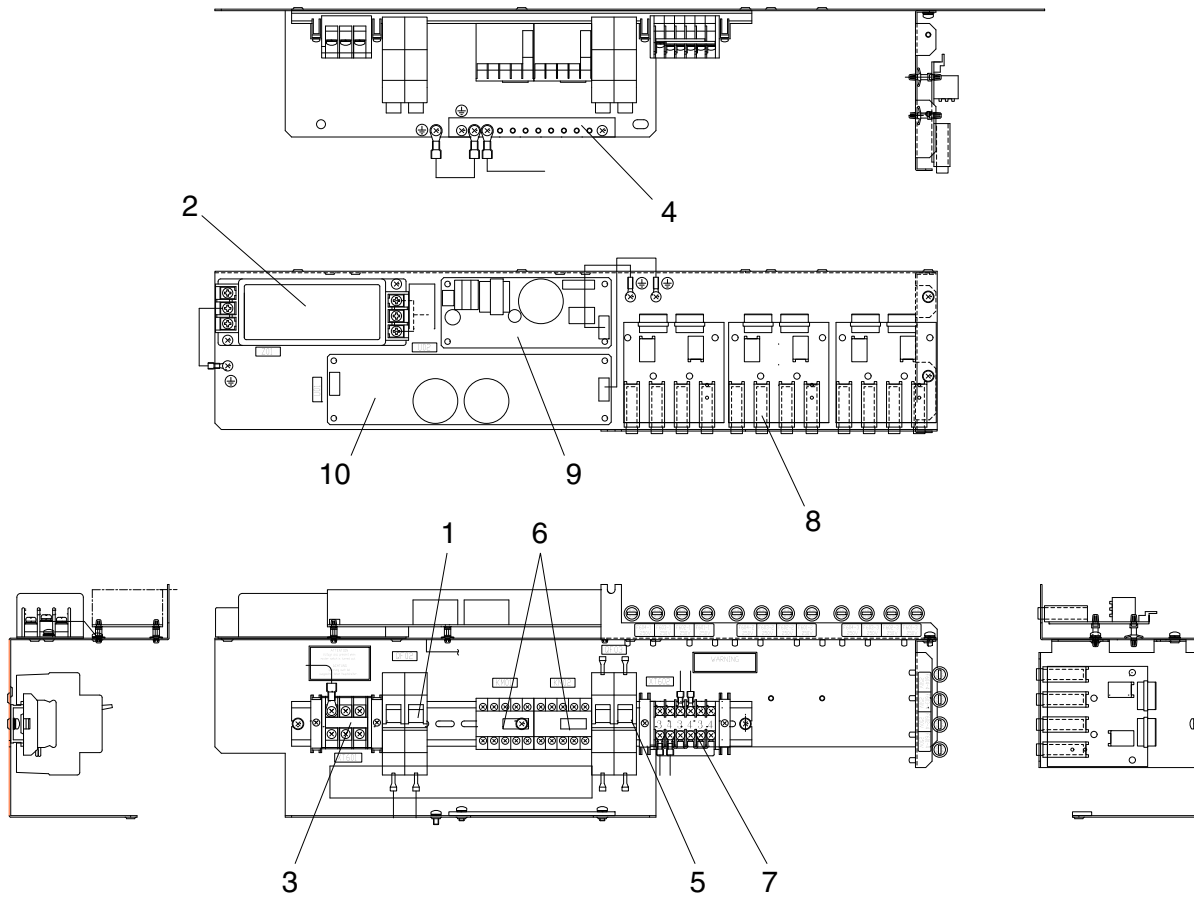
Table 13-21 Names of PS-0 Unit Parts

No.	Name
1	Circuit breaker
2	Noise filter
3	Terminal block
4	Grounding block
5	Circuit breaker
6	Electromagnetic contactor
7	Terminal block
8	AC FUSE board (P-5507*)
9	Switching power supply for relay unit (DC24V)
10	Switching power supply for remote control BOX (DC24V)

#### Functions of the unit

1. Detects overcurrent and shuts the power off.
2. Removes noise from the power source.
3. DC power supply to the remote control BOX unit and relay unit.
4. AC power supply to the main electrical unit, PS-FEEDER unit and CAL unit.

### 13.13 PS-0 Unit (CCW-R-224B)



**Fig.13-33 PS-0 Unit**

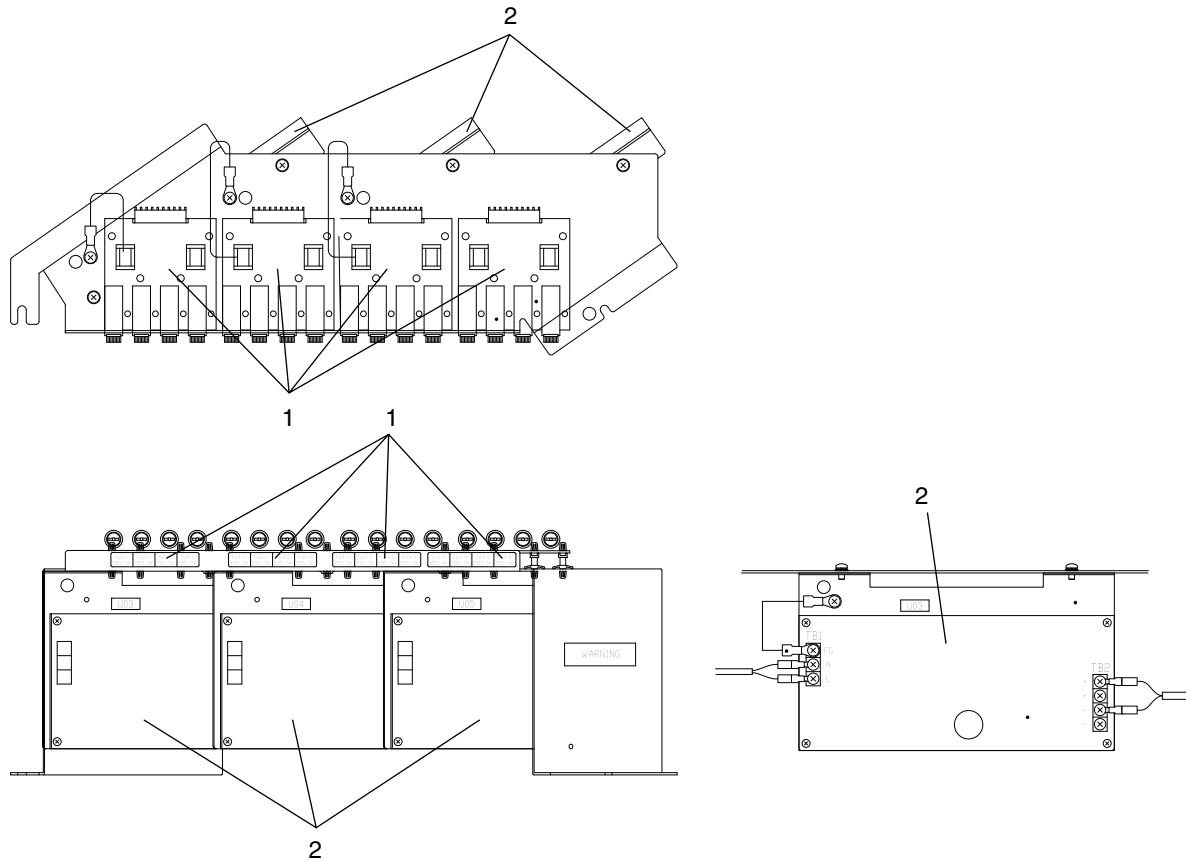
**Table 13-22 Names of PS-0 Unit Parts**

No.	Name
1	Circuit breaker
2	Noise filter
3	Terminal block
4	Grounding block
5	Circuit breaker
6	Electromagnetic contactor
7	Terminal block
8	AC FUSE board (P-5507*)
9	Switching power supply for relay unit (DC24V)
10	Switching power supply for remote control BOX (DC24V)

**Functions of the unit**

1. Detects overcurrent and shuts the power off.
2. Removes noise from the power source.
3. DC power supply to the remote control BOX unit and relay unit.
4. AC power supply to the main electrical unit, PS-FEEDER unit and CAL unit.

## 13.14 PS-2 Unit



**Fig.13-34 PS-2 Unit**

**Table 13-23 Names of PS-2 Unit Parts**

No.	Name
1	DC FUSE board (P-5508*)
2	DC39V switching power supply

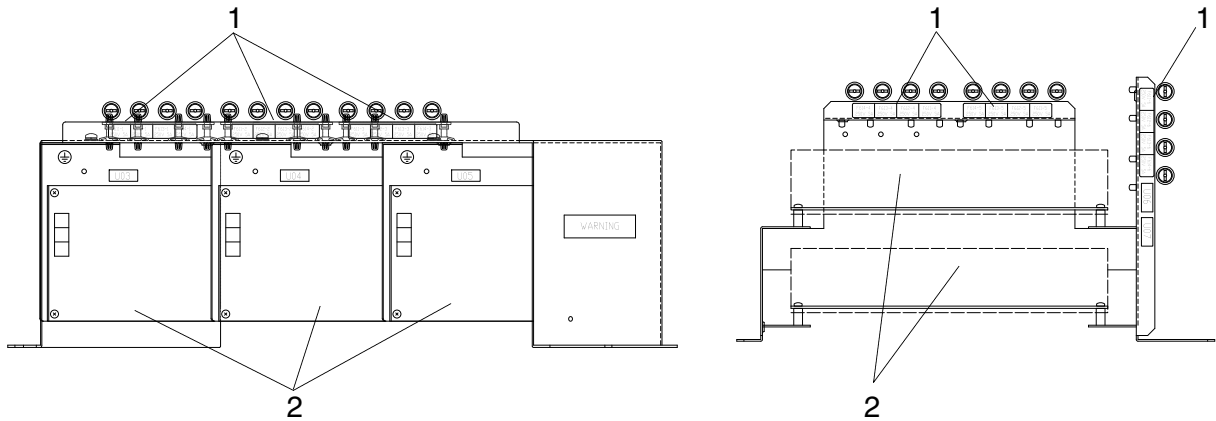
### Functions of the unit

1. Power supply to the motor of the weigh drive unit.

#### NOTE

- The number of the fuse boards may differ according to the number of heads in the machine.

### 13.15 PS-2 Unit (CCW-R-224B)



**Fig.13-35 PS-2 Unit**

**Table 13-24 Names of PS-2 Unit Parts**

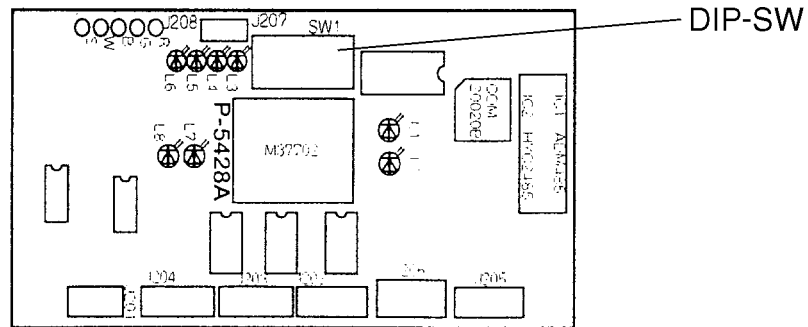
No.	Name
1	DC FUSE board (P-5508*)
2	DC39V switching power supply

#### Functions of the unit

1. Power supply to the motor of the weigh drive unit.

## 13.16 Weigh Drive Unit

### 13.16.1 DUC Board (P-5428\*)



**Fig.13-36 DUC Board**

#### Functions of the board

1. Communication with the WCU board by a high-speed communication line via HUB board.
2. Open/close control of the pool hopper and weigh hopper.
3. Amplification of the load cell output by preamp circuit.

#### NOTE

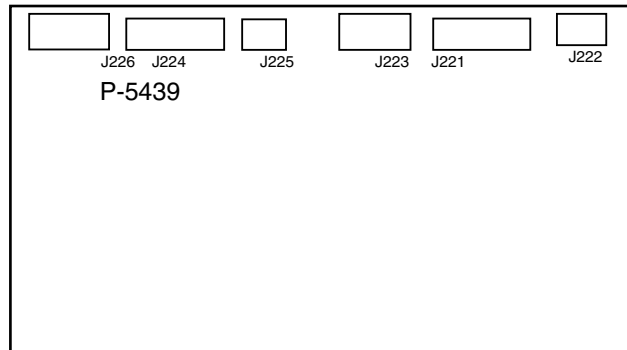
- When replacing the weigh drive unit and DUC board, perform the head setting by DIP-SW.



**DIP-SW settings****Table 13-25 Setting Items of DIP-SW**

Head No.	SW1-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF

### 13.16.2 DDU Board (P-5439\*)

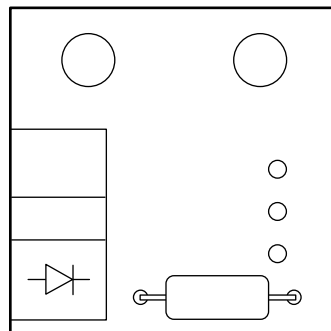


*Fig.13-37 DDU Board*

#### Functions of the board

1. Driving the motor for opening/closing the pool hopper and the weigh hopper.

### 13.16.3 Cam Sensor Board (P-5207\*)



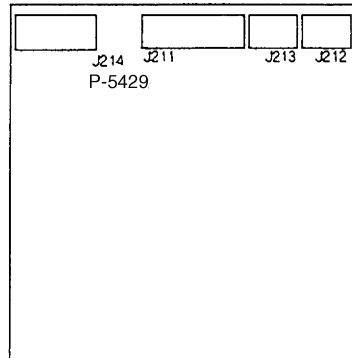
*Fig.13-38 Cam Sensor Board*

#### Functions of the board

1. Detects the stop position of the pool hopper and the weigh hopper using the cam with slit, and sends the signal to the DUC board.

