

# Maintenance manual

## CNC Two-component Coating System

# ACW Control Unit ACW4200EX



The instruction manual for ACW4200EX is composed by control unit and mixing unit.  
The manuals are divided as below.

### ACW control unit

- 1. Operation manual
- 2. Installation manual
- 3. Maintenance manual

### ACW mixing unit

- 4. Instruction manual

And this document is **3. Maintenance manual.**



This manual contains important information on warnings and cautions. Read the manual thoroughly before starting to operate the pump, and follow the instructions. Always keep the manual handy until such time as the pump is no longer being used. If your manual is lost or worn badly, do not hesitate to contact our agency that is closest to you, or the Asahi Sunac Corporation, directly, and ask us to send you a new one.

# Preface

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Thank you very much for choosing our CNC Two-component Mixing System (ACW).

In order to keep this equipment in the best condition for an extended period, please carefully read this manual before use. Above all, the specifications, warnings and prohibitory or cautionary instructions shown herein shall be fully understood and observed during the use of this equipment.

The equipment covered by this manual is designed for industrial coating work. It shall be used by those who have been duly trained regarding the handling and scope of application and have an understanding of the operating procedure.

If you need further information about this manual, please call any of our branches listed on the back cover by specifying the “model” and “serial No.” of your equipment.

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Contents of this instruction manual shall be fully understood and the instructions shown herein strictly observed. Using the system without following instructions in this manual may lead to **bodily injury or damage to properties**.

The safety measures described herein are the minimum requirements and additional measures may also be required. All requirements provided by laws and legislations as well as rules and guidelines laid by your company or office shall be observed.

The cautionary instructions shown below shall be construed as minimum basic requirements for safety in the use of our product.

- Cautionary instructions are shown in three levels as defined below.

 <b>WARNING</b>	Calls the user's attention to a situation that may lead to bodily injury and describes how to avoid that situation.
 <b>CAUTION</b>	Calls the user's attention to a situation that may lead to damage or breakdown to the equipment and describes how to avoid that situation.
<b>NOTE</b>	Gives important or helpful information.

- \* Please remember that the situation mentioned under CAUTION may also lead to a serious disaster under certain circumstances. All instructions are important for your safety and prevention of system disorder and shall be strictly observed.

## **WARNING**

### **SCOPE OF SUITABLE USE FOR THE EQUIPMENT**

- For mixed fluid coating, the ACW Control Unit is used with the ACW Mixing Unit.  
Do not use them in another composition or for another purpose than mixed fluid being obtained by mixing base resin and hardener.
- Use the primary power and air supplies complying with the specifications.  
Doing so may lead to equipment disorder, damage, malfunction, electric shock and fire.
- The ACW Control Unit is not explosion-proof type. Never install or operate it in an explosive hazardous area.
- Do not wet the electric components in the ACW Control Unit with any liquid (water, alcohol, solvent, etc.).  
Doing so may lead to equipment disorder, damage, malfunction, electric shock or fire.
- Never use any acid or corrosive substance or halogenated hydrocarbon solvent for any paint control unit around the equipment.  
Doing so may lead to equipment explosion, fire, malfunction, or disorder.
- If you have any doubt about the intended use of the product or the paint to be used, please contact us.
- The use of the equipment under conditions other than specified above is considered as abuse unless our company approves such use.

### **<<GENERAL SAFETY INSTRUCTIONS>>**

- Never apply a fluid or air pressure exceeding the allowable maximum to the equipment  
all components and accessories to be used shall be durable against the maximum operating pressures mentioned above.
- Class D (Regulation in Japan) grounding is required for the equipment (to ensure an electric resistance not exceeding 100 ohms).
- Check the whole equipment every day. If any unusual condition is found, turn off the main power switch and, if the problem can be solved within the specified scope of maintenance work, repair or replace faulty parts as necessary. If the unusual condition cannot be corrected within the specified scope of maintenance work, please contact us, or any of our distributors for repair.
- When checking the equipment, never fail to turn off the main power switch on the ACW Control Unit and reduce all the air and paint pressures to zero.
- To ensure a safe operation of the system, all operators shall read and understand this manual and labels attached to each unit. Adequately trained personnel can only operate the equipment.
- Fire and electric codes and safety related regulations provided by the national or local government should be observed during the work.

## **WARNING**

### **FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD**

#### **<<SOURCES OF IGNITION>>**

When the paint flows through a pump or hose, it generates static electricity, which may spark at any part of the coating equipment if not properly grounded. Sparks may ignite combustible volatile components of solvents, particles of sprayed paint, dust suspended in the air and other combustible substances to cause fire or explosion, resulting in serious injury or damage to the equipment.

- Always check that the coating equipment, the products to be coated and all conductive materials are correctly grounded.
- Do not perform the coating operation in the vicinity of open flame, pilot lamp, drive unit such as electric motor or engine or another source of ignition.
- Never smoke in or around a spray booth or in the atmosphere containing solvent.
- Adequately ventilate the spray coating place so that it will not be filled with a combustible (solvent containing) atmosphere generated by the solvent.
- If you feel shocked even slightly by static electricity when handling the coating equipment, immediately stop the coating operation and check that all components are grounded. Never restart the coating operation until the cause is located and corrective action taken.
- Fire extinguishers with a sufficient capacity must be provided in the place where the spray coating operation is performed.
- The ACW Control Unit is not explosion-proof. Do not operate it in an explosive hazardous area.
- If the ACW Control Unit or another electric component generates excessive heat or smokes, immediately turn off the main power switch to stop the equipment.

#### **<<ELECTRIC SHOCK HAZARD>>**

- Do not overhaul or remodel any electric component or ACW controller installed in the ACW Control Unit.
- Do not exposure the electrical component in the ACW control unit by the neighboring atmospheres of the facilities place carelessly.
- Do not wet the ACW Control Unit or another electric component with any liquid (water, alcohol, solvent, etc.).
- When checking the equipment, never fail to turn off the main power switch on the ACW Control Unit.
- Be sure to shut off all phases of the external power supply used by the system before wiring.
- When power is on, do not open the door of the ACW Control Unit, and do not touch the terminals.

## **WARNING**

### <<GROUNDING>>

Class D (Regulation in Japan) grounding is required for the equipment (to ensure an electric resistance not exceeding 100 ohms).

The pump, products to be coated and all other coating equipment components (in use or around the unit in use) shall be grounded to prevent accidents from static electricity. If no adequate grounding means is provided, the grounding work (Class D grounding) shall be performed according to the technical standard for electric equipment.

The coating equipment components shall be grounded as specified below.

#### (1) Grounding the pump

- Attach a grounding wire to the grounding terminal provided at the pump body or car and connect the other end of the wire to a Class D (Regulation in Japan) grounding means.

#### (2) Grounding the hoses

- All high-pressure hoses must be grounded to ground the whole coating system. When connecting additional hoses for extension, check that each hose is grounded.
- The paint hoses in use shall be checked every week to measure the electric resistance. The electric resistance shall be 100 ohms or less as obtained with Class D (Regulation in Japan) grounding. If the maximum electric resistance is not indicated on the hose, contact the hose distributor or manufacturer.

Connect an ohmmeter to metal parts such as the joint of the hose to measure the resistance and, if it exceeds the permissible limit, immediately replace the hose with another one.

#### (3) Grounding the products to be coated

- If hangers and earth clips are contaminated, complete grounding cannot be achieved. Keep hangers and earth clips clean and conductive (grounded).

#### (4) Grounding the paint containers

- The containers, if made of a conductive metal, shall be placed on a grounded floor or table.

#### (5) Grounding the container of solvent used for flushing

- The container, if made of a conductive metal, shall be placed on a grounded floor or table. Do not place it on a non-conductive sheet such as paper or corrugated cardboard.

### <<SAFE FLUSHING>>

- Before flushing, check that the mixing unit, whole coating equipment and paint and solvent containers has been correctly grounded.
- Adequately ventilate the workplace so that it will not be filled with a combustible (solvent containing) atmosphere.
- When doing the spray coating work, always wear the protective goggles, protection clothes and gas mask for organic solvents.

## WARNING

### TOXIC SUBSTANCES HAZARD

#### <<SOLVENTS>>

Halogenated hydrocarbon solvents may explode if brought into contact with aluminum or plated part of a pressure vessel (pump, heater, filter, valve, spray gun, etc.). The explosion may consequently lead to fatal bodily injury.

**Never use halogenated hydrocarbon solvents.**

#### <<Examples of halogenated hydrocarbon solvents>>

Chlorine group	Trichloroethylene, tetrachloroethylene, chlorinated ethylene
Bromine group	n-propyl bromide
Fluorine group	HCFC-225, HFC-43-10mee, HFE-449s1 (HFE-7100)

(The above list does not include all halogenated hydrocarbons. For detail, contact the paint distributor or manufacturer.)

#### <<INFLUENCES ON THE HUMAN BODY>>

If a solvent containing atmosphere or fluid comes into contact with your eyes or mouth or a toxic substance is inhaled or swallowed and brought into your body, your nervous tissue may be destroyed to cause serious injury such as lifetime functional disorder. Immediately ask for adequate medical treatment.

#### NECESSITY OF MEDICAL TREATMENT

**Immediately receive medical treatment by a medical specialist such as orthopedist, not by a layman. At this time, you should tell him (her) the exact type of the paint you used.**

- You may lapse into dyspnea or be poisoned by organic solvent in the mist of paint or spraying atmosphere. Do not use the equipment in a closed room, tunnel, tank or another poorly ventilated place. The user shall take enough care of persons and livestock around him as well as himself.
- The isocyanate used for two-component fluid may hurt mucous membranes in your nose or throat. You should be acquainted with components of the paint, hardener, solvent and other volatile substances to be used. If you need further information, contact the paint or solvent manufacturer.
- When doing the spray coating work, always wear the protective goggles, protection clothes and gas mask for organic solvents, recommended by the paint or solvent manufacturer. Additional protective devices may be required depending on the paint components or ventilation level. Contact the paint or solvent manufacturer.

## **WARNING**

### **INJECTION AND PRESSURES HAZARD**

This system uses the paint under a very high pressure. Therefore, the spray gun is filled with the highly pressurized paint. If the sprayed or leaking paint hits a person at a close distance, it hits his skin and a lot of toxic substances penetrate into his body. If he fails to receive adequate medical treatment, his nervous tissue may be destroyed to cause serious injury such as lifetime functional disorder or surgical amputation of damaged part of his body. You may be seriously injured if the paint is only pinged into your eyes or skin.

#### **NECESSITY OF MEDICAL TREATMENT**

**If you are hit by the sprayed paint, immediately receive medical treatment by a medical specialist such as orthopedist, not by a layman. At this time, you should tell him (her) the exact type of the paint you used.**

- Never aim the head of a spray gun to your body or another person or draw any part of your body near the spray.
- Never cover the nozzle of the spray gun with your finger, palm or another part of your body.
- Do not start using the system before fully understanding how to operate it.
- Before using the system, always make sure that hose joints and all connections in the paint circuit are tight. Above all, check that joints of the hoses that move during operation are locked tight.

#### **<<SAFETY DEVICE ON SPRAY GUN>>**

- Each spray gun is provided with a safety device. Before using the spray gun, make sure that the safety device correctly functions.
- Do not remove or modify any part of a safety device. Doing so may lead to a malfunction or injury.
- Use the spray gun according to the instruction manual provided with it.

#### **<<FOR SAFETY AGAINST NOZZLE>>**

- Do not put your finger, palm or any article in your hand onto the nozzle.
- Take special care when cleaning or replacing the nozzle. If the nozzle is clogged during the spraying operation, immediately fasten the safety lock on the gun trigger, reduce the paint and air pressures to zero and remove the nozzle for cleaning. It is dangerous to start removing the paint sticking around the nozzle before fully releasing the pressures or with the trigger not locked.

## **WARNING**

### <<**SAFETY OF HOSES**>>

- Handle hoses with much care. Be sure that hoses are not caught or pulled by another object or brought into contact with sharp edges.
- Do not bend or collapse any hose. Doing so raises the pressure in the hose and possibly breaks the hose to cause the paint to be injected in a dangerous manner.
- Do not expose hoses to temperatures higher than 50 deg C or lower than -20 deg C.
- Before starting the equipment, always make sure that hose joints and all connections in the paint circuit are tight. Above all, check that joints of the hoses that move during operation are locked tight.
- Do not pull any hose to drag or move the equipment.
- Never use any damaged hose. Check each hose throughout its length for scars, leak, wear, swell, cracks and loose fittings. In any of them is found, immediately withdraw the hose from service and replace it with a new one.
- Any hose with paint leak must be replaced with a new one. Use a standard hose complying with our specifications.

### <<**DANGER FROM MISUSE OF THE EQUIPMENT**>>

- When checking the equipment, never fail to turn off the main power switch on the ACW Control Unit and reduce the air and paint pressures supplied to the ACW Control Unit and ACW Mixing Unit to zero.
- Never apply a fluid or air pressure exceeding the allowable maximum to the equipment during the coating operation. All components and accessories to be used shall be durable against the maximum operating pressures mentioned above.
- When power is on, do not open the door of the ACW Control Unit, and do not touch the terminals.
- To ensure a safe operation of the system, all operators shall read and understand this manual and labels attached to each unit. Adequately trained personnel can only operate the equipment.
- Fire and electric codes and safety related regulations provided by the national or local government should be observed during the work.

## CAUTION

### TROUBLE AND MALFUNCTION BY THE WRONG USE

#### <<GENERAL SAFETY INSTRUCTIONS>>

- Use the ACW Control Unit in the environment that satisfies the general specifications described in this manual. Not doing so can cause an electric shock, fire, malfunction or product damage or deterioration.
- Always check the protective ground terminal of the ACW Control Unit is correctly grounded by Class D (Regulation in Japan) grounding (Class 3 grounding Method) or higher. Not doing so may cause an electric shock or malfunction.

#### <<WIRING PRECAUTIONS OF THE ACW CONTROL UNIT >>

- Be sure to shut off all phases of the external power supply used by the system before wiring. Failure to do so may result in an electric shock, product damage or malfunctions.
- Before starting wiring, always check Class D (Regulation in Japan) grounding correctly grounds the protective ground terminal of the ACW Control Unit. Perform an electric resistance not exceeding 100 ohms.
- Correctly wire the power supply section after confirming the rated voltage and terminal arrangement of the product. Not doing so can cause a fire or failure.
- Tighten the terminal screws of the power supply section in the specified torque range. Undertightening can cause a short circuit or malfunction. Overtightening can cause a short circuit or malfunction due to the damage of the screws.
- Terminal screws, which are not to be used, must be tightened always at torque 0.6 to 0.8 N·m. Otherwise there will be a danger of short circuit against the solderless terminals.
- Use applicable solderless terminals and tighten them with the specified torque. If any solderless spade terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.
- Exercise care to avoid foreign matter such as chips and wire offcuts entering the ACW controller. Not doing so can cause a fire, failure or malfunction.
- The ACW controller has an ingress prevention label on its top to prevent foreign matter, such as wire off-cuts, from entering the module during wiring. Do not peel this label during wiring. Please be sure to remove this label for heat dissipation the time of system operation.
- Tighten the mounting screws within the specified torque range. Undertightening can cause the GOT to drop, short circuit or malfunction. Overtightening can cause a drop, short-circuit or malfunction due to the damage of the screws.
- Before starting cleaning or terminal screw retightening, always switch off the power externally in all phases. Not switching the power off in all phases can cause the ACW controller failure or malfunction.

## CAUTION

### <<WIRING PRECAUTIONS OF FLOW METER CABLE >>

- Be sure to shut off all phases of the external power supply used by the system before wiring.  
Failure to do so may result in an electric shock, product damage or malfunctions.
- The flowmeter cables connected to the unit must be run in ducts or clamped.  
Not doing so can cause the unit or cable to be damaged due to the dangling, motion or accidental pulling of the cables or can cause a malfunction due to a cable connection fault.
- Do not bundle flowmeter cables with main-circuit, power or robot wiring. Run the flowmeter cables separately from such wiring and keep them a minimum of 100mm (3.94in.) apart.  
Lay wiring of the flowmeter cables through the conductive piping and duct.  
Not doing so noise can cause a malfunction.
- The shield lines of the flowmeter cables are firmly connected to SG terminal in the ACW Control Unit.  
The ACW Control Unit must be grounded.
- It has the influence of a noise on a grounding (ground) line. When a flowmeter cable carries out malfunction in spite of the wiring construction that is not influenced by a noise, It has the influence of a noise on a grounding (ground) line. Connection with SG terminal and the protective earth (PE) terminal in an ACW Control Unit are removed, and ground SG terminal independently.
- It has the influence of a noise from an ACW Mixing Unit.  
When a flowmeter cable carries out malfunction in spite of the wiring construction that is not influenced by a noise, grounding of an ACW Mixing Unit may be inefficient. Please check the grounding state and ground resistance of an ACW Mixing Unit.  
If a grounding screw is loose, a noise cannot be removed but it will become a cause of malfunction.  
When it has the influence of a noise on the grounding (ground) line by the side of the ACW Mixing Unit, a grounding place must change or it dissociates with other earth lines.
- When unplugging the cable connected to the ACW Control Unit, do not hold and pull the cable portion.  
Not doing so can cause a fire, failure or malfunction.
- When attaching the flowmeter cable, the mounting screws in the specified torque range.  
Undertightening can cause a short circuit or malfunction.  
Overtightening can cause a short circuit or malfunction due to the damage of the screws.

## CAUTION

### << OPERATION OF ACW CONTROLLER PRECAUTIONS >>

- The display section of the ACW controller is an analog-resistive type touch panel.  
If you touch the display section simultaneously in 2 points or more, the switch that is located around the center of the touched point, if any, may operate. Do not touch the display section in 2 points or more simultaneously. Doing so may cause an accident due to incorrect output or malfunction.
- Do not press the ACW controller display section with a pointed material as a pen or driver.  
Doing so can result in a damage or failure of the display section.

### <<MEMORY CARD PRECAUTIONS>>

- When inserting/removing the memory card into/from the ACW controller, turn the access switch off in advance. Failure to do so may corrupt data within the memory card.
- When removing the memory card from the ACW controller, make sure to support the memory card by hand, as it may pop out.  
Failure to do so may cause the memory card to drop from the ACW controller and break.
- Do not wet the memory card with any liquid. Do not fall or a shock to memory card.  
Failure to do so may cause the memory card break.
- When inserting the memory card into the ACW controller, push it into the insertion slot until the Card Eject button will pop out. Failure to do so may cause a malfunction due to poor contact.

### << ACW CONTROLLER REPLACEMENT PRECAUTIONS >>

- Before touching the ACW controller, always touch grounded metal, etc. to discharge static electricity from human body, etc. Not doing so can cause the ACW controller to fail or malfunction.
- Do not drop the ACW controller or subject it to strong shock.  
The ACW controller damage may result.
- Do not touch the conductive and electronic parts of the ACW controller directly.  
Doing so can cause the ACW controller malfunction or failure.
- When mounting the ACW controller to an ACW Control Unit, tighten the mounting screws in the specified torque range.  
Undertightening can cause the GOT to drop, short circuit or malfunction.  
Overtightening can cause a drop, short circuit or malfunction due to the damage of the screws
- Also where a backlight is turned off, the touch key operates. When the display of a backlight becomes hard to see, please contact our company, in order to perform early exchange.
- Do not perform exchange of the backlight or the liquid crystal display (LCD).  
It becomes a cause of ACW controller breakage. Please inform our company of repair etc.



## CAUTION

### << CLEANING OF ACW CONTROLLER PRECAUTIONS >>

- Use the display section of the ACW controller always in a clean condition.  
To clean the display section, wipe the dirty part with a soft cloth using neutral detergent or ethanol.
- Do not use solvents such as acetone, benzene, toluene and alcohol.  
It becomes a cause of the protective sheet to be deformed or peel off.
- Do not use spray solvents to cleaning. It becomes a cause of failure of the ACW controller.

### << TRANSPORTATION PRECAUTIONS >>

- ACW controller is a precision device. Please avoid the shock, which exceeds the value of the general specification of a statement to this instructions manual in transportation of an ACW controller.  
Check if the ACW controller operates correctly after transportation.

### << DISPOSAL PRECAUTIONS >>

- When disposing of the product, handle it as industrial waste.

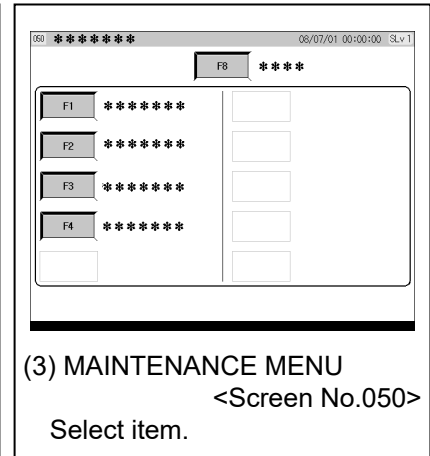
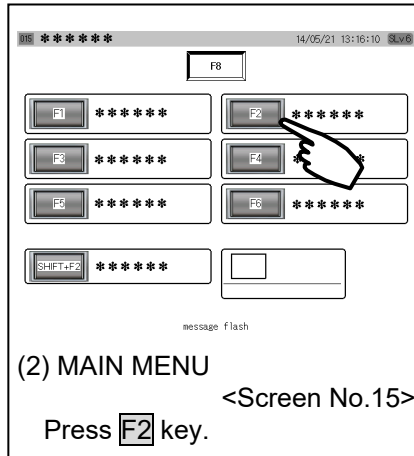
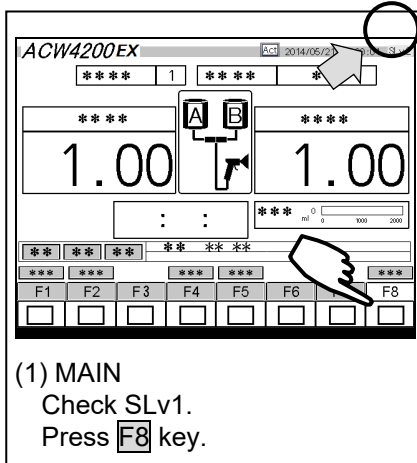
# 2

## Maintenance (Calibration, Adjust, Ratio Test)

### 2-1 Switch to MAINTENANCE MENU screen (SLv1)

On the security level more than SLv1, a setup is performed and a change can be made.

See Operation Manual [Change security level]



See Operation Manual [Basic operation of ACW controller]

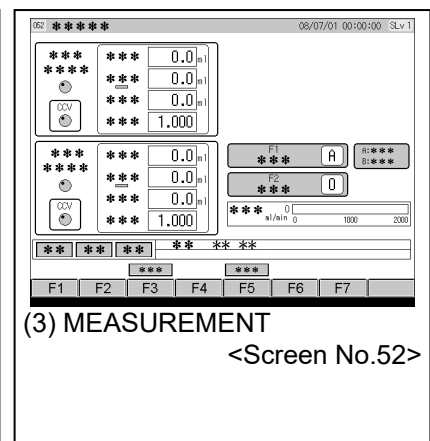
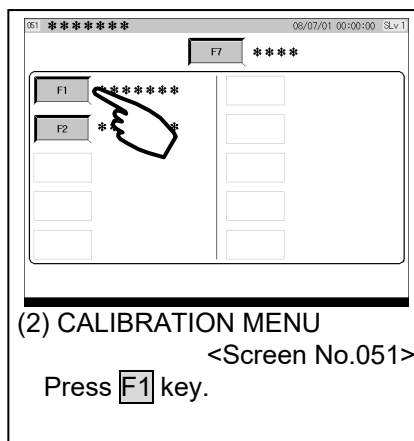
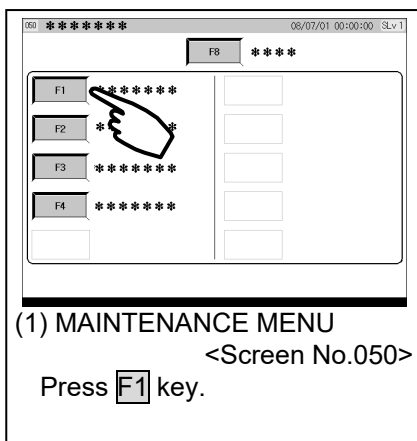
### 2-2 Calibration (Measurement) operation

Perform Measurement for calibration of flowmeter. Calibration is an operation to save the difference between a value read by flowmeter and actual measurement in advance for each base resin, hardener, and thinner (only three-component). If the Measurement operation is not performed, it is impossible to keep high precision mixing ratio, which results in hardening defect of coat. Be sure to perform the Measurement operation when fluid is changed or when dilution agent rate (viscosity) is changed.

Value of calibration is saved in FLOW PULSE CORRECTION screen.

See Operation Manual [Flow Pulse Correction]

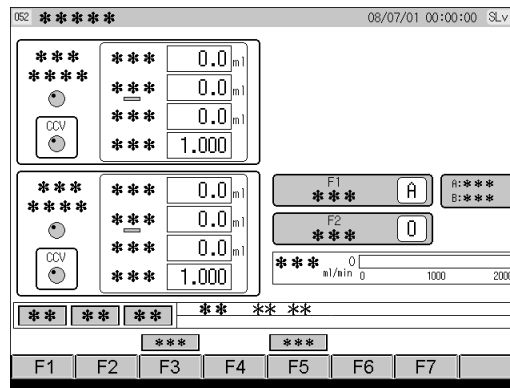
#### 2-2-1 Switch to MEASUREMENT screen



## 2-2-2 Operation of Measurement

When changing parameters of Measurement, refer to Operation Manual in [List of System Parameter].

<Screen No.052>



See Operation Manual [Basic operation of ACW controller]

### WARNING

#### **BREATHING DISORDER AND INTOXICATION HAZARD**

- Wear toxic fluid protecting mask, safety glasses, and protective clothes.
- Ventilate sufficiently to avoid filling by inflammable atmosphere (solvent atmosphere).

### NOTE

- Use a cup (for sampling) conforming to supply for charging before measuring and supply for measuring.
- Do not enter a wrong value (volume “ml” value).

(1) In measuring, have the items below available at hand.

	Necessities	Content
1	Two cups of approx. 300ml	Used for adjusting flow rate. (Used for filling.)
2	Two measuring cup of approx. 300ml	Measure the weight of cups in advance for measuring content precisely with a precision balance when measuring.
3	Electronic balance	Used for measuring paint weight. Capable of measuring up to 1kg with precision of 0.1g or below.

(2) Selecting [A](base resin)/ [B](hardener), and valve of CCV

- ◆ Press **F1** “[A]/[B]” key for selecting.
- ◆ Display changes in the sequence Base Resin [A] and Hardener [B]. (“A”⇒“B”⇒“A”)
- ◆ Press **F2** “VALVE” key to select a valve for measurement.

