

Title **MASK Production Automation Control**
TOPTEC

Document Revision History

Controlled Circulation		
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TABLE OF CONTENTS

1. Precautions	4
1. Check points before operation	6
1. Check points during operation	7
1. Check points after operation	8

EQUIPMENT OPERATIONS

1. Main Operating Screen	14
1.1 Operating Screen	14
1.2 Screen Tabs	16

2. MANUAL 17

2.1 MASK MOLDING PART	17
2.2 EAR SUPPLY PART	18
2.3 EAR #1 , #3	19
2.4 EAR #2 , #4	20
2.5 EAR OUTPUT PART	21

3. SERVO MOTOR 22

3.1 J01 NOSE WIRE , J02 MOLDING TURN	22
3.2 J03 INPUT PITCH , J04 OUTPUT PITCH	24

4. INVERTER 26

4.1 MAIN MOLDING INVERTER, TURN CONVEYOR	26
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5. DATA 27

5.1 SERVO DATA	28
5.2.1 SENSOR DELAY TIME	29
5.2.2 CYLINDER SENSOR DELAY TIME	30
5.2.3 EAR COMMON DELAY TIME SETTING	31
5.3.1 RUN SETTINGS	32
5.3.2 ALARM DELAY	35
5.3.2 MATERIAL SETTING	37
5.3.3 TEST MODE	38
5.3.3 LENGTH BWD SETTING	39
5.4 U. SONIC DELAY SETTING	40

6. MONITOR (DATA) 41

6.1.1 I/O CHECK (INPUT)	41
6.1.2 I/O CHECK (OUTPUT)	42
6.2 TACT TIME	43
6.3 PRODUCTION	44
6.4 DRAWING	45
6.5 FAN STATUS	46

7. ALARM	47
7.1 CURRENT ALARM SCREEN	47
7.2 LIGHT ALARM HISTORY	48
7.3 HEAVY ALARM HISTORY	49

EQUIPMENT ALARM TABLE

- 1 MINOR ALARM AND MEASURES
- 2 MAJOR ALARM AND MEASURES

PRECAUTIONS

- ✓ When power is on, check for and eliminate obstacles such as interference with the driving unit and equipment.
- ✓ At the start of equipment operation, always check and eliminate the factors of collision or deformation between people and equipment.
- ✓ No access around the drive during operation of the equipment.
- ✓ If an error occurs during operation, refer to the manual and maintenance manual.
- ✓ If the problem cannot be solved, contact the repair and our A/S team.
- ✓ After starting the automatic operation, check the operating status from the machine and operation panel from time to time.
- ✓ Do not operate the control panel with sharp edges such as pencils or pens.
- ✓ Eliminate any risk of fire inside the control box by checking if drawings and work tools are left inside the control box and operating automatically.
- ✓ Without A/S specialists, never perform any arbitrary maintenance, assembly and replacement work on the equipment.
- ✓ For malfunction and safety of workers, after inspection, be sure to perform independent operation, and check that there are no abnormalities before operating normally.

	This mark warns of the possible consequences of serious injury or death to workers if equipment or facilities are not properly handled.
	This mark warns of the possible consequences of equipment damage or injury to workers if equipment or facilities are not properly handled.
	This mark warns of the possible consequences of equipment damage or injury to workers if equipment or facilities are not properly handled.

Caution	 CAUTION TURN OFF COMPUTER BEFORE TURNING OFF EQUIPMENT				
Warning	 WARNING PORTENTIAL INJURY AND DAMAGE DO NOT CLIMB OVER EQUIPMENT	 WARNING PINCH POINT Keep hands clear of rollers during operation. Power OFF equipment before inspection.	 WARNING PINCH POINT Do not make contact with moving parts during operation.	 WARNING KEEP DOORS AND COVERS SHUT Access to authorized personnel only.	

Danger	 ⚠ DANGER IMPACT HAZARD Keep clear of moving parts during operation.	 ⚠ DANGER HIGH VOLTAGE Turn off main power before maintenance procedures.
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◆ Precautions when handling electric circuits

When handling electric circuits in the control panel, only those who are qualified for handling electricity or who have obtained permission from the manager should handle them.

When handling electric circuits, prepare electric circuit drawings, understand electric circuits, and pay special attention to safety.

*** WARNING:** When handling electric circuits in the control panel, make sure to turn off the main NFB before working.

Due to high pressure flowing inside the control panel, electric shock may occur during operation.

◆ Precautions for Equipment Operation

Only people who understand equipment operations are allowed to operate the equipment.

Check the basic equipment operation procedures before performing operation.

For the safety of workers and equipment, an INTER-LOCK system is put in place.

When INTER-LOCK system is voided during operation, there are possibilities of defects, equipment damage, and personal injuries

*** WARNING :** Be sure to fully understand the operation methods before operating the control panel.

If the operation is performed without familiarizations, product defects/equipment damage/personal injury may occur.

◆ Other Precautions

When abnormalities occur in the equipment or operation, the operation must be halted as quickly as possible and the cause of problem must be analyzed and removed.

If equipment is not to be used for a long period of time, the operation of equipment should be monitored regularly.

It is necessary to check whether the normal operation proceeds smoothly and any irregularities should be analyzed and eliminated.

☞ WARNING : When an abnormality occurs, the equipment should be restored in chronological order.

When abnormality in equipment is neglected, this may lead to defective product, equipment damage, and human injuries.

☞ To ensure safety of operators and longevity of equipment, read and understand the Operation Manual before operating the equipment.

1. Precautions

1.1. Check points before operation

* When operating or inspecting equipment operation, be familiar with the following instruction to ensure safety of workers.

1.1.1 1.1.1. Operating Environment

Check if the working environment of equipment is appropriate. An inadequate environment can cause malfunction and damage to equipment. Ensure the environment around the equipment is satisfied with the following:

1. No flammable substances
2. No external vibration
3. No electrical noise generating factor
4. Adequate space and no obstruction for safe inspection and repair

1.1.2 1.1.2. Inspection before Operation

- Check power supply status.
- Check air pressure level in pressure gauge.
- Check for obstacles in the transport system.
- Ensure each UNIT is located in correct location.
- Check the starting conditions on control panel.
- Check if each ACTUATOR is in initial (starting) position.
- Check the location and functionality of the emergency stop switch before operation.
- Keep clean for smooth operation of each switch
- Ensure that no obstacles are present in the equipment and operating environment.
- Do not remove any safety covers and devices.

WARNING : For the safety of production and maintenance personnel, do not modify or remove any safety-related devices. When entering the inside of the equipment, it is necessary to work with a partner to remove the safety plug of the door and operate the emergency stop switch of the equipment to verify that the operation of the machine is stopped. When one person enters the equipment during the group work, the other person keeps the equipment stationary and secures the safety of the operator.

1.1.3 1.1.3. Inspection during Operation

- The equipment must only be operated by authorized personnel who is familiar with the operation methods.
- Use the equipment as described in the manual.
- Doors on the control panel must be closed during operation.

WARNING : During operation of equipment, voltage is applied to each device in the control system and may cause injury to operator. Dust and particles may accumulate on the instrument and may cause equipment malfunction.

- Do not approach around the radius of operating movement and devices.
- Do not operate the operating switch with oil or water on hand.
- Do not operate the operating switch unconsciously.
- When operating the equipment, do not operate the operating switch while any part of body, such as hands and feet, is in contact with the equipment.
- Do not make direct contact with operating parts such as rotors, actuators, sensors, and limit switch while operating the equipment.

WARNING : Any operation of electrical verification components during operation of equipment may lead to equipment damage or injury to operator due to equipment malfunction.

- The system should be monitored frequently for abnormal operation, and in the event of abnormality, a qualified operator should be contacted.
- The emergency stop switch should be used immediately when equipment damage or personal injury is viable.

WARNING : The operation method and location of emergency stop switch should be familiarized in case of emergency.

1.1.4 1.1.4. Check Points After Operation

- Check that each UNIT is in normal operation.
- When operation is finished, turn off the power of the equipment.
- Check for any devices and parts that are still running when main power is off.
- For training purposes and preservation of equipment, warning sign should be placed on equipment to prevent other people from making contact with machine.
- For maintenance of equipment, regularly check and clean the inner compartment, electrical verification devices, and electrical compartment.

WARNING : When cleaning mechanical parts or electrical equipment, the equipment shall be kept stationary (power off or emergency shutdown).

- Keep equipment and workshop area clean.

WARNING: The Direction of Operation should keep the following in mind:

- Only qualified personnel shall operate and repair equipment.
- Maintenance personnel should be familiar with the operating manual and not mismanage the equipment.
- Unqualified individuals shall not have access to equipment.

WARNING: The following may cause serious accidents:

- When safety protection system is used in a way other than for its original use.
- When equipment is malfunctioned due to poor operation.
- When equipment is repaired insecurely.

2. Control Panel

2.1. PLC Settings

1.1.5 2.1.1. PLC Card Settings

1.1.6 2.1.2. PLC Setting

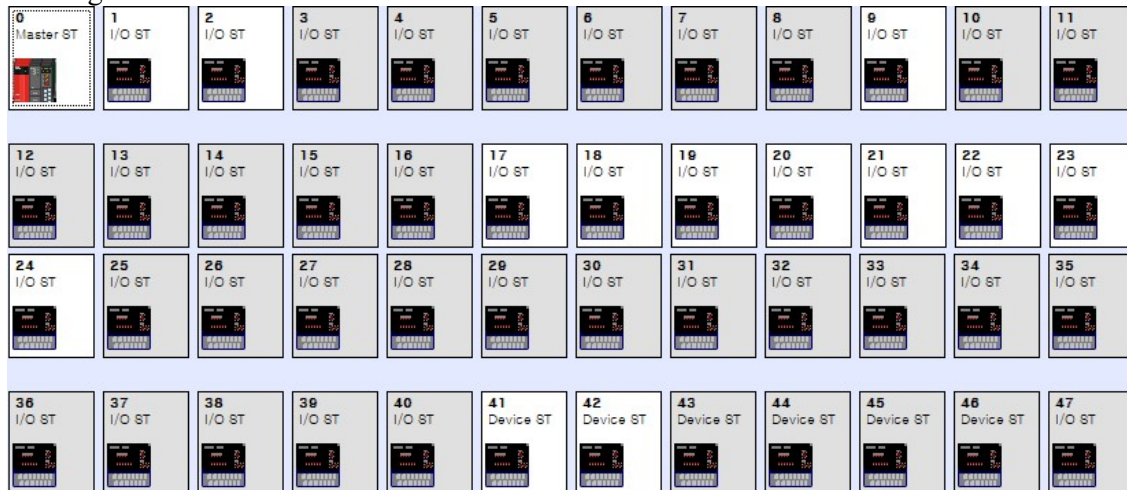
PLC Setting follows as described below.

Items	Description
1. BASE	Q35B
2. POWER	Q61P
3. PLC CPU	Q03UDV
4. CC LINK	QJ61BT11N
5. POSITION CARD	QD77MS4

*See “Appendix” for details.

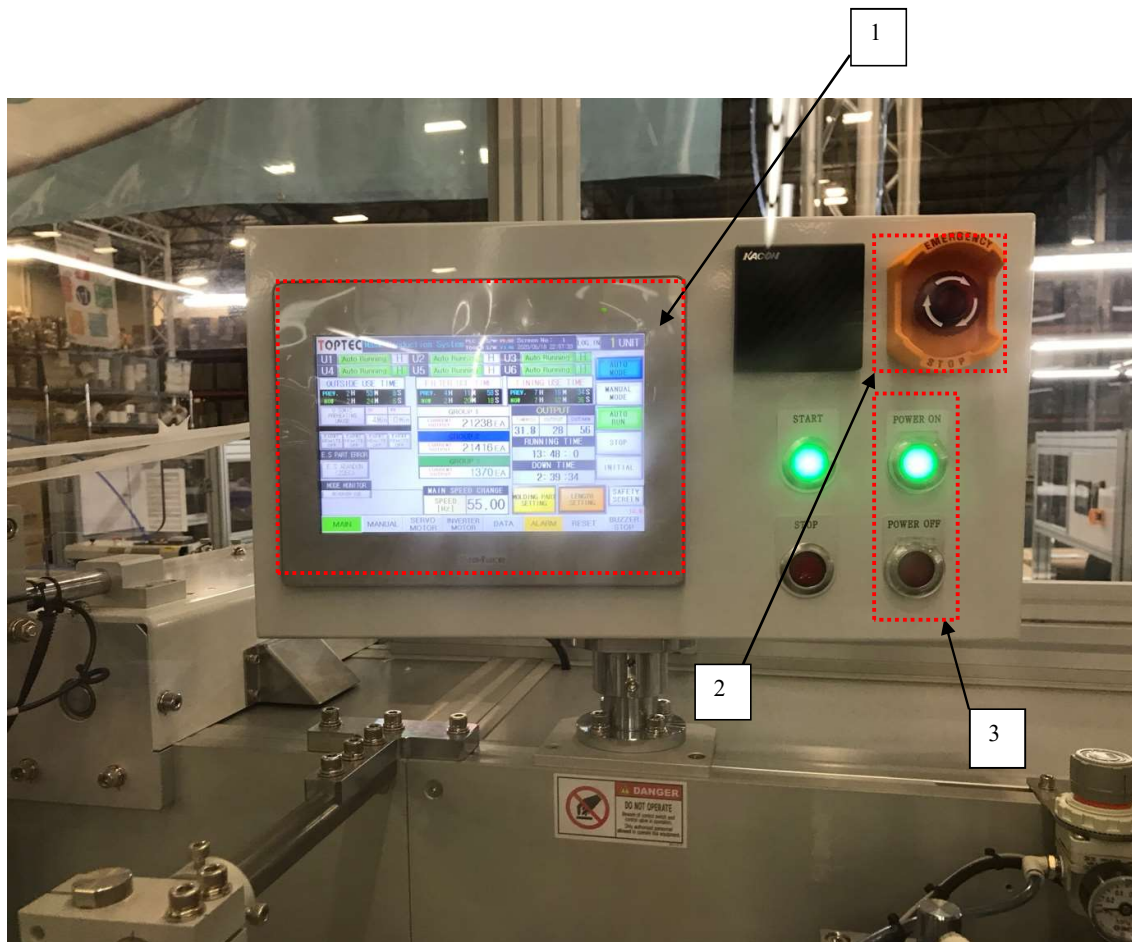
1.1.7 2.1.3. CC-Link Settings

Starting Address: MASTER#1 X/Y 1000



2.2. Control Panel Settings

1.1.8 2.2.1. Control Panel Settings



Items	Descriptions
1. Touch	Screen to check and manually operate components of equipment
2. EMO	Emergency Stop Button (Turn clockwise to release)
3. POWER	ACTUATOR POWER ON(Green) / OFF(Red)

3. Operations

- The operator of the equipment must be aware of the following before operation, and shall be able to operate the equipment smoothly and respond promptly in case of abnormality.

1) Precautions before turning on Power Supply:

- Check for consistency of power voltage
(3Φ 220V 60Hz $\pm 10\%$ within margin of error)
- Check for any open circuits
- Check for normal air pressure
(4~6kg/cm² within margin of error)
- Check for mechanical openings
- Check for any hazards within the working area of the equipment

2) Precaution when Powering On:

- If the precautions in paragraph (1) above are satisfied, proceed to turn on the power.
- Turn on the main power switch in the upper left corner of the control panel
- Turn on the UNIT related to NFB, CP, etc. in the control panel.

3.1. Control Power

- The operation team has the responsibility of turning the control power ON-OFF.
Check that the main power is on before turning on the control power.
 - 1) Check for any obstruction in the conveyor line and check if the power lamp is turned on.
 - 2) Turn on the position switch on the control panel to the ON position.
- [If control power fails to turn on]
 - (1) Check the voltage of the power meter on the control panel.
 - (2) Check if the main ELB in the control panel is on the TRIP (or OFF) position.

3.2. Operation Preparation

- 1) Check the RUN status of the PLC CPU.
 - 2) Check that the emergency stop of all equipment has been lifted.
 - 3) Check the operation status of the red tower lamp and buzzer on each control panel.
 - 4) After ensuring proper precautions are met, operate the equipment through the power switch on the control panel.
- [If the operation safety light does not turn on]
- (1) Check that the main NFB of the control panel is ON.
 - (2) Check if the NFB and CP on the control panel are not on TRIP state.
 - (3) Check if the CP on the control panel is on the [ON] position.
 - (4) Check that all the [EMG, STOP] switch is ON (LOCK, operation) position.
- Operation Preparation System Abnormality
Problems can include abnormalities with PLC, PLC battery, PLC FUSE, emergency stop operation, etc.

3.3. Automatic Operation

- The automatic operation of the equipment start from the automatic selection mode on the touchscreen of control panel.

- 1) Check if the red lamps on the control panel is on or flashing.
- 2) Check if the operation start lamp on the control panel is on or flashing.
- 3) Check for irregularities and signs of problem with the equipment.
- 4) Press the Home switch on the main screen to complete initialization.
- 5) Confirm the MODE setting switch on the main screen is on [AUTO] position.
- 6) Operate the [Auto Run] switch.
- 7) Check if the lamp of the [Auto Run] switch is green.

[If Automatic Operation fail to start]

- (1) Check if any problem is present in the equipment.
(Check if there are any errors on the [Alarm Screen] on the control panel.)
- (2) Check if the automatic mode is selected on the main screen.
- (3) Check if the equipment is in the starting or automatic operation position.
-If not in the starting position, release and restart the equipment for automatic operation.