## 13.17 Booster Hopper Drive Unit

### 13.17.1 DU Board (P-5429\*)

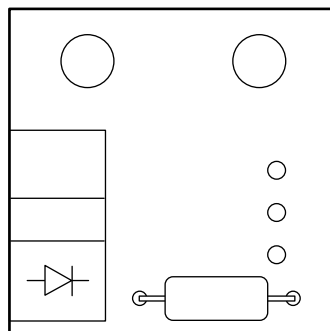


*Fig.13-39 DU Board*

#### Functions of the board

1. Driving the motor for opening/closing the booster hopper.

### 13.17.2 Cam Sensor Board (P-5207\*)

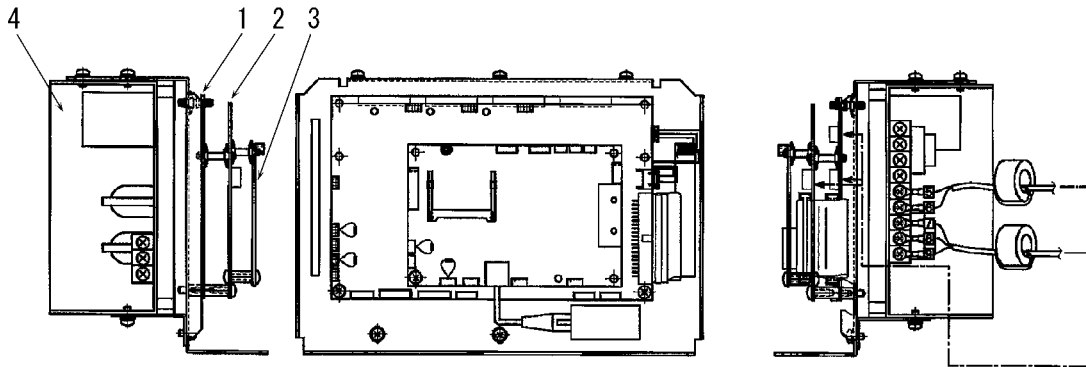


*Fig.13-40 Cam Sensor Board*

#### Functions of the board

1. Detects the booster hopper stop position using the cam with slit and sends the signal to the DUC board.

## 13.18 CAL Unit



**Fig.13-41 CAL Unit**

**Table 13-26 Names of CAL Unit Parts**

No.	Name
1	ADC board (P-5576*)
2	WCU board (P-5561*)
3	DMU board (P-5562*)
4	Switching power supply for CAL unit (DC5V, $\pm 15V$ )

### 13.18.1 ADC Board (P-5576\*)

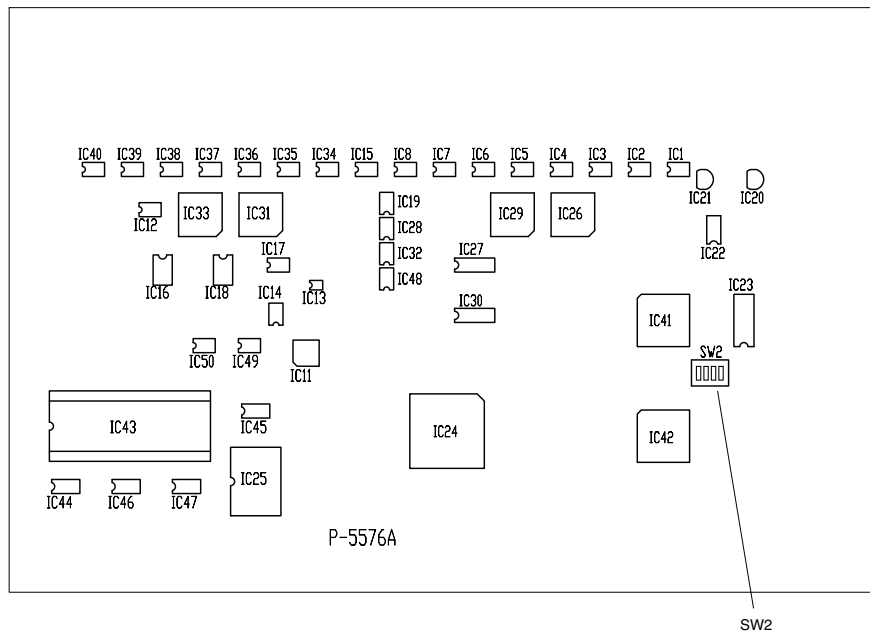


Fig.13-42 ADC Board

#### Functions of the board

1. Converts the analog weight data from each weigh drive unit (load cell) to digital weight data, and sends it to the WCU board.

#### DIP-SW settings

Table 13-27 Setting Items of DIP-SW

DIP-SW	Function	Default Setting
SW2-1	ON (Starts DSP from PROM) / OFF (Starts DSP from FLASH)	ON
SW2-2	Not used	OFF
SW2-3	Not used	OFF
SW2-4	Not used	OFF

### 13.18.2 WCU Board (P-5561\*)

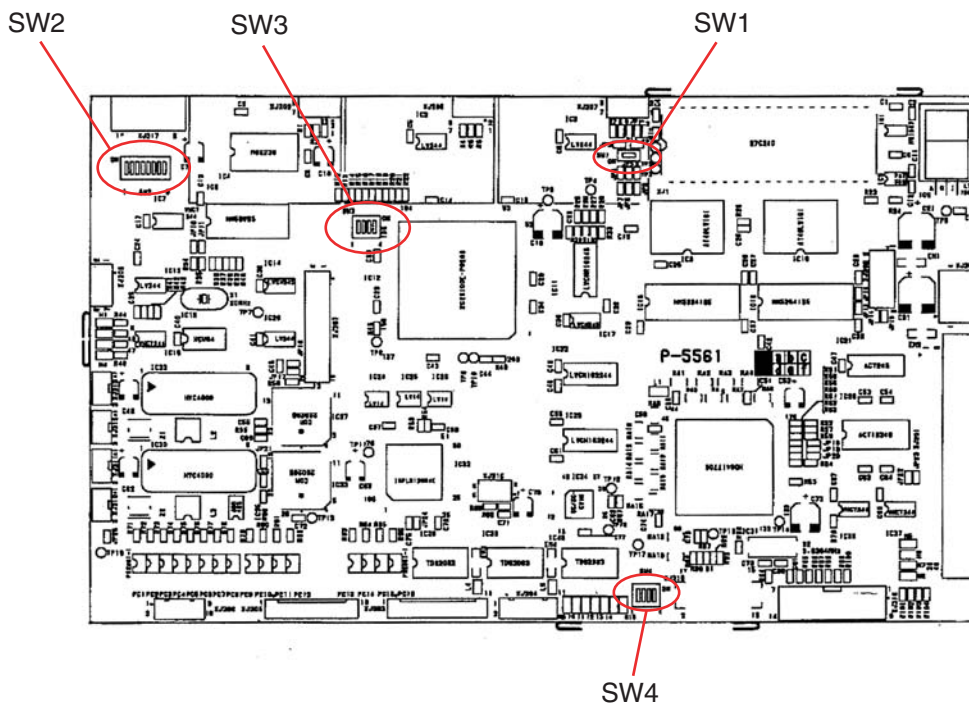


Fig.13-43 WCU Board

#### Functions of the board

1. Processing of combination weighing.
2. Sending of control command to each unit based on the combination weighing result.
3. Sending and receiving of various data to and from the DMU board.

#### DIP-SW settings

Table 13-28 Setting Items of DIP-SW

DIP-SW	Setting
SW1	OFF
SW2-1 to 8	OFF * Switches may be set to ON depending on the specification. Check the setting when replacing the board.
SW3-1	ON
SW3-2	OFF
SW3-3	ON
SW3-4	OFF
SW4-1	OFF
SW4-2	OFF

Table 13-28 Setting Items of DIP-SW (Continued)

DIP-SW	Setting
SW4-3	ON
SW4-4	OFF

### 13.18.3 DMU Board (P-5562\*)

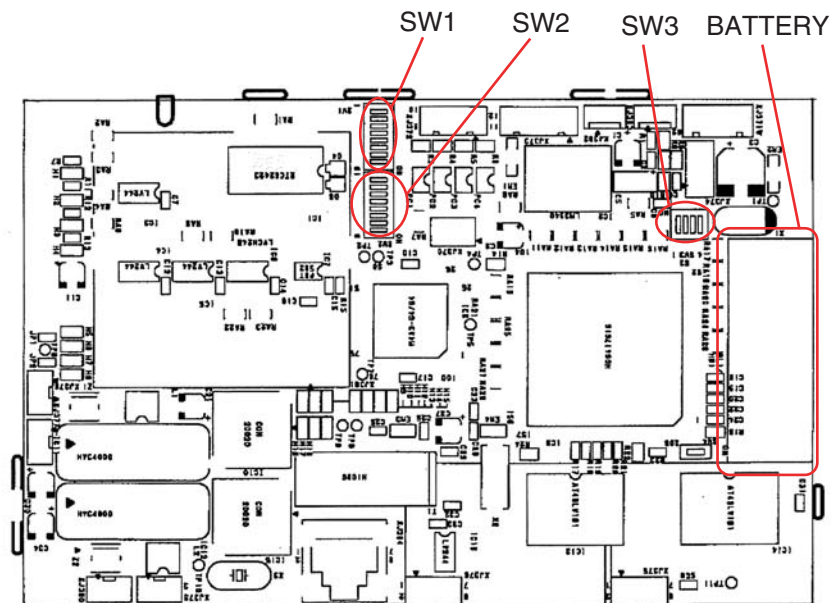


Fig.13-44 DMU Board

#### Functions of the board

1. Data processing.
2. Storing of total data and parameters.
3. Communication with the remote control BOX unit (RCU board) by a high-speed communication line.

## DIP-SW settings

Table 13-29 Setting Items of DIP-SW

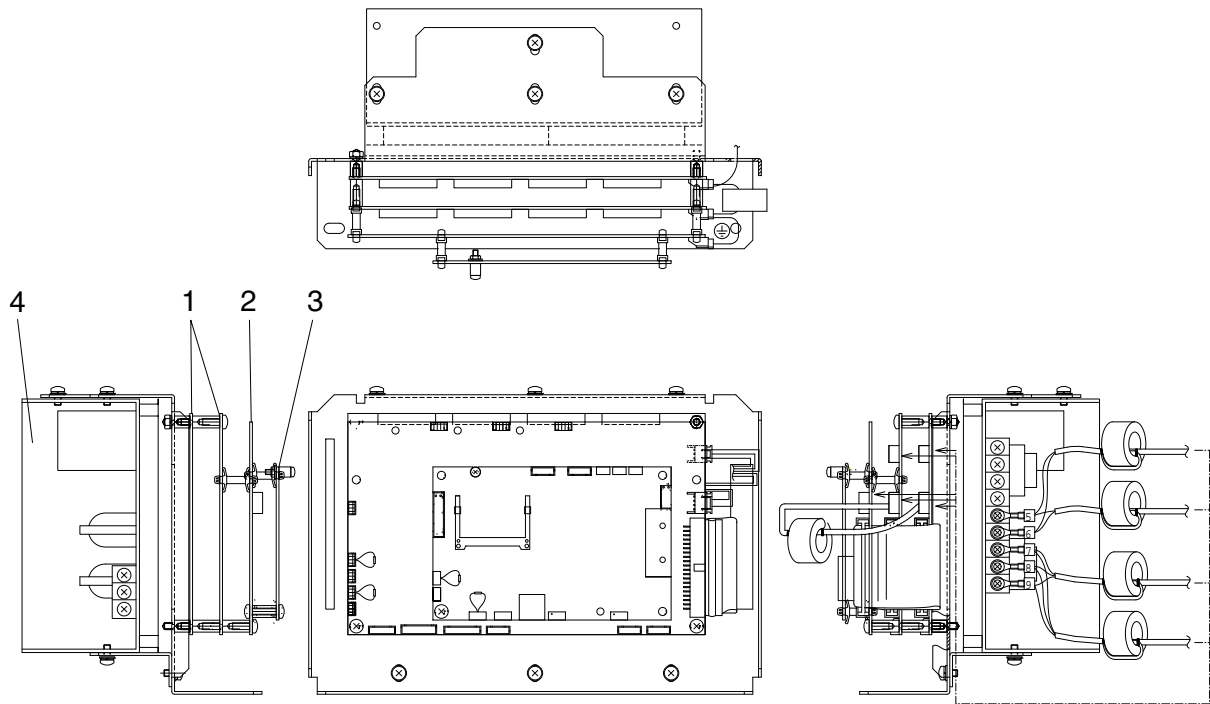
DIP-SW	Function	Default Setting
SW1-1	ON: Models with two distributed cameras OFF: Models with one distributed camera	OFF
SW1-2	ON: Models with no camera OFF: Models with camera	OFF
SW1-3 to SW1-8	Not used	OFF
SW2-1 to SW2-5	Not used	OFF
SW2-6	ON: Clears SRAM when initializing memory OFF: Does not clear SRAM when initializing memory	OFF
SW2-7	ON: Does not output FIFO at DMU application OFF: Outputs FIFO at DMU application	OFF
SW2-8	ON: Does not output boot loader message OFF: Outputs boot loader message	OFF
SW3-1	ON: Boot loader mode OFF: Application execution mode	OFF
SW3-2	Fix to OFF and should no be turned ON.	OFF
SW3-3	ON: Writing data to flash memory is prohibited. OFF: Writing data to flash memory is allowed.	OFF
SW3-4	Fix to OFF and should no be turned ON.	OFF

### CAUTION

- Refer to “10.3.8 Replacement of Memory Backup Battery” for replacing battery.



### 13.19 CAL Unit (CCW-R-224B)



**Fig.13-45 CAL Unit**

**Table 13-30 Names of CAL Unit Parts**

No.	Name
1	ADC board (P-5576*)
2	WCU board (P-5561*)
3	DMU board (P-5562*)
4	Switching power supply for CAL unit (DC5V, ±15V)

### 13.19.1 ADC Board (P-5576\*)

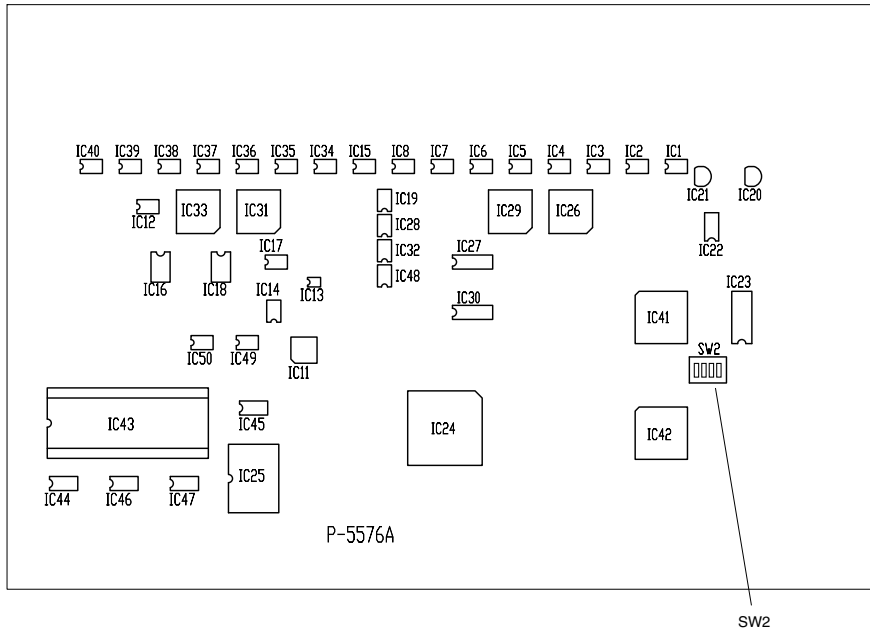


Fig.13-46 ADC Board

#### Functions of the board

1. Converts the analog weight data from each weigh drive unit (load cell) to digital weight data, and sends it to the WCU board.

