Software User Manual

TRC-1300

Thank you very much for using the「TRC-1300」
In order to correctly use, Please read this manual carefully before using.
Release date：2017/02/3
Edition：1.15

Alfa Industrial Group

Suzhou : Alfa Industrial Corporation. No.3366 Changyang road, weitang town, Xiangcheng District, Suzhou
TEL: 86-512-6590 2388 FAX: 86-512-6590 4888
Dongguan: Dongguan Alfa Automation Technology Limited. NO.29,6th Yumin street,Xiangwei Community,Dalang Town, Dongguan
TEL: 86-769-8312 0300 FAX: 86-769-8860 2226
Service Hotline in china: 400-8620-218

Table of Contents

Revision history

Revision number	Revision Date Day/month/year	Version number	Revised contents/ implementation period
1	'12/11/9	1.00	The first edition.
2	'12/12/13	1.01	V1.01 Correction
3	'12/12/19	1.02	V1.02 Revision
4	'13/01/12	1.03	V1.03 Revision (regional setting, mechanical parameters, system setting related contents)
5	'13/02/05	1.04	V1.04 Additional alarm content
6	'13/02/06	1.05	V1.05 Revision (Acceleration and deceleration, pass, position setting, files, mode)
7	'13/02/21	1.06	V1.06 Revision (2.21 instruction; 2.25 I/O record; 2.26 password)
8	'13/02/21	1.07	V1.07 Revision (frequency patterns addition)
9	'13/03/22	1.08	V1.07 Revision (additional user switching description, file attributes, NCP file save and read, delete a step forward relevant part, combine frequency conversion, 1 axis and 2 axis into one, with specific comparison and description and correction.)
10	'13/06/06	1.09	V1.08 Revision 1. Addition of base board and its related functions; 2. Free operating screen design changes; 3..Primary/secondary arm switching operation changes; 4. Addition of available stack case number; 5. Mode interlock; 6. Position setting optimization function; 7. The I/O list updates.
11	'13/07/24	1.10	V1.09 revision 1. Addition of 2-axis style of 2-absorb and 2-hold special style; 2. Correction of frequency conversion position adjusting plate style; 3. Additioin of full pneumatic style. 4. Correction of some alarm I0 expression error.

12	'13/09/29	1.11	V1.10 Revision 1.Initial screen improvement and menu arrangement. 2. Improvement of the mode setting of user 2. 3. Original point guide operation improvement. 4. Timer style change from post-action delay to fore-action delay. 5. Alarm processing simplification. 6. Position-adjusting panel simplification.
13	'14/01/28	1.12	V1.11 Revision 1.After original,the subscripsion about original will be changed in intial screen . 2.The bar about MZ in the original screen will be changed. 3.In the single axis setting,the information when S arm mode changed has been changed. 4.Add [cover] button at the mode screen. 5.The information in Stacked screen has been incorrected. 6.System settings to default to double arms. 7.It will be stratifficated in direction commonds.
14	'14/12/08	1.13	V1.12 Revision 1.Add setp function 2. Standardization of 2 holds 2 sorption and I/O. 3. Add “unuse of maniputlaor” function. 4.Add “test program”in User level 3 by no injection machine signal. 5.Inserting function . 6.Add damge placement of count. 7.Contact change

※ Safety precaution

In order to use the machine correctly, the Safety Precaution has described the protection precautions to prevent the harms and losses that may be caused to the bodies and properties of you and others. Please read this manual carefully before using and keep it properly for your reference in the future.

 Danger	If this sign is ignored and the machine is thus used incorrectly, death or serious injury accidents may be caused to personnel.
 Warning	If this sign is ignored and the machine is thus used incorrectly, death or serious injury accidents may be caused to personnel.
 Caution	If this sign is ignored and the machine is thus used incorrectly, injury accidents may be caused to personnel and the machine may be damaged.

※ Conditions for use

 Caution	As this device is not provided in an explosion-proof, waterproof or dustproof type, please avoid use in the following circumstances. Failure to comply with this warning may cause faults or damages.

(1) Circumstances with combustible gas, pyrophoric liquid, etc.;

(2) Circumstances with flying or dispersing conductive metal chips due to matel processing or cutting

(3) Circumstances with acid, alkali or other corrosive gas.

(4) Circumstances with spray os cutting fluid, grinding fluid, etc.;

(5) Circumstances near electrical noise sources like large-sized converters, devices with large output of g higher harmonics, large conductors, welding machine, etc.;

(6) Circumstances where the operating temperature is beyond the range of 0 ~ 40 ℃;

(7) Circumstances with humidity more than 90%RH;

(8) Circumstances with occurrence of condensation.

※ Prohibited matters

(1) Behaviors warned by the warning signs;

(2) Behaviors prohibited by this Operating Instruction Manual;

(3) Taking off the warning signs;

(4) Operations in a status with difficulty in making a normal judgment as a result of drinking, taking drugs, disease and etc.;

(5) Operations in a circumstance with intermittent power supply due to lightning or other causes;

(6) Transformation of the machine without the permission of the Company.

1.1 Use specifications

1. Input power supply voltage : Single-phase 【T series 1500 or more, based on three-phase 】 AC200V-10%/240V+10%，50/60Hz±2%.

2. Control power supply voltage: single-phase AC200V-10%/240V+10%，50/60Hz±2%.

2. I/O power supply voltage: DC24V ±10%.

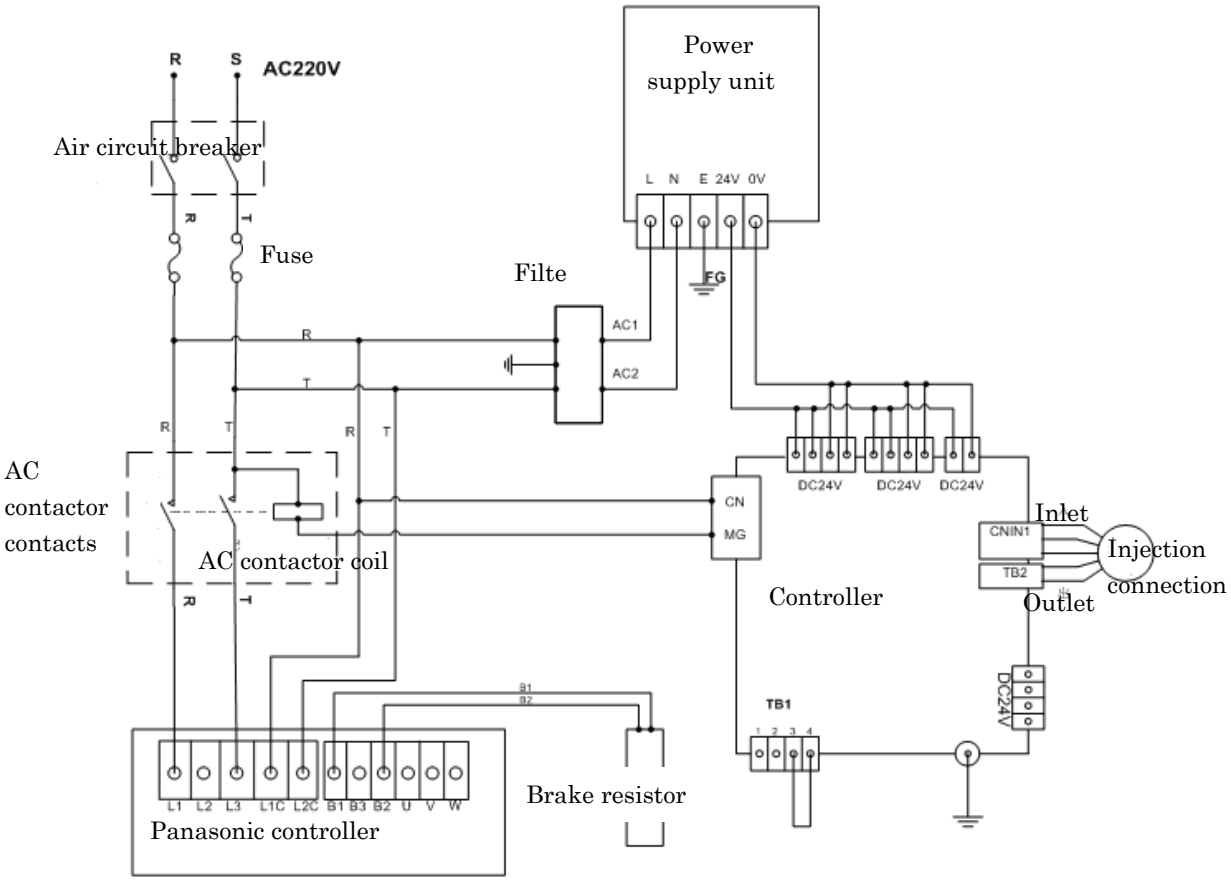
2. Consumed power: depending on the specific machine types.

4. Service environment temperature: 0~40° C.

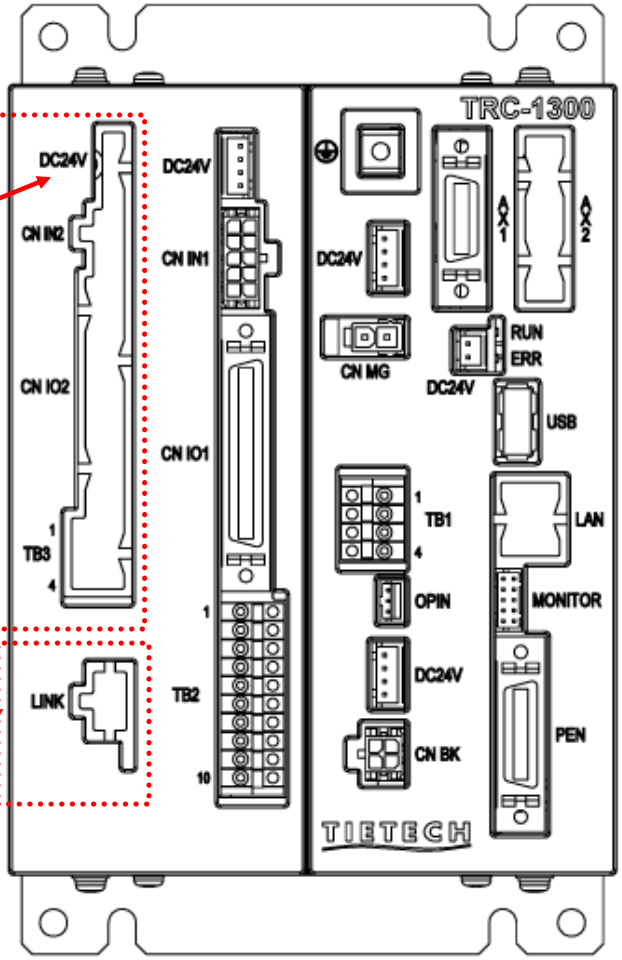
5, Operating environment humidity :humidity below 90%, no condensation or frozen status.

6 Storage environment: -20℃~75℃(not frozen), below 90% RH (no condensation).

1.2 Main circuit connection diagram



1.3 Controller panel layout



DC24V power supply(for IO)

Extended IO base board **DC24V** power supply

CNIN1: Injection molding machine input 1

CNIN2: Injection molding machine input 2

CNIO1: Take-out machine input/output 1

CNIO2: Take-out machine input/output 2

TB1: Abnormal stop input/output

TB2: Injection molding machine output 1

TB3: Injection molding machine output 2

TSL Base board
LINK: Used for IO communication
Used for position adjusting base board connection.

DC24V: Power supply input

AX1: Connected with servo drive attachment joint (for 1-axis)

AX2: Connected with servo drive joint (for 2-axis)

CNMG: Short circuit protection

RUN: Twinkling in normal run time
ERR: Flashing in failure

USB: Program data downloading and backup purposed USB interface

LAN: cable interface (for expansion in the future)

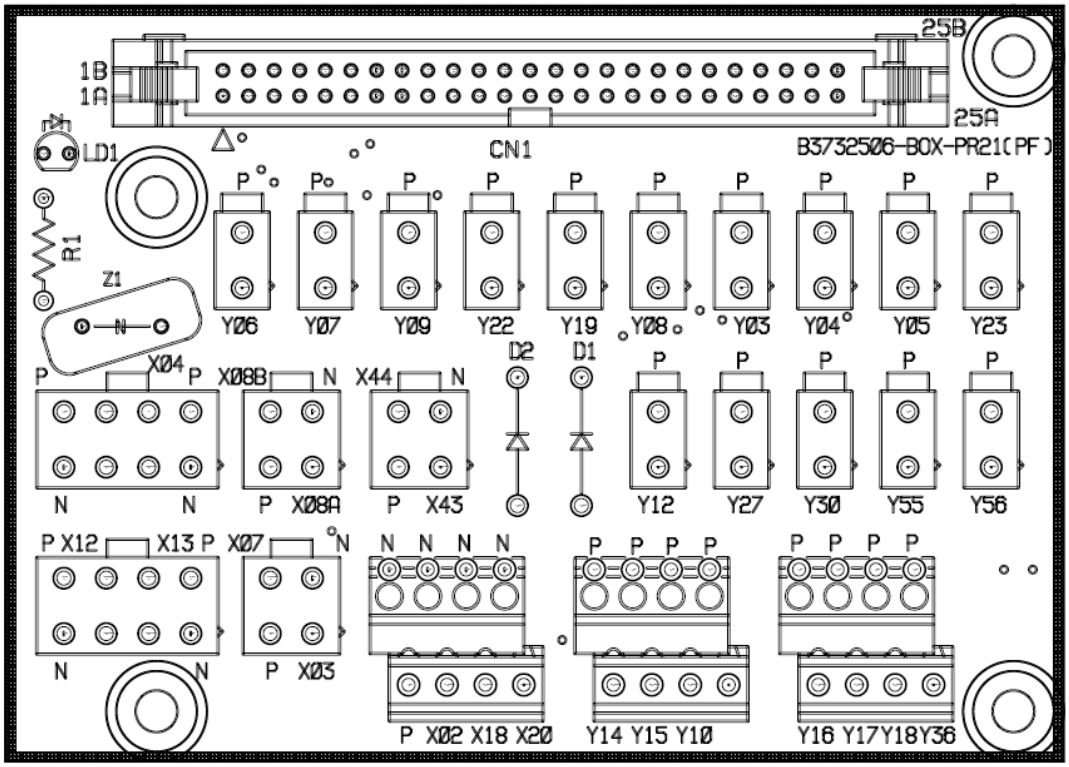
MONITOR: Connectors used for Backup battery

PEN: Connector used for the pendant connection

OPIN: Reserved input

CNBK: Fast inside and slow outside, Frequency conversion connector.