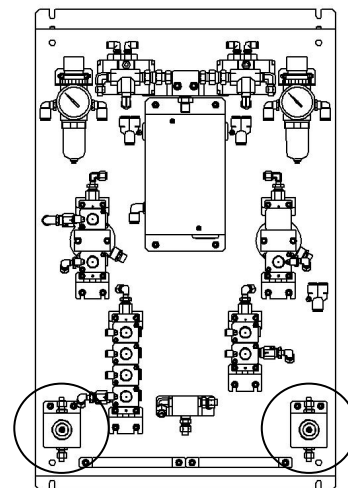
**<Example>** In the case the number of base resin [A] is two, when **F2** “VALVE” key is pressed, display changes in the sequence “0”⇒“1”⇒“2”⇒“0”.

(3) The state of Mixing Unit

- ◆ Place the Teflon tube under the measuring valve on measuring side (base resin or hardener) in a cup made available (for filling).
- ◆ When measurement screen is displayed, the route is automatically switched and pain is discharged from measuring valve.
- ◆ Turn the measuring valve to open.

(4) Filling to the Teflon tube

- ◆ Press **F3** "START F" key to discharge the Teflon tube with fluid.
- ◆ Here adjust the measuring valve **2** as described in "NOTE" below.
- ◆ Check flow rate by "FLOW RATE" display on the screen.
- ◆ In order to interrupt discharging, press **F4** "STOP F" key.



## NOTE

- When flow rate is great, the error increases. When flow rate is low, the alarm "Flow [A] / [B] Too Low" is issued.
- When actual flow rate is 200ml/min (g/min), adjust the measuring valve to ensure that discharge of measuring is 150 to 250ml/min (g/min).

(5) Start measuring

- ◆ After the adjustment, put the Teflon tubes in the measuring cups.
- ◆ Press **F5** "START M" key.
- ◆ Quantity to be measured is the value of "TARGET".

See Operation Manual [Measurement Parameter in List of System Parameter]

(6) When measurement is completed, it will switch to INPUT MEASUREMENT VALUE screen.

Set value "Change g ⇔ mL in Display (0:mL/1:g)" of DISPLAY PROPERTY screen.

Value is "mL". And enter by volume value (mL): Go to (7)

Value is "mL". And enter by weight value (g): Go to (8) (\*1)

Set value is "g": Go to (9) (\*2)

(\*1): It restricts, when specific gravity is entered to the SPECIFIC GRAVITY screen.

See Operation Manual [Specific Gravity]

(\*2): It restricts, when the ratio is inputted by the weight ratio.

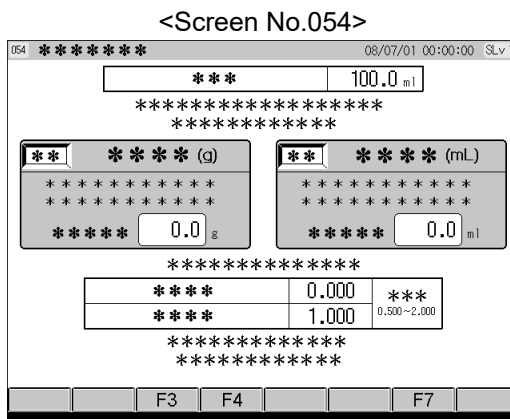
See Operation Manual [Mixing Ratio & Pot Life]

(7) Value is "mL" in the DISPLAY PROPERTY screen. And enter by volume value (mL).

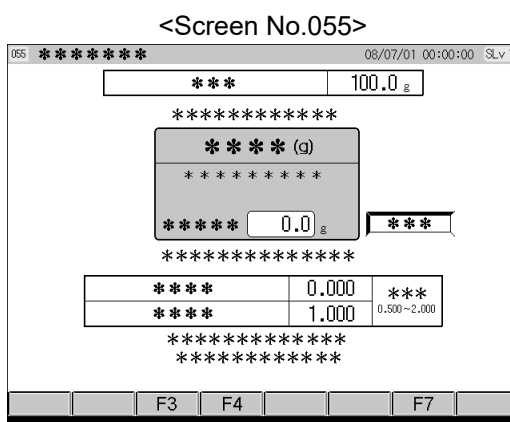
- ◆ Press "SELECT" key to the left "By Volume value (mL)" of INPUT MEASUREMENT VALUE screen.
- ◆ Measure the weight of liquid by a balance; divide by specified gravity (paint manufacturer's information) to calculate the volume.
- ◆ Press **F3** "CALC" key. Flow pulse correction is displayed on "NEW CORRECTION VALUE"
- ◆ Press **F4** "SETUP" key to save the flow pulse correction.

See Installation Manual [Ratio by weight and ratio by volume]

- (8) Value is “mL” in the DISPLAY PROPERTY screen. And enter by weight value (g).
- ◆ Press “SELECT” key to the left “By Weight value (g)” of INPUT MEASUREMENT VALUE screen.
  - ◆ The weight of the liquid measured with the balance is measured and the value is entered into “ACTUAL VALUE”.
  - ◆ Press **F3** “CALC” key. Flow pulse correction is displayed on “NEW CORRECTION VALUE”
  - ◆ Press **F4** “SETUP” key to save the flow pulse correction.



- (9) Value is “g” in the DISPLAY PROPERTY screen.
- ◆ The weight of the liquid measured with the balance is measured and the value is entered into “ACTUAL VALUE”.
  - ◆ Press **F3** “CALC” key. Flow pulse correction is displayed on “NEW CORRECTION VALUE”
  - ◆ Press **F4** “SETUP” key to save the flow pulse correction.



- (10) When measuring the next color (fluid), once flush the route.
- ◆ Press **F7** “RETURN” key on the INPUT MEASUREMENT VALUE screen to switch MEASUREMENT screen.
  - ◆ Put the Teflon tubes in the measuring cups.
  - ◆ Press **F2** “VALVE” key and it changes into “0”.
  - ◆ Press **F3** “START F” key to discharge the Teflon tube with solvent.

(11) Repeat operation

- ◆ After flushing, repeat the procedure 2 to 10 to measure all base resin and hardener [CCV valve].

(12) The end of measurement

- ◆ When all is completed, finally follow the step 11 again to flush the route.
- ◆ Close the measuring valve.
- ◆ Press **F7** "RETURN" key to switch the screen.

(13) Check a value by the enter data

- ◆ Switch to the MAIN MENU screen, press **F1** "STANDARD PARAMETER MENU" key and **F4** "FLOW PULSE CORRECTION" key in this sequence to change the screen, then record the copy of a value displayed in the table on a sheet.

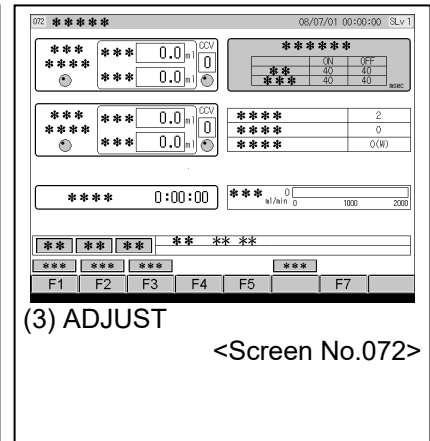
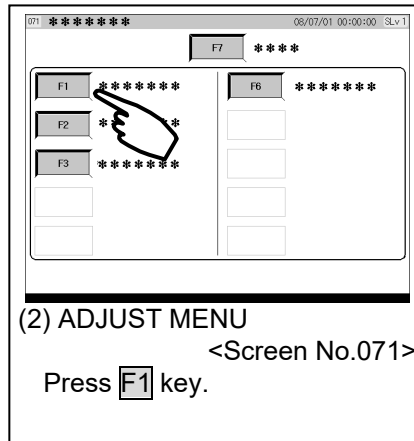
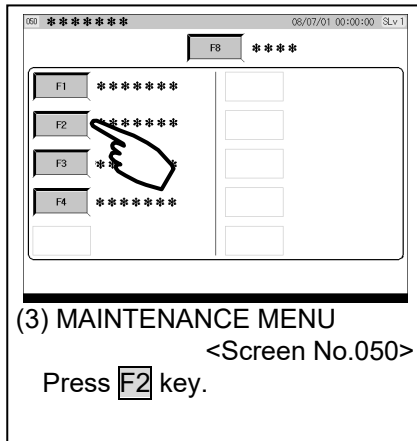
See Operation Manual [Flow Pulse Correction]

## 2-3 Adjust operation

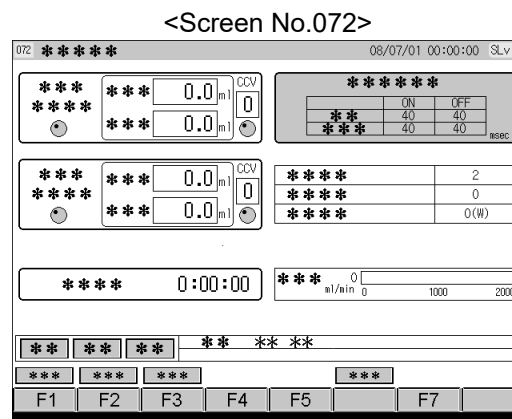
This is intended to determine the Mixing Valve opening/closing timings according to the actual flow rate.

When the flow rate is significantly changed (to more than twice the initial level), the learning operation shall be performed to let the system recognize the opening/closing timings again. The ADJUST operation shall also be performed to let the system recognize the valve response timings again when system has been operated for about six months.

### 2-3-1 Switch to ADJUST screen



### 2-3-2 Operation of Adjust



- (1) Change a color to the color for Adjust operation.

See Operation Manual [19-3 Color Change operation]

- (2) Press **F1** "READY ON" key and the **READY** lamp is on.

- (3) Start Adjust operation

- ◆ Press **F3** "START A" key to start and the **ADJUSTING** lamp is on.
- ◆ An operation situation is displayed under a screen during Adjust operation.

See Operation Manual [Comment list at the bottom of the screen].

- ◆ When interrupting the Adjust operation, press **F4** "STOP A" key. In this case, the data is not updated here.

- (4) The end of Adjust operation

- ◆ Be sure to continue spray until the **ADJUSTING** lamp goes off.
- ◆ Press **F5** "ADJUST DATA" key to switch ADJUST DATA screen, and record the copy of a value displayed in the table on a sheet.

## ⚠ CAUTION

### POSSIBILITY OF MIXING CONTROL ERROR

- Data for correcting mixed fluid is collecting, and high precision mixing is not maintained during Adjust operation. If the spray is stopped during Adjust operation, Adjust operation is not complete.
- Evaluation of ratio error is canceled during Adjust operation. Never press the “START A” key during production and during color change.

#### 2-3-3 Adjust data

## NOTE

- Do not change a value on this screen.
- Be sure to take a copy of the data after Adjust operation.

<Screen No.074>

074 *****		*****							0	0(W)
COLOR No. 1-7		0(W)	1(A)	2(B)	3(C)	4(D)	5(E)	6(F)	7(G)	
1	*****	msec	40	40	40	40	40	40	40	
2	*****	msec	40	40	40	40	40	40	40	
3	*****	msec	40	40	40	40	40	40	40	
4	*****	msec	40	40	40	40	40	40	40	
5	*****	msec	40	40	40	40	40	40	40	
6	Δt1 *****	pulse	10	10	10	10	10	10	10	
7	Δt2 *****	pulse	20	20	20	20	20	20	20	
8	Δt3 *****	pulse	40	40	40	40	40	40	40	
0 → 0 0 → ALL (No.0-7)										
F1 F2		F4		F5		F6		F7		
10 11		12 13		14		15				

**NOTE:** A numerical value will become red if the preset value of “ADJUST DATA DETECTION” is exceeded.  
See Operation Manual [Description of System Parameter No.21, No.22]

**NOTE:** In the case of initial setting, an error level “ERR1” (cautions) is outputted.  
See Operation Manual [Detaile of Detection Parameter No.19]  
See [3-4 Cause and solutions of error No.46, No.47, No.49, No.50]

## NOTE

- When a numerical value becomes in red (initial value: 150 or more msec), the response of Mixing Valve is falling. It is necessary to maintain the Mixing Valve of the ACW Mixing Unit, and a solenoid valve. Refer to the instructions manual of “ACW Mixing Unit” for the maintenance.

No.	Item	unit	Initial value	Content
1	BASE RESIN OFF PULSE	msec	40	The time until the flowmeter stops counting of flow rate after the Base Resin Mixing Valve has turned off.
2	BASE RESIN ON PULSE	Msec	40	The time until the flowmeter counts flow rate after the Base Resin Mixing Valve has turned on.
3	HARDENER OFF PULSE	Msec	40	The time until the flowmeter stops counting of flow rate after the Hardener Mixing Valve has turned off.
4	HARDENER ON PULSE	Msec	40	The time until the flowmeter counts flow rate after the Hardener Mixing Valve has turned on.
5	ADJ 4-PULSE TIME	Msec	40	Flow rate data at Adjust operating.
6	$\Delta$ t1 PULSE COUNT	pulse	10	Flow rate data when minute timing ( $\Delta$ T1), ( $\Delta$ T2), and ( $\Delta$ T3) of Hardener Mixing Valve are turned on.
7	$\Delta$ t2 PULSE COUNT	pulse	20	
8	$\Delta$ t3 PULSE COUNT	pulse	40	
9	CURRENT COLOR GROUP			The color group number chosen now is displayed.

No.	Item	Content
10	F1 "COPY"	See [10-5 Copy of a preset value]
11	F2 "ALL COPY"	
12	F4 "No.1-7"	The switch for shifting to ADJUST DATA No.1-7 screen. < Screen No.074>
13	F5 "No.8-14"	The switch for shifting to ADJUST DATA No.8-14 screen. < Screen No.076>
14	F6 "No.15-21"	The switch for shifting to ADJUST DATA No.15-21 screen. < Screen No.078>
15	F7 "RETURN"	The switch for shifting to ADJUST MENU screen. < Screen No.071>

### 2-3-4 Adjust operation record

Adjust operation record is displayed.

Data is saved every 20 to memory card. Less than 20 are checked on this screen.

See Operation Manual [Memory card]

<Screen No.088>

No.	****	**	**	**
1	0	0	0	0 : 0
2	0	0	0	0 : 0
3	0	0	0	0 : 0
4	0	0	0	0 : 0
5	0	0	0	0 : 0
6	0	0	0	0 : 0
7	0	0	0	0 : 0
8	0	0	0	0 : 0
9	0	0	0	0 : 0
10	0	0	0	0 : 0
11	0	0	0	0 : 0
12	0	0	0	0 : 0
13	0	0	0	0 : 0
14	0	0	0	0 : 0
15	0	0	0	0 : 0
16	0	0	0	0 : 0
17	0	0	0	0 : 0
18	0	0	0	0 : 0
19	0	0	0	0 : 0
20	0	0	0	0 : 0

\*\*\*\*\*  
\*\*\*\*\*

F3 F7

## 2-4 Ratio Test operation

Used for checking the preset mixing ratio. When mixing ratio of paint is changed, perform mixing ratio test.

### NOTE

- Flow rate is controlled with a high precision during the mixing ratio test, which is different from Adjust operation. When actual flow rate is greatly different from discharge in testing, the mixing ratio measured in testing may be collapsed. Be sure to adjust the flow rate (discharge quantity) when testing.

### 2-4-1 Switch to RATIO TEST screen

(1) MAINTENANCE MENU  
 <Screen No.050>  
 Press **F3** key.

(2) RATIO TEST MENU  
 <Screen No.091>  
 Press **F1** key.

(3) RATIO TEST  
 <Screen No.092>

### 2-4-2 Operation of Ratio Test

By the mixing ratio test, the number of times of mutual supply of liquid is decided.

When changing parameters of “Test Cycles”, refer to Operation Manual [Ratio Test Parameter in List of System Parameter]

<Screen No.092>

## ! WARNING

### **BREATHING DISORDER AND INTOXICATION HAZARD**

- Wear toxic fluid protecting mask, safety glasses, and protective clothes.
- Ventilate sufficiently to avoid filling by inflammable atmosphere (solvent atmosphere).

(1) Prepare the following tools for use in the mixing ratio test.

	Necessities	Content
1	Two cups of approx. 300ml.	Used for adjusting flow rate. (Used for filling.)
2	Two measured cup of approx. 300ml.	Measure the weight of cups in advance for measuring content precisely with a precision balance when measuring.
3	Electronic balance.	Used for measuring paint weight. Capable of measuring up to 1kg with precision of 0.1g or below.

(2) Color change

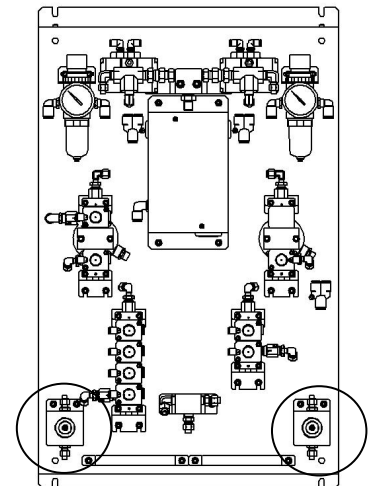
- ◆ Change a color to the color for Ratio Test operation, and discharge mixed fluid.
- ◆ Record the flow rate in spraying.

(3) The state of Mixing Unit

- ◆ Place the Teflon tube under the measuring valve of both base resin and hardener in a prepared cup (for filling).
- ◆ When measurement screen is displayed, the route is automatically switched and paint is discharged from measuring valve.
- ◆ Turn the measuring valve of both base resin and hardener one revolution for opening.

(4) Filling to the Teflon tube.

- ◆ Pull the trigger of spray gun and discharge base resin and hardener out of the Teflon tube.
- ◆ Adjust the measuring valve to bring filling close to the recorded quantity by watching the flow rate display on the screen.
- ◆ Return the trigger of the spray gun to stop spraying.



(5) Start ratio test

- ◆ When filling is finished, receive Teflon tube of base resin and hardener respectively to the measuring cup.
- ◆ Press **F3** "START T" key, and the **TESTING** lamp is on.
- ◆ Then base resin and hardener are discharged three times by turn. (The number of repeats can be changed.)

Dee Operation Manual [Ratio Test Parameter in List of System Parameter]

- ◆ The total quantity of the base resin and the hardener is displayed on "MEASURE" of the screen.

## NOTE

● **When flow rate is fast, the error increases. When flow rate is low, the alarm “Flow [A] / [B] Too Low” is issued. Adjust the measuring valves to obtain the flow rates almost equivalent to the actual flow rates levels.**

(6) Check of the mixing ratio

- ◆ Weigh the base resin and hardener using a balance and calculate the mixing ratio (by volume).
- ◆ Check the ratio of the measured liquid.

See Operation Manual [Ratio by weight and ratio by volume]

(7) Adjustment of equipment

- ◆ When gap is large, retry Measurement and Adjust operation.
- ◆ Check the settings of flowmeter, and check the condition of balance.

See Operation Manual [Common Parameter 1 in List of System Parameter]

(8) Repeat operation

- ◆ A mixing ratio test repeats the same operation for every color.
- ◆ Close the measuring valve.
- ◆ After changing a color, repeat the procedure 2 to 8, mixing test of all the color groups is done.

(9) The end of Ratio Test operation

- ◆ When all is completed, finally follow the step 8 again to flush the whole route to a spray gun.
- ◆ Flush inside of Teflon tube from the measuring valve with flushing fluid (solvent).
- ◆ In this case follow the procedure 11 of previous item Calibration operation, or open the measuring valve, and pull the trigger of spray gun to discharge flushing fluid through the Teflon tube.
- ◆ Flushing fluid (solvent) discharged through Teflon tube should be received in an appropriate container.
- ◆ Close the measuring valve.
- ◆ Press **F7** “RETURN” key to change screen.

## NOTE

- **Never fail to adjust the measuring valves to approximately obtain the noted flow rates. If the flow rate during the actual spraying operation and those used for the test is different, the mixing ratio cannot be accurately measured.**
- **Calculate the mixing ratio by volume.**
- **If the base resin and hardener viscosities are not within the specified limits, accurate measurements cannot be obtained.**



## 2-6 Auto Input Discharge Rate

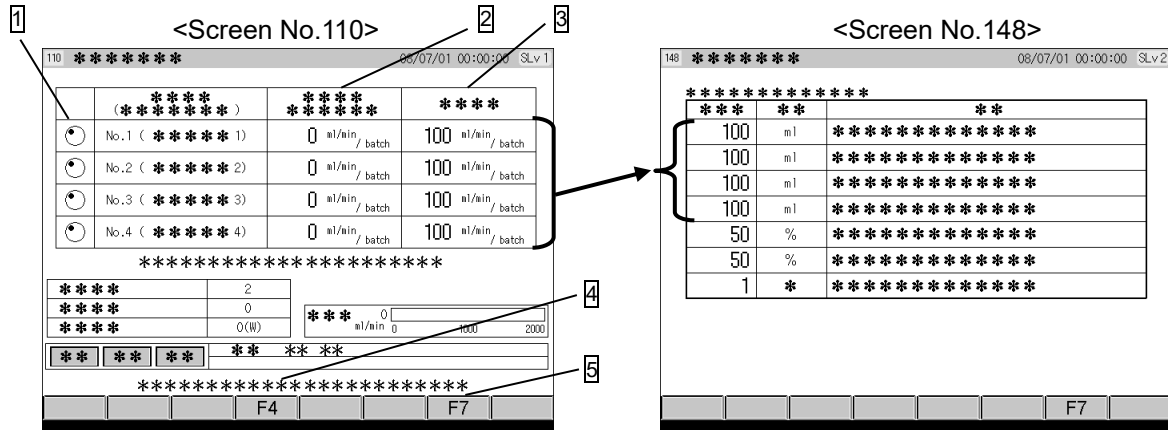
Auto Input Discharge Rate is the function to detect the discharge rate for every spray gun.

An error will be occurred if the tolerance level set up by the “GUN DISCHARGE RATE DETECTION” of detection conditions is exceeded. The discharge rate for every spray gun is memorized easily.

By the case where two or more spray gun is being used, it is detectable to have got the nozzle clogged.

It is especially effective in clogging of nozzle tip for airless spray gun.

When using this function, the trigger signal (Airflow switch signal) of each spray gun is inputted individually.



No.	Item	Content
1	Trigger lamp	Operation of spray gun is displayed.
2	CURRENT BATCH DISCHARGE RATE	Discharge rate for every batch mixture of each spray gun is displayed. When a trigger signal is continuously inputted for every batch mixture cycle, the batch discharge rate is calculated and displayed. <b>NOTE:</b> The batch discharge rate is updated for every batch mixture cycle.
3	REFERENCE VALUE (RV)	The reference of discharge rate of each spray gun is displayed. It is the same value as GUN DISCHARGE RATE DETECTION screen of detection conditions. See [12-2-2 Details of Detection Parameter] No.23
4	<b>F4</b> “SET UP”	The switch for storing “CURRENT BATCH DISCHARGE RATE” on “REFERENCE VALUE”
5	<b>F7</b> “RETURN”	The switch for shifting to MAINTENANCE MENU screen. < Screen No.050>

### 2-6-1 Set up Auto Input Discharge Rate

(1) Checks that the trigger signal (Airflow switch signal) of each spray gun is inputted individually.

(2) Only one spray gun makes discharge and the reference value is made to update.

**NOTE:** It is not updated when two or more spray guns spray (two or more trigger lamps are turned on) simultaneously.

(3) Press **F4** “SETUP” key to update the reference value.

(4) If it returns to MAIN MENU screen, the data will be reflected automatically to GUN DISCHARGE RATE DETECTION screen.

(5) An error level is changed more than “1” on ERROR LEVEL SETUP 4 screen.

See Operation Manual [Details of Detection Parameter No.18]

(6) An error will be occurred if tolerance level is exceeded.

See [Cause and solutions of error No.36 to No43]

## NOTE

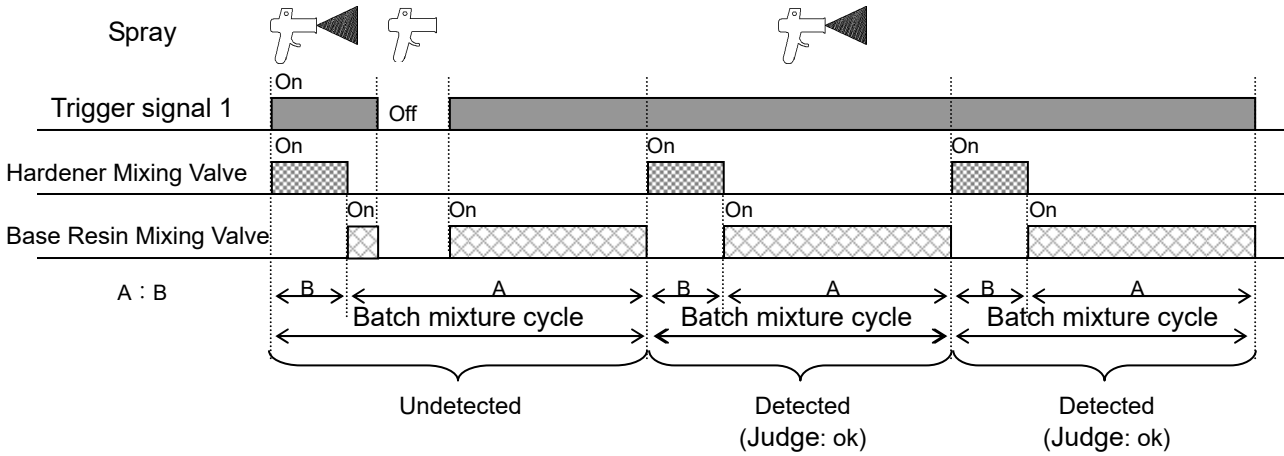
●When discharge rate changes a lot, it cannot be used.

●It will not detect, if a trigger signal turns off for batch mixture cycle.

## 2-6-2 About Gun discharge rate Detection

Discharge rate will be detected if the trigger is continuous ON during base resin and hardener supply.