[Stopping Automatic Operation]

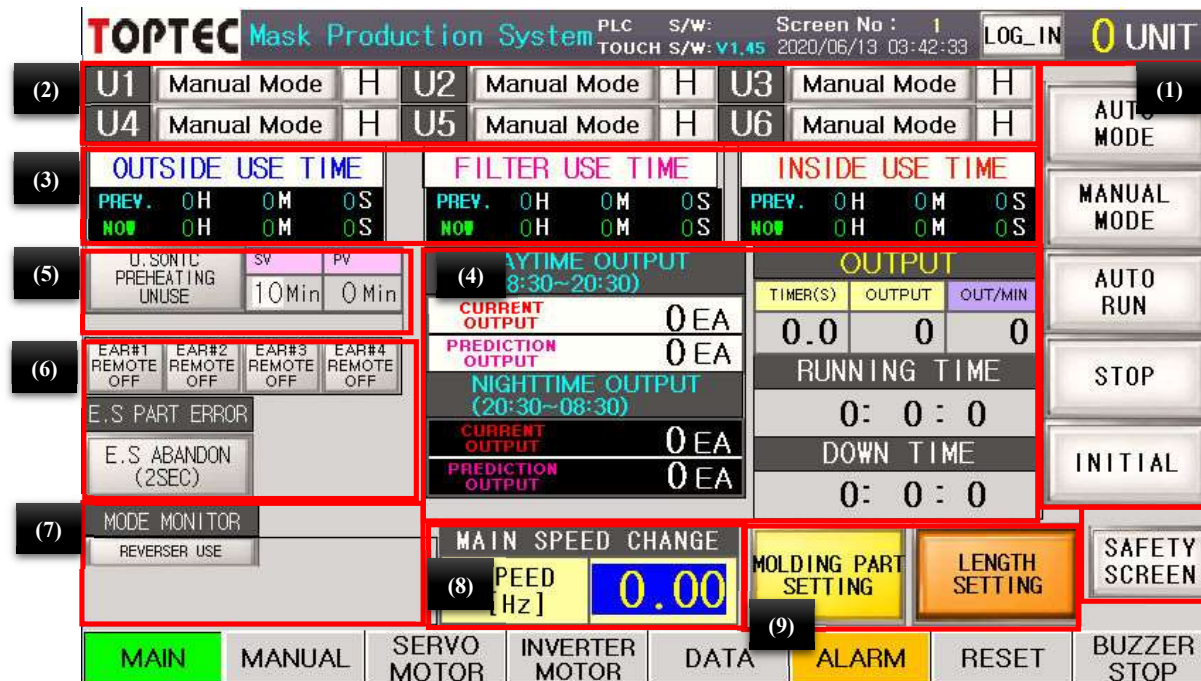
<General Stop>

The following will trigger a general stop:

- (1) Press the cycle stop button.
- (2) Press the emergency stop switch.
- (3) In the event of a heavy alarm on the equipment.
- (4) If the operation mode is switched to Manual during Automatic operation.

1. Operating Screen

1.1 Operation Screen



(1) Equipment Operation Mode (Changing Button)

1. Automatic Mode : Unit settings can only be changed from the initialized state. Operation state must be in automatic mode before automatic operation.

2. Manual Mode : To operate the equipment manually without automatic operation, the operation state must be in manual mode..

3. Automatic Operation : This mode should be used for automatic production. Automatic operation can only be operated through Automatic Mode. Manual adjustment and operation is not possible during automatic operation.

4. Equipment Stop : When equipment is stopped during operation, the mode is changed to the stop mode. After completion of the current cycle of operation, the equipment stops operation.

5. Initialization : Returns the equipment position to the initial position before automatic operation.

6. Safety Screen : Move to the safety screen [TOUCH SCREEN UNRESPONSIBLE]. (Use safety screen when working on equipment.)

(2) Unit Status Indication Window

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Location	SHEET MOLDING	INTERMEDIATE CONVEYOR	1ST SLOT	2ND SLOT	EAR MOLDING	OUTPUT CONVEYOR

(3) Estimate Time Window (Fabric Material)

Outer Fabric, Filter, and Inner Fabric Estimated Usage Time.

(4) Production Quantity and Operation Time Window

Day/Night Production : Weekly Basis : 8:30 ~ 20:30 , Nightly 20:30 ~ 8:30 Next Day

Estimated Production : Projected Day/Night estimated production without alarm stops and delays.

Production per Minute : Production quality based on 1 minute.

Equipment Operation Time and Shutdown Time : Projected start and shutdown time of equipment operation.

(5) Ultrasonic Heating and Molding Mode

Preheating Mode : Use/Disable Mode.

If the ultrasonic wave unit is not preheating when equipment is restarted after shutdown, the ultrasonic process is not performing properly. Stop and restart the preheating mode. After preheating the ultrasonic unit through the set timer, the equipment will operate normally.

(6) Ear Molding Remote Mode

Ear # Remote ON / OFF : EAR UNIT # REMOTE ON / OFF status can be checked through this menu. The operation will not be performed when any of the EAR REMOTE is on.

Discard Ear Material: Pressing the button for 2 seconds will release the clamps holding the respective EAR strap and discard material.

(7) Mode Status Check Window

Displays the mode currently in use. (EAR Subjoint Unit Disable Mode , Only EAR Subjoint Unit Operation Mode , Discharge Cylinder Disable Mode , Inverting Conveyor Disable Mode , Dry Run Mode, etc.)

(8) Changing Molding Automatic Speed

The speed of the main molding unit conveyor belt can be changed.

The production quantity per minute will change accordingly.

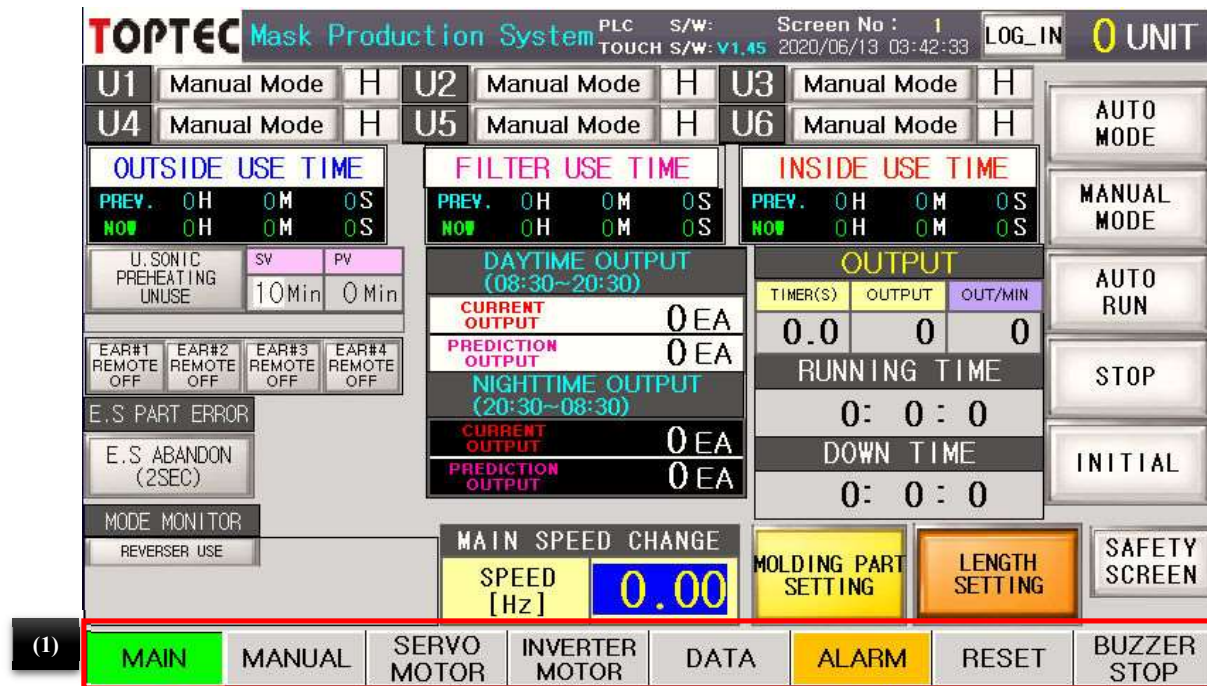
(9) Molding Setting

Navigate to the screen with mode require to set the material input.

Length BWD Setting

Navigate to the screen with mode settings for BWD Length Sensing Sensor (EAR).

1.2 Navigating the Screen

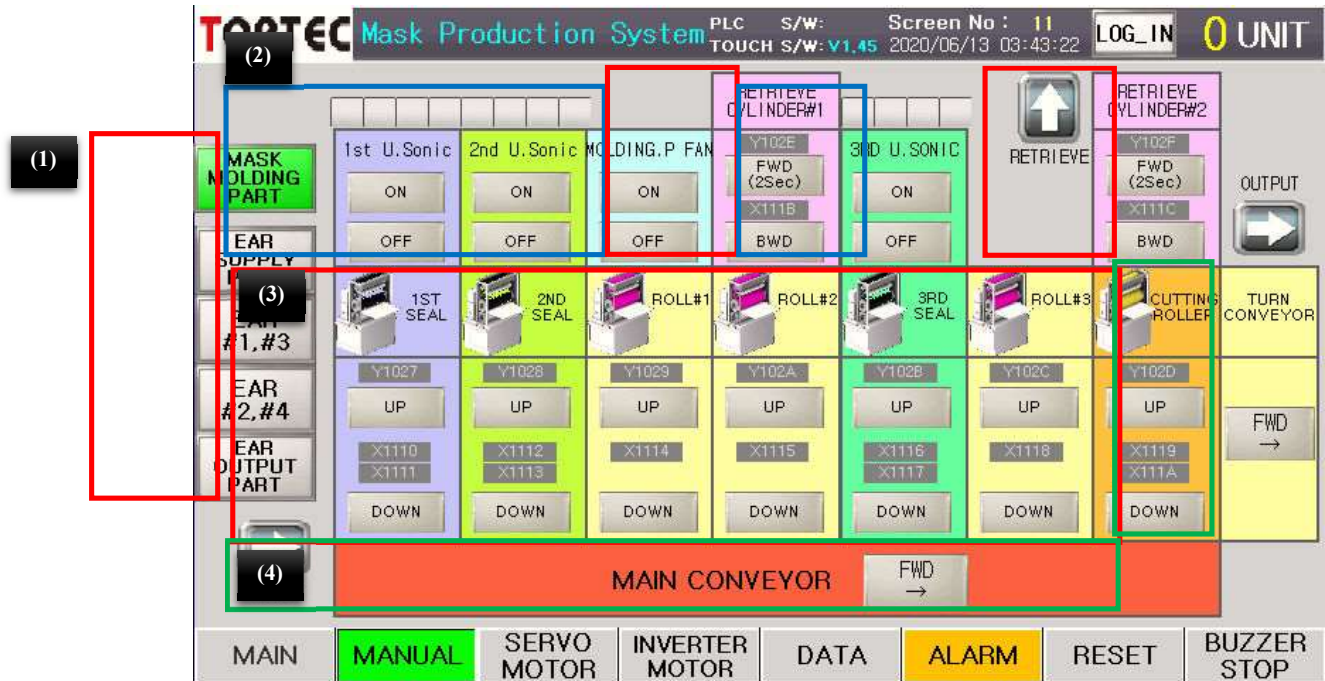


(1) Navigating the Screen

1. **Main** : Basic screen with functions required for automatic operation of the equipment.
2. **Manual** : Screen with manual operation after stopping the equipment (Cylinder UP/DOWN , Ultrasonic/Fan ON/OFF , Conveyor RUN/STOP).
3. **Servo Motor** : Nose Wire , 1ST SLOT , 2ND SLOT Axis Servo Operation.
4. **Inverter Motor** : MAIN Conveyor , TURN Unit Conveyor RUN/STOP and speed change functions.
5. **Data** : Automatic Operation Mode , Delay Settings , Drive Speed Change, and Equipment monitoring screen.
6. **Alarm** : Screen where operator can monitor current light/heavy alarm and view history.

2. MANUAL

2.1 MANUAL MASK MOLDING PART



(1) Navigating Location Manual Screen

1. **Mask Molding Part:** Navigate to MASK Molding Part Screen.
2. **Ear Supply Part :** Navigate to EAR Supply Part Screen.
3. **Ear #1 , #3 :** Navigate to EAR #1 , #3 Screen.
4. **Ear #2 , #4 :** Navigate to EAR #2 , #4 Screen.
5. **Ear Output Part :** Navigate to EAR Output Screen.

(2) Ultrasonic and FAN ON/OFF Function

On Button : Ultrasonic and Fan operation will turned on.

Off Button : Ultrasonic and Fan operation will turn off.

(3) Sealing and Cutting Roller UP/DOWN Function

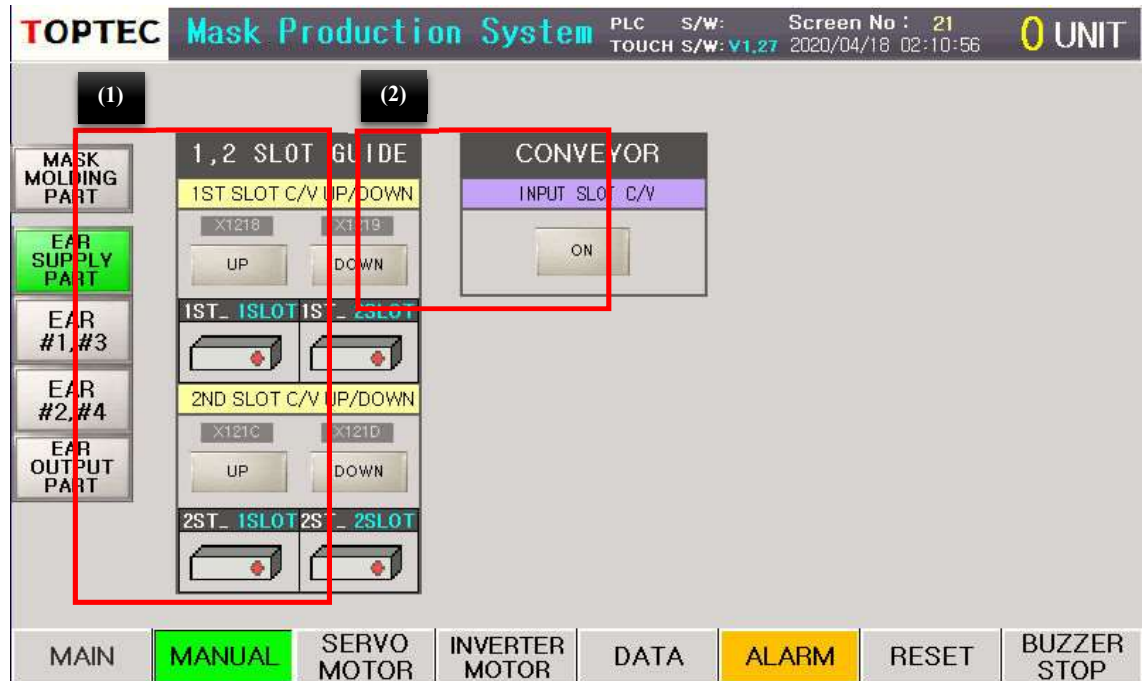
Up Button : Cylinder will operate in UP direction.

Down Button : Cylinder will operate in the DOWN direction.

(4) Conveyor Forward Rotation Function

Forward Button : AC motor will be rotated forward.

2.2 MANUAL EAR SUPPLY PART



(1) Slot 1,2 Cylinder Guide UP/DOWN Function

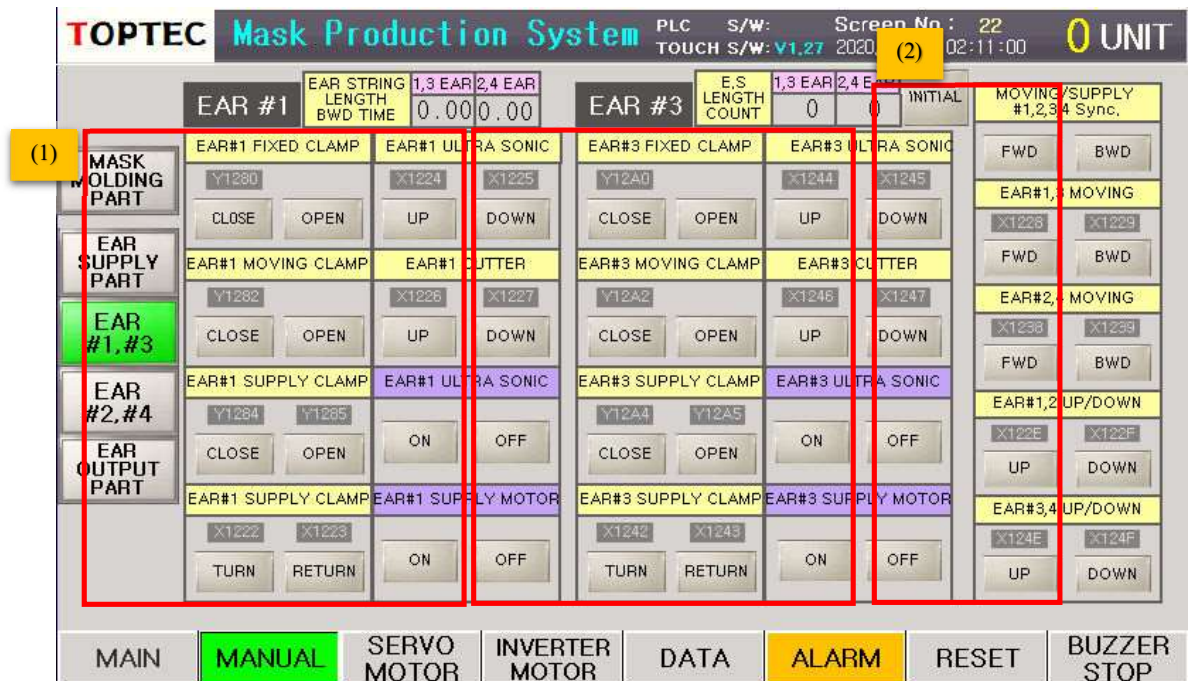
Up Button : Cylinder will be operated in the UP direction.