1.4 Relay board layout



Relay board signal definition description

CN IN01

1 Axis machine type: SER_1A; 2 Axis machine type:SER_2A			Frequency conversion:INV Upper and lower axis servo:INV+MZ Filly pneumatic:5Cylinder			
CNIN_01			**CNIO_01**			
Stitch Numbers	**Marks**	**Names (total 15 points)**	**Stitch Numbers**	**Marks**	**Names (total 20 points)**	
2	X01	**SER_1A&SER_2A**: Take-out side zone	22	Y03	**SER_1A &SER_2A**	**Single** : standby **Double**: Secndary arm go-down
		INV: Original point			**INV/INV+MZ/5C:** Single:Primary arm hold 2 Double: Secondary go-down	
		INV_MZ: Original point				
		5cylider: original point				

27	X02	**SER_1A&SER_2A:** standby **INV/INV+MZ/5C:** terminal point	46	Y04	**SER_1A&SER_2A:** Single :standby Double:Secondary arm go-forward **INV/INV+MZ/5C:** Single:Primary arm hold 2 Double:Secondary forward
12	X03	Double:Secondary arm upper Single arm: hold 2 detected	47	Y05	**SER_1A&SER_2A:** Single :standby Double: Secondary clamp **INV/INV+MZ/5C:** Single: blowing 2 Double: Secondary clamp
28	X04	Primary arm upper position	17	Y06	**SER_1A/INV/5C:**Finished product arm go-down **SER_2A/INV+MZ:** standby
13	X05	Absorb 1 detection	18	Y07	Primary arm go-forward
5	X06	Hold 1 detection	43	Y08	Primary arm sorption 1
37	X07	Double arm:Secondary clamp detected Single arm: standby	45	Y09	Lateral posture
6	X08	Pressure lower	20	Y10	Insert 2
30	X12	Lateral posture	19	Y12	Buzzer, warning lamp
31	X13	Aligning	14	Y14	**SER_1A/SER_2A:** blow 1 **INV+MZ:** transverse in **5C:** transverse in
11	X14	placement side zone 5c: terminal point	15	Y15	**SER_1A/SER_2A**: standby **INV+MZ**:Frequency conversion:transverse out **5C**: transverse out **INV:** transverse out
29	X18	Finished product arm retreat signal	38	Y16	**SER_1A/SER_2A**: standby B **INV+MZ/INV:**high speed **5C**:line feed slowdown

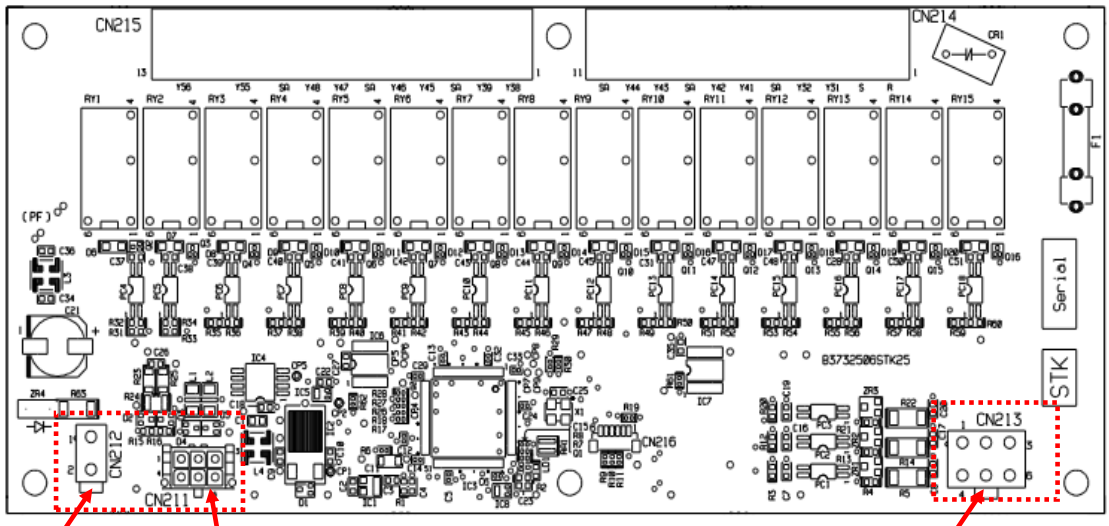
<table>
<tr><td rowspan="5">36</td><td rowspan="5">X20</td><td rowspan="2">SER_1A/SER_2A</td><td>Single: standby</td><td rowspan="5">48</td><td rowspan="5">Y17</td><td>SER_1A/SER_2A:Line feed servo: standby C</td></tr>
<tr><td>Double: Secondary arm</td><td rowspan="3">INV/INV+MZ: low speed</td></tr>
<tr><td>INV</td><td rowspan="2">Single:Sorp2 detected</td></tr>
<tr><td>INV+MZ</td></tr>
<tr><td>5C</td><td>Double: Secondary retreat</td><td>5C:tandby</td></tr>
<tr><td rowspan="3">3</td><td rowspan="3">X43</td><td colspan="2">SER_1A/SER_2A: Y axis original point</td><td rowspan="3">49</td><td rowspan="3">Y18</td><td rowspan="3">Inserting 1</td></tr>
<tr><td colspan="2">INV/5C: standby</td></tr>
<tr><td colspan="2">INV+MZ: finished product arm original point</td></tr>
<tr><td rowspan="3">4</td><td rowspan="3">X44</td><td colspan="2">SER_1A/SER_2A: Y axis limit</td><td rowspan="3">42</td><td rowspan="3">Y19</td><td rowspan="3">Primary arm hold</td></tr>
<tr><td colspan="2">INV/5C:standby</td></tr>
<tr><td colspan="2">INV+MZ:finished product arm out-of-limit</td></tr>
<tr><td rowspan="2"></td><td rowspan="2"></td><td colspan="2" rowspan="2"></td><td rowspan="2">44</td><td rowspan="2">Y22</td><td>SER_1A/SER_2A:Primary arm sorption 2</td></tr>
<tr><td>INV/INV+MZ/5C:standby</td></tr>
<tr><td></td><td></td><td colspan="2"></td><td>24</td><td>Y23</td><td>Aligning</td></tr>
<tr><td></td><td></td><td colspan="2"></td><td>21</td><td>Y27</td><td>Spray</td></tr>
<tr><td></td><td></td><td colspan="2"></td><td>23</td><td>Y30</td><td>INV/INV+MZ/5C:standby
SER_1A/ser_2A:
Primary arm hold 2</td></tr>
<tr><td></td><td></td><td colspan="2"></td><td>39</td><td>Y36</td><td>Allowing thimble retreat</td></tr>
</table>

CN INO2

CNIN_02			CNIO_02		
Stitch Numbers	**Marks**	**Names (total 9 points)**	**Stitch Numbers**	**Marks**	**Names (total 8 points)**
3	X09	hold 2 detection	13	Y01	**SER_1A/SER_2A:** standby B **INV/INV+MZ/5C:** Primary arm sorption 2
4	X15	**INV/INV+MZ/5C:** Sorption 2 detected **SER_1A/SER_2A**: standby 2	14	Y02	Add blowing Other:standby C
5	X21	Standby 5	15	Y21	StandbyF
6	X22	Standby 6	16	Y26	StandbyG
7	X37	Standby 9	31	Y11	StandbyE
21	X16	Standby 3	32	Y20	Add blowing
22	X19	Standby 4	33	Y28	StandbyD
23	X23	Standby 8	34	Y29	StandbyH
24	X27	Standby 7			

1.5 Position adjusting board layout and contact description

CN214,CN215: Contact output part



CN212:DC24V input

CN211: used for IO communication

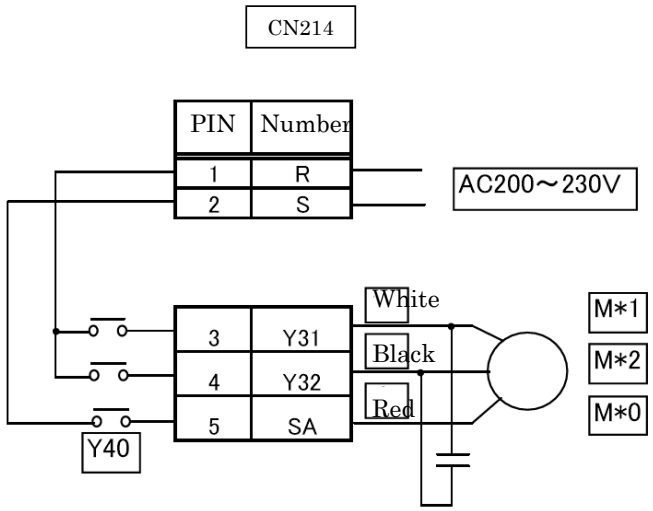
CN213: input part

Suitable for motor, wiring diagram:

1. Suitable for motor: M-4RK25N-C (220V 25W) [PEI-EI]
2. Wiring diagram

Wiring, for example: power supply and wiring for Y31, Y32

Other motor will be by means of combination of Y * 1, * 2 Y, and SA for wiring.



※1 The output of SA will be according to the ON/OFF status of Y40.

※2 Y*1 and Y*2 shall not get ON at the same time.

1.5.1 Position adjusting board signal definition description

CN211 IO communication

Type: 43045-0600（MOLEX）

Stitch Number	Marks	I/O specification	Names	Circuit structure
1	TX+	O	TS LINK TX	Differential output
2	TX-	O		Differential output
3	5.2V		DC5.2V	
4	RX+	I	TS LINK RX	Differential input
5	RX-	I		Differential input
6	GND		GND	

CN212 (DC24V input stroke adjustment)

Type: 5569-02（MOLEX）

Stitch Number	Marks	specification	Names	Circuit structure
1	24V		DC24V	
2	24G		24G	

Type：5569-06（MOLEX）

Stitch Number	Marks	specification	Names	Circuit structure
1	24V		DC24V	
2				NC
3	X24	I	Position-adjusting motor safety	Optocoupler
4	X25	I	Position-adjusting go-forward limit	Optocoupler
5	X26	I	Position-adjusting retreat limit	Optocoupler
6	24G		24G	

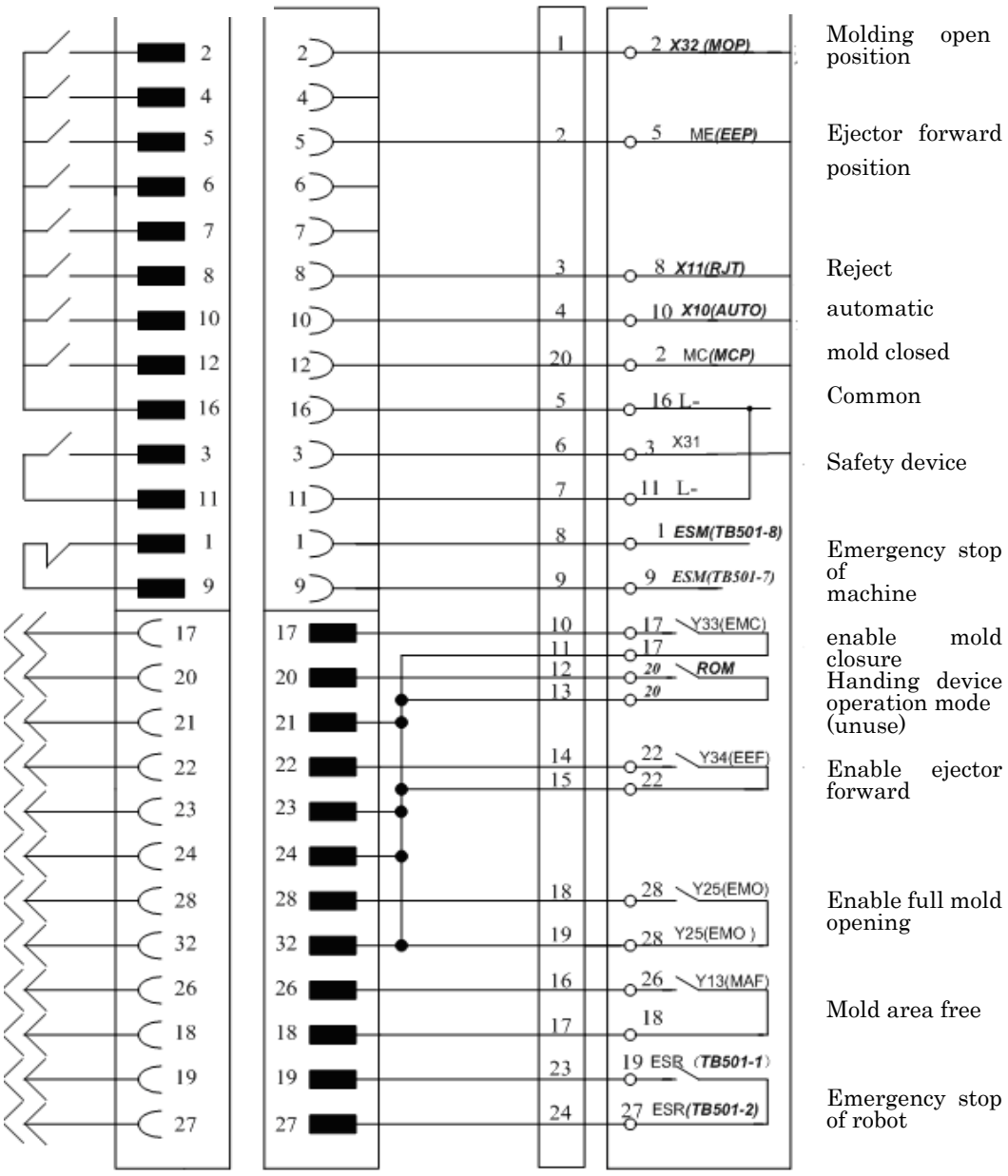
CN214 （Used for contact output）
Type: 2EHDRC-11P（MOLEX）