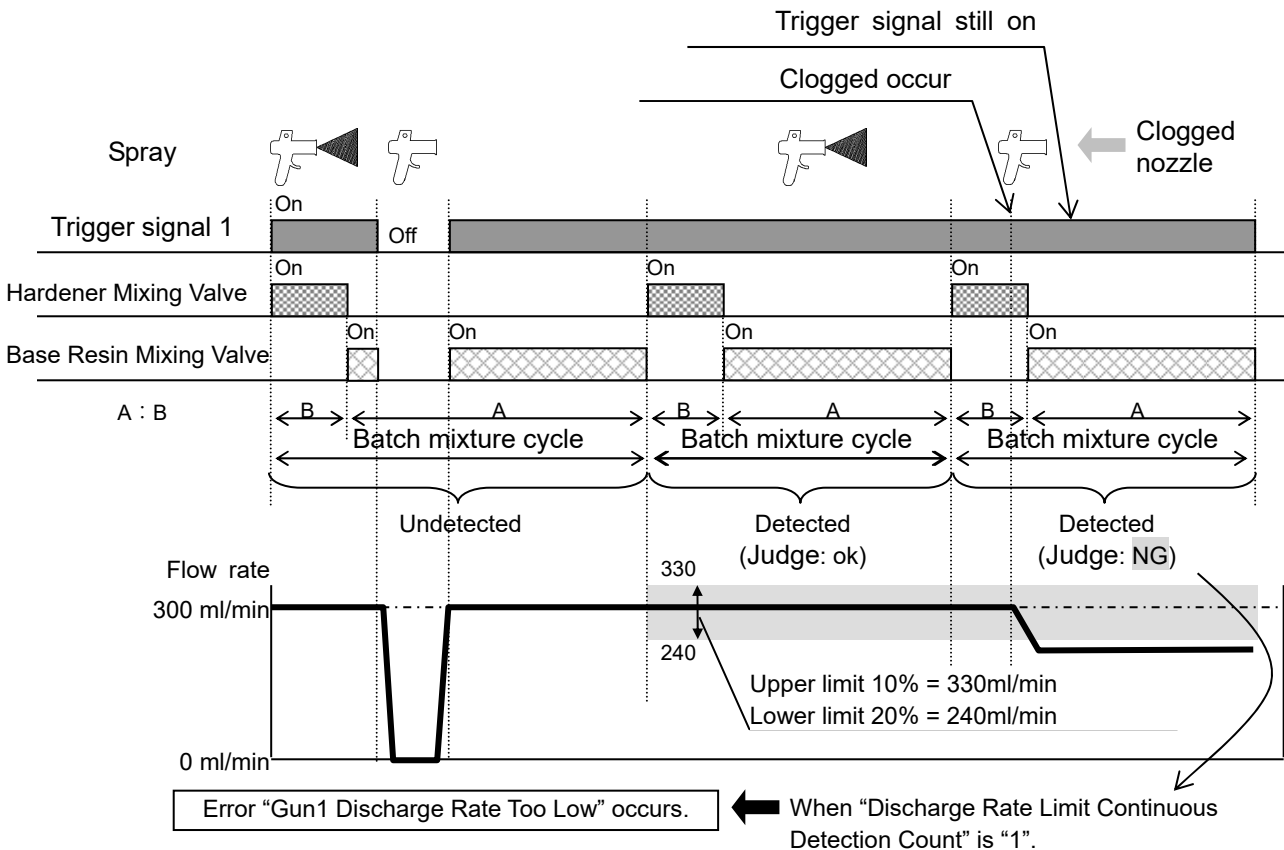
It is not detected when on/off of the spray gun is carried out in a batch mixture cycle. In this case, tolerance level is detected in the next batch mixture cycle.



### <Example>

Gun discharge rate Detection	Preset value	Content
Gun1 Batch-Mixture Discharge Rate	300ml/min	300 ml/min was given by Auto Input Discharge Rate
Batch-Mixture Discharge Rate Upper Limit	10%	Calculates: 300 ml/min x 110% = 330 ml/min.
Batch-Mixture Discharge Rate Lower Limit	20%	Calculates: 300 ml/min x 80% = 240 ml/min.

When a nozzle has got clogged, the discharge rate decreases in the state of trigger signal ON. This state is judged in a batch mixture cycle.



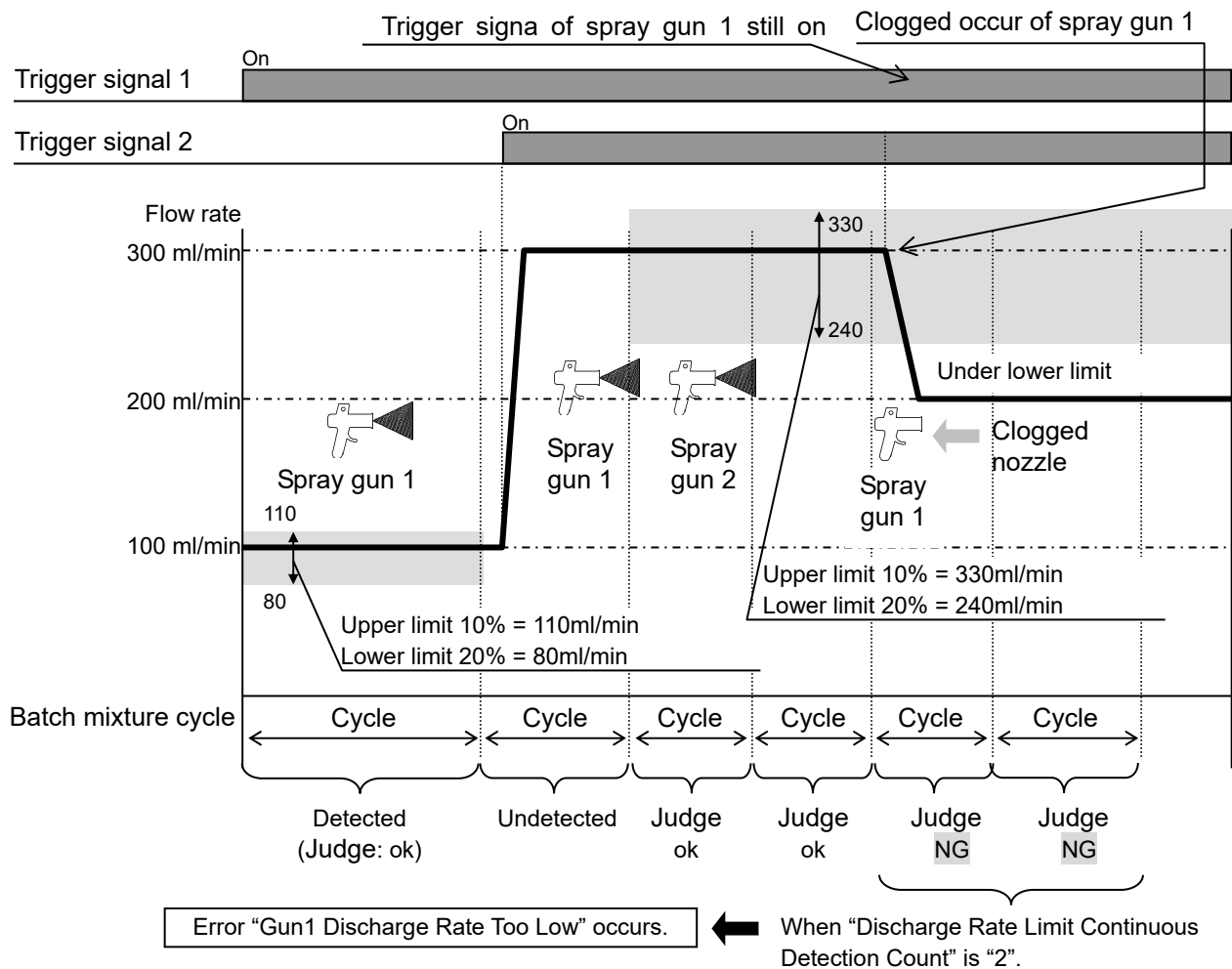
### 2-6-3 In the case of two or more spray guns

When spray gun is two or more, it will detect, if trigger of all spray guns is ON.

#### <Example>

Gun discharge rate Detection	Preset value	Content
Gun1 Batch-Mixture Discharge Rate	100ml/min	Auto Input Discharge Rate gave 100 ml/min.
Gun2 Batch-Mixture Discharge Rate	200ml/min	Auto Input Discharge Rate gave 200 ml/min.
Batch-Mixture Discharge Rate Upper Limit	10%	Upper limit is 330 ml/min at simultaneous spray.
		Upper limit is 110 ml/min at Gun1 spray only.
		Upper limit is 220 ml/min at Gun2 spray only.
Batch-Mixture Discharge Rate Lower Limit	20%	Lower limit is 240 ml/min at simultaneous spray.
		Lower limit is 80 ml/min at Gun1 spray only.
		Lower limit is 160 ml/min at Gun2 spray only.
Discharge Rate Limit Continuous Detection Count	2 times	An error output when the above-mentioned conditions are detected twice continuously.

When a nozzle of spray gun 1 (Gun1) has got clogged, the discharge rate decreases in the state of two triggers signal ON. Since spray gun 2 (Gun2) has not clogged, it can spray, but the total discharge rate decreases. This state is judged in two batch mixture cycles.



# 3

## Troubleshooting

The cause and solutions of every error is shown.

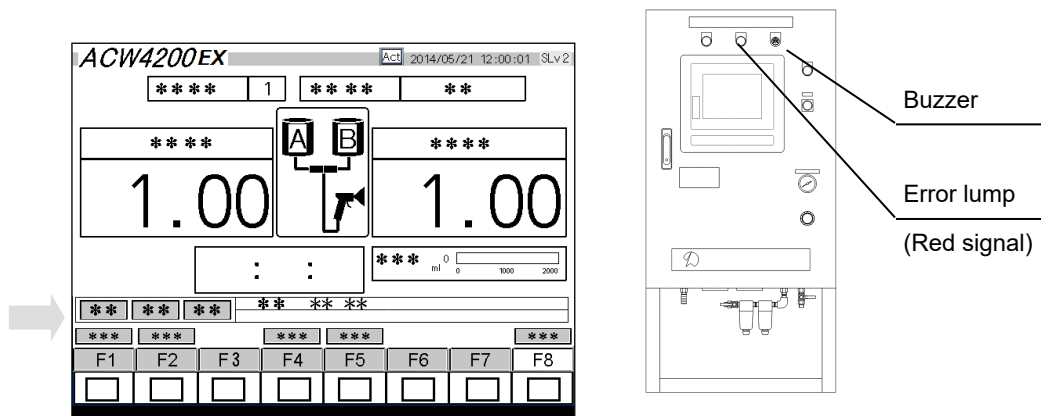
If any error occurs, stop working, locate the cause and take corrective action before restarting the coating operation.

### 3-1 The status of error occurring

The main screen shows the content of each error occurred

See Operation Manual [error record]

If any error occurs, the buzzer and error lump (red signal) indicates.



### 3-2 The status of ACW Control Unit and error display

Error display	Error level	Content
ERR3	3	<p>READY lamp is turned off. Control is stopped.                      ERR3 of ALB Terminal Block is outputted. See [7-3-1 OUT 1]                      Each error signal is outputted. See [7-3-6 OUT 6], [7-3-7 OUT 7]                      It is recorded on the error record. See Operation Manual [Error record]</p>
ERR2	2	<p>READY lamp is still on. Control is not stopped. See [7-3-1 OUT 1]                      ERR2 of ALB Terminal Block is outputted. See [7-3-6 OUT 6], [7-3-7 OUT 7]                      Each error signal is outputted. See Operation Manual [Error record]                      It is recorded on the error record.</p>
ERR1	1	<p>READY lamp is still on. Control is not stopped. See [7-3-6 OUT 6], [7-3-7 OUT 7]                      Each error signal is outputted. See Operation Manual [Error record]                      It is recorded on the error record.</p>
NON	0	An error is not detected.

See Operation Manual [List of Detection Parameter]

### 3-3 Reset error indication

Pressing **RESET** key of ACW controller can reset the error indication. If poor operation or incorrect pump motion results from wear of a component of the ACW Mixing Unit or there is electric noise, the same error will be indicated again after pressing **RESET** key. Locate the cause and take necessary action such as repair of faulty parts or removal of electric noise before restarting the coating operation.

Pressing **RESET** key cannot reset the error of “Pot Life Error” or “Auto Flush Start”.

See Operation Manual [Auto Flush after Pot Life Error (Automatic flushing)]

### 3-4 Cause and solutions of error

1	Code	3000	Item	Emergency Stop
Description	Emergency Stop signal is inputted.			See [7 Input / Output]
To reset	Press <b>RESET</b> key after canceling Emergency Stop signal.			
Cause	Emergency Stop signal was inputted. Emergency Stop switch was pushed.			
Solution	Refuse to push Emergency Stop switch.			

2	Code	3001	Item	Outside System Error 1
Description	Signal "Outside System Error 1" is inputted.			See [7 Input / Output]
To reset	Press <b>RESET</b> key after canceling abnormalities.			
Cause	(1) The abnormalities of an external system. (2) Detect lower level sensor of a tank.			
Solution	(1) Reset the error signal inputting. (2) Add material in the tank. Level sensor cancels a detection signal by filling up material.			

3	Code	3002	Item	Ratio Error1
Description	The mixing ratio of base resin and hardener exceeded the specified limit.			See Operation Manual [Details of Detection Parameter No.1, No.2]
To reset	Press <b>RESET</b> key locating the cause and taking preventive steps.			
Cause	(1) Adjust data is unsuitable. (2) A malfunction of the Solenoid Valve. (3) Disorder of the Solenoid Valve. (Intrinsically Safe Explosion-proof type) (4) Flow meter cables are affected by noise. See Installation Manual [The measure against the noise which influences flowmeter cable] (5) The pressure balancing of base resin and hardener is poor. (6) A malfunction of the Mixing Valve.			
Solution	(1) Perform Adjust operation. See [2-3 Adjust operation] Be sure to perform the Adjust operation, when fluid or paint condition is changed, when overhaul and replace the Mixing Valve or flowmeter. (2) Perform Measurement operation and check the following. See [2-2 Calibration (Measurement) operation] Remove the pilot air tube connected to the valve, check air comes out. When air does not come out, replace the Solenoid Valve. Replace air tube when there is a bent on air tube. (3) Replace the Solenoid Valve, perform Measurement operation. When air does not come out, replace the barrier. (4) When the system is not operating, and "MEASURE" value of main screen increases, it has the influence of a noise. Flow meter cable is weak to noise. Provide an independent route to avoid crossing with robot cable and another power cable, and lay wiring through the grounded piping and duct. Ground the ground position of ACW Mixing Unit and ACW Control Unit on the pillar of a building etc. Keep the electrostatic gun clear of the ACW Mixing Unit. Keep the ACW Mixing Unit or the ACW Control Unit clear of a robot (5) Adjust the paint regulator so that the base resin and hardener pressures will be the same. For the high-pressure type, the hardener pressure shall be about 10% higher than the base resin pressure. Pressure must be set up not in static pressure but in dynamic pressure. (6) Perform Measurement operation and check the following. See [2-2 Calibration (Measurement) operation] Check the discharge of each liquid. When there is no discharge, overhaul and clean the Mixing Valve, replace consumable parts. Refer to the instructions manual of "ACW Mixing Unit" about Mixing valve, and solenoid valve.			

5	Code	3004	Item	Batch-Mixture Max Limit 1
Description	The Batch-Mixture of base resin and hardener exceeded the upper limit. See Operation Manual [Detail of Detection Parameter No.3, No.4]			
To reset	Press <b>RESET</b> key after locating the cause and taking preventive steps.			
Cause	<p>(1) The preset value "Batch-Mixture Max Limit" is too low.  (2) Adjust data is unsuitable.  (3) A malfunction of the Solenoid Valve.  (4) Flow meter cables are affected by noise.  See Installation Manual [The measure against the noise which influences flowmeter cable]  (5) The pressure balancing of base resin and hardener is poor.  (6) A malfunction of the Mixing Valve.</p>			
Solution	<p>(1) Change a preset value according to paint conditions.  (2) Perform Adjust operation. See [2-3 Adjust operation]  Be sure to perform the Adjust operation, when fluid or paint condition is changed, when overhaul and replace the Mixing Valve or flowmeter.  (3) Perform Measurement operation and check the following. See [2-2 Calibration (Measurement) operation]  Remove the pilot air tube connected to the valve, check air comes out.  When air does not come out, replace the Solenoid Valve.  Replace air tube when there is a bent on air tube.  (4) When the system is not operating, and "MEASURE" value of main screen increases, it has the influence of a noise.  Flow meter cable is weak to noise. Provide an independent route to avoid crossing with robot cable and another power cable, and lay wiring through the grounded piping and duct.  Ground the ground position of ACW Mixing Unit and ACW Control Unit on the pillar of a building etc.  Keep the electrostatic gun clear of the ACW Mixing Unit.  Keep the ACW Mixing Unit or the ACW Control Unit closer of a robot  (5) Adjust the paint regulator so that the base resin and hardener pressures will be the same.  For the high-pressure type, the hardener pressure shall be about 10% higher than the base resin pressure.  Pressure must be set up not in static pressure but in dynamic pressure.  (6) Perform MEASUREMENT operation and check the following.  Check the discharge of each liquid. When there is no discharge, overhaul and clean the Mixing Valve, replace consumable parts. See [2-2 Calibration (Measurement) operation]  Refer to the instructions manual of "ACW Mixing Unit" about Mixing valve, and solenoid valve.</p>			

7	Code	3006	Item	Auto Flush Start
Description	After the Pot Life was exceeded, the setup time passed and auto flush began. See [12-3 Auto Flush after Pot Life Error (Automatic flushing)]			
To reset	Press <b>F5</b> "C CHANGE" key on the main screen, switch to COLOR CHANGE OPERATE screen, and press <b>F5</b> "START C.C." key to clean the system. Pressing <b>RESET</b> key cannot reset.			
Cause	Auto Flush is started without flushing operation.			
Solution	If you will not use the system for a certain period, clean sufficiently inside of the system. See [19-3 Color Change operation]			

8	Code	3007	Item	Pot Life Error
Description	Pot Life was exceeded.			
To reset	Press <b>F5</b> "C CHANGE" key on the main screen, switch to COLOR CHANGE OPERATE screen, and flush the system. Pressing <b>RESET</b> key cannot reset.			
Cause	The preset value of "Pot Life" is too short. Coating work is stopped until Pot Life time passed.			
Solution	Increase the value of "Pot Life". Flush the system before Pot Life time passes. See Operation Manual [Mixing Ratio & Pot Life]			

9	Code	3008	Item	Flow [A] Too Low
10	Code	3009	Item	Flow [B] Too Low
Description	Flow rate was less than lower limit during base resin supply. Flow rate was less than lower limit during hardener supply. See Operation Manual [Details of Detection Parameter No.5, No.6]			
To reset	Press <b>RESET</b> key after locating the cause and taking preventive steps.			
Cause	<ul style="list-style-type: none"> <li>(1) Clogging matter or hardening in the nozzle.</li> <li>(2) Clogging matter or hardening in the mixed fluid route.</li> <li>(3) Clogging between gears in the flowmeter.</li> <li>(4) The pressure balancing of base resin and hardener is poor.</li> <li>(5) The pressure of a pump is low.</li> <li>(6) A malfunction of a pump.</li> <li>(7) A malfunction of a paint regulator and a pressure gauge.</li> <li>(8) Disorder of an Airflow switch (AFS) and signal of spray (trigger) is continuing turning on.</li> <li>(9) A malfunction of the Mixing Valve.</li> <li>(10) A malfunction of the Solenoid Valve.</li> </ul>			
Solution	<ul style="list-style-type: none"> <li>(1) Clean the nozzle and remove contaminants and clogging matter using a brush.</li> <li>(2) Press F5 "C CHANGE" on the main screen, switch to COLOR CHANGE OPERATE screen, and clean the mixed fluid route. When solvent is not discharge, overhaul or replace the Static Mixer, Paint Hosess, and the Check Valves. See Operation Manual [Color Change operation]</li> <li>(3) Refer to the instructions manual of "ACW Mixing Unit" about overhaul and clean of flowmeter.</li> <li>(4) Adjust the paint regulator so that the base resin and hardener pressures will be the same. For the high-pressure type, the hardener pressure shall be about 10% higher than the base resin pressure. Pressure must be set up not in static pressure but in dynamic pressure.</li> <li>(5) Increase the pressure of a pump. Generally by low-pressure type, it is set as 0.3 MPa or more. To ensure a stable flow rate, the paint supply pressure shall be three times the pressure required for spraying. The tripled pressure shall not exceed the maximum withstanding pressure of the paint circuit.</li> <li>(6) Inspect a pump following the instruction manual of pump.</li> <li>(7) When zero is not displayed, replace pressure gauges. Reduce the primary fluid pressure to zero to check that pressure gauge reads zero. When a pressure gauge shows same value as pump pressure, the regulator is out of order. Replace regulators.</li> <li>(8) Replace the Airflow switch (AFS), when trigger is returned and the trigger lamp is on.</li> <li>(9) Perform MEASUREMENT operation and check the following. See [2-2 Calibration (Measurement) operation] Check the discharge of each liquid. When there is no discharge, overhaul and clean the Mixing Valve, replace consumable parts.</li> <li>(10) Perform Measurement operation and check the following. Remove the pilot air tube connected to the valve, check air comes out. When air does not come out, replace the Solenoid Valve. Replace air tube when there is a bent on air tube.</li> </ul>			
Cause at Flushing	<ul style="list-style-type: none"> <li>(1) Clogging matter or hardening in the Dump Valve or inside Dump Valve.</li> <li>(2) The pressure of the solvent pump is low.</li> </ul>			
Solution at Flushing	<ul style="list-style-type: none"> <li>(1) Overhaul and clean the Dump Valve and return pipe, and replace consumable parts.</li> <li>(2) Increase the pressure of a pump. Generally by low-pressure type, it is set as 0.3 MPa or more.</li> </ul>			
Cause at Measuring	<ul style="list-style-type: none"> <li>(1) The Measuring Valve is closed or not fully open.</li> <li>(2) Hardening in the Measuring Valve or in the Teflon tube below measuring valve.</li> <li>(3) Clogging between gears in the flowmeter. The flowmeter does not count up when the paint is sprayed through the tube.</li> </ul>			
Solution at Measuring	<ul style="list-style-type: none"> <li>(1) Open the metering valves.</li> <li>(2) Overhaul and clean the Measuring Valve. Replace the Teflon tubes. Overhaul and clean the tube joints.</li> <li>(3) Refer to the instructions manual of "ACW Mixing Unit" about overhaul and clean of flowmeter.</li> </ul>			

Refer to the instructions manual of "ACW Mixing Unit" about Mixing Valve, Dump Valve, and Measuring Valve.

12	Code	3011	Item	Flow [A] Valve Off discharge rete detection
13	Code	3012	Item	Flow [B] Valve Off discharge rate detection
Description	The flowmeter for base resin counted pulses during Base Resin Mixing Valve is closed. The flowmeter for hardener counted pulses during Hardener Mixing Valve is closed. See Operation Manual [Details of Detection Parameter No.10]			
To reset	Press <b>RESET</b> key after locating the cause and taking preventive steps.			
Cause	(1) Adjust was not correctly performed. (2) Flow meter cables are affected by noise. See Installation Manual [The measure against the noise which influences flowmeter cable]			
Solution	(1) Perform Adjust operation. Be sure to perform the Adjust operation, when fluid or paint condition is changed, when overhaul and replace the Mixing Valve or flowmeter. (2) When the system is not operating and MEASURE value indicator of main screen increases, it has the influence of a noise. Flow meter cable is weak to noise. Provide an independent route to avoid crossing with robot cable and another power cable, and lay wiring through the grounded piping and duct. Ground the ground position of the ACW Mixing Unit and the ACW Control Unit on the pillar of a building etc. Keep the electrostatic gun clear of the ACW Mixing Unit. Keep the ACW Mixing Unit or the ACW Control Unit closer of a robot			

15	Code	3014	Item	Flush Alarm Time
Description	During Color Change process, the detection function to gun trigger worked. See Operation Manual [Color Change operation]			
To reset	Interrupt the process by pressing <b>F5</b> "STOP C.C" key, then press <b>RESET</b> key.			
Cause	(1) The preset value "Flush Alarm Time" is too short. (2) The spray (gun trigger) was suspended beyond setup time during flushing process. (3) Gun trigger was not pulled to beyond setup time after pressing <b>F5</b> "START C.C" key. (4) The preset value "Auto Trigger In Flushing" is inaccurate.			
Solution	(1) Change a preset value according to paint conditions. See Operation Manual [Description of System Parameter No.21] (2) Keep pulling the trigger of spray gun during color changing process. (3) After pressing <b>F5</b> "STOP C.C" key, pull the gun trigger within the setup time. (4) Change preset value. Input a value "1" to blow off atomization air of spray gun at the time of color change. See Operation Manual [Description of System Parameter]			

16	Code	3015	Item	Measurement Alarm Time
Description	During Measurement process, the detection function to a flow or discharge rate worked. See [2-2 Calibration (Measurement) operation]			
To clear	Interrupt the process by pressing <b>F5</b> "STOP M" key or <b>F3</b> "STOP F" key, then press <b>RESET</b> key.			
Cause	(1) The preset value "Measurement Alarm Time" is too short. (2) The Measuring Valve is closed or not fully open. (3) Hardening in the Measuring Valve or in the Teflon tube.			
Solution	(1) Change a preset value according to paint conditions. See Operation Manual [Description of System Parameter No.35] (2) Open the metering valves. (3) Overhaul and clean the Measuring Valve. Replace the Teflon tubes. Overhaul and clean the tube joints. Refer to the instructions manual of "ACW Mixing Unit" about Measuring Valve.			

17	Code	3016	Item	Ratio Test Alarm Time
Description	During Ratio Test process, the detection function to a flow or discharge rate worked. See [2-4 Ratio Test operation]			
To reset	Interrupt the process by pressing <b>F4</b> "STOP T" key, then press <b>RESET</b> key.			
Cause	(1) The preset value "Ratio Test Alarm Time" is too short. (2) The Measuring Valve is closed or not fully open. (3) Hardening in the Measuring Valve or in the Teflon tube.			
Solution	(1) Change a preset value according to paint conditions. See Operation Manual [Description of System Parameter No.41] (2) Open the metering valves. (3) Overhaul and clean the Measuring Valve. Replace the Teflon tubes. Overhaul and clean the tube joints. Refer to the instructions manual of "ACW Mixing Unit" about Measuring Valve.			

18	Code	3017	Item	Flow [A] Too High
19	Code	3018	Item	Flow [B] Too High
Description	Flow rate exceeded the upper limit during base resin supply. Flow rate exceeded the upper limit during hardener supply.			
To clear	Press <b>RESET</b> key after locating the cause and taking preventive steps.			
Cause	(1) The preset value "Batch-Mixture Max Limit" is too low. (2) The feeder (pump) runs with nothing in it to feed air. (3) The flow of solvent at flushing process is Too much. (4) The flow rate at filling process is too much.			
Solution	(1) Change a preset value according to paint conditions. See Operation Manual [Detail of Detection Parameter No.3, No.4] (2) Inspect a pump following the instruction manual of pump. Fill the pump with the fluid. (3) For the high-pressure type, reduce flow rate by putting an orifice in the inlet of the Solvent Valve. (4) Reduce the flow rate at filling process. For the high-pressure type, attach a nozzle tip and filled up.			

21	Code	3020	Item	RAM Initialization
Description	All the data, such as Production record, Adjust operation record, and Ratio Test operation record on the display section was initialized. The data saved at memory card is not initialized.			
To reset	Press <b>RESET</b> key.			
Cause	(1) The power supply was turned off for a long time (One week or more). (2) DIP switch No.8 on the back of ACW controller was turned on, and turn on power switch for the ACW Control Unit.			
Solution	(1) When a power supply is turned off for a long time, be sure to take a copy of all the data in advance. (2) Turn the DIP switch No.8 off and turn on power switch.			