#### DIP-SW settings

Table 13-31 Setting Items of DIP-SW

DIP-SW	Function	Default Setting
SW2-1	ON (Starts DSP from PROM) / OFF (Starts DSP from FLASH)	ON
SW2-2	Not used	OFF
SW2-3	Not used	OFF
SW2-4	Not used	OFF

### 13.19.2 WCU Board (P-5561\*)

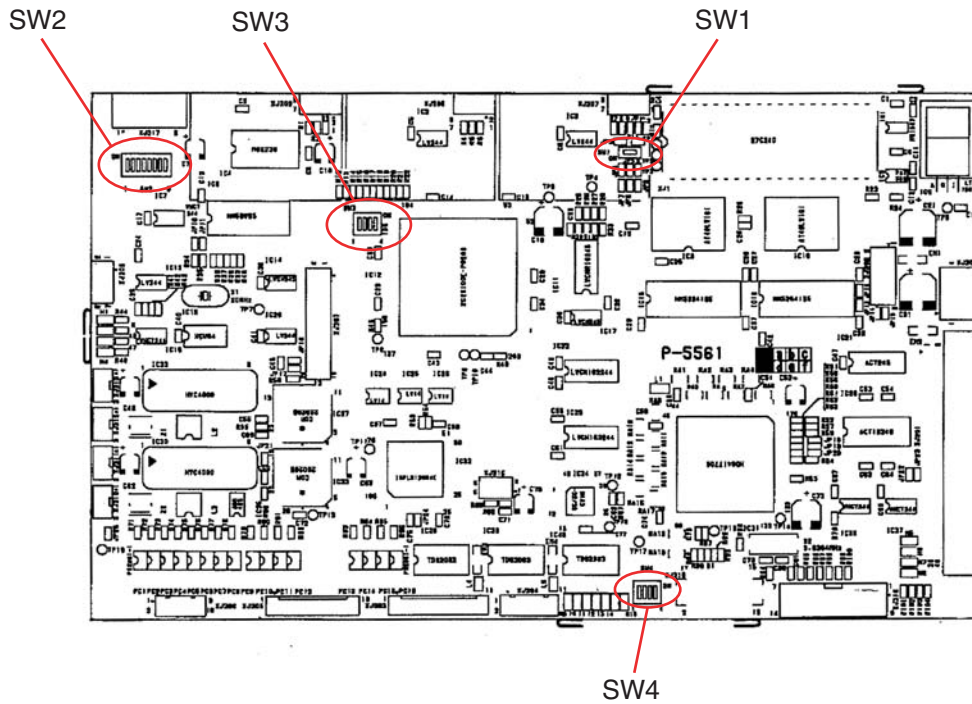


Fig.13-47 WCU Board

#### Functions of the board

1. Processing of combination weighing.
2. Sending of control command to each unit based on the combination weighing result.
3. Sending and receiving of various data to and from the DMU board.

#### DIP-SW settings

Table 13-32 Setting Items of DIP-SW

DIP-SW	Setting
SW1	OFF
SW2-1 to 8	OFF * Switches may be set to ON depending on the specification. Check the setting when replacing the board.
SW3-1	ON
SW3-2	OFF
SW3-3	ON
SW3-4	OFF
SW4-1	OFF
SW4-2	OFF

Table 13-32 Setting Items of DIP-SW (Continued)

DIP-SW	Setting
SW4-3	ON
SW4-4	OFF

### 13.19.3 DMU Board (P-5562\*)

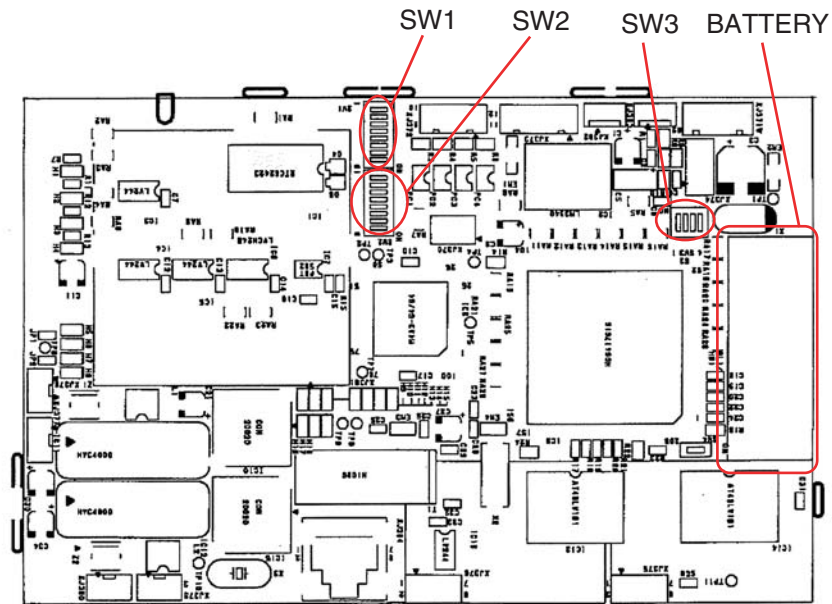


Fig.13-48 DMU Board

#### Functions of the board

1. Data processing.
2. Storing of total data and parameters.
3. Communication with the remote control BOX unit (RCU board) by a high-speed communication line.

#### DIP-SW settings

Table 13-33 Setting Items of DIP-SW

DIP-SW	Function	Default Setting
SW1-1	ON: Models with two distributed cameras OFF: Models with one distributed camera	OFF
SW1-2	ON: Models with no camera OFF: Models with camera	OFF
SW1-3 to SW1-8	Not used	OFF
SW2-1 to SW2-5	Not used	OFF
SW2-6	ON: Clears SRAM when initializing memory OFF: Does not clear SRAM when initializing memory	OFF

Table 13-33 Setting Items of DIP-SW (Continued)

DIP-SW	Function	Default Setting
SW2-7	ON: Does not output FIF0 at DMU application OFF: Outputs FIF0 at DMU application	OFF
SW2-8	ON: Does not output boot loader message OFF: Outputs boot loader message	OFF
SW3-1	ON: Boot loader mode OFF: Application execution mode	OFF
SW3-2	Fix to OFF and should no be turned ON.	OFF
SW3-3	ON: Writing data to flash memory is prohibited. OFF: Writing data to flash memory is allowed.	OFF
SW3-4	Fix to OFF and should no be turned ON.	OFF

 **CAUTION**

- Refer to “10.3.8 Replacement of Memory Backup Battery” for replacing battery.

## 13.20 PS FEEDER Unit

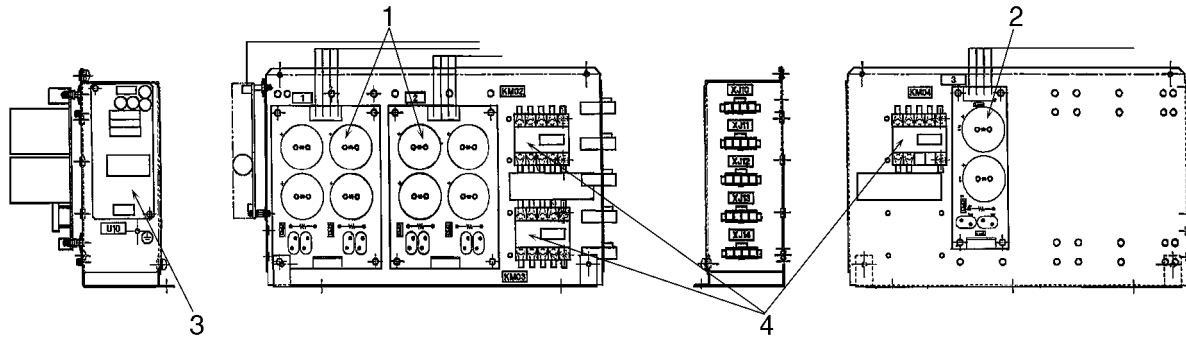


Fig.13-49 PS FEEDER Unit

Table 13-34 Names of PS FEEDER Unit Parts

No.	Name
1	FPS Board (P-5580*)
2	FPS Board (P-5581*)
3	Switching power supply (DC12V)
4	Electromagnetic contactor

### NOTE

- The figure is an example of CCW-R-216B\*.

### 13.20.1 FPS Board (P-5580\*)

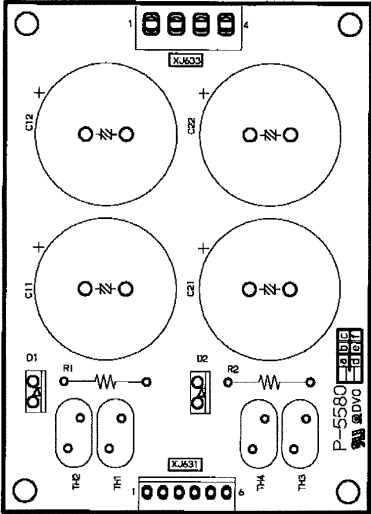
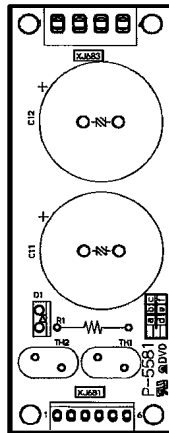


Fig.13-50 FPS Board

#### Functions of the board

- 1. Converts AC power to DC power. (Feeder power)

### 13.20.2 FPS Board (P-5581\*)



*Fig.13-51 FPS Board*

#### Functions of the board

1. Converts AC power to DC power. (Feeder power)



## 13.21 PS FEEDER Unit (CCW-R-224B)

### 13.21.1 PS FEEDER Unit 1

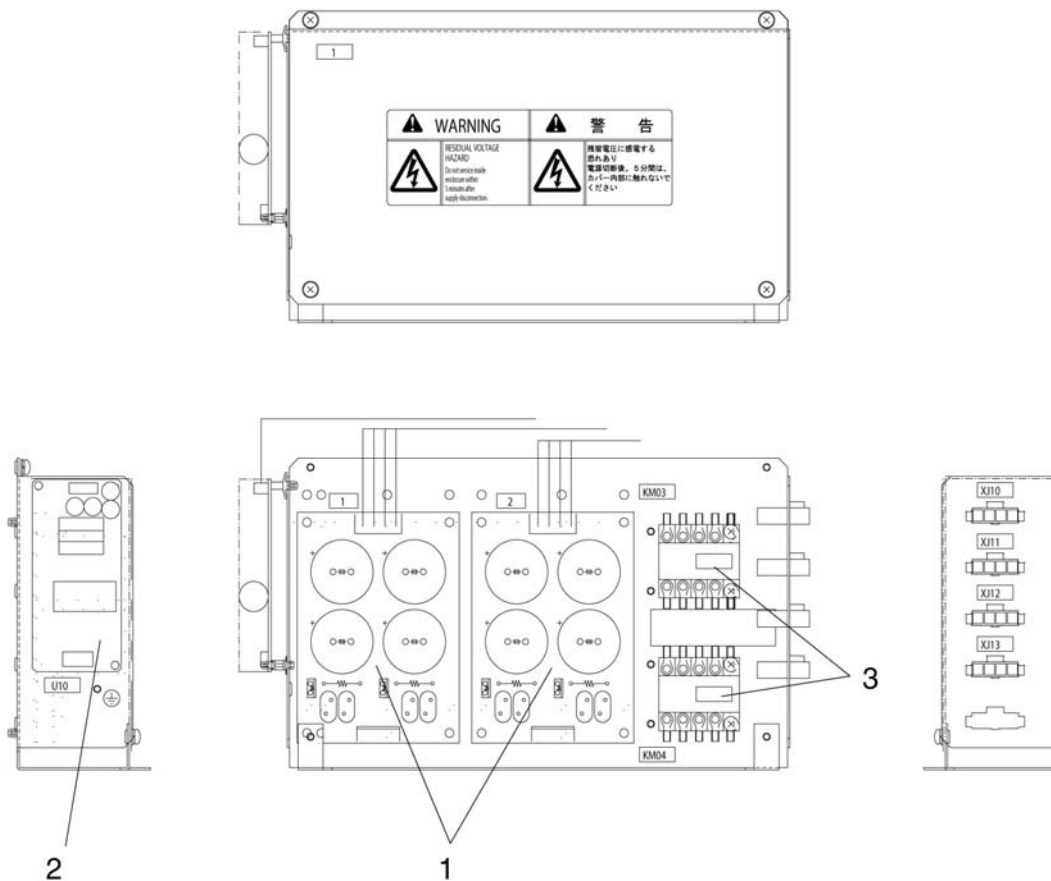
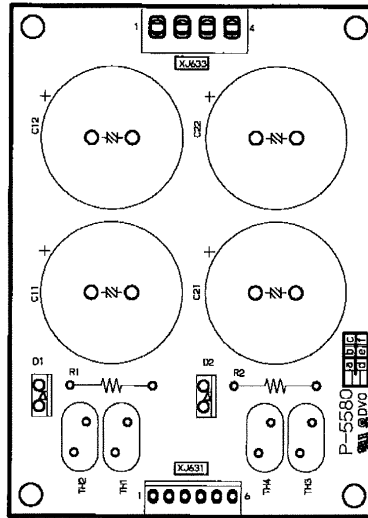


Fig.13-52 PS-FEEDER Unit 1

Table 13-35 Names of PS FEEDER Unit 1 Parts

No.	Name
1	FPS Board (P-5580*)
2	Switching power supply (DC12V)
3	Electromagnetic contactor

### 13.21.1.1 FPS Board (P-5580\*)



**Fig.13-53FPS Board**

#### **Functions of the board**

1. Converts AC power to DC power. (Feeder power)

### 13.21.2 PS FEEDER Unit 2

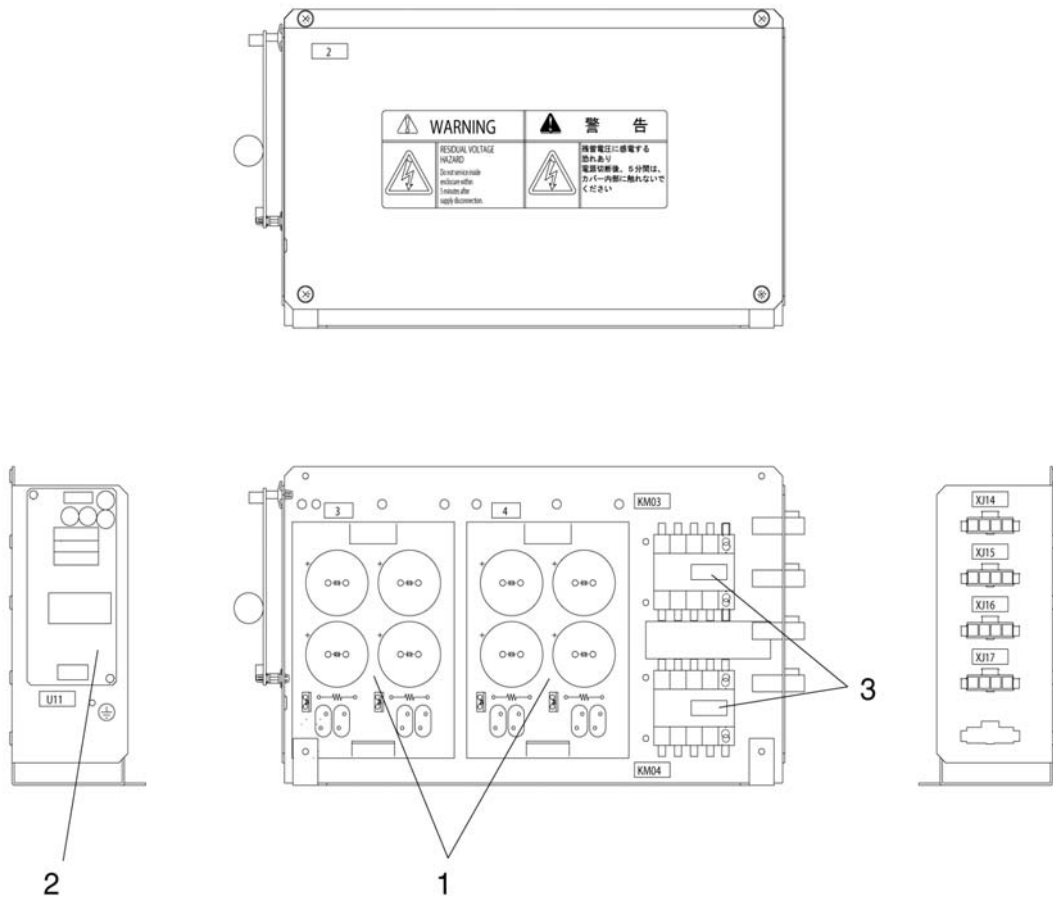
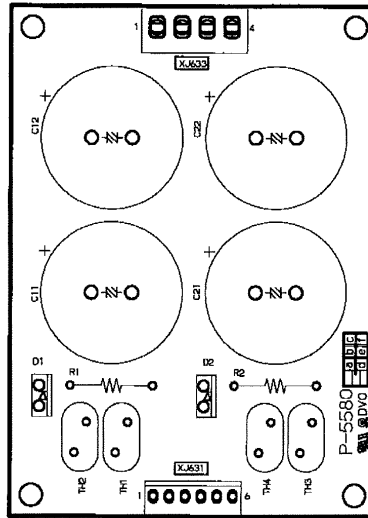