Stitch Number	Marks	specification	Names	Circuit structure
1	R			
2	S			
3	Y31	O	Primary arm position-adjusting go-upward (rising)	Contact output
4	Y32	O	Primary arm position-adjusting go-down	Contact output
5	SA(Y40)		Position-adjusting power supply	
6	Y41	O	Primary arm position go-forward	Contact output
7	Y42	O	Primary arm position retreat	Contact output
8	SA(Y40)		Adjusting motor’s power supply	
9	Y43	O	Primary arm stroke go-forward	Contact output
10	Y44	O	Primary arm stroke retreat	Contact output
11	SA(Y40)		Adjusting motor’s power supply	

CN215 （Used for contact output）
Type: 2EHDRC-13P（DINKLE）

Stitch Number	Marks	specification	Names	Circuit structure
1	Y38		Secondary arm position-adjusting go-upward (rising)	Contact output
2	Y39		Secondary arm position-adjusting go-down	
3	SA	O		Contact output
4	Y45	O	Secondary arm go-forward adjusting motor	Contact output
5	Y46		Secondary arm retreat adjusting motor	
6	SA	O		Contact output
7	Y47	O	Secondary arm stroke go-forward	Contact output
8	Y48		Secondary arm stroke retreat	
9	SA	O		Contact output
10，11	Y59	O	Primary arm position-adjusting motor braking	Contact output
12,13	(Y60)		Secondary arm position-adjusting motor braking	

1.6 Injection machine connection diagram



1.6.1 Injection machine signal connections definition description

CN IN1:

Stitch number	Marks	I/O	Names	Line numbers	
1,6	24V				
2	X31	I	safety devices	**6**	SDM
3	X32	I	Molding open position	**1**	MOP
4	X28	I	Medium board signal		
7	X10	I	automatic	**4**	AUTO
8	X11	I	Reject	**3**	RJT
9					
5,10	24G			**5,7**	

TB2:

Stitch number	Marks	I/O	Names	Line numbers	
1,2	Y33	O	enable mold closure	10,11	EMC
3,4	Y34	O	Enable ejector forward	14,15	EEF
5,6	Y13	O	Mold area free	16,17	MAF
7,8	Y25	O	Enable full mold opening	18,19	EMO
9,10	Y35	O	Conveyor belt	Null Null	CONV

CNIN2 （Option IO Injection molding machine） Type: 43045-0400(MOLEX)

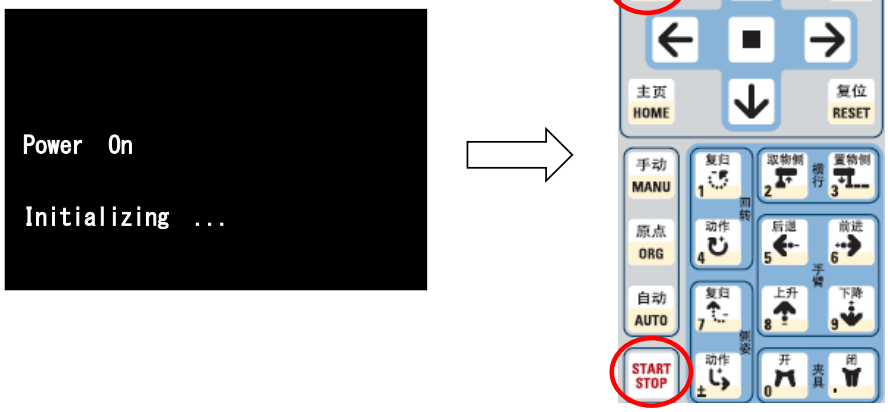
Stitch number	Marks	Specification	Names	Circuit structure
1	24V2		DC24V	
2	X29	I	Ejector forward position	Optocoupler input
3	X17	I	Placement safety	Optocoupler input
4	24V2		24G	

1 Screen and operating instructions

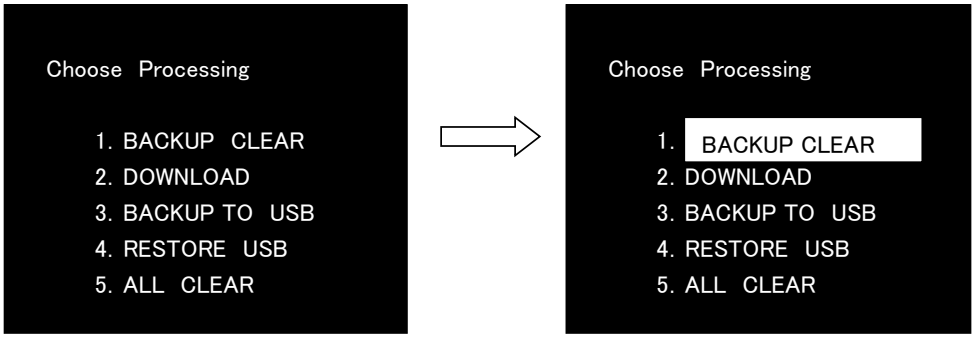
2.1 Download

After confirming the correction of all wiring connection and attachment, turn on the power supply switch. If the machine is set up for the first time, after-sales service personnel shall be responsible for the machine commissioning. During the daily production operations, users can make download operation on the programs.

①: Insert the USB flash disk into the USB interface on the controller, switch on the power supply and at the same time immediately press the "MENU" key + "START STOP" key.



②：Display the download menu. Press the 「↓」 key to display a white selection box, select the operating option 1 to 5, and then press the「■」 key to perform the operation.



③ ： Various operations:

Perform [1. BACKUP CLEAR] operation. When [Backup Clear Complete！] appears on the screen, the backup clearing operation ends.

Press any key to download the menu

Perform [2. DOWNLOAD] operation. When [Install Now Installing...] appears on the screen, start to perform the downloading operation.

※Caution※

Don't pull out the USB memory in the process of downloading .
Otherwise,
there will be possibility to lead to data corruption, moving failure or downloading error!

When [Install Complete!] appears, the downloading is complete. Please press any key to return to the download menu.

Perform [3. BACKUP USB] operation. Backup the data information of the setting value to the USB.

When [Backup All Now Writing...] appears, the “save” operation is in progress.

When [Backup All Complete！] appears, the data information has already been backuped to USB.

A [4. RESTORE the USB] operation. Will be saved in the USB value data load the machine.

Display [Restore All Now Writing...] when saved to start.

According to [Restore Complete!] When have to save data to the machine from the USB.

Perform [5． ALL　CLEAR] operation. Delete all data setting in the Flash ROM.

When [All Clear Complete!] appears, “delete” operation ends.

The objects to be deleted are for file data, operation record, alarm record, I/O record and system.

④ : After the completion of any above operations, restart the power supply and start up the system.

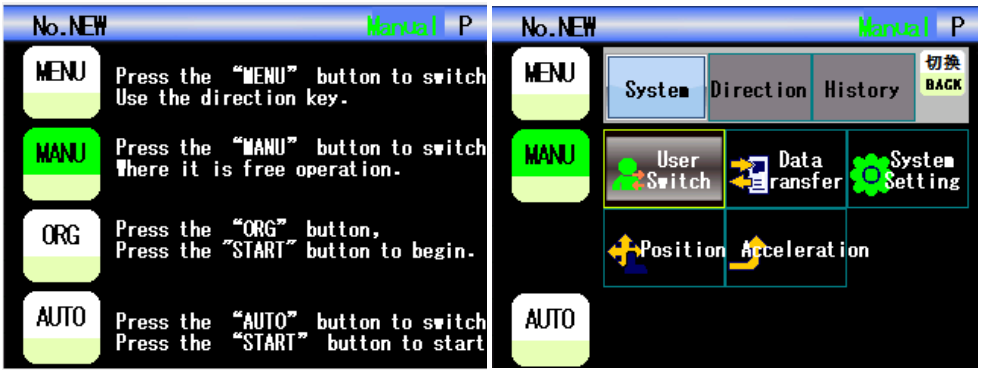
⑤ : Display that the backup is cleared. Display [alarm system]. After the backup is cleared, press the [CLEAR] key to perform the clearing operation.

⑥ : Use the ［version］under the menu to confirm the version information of all files and confirm whether or not the correct version of a file has been downloaded.

⑦ : When the downloading operation ends, restart the power supply and enter the following screen.

2.2 Menu screen and user switching

Press the "menu" button on the man-machine interface to display the menu screen. The "BACK/return" button can switch group, press the「← / →」「↑ / ↓」key to switch the dispay item under the menu, and press the「■」key to make confirmation.



2.2.1 Menu display under user permissions

The icon appears on the menu will change according to the user setting.

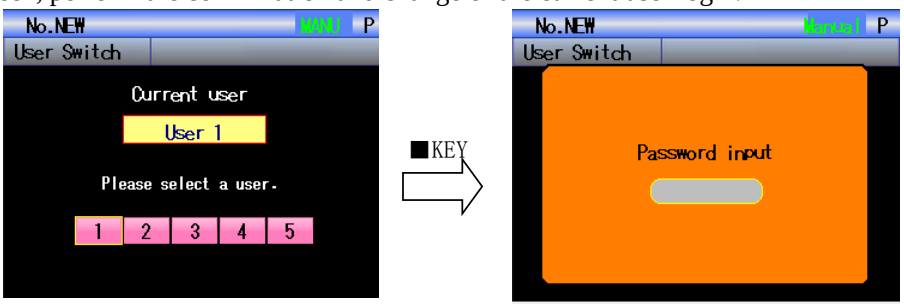
Group	Menu options	User 1	Standard user 2	Instruction user 3	Senior user 4	Senior user 5
System setting	User switching	●	●	●	●	●
	Data transfer	-	-	●	●	●
	Maintenance	-	-	-	●	●
	System setting	-	-	●	●	●
	Position adjusting (transposition	-	●	●	●	●
	Acceleration and deceleration	-	-	●	●	●
	Mechanical parameters	-	-	-	●	●

Instruction	Instruction	-	-	●	●	●
	Files	-	-	●	●	●
	Zone setting	-	●	●	●	●
	Mode setting	-	●	-	●	●
	Position setting	-	Sub-menu under the mode setting	-	●	●
	Linkage	-	●	-	●	●
	Detailed mode	-	Next page of mode setting	●	●	●
	Timer	-	Sub-menu under the mode setting and automatic screen	●	●	●
	Counter	-	Sub-menu under the timer screen	●	●	●
Record	Operation record	-	-	●	●	●
	Alarm record	-	-	●	●	●
	I/O status	-	●	●	●	●
	I/O record	-	-	-	●	●
	Production management	-	-	-	●	●
Others	Stack	-	The setting is possible within the position setting	●	-	●
	Free operation	-	Sub-menu under the manual screen	●	●	●

Among which, User 2 is referred to as the "Standard mode", and User 3 is also called "Instruction mode" 3.

2.2.2 User login

On the menu screen, select the "user login" to switch to the login screen as follows. On this screen, perform the confirmation and change of the current user login.

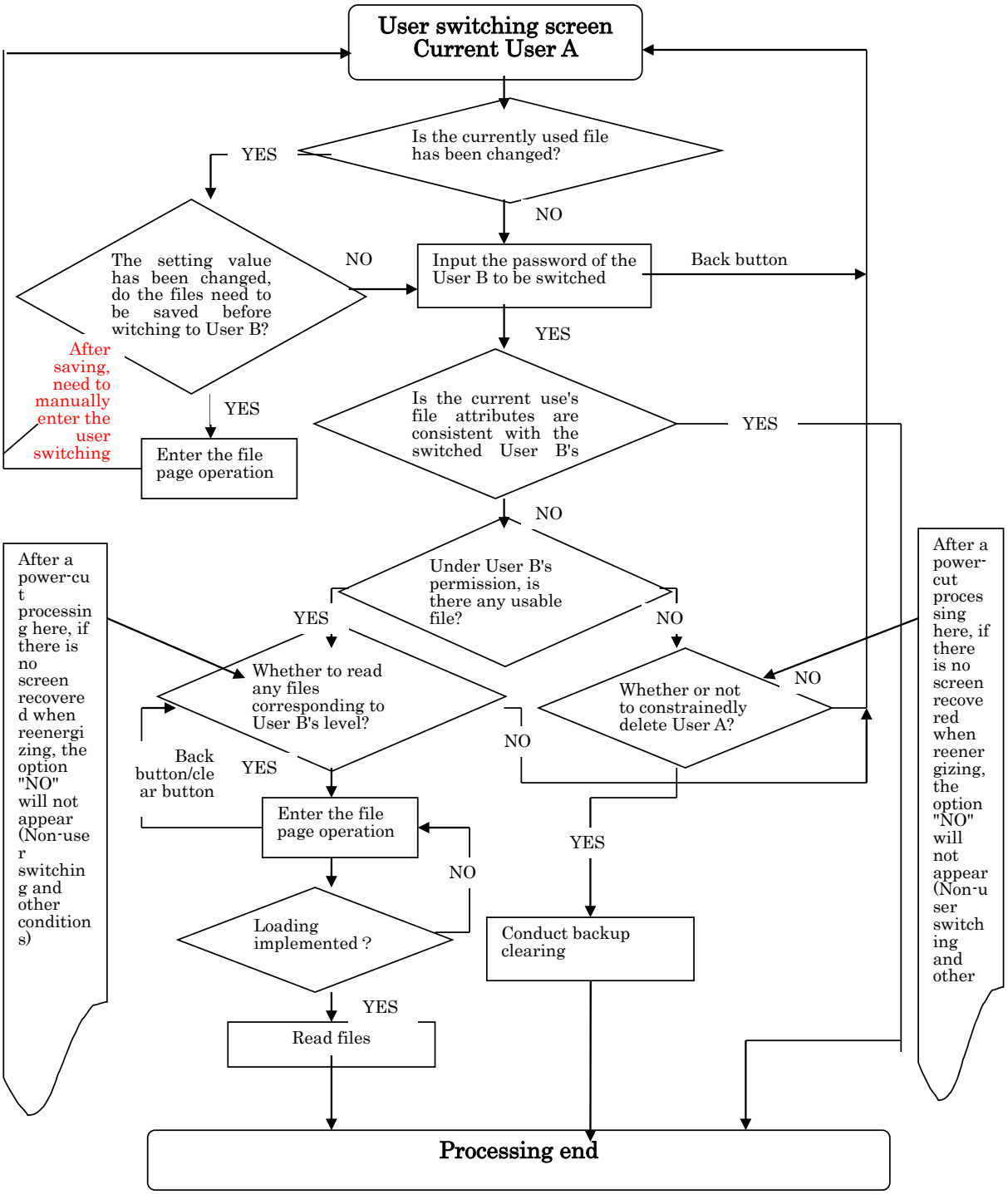


Firstly, the left screen appears. In the upper portion on the screen, the current logged-in user is displayed. On this screen, press the「←」/「→」button to select the user to be changed, press the「■」key to change the user login.