Down Button : Cylinder will be operated in the DOWN direction.

(2) Supply Slot Conveyor Motor ON/OFF Function

On Button : AC motor will be operated in the forward direction.

2.3 MANUAL EAR #1 ,3



(1) EAR #1

Ear Fixed Clamp : EAR Fixed CLAMP can be in CHUCK/UNCHUCK position.

Ear Moving Clamp : EAR MOVING CALMP can be in CHUCK/UNCHUCK position.

Ear Supply Clamp (CHUCK/ UNCHUCK) : EAR SUPPLY CLAMP can be in CHUCK/UNCHUCK position.

Ear Supply Clamp (TURN/ RETURN): EAR SUPPLY CALMP can be in TURN/RETURN position.

Ear Sonic : EAR SONIC can be in UP/DOWN position.

Ear Cutter : EAR CUTTER can be in UP/DOWN position.

Ear Ultrasonic: EAR Ultrasonic can be in ON/OFF position.

Ear Supply Motor : EAR SUPPLY Motor can be in ON/OFF position.

(2) Ear Common Moving / Supply

Moving / Supply #1,2,3,4 동시 구동 : EAR #1,2,3,4 MOVING Cylinder can be in FWD/BWD position.

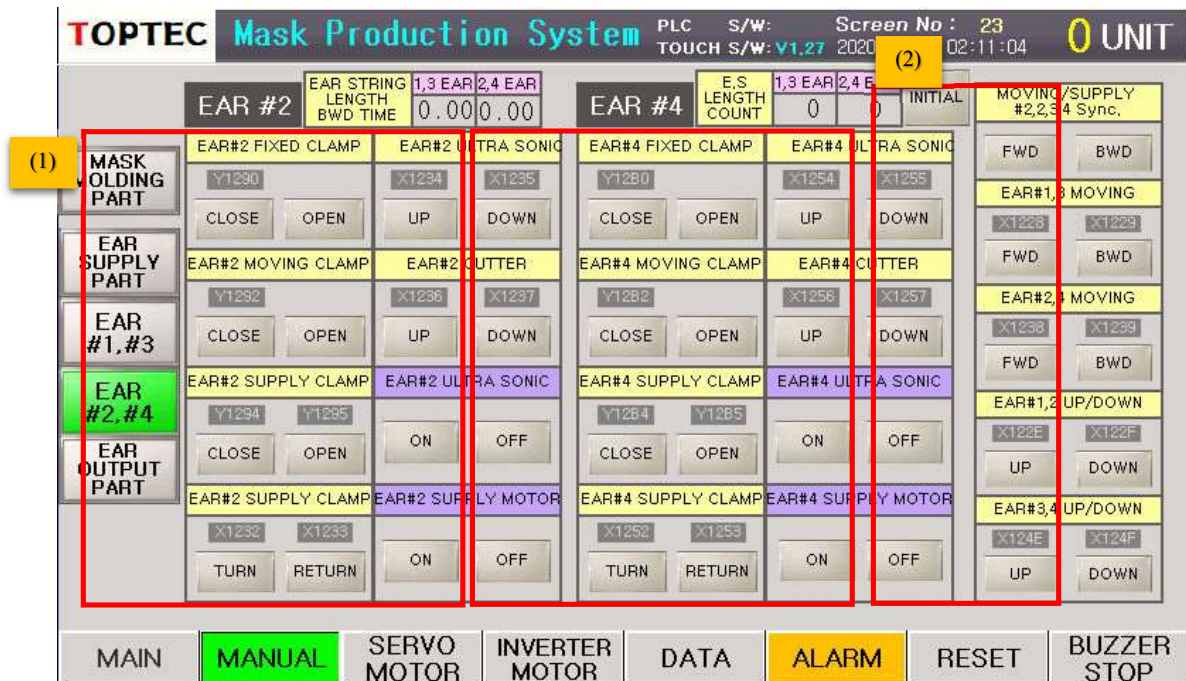
EAR #1, 3 Moving : EAR #1 ,3 MOVING Cylinder can be in FWD/BWD position.

EAR #2, 4 Moving : EAR #2 ,4 MOVING Cylinder can be in FWD/BWD position.

EAR #1, 2 Supply : EAR #1 ,2 SUPPLY Cylinder can be in UP/DOWN position.

EAR #3, 4 Supply : EAR #3 ,4 SUPPLY Cylinder can be in UP/DOWN position.

2.4 MANUAL EAR #2 ,4



(1) EAR #2

Ear Fixed Clamp : EAR Fixed CLAMP can be in CHUCK/UNCHUCK position.

Ear Moving Clamp : EAR MOVING CALMP can be in CHUCK/UNCHUCK position.

Ear Supply Clamp (CHUCK/ UNCHUCK) : EAR SUPPLY CLAMP can be in CHUCK/UNCHUCK position.

Ear Supply Clamp (TURN/ RETURN): EAR SUPPLY CALMP can be in TURN/RETURN position.

Ear Sonic : EAR SONIC can be in UP/DOWN position.

Ear Cutter : EAR CUTTER can be in UP/DOWN position.

Ear Ultrasonic : EAR Ultrasonic can be in ON/OFF position.

Ear Supply Motor : EAR SUPPLY Motor can be in ON/OFF position

(3) Ear Common Moving / Supply

Moving / Supply #1,2,3,4 Common Operation : EAR #1,2,3,4 MOVING Cylinder can be in FWD/BWD position.

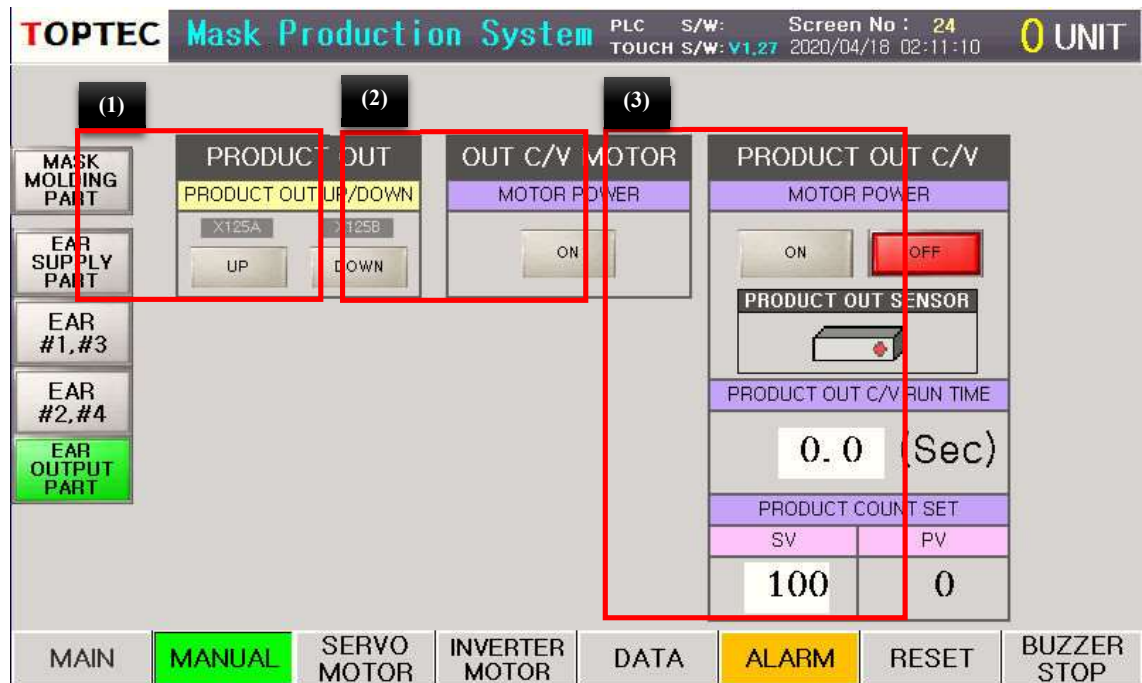
EAR #1, 3 Moving : EAR #1 ,3 MOVING Cylinder can be in FWD/BWD position.

EAR #2, 4 Moving : EAR #2 ,4 MOVING Cylinder can be in FWD/BWD position.

EAR #1, 2 Supply : EAR #1 ,2 SUPPLY Cylinder can be in UP/DOWN position.

EAR #3, 4 Supply : EAR #3 ,4 SUPPLY Cylinder can be in UP/DOWN position.

2.5 MANUAL EAR OUTPUT PART



(1) Finished Product UP/DOWN Function

Up Button: Cylinder will move to the UP position.

Down Button : Cylinder will move to the DOWN position.

(2) Output Conveyor Motor ON/OFF Function

On Button : AC motor will operate in the forwards direction.

(3) Finished Product Output Conveyor

1. Finished Product Output Conveyor Motor

On Button : AC motor will operate in the forwards direction.

2. Motor Delay Time Setting

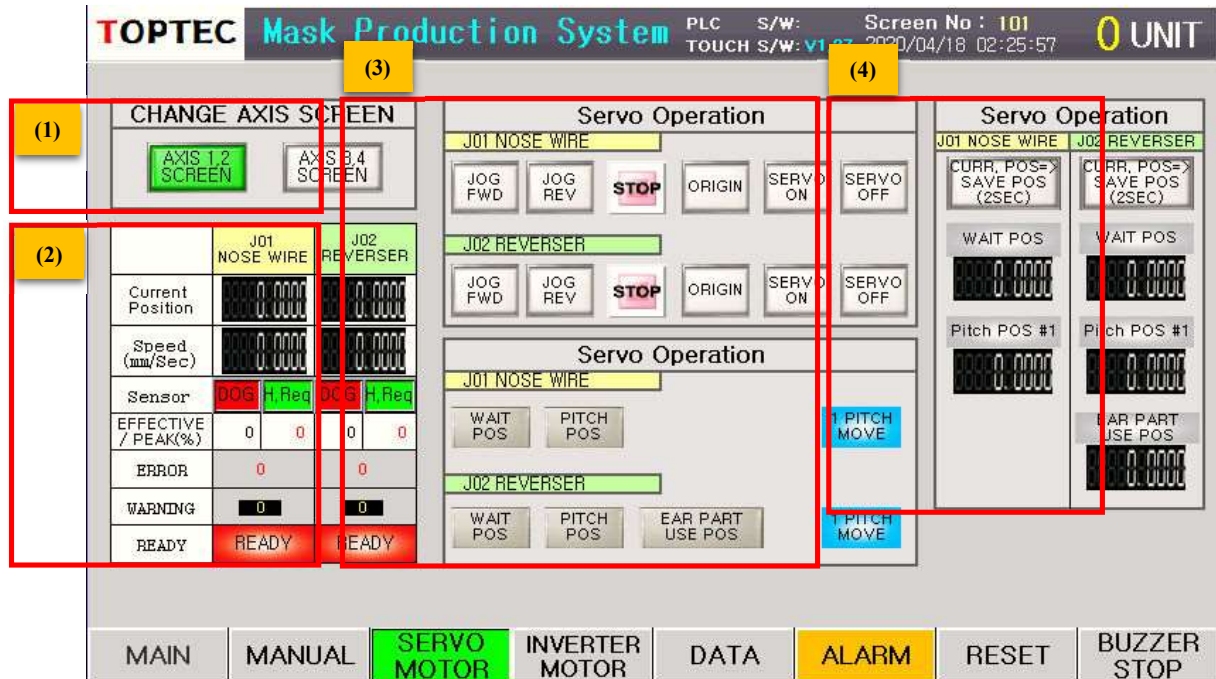
Operator can set the Delay Time of the conveyor motor after outputting the set quantity of finished products.

3. Product Set Count

The conveyor motor can be set to drive to a desired set quantity after outputting the set quantity.

3. SERVO MOTOR

3.1 J01 NOSE WIRE , J02 MODLING PART TURN



(1) CHANGE AXIS SCREEN

AXIS 1,2 SERVO SCREEN : Navigate to Axis 1, 2 Servo Screen.

AXIS 3,4 SERVO SCREEN : Navigate to Axis 3, 4 Servo Screen.

(2) SERVO AXIS STATUS WINDOW

CURRENT POSITION : Indicates the current position of each axis of the servo.

SPEED : Indicates the current speed of each axis of the servo.

SENSOR : Indicates the status of the Servo's DOG and its return to home position.

Effective/Peak : Displays the effective/peak load rate of the servo.

ERROR : Displays the error number of the servo.

WARNING : Displays the WARNING number of the servo.

READY : Displays the servo-ready status.

(3) Servo Operation # 1

JOG BUTTON : Performs a jog forward or jog reverse rotation.

STOP BUTTON : Issues a stop order on the axis.

ORIGIN BUTTON : Perform an initial state return on the axis.

SERVO ON : Servo power on.

SERVO OFF : Servo power off.

Servo Operation # 2**J01 NOSE WIRE**

STANDBY POS : Commands the JO1 axis to move to the STANDBY POS.

PITCH POS : Commands the JO1 axis to move to the PITCH POS..

1 PITCH POS : Commands the JO1 axis to move to the 1 PITCH POS.

J02 MOLDING PART TURN

STANDBY POS : Commands the JO2 axis to move to STANDBY POS.

PITCH POS : Commands the JO2 axis to move to the PITCH POS.

EAR Part Single POS : Commands the JO2 axis to move to EAR Part Single POS.

1 PITCH POS : Commands JO2 axis to move to 1 PITCH POS.

(4) Servo Operation # TEACHING**J01 NOSE WIRE**

Current Position => Teaching Value : Stores the JO1 CURRENT axis value as the position TEACHING value.

STANDBY POS : Operator can set the JO1 axis STANDBY position with a TEACHING value.

PITCH POS : Operator can set the JO1 axis PITCH position with a TEACHING value.

J02 MOLDIGN PART TURN

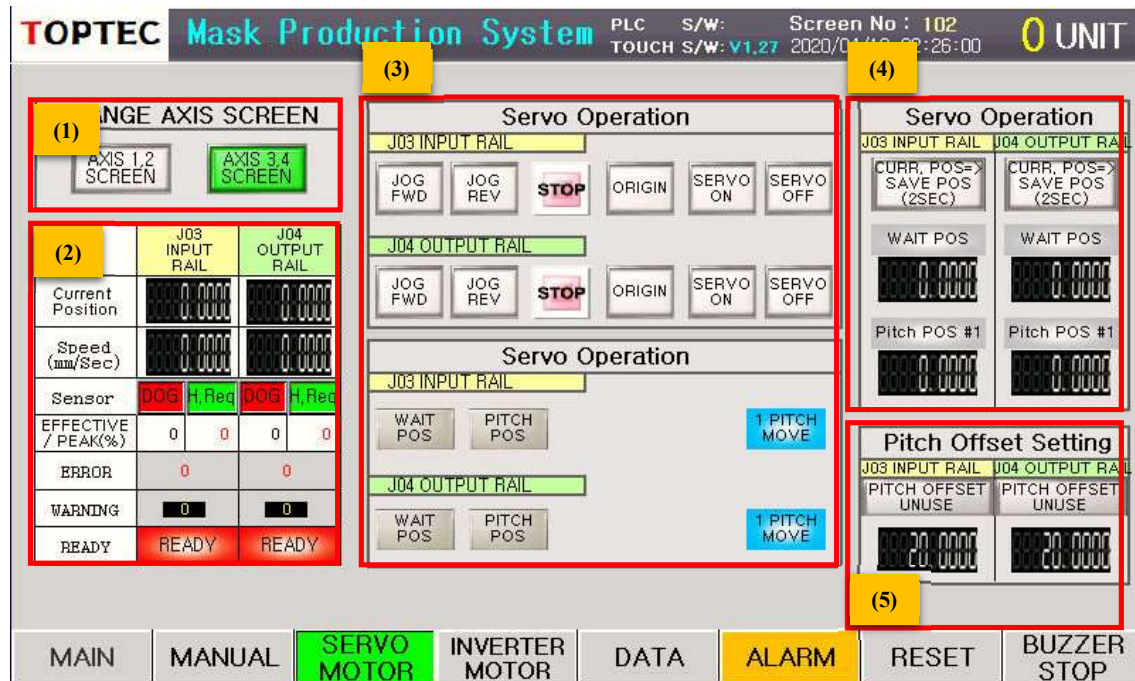
Current Position => Teaching Value : Stores the JO2 CURRENT axis value as the position TEACHING value.

STANDBY POS : Operator can set the JO2 axis STANDBY position with a TEACHING value.

PITCH POS : Operator can set the JO2 axis PITCH position with a TEACHING value.

EAR Part Single POS : Operator can set the JO2 axis EAR Part Single Position with a Teaching value.