Fig.13-54 PS-FEEDER Unit 2

Table 13-36 Names of PS FEEDER Unit 2 Parts

No.	Name
1	FPS Board (P-5580*)
2	Switching power supply (DC12V)
3	Electromagnetic contactor

### 13.21.2.1 FPS Board (P-5580\*)



*Fig.13-55 FPS Board*

#### Functions of the board

1. Converts AC power to DC power. (Feeder power)

## 13.22 Connection Diagram

### 13.22.1 TOTAL DIAGRAM

(1) CCW-R-216B-D/**	102-4577-05 102-4578-091
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### 13.22.2 BLOCK DIAGRAM

**NOTE**

- The drawing is targeted for CCW-R-216B-D/\*\*.

(1) REMOTE CONTROL UNIT	105-3851-04
(2) RELAY UNIT	107-2454-00
(3) AFV UNIT	107-2452-02
(4) ELECTRICAL UNIT	107-2459-08
(5) WEIGH DRIVE UNIT	107-2457-01 107-2458-04
(6) CAL UNIT	105-0490-021 105-3665-081
(7) POWER SUPPLY UNIT	102-3901-053
(8) POWER SUPPLY UNIT CE (1)	086-0964-073
(9) POWER SUPPLY UNIT CE (2)	108-7064-062

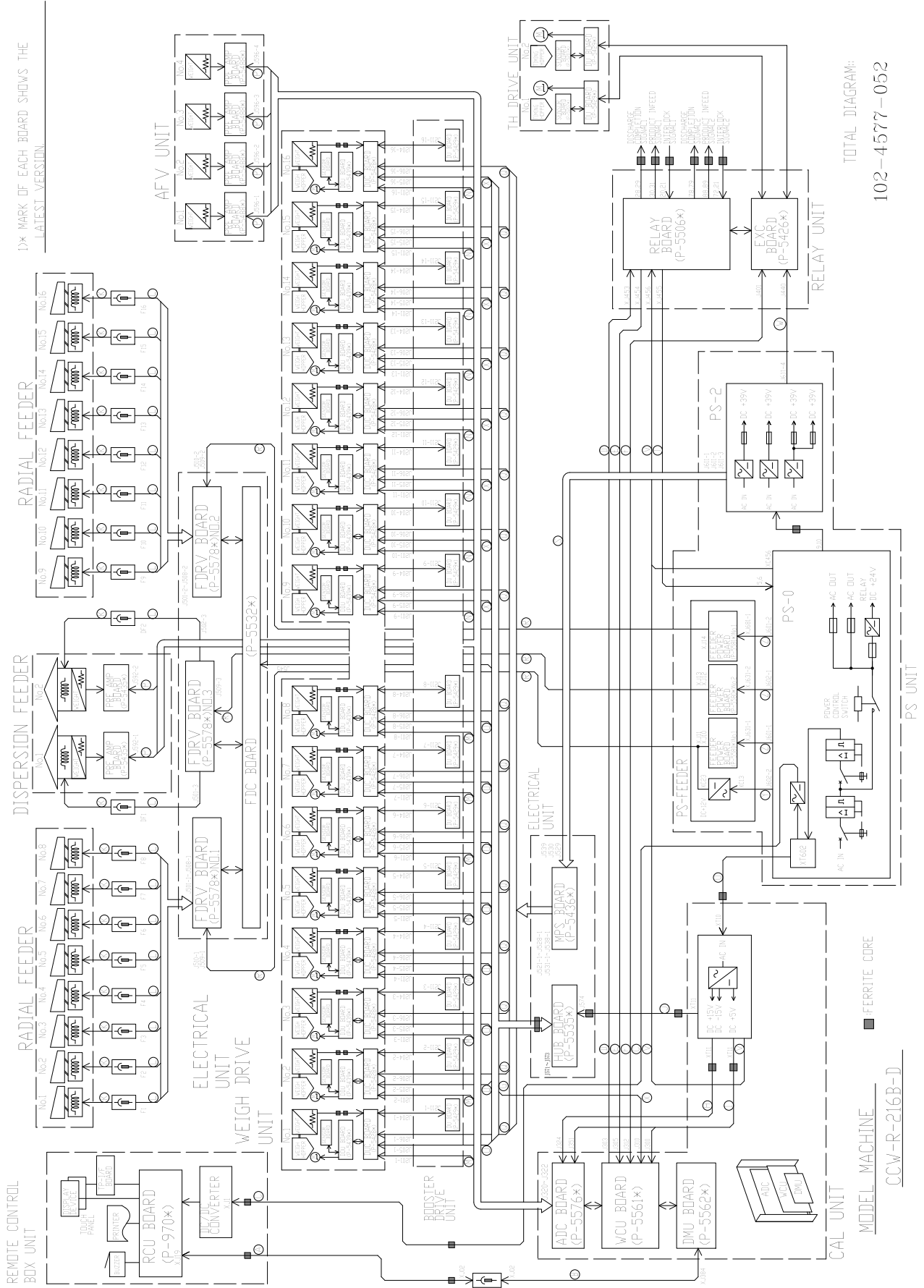
## **13.23 Connection Diagram (CCW-R-224B)**

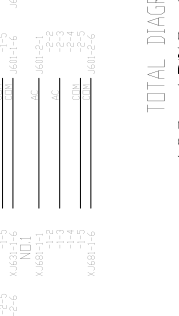
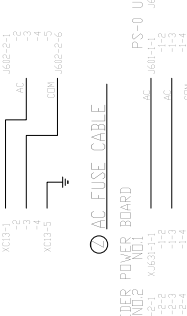
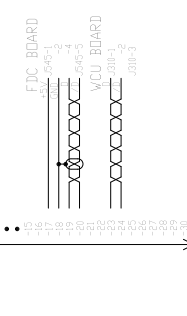
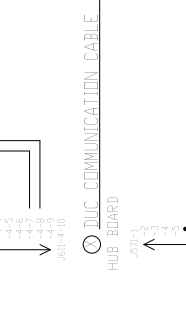
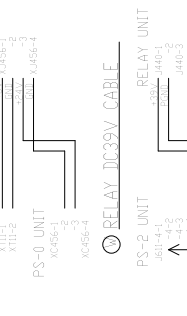
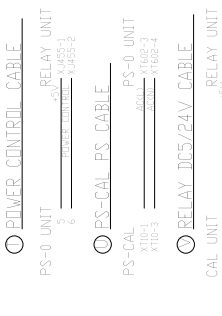
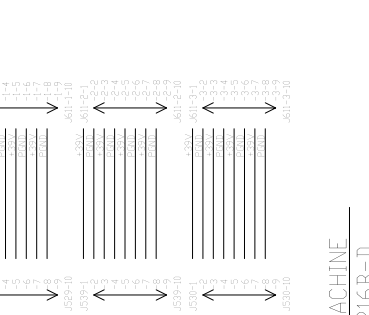
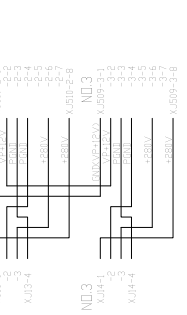
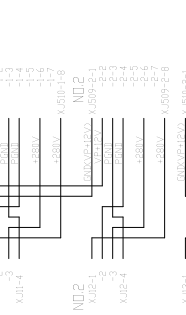
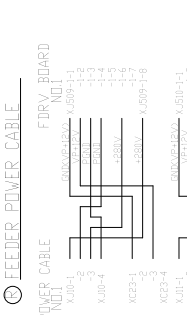
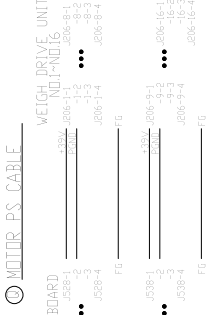
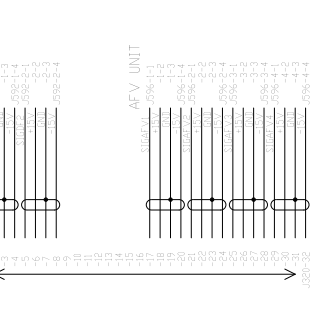
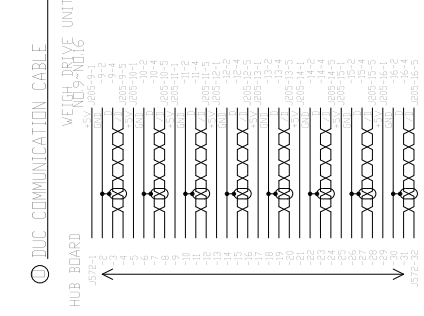
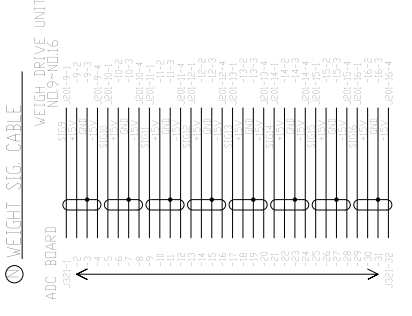
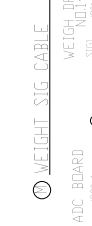
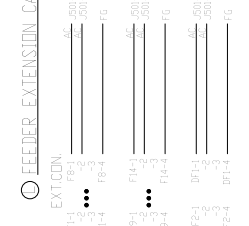
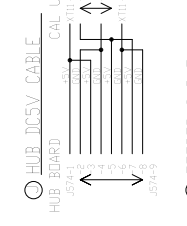
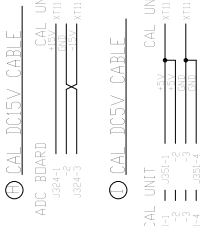
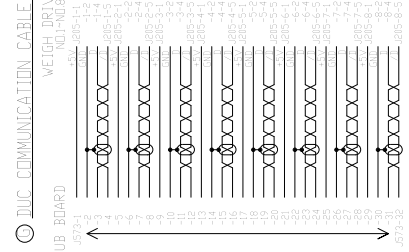
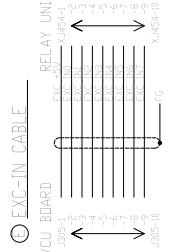
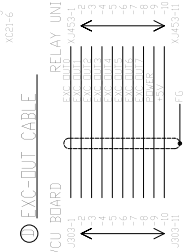
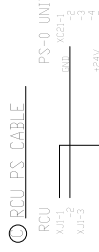
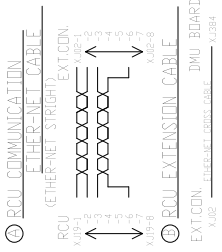
### **13.23.1 TOTAL DIAGRAM**

(1) CCW-R-224B	086-6134-04
	086-6135-08

### **13.23.2 BLOCK DIAGRAM**

(1) POWER SUPPLY UNIT	086-2153-013
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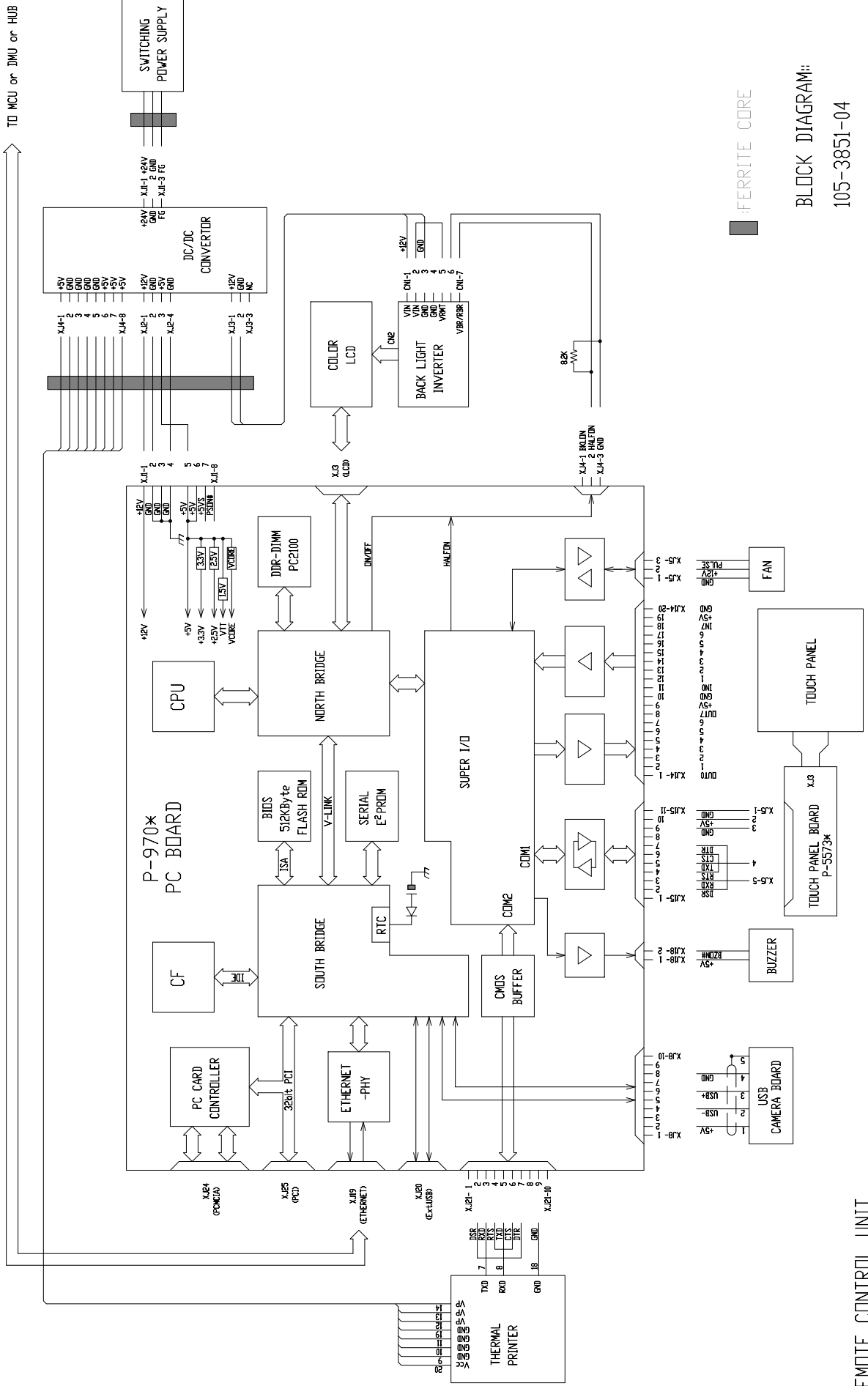


TOTAL DIAGRAM:  
 102-4578-091

MODEL MACHINE  
 CCW-R-216B-D



NOTE) "\*" :Alphanumerical code which corresponds to the latest version of the PWB.