When a more superior user is selected, the password input screen appears. After inputting a password on the password input screen, press the「■」key to change the user login. After inputting a password on the password input screen, press the「■」key to change the user.

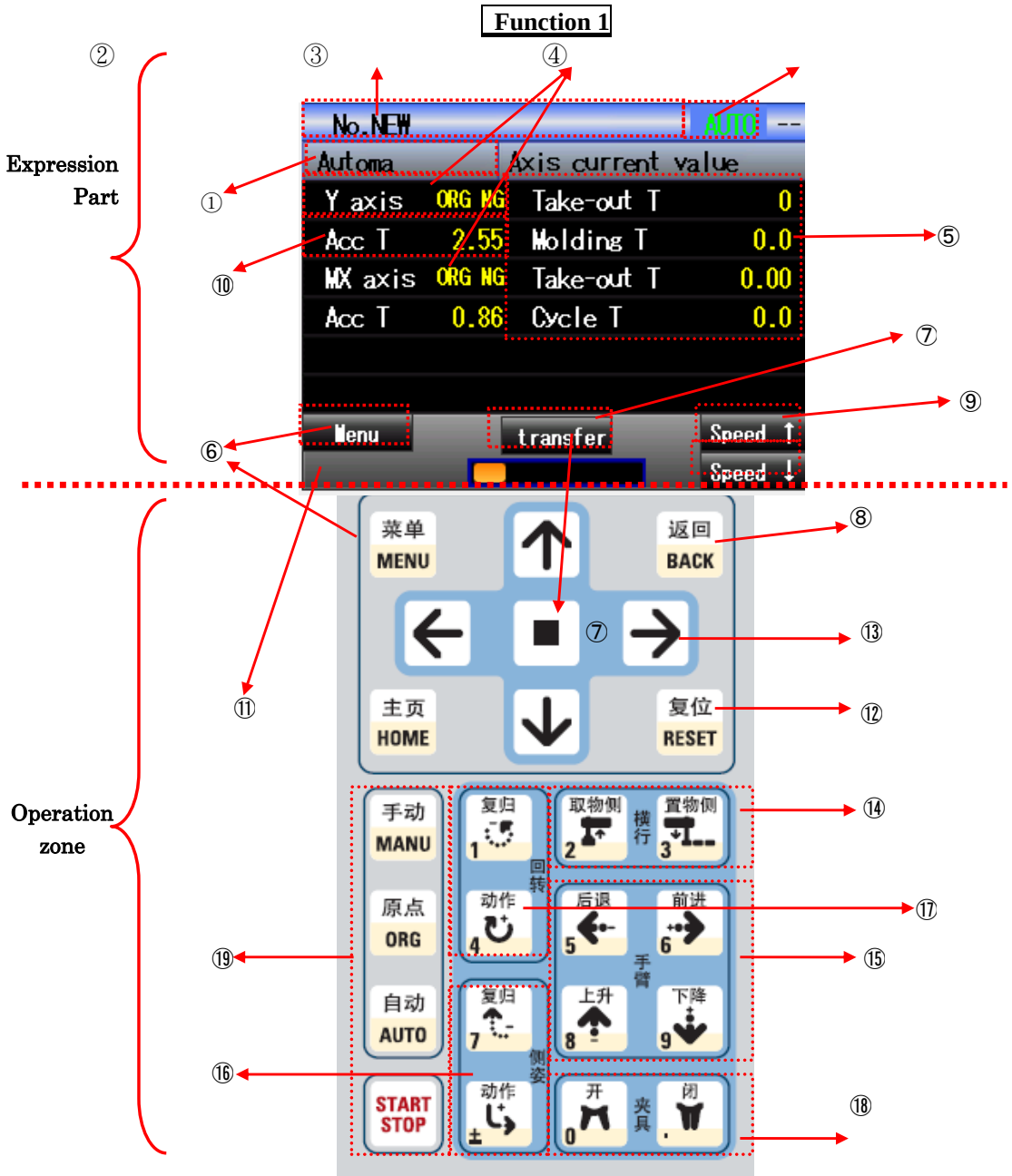
2.2.3 User switching

User switching refer to switching between different user permissions, because it has already been described above, the display as well ad mould file processing way will vary depanding on different permissions As shown in the screen below.


User switching screen
Current User A
Is the currently used file has been changed?
YES
NO
The setting value has been changed, do the files need to be saved before witching to User B?
NO
Input the password of the User B to be switched
Back button
YES
After saving, need to manually enter the user switching
YES
Enter the file page operation
Is the current use's file attributes are consistent with the switched User B's
YES
NO
After a power-cut processing here, if there is no screen recovered when reenergizing, the option "NO" will not appear (Non-user switching and other conditions)
Under User B's permission, is there any usable file?
YES
NO
Whether to read any files corresponding to User B's level?
Back button/clear button
YES
NO
Whether or not to constrainedly delete User A?
NO
After a power-cut processing here, if there is no screen recovered when reenergizing, the option "NO" will not appear (Non-user switching and other
Enter the file page operation
NO
YES
Loading implemented ?
YES
Conduct backup clearing
Read files
Processing end

2.3 Operation Screen

2.3.1 Operating button instructions



	Names	Functions

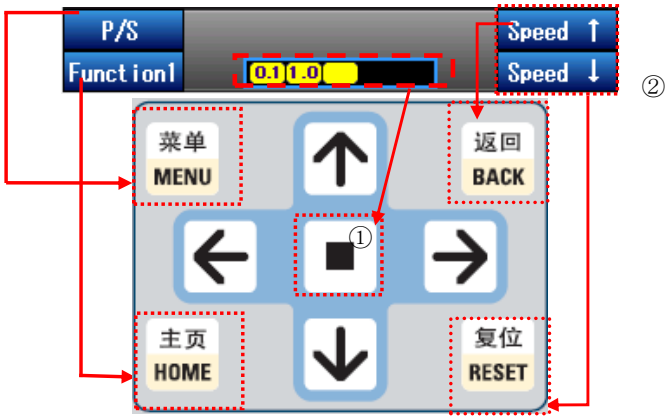
①	Screen name	Display the name of the current screen
②	Files	Display the number and comments of the file used cuurently. In case that the data in use are different with the logged data, the expression words will twinkle.
③	Axis's current value (when an axis is in service, the current value is displayed; when the axis's frequency is changing, no display.)	Y axis: Display the current position of the Y axis. MZ axis: Display the current position of the MZ axis.
④	Action mode expression	Display the current action's action mode. The status is " A: Automatic mode/M: Manual mode/O: Original point reset".
⑤	Running status window	According to the running condition. According to production status information.
⑥	MENU	Menu button, switch to the menu screen.
⑦	Screen transfer	「Press the「←」/「→」key to switch to the initial screen page display. Press the「■」key in the middle to switch to the detailed screen of the page from the initial screen.
⑧	BACK	Screens other than the initial screen, return to the previous screen
⑨	Speed adding and subtracting	According to the displayed screen, used when adjusting the speed. Usually corresponding to the return key and reset key.
⑩	Acceleration time (in case of frequency axis, without this item)	Display the acceleration time.
⑪	Timer	When it can operate once again automatically, enter into the timer screen.
⑫	RESET	According to the displayed screen, used in clearing the input, adjusting speed and eliminating the alarm.
⑬	Direction selection key	Used in turning pages or moving the selection box (cursor).
Action key part:		
⑭	Y axis action button	Make the Y axis move to the take-out side/placement side.
⑭	Forward, backward, Upward, downward key action keys	Make the primary arm and secondary arm move forward/backward/upward/downeard.
⑮	Posture action key	Make the clamp plate's posture return/move.
⑯	Rotation key	Make the clamp plate rotate, return/move.
⑰	Clamp action key	Make the clamp open/close.

⑱	MANU	Switch to manual mode.

	AUTO	Switch to automatic mode.
	ORG	Switch to original point reset mode.
	START/STOP	Perform the start/stop of the automatic operation, origina point reset action, and step action.

Screen button and man-machine interface

Function 2



Screen expression

	Names	Functions
Press "HOME" button to switch to the screen of the function 2 and function 1, and then the functions displayed on the screen change. The changed functions will be displayed in blue. At the moment, press the “action possibility button" to display the "primary/secondary" in blue, and the "MENU" can be used to switch the primary/secondary arm for use.		
	Speed display	Can be used to adjust overall speed of movement. Can be divided into five stages of "20% / 40% / 60% / 80% / 40%" for adjustment.
	Speed adjustment key	「RETURN」corresponding to SPEED↑, used for SPEED increase. 「CLEAR」key corresponding to SPEED↓, used for speed decrease.

2.3.2 Automatic screen

The automatic screen contains 3 sub-screens. Press「→」button to switch the screen .

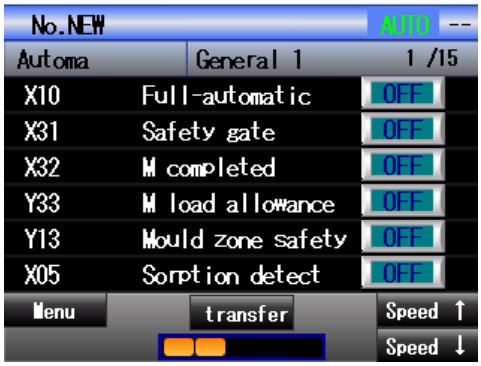
「Automatic screen – Axis's current value」

Axis current value. display the axis's current value, acceleration time, take-out times, mouloding time, take-out time, and cycle time.

To confirm the status of each point, press the「■」key on this screen to switch to the position setting.

.

When the system is in a status when the "Original point not reset," will be dipayed at axis position: .



「Automatic screen - input/output」

Display the initial screen of the input and output. The input and output screen is divided into three parts for display:injection molding machine input/output, external input/output and take-out machine input/output. Press the↑/↓ key to switch the the page display of each part.

To confirm each IO status, press the「■」key on this screen to switch to the IO expression screen.

「Initial screen - production management」

Display the initial screen of the

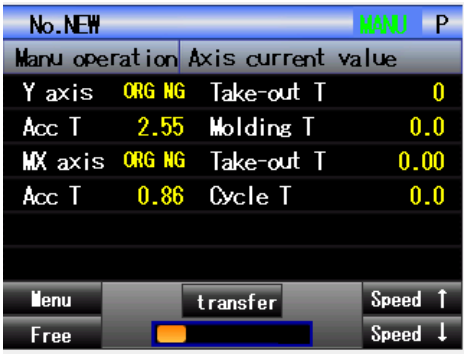
production management. Display the current production status.

To perform the production management, press the「■」key to switch to the production management screen.

The initial production management showing the name and description:

Names	Descriptions
Mould finished product number	The number of products that can be formed by a mould at one time.
Take-out times	Number of times of taking out products.
Scheduled production number	Scheduled number of products to be produced
Current production number	Number of products taken out, excluding the discharged products.
Achieving rate of %	Reative to the scheduled production number, the achieving degree is expressed as a percentage. A chieving rate = (Production number ÷scheduled number) ×100
Defective product number	Number of product pieces open to the defective product discharge position. A standard program is not open to the defective product discharge position.
Defective rate %	The number of products taken out as defective products in the total number of products taken out, expressed as a percentage. Defective rate = Discharge number÷(one-time finished product number x Taken-out times + discharge times)
Scheduled end time	Calculate and display the scheduled end time when the molding cycle is restored.

2.3.3 Manual screen



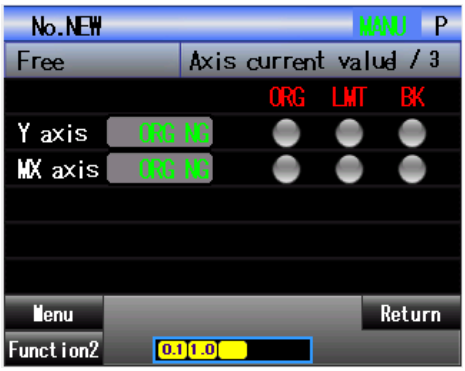
Press the "manual" button to enter a status of manual mode, press the safety switch and at the same time press the manual operation key to perform the manual (free) operation, which according to the screen changing can be divided into manual operation available/free operating available/both unavailable.