22	Code	3021	Item	ALB TB Communication Error
Description	The communication status of an ALB Terminal Block and the ACW controller is unusual. See [7 INPUT / OUTPUT]			
To reset	Press <b>RESET</b> key.			
Cause	(1) Setup two or more same station number on an ALB Terminal Block. (2) Setup two or more termination setting of an ALB Terminal Block. Or a termination setup is un-setting up. (3) Disorder of an ALB Terminal Block. Communication LED is not on. (4) Disconnection of a telecommunication cable.			
Solution	(1) Check and setup a station number correctly. (2) Check and setup a stermination setting correctly. (3) When communication LED has been off, replace the ALB Terminal Block. (4) When there is no electrical connection of a telecommunication cable, replace the cable. Disorder of the contact input-and-output of an ALB Terminal Block is undetectable. See [7 INPUT / OUTPUT]			

23	Code	3022	Item	Memory Card Error
Description	The memory card is unusual. The memory card is located in the left of ACW controller. See Operation Manual [Memory card] See Installation Manual [General tools of ACW controller]			
To reset	Press <b>RESET</b> key.			
Cause	(1) The memory card only for ACW controller is not installed. (2) The access switch is off. (3) The memory card only for ACW controller is corrupting. (4) Out of free space of the memory card only for ACW controller.			
Solution	(1) Install the memory card only for ACW controller. Commercial memory card cannot be used. (2) Turn the access switch on. See Operation Manual [Memory card] (3) Exchange the memory card only for ACW controller. When the memory card only for ACW controller is exchanged, all preset values are initialized. Reenter all the preset values. (4) The CSV data in the memory card only for ACW controller is moved and saved in a personal computer etc.			

24	Code	3023	Item	No Registered Recipe No.
Description	Change operation of recipe number is inaccurate.			
To reset	Press <b>RESET</b> key.			
Cause	The recipe number unregistered was chosen. An error is detected only changing a recipe number by I/O.			
Solution	Choose the recipe number registered correctly.			

25	Code	3024	Item	Outside System Error 2
Description	Signal "Outside System Error" is inputted. See [7 INPUT / OUTPUT]			
To reset	Press <b>RESET</b> key after canceling abnormalities.			
Cause	(1) The abnormalities of an external system. (2) Detect lower level sensor of a tank.			
Solution	(1) Reset the error signal inputting. (2) Add material in the tank. Level sensor cancels a detection signal by filling up material.			

26	Code	3025	Item	Adjusting Alarm Time
Description	During Adjust process, the detection function to gun trigger operation worked. During Adjust process, the detection function to a flow or discharge rate worked. See [2-3 Adjust operation]			
To reset	Interrupt the process by pressing <b>F4</b> "STOP A" key, then <b>RESET</b> key.			
Cause	(1) The preset value "Adjust Alarm Time" is too short. (2) Gun trigger was not pulled to beyond setup time after pressing <b>F3</b> "START" key. The spray was suspended during the adjusting process.			
Solution	(1) Change a preset value according to paint conditions. See Operation Manual [Description of System Parameter No.37] (2) Keep pulling the trigger during the adjusting process.			

27	Code	3026	Item	Trigger error
Description	Multiple trigger signals were input at the same time during individual flushing.			
To reset	Press <b>RESET</b> key.			
Cause	Multiple trigger were sprayed at the same time during individual flushing.			
Solution	Change work not to spray multiple guns at the same time.			

28	Code	3027	Item	Transmission Error (ch1)
Description	The communication of control device and display section in the ACW controller is unusual. Communication system uses the direct-current power supply and abnormalities are in a power circuit.			
To reset	Press <b>RESET</b> key.			
Cause	(1) There is loose connection of terminal connection. See Installation Manual [Name of Main Parts (Inside)] (2) Disorder of the direct-current power supply (24VDC) in the ACW Control Unit. (3) Disconnection of the 24VDC power supply line connected to the ACW controller. (4) The writing of the screen program was performed. When a screen program is corrected and changed without comprehension of our company, we do security to no functions, such as control and accuracy.			
Solution	(1) Check electrical connection, fix loose connection part. (2) Check a voltage output with a tester. When there is no output, replace the direct-current power supply (24VDC). (3) When there is no electrical connection of the 24VDC power supply line, replace the cable. (4) Do not perform the writing of a program by any means without comprehension of our company.			

29	Code	3028	Item	CLOCK Error
Description	The present time is inaccurate.			
To reset	Reset date and time of clock. Press <b>RESET</b> key.			
Cause	(1) The power supply was turned off for a long time (One week). (2) DIP switch No.8 on the back of ACW controller was turned on, and turn on power switch for the ACW Control Unit.			
Solution	(1) Reset date and time of clock. See Installation Manual [Set up clock] When a power supply is turned off for a long time, be sure to take a copy of all the data in advance. (2) Turn the DIP switch No.8 off and turn on power switch. Reset date and time of clock.			

30	Code	3029	Item	Count Up [A] Usage
31	Code	3030	Item	Count Up [B] Usage
Description	A counter exceeded the upper limit.			
To reset	Press <b>RESET</b> key after initializing a counter value.			
Cause	(1) A counter exceeded the upper limit. (2) The preset value of a counter is unsuitable.			
Solution	(1) Switch to [A] USAGE COUNT or [B] USAGE COUNT screen. Reset the valve currently counted up. When you use as an amount-used minimum value, check the quantity level of a tank or a container. (2) A preset value is changed according to paint specifications. See Operation Manual [Usage counter]			

33	Code	3032	Item	Count Up [A] Mixing Valve Operate
34	Code	3033	Item	Count Up [B] Mixing Valve Operate
Description	A counter exceeded the upper limit.			
To reset	Press <b>RESET</b> key after initializing a counter value.			
Cause	(1) A counter exceeded the upper limit. (2) The preset value of a counter is unsuitable.			
Solution	(1) Switch to OPERATE COUNT [A] or OPERATE COUNT [B] screen. Reset the valve currently counted up. Overhaul or replace Base Resin Mixing Valve or Hardener Mixing Valve. (2) A preset value is changed according to paint specifications. See Operation Manual [Valve counter]			

36	Code	3035	Item	Gun1 Discharge Rate Too Low
37	Code	3036	Item	Gun2 Discharge Rate Too Low
38	Code	3037	Item	Gun3 Discharge Rate Too Low
39	Code	3038	Item	Gun4 Discharge Rate Too Low
Description	The Batch-Mixture discharge rate was less than lower limit.			
To reset	Press <b>RESET</b> key.			
Cause	The preset value "Gun Discharge Rate Detection" is inaccurate.			
Solution	Switch to the AUTO INPUT GUN DISCHARGE RATE screen, and recognize the new discharge rate. See [2-6 Auto Input Discharge Rate] When changing a preset value directly, switch to the AUTO INPUT GUN DISCHARGE RATE screen. See Operation Manual [Details of Detection Parameter No.23, No.24]			

40	Code	3039	Item	Gun1 Discharge Rate Too High
41	Code	3040	Item	Gun2 Discharge Rate Too High
42	Code	3041	Item	Gun3 Discharge Rate Too High
43	Code	3042	Item	Gun4 Discharge Rate Too High
Description	The Batch-Mixture discharge rate of the gun exceeded the upper limit.			
To reset	Press <b>RESET</b> key.			
Cause	(1) Supply air pressure is too high. (2) Setting value for [pressure normal range] is not correct. (3) Malfunction of pressure detect sensor.			
Solution	(1) Reduce supply air pressure to correct value. (2) Switch to [Ratio Detection] screen and set correct value. (3) Replace pressure detect sensor.			

44	Code	3043	Item	Count Up Flow Meter
Description	A counter exceeded the upper limit.			
To reset	Press <b>RESET</b> key after initializing a counter value.			
Cause	(1) A counter exceeded the upper limit. (2) The preset value of a counter is unsuitable.			
Solution	(1) Switch to [A] or [B] USAGE COUNT screen. Reset the number 1 of "[A] or [B] FLOW METER". Overhaul or replace the flowmeter. (2) A preset value is changed according to paint specifications. See Operation Manual [Usage counter]			

45	Code	3044	Item	Count Up Valve Operate
Description	A counter exceeded the upper limit.			
To reset	Press <b>RESET</b> key after initializing a counter value.			
Cause	(1) A counter exceeded the upper limit. (2) The preset value of a counter is unsuitable.			
Solution	(1) Switch to OPERATE COUNT [A] or OPERATE COUNT [B] screen. Reset the valve currently counted up. Overhaul or replace [A] (Base Resin) Mixing valve or [B] (hardener) Mixing valve. (2) A preset value is changed according to paint specifications. See Operation Manual [Valve counter]			

46	Code	3045	Item	[A] Mixing Valve On-Timing Error
47	Code	3046	Item	[B] Mixing Valve On-Timing Error
49	Code	3048	Item	[A] Mixing Valve Off-Timing Error
50	Code	3049	Item	[B] Mixing Valve Off-Timing Error
Description	The preset value that detects the response of a valve was exceeded. It detects at the end of the Adjust process. See [2-3 Adjust operation]			
To reset	Press <b>RESET</b> key.			
Cause	It's not a preset value suitable for specification of quipment.			
Solution	Performe Adjust operation once again. See [2-3 Adjust operation] If the result is same, execute the following. >Overhaul and clean the Mixing Valve, replace consumable parts. >Replace the Solenoid Valve. Be sure to perform the Adjust operation after the maintenance. <b>NOTE:</b> Since it becomes impossible to judge the valve response if enter values are changed, please do not change preset values except for the case of being special.			

52	Code	3051	Item	GOT System Alarm (ACPU)
Description	The abnormalities of display section were detected.			
To reset	Press <b>RESET</b> key.			
Cause	The abnormalities by the side of a sequencer (PLC) at equipping with the CC-Link communication board (option).			
Solution	Take steps to improve a fault according to the instruction manual of the sequencer.			

53	Code	3052	Item	PM sensor
Description	Signal detect sensor of power mixer is not detected.			
To reset	Press <b>RESET</b> key.			
Cause	(1) Malfunction of sensor (2) Drive air does not supply to sensor.			
Solution	(1) Replace sensor. (2) Check drive air supply correctly.			

54	Code	3053	Item	GOT System Alarm (Main1)
Description	The abnormalities of display section were detected.			
To reset	Press <b>RESET</b> key.			
Cause	Injustice is in attachment of an option board. See Installation Manual [Interface option (Option board)]			
Solution	Set the mode of a monitoring device with the specification of an option board. Refer to the instructions manual of "ACW extend interface · Option".			

55	Code	3054	Item	Base resin air pressure lower limit error
56	Code	3055	Item	Hardener air pressure lower limit error
57	Code	3056	Item	Equipment air pressure lower limit error
58	Code	3057	Item	Factory air pressure lower limit error
Description	The lower limit of supply air pressure was exceeded.			
To reset	Press <b>RESET</b> key.			
Cause	(1) Supply air pressure is too low. (2) Setting value for [pressure normal range] is not correct. (3) Malfunction of pressure detect sensor.			
Solution	(1) Increase supply air pressure to correct value. (2) Switch to [Ratio Detection] screen and set correct value. (3) Replace pressure detect sensor.			

63	Code	3062	Item	PM rotation amount (Upper limit)
64	Code	3063	Item	PM rotation amount(Lower limit)
Description	The rotation amount of power mixer was exceeded from setting range.			
To reset	Press <b>RESET</b> key.			
Cause	(1) Supply air pressure is too low or too high. (2) Setting value for [Power Mixer detection] is not correct (3) Malfunction of pressure detect sensor.			
Solution	(1) Set appropriate supply air pressure. (2) Switch to [Power Mixer detection] and set appropriate value. (3) Replace pressure detect sensor.			

# 4

## List of Consumable Parts

Durable lives of the parts may vary depending on the type of paint used and coating and equipment conditions. The values shown below should be taken as reference lives under the conditions of 20 working days per month and 6 hours per day.

### 4-1 Short-term consumable part (Less than 2 years)

Part No.	Part name	Qty	Durable life	Remarks
EOQX0100J0500	Protective sheet	1	Replace as necessary	For ACW controller screen protection See [5-1 Replacement time of protective sheet]

### 4-2 Long-term consumable part (2 years or more)

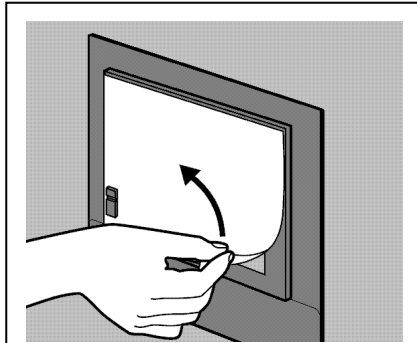
Part No.	Part name	Qty	Durable life	Remarks
467-0012	SOL Barrier	2	Replace as necessary	For solenoid valve cables; intrinsically safe explosion-proof type
301-0025	Air regulator	1	Replace as necessary	
303-0030	Air filter (*1)	1	Replace as necessary	
303-0037	Mist Separator (*1)	1	Replace as necessary	
3913	Air Flow Switch	1	Replace as necessary	For manual spray gun.

(\*1): The air filter and a mist separator are installed as the object for a solenoid valve drive, and an object for the atomization air of one of spray gun, and are the minimum specification. Please exchange according to paint specification and air quality.

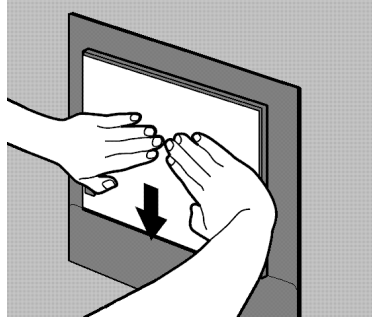
# 5

## Repair and Maintenance

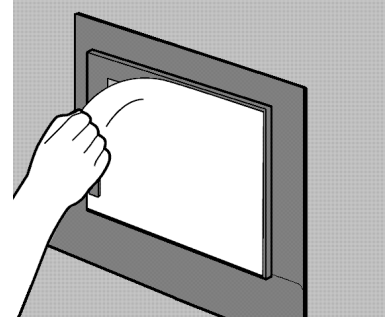
### 5-1 Protective sheet replacement



(1) Remove the old protective sheet from the ACW controller, and clean the controller surface.



(2) Peel the release paper from the back of the new protective sheet, and attach its adhesive side to the ACW controller display section. When attaching the protective sheet, make sure to fit it on the display section closely without leaving any clearance between them.



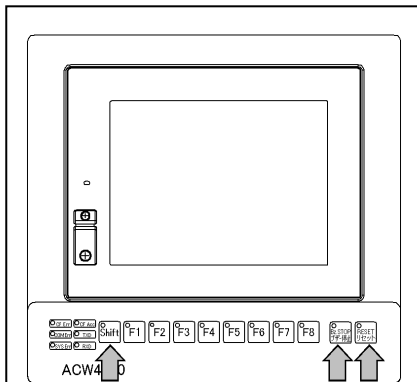
(3) Peel the protective film off the protective sheet.

**NOTE:** Refer to [4-1 Short-term consumable part (Less than 2 years)] for part number of protective sheet

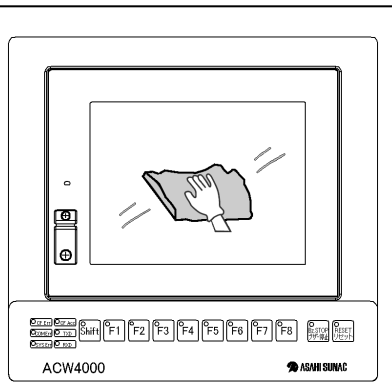
#### < Protective sheet replacement time >

A protective sheet should check a state visually by daily check. If it is dirty and there is a crack, visibility may worsen and may cause malfunction. In this case, it exchanges promptly.

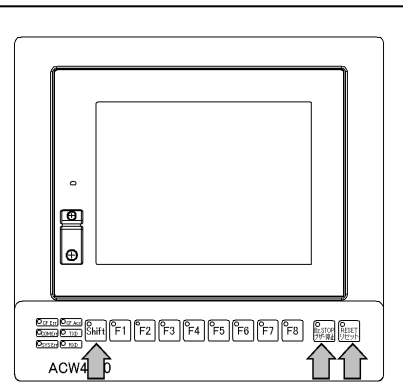
### 5-2 Cleaning Method



(1) It changes into the keylock state. Press **Shift** key pressing **BZ.Stop** key and **RESET** key simultaneously. **KEYLOCK** lamp on the screen blinks.



(2) Wipe the dirty part with a soft cloth using neutral detergent or ethanol.



(3) Cancel keylock state. Press **Shift** key pressing **BZ.Stop** key and **RESET** key simultaneously. **KEYLOCK** lamp on the screen puts out

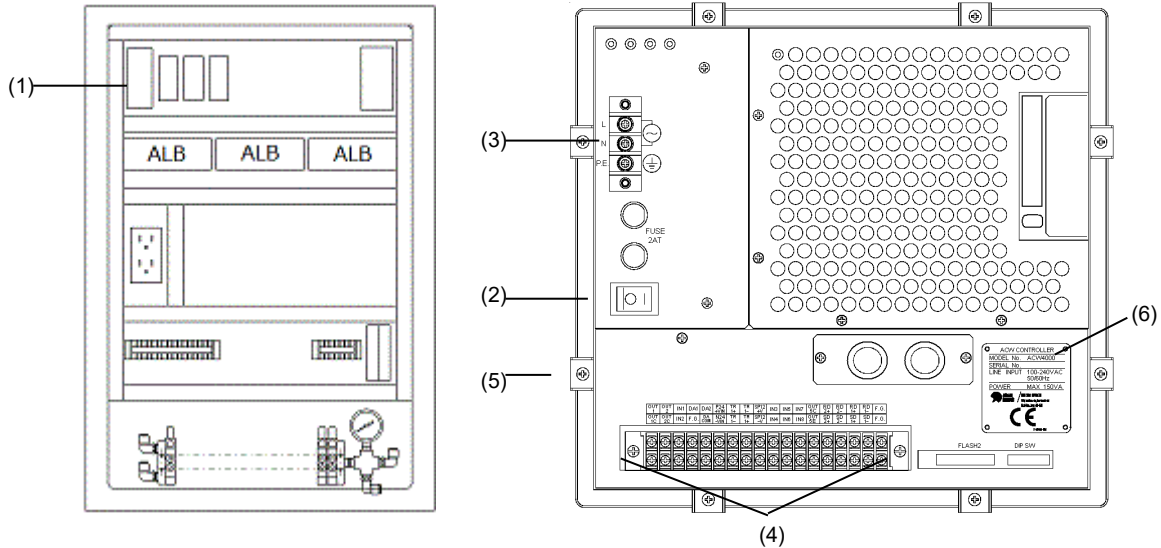
**NOTE:** Do not use solvents such as acetone, benzene, toluene and alcohol. It becomes a cause of the protective sheet to be deformed or peel off.

### 5-3 ACW controller inserting / removing method

## **! WARNING**

### **ELECTRIC SHOCK HAZARD**

- Be sure to shut off the power switch before replacing ACW controller.
- Do not wet the electric components in the ACW Control Unit with any liquid.



(1) The power supply breaker (NFB) of an ACW control device is shut off.

It certainly checks that 100VAC power supply is off.

(2) Shut off the power switch of the ACW controller.

(3) Power supply line is removed.

(4) Two attachment screws (M4) of an interface terminal are removed. The wiring connected to the interface terminal is left as it is.

(5) Eight attachment lugs (M4) of the ACW controller are removed.

(6) Record the copy of "MODEL No." and "SERIAL No.".

(7) Perform inserting the ACW controller in the procedure of the above 5 to 1.

Attachment lugs, interface terminal and power supply terminal must be tightened always at torque 1.2 to 1.8 N·m.

## **! CAUTION**

### **POSSIBILITY OF DAMAGE OR MALFUNCTION**

- Before touching the ACW controller, always touch grounded metal, etc. to discharge static electricity from human body, etc.
- Do not drop the ACW controller or subject it to strong shock.
- Do not touch the conductive and electronic parts of the ACW controller directly.
- When mounting the ACW controller to the ACW Control Unit, tighten the mounting screws in the specified torque range.

#### 5-4 Display section (Liquid crystal type display)

The display section of an ACW controller is using the touch-panel liquid crystal type.

Since a liquid crystal has a life, perform operation of a touch panel and check of a backlight periodically.

Please contact our company, when abnormalities are found at the time of check.

The exchange of a backlight must disassemble an ACW controller. Since you can consider the damage to a printed circuit board at the time of decomposition, please do not exchange of a backlight or a liquid crystal by yourself.

Display section Life:	Approx. 52,000 h (Operating ambient temperature: 25°C)
Backlight Life:	Approx. 50,000 h (Time when display luminance reaches 50% at the operating ambient temperature of 25°C)
Touch panel type:	Analog resistive film
Touch panel type Life:	1 million times or more (operating force 0.98N max.)

### CAUTION

#### **POSSIBILITY OF DAMAGE OR MALFUNCTION**

- **Also where a backlight is turned off, the touch key operates. When the display of a backlight becomes hard to see, please contact our company, in order to perform early exchange.**
- **Do not perform exchange of the backlight or the liquid crystal display (LCD). It becomes a cause of ACW controller breakage. Please inform our company of repair etc.**

# 6

## Inspection Items

### 6-1 Pre-work inspection

Check the following items at the start of the everyday work.

Check item	Check method	Criteria	Corrective action
Cleanliness ACW controller	Check with eyes.	With no dirt.	Clean up. See [5-2 Cleaning Method] A Protective sheet is exchanged if needed. See [5-1 Protective sheet replacement]
Air supply pressure to the ACW Control Unit	Check with eyes.	The pressure gauge shall read 0.4MPa or higher.	Raise the air pressure. Check air hose for bends.
Operating state of the Air Flow Switch.	Trigger indicator lights up.	The trigger of a spray gun is pulled and the trigger indicator lights up.	Raise the air pressure. Replace the Air Flow Switch.
Error indication	Check on display.	No Error indication allowed.	Locate and remove the cause so that no error or alarm will be indicated. See [3 Troubleshooting]
		No "Pot Life Error" indication allowed.	There is a possibility that it may have hardened inside. The whole equipment is checked. See [3 Troubleshooting]

### 6-2 Inspection after work

Check the following items at the end of the everyday work.

Check item	Check method	Criteria	Corrective action
Flush check	Spray gun.	Flushing fluid shall come out of gun head.	Pull spray gun trigger with 0(W) lit until a sufficient quantity of flushing fluid comes out of gun.
	Color code.	0(W) shall be dispaied.	Do flush.
Error indication	Check on display.	No Error indication allowed.	Locate and remove the cause so that no error or alarm will be indicated. Then, do flush. See [3 Troubleshooting]
The state of an ACW Control Unit setting position	Temperature in a board.	0 to 40°C.	The ambient air temperature of an ACW Control Unit is lowered.
	Check with eyes. Check smell.	Existence of burns, such as wiring. The bad smell of a glow.	When there is a burn, use is suspended, a cause is investigated, and apparatus and wiring are exchanged.

### 6-3 Monthly inspection

Check the following items every month.

Check item	Check method	Criteria	Corrective action	
Ambient environment	Temperature in a board	Make measurement with thermometer.	0 to 40°C.	The ambient air temperature of an ACW Control Unit is lowered.
	Humidity in a board	Make measurement with hygrometer.	10 to 80%RH.	The ambient humidity of an ACW Control Unit is lowered.
	Atmosphere	Measurement of corrosive gas.	No corrosive gas.	Corrosive gas is excluded.
Display section	The operation of a touch key.	Can be operated.	Please contact our company. ACW controller will be removed in order to perform maintenance and part exchange. See [5-4 Display section (Liquid crystal type display)]	
	A liquid crystal, a backlight.	Not dark.		

## 6-4 Regular inspection

Check the following items every 3 to 6 months.

Check item	Check method	Criteria	Corrective action
Power supply Voltage check	Measure voltage across terminals.	95 to 105VAC	Change supply power
Responsiveness of Mixing Valves (Base Resin and Hardener)	Adjust operation (*1)	30% or higher than the level obtained by learning at the time of delivery.	Replace consumable parts of valves (V-packing, needle and O-ring). Replace Solenoid Valves (Explosion-proof type) Refer to The instructions manual of "ACW Mixing Unit"  See [2-3 Adjust operation]
Mounting status of an ACW controller	Check the slack of screws.	Should be mounted firmly.	Retighten screws by regulation torque See [5-3 ACW controller inserting / removing method]

(\*1): The "ADJUST" is a function to determine the responsiveness of valves. After the learning operation, note the settings.

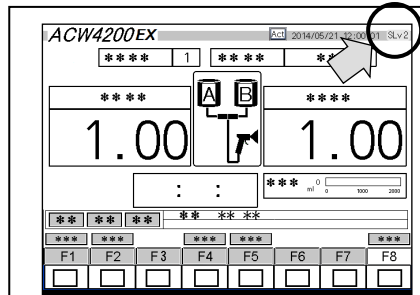
## 6-5 Miscellaneous

Check the following items as necessary.

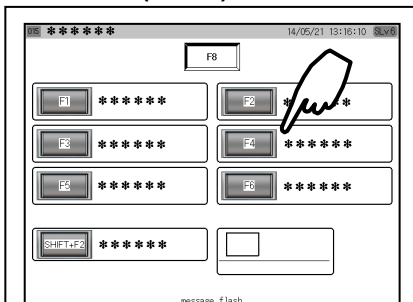
Check item	Check method	Criteria	Corrective action
Flowmeter operation	Indication of flow rate.	Shall be smoothly counted up.	Overhaul or replace flowmeter. Refer to The instructions manual of "ACW Mixing Unit"

**NOTE:** The instructions manual of "ACW Mixing Unit" is referred to overhaul of flowmeter.

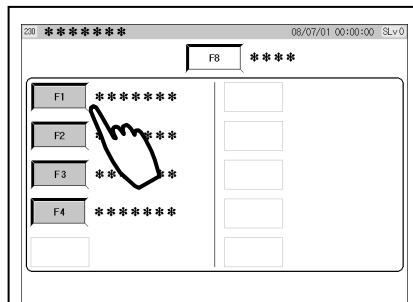
## 7-1 Switch to I/O MONITOR MENU screen (SLv 0)



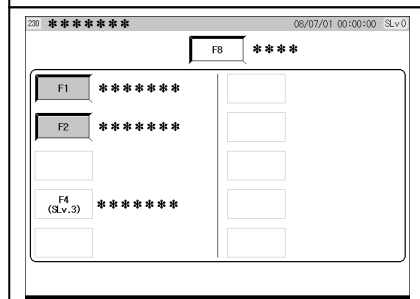
(1) MAIN  
Check SLv0.  
Press **F8** key.



(2) MAIN MENU  
<Screen No.15>  
Press **F5** key.