3.2 J03 INPUT PITCH , J04 OUTPUT PITCH



(1) Navigating the Servo Axis Screen

Navigating Axis 1, 2 Servo Screen : Will navigate to the Axis 1, 2 Screen.

Navigating Axis 3, 4 Servo Screen : Will navigate to the Axis 3, 4 Servo Screen.

(2) SERVO AXIS STATUS WINDOW

CURRENT POSITION : Indicates the current position of each axis of the servo.

SPEED : Indicates the current speed of each axis of the servo.

SENSOR : Indicates the status of the Servo's DOG and its return to home position.

Effective/Peak : Displays the effective/peak load rate of the servo.

ERROR : Displays the error number of the servo.

WARNING : Displays the WARNING number of the servo.

READY : Displays the servo-ready status.

(5) Servo Operation # 1

JOG BUTTON : Performs a jog forward or jog reverse rotation.

STOP BUTTON : Issues a stop order on the axis.

ORIGIN BUTTON : Perform an initial state return on the axis.

SERVO ON : Servo power on.

SERVO OFF : Servo power off.

Servo Operation # 2

J03 INPUT PITCH

STANDBY POS : Commands the JO3 axis to move to STANDBY POS.

PITCH POS : Commands the JO3 axis to move to PITCHPOS.

1 PITCH POS : Commands the JO3 axis to move to 1 PITCH POS.

J04 OUTPUT PITCH

STANDBY POS : Commands the JO3 axis to move to STANDBY POS.

PITCH POS : Commands the JO3 axis to move to PITCHPOS.

1 PITCH POS : Commands the JO3 axis to move to 1 PITCH POS.

(3) Servo Operation # TEACHING

J03 INPUT PITCH

Current Position => Teaching Value : Stores the JO3 CURRENT axis value as the position TEACHING value.

STANDBY POS : Operator can set the JO3 axis STANDBY position with a TEACHING value.

PITCH POS : Operator can set the JO3 axis PITCH position with a TEACHING value.

J04 OUTPUT PITCH

Current Position => Teaching Value : Stores the JO4 CURRENT axis value as the position TEACHING value.

STANDBY POS : Operator can set the JO4 axis STANDBY position with a TEACHING value.

PITCH POS : Operator can set the JO4 axis PITCH position with a TEACHING value.

(4) PITCH OFFSET SETTING

J03 INPUT PITCH

PITCH OFFSET ENABLE/DISABLE : J03 Axis PITCH OFFSET can be Enabled/Disabled.

PITCH OFFSET SETTING VALUE : When using JO3 Axis PITCH OFFSET, 1 additional PITCH OFFSET setting is moved when starting the PITCH position.

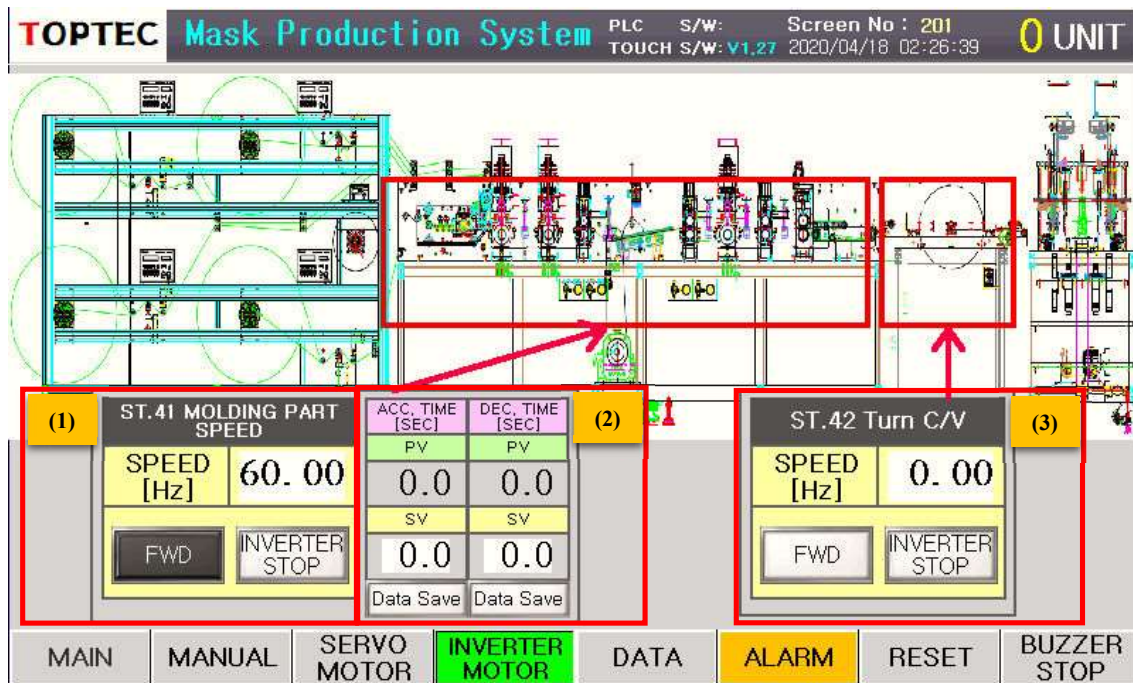
J04 OUTPUT PITCH

PITCH OFFSET ENABLE/DISABLE : J04 Axis PITCH OFFSET can be Enabled/Disabled.

PITCH OFFSET SETTING VALUE : When using JO4 Axis PITCH OFFSET, 1 additional PITCH OFFSET setting is moved when starting the PITCH position.

4. INVERTER

4.1 MOLDING PART MAIN INVERTCONVEYOR



(1) ST.41 Molding Part Auto Speed

Speed [Hz] : Operator can change the speed of the MAIN conveyor belt of the molding part.

Forward Button : Conveyor motor will rotate in the forward direction.

(2) Acceleration/Deceleration Time Setting Value

Acceleration Time [Sec] : Displays the current acceleration time. Enter the desired acceleration value and click the Data Save button to change settings.

Deceleration Time [Sec] : Displays the current deceleration time. Enter the desired deceleration value and click the Data Save button to change settings.

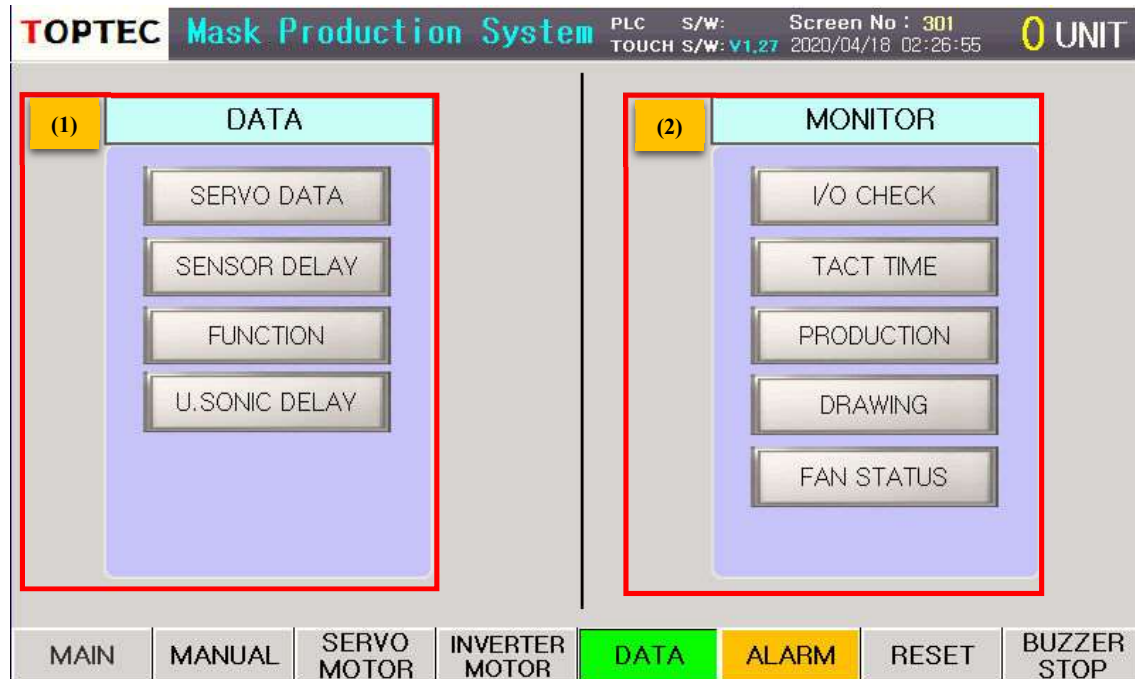
(3) ST.42 Turn Conveyor

Speed [Hz] : Operator can change the speed of the TURN conveyor belt.

Forward Button : Conveyor motor will rotate in the forward direction

5. DATA

Data Default Screen



(1) **Data** : Required Mode and Delay for equipment operation and alarm settings (Detailed information on the next page).

(2) **Monitor** : Features required for facility monitoring. (Detailed information on Table 6.1)

5.1 SERVO DATA

TOPTEC

Mask Production System

PLC S/W: Screen No : 302
 TOUCH S/W: V1.27 2020/04/18 02:27:07

0 UNIT

SERVO DATA

SET VALUE	J01 NOSE WIRE	J02 REVERSER	J03 INPUT RAIL	J04 OUTPUT RAIL	(1)
Acc Time (mm/sec)	0.00	0.00	0.00	0.00	
Dec Time (mm/sec)	0.00	0.00	0.00	0.00	
JOG SPEED (mm/sec)	0.00	0.00	0.00	0.00	
RUN SPEED (mm/sec)	0.00	0.00	0.00	0.00	
OPER LOAD SET (%)	0.00	0.00	0.00	0.00	

MAIN

MANUAL

SERVO
MOTOR

INVERTER
MOTOR

DATA

ALARM

RESET

BUZZER
STOP

(3) Servo Data

Acc Time (mm/sec) : Setting the USER acceleration time for each servo.

Dec Time (mm/sec) : Setting the USER deceleration time for each servo.

Jog Speed (mm/sec) : Setting the JOG operation speed of each servo.

Run Speed (mm/sec) : Setting the startup speed of each servo during automatic operation.

Operation Load Setting (%) : Setting the USER alarm rate for each servo.

5.2.1 MOLDING SENSOR DELAY TIME

TEC Mask Production System PLC S/W: Screen No : 305 0 UNIT
TOUCH S/W: V1.27 2020/04/18 02:27:19

(1) MOLDING SENSOR DELAY (2) SENSOR DELAY TIME

	SENSOR UNIT	SENSING WAIT TIME	Alarm Wait Time		SENSOR UNIT	SENSING WAIT TIME	Alarm Wait Time
MOLDING CYLINDER DELAY	#1 MATERIAL REMAIN CHECK	0.0			1st U.SONIC ALL FAN READY	0.0	0.0
SLOT #1,2 DELAY	#2 MATERIAL REMAIN CHECK	0.0			2nd U.SONIC ALL FAN READY	0.0	0.0
	#3 MATERIAL REMAIN CHECK	0.0			3rd U.SONIC ALL FAN READY	0.0	0.0
					1,2,3 U.SONIC ALL FAN READY	0.0	0.0
EAR #1 DELAY	#1 MATERIAL EMPTY CHECK	0.0	0.0				
EAR #2 DELAY	#2 MATERIAL EMPTY CHECK	0.0					
	#3 MATERIAL EMPTY CHECK	0.0					
EAR #3 DELAY	WIRE DETECT SENSOR	0.0					
EAR #4 DELAY	WIRE CUT START SENSOR	0.0					
COMMON DELAY	WIRE UNIT CYCLE STOP	0.0					

MAIN MANUAL SERVO MOTOR INVERTER MOTOR DATA ALARM RESET BUZZER STOP

(1) Navigating Sensor Delay Time Window

Molding Sensor Delay Time : Displays the Molding Sensor Delay Time Setting Window.

Molding Cylinder Sensor Delay Time : Displays the Cylinder Sensor Delay Time Setting Window.

Slot #1,2 Sensor Delay Time : Displays the SLOT #1,2 Sensor Delay Time Setting Window.

Ear #1 Sensor Delay Time : Displays the EAR #1 Sensor Delay Time Setting Window.

Ear #2 Sensor Delay Time : Displays the EAR #2 Sensor Delay Time Setting Window.

Ear #3 Sensor Delay Time : Displays the EAR #3 Sensor Delay Time Setting Window.

Ear #4 Sensor Delay Time : Displays the EAR #4 Sensor Delay Time Setting Window.

Ear Common Delay Time : Displays the EAR Common Sensor Delay Time Setting Window.

(2) Sensor Delay Time Setting

Motion detection WAIT TIME : Adjust the Motion Detection Sensor delay time.

Alarm WAIT TIME : Adjust the Alarm delay time for each Sensor.

5.2.2 MOLDING CYLINDER SENSOR DELAY TIME

TOPTEC Mask Production System PLC S/W: Screen No : 306
TOUCH S/W: V1.27 2020/04/18 02:27:29 0 UNIT

CYLINDER DELAY TIME (1)

CYLINDER UNIT	Action (1/2)	Action 1 Wait Time	Action 2 Wait Time	Action 1 Alarm Time	Action 2 Alarm Time
1,2,3 SEALING CYLINDER	UP/DOWN	0.0	0.0	0.0	0.0
1,2,3 ROLLER CYLINDER	FWD/BWD	0.0	0.0	0.0	0.0
CUTTER ROLLER	FWD/BWD	0.0	0.0	0.0	0.0
#1 RETRIEVE CYLINDER	UP/DOWN	0.0	0.0	0.0	0.0
#2 RETRIEVE CYLINDER	UP/DOWN	0.0	0.0	0.0	0.0
1st SLOT CYLINDER	UP/DOWN	0.0	0.0	0.0	0.0
2nd SLOT CYLINDER	UP/DOWN	0.0	0.0	0.0	0.0
OUTPUT CYLINDER	UP/DOWN	0.0	0.0	0.0	0.0

MOLDING SENSOR DELAY
 MOLDING CYLINDER DELAY
 SLOT #1,2 DELAY
 EAR #1 DELAY
 EAR #2 DELAY
 EAR #3 DELAY
 EAR #4 DELAY
 COMMON DELAY

MAIN MANUAL SERVO MOTOR INVERTER MOTOR DATA ALARM RESET BUZZER STOP

(1) Cylinder Sensor Delay Time Setting

Cylinder Unit : Indicates the location of each cylinder sensor.

Action (1/2) : Indicates the position of each cylinder sensor.

Action 1 WAIT TIME : Adjust the ACTION 1 position detection delay time for each sensor.

Action 2 WAIT TIME : Adjust the ACTION 2 position detection delay time for each sensor.

Action 1 Alarm WAIT TIME : Adjust the ACTION 1 position detection delay time for each sensor.

Action 2 Alarm WAIT TIME : Adjust the ACTION 1 position detection delay time for each sensor.

5.2.3 EAR COMMON DELAY TIME

TOPTEC Mask Production System		PLC S/W: Screen No : 312		TOUCH S/W: v1.27 2020/04/18 02:27:42		0 UNIT	
SENSOR DELAY (1)							
MOLDING SENSOR DELAY	CYLINDER UNIT	Action	Wait Time	S/W	Action	Wait Time	S/W
MOLDING CYLINDER DELAY	COMM EAR FIXED CLAMP	CLOSE	0.0	Data Input	OPEN	0.0	Data Input
SLOT #1,2 DELAY	COMM EAR MOVING CLAMP	CLOSE	0.0	Data Input	OPEN	0.0	Data Input
EAR #1 DELAY	COMM EAR SUPPLY CLAMP	CLOSE	0.0	Data Input	OPEN	0.0	Data Input
EAR #2 DELAY	COMM EAR SUPPLY	TURN	0.0	Data Input	RETURN	0.0	Data Input
EAR #3 DELAY	COMM EAR U.SONIC	UP	0.0	Data Input	DOWN	0.0	Data Input
EAR #4 DELAY	COMM EAR CUTTER	UP	0.0	Data Input	DOWN	0.0	Data Input
COMMON DELAY	COMM EAR MOVING	FWD	0.0	Data Input	BWD	0.0	Data Input
	COMM EAR SUPPLY	UP	0.0	Data Input	DOWN	0.0	Data Input
MAIN	MANUAL	SERVO MOTOR	INVERTER MOTOR	DATA	ALARM	RESET	BUZZER STOP

(1) Cylinder Sensor Delay Time Setting

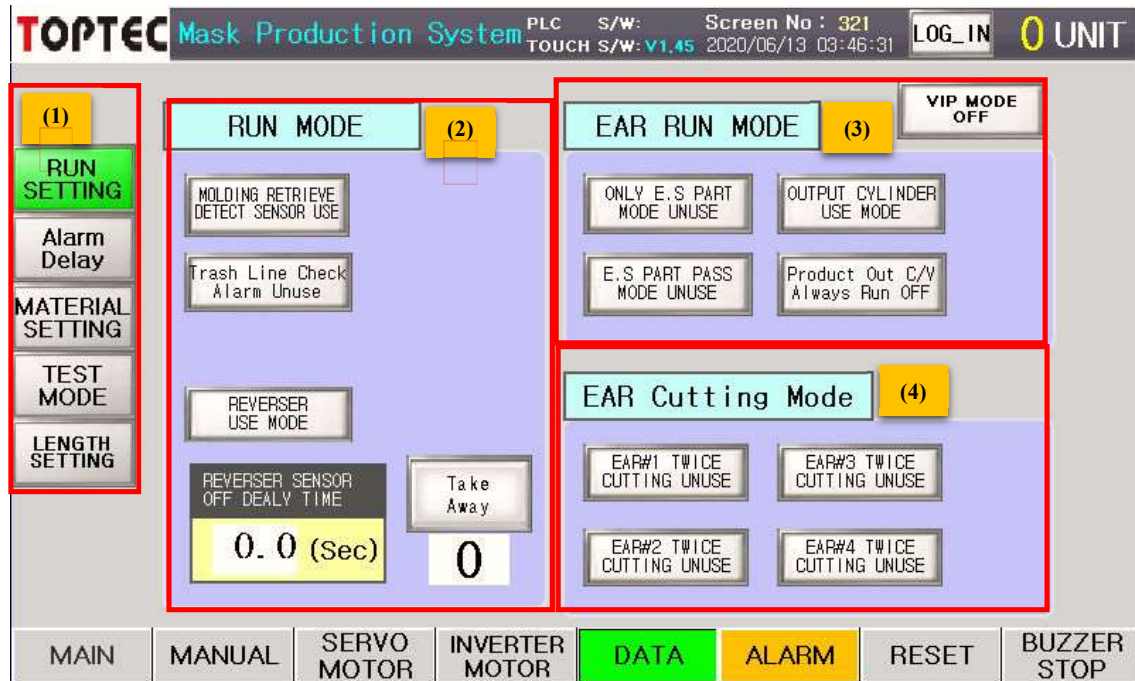
Cylinder Unit : Indicates the location name of each cylinder sensor.