Manual operation-available screen

・ Press the "manual" button on manual operation screen

.

2.3.4 Free screen



On the manual screen, press the "home page" button to enter a state of free operation, press the safety switch and at the same time press the manual operation key to perform the manual (free) operation, which according to the screen changing can be divided into manual operation available/free operating available/both unavailable..

Free operating-available screen

- Free operation screen
- Position setting screen
- Stack screen
  Screen for conducting axis setting on instruction screen
- Position-adjusting screen (transposition scren)
- other available screens

2.3.5 Original point reset

When the original point on the menu screen twinkles, it means that the original point has not been reset, or the corresponding prompty may also appear at the position of the axis's current value.

When the original poiont has been reset,you can see the subscription on the menu screen has been reflashed.

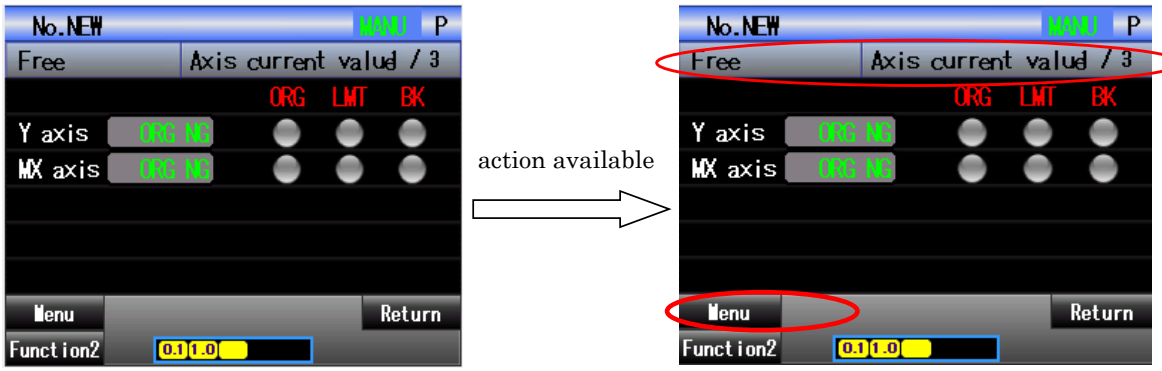
Press the "original point" button to enter a state of original point mode, momently press the "start " button to begin to reset the original. However, in the following circumstances, it is imposible to start the original point reset or even if it is started, the operation will not continue.

- Press the safety switch and at the same time press the START button
- Full stop alarm and axis stop alarm accur
- Axis is inside the mould
- Mouild outside standby mode gets ON and the mould unloading over (complete) (X32) gets OFF
- Axis goes down to a position other than tak take-out side or placement side

2.3.6 Primary and secondary arm switching

On the above screen, in the top right corner, “Primary” appears, indicating that the current operation is switched to "Primary arm", if the current operation is switched to "Secondary arm", in the top right corner, "Secondary " will appear.

On the screen able to switch primary arm and secondary arm, such as free screen, position setting and other screens associated to the use of primary arm and secondary arm, press the “action available " button on the left side of the man-machine screen, a primary/ secondary key similar to a hidden key will appear.



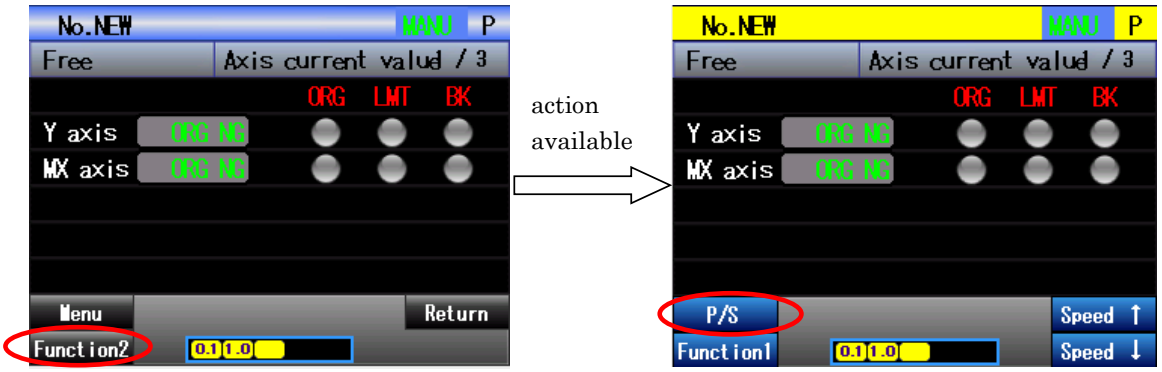
At the same time when the top of the screen becomes bright yellow, the “primary/secondary” botton will appear above the " function 2" button.

How to switch the primary/secondary arm for the corresponding operation?

The details on the foregoing are described as follows.

Firstly, switching the primary/secondary arm is required to be performed on a page available for free operation. For example, on the free screen, press the " function 2" key (i.e., HOME button) to make the “function 2” key get blue. And then, pressing "action available key" will let you find that the " primary/secondary " button is also changed into blue, indicating that it is currently available for switching.

Then, press "menu" button, you can free transform the use of "vice" is/arm.



Finally, press the primary/secondary " button to let the “primary in the top right corner become "secondary".

When switching "secondary", it means that the secondary arm related operation is available at the moment.

3 Standard user 2 operating instructions

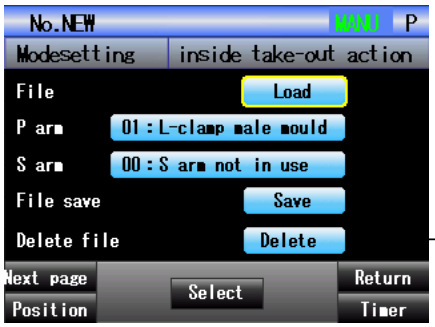
Base on the above mentioned, on the screen of User 2, enter the menu in the standard mode.

On the screen of standard user, the menu options are shown as: free operation, mode setting, linkage, zone setting, I/O status, user switch, and position adjustment (transposition). If you want to display more menu, a permission at a higher level shall be required to modify the user setting.

3.1 Mode setting

Select the "mode setting" on the menu screen to enter tne "mode settings" screen. According to the operating steps, it is possible to perform mould read-out, mould selection, senior mode setting, timer and counter, insert function, mould save and other functions. The descriptions on the setting process are as follows.

Mode screen operation flow chart



Use the cursor to select and press the "■"key, i.e. "selection".

Enter the "mode selection" page for mould read-in, primary arm (finished-product arm) and secondary-arm (stub bar arm).

Enter the detailed mode setting screen.

Press the man-machine "menu" button and enter the "next page" screen.

Enter the next page and enter the "insert" screen.

Enter the insert function screen, where it is possible to set the functions of Y30 and Y24.

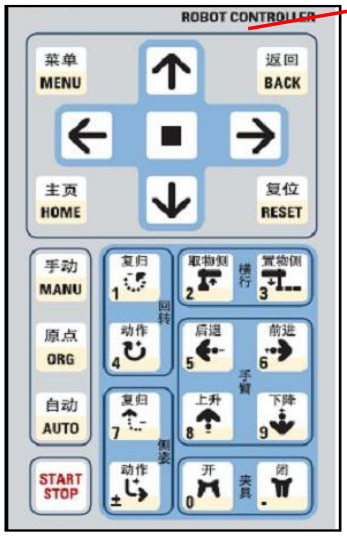
Enter the timer setting screen.

Press the "reset" button to enter the "timer" screen.

Press the man-machine "home page" button to enter the "counter" screen.

Enter the counter setting screen.

PEN panel key



Enter the position setting screen.

Press the man-machine "home page" button and enter the "position setting" screen.

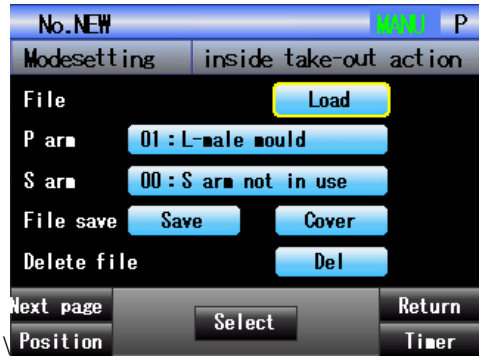
Enter the "mould save" screen. Please refer to the "mould file save" for the operation.

Move the cursorto select the "save" button and then press the "■" key.

Enter the "delete mould document" screen.

Move the cursor to select the "delete" key and press the "■" key.

3.1.1 Mode selection

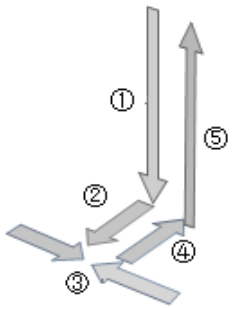


File: Read out the required mould files.
Primary arm: Primary arm's mode selection. 01-04 are usual mode.
Secondary arm: Secondary arm's mode selection. 11 to 18 are usual mode.
File save: Save the mould files.
File delete: Delete the mold files.

Primary arm (finished product arm) mould inside take-out action diagram

1. L- Male mould

Original point

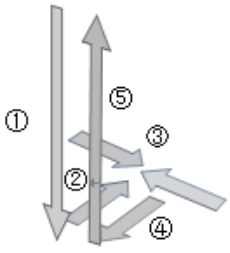


Take-out side

■ Action sequence
1. Arm go-downward
2. Go forward
3. Absorb/Clamp
4. Retreat(go-backward)
5. Arm rising(go-upward)

2. L- Female mould

Original point

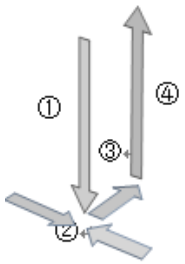


Take-out side

■ Action sequence
1. Arm go-downward
2. Retreat(go-backward)
3. Absorb/Clamp
4. Go forward
5. Arm rising(go-upward)