(3) OTHER MENU  
<Screen No.280>  
Press **F1** key



(3) I/O MONITOR MENU  
<Screen No.230>

See Operation Manual [Basic operation of ACW controller]

## 7-2 INPUT screen (SLv 0)

<Screen No.231>

No.	ALB	BIT	ON	No.	ALB	BIT	ON
0	1	0	*****	16	2	9	*****
1	1	1	*****	17	2	A	*****
2	1	2	*****	18	2	4	*****
3	2	1	*****	19	1	6	*****
4	2	2	*****	20	2	6	*****
5	1	7	*****	21	2	7	*****
6	1	4	*****	22	0	0	*****
7	1	3	*****	23	2	3	*****
8	1	8	*****	24	3	0	*****
9	1	9	*****	25	3	1	*****
10	1	A	*****	26	3	2	*****
11	1	B	*****	27	3	3	*****
12	1	C	*****	28	3	4	*****
13	1	D	*****	29	3	5	*****
14	1	E	*****	30	3	6	*****
15	1	F	*****	31	3	7	*****

Item	Content
1	ALB Station number of ALB Terminal Block is shown. See [7-4 ALB Terminal Block (Input/output Terminal Block)]
2	BIT Terminal number (BIT) of ALB Terminal Block is shown. See [7-4 ALB Terminal Block (Input/output Terminal Block)]
3	ITEM The name of I/O.
4	ON When inputting, a lamp lights up.

5	IN1 to IN5	The switch for changing a screen.
6	F1 "NEXT PAGE" F2 "PREV. PAGE"	The switch for shifting to screen number 231 to 235.
7	F5 "OUT1-1"	The switch for shifting to OUT1-1 screen.
8	F7 "RETURN"	The switch for shifting to I/O MONITOR MENU screen. <Screen No.230>

### 7-2-1 IN 1

Screen No.231		
No.	Name	Content
0	Emergency Stop	It is an input port to stop controlling.
1	Outside System Error 1	It is an input port to which "Outside System Error 1/2" error is made to output. This error is outputted during inputting.
2	Outside System Error 2	
3	Start Measurement	It is an input port to start Measurement operation.
4	Start Ratio Test	It is an input port to start Ratio Test operation.
5	Ready Mode	It is an input port to change on/off of READY lamp.
6	Reset Error	It is an input port to reset an error display.
7	Stop Buzzer	It is an input port to stop buzzer.
8	RCB Color No.0 (W)	It is an input port to receive the signal from RCB (Remote Control Box). It connects with the Barrier Relay of RCB. Color change operation starts by switch of RCB. More than color group 8(No.H) needs the input of No.16. More than color group 15(No.O) needs the input of No.17.  <b>NOTE:</b> Status of controller is REMOTE lamp-on.
9	RCB Color No.1 (A)/ 8(H)/15(O)	
10	RCB Color No.2 (B)/ 9(I)/16(P)	
11	RCB Color No.3 (C)/10(J)/17(Q)	
12	RCB Color No.4 (D)/11(K)/18(R)	
13	RCB Color No.5 (E)/12(L)/19(S)	
14	RCB Color No.6 (F)/13(M)/20(T)	
15	RCB Color No.7 (G)/14(N)/21(U)	
16	RCB Switch Color Group 8 (H)-14(N)	It is an input port to receive the signal from RCB.
17	RCB Switch Color Group 15 (O)-21(U)	It is used as a changeover switch more than color group 8(No.H)
18	AFS1 (Trigger Signal 1)	It is an input port for function of Auto Input Discharge Rate. It is an individual input about the trigger signal of each spray gun. (Up to four dishes)  See [2-6 Auto Input Discharge Rate]
19	AFS2 (Trigger Signal 2)	
20	AFS3 (Trigger Signal 3)	
21	AFS4 (Trigger Signal 4)	
22	Auto mode Spray OFF	Cancellation spray state in auto mode
23	Stop Color Change	It is an input port to interrupt color change operation.
24	AUTO Mode Color No. (bit 1)	It is an input port to receive the signal from other control device. Signal is a binary type only. <b>NOTE:</b> Status of controller is REMOTE lamp-on.
25	AUTO Mode Color No. (bit 2)	
26	AUTO Mode Color No. (bit 4)	<b>&lt;Example&gt;</b>
27	AUTO Mode Color No. (bit 8)	When you want to change into the color group 3.
28	AUTO Mode Color No. (bit 16)	Input the port of bit 1 and bit 2 simultaneously, and then input "AUTO Color Change Strobe Signal".
29	AUTO Mode Color No. 0(W)	It is an input port to change to color code "0(W)".
30	AUTO Mode Color Change Strobe Sig.	It is an input port to start color change operation.
31	AUTO Mode Color Change Available	It is an input port that operation of color change is possible.

## 7-2-2 IN 2

Screen No.232		
No.	Name	Content
0	Recipe No. Change (bit 1)	<p>It is an input port to read a recipe number memorized. Signal is a binary type only.</p> <p>(*1): Status of controller is READR lamp-on.</p> <p><b>&lt;Example&gt;</b> When you want to change into the Recipe No. 3. Input the port of bit1 and bit2 simultaneously, and then input "Recipe No. Change Strobe Signal".</p>
1	Recipe No. Change (bit 2)	
2	Recipe No. Change (bit 4)	
3	Recipe No. Change (bit 8)	
4	Recipe No. Change (bit 16)	
5	Recipe No. Change (bit 32)	
6	Recipe No. Change (bit 64)	
7	Recipe No. Change (bit128)	
8	Recipe No. Change (bit256)	
9	Recipe No. Change (bit512)	
10	Recipe No. Change Strobe Signal	It is an input port to change to recipe number. (Inputing: More than 1 second)
11	Divide Log	The Production record is divided for every lot.
12	Start Adjust	It is an input port to start Adjust operation.
13	Ignore Flow Pulse [A]	<p>It changes into the state where the pulse signals of flowmeters are not made to receive.</p> <p><b>NOTE:</b> Usually unused.</p>
14	Ignore Flow Pulse [B]	
15	Ignore Flow Pulse [C]	
16	Reset base resin tank remaining amount	Reset base resin accumulation of remaining amount
17	Reset hardener tank remaining amount	Rreset hardener accumulation of remaining amount
18	*** Unused 51	
19	Eco flushing pressure gauge upper limit	Signal of Eco flushing pressure gauge upper limit.
20	Eco flushing pressure gauge lower limit	Signal of Eco flushing pressure gauge lower limit.
21	*** Unused 54	
22	PM1 rotation ON	Start to run power mixer 1.
23	PM2 rotation ON	Start to run power mixer 2.
24	PM1 memory No. (bit 1)	<p>Select the rotationtarget value memory of the power mixer 1. 8 the memory switching is available.</p>
25	PM1 memory No. (bit 2)	
26	PM1 memory No. (bit4)	
27	PM1 memory No. T mode	Run the power mixer 1 in fixed pressure mode.
28	PM2 memory No. (bit 1)	<p>Select the rotationtarget value memory of the power mixer 2. 8 the memory switching is available.</p>
29	PM2 memory No. (bit 2)	
30	PM2 memory No. (bit4)	
31	PM2 memory No. T mode	Run the power mixer 2 in fixed pressure mode.

7-2-3 IN 3

Screen No.233		
No.	Name	Content
0	W (OPS200)	It is an option input port. It is OPS200 (color change operation unit) exclusive use. It is used as Station number (St.No.) 18 of OPS200.
1	A (OPS200)	
2	B (OPS200)	
3	C (OPS200)	
4	D (OPS200)	
5	E (OPS200)	
6	F (OPS200)	
7	G (OPS200)	
8	H (OPS201)	It is an option input port. It is OPS201 (color change operation unit) exclusive use. It is used as Station number (St.No.) 19 of OPS201.
9	I (OPS201)	
10	J (OPS201)	
11	K (OPS201)	
12	L (OPS201)	
13	M (OPS201)	
14	N (OPS201)	
15	O (OPS202)	It is an option input port. It is OPS202 (color change operation unit) exclusive use. It is used as Station number (St.No.) 20 of OPS202.
16	P (OPS202)	
17	Q (OPS202)	
18	R (OPS202)	
19	S (OPS202)	
20	T (OPS202)	
21	U (OPS202)	
22	AUTO/MANU (OPS200)	It is OPS200 (color change operation unit) exclusive use.
23	F1/F6 (OPS220)	It is an option input port. It is OPS200 (color change operation unit) exclusive use. It is not used.
24	F2/F7 (OPS220)	
25	F3/F8 (OPS220)	
26	F4/F9 (OPS220)	
27	F5/F10 (OPS220)	
28	*** Unused 93	
29	Reset	It is an option input port. It is OPS200 (color change operation unit) exclusive use. It is not used.
30	Stop Buzzer	
31	Shift	

7-2-4 IN 4

Screen No.234		
No.	Name	Content
0	Forced Ope. [A] Solvent Pur.Valve	Input for compulsive operation of Base Resin Solvent Purge Valve.
1	Forced Ope. [A] Air Pur.Valve	Input for compulsive operation of Base Resin Air Purge Valve.
2	Forced Ope. [A] 2nd Sol.Pur.Valve	Input for compulsive operation of Base Resin 2nd Solvent Purge Valve.
3	Forced Ope. [A] Mixing Valve	Input for compulsive operation of Base Resin Mixing Valve.
4	Forced Ope. [A] Dump Valve	Input for compulsive operation of Base Resin Dump Valve.
5	Forced Ope. [B] Solvent Pur.Valve	Input for compulsive operation of Hardener Solvent Purge Valve.
6	Forced Ope. [B] Air Purge Valve	Input for compulsive operation of Hardener Air Purge Valve.
7	Forced Ope. [B] 2nd Sol.Pur.Valve	Input for compulsive operation of Hardener 2nd Solvent Purge Valve.
8	Forced Ope. [B] Mixing Valve	Input for compulsive operation of Hardener Mixing Valve.
9	Forced Ope. [B] Dump Valve	Input for compulsive operation of Hardener Dump Valve.
10	Forced Ope. [C] Solvent Pur.Valve	Input for compulsive operation of Thinner Solvent Purge Valve.
11	Forced Ope. [C] Air Pur.Valve	Input for compulsive operation of Thinner Air Purge Valve.
12	Forced Ope. [C] 2nd Sol.Pur.Valve	Input for compulsive operation of Thinner 2nd Solvent Purge Valve.
13	Forced Ope. [C] Mixing Valve	Input for compulsive operation of Thinner Mixing Valve.
14	Forced Ope. [C] Dump Valve	Input for compulsive operation of Thinner Dump Valve.
15	Forced Ope. [BYP] Air Pur.Valve	Input for compulsive operation of Air Purge Valve on bypass system.
16	Forced Ope. [BYP] Sol.Pur.Valve	Input for compulsive operation of Solvent Purge Valve on bypass system.
17	Forced Ope. [BYP] Dump Valve	Input for compulsive operation of Dump Valve on bypass system.
18	Forced Ope. [BYP] Changeover Valve	Input for compulsive operation of Changeover Valve on bypass system.
19	Forced Ope. Dump Valve	Input for compulsive operation of Dump Valve.
20	*** Unused 117	
21	*** Unused 118	
22	*** Unused 119	
23	*** Unused 120	
24	*** Unused 121	
25	*** Unused 122	
26	*** Unused 123	
27	*** Unused 124	
28	*** Unused 125	
29	*** Unused 126	
30	*** Unused 127	
31	*** Unused 128	

Screen No.235		
No.	Name	Content
0	[A] Ratio Change Code 0.1	<p>It is an input port to change mixing ratio. A binary signal is combined and a base resin ratio is inputted.</p> <p><b>&lt;Example&gt;</b> In case to input mixing ratio [A]: [B]=5:2 Input No. "1", "4" and "5". <math>0.2 + 1.6 + 3.2 = 5.0</math></p>
1	[A] Ratio Change Code 0.2	
2	[A] Ratio Change Code 0.4	
3	[A] Ratio Change Code 0.8	
4	[A] Ratio Change Code 1.6	
5	[A] Ratio Change Code 3.2	
6	[A] Ratio Change Code 6.4	
7	[A] Ratio Change Code 12.8	
8	[B] Ratio Change Code 0.1	<p>It is an input port to change mixing ratio. A binary signal is combined and a hardener ratio is inputted.</p> <p><b>&lt;Example&gt;</b> In case to output mixing ratio [A]: [B]=5:2 Output No. "10" and "12". <math>0.4 + 1.6 = 2.0</math></p>
9	[B] Ratio Change Code 0.2	
10	[B] Ratio Change Code 0.4	
11	[B] Ratio Change Code 0.8	
12	[B] Ratio Change Code 1.6	
13	[B] Ratio Change Code 3.2	
14	[B] Ratio Change Code 6.4	
15	[B] Ratio Change Code 12.8	
16	[C] Ratio Change Code 0.1	<p>It is an input port to change mixing ratio. A binary signal is combined and a thinner ratio is inputted.</p> <p><b>&lt;Example&gt;</b> In case to output mixing ratio [A]: [B]: [C]=5:2:1 Output No. "17" and "19". <math>0.2 + 0.8 = 1.0</math></p> <p>Unuse for three-component type only.</p>
17	[C] Ratio Change Code 0.2	
18	[C] Ratio Change Code 0.4	
19	[C] Ratio Change Code 0.8	
20	[C] Ratio Change Code 1.6	
21	[C] Ratio Change Code 3.2	
22	[C] Ratio Change Code 6.4	
23	[C] Ratio Change Code 12.8	
24	Ratio Code Color No. (bit 1)	<p>It is an input port to select color group number of the mixing ratio desired to change. A binary signal is combined and a color group number is inputted.</p> <p>In the case of "0 (W)", there is no output.</p>
25	Ratio Code Color No. (bit 2)	
26	Ratio Code Color No. (bit 4)	
27	Ratio Code Color No. (bit 8)	
28	Ratio Code Color No. (bit16)	
29	*** Unused 158	
30	*** Unused 159	
31	Write Ratio Change Code	<p>It is a change trigger of the mixing ratio. <b>NOTE:</b> Status of controller is REMOTE lamp-on.</p>

7-2-6 | N 6

Screen No. 236		
No.	Name	Content
0	Test mode	Switch to mixing ratio test screen.
1	Measurement mode	Switch to measurement mode screen.
2	Test / Measurement Filling	Filling selected paint in test / measurement mode.
3	Test / Measurement Start	Start with selected paint in test / measurement mode.
4	Test / Measurement Flush	Flush route with thinner in test / measurement mode.
5	Test / Measurement Stop	Stopfilling, start and flushing.
6	Test / Measurement ColorNo.0 A/B	Select color No. in mixing ratio test. Select fluid No. in measurement mode.
7	Test / MeasurementColorNo 1 /8/15 A/B	
8	Test / Measurement Color No.2/9/16 A/B	
9	Test / Measurement ColorNo.3/10/17A/B	
10	Test / Measurement Color No.4/11/18A/B	
11	Test / Measurement Color No.5/12/19A/B	
12	Test / Measurement Color No.6/13/20A/B	
13	Test / Measurement Color No.7/14/21A/B	
14	Measurement Base Resin select	Select base resin in measurement mode.
15	Measurement Hardener select	Select hardener in measurement mode.
16	Mixing ratio base resin correction +5%	Adjust the input amount of base resin and adjust the mixing ratio. Check with mixing ratio test mode.
17	Mixing ratio base resin correction +4%	
18	Mixing ratio base resin correction +3%	
19	Mixing ratio base resin correction +2%	
20	Mixing ratio base resin correction +1%	
21	Mixing ratio base resin correction -1%	
22	Mixing ratio base resin correction -2%	
23	Mixing ratio base resin correction -3%	
24	Mixing ratio base resin correction -4%	
25	Mixing ratio base resin correction -5%	
26	*** Unused 187	
27	*** Unused 188	
28	*** Unused 189	
29	*** Unused 190	
30	*** Unused 191	
31	*** Unused 192	

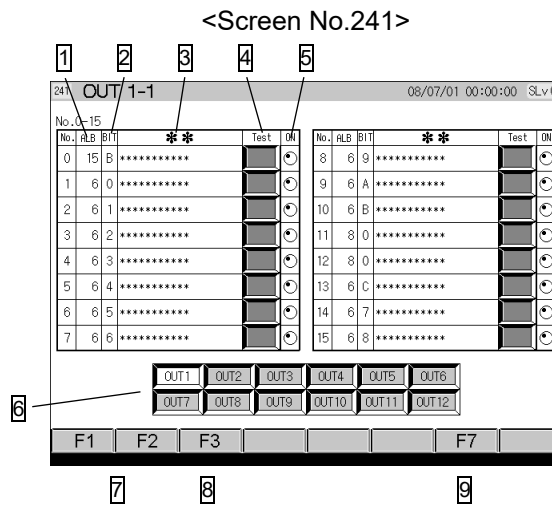
7-2-7 | N 7

Screen No. 237		
No.	Name	Content
0	A/D Input Ch1	Sensor input for air pressure measurement.
1	A/D Input Ch1	
2	A/D Input Ch1	
3	A/D Input Ch1	
4	A/D Input Ch1	
5	A/D Input Ch1	
6	A/D Input Ch1	
7	A/D Input Ch1	
8	A/D Input Ch1	
9	A/D Input Ch1	
10	A/D Input Ch1	
11	A/D Input Ch1	
12	A/D Input Ch1	
13	A/D Input Ch1	
14	A/D Input Ch1	
15	A/D Input Ch1	
16	A/D Input Ch2	Sensor input for air pressure measurement.
17	A/D Input Ch2	
18	A/D Input Ch2	
19	A/D Input Ch2	
20	A/D Input Ch2	
21	A/D Input Ch2	
22	A/D Input Ch2	
23	A/D Input Ch2	
24	A/D Input Ch2	
25	A/D Input Ch2	
26	A/D Input Ch2	
27	A/D Input Ch2	
28	A/D Input Ch2	
29	A/D Input Ch2	
30	A/D Input Ch2	
31	A/D Input Ch2	

7-2-8 | N 8 237

Screen No. 237		
No.	Name	Content
0	A/D Input Ch3	Sensor input for air pressure measurement.
1	A/D Input Ch3	
2	A/D Input Ch3	
3	A/D Input Ch3	
4	A/D Input Ch3	
5	A/D Input Ch3	
6	A/D Input Ch3	
7	A/D Input Ch3	
8	A/D Input Ch3	
9	A/D Input Ch3	
10	A/D Input Ch3	
11	A/D Input Ch3	
12	A/D Input Ch3	
13	A/D Input Ch3	
14	A/D Input Ch3	
15	A/D Input Ch3	
16	A/D Input Ch4	Sensor input for air pressure measurement.
17	A/D Input Ch4	
18	A/D Input Ch4	
19	A/D Input Ch4	
20	A/D Input Ch4	
21	A/D Input Ch4	
22	A/D Input Ch4	
23	A/D Input Ch4	
24	A/D Input Ch4	
25	A/D Input Ch4	
26	A/D Input Ch4	
27	A/D Input Ch4	
28	A/D Input Ch4	
29	A/D Input Ch4	
30	A/D Input Ch4	
31	A/D Input Ch4	

### 7-3 OUTPUT screen (SLv 0)



	Item	Content
1	ALB	Station number of ALB Terminal Block is shown. See [7 ALB Terminal Block (INPUT / OUTPUT)]
2	BIT	Terminal number (BIT) of ALB Terminal Block is shown. See [7 ALB Terminal Block (INPUT / OUTPUT)]
3	ITEM	The name of I / O
4	TEST	The switch for operating outputs compulsorily. It is used in security level SLv3. Being <b>READY</b> lamp off can use it. <span style="float: right;">See [8 Test mode]</span>
5	ON	When outputting, a lamp lights up.
6	OUT 0 to OUT 12	The switch for changing a screen.
7	F1 "NEXT PAGE" F2 "PREV. PAGE"	The switch for shifting to screen number 241 to 264.
8	F3 "IN1"	The switch for shifting to IN1 screen.
9	F7 "RETURN"	The switch for shifting to I / O MONITOR MENU screen. <Screen No.230>

## 7-3-1 OUT 1

### OUT 1-1

Screen No.241		
No.	Name	Content
0	Error Lv.1 (Err3)	It outputs, when the Err3 error has occurred.
1	Error Lv.2 (Err2)	It outputs, when the Err2 error has occurred.
2	Ready Mode	It outputs, when the <b>READY</b> lamp is on.
3	Pot Life Error	It outputs, when the Pot Life was exceeded.
4	Color Change Signal Receivable	It outputs, when the <b>READY</b> and <b>REMOTE</b> lamp is on. ※ Except for "Color Change In Process"
5	Color Change Completion	It outputs for 1 second, when color change operation has completed.
6	Color Change In Process	It outputs, during the whole color change (flushing + filling) operating.
7	Flushing In Process	It outputs, while the flushing sequence is operating.
8	Current Color No. (bit 1)	A current color group number (current valve number) is outputted by a binary signal. As for flushing time, it outputs color group number before change. As for filling time, it outputs next color group number.
9	Current Color No. (bit 2)	
10	Current Color No. (bit 4)	
11	Current Color No. (bit 8)	
12	Current Color No. (bit16)	
13	Current Color No. 0 (W)	A current color group number "0(W)" is outputted
14	Adjust In Process	Output during the ADJUST operation.
15	High Voltage Generation Ok	No output in the "0(W)" state and during the color change operating.

### OUT 1-2

Screen No.242		
No.	Name	Content
16	For Buzzer	It outputs at the time of generating Err3 and Err2. Pressing "Bz. Stop" key turns off output.
17	For Error Lamp	It outputs at the time of generating Err3 and Err2. Pressing "RESET" key turns off output.
18	Dump Valve	For controlling Dump Valve.
19	Remote Mode	Output when operating in remote mode.
20	Eco Flush gate valve	It is for gate valve control when Eco flush mode is active.
21	[A] Flow Pulses (2 Divide)	Base resin flowmeter signal is outputted in half frequency dividing
22	[B] Flow Pulses (2 Divide)	Hardener flowmeter signal is outputted in half frequency dividing
23	[C] Flow Pulses (2 Divide)	Thinner flowmeter signal is outputted in half frequency dividing
24	Caution	It outputs at the time of generating "CAUTION".
25	Operation preparation	It outputs, when the <b>READY</b> and <b>REMOTE</b> lamp is on.
26	B-Flushing In Process	It outputs while the flushing sequence is operating on bypass system.
27	F-BYPASS System Air Purge Valve	It is an output for controlling Air Purge Valve on bypass system.
28	F-BYPASS System Solvent Purge Valve	It is an output for controlling Solvent Purge Valve on bypass system.
29	F-BYPASS System Dump Valve	It is an output for controlling Dump Valve on bypass system.
30	F-BYPASS System Changeover Valve	It is an output for controlling Changeover Valve on bypass system.
31	F-BYPASS System Trigger Signal Request	It is an output for controlling spray gun operation on bypass system.

## 7-3-2 OUT 2

### Out 2-1

Screen No.243		
No.	Name	Content
0	[A] Solvent Purge Valve No.0	It is an output for controlling Base Resin Solvent Purge Valve.
1	[A] Valve No.1	It is an output for controlling Base Resin Valve 01 (A).
2	[A] Valve No.2	It is an output for controlling Base Resin Valve 02 (B).
3	[A] Valve No.3	It is an output for controlling Base Resin Valve 03 (C).
4	[A] Valve No.4	It is an output for controlling Base Resin Valve 04 (D).
5	[A] Valve No.5	It is an output for controlling Base Resin Valve 05 (E).
6	[A] Valve No.6	It is an output for controlling Base Resin Valve 06 (F).
7	[A] Valve No.7	It is an output for controlling Base Resin Valve 07 (G).
8	[A] Valve No.8	It is an output for controlling Base Resin Valve 08 (H).
9	[A] Valve No.9	It is an output for controlling Base Resin Valve 09 (I).
10	[A] Valve No.10	It is an output for controlling Base Resin Valve 10 (J).
11	[A] Valve No.11	It is an output for controlling Base Resin Valve 11 (K).
12	[A] Valve No.12	It is an output for controlling Base Resin Valve 12 (L).
13	[A] Valve No.13	It is an output for controlling Base Resin Valve 13 (M).
14	[A] Valve No.14	It is an output for controlling Base Resin Valve 14 (N).
15	[A] Valve No.15	It is an output for controlling Base Resin Valve 15 (O).

### OUT 2-2

Screen No.244		
No.	Name	Content
16	[A] Valve No.16	It is an output for controlling Base Resin Valve 16 (P).
17	[A] Valve No.17	It is an output for controlling Base Resin Valve 17 (Q).
18	[A] Valve No.18	It is an output for controlling Base Resin Valve 18 (R).
19	[A] Valve No.19	It is an output for controlling Base Resin Valve 19 (S).
20	[A] Valve No.20	It is an output for controlling Base Resin Valve 20 (T).
21	[A] Valve No.21	It is an output for controlling Base Resin Valve 21 (U).
22	[A] 2nd Solvent Purge Valve	It is an output for controlling Base Resin 2nd Solvent Purge Valve.
23	[A] Air Purge Valve	It is an output for controlling Base Resin Air Purge Valve.
24	[A] Mixing Valve	It is an output for controlling Base Resin Mixing Valve.
25	[A] Dump Valve	It is an output for controlling Base Resin Dump Valve. Usually unused.
26	[A] Route Switchi	It is control of multiple Base Resin route switching
27	*** Unused 316	
28	*** Unused 317	
29	*** Unused 318	
30	*** Unused 319	
31	*** Unused 320	

**7-3-3 OUT 3**

**OUT 3-1**

Screen No.245		
No.	Name	Content
0	[B] Solvent Purge Valve No.0	It is an output for controlling Hardener Solvent Purge Valve.
1	[B] Valve No.1	It is an output for controlling Hardener Valve 01.
2	[B] Valve No.2	It is an output for controlling Hardener Valve 02.
3	[B] Valve No.3	It is an output for controlling Hardener Valve 03.
4	[B] Valve No.4	It is an output for controlling Hardener Valve 04.
5	[B] Valve No.5	It is an output for controlling Hardener Valve 05.
6	[B] Valve No.6	It is an output for controlling Hardener Valve 06.
7	[B] Valve No.7	It is an output for controlling Hardener Valve 07.
8	[B] Valve No.8	It is an output for controlling Hardener Valve 08.
9	[B] Valve No.9	It is an output for controlling Hardener Valve 09.
10	[B] Valve No.10	It is an output for controlling Hardener Valve 10.
11	[B] Valve No.11	It is an output for controlling Hardener Valve 11.
12	[B] Valve No.12	It is an output for controlling Hardener Valve 12.
13	[B] Valve No.13	It is an output for controlling Hardener Valve 13.
14	[B] Valve No.14	It is an output for controlling Hardener Valve 14.
15	[B] Valve No.15	It is an output for controlling Hardener Valve 15.