Action : Indicates the position of each cylinder sensor.

Wait Time : Adjust the common EAR #1,2,3,4 position sensor delay settings.

S/W Data Input: Adjust the common EAR #1,2,3,4 location sensor delay settings.

5.4.1 OPERATION SETTINGS



(1) Navigating the Run Settings Screen

Run Setting Screen : Navigates to the run mode setting screen.

Alarm Delay Setting Screen : Navigates to the operation delay setting screen.

Input Material Setting Screen : Navigates to the function screen necessary for input material setting.

TEST MODE Screen : Navigates to the function screen necessary for test runs (Dry Run and Continuous Cutting Mode).

Length BWD SETTING Screen : Navigates to the function screen for setting the length of EAR part BWD.

(2) Run Mode Settings

1. **Disposal Material Sensor Detection Enable/Disable:** The sensor detects if the discarded material after the mask cutting is connected. In the case of disconnection, a heavy alarm will be activated to stop the operation of equipment
2. **Material Curling Detection Sensor Enable/Disable:** The sensor detects any entanglement of discarded material in the system. In the case of entanglement, a heavy alarm will be activated to stop the operation of the equipment.
3. **Inverting Conveyor Enable/Disable:** Using the TURN servo of the JO2 Molding Axis, the product will be flipped over a 180° motion.

4. **TURN SENOSOR DETECTION OFF Delay Time:** In the use of Inverting Conveyor, the OFF Delay counter value will be reached before flipping the conveyor.
5. **Forced Discharge :** When using Forced Discharge Mode, the equipment will automatically will discharge the number of set units equal to the counter value after the EAR attachment process. Each product will be discharge in slot units of 2.

(3) EAR OPERATION MODE SETTINGS

1. **Ear Attachment Pass Mode ENABLE/DISABLE :** When using the PASS Mode, the material will progress through the conveyor without the EAR attachment process.
2. **Ear Molding Only Mode MODE ENABLE/DISABLE :** When using the EAR Molding Only ENABLE Mode, the material skip through the molding procedure and proceed with the TURN conveyor and EAR attachment process.
3. **Output Cylinder ENABLE/DISABLE :** When using EAR OUTPUT CYLINDER ENABLE Mode, the lowering cylinder will lower the finished product to a transferring conveyor system.
4. **Product Output C/V ENABLE/DISABLE :** When using C/V PRODUCT OUTPUT, the C/V of finished product is always operated regardless of product counter value.

(4) EAR Cutting Mode

1. **Ear#1 Double Cutting ENABLE/DISABLE :** When using EAR#1 DOUBLE CUTTING, the EAR straps will be cut in a double cutting action.
2. **Ear#2 Double Cutting ENABLE/DISABLE :** When using EAR#2 DOUBLE CUTTING, the EAR straps will be cut in a double cutting action.
3. **Ear#3 Double Cutting ENABLE/DISABLE :** When using EAR#3 DOUBLE CUTTING, the EAR straps will be cut in a double cutting action.
4. **Ear#4 Double Cutting ENABLE/DISABLE :** When using EAR#4 DOUBLE CUTTING, the EAR straps will be cut in a double cutting action.

5.4.1 ALARM DELAY SETTINGS



(1) OPERATION ALARM DELAY TIME

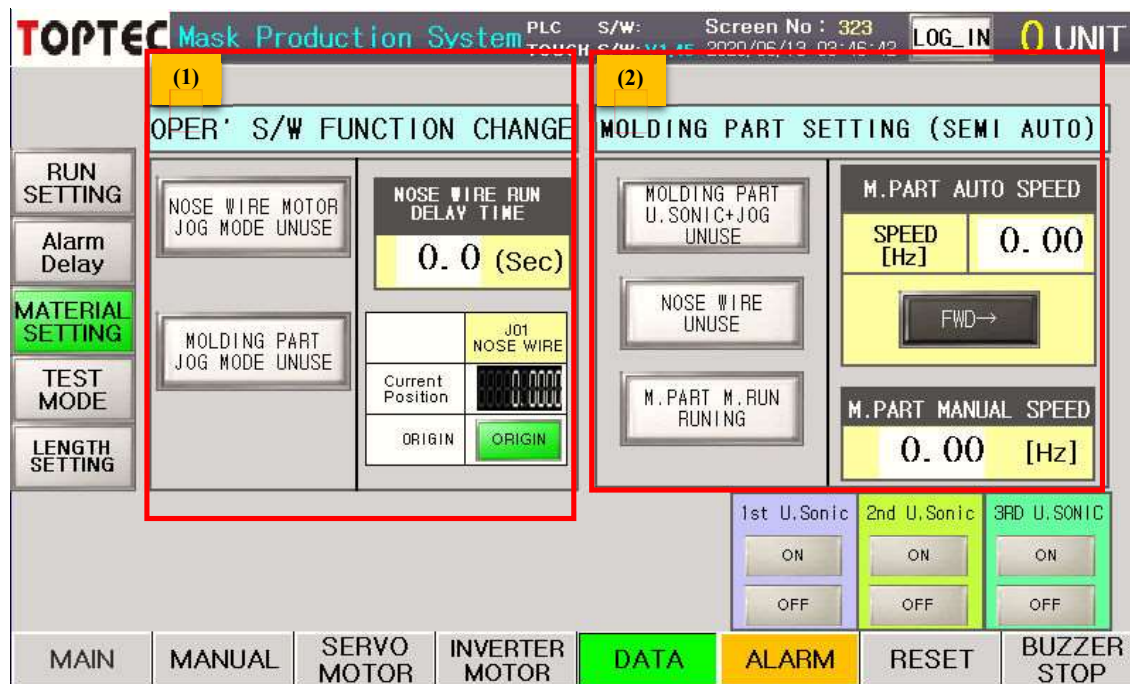
- TURN C/V Product Abnormality Detection Alarm :** The TURN conveyor Product Abnormality Detection Alarm will trigger an alarm when the product is in the position in the transfer line for more than the set amount of time.
- TURN REVERSE => 1st SLOT Detection Alarm:** The 1st SLOT DETECT Alarm will trigger when the TURN Conveyor transfers the product but 1st SLOT DETECT Sensor fails to detect the product for more than the set amount of time
- 1SLOT#1 => Pitch Movement 1st SLOT#2 Product Detection Alarm :** The 1st SLOT#2 Product Detection Alarm will trigger when product is transferred through the 1st SLOT#1 sensor but the 1st SLOT#2 fails to detect a product for more than the set amount time.
- 1SLOT => 2SLOT Alarm :** The 2nd SLOT Alarm will trigger when product is transferred through the 1st SLOT Alarm but 2nd SLOT fails to detect a product for more than the set amount of time.
- Roof Sensor Abnormality Alarm when pulling ear strap:** The Roof Sensor Abnormality Alarm will trigger when the upper ear strap detection sensor fails to detect strap after ear pulling movement for more than the set amount of time.

6. **Roof Sensor Abnormality Alarm when releasing ear strap:** The Roof Sensor Abnormality Alarm will trigger when lower ear strap sensor fails to detect strap after releasing of ear strap for more than the set amount of time.

(2) ALARM SETTINGS

1. **Nose Wire Detection Abnormality Alarm:** The Nose Wire Detection Abnormality Alarm will trigger when Nose Wire Detection Sensor continuously fails to detect nose wire.

5.4.2 INPUT MATERIAL SETTINGS



(1) Operator Switch Function Change

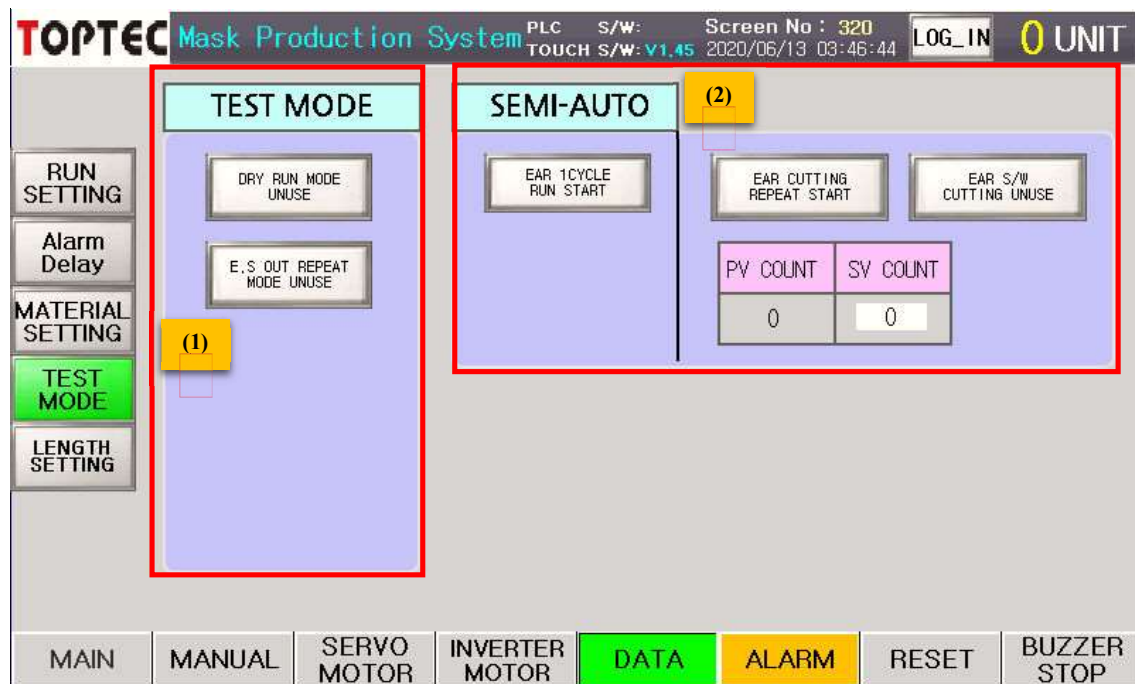
1. **Nose Wire Motor Jog Mode Enable/Disable:** When enabling the Nose Wire Motor Jog Mode, the operator can control the position of the nose wire (forwards/backwards jog) using the switch box in front of main molding conveyor.
2. **Fabric Jog Mode Enable/Disable:** When enabling the Fabric Jog Mode, the operator can control the position of the fabric (forwards/backwards jog) using the switch box in front of main molding conveyor.

(2) Molding Part Setting

1. **Molding Part Ultrasonic + Jog Enable/Disable :** When enabling Molding Part U. Sonic + Jog Mode, the Ultrasonic Molding Part #1,2,3 will normally operate during manual molding operation.
2. **Nose Wire Enable/Disable :** When enabling Nose Wire Mode, the Nose Wire will normally operate during manual molding operation.
3. **Molding Part Manual Operation:** This function is primarily used for the initial fabric insertion and settings. This function enables the Molding Part Motor to operate normally when fabric is detected regardless of other interlock conditions.

4. **Molding Part Manual Speed** : The Manual Operation will be operated at the set speed.

5.4.3 TEST MODE



(1) TEST MODE

1. **Dry Run Mode Enable/Disable** : The Dry Run Mode allows the equipment to operate normally without molding parts (fabric, nose wire, ear straps) for simulation and inspection on servo, cylinder, conveyor, and sensor operations.
2. **Continuous Ear Attachment Mode Enable/Disable** : The Continuous Ear Attachment Mode allows for simulation and inspection on ear strap length and strap attachment reliability.

(2) SEMI-AUTO

1. **Ear 1 Cycle Operation Start** : This function will operate one cycle of Ear 1 cutting and attachment.
2. **Ear Cutting Repeat Start** : This function will only operate the Ear Cutting motion (no ear attachment motion.)
3. **Ear S/W Cutting Enable/Disable** : When enabling the Ear S/W Cutting Mode, the function of the Start/Stop control box (in front of ear attachment system) can be changed to Ear Cutting repeat Start/Stop.

5.4.4 LEGNTH BWD SETTING



(1) Length Sensor BWD TIME

1. **1,3 Ear Timer** : The length sensor detects the time it takes for 1, 3 Ear Moving Clamp to move to the BWD position.
2. **2,4 Ear Timer** : The length sensor detects the time it takes for 2, 4 Ear Moving Clamp to move to the BWD position.

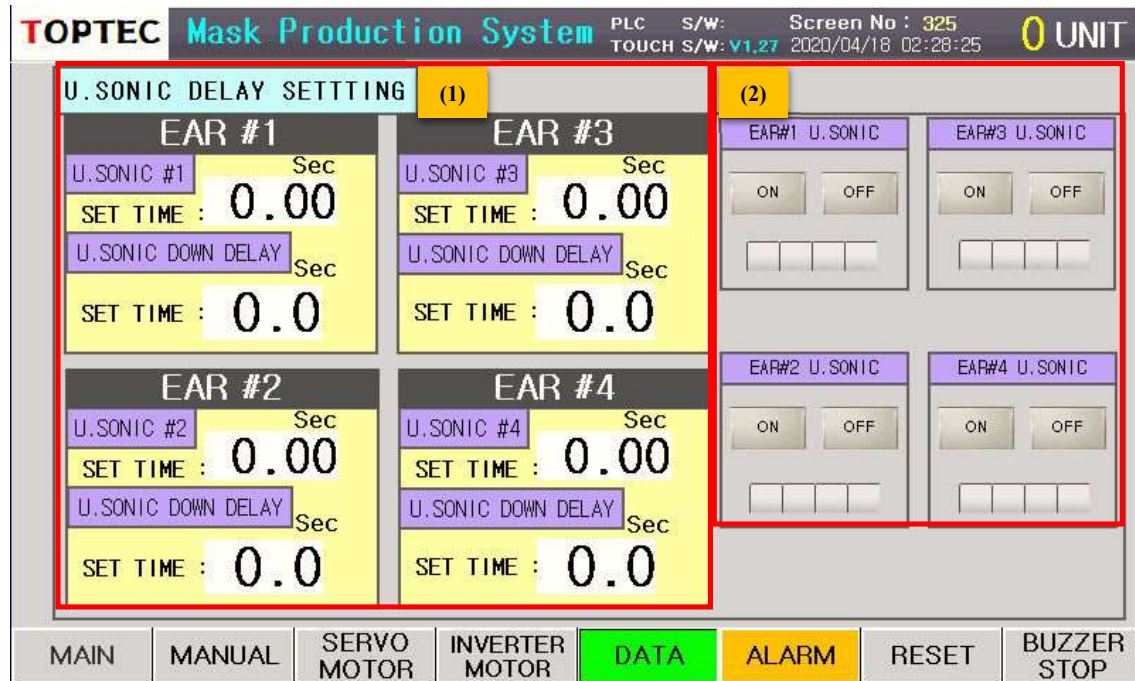
(2) Length Sensor Detection Count

1. **1,3 Ear Length Count** : The detected length value when 1,3 EAR MOVING CLAMP moves to the BWD position.
2. **2,4 Length Count** : The detected length value when 2,4 EAR MOVING CLAMP moves to BWD position.

(3) Moving/Supply #1,2,3,4 Synchronization

1. **FWD** : Ear #1,2,3,4 Moving Clamp cylinder will be operated to the FWD position.
2. **BWD** : Ear #1,2,3,4 Moving Clamp cylinder will be operated to the BWD position.
3. **INITIAL**: The Ear Length detection length can be initialized.

5.5 ULTRASONIC DELAY SETTING



(4) Ultrasonic Delay Time Setting

Ultrasonic Delay Time Setting: The operator can set each Ear Ultrasonic Delay Time.

Sonic Down Delay Time Setting: The operator can set the press time for each Ear Ultrasonic system.

(5) Ear Ultrasonic

On Button : The Ultrasonic operation will be turned on.

Off Button : The Ultrasonic operation will be turned off.

6. MONITOR

6.1.1 INPUT I/O CHECK



(1) **Navigating to Input I/O Screen:** Operator can navigate to input I/O monitoring screen.