3. U- Fale mould

Original point



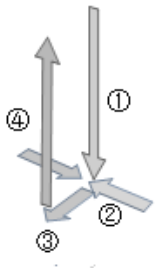
Take-out side

■ Action sequence

1. Arm go-downward
2. Absorb/Clamp
3. Retreat(go-backward)
4. Arm rising(go-upward)

4. U- Female mould

Original point



Take-out side

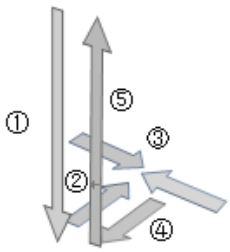
■ Action sequence

1. Arm go-downward
2. Absorb/Clamp
3. Go forward
4. Arm rising(go-upward)

Secondary arm (stub bar arm) mould inside take-out action diagram

11. L- Female mould

Original point



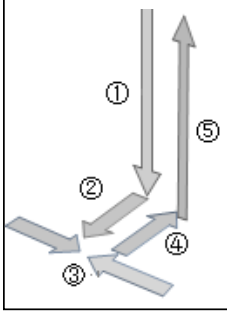
Take-out side

■Action sequence

1. Arm go-downward
2. Retreat(go-backward)
3. Clamp
4. Go forward
5. Arm rising(go-upward)

12. L- Male mould

Original point ıal point ıt



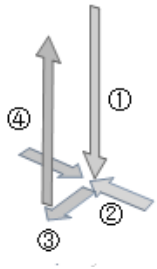
Take-out side

■Action sequence

1. Arm go-downward
2. Go forward
3. Clamp
4. Retreat(go-backward)
5. Arm rising(go-upward)

13. U- Female mould

Original point



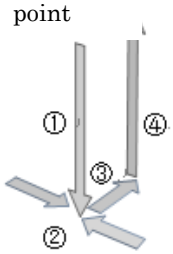
Take-out side

■Action sequence

1. Arm go-downward
2. Clamp
3. Go forward
4. Arm rising(go-upward)

14. U- Male mould

Original point



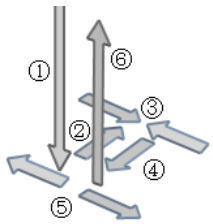
Take-out side

■Action sequence

1. Arm go-downward
2. Clamp
3. Retreat(go-backward)
4. Arm rising(go-upward)

15. L- Male mould inside

Original point



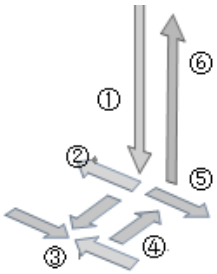
Take-out side

■Action sequence

1. Arm go-downward
2. Go forward
3. Clamp
4. Retreat(go-backward)
5. Clamp open
6. Arm go-upward

16. L- Male mould inside

Original point



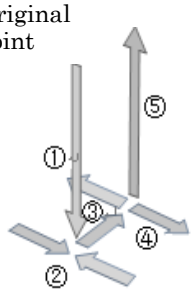
Take-out side

■Action sequence

1. Arm go-downward
2. Go forward
3. Clamp
4. Retreat(go-backward)
5. Clamp open
6. Arm rising(go-upward)

17. U- Male mould inside

Original point

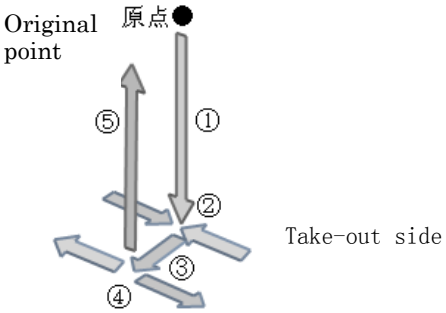


Take-out side

■Action sequence

1. Arm go-downward
2. Clamp
3. Retreat(go-backward)
4. Clamp open
5. Arm rising(go-upward)

18. U- Female mould inside

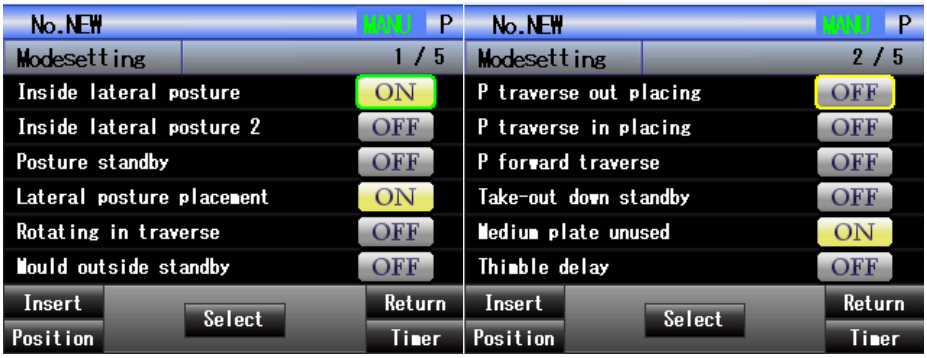


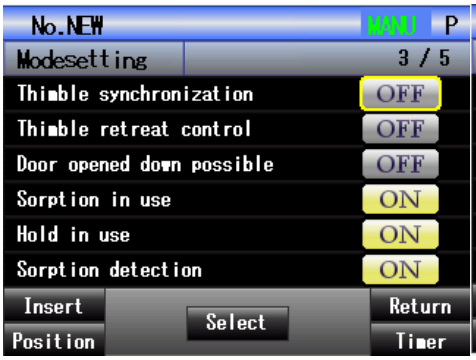
■Action sequence

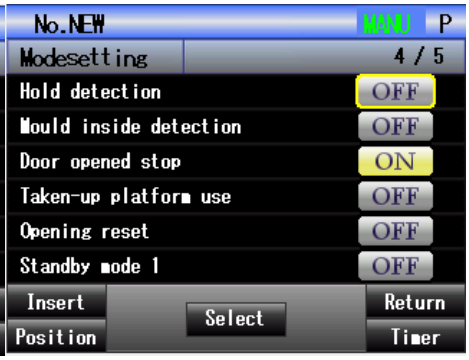
1. Arm go-downward
2. Clamp
3. Go forward
4. Clamp open
5. Arm rising(go-upward)

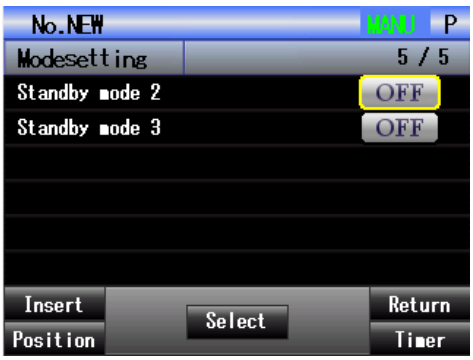
3.1.2 Detailed mode under standard user

Under the model setting, press the "next page" key to enter the mode setting screen. Depending on differentthe machine types , the mode may also be somewhat different. Here is a mode page for the machine type of 1-axis .









Mode list

Standard mode

Mode names	Descriptions
Interna lateral posture	By reason of a long finished product or other reasons and thus after the finished product taken out interferes with the molder action in the lateral posture status, gets ON.
	Wait for forming at the take-out standby position and stand by at an aligning status, and after taken-out, allow forming after lateral posture. Later, make the transverse axis move.
Interna lateral posture 2	Lateral posture status and molder action does not interfere with each otherm, but when performing take-out side < = > placement side movement in a lateral posture status and interfering with injection molding machine (safety door), get ON.
	Wait for forming at the take-out standby position and stand by at an aligning status, and after taken-out, allow post-forming lateral posture. Later, make the transverse axis move.
Lateral posture standby	By reason of a long clamp and other reasons, at the aligning status with interference with the molder action, gets ON.
	Wait for forming at the take-out standby position and stand by at a lateral posture status, and after taken-out, allow post-forming lateral posture. Later, make the transverse axis move.
Lateral posture placement	When releasing finished products and making it in a lateral posture, gets ON.
Transverse midway lateral posture	When moving toward placement side, before moving toward the placement position, and when the placement side zone gets ON, perform a lateral posture movement.
Mould outside standby	In a mould-loading status, when line feed mechanism comes to contact with the mould, and when failing to reach onto the mouild before the mould unloading over/complete, gets ON.
Primary arm transverse-out placing materials	When performing primary arm stub bar releasing before releasing finished products, gets ON
Primary arm transverse-in placing materials	When performing primary arm stub bar releasing after releasing finished products, when transverse-in, gets ON

Secondary arm transverse-in placing materials	When performing stub bar releasing after releasing finished products, when transverse-in, gets ON
Transverse-in go-down placing materials	When performing transverse-out/in primary arm stub bar releasing and making it go down, gets ON.
Primary outside go-down(axis, frequency conversion with this item)	When performing finished product releasing and making it go down, gets ON.
Primary outside go-down	When performing releasing and making it go down, gets ON.
Primary arm lead-in transverse-out	When performing take-out side < = > placement side movement and letting primary arm go forward, gets ON.
Secondary arm lead-out transverse-out	When performing take-out side < = > placement side movement and letting secondary arm move to line feed body side, gets ON.
Medium plate unused	When medium plate limit not in use, gets ON. Please note that ON means not in use, OFF means in use.
Thimble delay	When the control allows thimble to go forward, gets ON. When take-out go-down begin, after startup timer's limit time is up, allowing thimble to go forward gets ON.
Thimble synchronization	When control allows the thimble go forward, gets ON. After take-out clamp's taking position has moved, allowing thimble to go forward gets ON.
Thimble retreat control	When control allows the thimble to retreat (go back), gets ON.
Sorption in use	When sorption is in use, gets ON.
Hold in use	When clamp/jig 1 is in use, gets ON.
Absorb detection	When confirming sorption to verify if finished products are firmly sucked, gets ON.
Hold detection	When confirming clamp to verify if finished products are firmly clamped, gets ON.

Secondary clamp detection	When confirming stub bar gripping verify if stub bar is firmly clamped, gets ON.
Mould inside detection	Only perform mould inside gripping and dropping confirmation.
Door open go-down available	When letting operating personnel perform mould inside items take-out action after opening the safety door, gets ON.
Opening door stop	When temporarily stoppomg action after opening safety door, gets ON.
Taken-up platform in use	When replacing conveyor belt action and letting taken-up platform rise, gets ON.
Opening reset	When gripping action mistaking and omitting releasing action, gets ON.
Take-out go-down standby .(2-axis and upper/lower axis servo type are provided with this item; 1-axis and frequency conversion are not provided with this item)	Waiting for go-down action at a certain distance outside the mould.
USER MODE1～8	Unused in a standard program.

Instruction model (User 3)

The the instruction mode is mainly used for safety protection in manual operation, if the action of mode setting is in need, the instruction program should be conducted according to the action sequence of the mode.

Mode names	**Descriptions**
Mould outside standby	In a mould-loading status, when line feed mechanism comes to contact with the mould, and when failing to reach onto the mouild before the mould unloading over/complete, gets ON.
Primary arm fixed mould take-out	When taking out finished products from the fixed mould of the injection molding machine, gets ON.

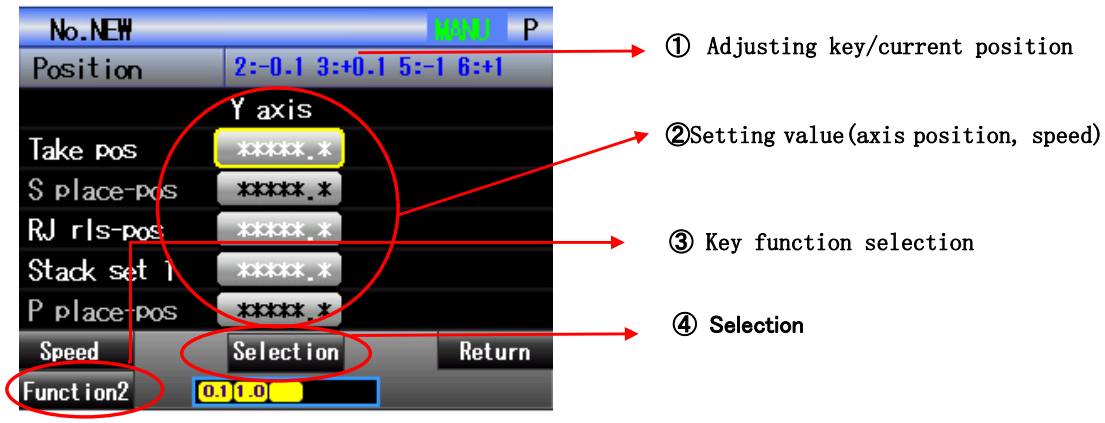
Primary arm U-shaped take-out	In the process of performing finished product take-out action, when making it act in the sequence of 「moving toward above the gripping position →going down →clamp →extraction →going upward", gets ON.
Internal lateral posture	By reason of a long finished product or other reasons and thus after the finished product taken out interferes with the molding action in the lateral posture status, gets ON. Wait for forming at the take-out standby position and stand by at an aligning status, and after taken-out, allow forming after lateral posture. Later, make the transverse axis move.
Internal lateral posture 2	Lateral posture status and molding action does not interfere with each otherm, but when performing take-out side < = > placement side movement in a lateral posture status and interfering with injection molding machine (safety door), get ON. Wait for forming at the take-out standby position and stand by at an aligning status, and after taken-out, allow post-forming lateral posture. Later, make the transverse axis move.
Lateral posture standby	By reason of a long clamp and other reasons, at the aligning status with interference with the molding action, gets ON. Wait for forming at the take-out standby position and stand by at a lateral posture status, and after taken-out, allow post-forming lateral posture. Later, make the transverse axis move.
Medium plate unused	When medium plate limit not in use, gets ON. Please note that ON means not in use, OFF means in use.

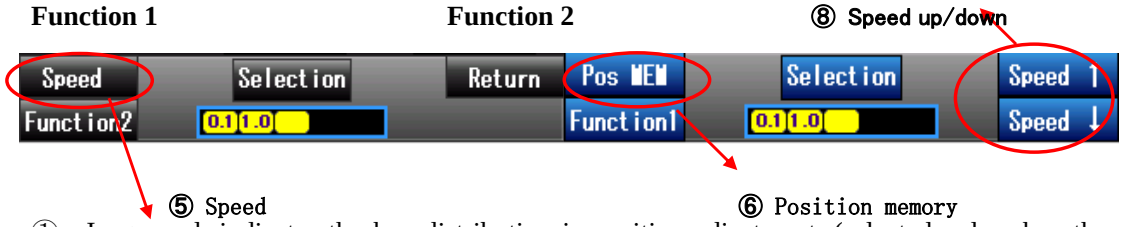
3.1.3 Position setting

On the detailed mode setting screen, press the “next page” to enter into the "position setting".

Switch to the screen as showned below, where it is possible to set various points and speed of the take-out machine.(if the corresponding mode of this position is OFF, it will be displayed in gray and impossible to make setting)

Example: 1-axis’s position setting





①：In general, indicates the key distribution in position adjustment. (selected only when the setting value is “axis position”)

According to the safety switch: display position now.

②：Indicates Y axis position/speed zone. Set the setting value of this position. In case of no setting value, displayed as "- - - -.-" . (in case of FUNC1, press the"MENU" button to switch the "axis position"/"speed".)

③：Keys function selection. Press the "HOME" button to switch successively the expression of the "function 2" / "function1" key.

④：Move the cursor to the item to be set and press the “■” key can to perform the digital key input for the setting value.

⑤：Press the "RESET" button to switch successively the primary arm axie and secondary arm axis.

⑥：Press the “■” key to switch the setting value of "axis position"/"speed".

⑦：Perform the position memory. Let the setting value be reflected at the current position.

⑧：Raising or lowering the speed of manual operating/free operating.

2-axis position setting

①：In general, indicates the key distribution in position adjustment. (selected only when the setting value is “axis position”)

According to the safety switch: display position now.

②：Indicates Y axis position/speed zone. Set the setting value of this position. In case of no setting value, displayed as "- - - -.-" . (in case of FUNC1, press the"MENU" button to switch the "axis position"/"speed".)

③：Keys function selection. Press the "HOME" button to switch successively the expression of the "function 2" / "function1" key.

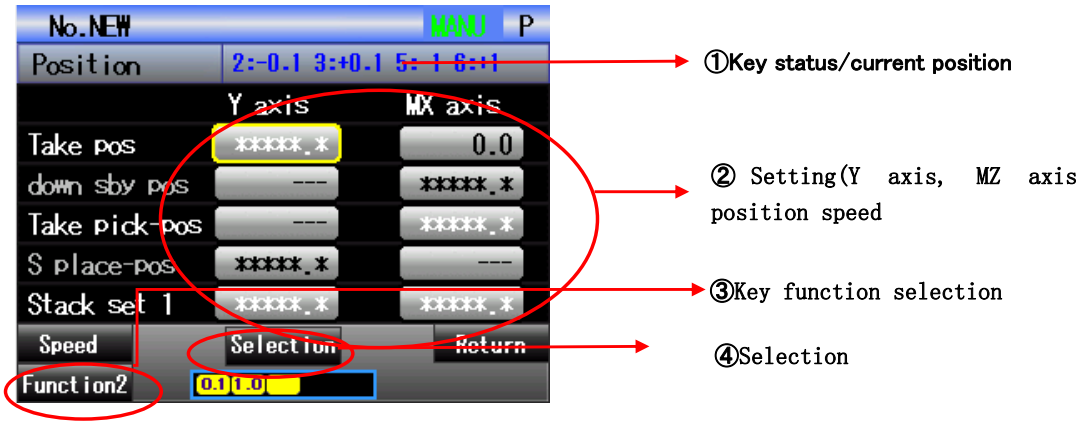
④：Move the cursor to the item to be set and press the “■” key can to perform the digital key input for the setting value.