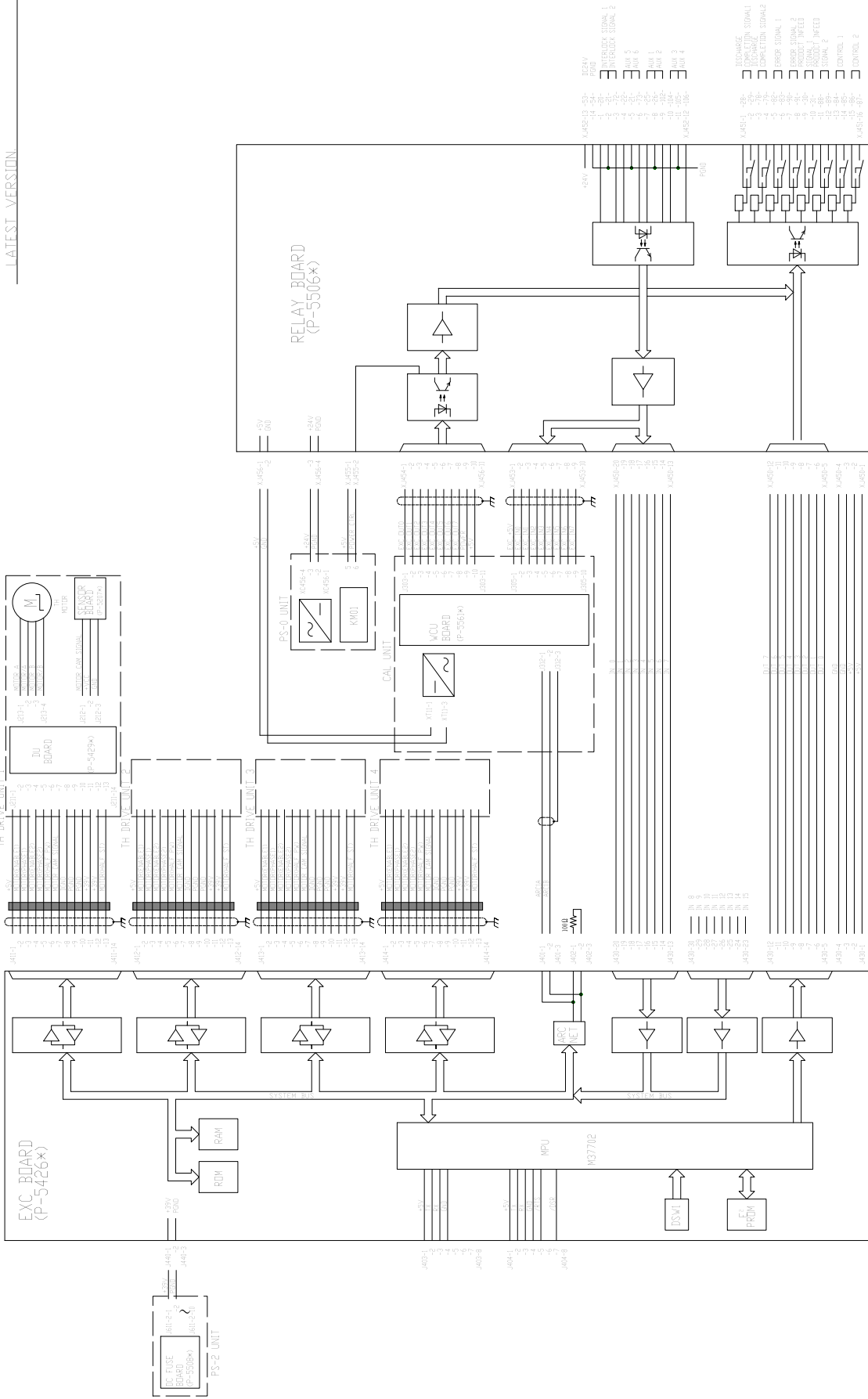


■ FERRITE CORE

BLOCK DIAGRAM:  
105-3851-04

REMOTE CONTROL UNIT

1X MARK OF EACH BOARD SHOWS THE LATEST VERSION



RELAY UNIT

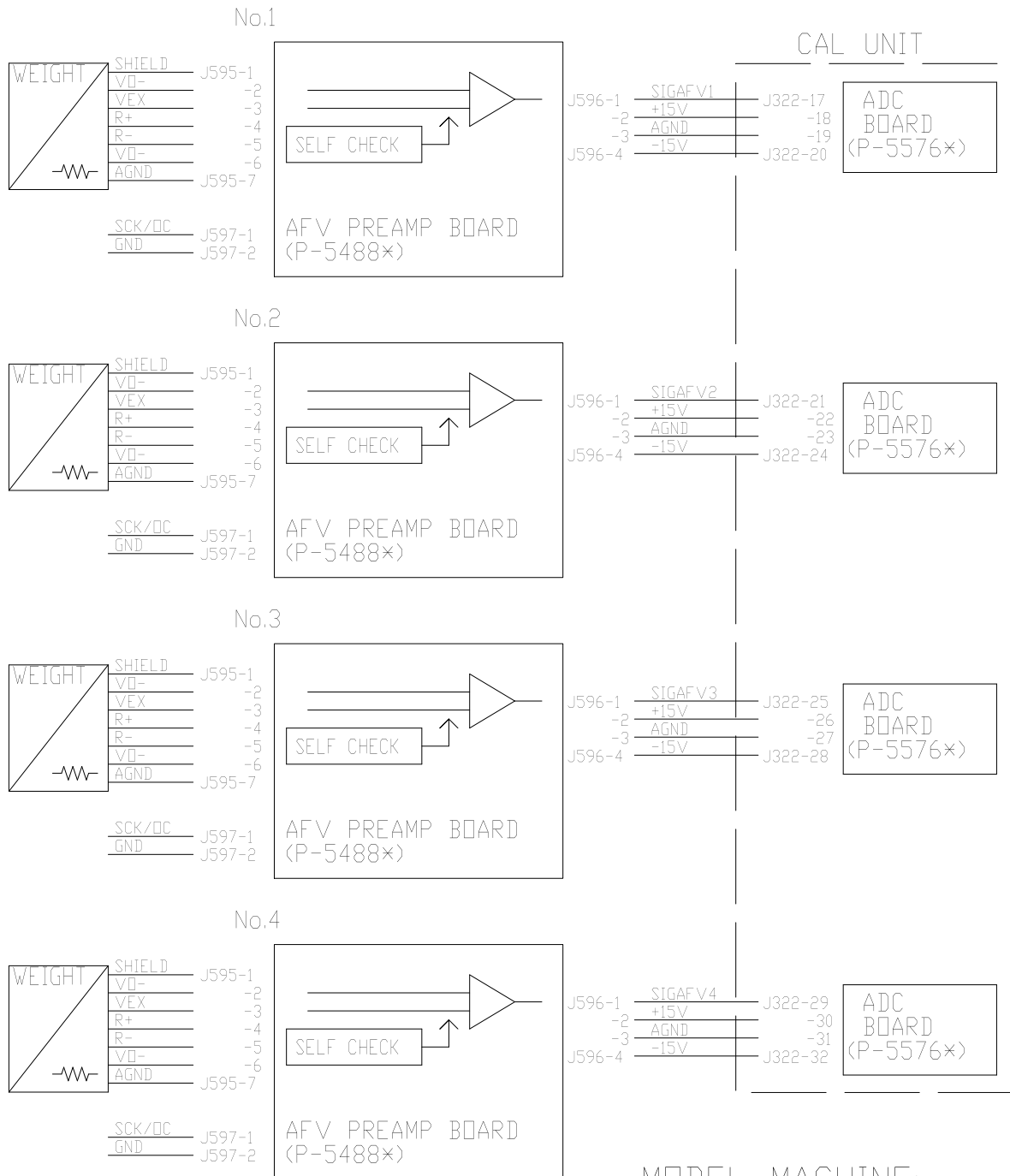
MODEL MACHINE:  
CCW-R-2xx SERIES

BLOCK DIAGRAM:

107-2454-00

■ FERRITE CORE

1)\* MARK OF EACH BOARD SHOWS THE LATEST VERSION.



AFV UNIT

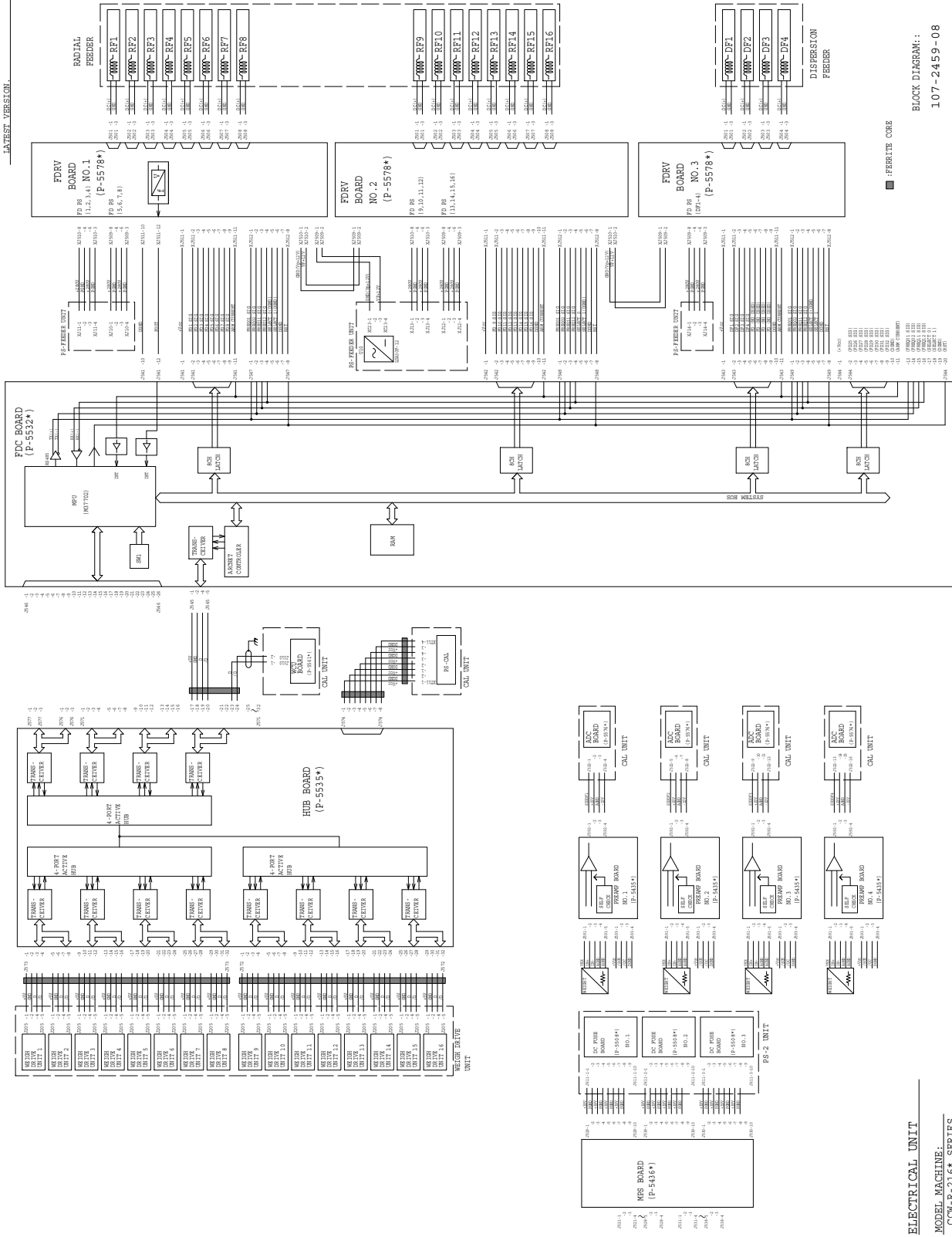
MODEL MACHINE:

CCW-R SERIES

BLOCK DIAGRAM::