Navigating to Output I/O Screen: Operator can navigate to output I/O monitoring screen.

(2) Each Tab will navigate to the digital input window.

(3) The screen displays the status, number and name of digital input.

6.1.2 OUPUT I/O CHECK

TOPTEC Mask Production System PLC S/W: Screen No : 361
TOUCH S/W: V1.27 2020/04/18 02:29:06 0 UNIT

(1) INPUT I/O
OUTPUT I/O

(2) Y1020~Y103F
Y1260~Y127F
Y1280~Y129F
Y12A0~Y12BF
Lamp,BUZZER CHECK

(3)

Y1020	TOUCH SCREEN POWER ON S/W	Y1030	1st ULTRASONIC ON
Y1021	TOUCH SCREEN POWER OFF S/W	Y1031	2nd ULTRASONIC ON
Y1022	TOUCH#1,2 START S/W	Y1032	3rd ULTRASONIC ON
Y1023	TOUCH#1,2 STOP S/W	Y1033	SPARE
Y1024	MAIN POWER MC ON	Y1034	MOLDING FAN #3 ON
Y1025	MOLDING FAN #1, 2 ON	Y1035	TOWER LAMP RED
Y1026	TOUCH SCREEN EMERGENCY STOP	Y1036	TOWER LAMP YELLOW
Y1027	1st SEALING CYLINDER UP/DOWN SOL	Y1037	TOWER LAMP GREEN
Y1028	2nd SEALING CYLINDER UP/DOWN SOL	Y1038	MAIN C/V JOG +
Y1029	ROLLER#1 CYLINDER UP/DOWN SOL	Y1039	MAIN C/V JOG -
Y102A	ROLLER#2 CYLINDER UP/DOWN SOL	Y103A	RETRIEVE #2 EMERGENCY STOP
Y102B	3rd SEALING CYLINDER UP/DOWN SOL	Y103B	
Y102C	ROLLER#3 CYLINDER UP/DOWN SOL	Y103C	BUZZER #1
Y102D	CUTTER CYLINDER UP/DOWN SOL	Y103D	BUZZER #2
Y102E	RETRIEVE CYLINDER#1 FWD/BWD SOL	Y103E	BUZZER #3
Y102F	RETRIEVE CYLINDER#2 FWD/BWD SOL	Y103F	BUZZER #4

MAIN MANUAL SERVO MOTOR INVERTER MOTOR DATA ALARM RESET BUZZER STOP

(1) **Navigating to Input I/O Screen:** Operator can navigate to input I/O monitoring screen.

Navigating to Output I/O Screen: Operator can navigate to output I/O monitoring screen.

(2) Each Tab will navigate to the digital input window.

(3) The screen displays the status, number and name of digital input.

6.2 TAKT TIME

TOPTEC

Mask Production System

PLC S/W:

TOUCH S/W: V1.27

Screen No : 371

2020/04/18 02:29:31

0 UNIT

(1)

ALL Tact Time			
1	0.0	11	0.0
2	0.0	12	0.0
3	0.0	13	0.0
4	0.0	14	0.0
5	0.0	15	0.0
6	0.0	16	0.0
7	0.0	17	0.0
8	0.0	18	0.0
9	0.0	19	0.0
10	0.0	20	0.0

Average Tact Time	(2)
0.0 (Sec)	

MAIN

MANUAL

SERVO MOTOR

INVERTER MOTOR

DATA

ALARM

RESET

BUZZER STOP

(1) **All Takt Time** : After the production of one unit, the takt time is counted until the production of the next unit.

(2) **Average Takt Time** : The average takt time is the mean of 20 values of All Takt Time.

6.3 PRODUCTION

TOPTEC Mask Production System PLC S/W: Screen No : 380
TOUCH S/W: v1.27 2020/04/18 02:29:50 0 UNIT

(1)

DAYTIME		NIGHTTIME		DAILY OUTPUT	DAYTIME	NIGHTTIME
08:30~09:30	0	20:30~21:30	0	TODAY	0	0
09:30~10:30	0	21:30~22:30	0	-1 DAY	0	0
10:30~11:30	0	22:30~23:30	0	-2 DAY	0	0
11:30~12:30	0	23:30~24:30	0	-3 DAY	0	0
12:30~13:30	0	24:30~01:30	0	-4 DAY	0	0
13:30~14:30	0	01:30~02:30	0	-5 DAY	0	0
14:30~15:30	0	02:30~03:30	0	-6 DAY	0	0
15:30~16:30	0	03:30~04:30	0	DAILY OUTPUT(DAY+NIGHT) TODAY 0 -1 DAY 0 -2 DAY 0 -3 DAY 0 -4 DAY 0 -5 DAY 0 -6 DAY 0		
16:30~17:30	0	04:30~05:30	0			
17:30~18:30	0	05:30~06:30	0			
18:30~19:30	0	06:30~07:30	0			
19:30~20:30	0	07:30~08:30	0			
PREDICTION OUTPUT/Min SETTING TIMER PREDICTION OUTPUT TIMER PREDICTION OUTPUT QUANTITY/Min SV 0.00 SEC 0.00 SEC 0 EA				TODAY'S OUTPUT RESET (2SEC) (2)		

MAIN MANUAL SERVO MOTOR INVERTER MOTOR DATA ALARM RESET BUZZER STOP

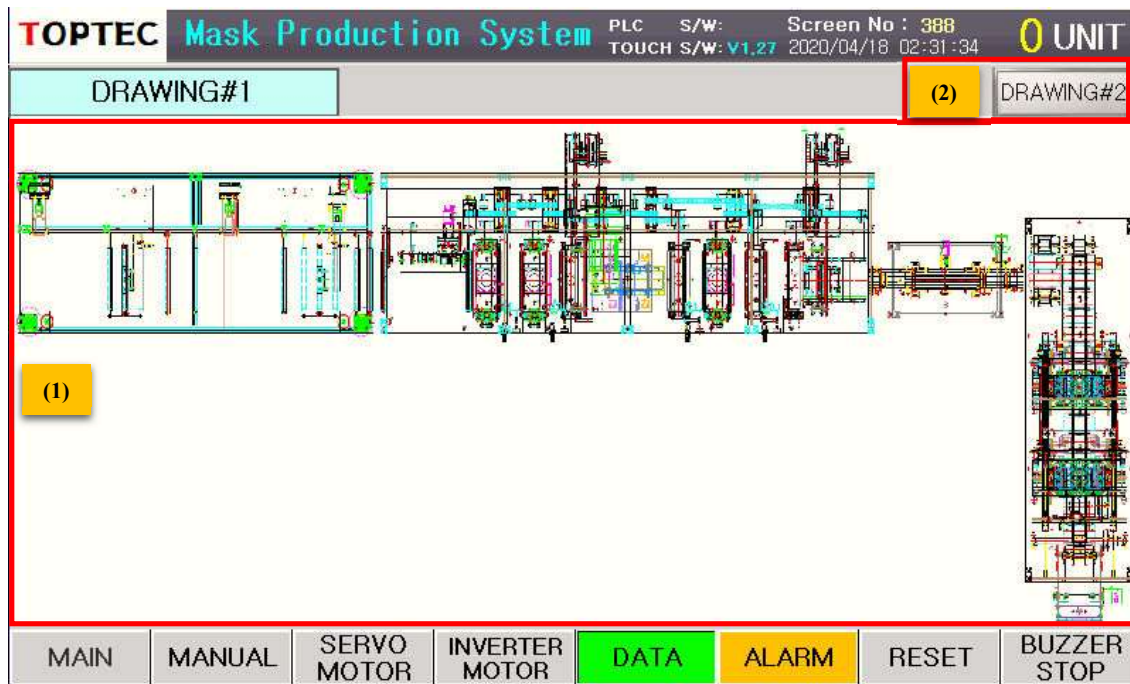
- (1) **Daytime/Nighttime Production** : The production amount is calculated for each hour of production during the daytime/nighttime.

Estimated Production per Minute : After adjusting the production output quantity per minute setting, the predicted time for each production cycle is calculated.

- (2) **Daily Production** : The daytime and nighttime production can be monitored from the current day to the previous 6 days.

Current Day Production Initialization (2 SEC) : This function resets the current day's production record.

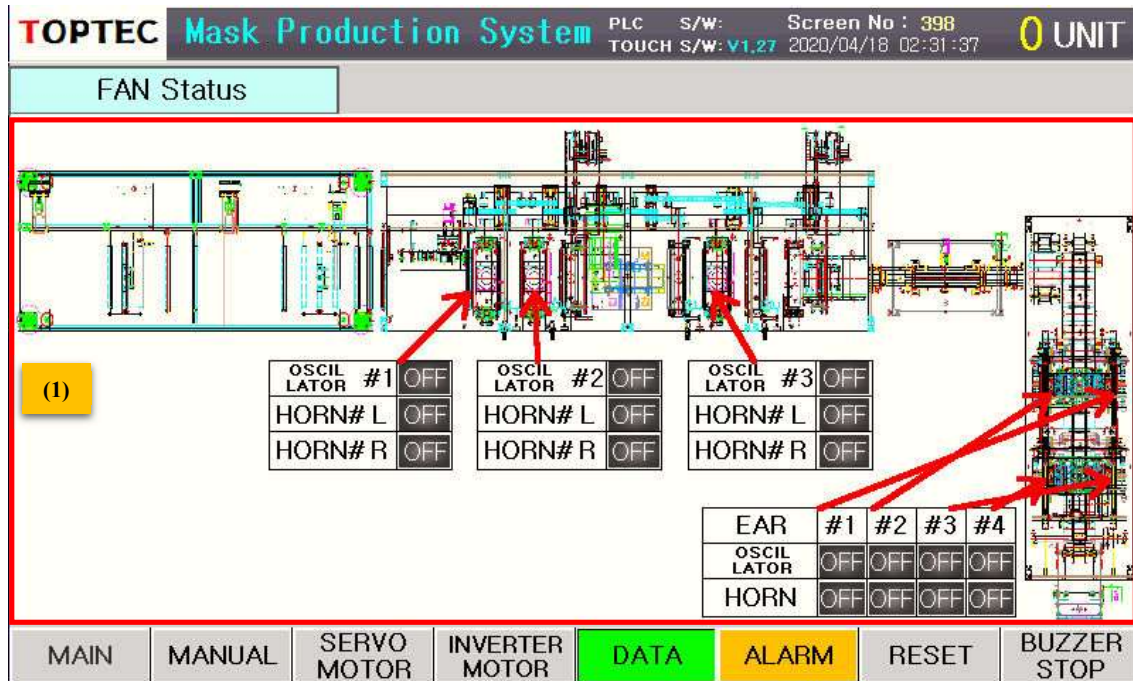
6.4 DRAWING



(1) **Drawing # 1** : This drawing provides layout of equipment using bird's eye view.

(2) **Drawing # 2** : This drawing provides layout of equipment using side view.

6.5 FAN STATUS



- (1) **Fan Status** : The Fan Status window displays the status of the molding part ultrasonic fan and ear attachment ultrasonic fan.

7. ALARM

7.1 Current Alarm Screen



(1) **Alarm Screen** : Displays the current alarm on the screen. Minor Alarm will be in yellow and Major Alarm will be in red.

(2) **Alarm Screen** : Displays the current alarm on the screen.

Minor Alarm History : Displays the history of recent minor alarms.

Major Alarm History : Displays the history of recent major alarms.

7.2 MINOR ALARM



(1) **Alarm History Screen (Minor Alarm)** : Displays the history of recent minor alarms. Unresolved minor alarms will appear in yellow. Resolved minor alarms will appear in green. Time intervals between each alarm is also recorded in the history log.

(2) CUSOR MANUAL

1. **CUSOR ON** : Enables cursor function in the page for smooth navigate on the screen.
2. **PAGE UP** : Scrolls the page up from the point of cursor.
3. **PAGE DOWN** : Scrolls the page down from the point of cursor.
4. **DELETE ALL** : Clears all record of history log.

7.3 MAJOR ALARM



(3) Alarm History Screen (Major Alarm) : Displays the history of recent major alarms. Unresolved minor alarms will appear in yellow. Resolved major alarms will appear in green. Time intervals between each alarm is also recorded in the history log.

(4) CUSOR MANUAL

5. **CUSOR ON** : Enables cursor function in the page for smooth navigate on the screen.
6. **PAGE UP** : Scrolls the page up from the point of cursor.
7. **PAGE DOWN** : Scrolls the page down from the point of cursor.
8. **DELETE ALL** : Clears all record of history log.

ALARM LIST

1. MINOR ALARM AND METHOD OF ACTION

Alarm	[D2800.0] U01: Initial Return T_OVER ERROR
Cause	Unit Initial Return TIME ERROR
Solution	Call Engineer

Alarm	[D2800.C] Molding Part Outer Fabric Roller Low Material ERROR
Cause	Molding Part Outer Fabric Low Material
Solution	Replace Molding Part Outer Fabric Roll

Alarm	[D2800.D] Molding Filter Fabric Roller Low Material ERROR
Cause	Molding Filter Fabric Roller Low Material
Solution	Replace Molding Part Filter Fabric Roll

Alarm	[D2800.E] Molding Inner Fabric Roller Low Material ERROR
Cause	Molding Inner Fabric Roller Low Material
Solution	Replace Molding Part Inner Fabric Roll

Alarm	[D2801.0] Return #1CYL' FWD ERROR
Cause	Return#1 Cylinder Advancement ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2801.1] Return#1CYL' BWD ERROR
Cause	Return#1 Cylinder Advancement ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2801.2] Return#2CYL' FWD ERROR
Cause	Return#1 Cylinder Advancement ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2801.3] Return#2CYL' BWD ERROR
Cause	Return#1 Cylinder Advancement ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2809.D] U01: AutoStepCycle TimeOver
Cause	Unit AutoStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2809.F] U01: HomeStepCycle TimeOver
Cause	Unit HomeStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2810.0] U02: Initial Return T_OVER ERROR
Cause	Unit Initial Return TIME ERROR
Solution	Call Engineer

Alarm	[D2819.D] U02: AutoStepCycle TimeOver
Cause	Unit AutoStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2819.F] U02: HomeStepCycle TimeOver
Cause	Unit HomeStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2820.0] U03: Initial Return T_OVER ERROR
Cause	Unit Initial Return TIME ERROR
Solution	Call Engineer

Alarm	[D2829.D] U03: AutoStepCycle TimeOver
Cause	Unit AutoStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2829.F] U03: HomeStepCycle TimeOver
Cause	Unit HomeStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2830.0] U04: Initial Return T_OVER ERROR
Cause	Unit Initial Return TIME ERROR
Solution	Call Engineer

Alarm	[D2839.D] U04: AutoStepCycle TimeOver
Cause	Unit AutoStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2839.F] U04: HomeStepCycle TimeOver
Cause	Unit HomeStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2840.0] U05: Initial Return T_OVER ERROR
Cause	Unit Initial Return TIME ERROR
Solution	Call Engineer

Alarm	[D2849.D] U05: AutoStepCycle TimeOver
Cause	Unit AutoStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2849.F] U05: HomeStepCycle TimeOver
Cause	Unit HomeStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2840.1] #1 UPPER LOOP S/NDETECT ERROR
Cause	EAR #1 UPPER LOOP PROXIMITY INTERFERENCE ERROR
Solution	Check Proximity and Abnormality of Sensor

Alarm	[D2840.2] #2 UPPER LOOP S/NDETECT ERROR
Cause	EAR #2 UPPER LOOP PROXIMITY INTERFERENCE ERROR
Solution	Check Proximity and Abnormality of Sensor

Alarm	[D2840.3] #3 UPPER LOOP S/NDETECT ERROR
Cause	EAR #3 UPPER LOOP PROXIMITY INTERFERENCE ERROR
Solution	Check Proximity and Abnormality of Sensor

Alarm	[D2840.4] #4 UPPER LOOP S/NDETECT ERROR
Cause	EAR #4 UPPER LOOP PROXIMITY INTERFERENCE ERROR
Solution	Check Proximity and Abnormality of Sensor

Alarm	[D2840.5] EAR PART MOVING LENGTH DETECTION ERROR
Cause	EAR PART MOVING CYLINDER/LENGTH SENSOR ERROR
Solution	Inspect Cylinder Movement and Cylinder Sensor

Alarm	[D2849.E] U05: SUBStepCycle TimeOver
Cause	Unit SUBStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2850.0] U06: Initial Return T_OVER ERROR
Cause	Unit Initial Return TIME ERROR
Solution	Call Engineer

Alarm	[D2859.D] U06: AutoStepCycle TimeOver
Cause	Unit AutoStepCycle TIME ERROR
Solution	Call Engineer

Alarm	[D2859.F] U06: HomeStepCycle TimeOver
Cause	Unit HomeStepCycle TIME ERROR
Solution	Call Engineer

2. MAJOR ALARM AND METHOD OF ACTION

Alarm	[D2900.0] AUTO OPERATION MOLDING PART CYCLE STOP NON-DETECTION
Cause	MOLDING PART CYCLE STOP SENSOR NON-DETECTION ERROR
Solution	MOLDING PART CYCLE STOP CHECK SENSOR ABNORMALITY

Alarm	[D2900.1] CUT START SENSOR NON-DETECTION ERROR
Cause	MOLDING PART CUT START SENSOR NON-DETECTION ERROR
Solution	MOLDING PART CUT START CHECK SENSOR ABNORMALITY