⑤：Press the "RESET" button to switch successively the primary arm axie and secondary arm axis.

⑥：Press the “■” key to switch the setting value of "axis position"/"speed".

⑦：Perform the position memory. Let the setting value be reflected at the current position.

⑧：Raising or lowering the speed of manual operating/free operating.



Note: The variable-frequency bype is not provided with position setting.

When using the "function 2" on the position setting screen, it is possible to use position memory function.

Position setting procedure: When using the "position memory"

1. Select the "free operation".
2. Press the action available key, and at the same time, press the corresponding action key to move to the position desired to be set.
3. Use the 「↑」/「↓」key to select the point desired to be set.
4. Press the "■" key to select the " position memory" and set the current value as the setting value.

Use the 「↑」/「↓」button to select the point desired to be set. Move the cursor to the point desired to be changed and then press the "■" key, with the screen displayed as follow; after the setting value column is selected, it is displayed as cyan, and at this place, use the action button to enter the numerical value of the position desired to be moved, press the "■" key to complete the input, with unit in "mm.

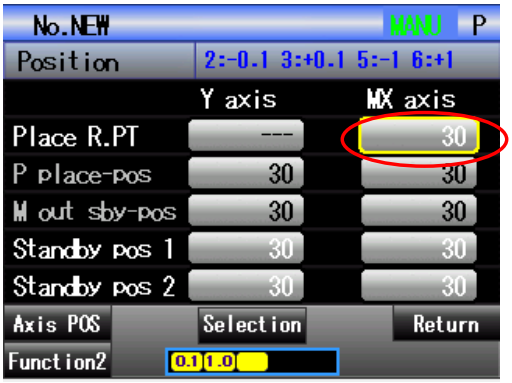
Speed setting:

Turn the “Key function selection” to the “Functional1”, press the speed (the MENU button) to switch to the "speed setting". Select the speed setting column of each point, with the screen displayed as below in light blue, using the action key to input numerical values from 0 to 100 and pressing the “■” key to complete the input, where the unit is in "%", i.e. the percentage of all the speed.

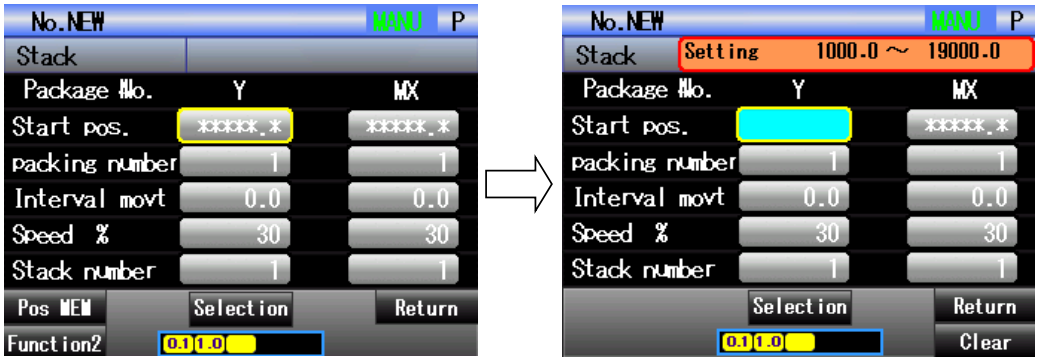
In the speed setting, according to the requirements by various production processes, it is also possible to set separately the rising speed of the upper and lower axis.

To set the next point, use the「↓」key to move to the last option on this page, and then press to switch to the next page.

Select the stack to perform the in the following stack settings. The stack setting consists of seven items.



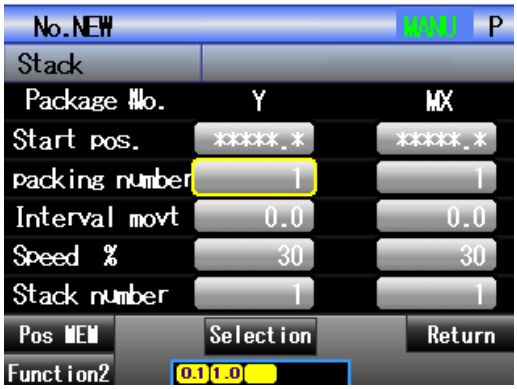
「**Start position**」



First of all, the starting position of the stack can be set, with the screen displaying the Y axis’s current value and setting value column. When no setting value, the display is * * * *. *. Press the “■” key, with the screen dispayed as that on the right side, where the action key may be used to input the setting value. to cancel the input, press the "RESET" button, and press the “■” key to make confirmation after the input is completed. Click the "BACK" button to return to the previous screen.

「Stack starting point」:

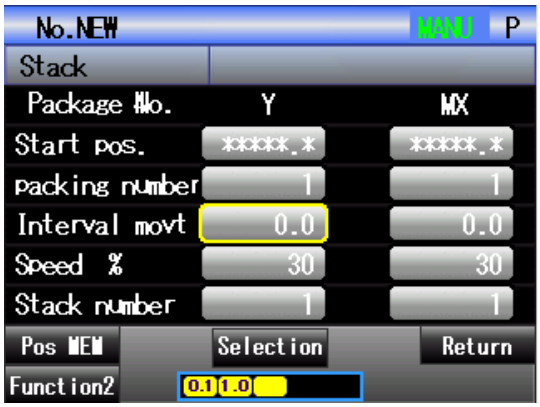
Use the「↓」key to move the cursor to the "stack starting point".



On this screen, it is possible to set the current number of packing, with the numeric value input method being the same as that used in the setting for the “start position”. After the value setting here is accumulated to the setting value of the "stack number", the value will accumulate from the very beginning, whereby to achieve the movement of the stack and conveyor belt and perform the next stack action.

「Interval movement amount」:

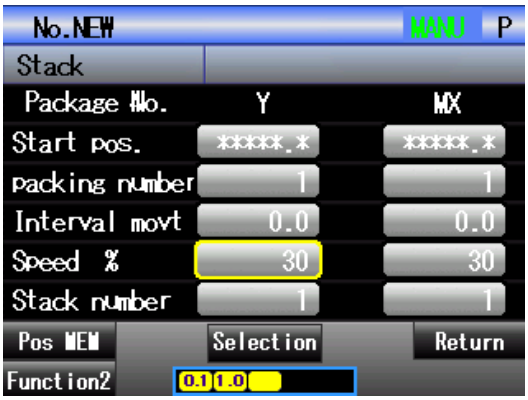
Use the「↓」key to move the cursor to the "Interval movement amount".



On this screen, it is possible to set the position interval when releasing the products. For example, when the setting value is 10.0, the products will be released in an interval of10 mm, with the numerical value input method being the same as that used in the setting for the “start position”.

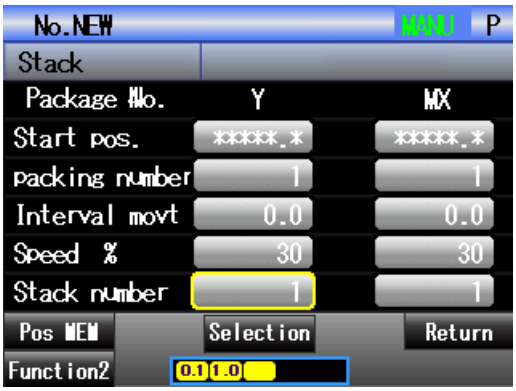
「Speed %」:

Use the「↓」key to move the cursor to the "speed %".



On this screen, it is possible to set the speed moving toward the placement side, which can be set as a numerical value from 1 to 100, with the unit in %, i.e. the percentage of the whole speed. The numerical input method is the same as that used in the setting for the “start position”.

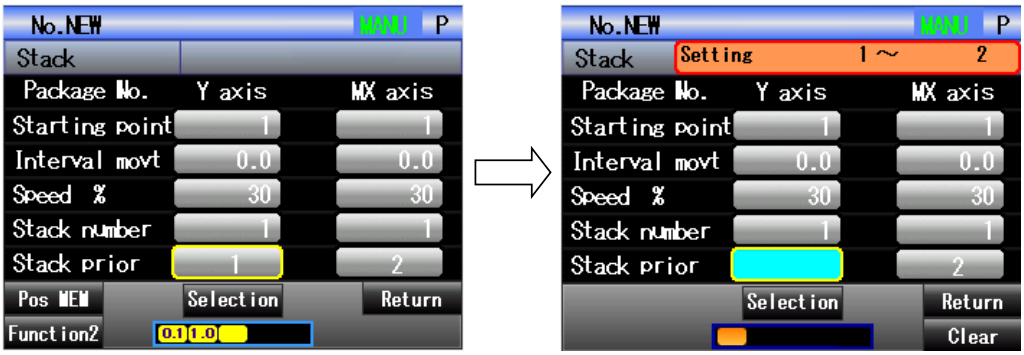
Use the「↓」key to move the cursor to the "stack number".



On the stack number screen, it is possible to set the number of axis position, with a settable range from 1 to 127 and a maximum stack number up to 127. The numerical input method is the same as that used in the setting for the “start position”. The stack number is exactly the maximum number the user desired to stack; when the stack starting point accumulate to the stack number, the value will accumulate once again from the very beginning.

「Stack priority」:

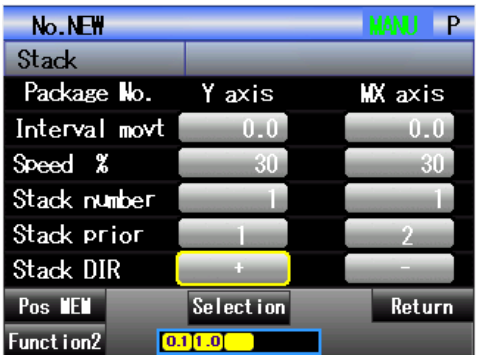
Use the「↓」key to move the cursor to the "stack priority



On the stacking sequence screen, it is possible to set the axis from which to start the stack. The numerical input method is the same as that used in the setting for the “start position”. If the axis number is different, the sequence will automatically change.

「Stack direction」:

Use the「↓」key to move the cursor to the "stack direction".



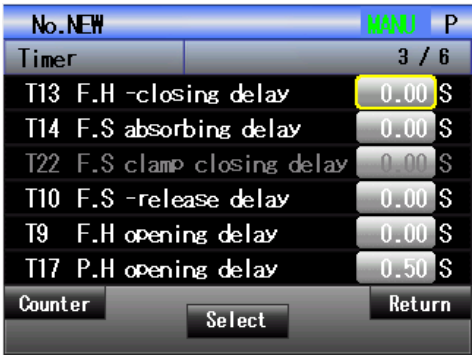
The interval direction is set for the the direction of the product release. Press the “■” key to switch the direction of 「＋」/「-」. Before the direction changes, the confirmation message will be be displayed.

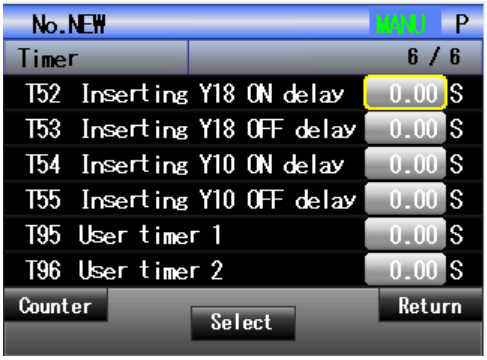
3.1.4 Timer

Select the "timer" under the menu to switch to the screen as shown below. The content changes will be expressed according to the user setting.

On this screen, it is possible to set the timer, including the setting of position and the time between steps. The timer setting can also be performed in automatic operation.The corresponding mode-effective timer mark is displayed with white text, and the mode-ineffective timer is displayed in gray, which can not be set.

Select the timer settings column, press the "■" key to switch to a screen as below, with the selected item displayed in green, where the action key may be used to input time, with an unit in second.



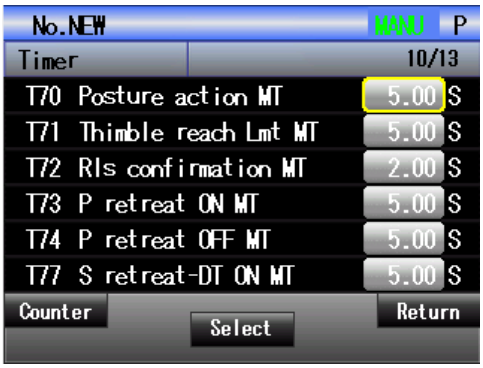


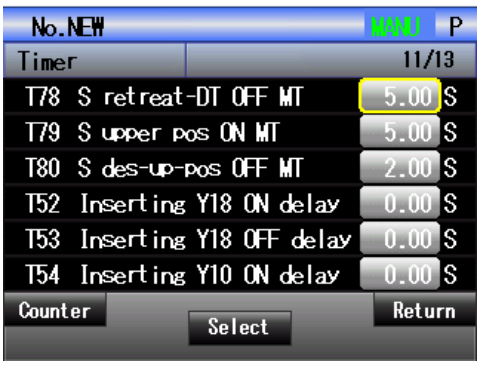
[Timer alarm] is only for display of User 4 and User 5.

The timer page begins from page 9, which is all for the timer alarm setting.

On the timer alarm screen, it is possible to set the time of alarm output for each abnormal situation occurs

It is also possible to set the timer in automatic operation.





Select the numerical value bar/column of the timer desired to be set,and use the action key to set the numerical value of the timer.

Timer status expression:

The the timer start up (ON), [T] * * is shown in red word. After the timer's time is up, the [T * * + name] are all displayed as red word.