**OUT 3-2**

Screen No.246		
No.	Name	Content
16	[B] Valve No.16	It is an output for controlling Hardener Valve 16.
17	[B] Valve No.17	It is an output for controlling Hardener Valve 17.
18	[B] Valve No.18	It is an output for controlling Hardener Valve 18.
19	[B] Valve No.19	It is an output for controlling Hardener Valve 19.
20	[B] Valve No.20	It is an output for controlling Hardener Valve 20.
21	[B] Valve No.21	It is an output for controlling Hardener Valve 21.
22	[B] 2nd Solvent Purge Valve	It is an output for controlling Hardener 2nd Solvent Purge Valve.
23	[B] Air Purge Valve	It is an output for controlling Hardener Air Purge Valve. Usually unused.
24	[B] Mixing Valve	It is an output for controlling Hardener Mixing Valve.
25	[B] Dump Valve	It is an output for controlling Hardener Dump Valve. Usually unused.
26	*** Unused 347	
27	*** Unused 348	
28	*** Unused 349	
29	*** Unused 350	
30	*** Unused 351	
31	*** Unused 352	

## 25-3-4 OUT 4

### OUT 4-1

Screen No.247		
No.	Name	Content
0	[C] Solvent Purge Valve No.0	It is an output for controlling Thinner Solvent Purge Valve. ※For ACW 3K mode
1	[C] Valve No.1	It is an output for controlling Thinner Valve 01. ※For ACW3K mode
2	[C] Valve No.2	It is an output for controlling Thinner Valve 02. ※For ACW3K mode
3	[C] Valve No.3	It is an output for controlling Thinner Valve03. ※For ACW3K mode
4	[C] Valve No.4	It is an output for controlling Thinner Valve 04. ※For ACW3K mode
5	[C] Valve No.5	It is an output for controlling Thinner Valve 05. ※For ACW3K mode
6	[C] Valve No.6	It is an output for controlling Thinner Valve 06. ※For ACW3K mode
7	[C] Valve No.7	It is an output for controlling Thinner Valve 07. ※For ACW3K mode
8	[C] Valve No.8	It is an output for controlling Thinner Valve 08. ※For ACW3K mode
9	[C] Valve No.9	It is an output for controlling Thinner Valve 09. ※For ACW3K mode
10	[C] Valve No.10	It is an output for controlling Thinner Valve 10. ※For ACW3K mode
11	[C] Valve No.11	It is an output for controlling Thinner Valve 11. ※For ACW3K mode
12	[C] Valve No.12	It is an output for controlling Thinner Valve 12. ※For ACW3K mode
13	[C] Valve No.13	It is an output for controlling Thinner Valve 13. ※For ACW3K mode
14	[C] Valve No.14	It is an output for controlling Thinner Valve 14. ※For ACW3K mode
15	[C] Valve No.15	It is an output for controlling Thinner Valve 15. ※For ACW3K mode

### OUT 4-2

Screen No.248		
No.	Name	Content
16	[C] Valve No.16	It is an output for controlling Thinner Valve 16. ※For ACW3K mode
17	[C] Valve No.17	It is an output for controlling Thinner Valve 17. ※For ACW3K mode
18	[C] Valve No.18	It is an output for controlling Thinner Valve 18. ※For ACW3K mode
19	[C] Valve No.19	It is an output for controlling Thinner Valve 19. ※For ACW3K mode
20	[C] Valve No.20	It is an output for controlling Thinner Valve 20. ※For ACW3K mode
21	[C] Valve No.21	It is an output for controlling Thinner Valve 21. ※For ACW3K mode
22	[C] 2nd Solvent Purge Valve	It is an output for controlling Thinner 2nd Solvent Purge Valve. ※For ACW3K mode
23	[C] Air Purge Valve	It is an output for controlling Thinner Air Purge Valve. ※For ACW3K mode
24	[C] Mixing Valve	It is an output for controlling Thinner Mixing Valve. ※For ACW3K mode
25	[C] Dump Valve	It is an output for controlling Thinner Dump Valve. ※For ACW3K mode
26	*** Unused 379	
27	*** Unused 380	
28	*** Unused 381	
29	*** Unused 382	
30	*** Unused 383	
31	*** Unused 384	

## 7-3-5 OUT 5

### OUT 5-1

Screen No.249		
No.	Name	Content
0	Current Color No. 0(W) (For Lamp)	<p>A current color group number (current valve number) is outputted. As for filling time, an output signal flashes on and off.</p> <p><b>NOTE:</b> Use it as the lamp output. Do not use it for sequencer control. In this case please use output of Current Color No. (bit 1) to (bit 16) and No. 0 (W).</p>
1	Current Color No. 1(A) (For Lamp)	
2	Current Color No. 2(B) (For Lamp)	
3	Current Color No. 3(c) (For Lamp)	
4	Current Color No. 4(D) (For Lamp)	
5	Current Color No. 5(E) (For Lamp)	
6	Current Color No. 6(F) (For Lamp)	
7	Current Color No. 7(G) (For Lamp)	
8	Current Color No. 8(H) (For Lamp)	
9	Current Color No. 9(I) (For Lamp)	
10	Current Color No.10 (J) (For Lamp)	
11	Current Color No.11 (K) (For Lamp)	
12	Current Color No.12 (L) (For Lamp)	
13	Current Color No.13 (M) (For Lamp)	
14	Current Color No.14 (N) (For Lamp)	
15	Current Color No.15 (O) (For Lamp)	

### OUT 5-2

Screen No.250		
No.	Name	Content
16	Current Color No.16 (P) (For Lamp)	<p>A current color group number (current valve number) is outputted. As for filling time, an output signal flashes on and off.</p> <p><b>NOTE:</b> Use it as the lamp output. Do not use it for sequencer control. In this case please use output of Current Color No. (bit 1) to (bit 16) and No. 0 (W).</p>
17	Current Color No.17 (Q) (For Lamp)	
18	Current Color No.18 (R) (For Lamp)	
19	Current Color No.19 (S) (For Lamp)	
20	Current Color No.20 (T) (For Lamp)	
21	Current Color No.21 (U) (For Lamp)	
22	*** Unused 407	
23	*** Unused 408	
24	*** Unused 409	
25	*** Unused 410	
26	*** Unused 411	
27	*** Unused 412	
28	Measuring	It outputs during measuring screen display
29	In Ratio Test	It outputs during mixing ratio test screen display.
30	Ratio Test Select Receiving	It outputs when color information is input during mixing ratio test.
31	Ratio Test Select OK	It outputs when color information changed during mixing ratio test is normal

### 7-3-6 OUT 6

#### OUT 6-1

Screen No.251			
No.	Name	Error code	Content
0	Emergency Stop	<3000>	<p>It outputs when each error has occurred.</p> <p>Pressing <b>RESET</b> key of the ACW controller or inputting of "Reset Error" signal turned off all output signals.</p> <p>(*1): Used for 3K type only.</p>
1	Outside System Error 1	<3001>	
2	Ratio Error 1	<3002>	
3	Ratio Error 2 (*1)	<3003>	
4	Batch-Mixture Max Limit 1	<3004>	
5	Batch-Mixture Max Limit 2 (*1)	<3005>	
6	Auto Flush Start	<3006>	
7	Pot Life Error	<3007>	
8	Flow [A] Too Low	<3008>	
9	Flow [B] Too Low	<3009>	
10	Flow [C] Too Low (*1)	<3010>	
11	Flow [A] When Stopped	<3011>	
12	Flow [B] When Stopped	<3012>	
13	Flow [C] When Stopped (*1)	<3013>	
14	Flush Alarm Time	<3014>	
15	Measurement Alarm Time	<3015>	

#### OUT 6-2

Screen No.252			
No.	Name	Error code	Content
16	Ratio Test Alarm Time	<3016>	<p>It outputs for every error to the generated error.</p> <p>Pressing the <b>RESET</b> key of the ACW controller or inputting of "Reset Error" signal turned off all output signals.</p> <p>(*1): Used for 3K type only.</p>
17	Flow [A] Too High	<3017>	
18	Flow [B] Too High	<3018>	
19	Flow [C] Too High (*1)	<3019>	
20	RAM Initialization	<3020>	
21	ALB TB Comm. Error	<3021>	
22	Memory Card Error	<3022>	
23	No Registered Recipe No.	<3023>	
24	Outside System Error 2	<3024>	
25	Adjusting Alarm Time	<3025>	
26	Trigger Error	<3026>	
27	Transmission Error (ch1)	<3027>	
28	CLOCK Error	<3028>	
29	Count Up [A] Usage	<3029>	
30	Count Up [B] Usage	<3030>	
31	Count Up [C] Usage (*1)	<3031>	

## 7-3-7 OUT 7

### OUT 7-1

Screen No.253			
No.	Name	Error code	Content
0	Count Up [A] Mixing Valve Operate	<3032>	<p>It outputs for every error to the generated error.</p> <p>Pressing the <b>RESET</b> key of the ACW controller or inputting of "Reset Error" signal turned off all output signals.</p> <p>(*1): Used for 3K type only.</p>
1	Count Up [B] Mixing Valve Operate	<3033>	
2	Count Up [C] Mixing Valve Operate (*1)	<3034>	
3	Gun1 Discharge Rate Too Low	<3035>	
4	Gun2 Discharge Rate Too Low	<3036>	
5	Gun3 Discharge Rate Too Low	<3037>	
6	Gun4 Discharge Rate Too Low	<3038>	
7	[A] Air Pressure Upper Limit Error	<3039>	
8	[B] Air Pressure Upper Limit Error	<3040>	
9	System Air Pressure Upper Limit Error	<3041>	
10	Factory Air Pressure Upper Limit Error	<3042>	
11	Count Up Flow Meter	<3043>	
12	Count Up Valve Operate	<3044>	
13	[A] Mixing Valve On-Timing Error	<3045>	
14	[B] Mixing Valve On-Timing Error	<3046>	
15	[C] Mixing Valve On-Timing Error (*1)	<3047>	

### Out 7-2

Screen No.254			
No.	Name	Error code	Content
16	[A] Mixing Valve Off-Timing Error	<3048>	<p>It outputs for every error to the generated error.</p> <p>Pressing the <b>RESET</b> key of the ACW controller or inputting of "Reset Error" signal turned off all output signals.</p> <p>(*1): Used for 3K type only.</p>
17	[B] Mixing Valve Off-Timing Error	<3049>	
18	[C] Mixing Valve Off-Timing Error (*1)	<3050>	
19	GOT System Alarm (ACPU)	<3051>	
20	PM Sensor	<3052>	
21	GOT System Alarm (Main1)	<3053>	
22	[A] Air Pressure Lower Limit Error	<3054>	
23	[B] Air Pressure Lower Limit Error	<3055>	
24	System Air Pressure Lower Limit Error	<3056>	
25	Factory Air Pressure Lower Limit Error	<3057>	
26	[C] Total Amount Lower Limit in color change	<3058>	
27	Eco Flush High Pressure Detection	<3059>	
28	Eco Flush Error	<3060>	
29	Pot Life Error previous notice	<3061>	
30	PM rotation Amount (Upper Limit)	<3062>	
31	PM Rotation Amount (Lower Limit)	<3063>	

**7-3-8 OUT 8**

**OUT 8-1**

Screen No.255		
No.	Name	Content
0	Current Recipe Number (bit1)	<p>The current recipe number is outputted by a binary signal.</p> <p><b>&lt;Example&gt;</b>                      When the main screen displays recipe number 3, output number 1 and 2 are outputted simultaneously. (It means bit1 and bit2 are outputted simultaneously.)</p>
1	Current Recipe Number (bit2)	
2	Current Recipe Number (bit4)	
3	Current Recipe Number (bit8)	
4	Current Recipe Number (bit16)	
5	Current Recipe Number (bit32)	
6	Current Recipe Number (bit64)	
7	Current Recipe Number (bit128)	
8	Current Recipe Number (bit256)	
9	Current Recipe Number (bit512)	
10	Unused 491	
11	Unused 492	
12	Unused 493	
13	Unused 494	
14	Unused 495	
15	Unused 496	

**OUT 8-2**

Screen No.256		
No.	Name	Content
16	Flow Rate Analog Signal (D00)	<p>The analog signal of flow rate is outputted.</p> <p><b>NOTE:</b>                      These output signals are used connecting with a digital indication meters.</p>
17	Flow Rate Analog Signal (D01)	
18	Flow Rate Analog Signal (D02)	
19	Flow Rate Analog Signal (D03)	
20	Flow Rate Analog Signal (D04)	
21	Flow Rate Analog Signal (D05)	
22	Flow Rate Analog Signal (D06)	
23	Flow Rate Analog Signal (D07)	
24	Flow Rate Analog Signal (D08)	
25	Flow Rate Analog Signal (D09)	
26	Flow Rate Analog Signal (D10)	
27	Flow Rate Analog Signal (D11)	
28	Flow Rate Analog Signal (D12)	
29	Flow Rate Analog Signal (D13)	
30	Flow Rate Analog Signal (D14)	
31	Flow Rate Analog Signal (D15)	

**7-3-9 OUT 9**

**OUT 9-1**

Screen No.257		
No.	Name	Content
0	No.W Lamp For OPS200	Option output port. For use in the lamp output for OPS200 (color change operation unit).
1	No.A Lamp For OPS200	
2	No.B Lamp For OPS200	
3	No.C Lamp For OPS200	
4	No.D Lamp For OPS200	
5	No.E Lamp For OPS200	
6	No.F Lamp For OPS200	
7	No.G Lamp For OPS200	
8	No.H Lamp For OPS200	Option output port. For use in the lamp output for OPS201 (color change operation unit).
9	No.I Lamp For OPS200	
10	No.J Lamp For OPS200	
11	No.K Lamp For OPS200	
12	No.L Lamp For OPS200	
13	No.M Lamp For OPS200	
14	No.N Lamp For OPS200	
15	No.O Lamp For OPS200	

**OUT 9-2**

Screen No.258		
No.	Name	Content
16	No.P Lamp For OPS200	Option output port. For use in the lamp output for OPS202 (color change operation unit).
17	No.Q Lamp For OPS200	
18	No.R Lamp For OPS200	
19	No.S Lamp For OPS200	
20	No.T Lamp For OPS200	
21	No.U Lamp For OPS200	
22	AIR (OPS200)	Option output port. For use in the lamp output for OPS200 (color change operation unit).
23	THIN (OPS200)	
24	DRAIN (OPS200)	
25	MANU (OPS200)	
26	AUTO (OPS200)	
27	COMM (OPS200)	
28	*** Unused 541	
29	*** Unused 542	
30	*** Unused 543	
31	*** Unused 544	

**7-3-10 OUT 10**

**OUT 10-1**

Screen No.259		
No.	Name	Content
0	[A] Solvent Purge Valve	It is an output for controlling Base Resin Solvent Valve.
1	[A] Air Purge Valve	It is an output for controlling Base Resin Air Purge Valve.
2	[A] 2nd Solvent Purge Valve	It is an output for controlling Base Resin 2nd Solvent Purge Valve.
3	[A] Mixing Valve	It is an output for controlling Base Resin Mixing Valve.
4	[A] Dump Valve	It is an output for controlling Base Resin Dump Valve. Usually unused.
5	[B] Solvent Purge Valve	It is an output for controlling Hardener Solvent Valve.
6	[B] Air Purge Valve	It is an output for controlling Hardener Air Purge Valve. Usually unused.
7	[B] 2nd Solvent Purge Valve	It is an output for controlling Hardener 2nd Solvent Purge Valve.
8	[B] Mixing Valve	It is an output for controlling Hardener Mixing Valve.
9	[B] Dump Valve	It is an output for controlling Hardener Dump Valve. Usually unused.
10	[C] Solvent Purge Valve	It is an output for controlling Thinner Solvent Valve.
11	[C] Air Purge Valve	It is an output for controlling Thinner Air Purge Valve.
12	[C] 2nd Solvent Purge Valve	It is an output for controlling Thinner 2nd Solvent Purge Valve.
13	[C] Mixing Valve	It is an output for controlling Thinner Mixing Valve.
14	[C] Dump Valve	It is an output for controlling Thinner Dump Valve.
15	F-BYPASS System Air Purge Valve	It is an output for controlling Air Purge Valve on bypass system.

**OUT 10-2**

Screen No.260		
No.	Name	Content
16	F-BYPASS System Solvent Purge Valve	It is an output for controlling Solvent Purge Valve on bypass system.
17	F-BYPASS System Dump Valve	It is an output for controlling Dump Valve on bypass system.
18	F-BYPASS System Changeover Valve	It is an output for controlling Changeover Valves on bypass system.
19	Dump Valve	It is an output for controlling Dump Valve.
20	F-BYPASS System Trigger Signal Request	It is an output for controlling spray gun operation on bypass system.
21	Color Change Completion	It outputs for 1 second, when color change operation has completed.
22	Color Change In Process	It outputs, during the whole color change (flushing + filling) operating.
23	Flushing In Process	It outputs, while the flushing sequence is operating.
24	B-Flushing In Process	It outputs while the flushing sequence is operating on bypass system.
25	Unused 570 (For C.C)2	It is an unused output for flush sequence (color change sequence) output.
26	Unused 571 (For C.C)3	
27	Unused 572 (For C.C)4	
28	Unused 573 (For C.C)5	
29	Unused 574 (For C.C)6	
30	Unused 575 (For C.C)7	
31	Unused 576 (For C.C)8	

**7-3-11 OUT 11**

**OUT 11-1**

Screen No.261		
No.	Name	Content
0	*** Unused 577	
1	*** Unused 578	
2	*** Unused 579	
3	*** Unused 580	
4	*** Unused 581	
5	*** Unused 582	
6	*** Unused 583	
7	*** Unused 584	
8	*** Unused 585	
9	*** Unused 586	
10	*** Unused 587	
11	*** Unused 588	
12	*** Unused 589	
13	*** Unused 590	
14	*** Unused 591	
15	*** Unused 592	

**OUT 11-2**

Screen No.262		
No.	Name	Content
16	Route flush Drain valve 1	It is for drain valve control when multiple individual gun flush is effective.
17	Route flush Drain valve 2	
18	Route flush Drain valve 3	
19	Route flush Drain valve 4	
20	Gun No.1 Flushing	It outputs when flush when multiple individual gun flash is effective.
21	Gun No.2 Flushing	
22	Gun No.3 Flushing	
23	Gun No.4 Flushing	
24	Gun No.1 Filling	It outputs when flush multiple individual gun filling is effective.
25	Gun No.1 Filling	
26	Gun No.1 Filling	
27	Gun No.1 Filling	
28	*** Unused 605	
29	*** Unused 606	
30	*** Unused 607	
31	*** Unused 608	

**7-3-12 OUT 12**

**OUT 12-1**

Screen No.263		
No.	Name	Content
0	Ratio Code Back [A] 0.1	After inputting new mixing ratio data to No.5 input terminal block, it outputs mixing ratio data of base resin by a binary signal.
1	Ratio Code Back [A] 0.2	
2	Ratio Code Back [A] 0.4	
3	Ratio Code Back [A] 0.8	
4	Ratio Code Back [A] 1.6	
5	Ratio Code Back [A] 3.2	
6	Ratio Code Back [A] 6.4	
7	Ratio Code Back [A] 12.8	
8	Ratio Code Back [B] 0.1	After inputting new mixing ratio data to No.5 input terminal block, it outputs mixing ratio data of hardener by a binary signal.
9	Ratio Code Back [B] 0.2	
10	Ratio Code Back [B] 0.4	
11	Ratio Code Back [B] 0.8	
12	Ratio Code Back [B] 1.6	
13	Ratio Code Back [B] 3.2	
14	Ratio Code Back [B] 6.4	
15	Ratio Code Back [B] 12.8	

**OUT 12-2**

Screen No.264		
No.	Name	Content
16	Ratio Code Back [C] 0.1	After inputting new mixing ratio data to No.5 input terminal block, it outputs mixing ratio data of thinner by a binary signal.  Use for ACW 3K mode type.
17	Ratio Code Back [C] 0.2	
18	Ratio Code Back [C] 0.4	
19	Ratio Code Back [C] 0.8	
20	Ratio Code Back [C] 1.6	
21	Ratio Code Back [C] 3.2	
22	Ratio Code Back [C] 6.4	
23	Ratio Code Back [C] 12.8	
24	Ratio Code Back Color No.(bit 1)	After inputting new mixing ratio data to No.5 input terminal block, It outputs Color group number that mixing ratio is changed, by a binary signal.  In the case of "0 (W)", there is no output.
25	Ratio Code Back Color No.(bit 2)	
26	Ratio Code Back Color No.(bit 4)	
27	Ratio Code Back Color No.(bit 8)	
28	Ratio Code Back Color No.(bit16)	
29	*** Unused ***	
30	Ratio Code Back Ratio Range OK	IN5 has an input, and only when the inputted value is within the limits, it outputs.
31	Ratio Code Back "Write" Received	It outputs, when IN5 has an input of a signal.

**7-3-13 OUT 13**

**OUT 13-1**

Screen No.263		
No.	Name	Content
0	DA Output CH1	It is for power mixer drive control.
1	DA Output CH1	
2	DA Output CH1	
3	DA Output CH1	
4	DA Output CH1	
5	DA Output CH1	
6	DA Output CH1	
7	DA Output CH1	
8	DA Output CH1	
9	DA Output CH1	
10	DA Output CH1	
11	DA Output CH1	
12	DA Output CH1	
13	DA Output CH1	
14	DA Output CH1	
15	DA Output CH1	

**OUT 13-2**

Screen No.264		
No.	Name	Content
16	DA Output CH2	It is for power mixer drive control.
17	DA Output CH2	
18	DA Output CH2	
19	DA Output CH2	
20	DA Output CH2	
21	DA Output CH2	
22	DA Output CH2	
23	DA Output CH2	
24	DA Output CH2	
25	DA Output CH2	
26	DA Output CH2	
27	DA Output CH2	
28	DA Output CH2	
29	DA Output CH2	
30	DA Output CH2	
31	DA Output CH2	

**7-3-14 OUT 14**

**OUT 14-1**

Screen No.263		
No.	Name	Content
0	DA Output CH3	It is for power mixer drive control.
1	DA Output CH3	
2	DA Output CH3	
3	DA Output CH3	
4	DA Output CH3	
5	DA Output CH3	
6	DA Output CH3	
7	DA Output CH3	
8	DA Output CH3	
9	DA Output CH3	
10	DA Output CH3	
11	DA Output CH3	
12	DA Output CH3	
13	DA Output CH3	
14	DA Output CH3	
15	DA Output CH3	

**OUT 14-2**

Screen No.264		
No.	Name	Content
16	DA Output CH4	It is for power mixer drive control.
17	DA Output CH4	
18	DA Output CH4	
19	DA Output CH4	
20	DA Output CH4	
21	DA Output CH4	
22	DA Output CH4	
23	DA Output CH4	
24	DA Output CH4	
25	DA Output CH4	
26	DA Output CH4	
27	DA Output CH4	
28	DA Output CH4	
29	DA Output CH4	
30	DA Output CH4	
31	DA Output CH4	

#### **7-4 ACW controller DIP SW and I/O allocation**





The ALB Terminal Block of ACW Control Unit differs in the code set up according to delivery specification. For example, since DIP SW (DIP switch) of ACW controller differs even if the code of the ALB Terminal Block currently installed in each ACW Control Unit is the same when there are two kinds of supplied ACW Control Unit; such as manual type and automatic type, since allocation of input and output of each electrical equipment (solenoid valve etc.) connected to the ALB Terminal Block differs, it is careful.

The input/output allocation displayed on the screen of ACW controller also changes with setup of DIP SW of the ACW controller.

List of input/output allocation of the ALB Terminal Block to DIP SW of an ACW controller is shown in 7-4-1 (Input) and 7-4-2 (Output).

See Operation Manual [ACW controller DIP switch]

The item of “A setup of ACW controller DIP SW, and input/output allocation” table is explained to the following clause.

Item		Content
IN (or OUT)		The title of an I/O monitor screen is shown.
No.		The number of an I/O monitor screen is shown.
ACW controller DIP SW  See Operation Manual [ACW controller DIP switch]	0	
	1	
	2	
	3	
ACW Control Unit Type (I/O Mode)	Manual	The specification of ACW Control Unit is a manual type.
	Automatic	The specification of ACW Control Unit is an automatic type.
	Manual 2 (Non color change type)	The specification of ACW Control Unit is a manual type and non-color change type.
	Automatic 2 (Non color change type)	The specification of ACW Control Unit is an automatic type and non-color change type.
Item		Input-and-output name.
ALB Terminal Block address setup	St. No	Station number of an ALB Terminal Block is shown.
	BIT	Terminal number of the ALB Terminal Block is shown.