Alarm	[D2900.2] MOLDING PART NO NOSE WIRE ERROR
Cause	MOLDING PART NOSE WIRE MATERIAL SENSOR NON-DETECTION ERROR
Solution	MOLDING PART NOSE WIRE MATERIAL CHECK SENSOR ABNORMALITY

Alarm	[D2900.3] MOLDING PART 코 쇄 2 회연속 컷팅 이상 ERROR
Cause	MOLDING PART 코 쇄 컷팅 감지 SENSOR NON-DETECTION ERROR
Solution	MOLDING PART 코 쇄 컷팅 감지 CHECK SENSOR ABNORMALITY

Alarm	[D2900.4] 1 차 초음파 CYL' UP ERROR
Cause	1 차 초음파 업 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.5] 1 차 초음파 CYL'DOWN ERROR
Cause	1 차 초음파 다운 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.6] 2 차 초음파 CYL' UP ERROR
Cause	2 차 초음파 업 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.7] 2 차 초음파 CYL'DOWN ERROR
Cause	2 차 초음파 다운 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.8] 1 차 구동롤러 CYL'UP ERROR
Cause	1 차 구동롤러 업 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.9] 1 차 구동롤러 CYL'DOWN ERROR
Cause	1 차 구동롤러 다운 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.A] 2 차 구동롤러 CYL'UP ERROR
Cause	2 차 구동롤러 업 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.B] 2 차 구동롤러 CYL'DOWN ERROR
Cause	2 차 구동롤러 다운 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.C] 3 차 초음파 CYL' UP ERROR
Cause	3 차 초음파 업 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.D] 3 차 초음파 CYL'DOWN ERROR
Cause	3 차 초음파 다운 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.E] 3 차 구동롤러 CYL'UP ERROR
Cause	3 차 구동롤러 업 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2900.F] 3 차 구동롤러 CYL'DOWN ERROR
Cause	3 차 구동롤러 다운 실린더 SENSOR 감지 ERROR

Solution	Inspect Cylinder Movment and Cylinder Sensor
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Alarm	[D2901.0] Return#1CYL' FWD ERROR
Cause	Return#1 전진 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2901.1] Return#1CYL' BWD ERROR
Cause	Return#1 후진 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2901.2] 커팅롤러 CYL'UP ERROR
Cause	커팅롤러 업 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2901.3] 커팅롤러 CYL'DOWN ERROR
Cause	커팅롤러 다운 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2901.4] MOLDING PART SERVO START SENSOR SENSOR 고장
Cause	MOLDING PART SERVO START SENSOR 감지 ERROR
Solution	MOLDING PART SERVO START SENSOR CHECK SENSOR ABNORMALITY

Alarm	[D2901.5] MOLDING PART CYCLE STOP SENSOR SENSOR 고장
Cause	MOLDING PART CYCLE STOP SENSOR 감지 ERROR
Solution	MOLDING PART CYCLE STOP CHECK SENSOR ABNORMALITY

Alarm	[D2901.9] MOLDING PART FAN OFF 알람
Cause	MOLDING PART FAN OFF ERROR
Solution	MOLDING PART FAN 동작 이상 유무 점검

Alarm	[D2901.A] Return1 차 하부 자재 감지 ERROR X100A
Cause	Return1 차 하부 자재 감지 SENSOR ERROR
Solution	Return1 차 하부 자재 감지 CHECK SENSOR ABNORMALITY

Alarm	[D2901.B] Return1 차 상부 자재 감지 ERROR X100B
Cause	Return1 차 상부 자재 감지 SENSOR ERROR
Solution	Return1 차 상부 자재 감지 CHECK SENSOR ABNORMALITY

Alarm	[D2901.C] Return2 차 상부 자재 감지 ERROR X100C
Cause	Return2 차 상부 자재 감지 SENSOR ERROR
Solution	Return2 차 상부 자재 감지 CHECK SENSOR ABNORMALITY

Alarm	[D2901.D] Return2 차 하부 자재 감지 ERROR X100D
Cause	Return2 차 하부 자재 감지 SENSOR ERROR
Solution	Return2 차 하부 자재 감지 CHECK SENSOR ABNORMALITY

Alarm	[D2905.0] 1 차 초음파 발진기 FAN 이상
Cause	1 차 초음파 발진기 FAN 이상 ERROR
Solution	1 차 초음파 발진기 FAN 동작 이상 유무 점검

Alarm	[D2905.1] 1 차 초음파 HORN #1 FAN 이상
Cause	1 차 초음파 HORN #1 FAN 이상 ERROR
Solution	1 차 초음파 HORN #1 FAN 동작 이상 유무 점검

Alarm	[D2905.2] 1 차 초음파 HORN #2 FAN 이상
Cause	1 차 초음파 HORN #2 FAN 이상 ERROR
Solution	1 차 초음파 HORN #2 FAN 동작 이상 유무 점검

Alarm	[D2905.3] 2 차 초음파 발진기 FAN 이상
Cause	2 차 초음파 발진기 FAN 이상 ERROR
Solution	2 차 초음파 발진기 FAN 동작 이상 유무 점검

Alarm	[D2905.4] 2 차 초음파 HORN #1 FAN 이상
Cause	2 차 초음파 HORN #1 FAN 이상 ERROR
Solution	2 차 초음파 HORN #1 FAN 동작 이상 유무 점검

Alarm	[D2905.5] 2 차 초음파 HORN #2 FAN 이상
Cause	2 차 초음파 HORN #2 FAN 이상 ERROR
Solution	2 차 초음파 HORN #2 FAN 동작 이상 유무 점검

Alarm	[D2905.6] 3 차 초음파 발진기 FAN 이상
Cause	3 차 초음파 발진기 FAN 이상 ERROR
Solution	2 차 초음파 발진기 FAN 동작 이상 유무 점검

Alarm	[D2905.7] 3 차 초음파 HORN #1 FAN 이상
Cause	3 차 초음파 HORN #1 FAN 이상 ERROR
Solution	3 차 초음파 HORN #1 FAN 동작 이상 유무 점검

Alarm	[D2905.8] 3 차 초음파 HORN #2 FAN 이상
Cause	3 차 초음파 HORN #2 FAN 이상 ERROR
Solution	3 차 초음파 HORN #2 FAN 동작 이상 유무 점검

Alarm	[D2905.9] 초음파 컨트롤러#1 FAN 이상
Cause	초음파 컨트롤러#1 이상 ERROR
Solution	초음파 컨트롤러#1 FAN 동작 이상 유무 점검

Alarm	[D2905.A] 초음파 컨트롤러#2 FAN 이상
Cause	초음파 컨트롤러#2 이상 ERROR
Solution	초음파 컨트롤러#2 FAN 동작 이상 유무 점검

Alarm	[D2905.B] MOLDING PART 걸감 롤러 자재없음 ERROR
Cause	MOLDING PART 걸감 롤러 자재 없음
Solution	MOLDING PART 걸감 롤러 자재 교체

Alarm	[D2905.C] MOLDING PART 필터 롤러 자재없음 ERROR
Cause	MOLDING PART 필터 롤러 자재 없음
Solution	MOLDING PART 필터 롤러 자재 교체

Alarm	[D2905.D] MOLDING PART 안감 롤러 자재없음 ERROR
Cause	MOLDING PART 안감 롤러 자재 없음
Solution	MOLDING PART 안감 롤러 자재 교체

Alarm	[D2908.0] SM#01 NOSE WIRE SERVO OFF ALARM
Cause	SM#01 NOSE WIRE SERVO OFF ERROR
Solution	TOUCH 서보 화면 SERVO ON 및 SERVO AMP , CABLE 점검

Alarm	[D2908.1] SM#01 NOSE WIRE SERVO ORIGIN REQUEST ALARM
Cause	SM#01 NOSE WIRE SERVO ORIGIN REQUEST ERROR
Solution	TOUCH 서보 화면 ORIGIN 및 SERVO AMP , CABLE 점검

Alarm	[D2908.2] SM#01 NOSE WIRE SERVO OverLoad ALARM
Cause	SM#01 NOSE WIRE SERVO OverLoad ERROR
Solution	서보 동작중 기구물 및 케이블 간섭 확인

Alarm	[D2908.3] SM#01 NOSE WIRE SERVO USER 부하 ALARM
Cause	SM#01 NOSE WIRE SERVO USER 부하 ERROR
Solution	서보 동작중 기구물 및 케이블 간섭 확인

Alarm	[D2908.4] SM#01 NOSE WIRE SERVO ALARM CODE 확인
Cause	SM#01 NOSE WIRE SERVO ALARM CODE 확인
Solution	SM#01 NOSE WIRE SERVO AMP ALARM CODE 확인

Alarm	[D2908.F] ST.41 메인인버터 ALARM
Cause	ST.41 메인인버터 ERROR
Solution	인버터 동작중 기구물 및 케이블 간섭 확인 후 Call Engineer

Alarm	[D2909.D] CYCLE STOP 진행중 MOLDING PART CYCLE STOP SENSOR NON-DETECTION
Cause	CYCLE STOP SENSOR NON-DETECTION ERROR
Solution	CYCLE STOP CHECK SENSOR ABNORMALITY

Alarm	[D2910.1] 반전기 자재 배출요구 ERROR (반전기 자재를 빼주세요)
Cause	반전기 자재 배출 요구 ERROR
Solution	반전기 이송 불량 자재 제거

Alarm	[D2910.2] TURN C/V 제품감지 SENSOR 감지이상
Cause	TURN C/V 제품 감지 SENSOR ERROR
Solution	반전기 이송 불량 자재 제거

Alarm	[D2918.0] SM#02 REVERSE SERVO OFF ALARM
Cause	SM#02 REVERSE SERVO OFF ERROR
Solution	TOUCH 서보 화면 SERVO ON 및 SERVO AMP , CABLE 점검

Alarm	[D2918.1] SM#02 REVERSE SERVO ORIGIN REQUEST ALARM
Cause	SM#02 REVERSE SERVO ORIGIN REQUEST ERROR
Solution	TOUCH 서보 화면 ORIGIN 및 SERVO AMP , CABLE 점검

Alarm	[D2918.2] SM#02 REVERSE SERVO OverLoad ALARM
Cause	SM#02 REVERSE SERVO OverLoadERROR
Solution	서보 동작중 기구물 및 케이블 간섭 확인

Alarm	[D2918.3] SM#02 REVERSE SERVO USER 부하 ALARM
Cause	SM#02 REVERSE SERVO USER 부하 ERROR
Solution	서보 동작중 기구물 및 케이블 간섭 확인

Alarm	[D2918.4] SM#02 REVERSE SERVO ALARM CODE 확인
Cause	SM#02 REVERSE SERVO ALARM CODE 확인
Solution	SM#02 REVERSE SERVO AMP ALARM CODE 확인

Alarm	[D2918.F] ST.42 TURN 컨베어 인버터 ALARM
Cause	ST.42 TURN 컨베어 인버터 ERROR
Solution	인버터 동작중 기구물 및 케이블 간섭 확인 후 Call Engineer

Alarm	[D2920.0] 1st SLOT#1 제품투입 이상 ERROR
Cause	1st SLOT#1 제품 투입 이상 ERROR
Solution	1st SLOT#1 이송 불량 자재 제거 및 자재 감지 SENSOR 확인

Alarm	[D2920.1] 1st SLOT#2 제품투입 이상 ERROR
Cause	1st SLOT#2 제품 투입 이상 ERROR
Solution	1st SLOT#2 이송 불량 자재 제거 및 자재 감지 SENSOR 확인

Alarm	[D2920.1] 1st SLOT#2 제품투입 이상 ERROR
Cause	1st SLOT#2 제품 투입 이상 ERROR
Solution	1st SLOT#2 이송 불량 자재 제거 및 자재 감지 SENSOR 확인

Alarm	[D2920.2] 1st_SLOT#1 이동 -> SLOT#2 제품감지 이상 ERROR
Cause	1st SLOT#1 => SLOT#2 제품 투입 이상 ERROR
Solution	1st SLOT#1 => SLOT#2 이송 불량 자재 제거 및 자재 감지 SENSOR 확인

Alarm	[D2920.3] 1st SLOT ROLLER UP ERROR
Cause	1st SLOT ROLLER 업 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2920.4] 1st SLOT ROLLER DOWN ERROR
Cause	1st SLOT ROLLER 다운 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2920.9] 1st SLOT 피치구동 DOG SENSOR 감지이상
Cause	1st SLOT 피치구동 DOG SENSOR 감지 ERROR
Solution	피치 구동 후 , DOG SENSOR 감지 이상 유무 점검

Alarm	[D2928.0] SM#03 1st SERVO OFF ALARM
Cause	SM#03 1st SERVO OFF ERROR
Solution	TOUCH 서보 화면 SERVO ON 및 SERVO AMP , CABLE 점검

Alarm	[D2928.1] SM#03 1st SERVO ORIGIN REQUEST ALARM
Cause	SM#03 1st SERVO ORIGIN REQUEST ERROR
Solution	TOUCH 서보 화면 ORIGIN 및 SERVO AMP , CABLE 점검

Alarm	[D2928.2] SM#03 1st SERVO OverLoad ALARM
Cause	SM#03 1st SERVO OverLoad ERROR
Solution	서보 동작중 기구물 및 케이블 간섭 확인

Alarm	[D2928.3] SM#03 1st SERVO USER 부하 ALARM
Cause	SM#03 1st SERVO USER 부하 ERROR
Solution	서보 동작중 기구물 및 케이블 간섭 확인

Alarm	[D2928.4] SM#03 1st SERVO ALARM CODE 확인
Cause	SM#03 1st SERVO ALARM CODE 확인
Solution	SM#03 1st SERVO AMP ALARM CODE 확인

Alarm	[D2928.F] ST.43 INVERTER ALARM
Cause	ST.43 INVERTER ERROR
Solution	인버터 동작중 기구물 및 케이블 간섭 확인 후 Call Engineer

Alarm	[D2930.0] 1st > 2nd 제품투입 이상 ERROR
Cause	1st > 2nd 제품투입 이상 ERROR
Solution	1st => 2nd 이송 불량 자재 제거 및 자재 감지 SENSOR 확인

Alarm	[D2930.0] 1st > 2nd 제품투입 이상 ERROR
Cause	1st > 2nd 제품투입 이상 ERROR
Solution	1st => 2nd 이송 불량 자재 제거 및 자재 감지 SENSOR 확인

Alarm	[D2930.1] 2nd SLOT GUIDE UP ERROR
Cause	2nd SLOT GUIDE 업 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2930.2] 2nd SLOT GUIDE DOWN ERROR
Cause	2nd SLOT GUIDE 다운 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2930.3] 2nd 자재 배출요구 ERROR (2nd 자재를 빼주세요)
Cause	2nd 자재 배출 요구 ERROR
Solution	2nd Unit 이송 불량 자재 제거

Alarm	[D2930.4] 2nd SLOT 하부 마스크 끼임 ERROR
Cause	2nd SLOT 하부 마스크 끼임 ERROR
Solution	2nd SLOT 하부 마스크 끼임 제거

Alarm	[D2930.9] 2nd SLOT 피치구동 DOG SENSOR 감지이상
Cause	2nd SLOT 피치구동 DOG SENSOR 감지 ERROR
Solution	피치 구동 후 , DOG SENSOR 감지 이상 유무 점검

Alarm	[D2938.0] SM#04 2nd SERVO OFF ALARM
Cause	SM#04 2nd SERVO OFF ERROR
Solution	TOUCH 서보 화면 SERVO ON 및 SERVO AMP , CABLE 점검

Alarm	[D2938.1] SM#04 2nd SERVO ORIGIN REQUEST ALARM
Cause	SM#04 2nd SERVO ORIGIN REQUEST ERROR
Solution	TOUCH 서보 화면 ORIGIN 및 SERVO AMP , CABLE 점검

Alarm	[D2938.2] SM#04 2nd SERVO OverLoad ALARM
Cause	SM#04 2nd SERVO OverLoad ERROR
Solution	서보 동작중 기구물 및 케이블 간섭 확인

Alarm	[D2938.3] SM#04 2nd SERVO USER 부하 ALARM
Cause	SM#04 2nd SERVO USER 부하 ERROR
Solution	서보 동작중 기구물 및 케이블 간섭 확인

Alarm	[D2938.4] SM#04 2nd SERVO ALARM CODE 확인
Cause	SM#04 2nd SERVO ALARM CODE 확인
Solution	SM#04 2nd SERVO AMP ALARM CODE 확인