107-2452-02

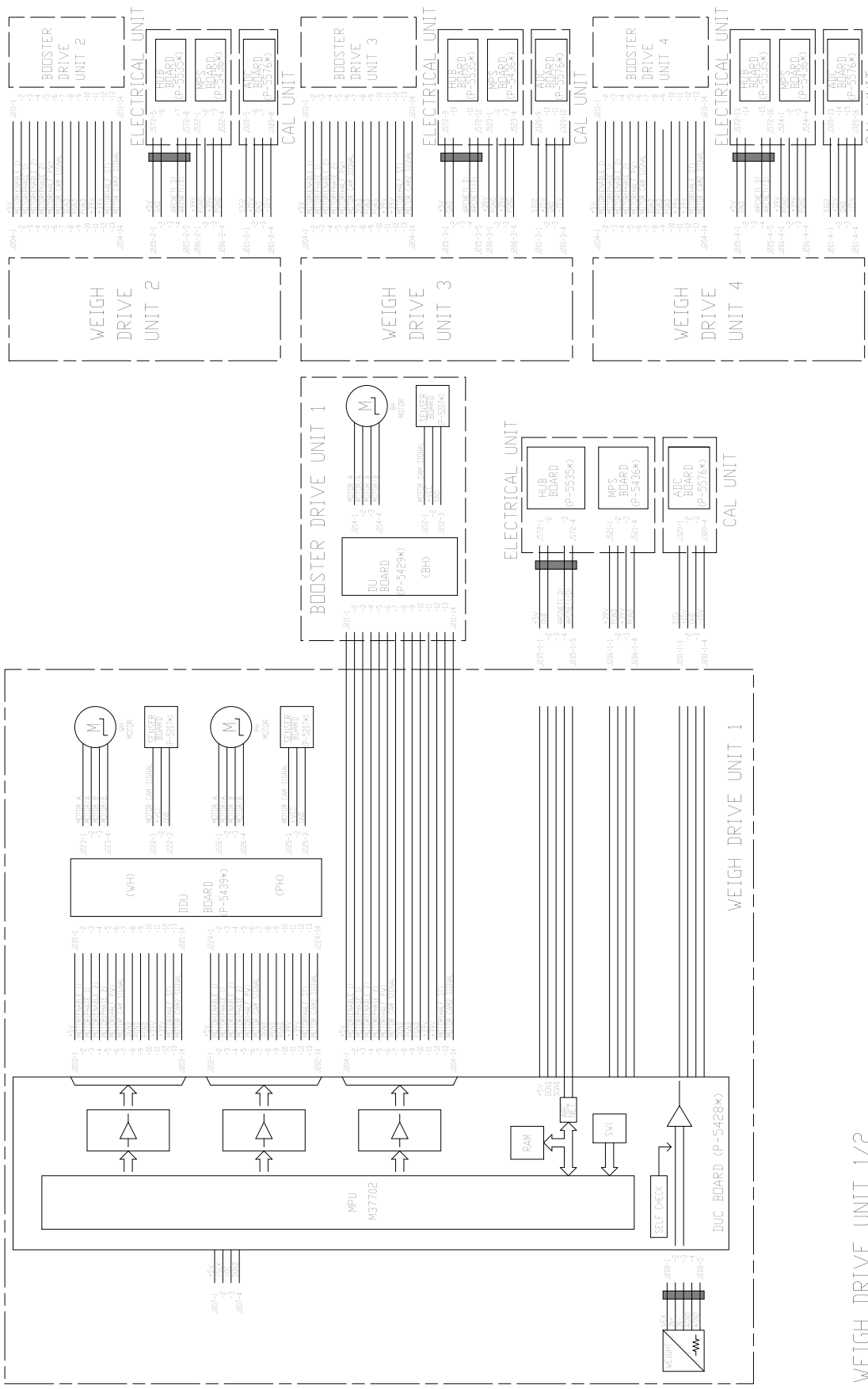
1) \* MARK OF EACH BOARD SHOWS THE LATEST VERSION.



BLOCK DIAGRAM:  
107-2459-08

ELECTRICAL UNIT  
MODEL MACHINE:  
CCP-R-216\* SERIES

1X MARK OF EACH BOARD SHOWS THE LATEST VERSION

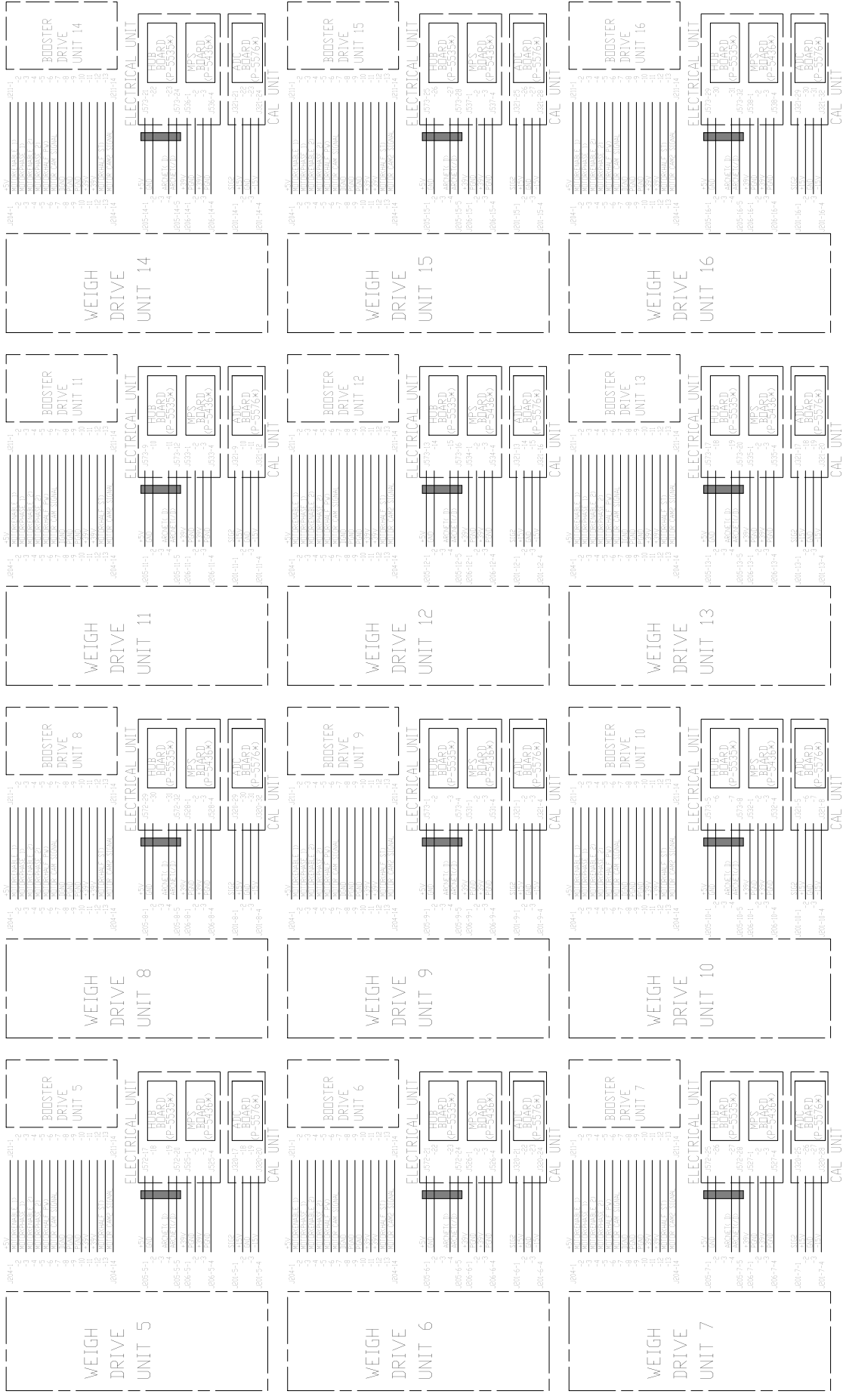


WEIGH DRIVE UNIT 1/2

MODEL MACHINE:  
CCW-R-2\*\* SERIES (3 MOTOR)

BLOCK DIAGRAM:  
107-2457-01

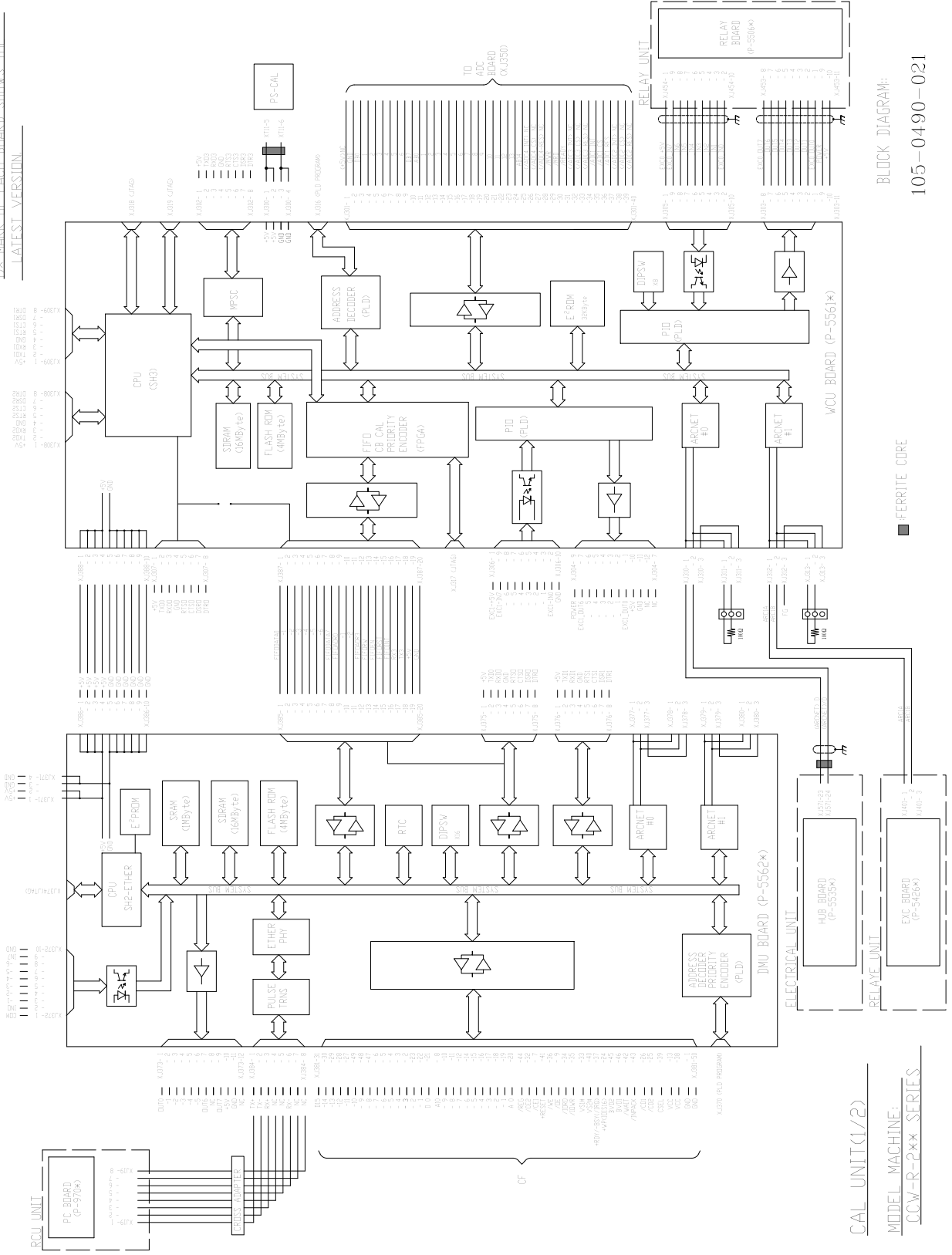
■ FERRITE CORE



BLOCK DIAGRAM:

■ FERRITE CORE

1X MARK OF EACH BOARD SHOWS THE LATEST VERSION



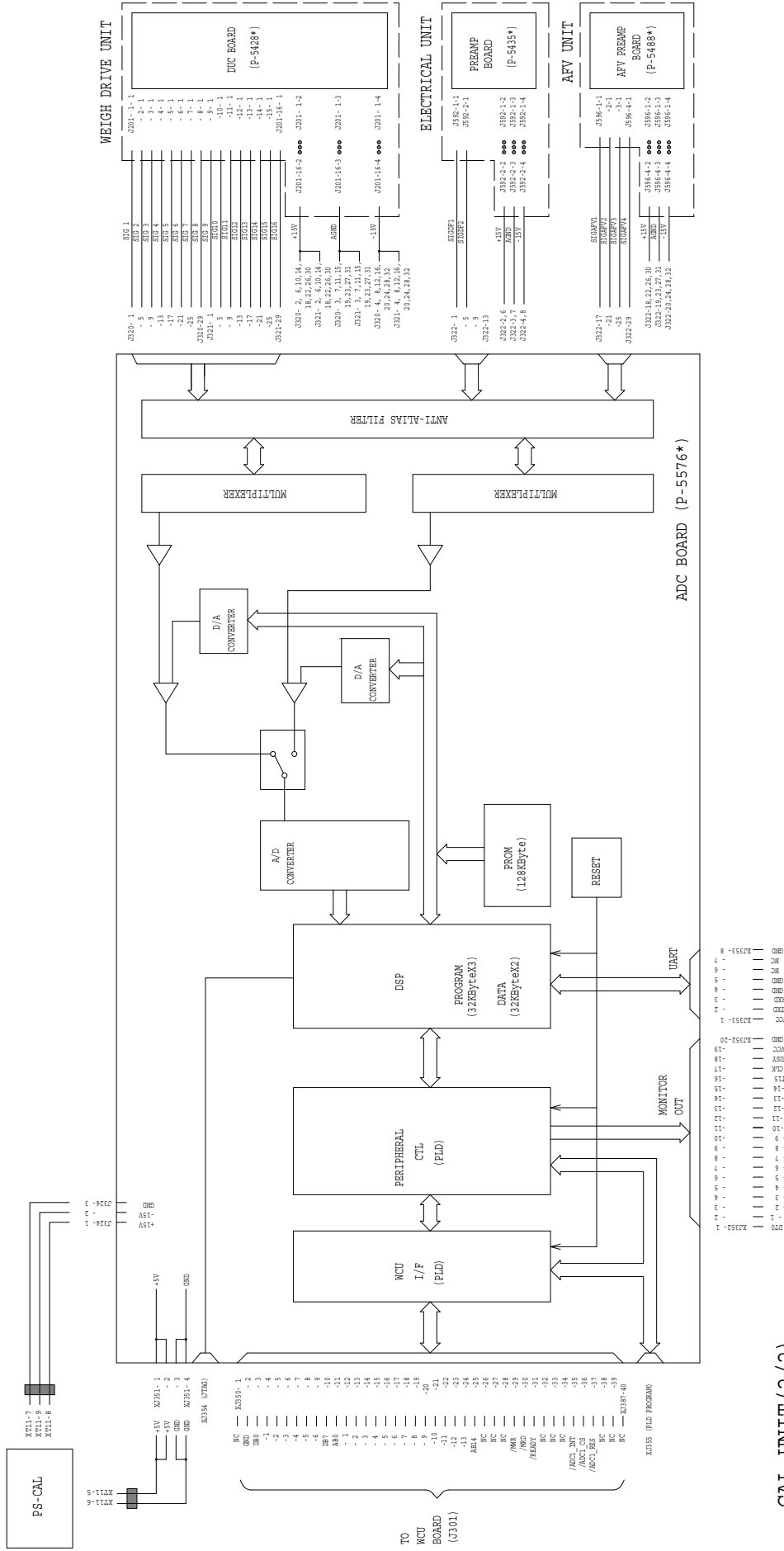
CAL UNIT(1/2)

MODEL MACHINE:  
CCW-R-2XX SERIES

BLOCK DIAGRAM:

105-0490-021

1) \* MARK OF EACH BOARD SHOWS THE LATEST VERSION.