#### 7-4-1 ACW controller DIP SW setup and input allocation

IN	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
1	0	Emergency Stop	1	0	1	0	1	0	1	0	
	1	Outside System Error 1	1	1	1	1	1	1	1	1	
	2	Outside System Error 2	1	2	1	2	1	2	1	2	
	3	Start Measurement	2	1	2	1	2	1	2	1	
	4	Start Ratio Test	2	2	2	2	2	2	2	2	
	5	Ready Mode	1	7	1	7	1	7	1	7	
	6	Reset Error	1	4	1	4	1	4	1	4	
	7	Stop Buzzer	1	3	1	3	1	3	1	3	
	8	RCB Color No.0(W)	1	8	3	0	1	8	3	0	
	9	RCB Color No.1(A)/ 8(H)/15(O)	1	9	3	1	1	9	3	1	
	10	RCB Color No.2(B)/ 9(I)/16(P)	1	A	3	2	1	A	3	2	
	11	RCB Color No.3(C)/10(J)/17(Q)	1	B	3	3	1	B	3	3	
	12	RCB Color No.4(D)/11(K)/18(R)	1	C	3	4	1	C	3	4	
	13	RCB Color No.5(E)/12(L)/19(S)	1	D	3	5	1	D	3	5	
	14	RCB Color No.6(F)/13(M)/20(T)	1	E	3	6	1	E	3	6	
	15	RCB Color No.7(G)/14(N)/21(U)	1	F	3	7	1	F	3	7	
	16	RCB Switch Color Group 8(H)-14(N)	2	9	2	9	2	9	2	9	
	17	RCB Switch Color Group15(O)-21(U)	2	A	2	A	2	A	2	A	
	18	AFS1 (Trigger Signal 1)	2	4	2	4	2	4	2	4	
	19	AFS2 (Trigger Signal 2)	1	6	1	6	1	6	1	6	
	20	AFS3 (Trigger Signal 3)	2	6	2	6	2	6	2	6	
	21	AFS4 (Trigger Signal 4)	2	7	2	7	2	7	2	7	
	22	AUTO system mode Spray OFF	3	8	3	8	3	8	3	8	
	23	Stop Color Change	2	3	2	3	2	3	2	3	
	24	AUTO Mode Color No. (bit 1)	3	0	1	8	3	0	1	8	
	25	AUTO Mode Color No. (bit 2)	3	1	1	9	3	1	1	9	
	26	AUTO Mode Color No. (bit 4)	3	2	1	A	3	2	1	A	
	27	AUTO Mode Color No. (bit 8)	3	3	1	B	3	3	1	B	
	28	AUTO Mode Color No. (bit16)	3	4	1	C	3	4	1	C	
	29	AUTO Mode Color No. 0(W)	3	5	1	D	3	5	1	D	
	30	AUTO Mode Color Change Strobe Sig.	3	6	1	E	3	6	1	E	
31	AUTO Mode Color Change Available	3	7	1	F	3	7	1	F		

IN	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
2	0	Recipe No. Change (bit 1)	4	0	4	0	4	0	4	0	
	1	Recipe No. Change (bit 2)	4	1	4	1	4	1	4	1	
	2	Recipe No. Change (bit 4)	4	2	4	2	4	2	4	2	
	3	Recipe No. Change (bit 8)	4	3	4	3	4	3	4	3	
	4	Recipe No. Change (bit 16)	4	4	4	4	4	4	4	4	
	5	Recipe No. Change (bit 32)	4	5	4	5	4	5	4	5	
	6	Recipe No. Change (bit 64)	4	6	4	6	4	6	4	6	
	7	Recipe No. Change (bit128)	4	7	4	7	4	7	4	7	
	8	Recipe No. Change (bit256)	4	8	4	8	4	8	4	8	
	9	Recipe No. Change (bit512)	4	9	4	9	4	9	4	9	
	10	Recipe No. Change Strobe Signal	4	A	4	A	4	A	4	A	
	11	Divide Log	2	0	2	0	2	0	2	0	
	12	Start Adjust	1	5	1	5	1	5	1	5	
	13	Ignore Flow Pulse [A]	2	C	2	C	2	C	2	C	
	14	Ignore Flow Pulse [B]	2	D	2	D	2	D	2	D	
	15	Ignore Flow Pulse [C]	2	E	2	E	2	E	2	E	
	16	[A] Tank Remaining Amount Reset	3	E	3	E	3	E	3	E	
	17	[B] Tand Remaining Amount Reset	3	F	3	F	3	F	3	F	
	18	*** Unused 51									
	19	Eco Flush Pressure Gauge Upper Limit	3	C	3	C	3	C	3	C	
	20	Eco Flush Pressure Gauge Lower Limit	3	D	3	D	3	D	3	D	
	21	*** Unused 54									
	22	PM1 Rotation ON	23	6	23	6	23	6	23	6	
	23	PM2 Rotation ON	23	7	23	7	23	7	23	7	
	24	PM1 Memory No. (bit 1)	23	8	23	8	23	8	23	8	
	25	PM1 Memory No. (bit 2)	23	9	23	9	23	9	23	9	
	26	PM1 Memory No. (bit 4)	23	A	23	A	23	A	23	A	
	27	PM1 Memory No. T Mode	23	B	23	B	23	B	23	B	
	28	PM2 Memory No. (bit 1)	23	C	23	C	23	C	23	C	
	29	PM2 Memory No. (bit 2)	23	D	23	D	23	D	23	D	
	30	PM2 Memory No. (bit 4)	23	E	23	E	23	E	23	E	
31	PM2 Memory No. T Mode	23	F	23	F	23	F	23	F		

IN	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
3	0	W (OPS200)	18	7	18	7	18	7	18	7	
	1	A (OPS200)	18	0	18	0	18	0	18	0	
	2	B (OPS200)	18	1	18	1	18	1	18	1	
	3	C (OPS200)	18	2	18	2	18	2	18	2	
	4	D (OPS200)	18	3	18	3	18	3	18	3	
	5	E (OPS200)	18	4	18	4	18	4	18	4	
	6	F (OPS200)	18	5	18	5	18	5	18	5	
	7	G (OPS200)	18	6	18	6	18	6	18	6	
	8	H (OPS201)	19	0	19	0	19	0	19	0	
	9	I (OPS201)	19	1	19	1	19	1	19	1	
	10	J (OPS201)	19	2	19	2	19	2	19	2	
	11	K (OPS201)	19	3	19	3	19	3	19	3	
	12	L (OPS201)	19	4	19	4	19	4	19	4	
	13	M (OPS201)	19	5	19	5	19	5	19	5	
	14	N (OPS201)	19	6	19	6	19	6	19	6	
	15	O (OPS202)	20	0	20	0	20	0	20	0	
	16	P (OPS202)	20	1	20	1	20	1	20	1	
	17	Q (OPS202)	20	2	20	2	20	2	20	2	
	18	R (OPS202)	20	3	20	3	20	3	20	3	
	19	S (OPS202)	20	4	20	4	20	4	20	4	
	20	T (OPS202)	20	5	20	5	20	5	20	5	
	21	U (OPS202)	20	6	20	6	20	6	20	6	
	22	AUTO/MANU (OPS200)	18	8	18	8	18	8	18	8	
	23	F1/F6 (OPS220)									
	24	F2/F7 (OPS220)									
	25	F3/F8 (OPS220)									
	26	F4/F9 (OPS220)									
	27	F5/F10 (OPS220)									
	28	*** Unused 93									
	29	Reset (OPS220)									
	30	Stop Buzzer (OPS220)									
31	Shift (OPS220)										

IN	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
4	0	Forced Ope. [A] Solvent Pur.Valve		22	1	22	1	22	1	22	1
	1	Forced Ope. [A] Air Pur.Valve		22	2	22	2	22	2	22	2
	2	Forced Ope. [A] 2nd Sol.Pur.Valve		22	3	22	3	22	3	22	3
	3	Forced Ope. [A] Mixing Valve		22	4	22	4	22	4	22	4
	4	Forced Ope. [A] Dump Valve		22	5	22	5	22	5	22	5
	5	Forced Ope. [B] Solvent Pur.Valve		22	6	22	6	22	6	22	6
	6	Forced Ope. [B] Air Purge Valve		22	7	22	7	22	7	22	7
	7	Forced Ope. [B] 2nd Sol.Pur.Valve		22	8	22	8	22	8	22	8
	8	Forced Ope. [B] Mixing Valve		22	9	22	9	22	9	22	9
	9	Forced Ope. [B] Dump Valve		22	A	22	A	22	A	22	A
	10	Forced Ope. [C] Solvent Pur.Valve		23	0	23	0	23	0	23	0
	11	Forced Ope. [C] Air Pur.Valve		23	1	23	1	23	1	23	1
	12	Forced Ope. [C] 2nd Sol.Pur.Valve		23	2	23	2	23	2	23	2
	13	Forced Ope. [C] Mixing Valve		23	3	23	3	23	3	23	3
	14	Forced Ope. [C] Dump Valve		23	4	23	4	23	4	23	4
	15	Forced Ope. [BYP] Air Pur.Valve		22	B	22	B	22	B	22	B
	16	Forced Ope. [BYP] Sol.Pur.Valve		22	C	22	C	22	C	22	C
	17	Forced Ope. [BYP] Dump Valve		22	D	22	D	22	D	22	D
	18	Forced Ope. [BYP]Changeover Valve		22	E	22	E	22	E	22	E
	19	Forced Ope. Dump Valve		22	0	22	0	22	0	22	0
	20	*** Unused 117									
	21	*** Unused 118									
	22	*** Unused 119									
	23	*** Unused 120									
	24	*** Unused 121									
	25	*** Unused 122									
	26	*** Unused 123									
	27	*** Unused 124									
	28	*** Unused 125									
	29	*** Unused 126									
	30	*** Unused 127									
31	*** Unused 128										

IN	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
5	0	[A] Ratio Change Code 0.1		28	0	28	0	28	0	28	0
	1	[A] Ratio Change Code 0.2		28	1	28	1	28	1	28	1
	2	[A] Ratio Change Code 0.4		28	2	28	2	28	2	28	2
	3	[A] Ratio Change Code 0.8		28	3	28	3	28	3	28	3
	4	[A] Ratio Change Code 1.6		28	4	28	4	28	4	28	4
	5	[A] Ratio Change Code 3.2		28	5	28	5	28	5	28	5
	6	[A] Ratio Change Code 6.4		28	6	28	6	28	6	28	6
	7	[A] Ratio Change Code 12.8		28	7	28	7	28	7	28	7
	8	[B] Ratio Change Code 0.1		28	8	28	8	28	8	28	8
	9	[B] Ratio Change Code 0.2		28	9	28	9	28	9	28	9
	10	[B] Ratio Change Code 0.4		28	A	28	A	28	A	28	A
	11	[B] Ratio Change Code 0.8		28	B	28	B	28	B	28	B
	12	[B] Ratio Change Code 1.6		28	C	28	C	28	C	28	C
	13	[B] Ratio Change Code 3.2		28	D	28	D	28	D	28	D
	14	[B] Ratio Change Code 6.4		28	E	28	E	28	E	28	E
	15	[B] Ratio Change Code 12.8		28	F	28	F	28	F	28	F
	16	[C] Ratio Change Code 0.1		29	0	29	0	29	0	29	0
	17	[C] Ratio Change Code 0.2		29	1	29	1	29	1	29	1
	18	[C] Ratio Change Code 0.4		29	2	29	2	29	2	29	2
	19	[C] Ratio Change Code 0.8		29	3	29	3	29	3	29	3
	20	[C] Ratio Change Code 1.6		29	4	29	4	29	4	29	4
	21	[C] Ratio Change Code 3.2		29	5	29	5	29	5	29	5
	22	[C] Ratio Change Code 6.4		29	6	29	6	29	6	29	6
	23	[C] Ratio Change Code 12.8		29	7	29	7	29	7	29	7
	24	Ratio Code Color No.(bit 1)		29	8	29	8	29	8	29	8
	25	Ratio Code Color No.(bit 2)		29	9	29	9	29	9	29	9
	26	Ratio Code Color No.(bit 4)		29	A	29	A	29	A	29	A
	27	Ratio Code Color No.(bit 8)		29	B	29	B	29	B	29	B
	28	Ratio Code Color No.(bit16)		29	C	29	C	29	C	29	C
	29	*** Unused 158									
	30	*** Unused 159									
31	Write Ratio Change Code		29	F	29	F	29	F	29	F	

IN	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
6	0	Test Mode		21	0	21	0	21	0	21	0
	1	Measurement Mode		21	1	21	1	21	1	21	1
	2	Test / Measurement Filling		21	2	21	2	21	2	21	2
	3	Test / Measurement Start		21	3	21	3	21	3	21	3
	4	Test / Measurement Flush		21	4	21	4	21	4	21	4
	5	Test / Measurement Filling Stop		21	5	21	5	21	5	21	5
	6	Test / Measurement Color No.0 A/B		21	6	21	6	21	6	21	6
	7	Test / Measurement Color No.1/8/15 A/B		21	7	21	7	21	7	21	7
	8	Test / Measurement Color No.2/9/16 A/B		21	8	21	8	21	8	21	8
	9	Test / Measurement Color No.3/10/17 A/B		21	9	21	9	21	9	21	9
	10	Test / Measurement Color No.4/11/18 A/B		21	A	21	A	21	A	21	A
	11	Test / Measurement Color No.5/12/19 A/B		21	B	21	B	21	B	21	B
	12	Test / Measurement Color No.6/13/20 A/B		21	C	21	C	21	C	21	C
	13	Test / Measurement Color No.7/14/21 A/B		21	D	21	D	21	D	21	D
	14	Measurement [A] Select		21	E	21	E	21	E	21	E
	15	Measurement [B] Select		21	F	21	F	21	F	21	F
	16	Mixing Ratio [A] correction +5%		32	0	32	0	32	0	32	0
	17	Mixing Ratio [A] correction +4%		32	1	32	1	32	1	32	1
	18	Mixing Ratio [A] correction +3%		32	2	32	2	32	2	32	2
	19	Mixing Ratio [A] correction +2%		32	3	32	3	32	3	32	3
	20	Mixing Ratio [A] correction +1%		32	4	32	4	32	4	32	4
	21	Mixing Ratio [A] correction -1%		32	5	32	5	32	5	32	5
	22	Mixing Ratio [A] correction -2%		32	6	32	6	32	6	32	6
	23	Mixing Ratio [A] correction -3%		32	7	32	7	32	7	32	7
	24	Mixing Ratio [A] correction -4%		32	8	32	8	32	8	32	8
	25	Mixing Ratio [A] correction -5%		32	9	32	9	32	9	32	9
	26	*** Unused 187									
	27	*** Unused 188									
	28	*** Unused 189									
	29	*** Unused 190									
	30	*** Unused 191									
31	*** Unused 192										

IN	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
7	0	A/D Input Ch1		33	0	33	0	33	0	33	0
	1	A/D Input Ch1		33	1	33	1	33	1	33	1
	2	A/D Input Ch1		33	2	33	2	33	2	33	2
	3	A/D Input Ch1		33	3	33	3	33	3	33	3
	4	A/D Input Ch1		33	4	33	4	33	4	33	4
	5	A/D Input Ch1		33	5	33	5	33	5	33	5
	6	A/D Input Ch1		33	6	33	6	33	6	33	6
	7	A/D Input Ch1		33	7	33	7	33	7	33	7
	8	A/D Input Ch1		33	8	33	8	33	8	33	8
	9	A/D Input Ch1		33	9	33	9	33	9	33	9
	10	A/D Input Ch1		33	A	33	A	33	A	33	A
	11	A/D Input Ch1		33	B	33	B	33	B	33	B
	12	A/D Input Ch1		33	C	33	C	33	C	33	C
	13	A/D Input Ch1		33	D	33	D	33	D	33	D
	14	A/D Input Ch1		33	E	33	E	33	E	33	E
	15	A/D Input Ch1		33	F	33	F	33	F	33	F
	16	A/D Input Ch2		34	0	34	0	34	0	34	0
	17	A/D Input Ch2		34	1	34	1	34	1	34	1
	18	A/D Input Ch2		34	2	34	2	34	2	34	2
	19	A/D Input Ch2		34	3	34	3	34	3	34	3
	20	A/D Input Ch2		34	4	34	4	34	4	34	4
	21	A/D Input Ch2		34	5	34	5	34	5	34	5
	22	A/D Input Ch2		34	6	34	6	34	6	34	6
	23	A/D Input Ch2		34	7	34	7	34	7	34	7
	24	A/D Input Ch2		34	8	34	8	34	8	34	8
	25	A/D Input Ch2		34	9	34	9	34	9	34	9
	26	A/D Input Ch2		34	A	34	A	34	A	34	A
	27	A/D Input Ch2		34	B	34	B	34	B	34	B
	28	A/D Input Ch2		34	C	34	C	34	C	34	C
	29	A/D Input Ch2		34	D	34	D	34	D	34	D
	30	A/D Input Ch2		34	E	34	E	34	E	34	E
31	A/D Input Ch2		34	F	34	F	34	F	34	F	

IN	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
				St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
8	0	A/D Input Ch3		35	0	35	0	35	0	35	0
	1	A/D Input Ch3		35	1	35	1	35	1	35	1
	2	A/D Input Ch3		35	2	35	2	35	2	35	2
	3	A/D Input Ch3		35	3	35	3	35	3	35	3
	4	A/D Input Ch3		35	4	35	4	35	4	35	4
	5	A/D Input Ch3		35	5	35	5	35	5	35	5
	6	A/D Input Ch3		35	6	35	6	35	6	35	6
	7	A/D Input Ch3		35	7	35	7	35	7	35	7
	8	A/D Input Ch3		35	8	35	8	35	8	35	8
	9	A/D Input Ch3		35	9	35	9	35	9	35	9
	10	A/D Input Ch3		35	A	35	A	35	A	35	A
	11	A/D Input Ch3		35	B	35	B	35	B	35	B
	12	A/D Input Ch3		35	C	35	C	35	C	35	C
	13	A/D Input Ch3		35	D	35	D	35	D	35	D
	14	A/D Input Ch3		35	E	35	E	35	E	35	E
	15	A/D Input Ch3		35	F	35	F	35	F	35	F
	16	A/D Input Ch4		36	0	36	0	36	0	36	0
	17	A/D Input Ch4		36	1	36	1	36	1	36	1
	18	A/D Input Ch4		36	2	36	2	36	2	36	2
	19	A/D Input Ch4		36	3	36	3	36	3	36	3
	20	A/D Input Ch4		36	4	36	4	36	4	36	4
	21	A/D Input Ch4		36	5	36	5	36	5	36	5
	22	A/D Input Ch4		36	6	36	6	36	6	36	6
	23	A/D Input Ch4		36	7	36	7	36	7	36	7
	24	A/D Input Ch4		36	8	36	8	36	8	36	8
	25	A/D Input Ch4		36	9	36	9	36	9	36	9
	26	A/D Input Ch4		36	A	36	A	36	A	36	A
	27	A/D Input Ch4		36	B	36	B	36	B	36	B
	28	A/D Input Ch4		36	C	36	C	36	C	36	C
	29	A/D Input Ch4		36	D	36	D	36	D	36	D
	30	A/D Input Ch4		36	E	36	E	36	E	36	E
	31	A/D Input Ch4		36	F	36	F	36	F	36	F

**7-4-2 ACW controller DIP SW setup and output allocation**

OUT	No.	ACW controller DIP SW		0		1		2		3		
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2		
		Item		ALB Terminal Block address setup								
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	
1-1	0	Error Lv.1 (ERR3)	15	B	15	B	15	B	15	B	15	B
	1	Error Lv.2 (ERR2)	6	0	6	0	5	8	5	8	5	8
	2	Ready Mode	6	1	6	1	5	9	5	9	5	9
	3	Pot Life Error	6	2	6	2	5	A	5	A	5	A
	4	Color Change Signal Receivable	6	3	6	3	5	B	5	B	5	B
	5	Color Change Completion	6	4	6	4	6	8	6	8	6	8
	6	Color Change In Process	6	5	6	5	5	C	5	C	5	C
	7	Flushing In Process	6	6	6	6	6	9	6	9	6	9
	8	Current Color No.(bit 1)	6	9	6	9	6	A	6	A	6	A
	9	Current Color No.(bit 2)	6	A	6	A	6	B	6	B	6	B
	10	Current Color No.(bit 4)	6	B	6	B	6	C	6	C	6	C
	11	Current Color No.(bit 8)	8	0	8	0	8	0	8	0	8	0
	12	Current Color No.(bit16)	8	1	8	1	8	1	8	1	8	1
	13	Current Color No. 0 (W)	6	C	6	C	5	E	5	E	5	E
	14	Adjust In Process	6	7	6	7	5	D	5	D	5	D
15	High Voltage Generation Ok	6	8	6	8	5	F	5	F	5	F	
1-2	16	For Buzzer	25	E	25	E	25	E	25	E	25	E
	17	For Error Lamp	25	F	25	F	25	F	25	F	25	F
	18	Dump Valve	5	2	5	2	5	2	5	2	5	2
	19	In Remote Mode	15	C	15	C	15	C	15	C	15	C
	20	Eco Flush Gate Valve	7	2	7	2	7	2	7	2	7	2
	21	[A] Flow Pulses (2 Divide)	15	D	15	D	15	D	15	D	15	D
	22	[B] Flow Pulses (2 Divide)	15	E	15	E	15	E	15	E	15	E
	23	[C] Flow Pulses (2 Divide)	15	F	15	F	15	F	15	F	15	F
	24	Caution	0	0	0	0	0	0	0	0	0	0
	25	Operation preparation	0	0	0	0	0	0	0	0	0	0
	26	B-Flushing In Process	15	0	15	0	15	0	15	0	15	0
	27	F-BYPASS System Air Purge Valve	15	1	15	1	15	1	15	1	15	1
	28	F-BYPASS System Solvent Purge Valve	15	2	15	2	15	2	15	2	15	2
	29	F-BYPASS System Dump Valve	15	3	15	3	15	3	15	3	15	3
	30	F-BYPASS System Changeover Valve	15	4	15	4	15	4	15	4	15	4
	31	F-BYPASS System Trigger Signal Request	15	5	15	5	15	5	15	5	15	5

OUT	No.	ACW controller DIP SW		0		1		2		3		
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2		
		Item		ALB Terminal Block address setup								
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	
2-1	0	[A] Solvent Purge Valve No.0 (W)	5	4	5	4	5	4	5	4	5	4
	1	[A] Valve No.1 (A)	5	5	5	5	5	5	5	5	5	5
	2	[A] Valve No.2 (B)	5	6	5	6	6	0	6	0	6	0
	3	[A] Valve No.3 (C)	5	7	5	7	6	1	6	1	6	1
	4	[A] Valve No.4 (D)	5	8	5	8	6	2	6	2	6	2
	5	[A] Valve No.5 (E)	5	9	5	9	6	3	6	3	6	3
	6	[A] Valve No.6 (F)	5	A	5	A	6	4	6	4	6	4
	7	[A] Valve No.7 (G)	5	B	5	B	6	5	6	5	6	5
	8	[A] Valve No.8 (H)	8	2	8	2	8	2	8	2	8	2
	9	[A] Valve No.9 (I)	8	3	8	3	8	3	8	3	8	3
	10	[A] Valve No.10 (J)	8	4	8	4	8	4	8	4	8	4
	11	[A] Valve No.11 (K)	8	5	8	5	8	5	8	5	8	5
	12	[A] Valve No.12 (L)	8	6	8	6	8	6	8	6	8	6
	13	[A] Valve No.13 (M)	8	7	8	7	8	7	8	7	8	7
	14	[A] Valve No.14 (N)	8	8	8	8	8	8	8	8	8	8
15	[A] Valve No.15 (O)	8	9	8	9	8	9	8	9	8	9	
2-2	16	[A] Valve No.16 (P)	8	A	8	A	8	A	8	A	8	A
	17	[A] Valve No.17 (Q)	8	B	8	B	8	B	8	B	8	B
	18	[A] Valve No.18 (R)	8	C	8	C	8	C	8	C	8	C
	19	[A] Valve No.19 (S)	8	D	8	D	8	D	8	D	8	D
	20	[A] Valve No.20 (T)	8	E	8	E	8	E	8	E	8	E
	21	[A] Valve No.21 (U)	8	F	8	F	8	F	8	F	8	F
	22	[A] Air Purge Valve	15	6	15	6	15	6	15	6	15	6
	23	[A] 2nd Solvent Purge Valve	5	3	5	3	5	3	5	3	5	3
	24	[A] Mixing Valve	5	0	5	0	5	0	5	0	5	0
	25	[A] Dump Valve	15	7	15	7	15	7	15	7	15	7
	26	[A] Route Change										
	27	*** Unused 316										
	28	*** Unused 317										
	29	*** Unused 318										
	30	*** Unused 319										
	31	*** Unused 320										

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
			St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	
3-1	0	[B] Solvent Purge Valve No.0	5	C	5	C	5	6	5	6	
	1	[B] Valve No.1	5	D	5	D	5	7	5	7	
	2	[B] Valve No.2	5	E	5	E	6	6	6	6	
	3	[B] Valve No.3	5	F	5	F	6	7	6	7	
	4	[B] Valve No.4	7	0	7	0	7	0	7	0	
	5	[B] Valve No.5	7	1	7	1	7	1	7	1	
	6	[B] Valve No.6	9	0	9	0	9	0	9	0	
	7	[B] Valve No.7	9	1	9	1	9	1	9	1	
	8	[B] Valve No.8	9	2	9	2	9	2	9	2	
	9	[B] Valve No.9	9	3	9	3	9	3	9	3	
	10	[B] Valve No.10	9	4	9	4	9	4	9	4	
	11	[B] Valve No.11	9	5	9	5	9	5	9	5	
	12	[B] Valve No.12	9	6	9	6	9	6	9	6	
	13	[B] Valve No.13	9	7	9	7	9	7	9	7	
	14	[B] Valve No.14	9	8	9	8	9	8	9	8	
15	[B] Valve No.15	9	9	9	9	9	9	9	9		
3-2	16	[B] Valve No.16	9	A	9	A	9	A	9	A	
	17	[B] Valve No.17	9	B	9	B	9	B	9	B	
	18	[B] Valve No.18	9	C	9	C	9	C	9	C	
	19	[B] Valve No.19	9	D	9	D	9	D	9	D	
	20	[B] Valve No.20	9	E	9	E	9	E	9	E	
	21	[B] Valve No.21	9	F	9	F	9	F	9	F	
	22	[B] 2nd Solvent Purge Valve	15	8	15	8	15	8	15	8	
	23	[B] Air Purge Valve	15	9	15	9	15	9	15	9	
	24	[B] Mixing Valve	5	1	5	1	5	1	5	1	
	25	[B] Dump Valve	15	A	15	A	15	A	15	A	
	26	*** Unused 347									
	27	*** Unused 348									
	28	*** Unused 349									
	29	*** Unused 350									
	30	*** Unused 351									
	31	*** Unused 352									

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
			St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	
4-1	0	[C] Solvent Purge Valve No.0	7	5	7	5	7	6	7	6	
	1	[C] Valve No.1	7	9	7	9	7	9	7	9	
	2	[C] Valve No.2	7	A	7	A	7	A	7	A	
	3	[C] Valve No.3	7	B	7	B	7	B	7	B	
	4	[C] Valve No.4	7	C	7	C	7	C	7	C	
	5	[C] Valve No.5	7	D	7	D	7	D	7	D	
	6	[C] Valve No.6	10	0	10	0	10	0	10	0	
	7	[C] Valve No.7	10	1	10	1	10	1	10	1	
	8	[C] Valve No.8	10	2	10	2	10	2	10	2	
	9	[C] Valve No.9	10	3	10	3	10	3	10	3	
	10	[C] Valve No.10	10	4	10	4	10	4	10	4	
	11	[C] Valve No.11	10	5	10	5	10	5	10	5	
	12	[C] Valve No.12	10	6	10	6	10	6	10	6	
	13	[C] Valve No.13	10	7	10	7	10	7	10	7	
	14	[C] Valve No.14	10	8	10	8	10	8	10	8	
15	[C] Valve No.15	10	9	10	9	10	9	10	9		
4-2	16	[C] Valve No.16	10	A	10	A	10	A	10	A	
	17	[C] Valve No.17	10	B	10	B	10	B	10	B	
	18	[C] Valve No.18	10	C	10	C	10	C	10	C	
	19	[C] Valve No.19	10	D	10	D	10	D	10	D	
	20	[C] Valve No.20	10	E	10	E	10	E	10	E	
	21	[C] Valve No.21	10	F	10	F	10	F	10	F	
	22	[C] 2nd Solvent Purge Valve	7	7	7	7	7	7	7	7	
	23	[C] Air Purge Valve	7	6	7	6	7	5	7	5	
	24	[C] Mixing Valve	7	4	7	4	7	4	7	4	
	25	[C] Dump Valve	7	8	7	8	7	8	7	8	
	26	*** Unused 379									
	27	*** Unused 380									
	28	*** Unused 381									
	29	*** Unused 382									
	30	*** Unused 383									
	31	*** Unused 384									