Alarm	[D2940.0] #1 고정 클램프 CHUCK ERROR
Cause	#1 고정 클램프 CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.1] #1 고정 클램프 UNCHUCK ERROR
Cause	#1 고정 클램프 UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.2] #1 무빙 클램프 CHUCK ERROR
Cause	#1 무빙 클램프 CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.3] #1 무빙 클램프 UNCHUCK ERROR
Cause	#1 무빙 클램프 UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.4] #1 SUPPLY CLAMP CHUCK ERROR
Cause	#1 SUPPLY CLAMP CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.5] #1 SUPPLY CLAMP UNCHUCK ERROR
Cause	#1 SUPPLY CLAMP UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.6] #1 SUPPLY CLAMP TURN ERROR
Cause	#1 SUPPLY CLAMP TURN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.7] #1 SUPPLY CLAMP RETURN ERROR
Cause	#1 SUPPLY CLAMP RETURN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.8] #1 SONIC UP ERROR
Cause	#1 SONIC UP 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.9] #1 SONIC DOWN ERROR
Cause	#1 SONIC DOWN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.A] #1 EAR CUTTER UP ERROR
Cause	#1 EAR CUTTER UP 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.B] #1 EAR CUTTER DOWN ERROR
Cause	#1 EAR CUTTER DOWN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.C] #1,3 MOVING FWD ERROR
Cause	#1,3 MOVING FWD 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.D] #1,3 MOVING BWD ERROR
Cause	#1,3 MOVING FWD 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.E] #1,2 EAR SUPPLY UP ERROR
Cause	#1,2 EAR SUPPLY UP 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2940.F] #1,2 EAR SUPPLY DOWN ERROR
Cause	#1,2 EAR SUPPLY DOWN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2941.0] EAR#1 귀끈당김 루프 SENSOR 동작이상 ERROR
Cause	EAR#1 귀끈당김 루프 SENSOR 동작이상 ERROR
Solution	귀끈 당김 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2941.1] EAR#1 발진기 FAN 이상
Cause	EAR#1 발진기 FAN 이상 ERROR
Solution	EAR#1 발진기 FAN 동작 이상 유무 점검

Alarm	[D2941.2] EAR#1 HORN FAN 이상
Cause	EAR#1 HORN FAN 이상 ERROR
Solution	EAR#1 HORN FAN 동작 이상 유무 점검

Alarm	[D2941.3] #1 UPPER LOOP S/N DETECT ERROR
Cause	EAR #1 UPPER LOOP PROXIMITY INTERFERENCE ERROR
Solution	귀끈 당김 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2942.0] #2 고정 클램프 CHUCK ERROR
Cause	#2 고정 클램프 CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.1] #2 고정 클램프 UNCHUCK ERROR
Cause	#2 고정 클램프 UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.2] #2 무빙 클램프 CHUCK ERROR
Cause	#2 무빙 클램프 CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.3] #2 무빙 클램프 UNCHUCK ERROR
Cause	#2 무빙 클램프 UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.4] #2 SUPPLY CLAMP CHUCK ERROR
Cause	#2 SUPPLY CLAMP CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.5] #2 SUPPLY CLAMP UNCHUCK ERROR
Cause	#2 SUPPLY CLAMP UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.6] #2 SUPPLY CLAMP TURN ERROR
Cause	#2 SUPPLY CLAMP TURN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.7] #2 SUPPLY CLAMP RETURN ERROR
Cause	#2 SUPPLY CLAMP RETURN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.8] #2 SONIC UP ERROR
Cause	#2 SONIC UP 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.9] #2 SONIC DOWN ERROR
Cause	#2 SONIC DOWN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.A] #2 EAR CUTTER UP ERROR
Cause	#2 EAR CUTTER UP 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.B] #2 EAR CUTTER DOWN ERROR
Cause	#2 EAR CUTTER DOWN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.C] #2,4 MOVING FWD ERROR
Cause	#2,4 MOVING FWD 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.D] #2,4 MOVING BWD ERROR
Cause	#2,4 MOVING BWD 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.E] EAR1,3 무빙길이 SENSOR 3 회 연속 감지이상
Cause	EAR1,3 무빙길이 SENSOR 3 회 연속 감지 이상 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2942.F] EAR2,4 무빙길이 SENSOR 3 회 연속 감지이상
Cause	EAR2,4 무빙길이 SENSOR 3 회 연속 감지 이상 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2943.0] EAR#2 귀곤당김 루프 SENSOR 동작이상 ERROR
Cause	EAR#2 귀곤당김 루프 SENSOR 동작이상 ERROR
Solution	귀곤 당김 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2943.1] EAR#2 발진기 FAN 이상
Cause	EAR#2 발진기 FAN 이상 ERROR
Solution	EAR#2 발진기 FAN 동작 이상 유무 점검

Alarm	[D2943.2] EAR#2 HORN FAN 이상
Cause	EAR#2 HORN FAN 이상 ERROR
Solution	EAR#2 HORN FAN 동작 이상 유무 점검

Alarm	[D2943.3] #2 UPPER LOOP S/N DETECT ERROR
Cause	EAR #2 UPPER LOOP PROXIMITY INTERFERENCE ERROR
Solution	귀관 당김 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2944.0] #3 고정 클램프 CHUCK ERROR
Cause	#3 고정 클램프 CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.1] #3 고정 클램프 UNCHUCK ERROR
Cause	#3 고정 클램프 UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.2] #3 무빙 클램프 CHUCK ERROR
Cause	#3 무빙 클램프 CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.3] #3 무빙 클램프 UNCHUCK ERROR
Cause	#3 무빙 클램프 UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.4] #3 SUPPLY CLAMP CHUCK ERROR
Cause	#3 SUPPLY CLAMP CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.5] #3 SUPPLY CLAMP UNCHUCK ERROR
Cause	#3 SUPPLY CLAMP UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.6] #3 SUPPLY CLAMP TURN ERROR
Cause	#3 SUPPLY CLAMP TURN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.7] #3 SUPPLY CLAMP RETURN ERROR
Cause	#3 SUPPLY CLAMP RETURN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.8] #3 SONIC UP ERROR
Cause	#3 SONIC UP 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.9] #3 SONIC DOWN ERROR
Cause	#3 SONIC DOWN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.A] #3 EAR CUTTER UP ERROR
Cause	#3 EAR CUTTER UP 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.B] #3 EAR CUTTER DOWN ERROR
Cause	#3 EAR CUTTER DOWN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.E] #3,4 EAR SUPPLY UP ERROR
Cause	#3,4 EAR SUPPLY UP 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2944.F] #3,4 EAR SUPPLY DOWN ERROR
Cause	#3,4 EAR SUPPLY DOWN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2945.0] EAR#3 귀끈당김 루프 SENSOR 동작이상 ERROR
Cause	EAR#3 귀끈당김 루프 SENSOR 동작이상 ERROR
Solution	귀끈 당김 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2945.1] EAR#3 발진기 FAN 이상
Cause	EAR#3 발진기 FAN 이상 ERROR
Solution	EAR#3 발진기 FAN 동작 이상 유무 점검

Alarm	[D2945.2] EAR#3 HORN FAN 이상
Cause	EAR#3 HORN FAN 이상 ERROR
Solution	EAR#3 HORN FAN 동작 이상 유무 점검

Alarm	[D2945.3] #3 UPPER LOOP S/N DETECT ERROR
Cause	EAR #3 UPPER LOOP PROXIMITY INTERFERENCE ERROR
Solution	귀곤 당김 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2946.0] #4 고정 클램프 CHUCK ERROR
Cause	#4 고정 클램프 CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.1] #4 고정 클램프 UNCHUCK ERROR
Cause	#4 고정 클램프 UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.2] #4 무빙 클램프 CHUCK ERROR
Cause	#4 무빙 클램프 CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.3] #4 무빙 클램프 UNCHUCK ERROR
Cause	#4 무빙 클램프 UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.4] #4 SUPPLY CLAMP CHUCK ERROR
Cause	#4 SUPPLY CLAMP CHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.5] #4 SUPPLY CLAMP UNCHUCK ERROR
Cause	#4 SUPPLY CLAMP UNCHUCK 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.6] #4 SUPPLY CLAMP TURN ERROR
Cause	#4 SUPPLY CLAMP TURN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.7] #4 SUPPLY CLAMP RETURN ERROR
Cause	#4 SUPPLY CLAMP RETURN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.8] #4 SONIC UP ERROR
Cause	#4 SONIC UP 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.9] #4 SONIC DOWN ERROR
Cause	#4 SONIC DOWN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.A] #4 EAR CUTTER UP ERROR
Cause	#4 EAR CUTTER UP 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2946.B] #4 EAR CUTTER DOWN ERROR
Cause	#4 EAR CUTTER DOWN 실린더 SENSOR 감지 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2947.0] EAR#4 귀관당김 루프 SENSOR 동작이상 ERROR
Cause	EAR#4 귀관당김 루프 SENSOR 동작이상 ERROR
Solution	귀관 당김 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2947.1] EAR#4 발진기 FAN 이상
Cause	EAR#4 발진기 FAN 이상 ERROR
Solution	EAR#4 발진기 FAN 동작 이상 유무 점검

Alarm	[D2947.2] EAR#4 HORN FAN 이상
Cause	EAR#4 HORN FAN 이상 ERROR
Solution	EAR#4 HORN FAN 동작 이상 유무 점검

Alarm	[D2947.3] #4 UPPER LOOP S/N DETECT ERROR
Cause	EAR #4 UPPER LOOP PROXIMITY INTERFERENCE ERROR
Solution	귀관 당김 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2948.A] EAR#1 귀관풀어줌 루프 SENSOR 동작이상 ERROR
Cause	EAR#1 귀관풀어줌 루프 SENSOR 동작이상 ERROR
Solution	귀관 풀어줌 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2948.B] EAR#2 귀관풀어줌 루프 SENSOR 동작이상 ERROR
Cause	EAR#2 귀관풀어줌 루프 SENSOR 동작이상 ERROR
Solution	귀관 풀어줌 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2948.C] EAR#3 귀관풀어줌 루프 SENSOR 동작이상 ERROR
Cause	EAR#3 귀관풀어줌 루프 SENSOR 동작이상 ERROR
Solution	귀관 풀어줌 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2948.D] EAR#4 귀관풀어줌 루프 SENSOR 동작이상 ERROR
Cause	EAR#4 귀관풀어줌 루프 SENSOR 동작이상 ERROR
Solution	귀관 풀어줌 동작 확인 후 , Check Proximity and Abnormality of Sensor

Alarm	[D2949.1] EAR#1 루프 SENSOR 감지안됨 ERROR
Cause	EAR#1 루프 SENSOR 동작이상 ERROR
Solution	Check Proximity and Abnormality of Sensor

Alarm	[D2949.1] EAR#2 루프 SENSOR 감지안됨 ERROR
Cause	EAR#2 루프 SENSOR 동작이상 ERROR
Solution	Check Proximity and Abnormality of Sensor

Alarm	[D2949.1] EAR#3 루프 SENSOR 감지안됨 ERROR
Cause	EAR#3 루프 SENSOR 동작이상 ERROR
Solution	Check Proximity and Abnormality of Sensor

Alarm	[D2949.1] EAR#4 루프 SENSOR 감지안됨 ERROR
Cause	EAR#4 루프 SENSOR 동작이상 ERROR
Solution	Check Proximity and Abnormality of Sensor

Alarm	[D2950.0] 완제품 DETECT 이상 ERROR
Cause	완제품 DETECT SENSOR 감지 이상 ERROR
Solution	CHECK SENSOR ABNORMALITY

Alarm	[D2950.1] 배출 SOL UP ERROR
Cause	완제품 배출 UP 실린더 SENSOR 감지 이상 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2950.2] 배출 SOL DOWN ERROR
Cause	완제품 배출 DOWN 실린더 SENSOR 감지 이상 ERROR
Solution	Inspect Cylinder Movment and Cylinder Sensor

Alarm	[D2950.3] 배출부 완제품 감지 이상
Cause	배출부 완제품 SENSOR 감지 이상 ERROR
Solution	CHECK SENSOR ABNORMALITY

Alarm	[D2958.F] ST.44 INVERTER ALARM
Cause	ST.44 INVERTER ERROR
Solution	인버터 동작중 기구물 및 케이블 간섭 확인 후 Call Engineer

Alarm	[D2990.0] MOLDING PART TOUCH EMG STOP
Cause	MOLDING PART TOUCH EMG STOP
Solution	설비 이상 유무 및 안전 문제 확인 후 EMG 해제

Alarm	[D2990.1] EAR TOUCH EMG STOP
Cause	EAR TOUCH EMG STOP
Solution	설비 이상 유무 및 안전 문제 확인 후 EMG 해제

Alarm	[D2990.2] MAIN MC ON FAIL
Cause	MAIN MC ON FAIL
Solution	EMG 동작 확인 , Main 전원 부 ON / OFF 확인

Alarm	[D2990.3] SERVO POWER CP TRIP
Cause	SERVO POWER CP TRIP ERROR
Solution	CP TRIP 확인 , 과전류 CHECK

Alarm	[D2990.3] SERVO POWER CP TRIP
Cause	SERVO POWER CP TRIP ERROR
Solution	CP TRIP 확인 , 과전류 Cause 점검

Alarm	[D2990.4] MS04 NOT READY
Cause	MS04 NOT READY ERROR
Solution	설비 이상 유무 확인

Alarm	[D2990.4] MS04 NOT READY
Cause	MS04 NOT READY ERROR
Solution	설비 이상 유무 확인

Alarm	[D2990.4] MS04 NOT READY
Cause	MS04 NOT READY ERROR
Solution	설비 이상 유무 확인

Alarm	[D2990.5] EAR#1 SUPPLY MOTOR MC OFF
Cause	EAR#1 SUPPLY MOTOR MC OFF ERROR
Solution	MOTOR 전원부 점검

Alarm	[D2990.6] EAR#1 SUPPLY MOTOR EOCR OFF
Cause	EAR#1 SUPPLY MOTOR EOCR OFF
Solution	MOTOR 전원부 점검 , 과전류 원 인 점검

Alarm	[D2990.7] EAR#2 SUPPLY MOTOR MC OFF
Cause	EAR#2 SUPPLY MOTOR MC OFF
Solution	MOTOR 전원부 점검

Alarm	[D2990.8] EAR#2 SUPPLY MOTOR EOCR OFF
Cause	EAR#2 SUPPLY MOTOR EOCR OFF
Solution	MOTOR 전원부 점검 , 과전류 원 인 점검

Alarm	[D2990.9] EAR#3 SUPPLY MOTOR MC OFF
Cause	EAR#3 SUPPLY MOTOR MC OFF
Solution	MOTOR 전원부 점검

Alarm	[D2990.A] EAR#3 SUPPLY MOTOR EOCR OFF
Cause	EAR#3 SUPPLY MOTOR EOCR OFF
Solution	MOTOR 전원부 점검 , 과전류 원 인 점검

Alarm	[D2990.B] EAR#4 SUPPLY MOTOR MC OFF
Cause	EAR#4 SUPPLY MOTOR MC OFF
Solution	MOTOR 전원부 점검

Alarm	[D2990.C] EAR#4 SUPPLY MOTOR EOCR OFF
Cause	EAR#4 SUPPLY MOTOR EOCR OFF
Solution	MOTOR 전원부 점검 , 과전류 원 인 점검

Alarm	[D2990.D] MOLDING PART 초음파 NFB OFF ERROR
Cause	MOLDING PART 초음파 NFB OFF ERROR
Solution	MOLDING PART 초음파 전원부 점검 , 과전류 원 인 점검

Alarm	[D2990.E] EAR PART 초음파 NFB OFF ERROR
Cause	EAR PART 초음파 NFB OFF ERROR
Solution	EAR PART 초음파 전원부 점검 , 과전류 원 인 점검

Alarm	[D2990.F] MOLDING PART ReturnEMG STOP
Cause	MOLDING PART ReturnEMG STOP
Solution	설비 이상 유무 및 안전 문제 확인 후 EMG 해제

Alarm	[D2992.1] EAR PART 오퍼레이팅 S/W 동작이상
Cause	EAR PART 오퍼레이팅 S/W 동작이상 ERROR
Solution	EAR PART 작업자 Manual S/W 점검

Alarm	[D2992.2] 배출부 EMG STOP
Cause	배출부 EMG STOP
Solution	설비 이상 유무 및 안전 문제 확인 후 EMG 해제

Alarm	[D2995.0] Diagnostic Error
Cause	노이즈에 의한 오작동 , 하드웨어 이상
Solution	PLC RESET , Call Engineer

Alarm	[D2995.1] Self Test Error
Cause	노이즈에 의한 오작동 , 하드웨어 이상
Solution	PLC RESET , Call Engineer

Alarm	[D2995.2] Common Error Information
Cause	노이즈에 의한 오작동 , 하드웨어 이상
Solution	PLC RESET , Call Engineer

Alarm	[D2995.3] PLC BATT 이상
Cause	PLC BATTERY 이상
Solution	PLC CPU BATTERY 점검

Alarm	[D2995.4] PLC 전원 이상
Cause	PLC 전원 이상
Solution	PLC CPU 전원 부 점검

Alarm	[D2995.5] PLC FUSE 단선이상
Cause	PLC FUSE 단선이상
Solution	PLC CPU 전원 부 , 퓨즈 점검

Alarm	[D2995.6] PLC I/O 모듈조합이상
Cause	PLC I/O 모듈조합이상
Solution	PLC 모듈 및 PLC 파라미터 점검

Alarm	[D2995.7] CC-LINK #1 ERROR
Cause	CC-LINK #1 ERROR
Solution	리모트 카드 국번 및 순서 , CC LINK 파라미터 점검

Alarm	[D2995.8] CC-LINK #1 DATA LINK
Cause	CC-LINK #1 DATA LINK
Solution	리모트 카드 국번 및 순서 , CC LINK 파라미터 점검

Alarm	[D2995.9] MAIN POWER MC OFF ERROR
Cause	MAIN POWER MC OFF ERROR
Solution	MAIN 주 전원부 점검

Alarm	[D2999.0] [SYSTEM]MOLDING PART MAIN AIR DOWN
Cause	MOLDING PART MAIN AIR DOWN ERROR
Solution	MAIN AIR 점검

Alarm	[D2999.1] [SYSTEM]EAR PART MAIN AIR DOWN
Cause	EAR PART MAIN AIR DOWN ERROR
Solution	MAIN AIR 점검