BLOCK DIAGRAM::

105-3665-081

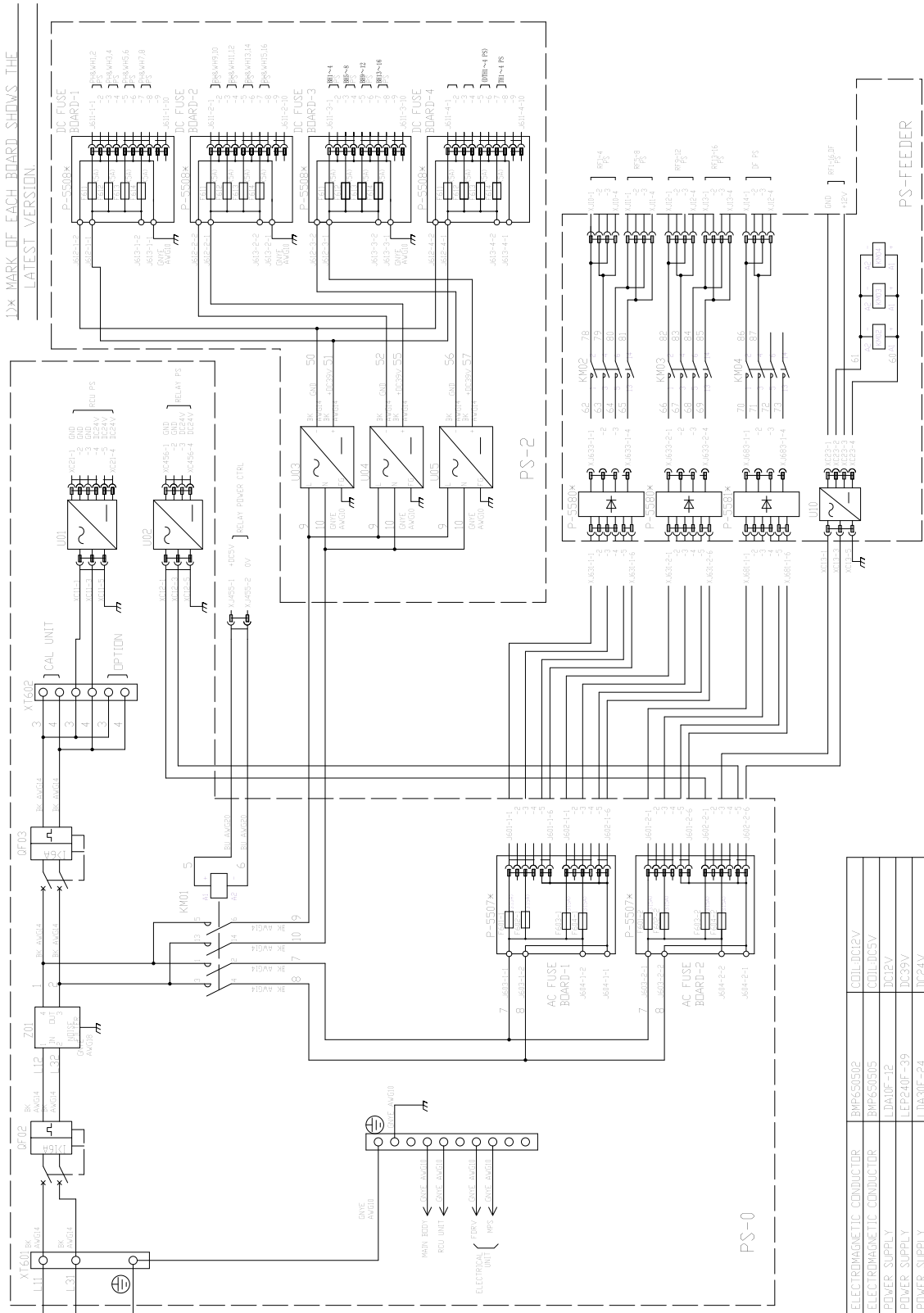
■ : FERRITE CORE

CAL UNIT (2/2)

MODEL MACHINE :  
CCW-R-2\*\* SERIES



1X MARK OF EACH BOARD SHOWS THE LATEST VERSION

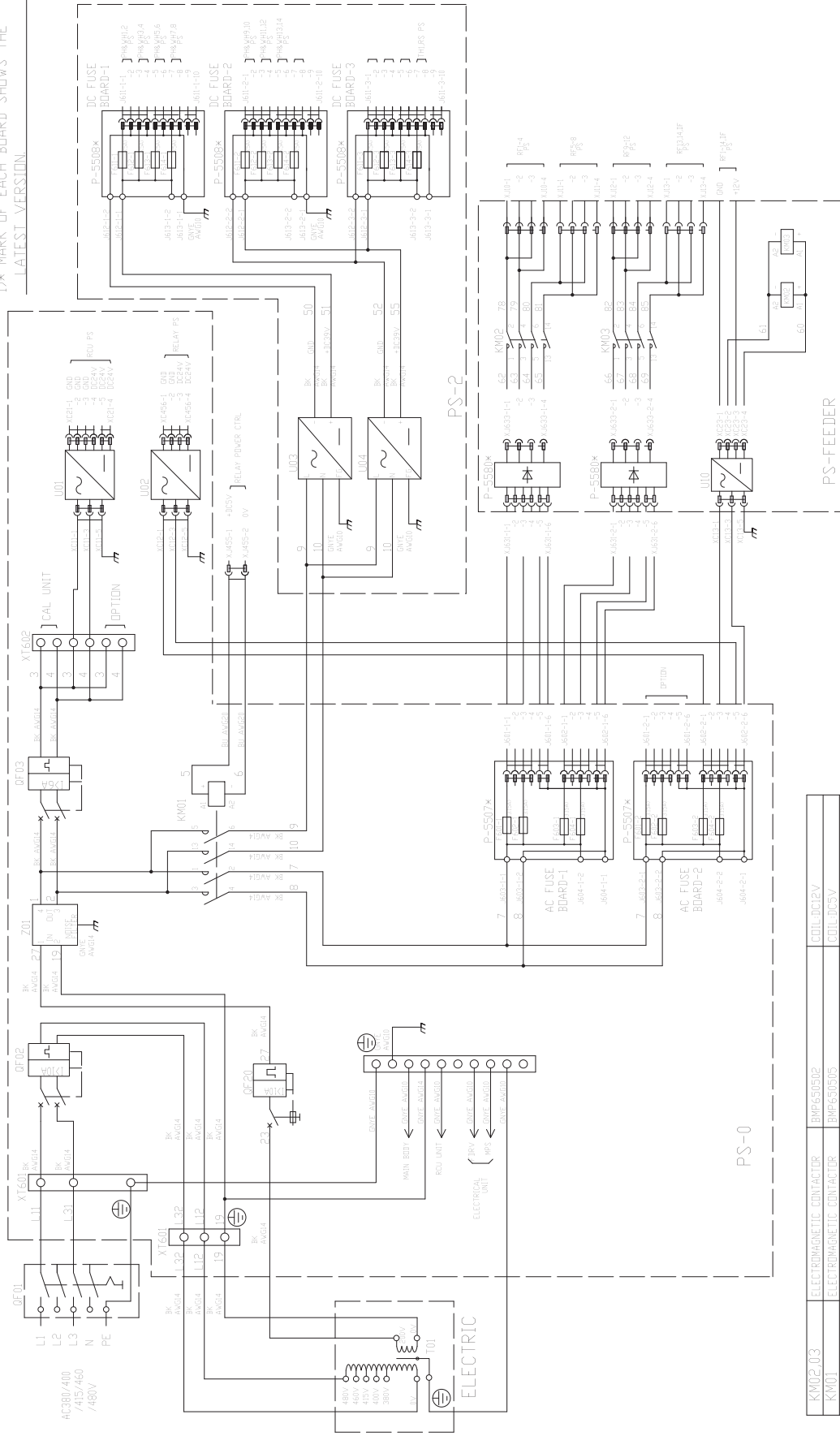


CCW-R-216B-D  
(STANDARD)

BLOCK DIAGRAM:  
102-3901-053

Item Designation	PART NAME	TYPE	REMARKS/RATING
KM02,03,04	ELECTROMAGNETIC CONDUCTOR	COL10C12V	
KM01	ELECTROMAGNETIC CONDUCTOR	COL10C5V	
U10	POWER SUPPLY	DC12V	
U03,04	POWER SUPPLY	DC39V	
U02	POWER SUPPLY	DC24V	
U01	POWER SUPPLY	DC24V	
Z01	NOISE FILTER	ZAG220-11S	AC250V 20A
DF02	CIRCUIT BREAKER	FAZ-2-C6	6A
DF01	EMERGENCY SWITCH	3P4H AC250V 25A	

1X MARK OF EACH BOARD SHOWS THE LATEST VERSION

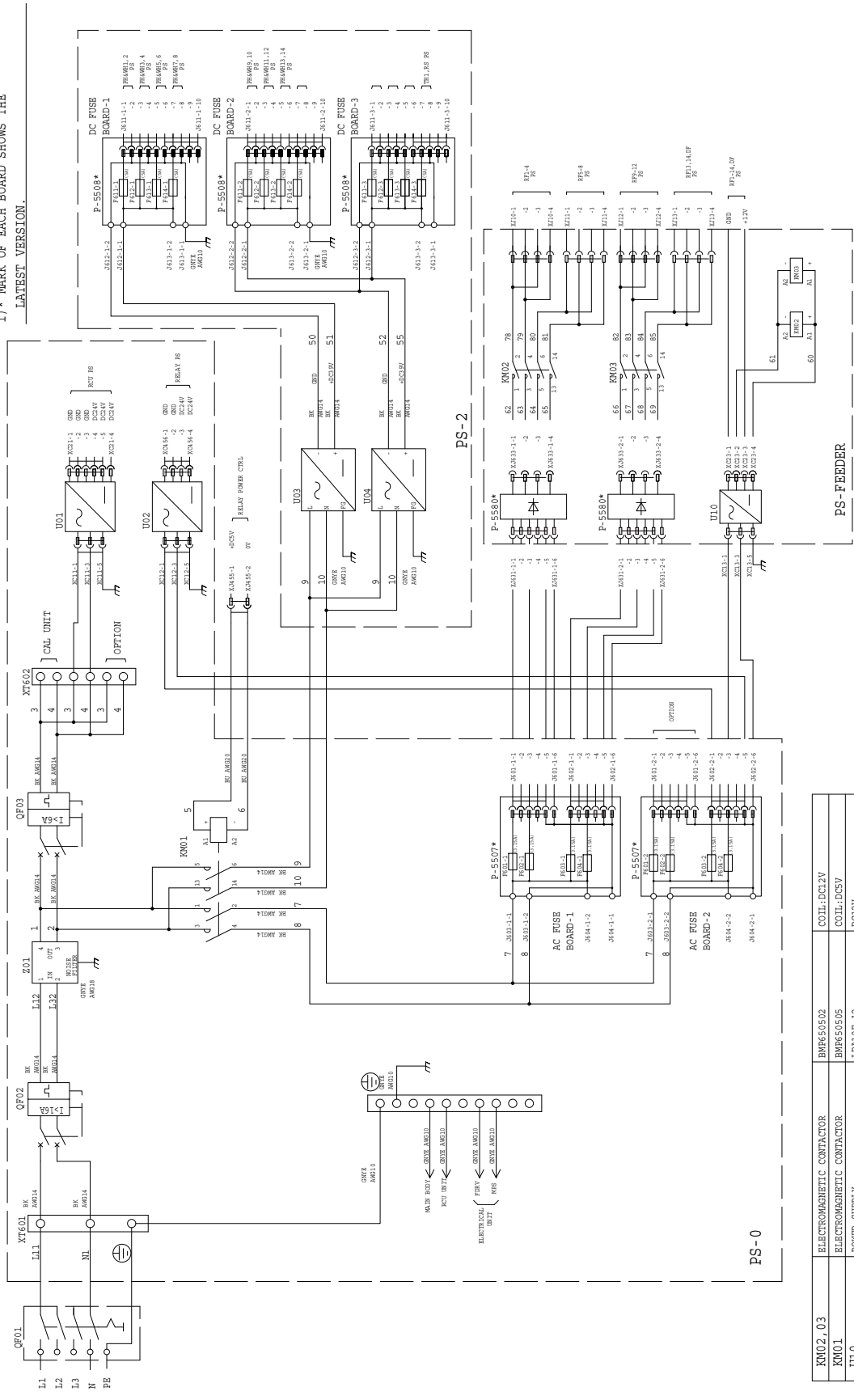


CC.W-R-214 W-S/15,20,30,50,70  
AC380/400/415/460/480V(KEU)

BLOCK DIAGRAM:  
086-0964-073

Item designation	PART NAME	TYPE	REMARKS/RATING
KM02_03	ELECTROMAGNETIC CONTACTOR	BMP650502	
KM01	ELECTROMAGNETIC CONTACTOR	BMP650505	
U10	POWER SUPPLY	LD10F-12	
U03,04	POWER SUPPLY	LEP24IF-39	
U02	POWER SUPPLY	LEA75F-24	
U01	POWER SUPPLY	LEA75F-24	
Z01	NOISE FILTER	ZAGE220-11S	
T01	TRANSFORMER	P-550/400/415/460/480V P-550/400/415/460/480V P-550V	
QF20	CIRCUIT BREAKER	FAZ-S10	
QF03	CIRCUIT PROTECTOR	FAZ-2-16	
QF02	CIRCUIT BREAKER	PK2M0-10-T	
QF01	EMERGENCY SWITCH	XG20T204/33K31V	

1) \* MARK OF EACH BOARD SHOWS THE LATEST VERSION.