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
				St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
5-1	0	Current Color No. 0(W) (For Lamp)		12	0	12	0	12	0	12	0
	1	Current Color No. 1(A) (For Lamp)		12	1	12	1	12	1	12	1
	2	Current Color No. 2(B) (For Lamp)		12	2	12	2	12	2	12	2
	3	Current Color No. 3(c) (For Lamp)		12	3	12	3	12	3	12	3
	4	Current Color No. 4(D) (For Lamp)		12	4	12	4	12	4	12	4
	5	Current Color No. 5(E) (For Lamp)		12	5	12	5	12	5	12	5
	6	Current Color No. 6(F) (For Lamp)		12	6	12	6	12	6	12	6
	7	Current Color No. 7(G) (For Lamp)		12	7	12	7	12	7	12	7
	8	Current Color No. 8(H) (For Lamp)		12	8	12	8	12	8	12	8
	9	Current Color No. 9(I) (For Lamp)		12	9	12	9	12	9	12	9
	10	Current Color No.10 (J) (For Lamp)		12	A	12	A	12	A	12	A
	11	Current Color No.10 (K) (For Lamp)		12	B	12	B	12	B	12	B
	12	Current Color No.12 (L) (For Lamp)		12	C	12	C	12	C	12	C
	13	Current Color No.13 (M) (For Lamp)		12	D	12	D	12	D	12	D
	14	Current Color No.14 (N) (For Lamp)		12	E	12	E	12	E	12	E
15	Current Color No.15 (O) (For Lamp)		12	F	12	F	12	F	12	F	
5-2	16	Current Color No.16 (P) (For Lamp)		13	0	13	0	13	0	13	0
	17	Current Color No.17 (Q) (For Lamp)		13	1	13	1	13	1	13	1
	18	Current Color No.18(R) (For Lamp)		13	2	13	2	13	2	13	2
	19	Current Color No.19 (S) (For Lamp)		13	3	13	3	13	3	13	3
	20	Current Color No.20 (T) (For Lamp)		13	4	13	4	13	4	13	4
	21	Current Color No.21 (U) (For Lamp)		13	5	13	5	13	5	13	5
	22	*** Unused 407									
	23	*** Unused 408									
	24	*** Unused 409									
	25	*** Unused 410									
	26	*** Unused 411									
	27	*** Unused 412									
	28	In Measuring		6	D	6	D	6	D	6	D
	29	In Mixing Ratio Test		6	E	6	E	6	E	6	E
	30	Mixing Test Select Receiving		17	E	17	E	17	E	17	E
	31	Mixing Test Select OK		17	F	17	F	17	F	17	F

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
				St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
6-1	0	Emergency Stop		24	0	24	0	24	0	24	0
	1	Outside System Error 1		24	1	24	1	24	1	24	1
	2	Ratio Error 1		26	0	26	0	26	0	26	0
	3	Ratio Error 2		27	0	27	0	27	0	27	0
	4	Batch-Mixture Max Limit 1		26	1	26	1	26	1	26	1
	5	Batch-Mixture Max Limit 2		27	1	27	1	27	1	27	1
	6	Auto Flush Start		24	3	24	3	24	3	24	3
	7	Pot Life Error		24	4	24	4	24	4	24	4
	8	Flow [A] Too Low		26	2	26	2	26	2	26	2
	9	Flow [B] Too Low		26	9	26	9	26	9	26	9
	10	Flow [C] Too Low		27	2	27	2	27	2	27	2
	11	Flow [A] When Stopped		26	3	26	3	26	3	26	3
	12	Flow [B] When Stopped		26	A	26	A	26	A	26	A
	13	Flow [C] When Stopped		27	3	27	3	27	3	27	3
	14	Flush Alarm Time		24	5	24	5	24	5	24	5
15	Measurement Alarm Time		24	6	24	6	24	6	24	6	
6-2	16	Ratio Test Alarm Time		24	7	24	7	24	7	24	7
	17	Flow [A] Too High		26	4	26	4	26	4	26	4
	18	Flow [B] Too High		26	B	26	B	26	B	26	B
	19	Flow [C] Too High		27	4	27	4	27	4	27	4
	20	RAM Initialization		24	A	24	A	24	A	24	A
	21	ALB TB Comm. Error		24	B	24	B	24	B	24	B
	22	Memory Card Error		24	C	24	C	24	C	24	C
	23	No Registered Recipe No.		24	D	24	D	24	D	24	D
	24	Outside System Error 2		24	2	24	2	24	2	24	2
	25	Adjusting Alarm Time		24	8	24	8	24	8	24	8
	26	Transmission Error (ch0) <Unused>		27	C	27	C	27	C	27	C
	27	Transmission Error (ch1)		25	C	25	C	25	C	25	C
	28	CLOCK Error		24	9	24	9	24	9	24	9
	29	Count Up [A] Usage		26	5	26	5	26	5	26	5
	30	Count Up [B] Usage		26	C	26	C	26	C	26	C
	31	Count Up [C] Usage		27	5	27	5	27	5	27	5

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
7-1	0	Count Up [A] Mixing Valve Operate	26	6	26	6	26	6	26	6	
	1	Count Up [B] Mixing Valve Operate	26	D	26	D	26	D	26	D	
	2	Count Up [C] Mixing Valve Operate	27	6	27	6	27	6	27	6	
	3	Gun1 Discharge Rate Too Low	25	0	25	0	25	0	25	0	
	4	Gun2 Discharge Rate Too Low	25	1	25	1	25	1	25	1	
	5	Gun3 Discharge Rate Too Low	25	2	25	2	25	2	25	2	
	6	Gun4 Discharge Rate Too Low	25	3	25	3	25	3	25	3	
	7	[A] Air Pressure Uppler Limit Error	25	4	25	4	25	4	25	4	
	8	[B] Air Pressure Upper Limit Error	25	5	25	5	25	5	25	5	
	9	Equipment Air Pressure Upper Limit Error	25	6	25	6	25	6	25	6	
	10	Factory Air Pressure Upper Limit Error	25	7	25	7	25	7	25	7	
	11	Count Up Flow Meter	24	E	24	E	24	E	24	E	
	12	Count Up Valve Operate	24	F	24	F	24	F	24	F	
	13	[A] Mixing Valve On-Timing Error	26	7	26	7	26	7	26	7	
	14	[B] Mixing Valve On-Timing Error	26	E	26	E	26	E	26	E	
15	[C] Mixing Valve On-Timing Error	27	7	27	7	27	7	27	7		
7-2	16	[A] Mixing Valve Off-Timing Error	26	8	26	8	26	8	26	8	
	17	[B] Mixing Valve Off-Timing Error	26	F	26	F	26	F	26	F	
	18	[C] Mixing Valve Off-Timing Error	27	8	27	8	27	8	27	8	
	19	GOT System Alarm (ACPU)	27	D	27	D	27	D	27	D	
	20	PM Sensor	27	E	27	E	27	E	27	E	
	21	GOT System Alarm (Main1)	25	8	25	8	25	8	25	8	
	22	[A] Air Pressure Lower Limit Error	25	9	25	9	25	9	25	9	
	23	[B] Air Pressure Lower Limit Error	25	A	25	A	25	A	25	A	
	24	Equipment Air Pressure Lower Limit Error	25	B	25	B	25	B	25	B	
	25	Factory Air Pressure Lower Limit Error	27	F	27	F	27	F	27	F	
	26	In Color Change Solvent amount Lower Limit	27	9	27	9	27	9	27	9	
	27	Eco Flush High Pressure Detection	27	A	27	A	27	A	27	A	
	28	Ecor Flush Error	27	B	27	B	27	B	27	B	
	29	Pot Life Error previous nortification									
	30	PM Rotation Amount (Upper Limit)									
	31	PM Rotation Amount (Lower Limit)									

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
		St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
8-1	0	Current Recipe Number (bit1)	11	0	11	0	11	0	11	0	
	1	Current Recipe Number (bit2)	11	1	11	1	11	1	11	1	
	2	Current Recipe Number (bit4)	11	2	11	2	11	2	11	2	
	3	Current Recipe Number (bit8)	11	3	11	3	11	3	11	3	
	4	Current Recipe Number (bit16)	11	4	11	4	11	4	11	4	
	5	Current Recipe Number (bit32)	11	5	11	5	11	5	11	5	
	6	Current Recipe Number (bit64)	11	6	11	6	11	6	11	6	
	7	Current Recipe Number (bit128)	11	7	11	7	11	7	11	7	
	8	Current Recipe Number (bit256)	11	8	11	8	11	8	11	8	
	9	Current Recipe Number (bit512)	11	9	11	9	11	9	11	9	
	10	*** Unused 491									
	11	*** Unused 492									
	12	*** Unused 493									
	13	*** Unused 494									
	14	*** Unused 495									
15	*** Unused 496										
8-2	16	Flow Rate Analog Signal (D00)	14	0	14	0	14	0	14	0	
	17	Flow Rate Analog Signal (D01)	14	1	14	1	14	1	14	1	
	18	Flow Rate Analog Signal (D02)	14	2	14	2	14	2	14	2	
	19	Flow Rate Analog Signal (D03)	14	3	14	3	14	3	14	3	
	20	Flow Rate Analog Signal (D04)	14	4	14	4	14	4	14	4	
	21	Flow Rate Analog Signal (D05)	14	5	14	5	14	5	14	5	
	22	Flow Rate Analog Signal (D06)	14	6	14	6	14	6	14	6	
	23	Flow Rate Analog Signal (D07)	14	7	14	7	14	7	14	7	
	24	Flow Rate Analog Signal (D08)	14	8	14	8	14	8	14	8	
	25	Flow Rate Analog Signal (D09)	14	9	14	9	14	9	14	9	
	26	Flow Rate Analog Signal (D10)	14	A	14	A	14	A	14	A	
	27	Flow Rate Analog Signal (D11)	14	B	14	B	14	B	14	B	
	28	Flow Rate Analog Signal (D12)	14	C	14	C	14	C	14	C	
	29	Flow Rate Analog Signal (D13)	14	D	14	D	14	D	14	D	
	30	Flow Rate Analog Signal (D14)	14	E	14	E	14	E	14	E	
	31	Flow Rate Analog Signal (D15)	14	F	14	F	14	F	14	F	

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
			St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	
9-1	0	No.W Lamp For OPS200	18	D	18	D	18	D	18	D	
	1	No.A Lamp For OPS200	18	0	18	0	18	0	18	0	
	2	No.B Lamp For OPS200	18	1	18	1	18	1	18	1	
	3	No.C Lamp For OPS200	18	2	18	2	18	2	18	2	
	4	No.D Lamp For OPS200	18	3	18	3	18	3	18	3	
	5	No.E Lamp For OPS200	18	4	18	4	18	4	18	4	
	6	No.F Lamp For OPS200	18	5	18	5	18	5	18	5	
	7	No.G Lamp For OPS200	18	6	18	6	18	6	18	6	
	8	No.H Lamp For OPS200	19	0	19	0	19	0	19	0	
	9	No.I Lamp For OPS200	19	1	19	1	19	1	19	1	
	10	No.J Lamp For OPS200	19	2	19	2	19	2	19	2	
	11	No.K Lamp For OPS200	19	3	19	3	19	3	19	3	
	12	No.L Lamp For OPS200	19	4	19	4	19	4	19	4	
	13	No.M Lamp For OPS200	19	5	19	5	19	5	19	5	
	14	No.N Lamp For OPS200	19	6	19	6	19	6	19	6	
15	No.O Lamp For OPS200	20	0	20	0	20	0	20	0		
9-2	16	No.P Lamp For OPS200	20	1	20	1	20	1	20	1	
	17	No.Q Lamp For OPS200	20	2	20	2	20	2	20	2	
	18	No.R Lamp For OPS200	20	3	20	3	20	3	20	3	
	19	No.S Lamp For OPS200	20	4	20	4	20	4	20	4	
	20	No.T Lamp For OPS200	20	5	20	5	20	5	20	5	
	21	No.U Lamp For OPS200	20	6	20	6	20	6	20	6	
	22	AIR (OPS200)	18	7	18	7	18	7	18	7	
	23	THIN (OPS200)	18	8	18	8	18	8	18	8	
	24	DRAIN (OPS200)	18	9	18	9	18	9	18	9	
	25	MANU (OPS200)	18	A	18	A	18	A	18	A	
	26	AUTO (OPS200)	18	B	18	B	18	B	18	B	
	27	COMM (OPS200)	18	C	18	C	18	C	18	C	
	28	*** Unused 541									
	29	*** Unused 542									
	30	*** Unused 543									
	31	*** Unused 544									

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
			St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT	
10-1	0	[A] Solvent Purge Valve	5	4	5	4	5	4	5	4	
	1	[A] Air Purge Valve	5	3	5	3	5	3	5	3	
	2	[A] 2nd SolventPurge Valve	15	6	15	6	15	6	15	6	
	3	[A] Mixing Valve	5	0	5	0	5	0	5	0	
	4	[A] Dump Valve	15	7	15	7	15	7	15	7	
	5	[B] Solvent Purge Valve	5	C	5	C	5	6	5	6	
	6	[B] Air Purge Valve	15	9	15	9	15	9	15	9	
	7	[B] 2nd Solvent Purge Valve	15	8	15	8	15	8	15	8	
	8	[B] Mixing Valve	5	1	5	1	5	1	5	1	
	9	[B] Dump Valve	15	A	15	A	15	A	15	A	
	10	[C] Air Purge Valve	7	5	7	5	7	6	7	6	
	11	[C] Solvent Purge Valve	7	6	7	6	7	5	7	5	
	12	[C] 2nd Solvent Purge Valve	7	7	7	7	7	7	7	7	
	13	[C] Mixing Valve	7	4	7	4	7	4	7	4	
	14	[C] Dump Valve	7	8	7	8	7	8	7	8	
15	F-BYPASS System Air Purge Valve	15	1	15	1	15	1	15	1		
10-2	16	F-BYPASS SystemSolvent Purge Valve	15	2	15	2	15	2	15	2	
	17	F-BYPASS System Dump Valve	15	3	15	3	15	3	15	3	
	18	F-BYPASS SystemChangeover Valve	15	4	15	4	15	4	15	4	
	19	Dump Valve	5	2	5	2	5	2	5	2	
	20	F-BYPASS System Trigger Signal Request	15	5	15	5	15	5	15	5	
	21	Color Change Completion	6	4	6	4	6	8	6	8	
	22	Color Change In Process	6	5	6	5	5	C	5	C	
	23	Flushing In Process	6	6	6	6	6	9	6	9	
	24	B-Flushing In Process	15	0	15	0	15	0	15	0	
	25	Unused 570 (For C.C)2	16	9	16	9	16	9	16	9	
	26	Unused 571 (For C.C)3	16	A	16	A	16	A	16	A	
	27	Unused 572 (For C.C)4	16	B	16	B	16	B	16	B	
	28	Unused 573 (For C.C)5	16	C	16	C	16	C	16	C	
	29	Unused 574 (For C.C)6	16	D	16	D	16	D	16	D	
	30	Unused 575 (For C.C)7	16	E	16	E	16	E	16	E	
	31	Unused 576 (For C.C)8	16	F	16	F	16	F	16	F	

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit	Type (I/O mode)	Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
				St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
11-1	0	*** Unused	577	21	0	21	0	21	0	21	0
	1	*** Unused	578	21	1	21	1	21	1	21	1
	2	*** Unused	579	21	2	21	2	21	2	21	2
	3	*** Unused	580	21	3	21	3	21	3	21	3
	4	*** Unused	581	21	4	21	4	21	4	21	4
	5	*** Unused	582	21	5	21	5	21	5	21	5
	6	*** Unused	583	21	6	21	6	21	6	21	6
	7	*** Unused	584	21	7	21	7	21	7	21	7
	8	*** Unused	585	21	8	21	8	21	8	21	8
	9	*** Unused	586	21	9	21	9	21	9	21	9
	10	*** Unused	587	21	A	21	A	21	A	21	A
	11	*** Unused	588	21	B	21	B	21	B	21	B
	12	*** Unused	589	21	C	21	C	21	C	21	C
	13	*** Unused	590	21	D	21	D	21	D	21	D
	14	*** Unused	591								
15	*** Unused	592									
11-2	16	F-BYPASS System Dump Valve	1	17	0	17	0	17	0	17	0
	17	F-BYPASS System Dump Valve	2	17	1	17	1	17	1	17	1
	18	F-BYPASS System Dump Valve	3	17	2	17	2	17	2	17	2
	19	F-BYPASS System Dump Valve	4	17	3	17	3	17	3	17	3
	20	Gun No. 1 Flush in Process		17	4	17	4	17	4	17	4
	21	Gun No. 2 Flush in Process		17	5	17	5	17	5	17	5
	22	Gun No. 3 Flush in Process		17	6	17	6	17	6	17	6
	23	Gun No. 4 Flush in Process		17	7	17	7	17	7	17	7
	24	Gun No. 1 Flush in Process		17	8	17	8	17	8	17	8
	25	Gun No. 2 Flush in Process		17	9	17	9	17	9	17	9
	26	Gun No. 3 Flush in Process		17	A	17	A	17	A	17	A
	27	Gun No. 4 Flush in Process		17	B	17	B	17	B	17	B
	28	*** Unused	605								
	29	*** Unused	606								
	30	*** Unused	607								
	31	*** Unused	608								

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit	Type (I/O mode)	Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
				St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
12-1	0	Ratio Code Back [A]	0.1	30	0	30	0	30	0	30	0
	1	Ratio Code Back [A]	0.2	30	1	30	1	30	1	30	1
	2	Ratio Code Back [A]	0.4	30	2	30	2	30	2	30	2
	3	Ratio Code Back [A]	0.8	30	3	30	3	30	3	30	3
	4	Ratio Code Back [A]	1.6	30	4	30	4	30	4	30	4
	5	Ratio Code Back [A]	3.2	30	5	30	5	30	5	30	5
	6	Ratio Code Back [A]	6.4	30	6	30	6	30	6	30	6
	7	Ratio Code Back [A]	12.8	30	7	30	7	30	7	30	7
	8	Ratio Code Back [B]	0.1	30	8	30	8	30	8	30	8
	9	Ratio Code Back [B]	0.2	30	9	30	9	30	9	30	9
	10	Ratio Code Back [B]	0.4	30	A	30	A	30	A	30	A
	11	Ratio Code Back [B]	0.8	30	B	30	B	30	B	30	B
	12	Ratio Code Back [B]	1.6	30	C	30	C	30	C	30	C
	13	Ratio Code Back [B]	3.2	30	D	30	D	30	D	30	D
	14	Ratio Code Back [B]	6.4	30	E	30	E	30	E	30	E
15	Ratio Code Back [B]	12.8	30	F	30	F	30	F	30	F	
12-2	16	Ratio Code Back [C]	0.1	31	0	31	0	31	0	31	0
	17	Ratio Code Back [C]	0.2	31	1	31	1	31	1	31	1
	18	Ratio Code Back [C]	0.4	31	2	31	2	31	2	31	2
	19	Ratio Code Back [C]	0.8	31	3	31	3	31	3	31	3
	20	Ratio Code Back [C]	1.6	31	4	31	4	31	4	31	4
	21	Ratio Code Back [C]	3.2	31	5	31	5	31	5	31	5
	22	Ratio Code Back [C]	6.4	31	6	31	6	31	6	31	6
	23	Ratio Code Back [C]	12.8	31	7	31	7	31	7	31	7
	24	Ratio Code Back Color No.(bit 1)		31	8	31	8	31	8	31	8
	25	Ratio Code Back Color No.(bit 2)		31	9	31	9	31	9	31	9
	26	Ratio Code Back Color No.(bit 4)		31	A	31	A	31	A	31	A
	27	Ratio Code Back Color No.(bit 8)		31	B	31	B	31	B	31	B
	28	Ratio Code Back Color No.(bit16)		31	C	31	C	31	C	31	C
	29	*** Unused	638								
	30	Ratio Code Back Ratio Range OK		31	E	31	E	31	E	31	E
	31	Ratio Code Back "Write" Received		31	F	31	F	31	F	31	F

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
				St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
13-1	0	DA Output CH1		37	0	37	0	37	0	37	0
	1	DA Output CH1		37	1	37	1	37	1	37	1
	2	DA Output CH1		37	2	37	2	37	2	37	2
	3	DA Output CH1		37	3	37	3	37	3	37	3
	4	DA Output CH1		37	4	37	4	37	4	37	4
	5	DA Output CH1		37	5	37	5	37	5	37	5
	6	DA Output CH1		37	6	37	6	37	6	37	6
	7	DA Output CH1		37	7	37	7	37	7	37	7
	8	DA Output CH1		37	8	37	8	37	8	37	8
	9	DA Output CH1		37	9	37	9	37	9	37	9
	10	DA Output CH1		37	A	37	A	37	A	37	A
	11	DA Output CH1		37	B	37	B	37	B	37	B
	12	DA Output CH1		37	C	37	C	37	C	37	C
	13	DA Output CH1		37	D	37	D	37	D	37	D
	14	DA Output CH1		37	E	37	E	37	E	37	E
15	DA Output CH1		37	F	37	F	37	F	37	F	
13-2	16	DA Output CH2		38	0	38	0	38	0	38	0
	17	DA Output CH2		38	1	38	1	38	1	38	1
	18	DA Output CH2		38	2	38	2	38	2	38	2
	19	DA Output CH2		38	3	38	3	38	3	38	3
	20	DA Output CH2		38	4	38	4	38	4	38	4
	21	DA Output CH2		38	5	38	5	38	5	38	5
	22	DA Output CH2		38	6	38	6	38	6	38	6
	23	DA Output CH2		38	7	38	7	38	7	38	7
	24	DA Output CH2		38	8	38	8	38	8	38	8
	25	DA Output CH2		38	9	38	9	38	9	38	9
	26	DA Output CH2		38	A	38	A	38	A	38	A
	27	DA Output CH2		38	B	38	B	38	B	38	B
	28	DA Output CH2		38	C	38	C	38	C	38	C
	29	DA Output CH2		38	D	38	D	38	D	38	D
	30	DA Output CH2		38	E	38	E	38	E	38	E
	31	DA Output CH2		38	F	38	F	38	F	38	F

OUT	No.	ACW controller DIP SW		0		1		2		3	
		ACW Control Unit Type (I/O mode)		Manual		Automatic		Manual 2		Automatic 2	
		Item		ALB Terminal Block address setup							
				St. No	BIT	St. No	BIT	St. No	BIT	St. No	BIT
14-1	0	DA Output CH3		39	0	39	0	39	0	39	0
	1	DA Output CH3		39	1	39	1	39	1	39	1
	2	DA Output CH3		39	2	39	2	39	2	39	2
	3	DA Output CH3		39	3	39	3	39	3	39	3
	4	DA Output CH3		39	4	39	4	39	4	39	4
	5	DA Output CH3		39	5	39	5	39	5	39	5
	6	DA Output CH3		39	6	39	6	39	6	39	6
	7	DA Output CH3		39	7	39	7	39	7	39	7
	8	DA Output CH3		39	8	39	8	39	8	39	8
	9	DA Output CH3		39	9	39	9	39	9	39	9
	10	DA Output CH3		39	A	39	A	39	A	39	A
	11	DA Output CH3		39	B	39	B	39	B	39	B
	12	DA Output CH3		39	C	39	C	39	C	39	C
	13	DA Output CH3		39	D	39	D	39	D	39	D
	14	DA Output CH3		39	E	39	E	39	E	39	E
15	DA Output CH3		39	F	39	F	39	F	39	F	
14-2	16	DA Output CH4		40	0	40	0	40	0	40	0
	17	DA Output CH4		40	1	40	1	40	1	40	1
	18	DA Output CH4		40	2	40	2	40	2	40	2
	19	DA Output CH4		40	3	40	3	40	3	40	3
	20	DA Output CH4		40	4	40	4	40	4	40	4
	21	DA Output CH4		40	5	40	5	40	5	40	5
	22	DA Output CH4		40	6	40	6	40	6	40	6
	23	DA Output CH4		40	7	40	7	40	7	40	7
	24	DA Output CH4		40	8	40	8	40	8	40	8
	25	DA Output CH4		40	9	40	9	40	9	40	9
	26	DA Output CH4		40	A	40	A	40	A	40	A
	27	DA Output CH4		40	B	40	B	40	B	40	B
	28	DA Output CH4		40	C	40	C	40	C	40	C
	29	DA Output CH4		40	D	40	D	40	D	40	D
	30	DA Output CH4		40	E	40	E	40	E	40	E
	31	DA Output CH4		40	F	40	F	40	F	40	F

The test mode of ACW controller operates an output compulsorily on an ACW controller screen, and when performing operation (operation of a valve) of a solenoid valve, and the check of signal transmission, it is used.

### 8-1 Switch to TEST MODE screen (Slv.3)

(1) MAIN  
Check SLv3.  
Press "F8".

(2) MAIN MENU  
<Screen No.15>  
Press "F5".

(3) I/O MONITOR MENU  
<Screen No.280>

See Operation Manual[Basic operation of ACW controller]

### 8-2 Condition of test mode

Not test mode state

Test mode state

- (1) **READY** lamp is turned off.
- (2) Set a security level to SLv3.

See Operation Manual [Change security level]

- (3) Touch **F4** "I/O TEST MODE" of I/O MONITOR MENU screen. The display of "I/O TEST MODE" changes to "TEST MODE IN OPERATION", and blinks. Also in the IN and OUT screen, a blink indication of "TEST MODE IN OPERATION" is given.

See [7 Input / Output]

- (4) Cancel test mode by pressing **F4** key, which "TEST MODE IN OPERATION" of I/O MONITOR MENU screen is blinking. Or press **F8** "MAIN MENU" key of I/O MONITOR MENU screen.

ASAHI SUNAC CORPORATION (the “Company”) shall provide the original purchaser (the “Purchaser”) with warranty service for a period of one (1) year from the date of purchase of the product, as follows:

- Should you find defects in design or workmanship with regard to parts, ship them back to the Company, with freight prepaid. The Company shall repair or replace the parts free of charge and reimburse the freight charges, provided that, as a result of an inspection and investigation of the parts conducted by the Company, the defects are deemed to be attributable to the factors within the Company’s responsibility.
- In the following cases, free after-sales service is not provided.
  1. Failure resulting from an inappropriate method of installing this equipment.
  2. Failure resulting from a use method not conforming to this instruction manual or mishandling.
  3. Failure resulting from insufficient maintenance management of this equipment and incorrect handling such as non-conformance to the procedures specified in this instruction manual.
  4. Failure resulting from unauthorized alteration or structure change of this equipment without the Company’s consent.
  5. Failure due to force majeure such as earthquake, disaster, flood disaster or lightning.
  6. Warranty for consumables worn or deteriorated even in the case where this equipment is used correctly.
  7. Repair after the machine has been used outside Japan, and shipping cost.
  8. In addition to the above, failure due to circumstances beyond our control.
- As for items such as parts purchased by the Company from another manufacturer, the warranty of that manufacturer shall apply.
- As for any parts deemed to be defective, the Company shall not be held liable for any expenses beyond the provision of repair or replacement parts free of charge.
- The Company shall not be held liable for any damage to the Purchaser caused by factors not attributable to the Company, such as misuse of product, etc.

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- When transferring this equipment to another owner, attach the instruction manual to the equipment.
  - This equipment has been manufactured according to the laws and legislations of Japan and may only be used in Japan.

When using the equipment in another country, it is necessary to observe the safety standards in that country.

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