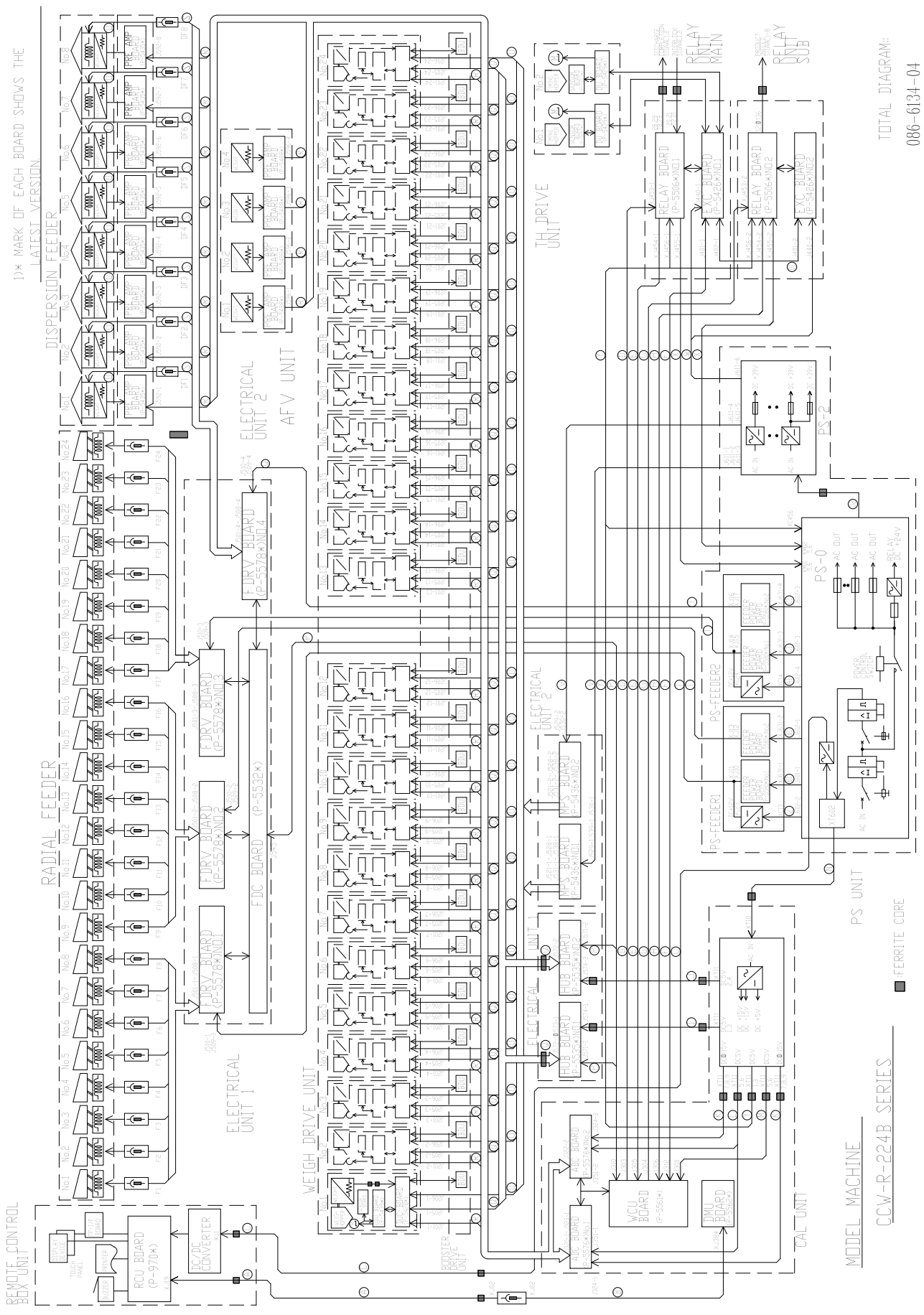


CCW-R-214W-S/15,20,30,50,70  
AC200-240V (EU)

BLOCK DIAGRAM:  
108-7064-062

Item Designation	PART NAME	TYPE	REMARKS/RATING
KM02, 03	ELECTROMAGNETIC CONTACTOR	BMF50502	COIL:DC12V
KM01	ELECTROMAGNETIC CONTACTOR	BMF50505	COIL:DC5V
U10	POWER SUPPLY	LDAL0F-12	DC12V
U03, 04	POWER SUPPLY	LEF240F-39	DC39V
U02	POWER SUPPLY	LDA30F-24	DC24V
U01	POWER SUPPLY	LEA75F-24	DC24V
Z01	NOISE FILTER	ZAG220-11S	AC950V 20A
QF03	CIRCUIT BREAKER	FAZ-2-C16	6A
QF02	CIRCUIT BREAKER	FAZ-2-C16	16A
QF01	EMERGENCY SWITCH	KG20T04/33S1V	3P+N AC750V 25A

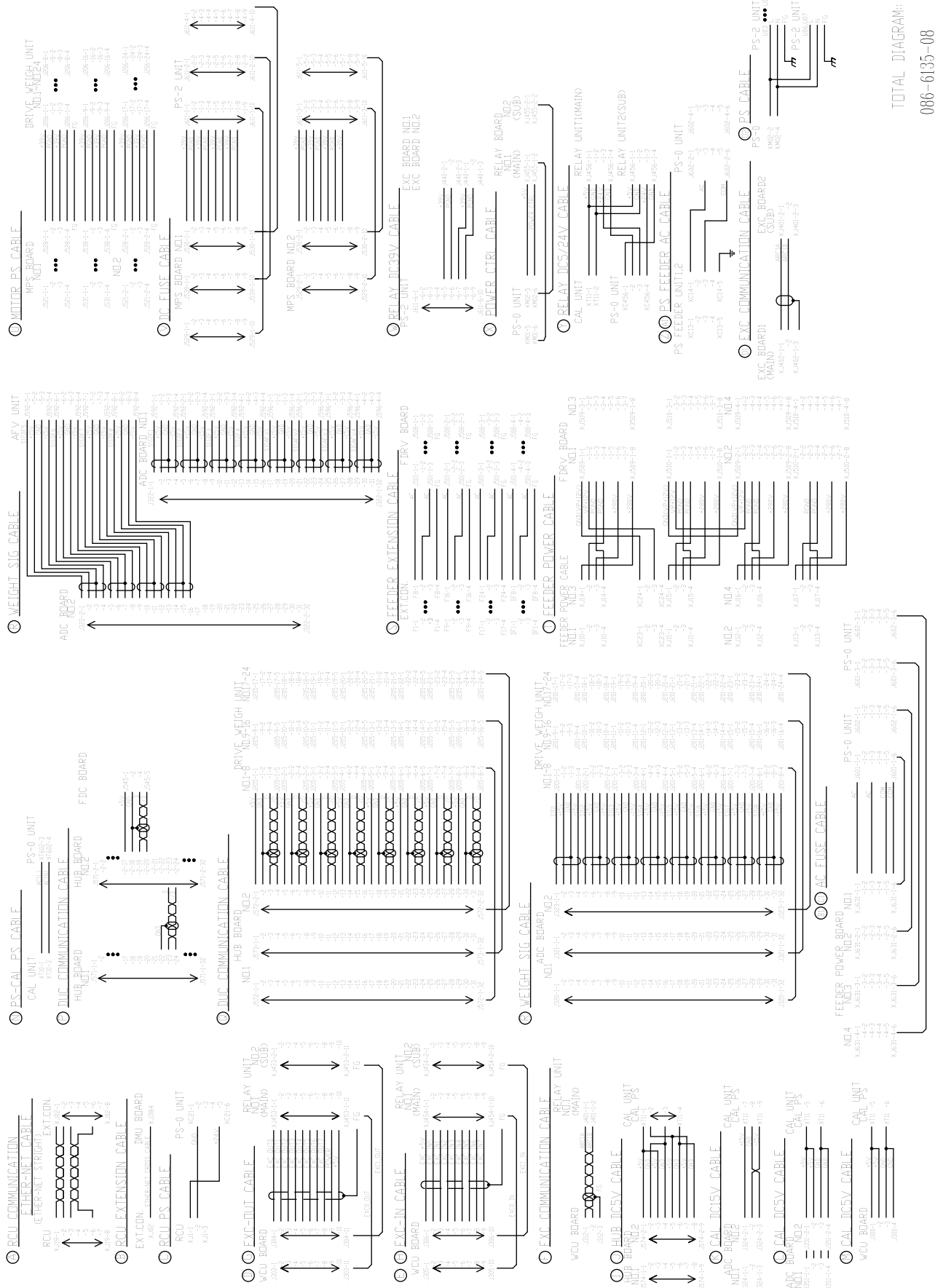
1) X MARK OF EACH BOARD SHOWS THE LATEST VERSION



TOTAL DIAGRAM:  
086-6134-04

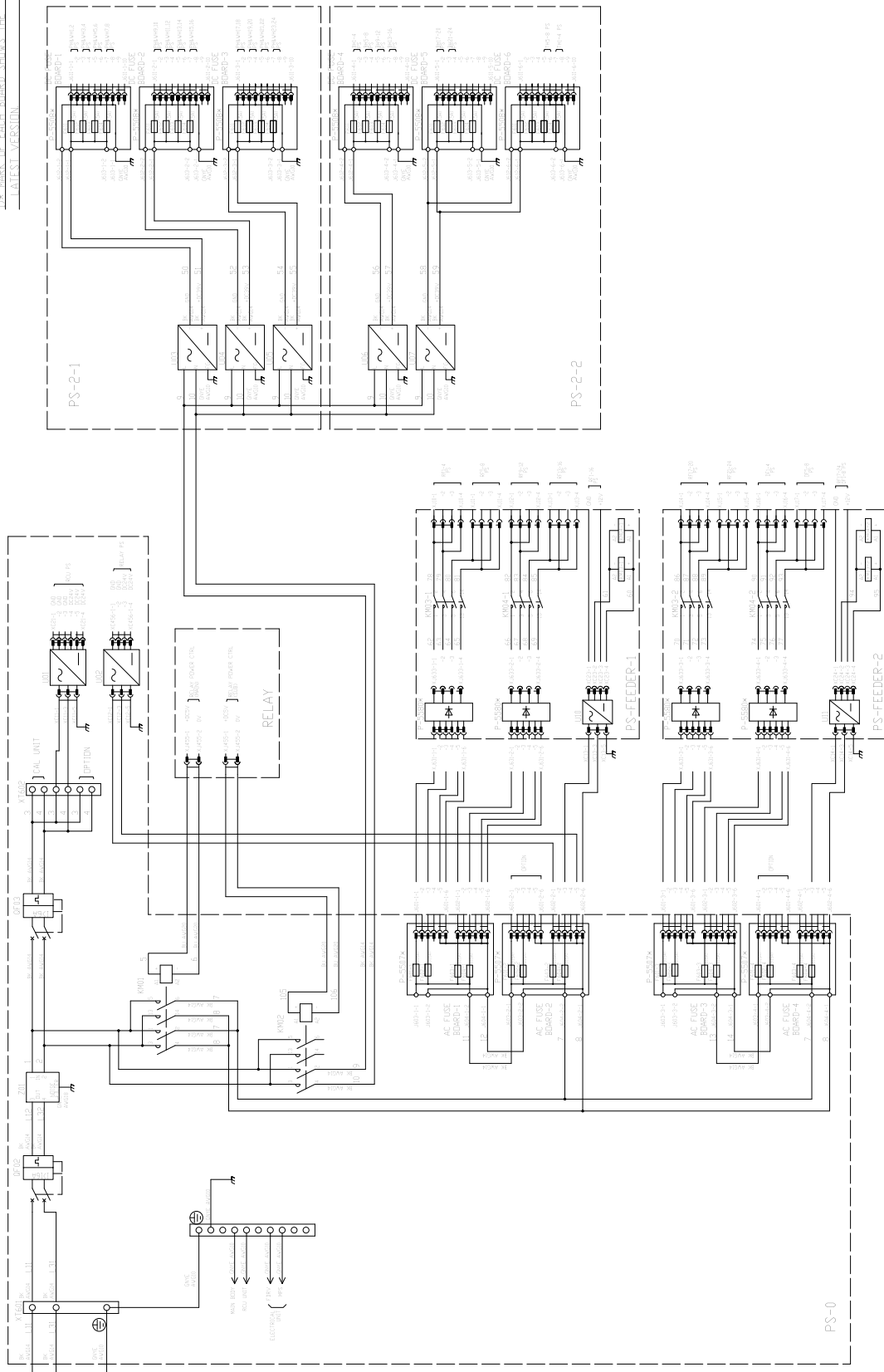
MODEL MACHINE  
CCW-R-224B SERIES

■ FERRITE CORE



TOTAL DIAGRAM:  
086-6135-08

DO NOT MARK UP EACH BOARD. SHOW AS THE LATEST VERSION.



KN03-1V-2	ELECTROMAGNETIC CONTACTOR	BM65H50E	GENERAL-PURV
KN04-1V-2	ELECTROMAGNETIC CONTACTOR	BM65H50E	GENERAL-PURV
KN01-0P	DIODE	1N4007	DIODE
KN02-0P	DIODE	1N4007	DIODE
KN03-0P	DIODE	1N4007	DIODE
KN04-0P	DIODE	1N4007	DIODE
KN05-0P	DIODE	1N4007	DIODE
KN06-0P	DIODE	1N4007	DIODE
KN07-0P	DIODE	1N4007	DIODE
KN08-0P	DIODE	1N4007	DIODE
KN09-0P	DIODE	1N4007	DIODE
KN10-0P	DIODE	1N4007	DIODE
KN11-0P	DIODE	1N4007	DIODE
KN12-0P	DIODE	1N4007	DIODE
KN13-0P	DIODE	1N4007	DIODE
KN14-0P	DIODE	1N4007	DIODE
KN15-0P	DIODE	1N4007	DIODE
KN16-0P	DIODE	1N4007	DIODE
KN17-0P	DIODE	1N4007	DIODE
KN18-0P	DIODE	1N4007	DIODE
KN19-0P	DIODE	1N4007	DIODE
KN20-0P	DIODE	1N4007	DIODE
KN21-0P	DIODE	1N4007	DIODE
KN22-0P	DIODE	1N4007	DIODE
KN23-0P	DIODE	1N4007	DIODE
KN24-0P	DIODE	1N4007	DIODE
KN25-0P	DIODE	1N4007	DIODE
KN26-0P	DIODE	1N4007	DIODE
KN27-0P	DIODE	1N4007	DIODE
KN28-0P	DIODE	1N4007	DIODE
KN29-0P	DIODE	1N4007	DIODE
KN30-0P	DIODE	1N4007	DIODE
KN31-0P	DIODE	1N4007	DIODE
KN32-0P	DIODE	1N4007	DIODE
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KN39-0P	DIODE	1N4007	DIODE
KN40-0P	DIODE	1N4007	DIODE
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KN45-0P	DIODE	1N4007	DIODE
KN46-0P	DIODE	1N4007	DIODE
KN47-0P	DIODE	1N4007	DIODE
KN48-0P	DIODE	1N4007	DIODE
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KN58-0P	DIODE	1N4007	DIODE
KN59-0P	DIODE	1N4007	DIODE
KN60-0P	DIODE	1N4007	DIODE
KN61-0P	DIODE	1N4007	DIODE
KN62-0P	DIODE	1N4007	DIODE
KN63-0P	DIODE	1N4007	DIODE
KN64-0P	DIODE	1N4007	DIODE
KN65-0P	DIODE	1N4007	DIODE
KN66-0P	DIODE	1N4007	DIODE
KN67-0P	DIODE	1N4007	DIODE
KN68-0P	DIODE	1N4007	DIODE
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KN80-0P	DIODE	1N4007	DIODE
KN81-0P	DIODE	1N4007	DIODE
KN82-0P	DIODE	1N4007	DIODE
KN83-0P	DIODE	1N4007	DIODE
KN84-0P	DIODE	1N4007	DIODE
KN85-0P	DIODE	1N4007	DIODE
KN86-0P	DIODE	1N4007	DIODE
KN87-0P	DIODE	1N4007	DIODE
KN88-0P	DIODE	1N4007	DIODE
KN89-0P	DIODE	1N4007	DIODE
KN90-0P	DIODE	1N4007	DIODE
KN91-0P	DIODE	1N4007	DIODE
KN92-0P	DIODE	1N4007	DIODE
KN93-0P	DIODE	1N4007	DIODE
KN94-0P	DIODE	1N4007	DIODE
KN95-0P	DIODE	1N4007	DIODE
KN96-0P	DIODE	1N4007	DIODE
KN97-0P	DIODE	1N4007	DIODE
KN98-0P	DIODE	1N4007	DIODE
KN99-0P	DIODE	1N4007	DIODE
KN100-0P	DIODE	1N4007	DIODE

BLOCK DIAGRAM:  
086-2153-013

CCV-R-224B  
AC200-240V(50/60Hz)

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# MODIFICATION HISTORY

<b>Version</b>	<b>Date</b>	<b>Part Number</b>	<b>Changes</b>
4	Jan. 2008	108-6497-39	Descriptions about WP Specification (air dryer) are added

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