Timer list

Serial number	Names	Descriptions
T82	Take-up side: Primary down	Finished-product arm mould inside go-downward delay, after fore-action is complete, timing begins, after timing is complete, goes downward.
T81	Take-up side: Primary forward	Finished-product arm mould inside extraction go-forward delay, after fore-action is complete, timing begins, after timing is complete, goes forward.
T83	Take-up side: Primary back	Finished-product arm mould inside extraction retreat (go-back)delay, after fore-action is complete, timing begins, after timing is complete, retreats (goes back).
T84	Take-up side: Primary up	Finished-product arm mould inside rising (go-upward), after fore-action is complete, timing begins, after timing is complete, rises (goes upward)
T86	Placement side: Primary down	Finished-product arm mould outside go-downward delay, after fore-action is complete, timing begins, after timing is complete, goes downward
T88	Placement side: Primary up	Finished-product arm mould outside rising (go-upward) delay, after fore-action is complete, timing begins, after timing is complete, rises (goes upward)
T89	Take-up side: Secondary forward	Stub bar arm mould inside extraction forward delay, after fore-action is complete, timing begins, after timing is complete, goes forward
T90	Take-up side: Secondary back	Stub bar arm mould inside go-down delay, after fore-action is complete, timing begins, after timing is complete, goes downward
T91	Take-up side: Secondary down	Stub bar arm mould inside go-down delay, after fore-action is complete, timing begins, after timing is complete, go downward
T92	Take-up side: Secondary up	Stub bar arm mould inside go-upward delay, after fore-action is complete, timing begins, after timing is complete, rises (goes upward)
T93	Placement side: Secondary down	Stub bar arm mould outside go-downward delay, after fore-action is complete, timing begins, after timing is complete, go downward
T94	Placement side: Secondary up	Stub bar arm mould outside rising (go-upward) delay, after fore-action is complete, timing begins, after timing is complete, rises (goes upward)

T13	Holder closing fore-delay	After fore-action is complete, timing begins, after timing is complete, finished-product arm's holer performs closing action
T14	Sorption absorb fore-delay	After fore-action is complete, timing begins, after timing is complete, finished-product arm's absorb performs sorption action
T22	Secondary clamp closing fore-delay	After fore-action is complete, timing begins, after timing is complete, stub bar arm's secondary clamp performs closing action
T10	Sorption releasing fore-delay	After fore-action is complete, timing begins, after timing is complete, finished-product arm's absorb performs opening action
T9	Hold opening fore-delay	After fore-action is complete, timing begins, after timing is complete, finished-product arm's hold performs opening action
T17	Hold opening post-delay	After finished-product arm hold opening, timing begins, after timing is complete, goes into next action
T21	Secondary clamp opening fore-delay	After fore-action is complete, timing begins, after timing is complete, stub bar clamp opens
T19	Secondary clamp opening post-delay	After stub bar clamp opening, timing begins, after timing is complete, goes into next action
T23	Aligning fore-delay	After fore-action is complete, timing begins, after timing is complete, lateral posture aligns
T24	Lateral posture fore-delay	After fore-action is complete, timing begins, after timing is complete, performs lateral posture
T27	Thimble fore-delay	After fore-action is complete, timing begins, after timing is complete, thimble goes forward
T30	Conveyor belt	After conveyor belt's action, timing begins, after timing is complete, stops
T32	Spray output keeping	After spray action, timing begins, keeping ooutput, after timing is complete, stops output
T31	Spray fore-delay	After fore-action is complete, timing begins, after timing is complete, performs spray operation
T29	Taken-up platform go-down fore-delay	After fore-action is complete, timing begins, after timing is complete, taken-up platform goes downward
T46	Vibration	Set time interval of vibration (interval of go-forward and go-backward)
T43	Blow 1	Set blowing 1 time when sorption is open.
T44	Emergency stop reset post-delay	Set the delay time from abnormal stop to servo ON.
T52	Insert 1（Y18）ON delay	Finished-product arm insert delay, after fore-action is complete, timing begins, after timing is complete, insert 1 gets ON

T53	Insert 1（Y18）OFF delay	Finished-product arm insert delay, after fore-action is complete, timing begins, after timing is complete, insert 1 gets OFF
T54	Insert 2（Y10）ON delay	Finished-product arm insert delay, after fore-action is complete, timing begins, after timing is complete, insert 2 gets ON
T55	Insert 2（Y10）OFF delay	Finished-product arm insert delay, after fore-action is complete, timing begins, after timing is complete, insert 2 gets OFF
T95~T100	User timer 1	Temporarily not used in standard program.
T1	Take-out side: Primary arm go-forward	Set the go-forward over (complete) time when letting the primary arm go forward outside the placement side.
T35	Take-out side: Primary arm retreat(go-back)	Set the retreat(go-back) over (complete) time when letting the primary arm retreat(go back) outside the placement side.
T2	Take-out side: Primary arm go-down	Set the go-dowm over (complete) time when letting the primary arm go down outside the placement side.
T36	Take-out side: Primary arm rising(go-upward)	Set the rising (go-upward) over (complete) time when letting the primary arm rise (go upward) outside the placement side.
T3	Take-out side: Secondary arm go-forward	Set the go-forward over (complete) time when letting the secondary arm go forward outside the placement side.
T37	Take-out side: Secondary arm retreat(go-back)	Set the retreat(go-back) over (complete) time when letting the secondary arm retreat (go back) outside the placement side.
T4	Take-out side: Secondary arm go-down	Set the go-down over (complete) time when letting the secondary arm go dowm outside the placement side.
T38	Placement side: Secondary arm rising(go-upward)	Set the rising (go-upward) over (complete) time when letting the secondary arm rise (go upward)outside the placement side.
T5	Placement side: Primary arm go-forward	Set the go-forward over (complete) time when letting the primary go forward outside the placement side.
T39	Placement side: Primary arm retreat (go-back)	Set the retreat (go-back) over (complete) time when letting the primary retreat (go back) outside the placement side.

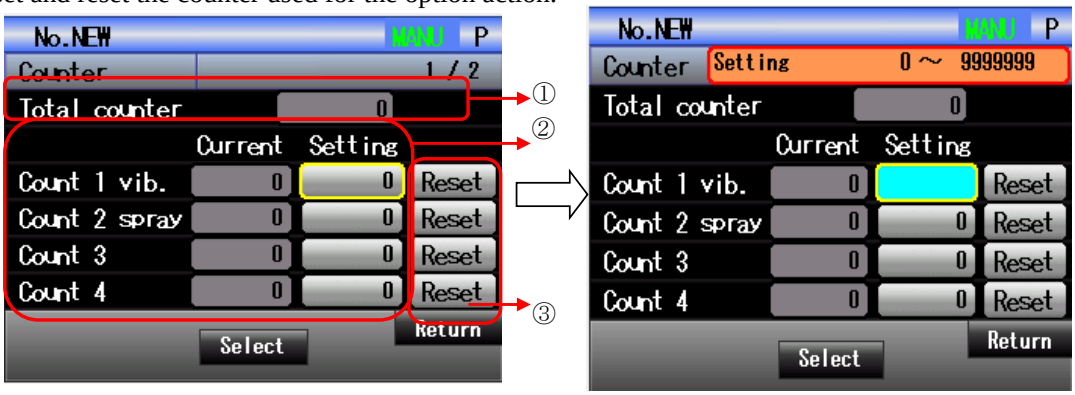
T6	Placement side: Primary arm go-down	Set the go-down over (complete) time when letting the primary go down outside the placement side.
T40	Placement side: Primary arm rising (go-upward)	Set the rising (go-upward) over (complete) time when letting the primary rise (go upward) outside the placement side.
T7	Placement side: Secondry arm go-forward	Set the go-forward over (complete) time when letting the secondary arm go forward outside the placement side.
T41	Placement side: Secondry arm retreat(go-back)	Set the retreat (go-back) over (complete) time when letting the secondary arm retreat (go back) outside the placement side.
T8	Placement side: Secondry arm go-down	Set the go-down over (complete) time when letting the secondary arm go down outside the placement side.
T81	Placement side: Secondry arm rising (go-upward)	Set the rising (go-upward) over (complete) time when letting the secondary arm rising (go upward) outside the placement side.
T33	Aligning	Set the aligning over (complete) time in aligning.
T34	Lateral posture	Set the lateral posture over (complete) time in lateral posture.
T28	Go-forward lateral posture delay	When the lead-in transverse-out mode is ON, set the time from the primary arm beginning go-forward to the lateral posture beginning
T25	Primary arm take-out go-down delay	Set the delay time of go-down when the primary arm take-out goes down
T26	Secondary arm take-out go-down delay	Set the delay time of go-down when the secondary arm take-out goes down
T29	Taken-up platform go-down delay	Set the time from the primary arm rising (go-upward) status to the taken-up platform go-down after the finished-product release when the taken-up platform rising (go-upward) mode is ON.
T 31	Spray delay	Set the delay time for spray.
T 32	Spary output delay	Set the time from the spray start to its stop
T44	Abnormal stop reset delay	Set the delay time from the abnormal stop released to servo ON
T45	Inverter braking delay	Set the delay time of the frequency conversion motor braking OFF

T46	Vibration	Set the time interval of vibration (interval of go-forward and retreat/go-back)
T61	Mould loading over (complete)time	Set the time between mould loading start to mould loading end
T62	Molding over(complete) monitoring	In automatic operation, after molding start, if no mould unloading within the setting time of this timer, alarm occurs.
T64	Molding keeping start	When the injection molding machine type is a Japanese style, set time that keeps allowing forming signals.
T65	Mould over(complete) OFF monitoring	In automatic operation, after giving out allowing mould loading, if no mould loading within the setting time of this timer, alarm occurs.
T63	Medium plate mould monitoring delay	When the medium plate unused mode is OFF, after mould unloading, the medium plate limit is not ON within this timer's setting time, alarm occurs
T69	Rotating action monitoring	After rotation reset and rotation action, when the action is not complete within this timer's setting time, alarm occurs
T70	Posture action monitoring	After aligning and lateral posture, when the action is not complete within this timer's setting time, alarm occurs
T71	Thimble go-forward limit monitoring	Stadrad program does not use it.
T72	Release confirmation monitoring	After releasing finished-products and stub bar, and exceeding this timer's time, performs releasing confirmation.
T73	Primary arm retreat (go-back) ON monitoring	When using primary arm retreat(go-back) limit, after primary arm beginning retreat(go-back), when the primary arm retreat (go-back) limit is not ON within the timer's setting time, alarm occurs
T74	Primary arm retreat (go-back) OFF monitoring	When using primary arm retreat(go-back) limit, after primary arm beginning go-forward, when the primary arm retreat (go-back) limit is not OFF within the timer's setting time, alarm occurs
T75	Primary arm rising(go-upward) upper position ON monitoring (Variable frequency style)	After primary arm beginning go-upward(rising), when the primary arm go-upward (rising) upper position is not ON within the timer's setting time, alarm occurs

T76	Primary arm go-down upper position OFF monitoring (Variable frequency style)	After primary arm beginning go-dowmward, when the primary arm go-downward upper positiont is not OFF within the timer's setting time, alarm occurs
T77	Secondary arm retreat (go-back) detection ON monitoring	When using secondary arm retreat (go-back) limit, after the secondary arm begins to retreat (go back), when the secondary arm retreat (go-back) detection is not ON within the timer's setting time, alarm occurs
T78	Secondary arm retreat (go-back) detection OFF monitoring	When using secondary arm retreat (go-back) limit, after the secondary arm begins to go forward, when the secondary arm retreat (go-back) detection is not OFF within the timer's setting time, alarm occurs
T79	Secondary arm rising (go-upward) upper position ON monitoring	After the secondary arm begins to rise (go upward), when the secondary rising (go-upward) is not ON within the timer's setting time, alarm occurs
T80	Secondary arm go-down upper position OFF monitoring	After the secondary arm begins to go down, when the secondary go-dwon upper positioin is not OFF within the timer's setting time, alarm occurs
T66	Line feed movement start monitoring	From the start point or end point, when the Y axis starts action, monitors its normal movement. After the movement starts, stays at the start point or end point within the time of T66, alarm occurs
T67	Line feed high-speed movement monitoring	In automatic or manual operation, monitor the high-speed movement. When the time of high-speed movement is over the time of T67, alarm occurs
T68	Line feed low-speed movement monitoring	Monitor the low-speed movement in free operation, or high-speed movement accompanied with low-speed movement. When the time of low-speed movement is over the time of T68, alarm occurs

3.1.5 Counter

Select the "counter" on the menu screen to switch to the screen as below, where it is possible to set and reset the counter used for the option action.



Screen display description

Display contents	Expression meanings	
①Total counter	Display the total of products taken out	
② Counter (expressed starting from the left column)	Name column	Displays the name of the counter.
	Setting value column	According to the selection, operate and set the preset counter's value. Click on the gray zone to let it get green, as shown on the right screen, and use thje action key to input numerical values. The preset counter's value can only be set in manual mode.
	Current value column	Display the counter's current value
③ Reset	Reset the counter's value. Before automatic operation and manual operation, confirm the counter's value, reset if necessary. In manual operation and automatic operation, it is possible to reset.	

About damge placement,you would be pay attention to :
You should setup value more than 0,when the damge signal is ON, the counter will begin to up.

3.1.6 Insert function

This screen can be applied to the insert function.

(1) The insertion points are: **Y18 ON; Y18 OFF; Y10 ON; Y10 OFF.**
(2) The insertion contents are as follows:

Inserting 1 Y10	Unuse	**Inserting 2 Y18**	Unuse
	Start to cross out		Start to cross out
	Start to cross into		Start to cross into
	Before Primary arm go-down in placement		Before Secondary arm do-down in placement
	Before Primary arm upon in placement		Before Secondary arm upon in placement
	Before Primary arm hold close		Before Sencondary arm hold close
	Before Primary arm forward in take-place		Before Secondary arm forward in take-place
	Before Primary arm retreat in take-place		Before Primary arm retreat in take-place
	Before Primary arm hold open		Before Secondary arm hold open
	Before Primary arm go-down in take-place		Before Secondary arm go-down in take-place
	Before Primary arm upon in take-place		Before Secondary arm upon in take-place

3.1.7 Save and delete

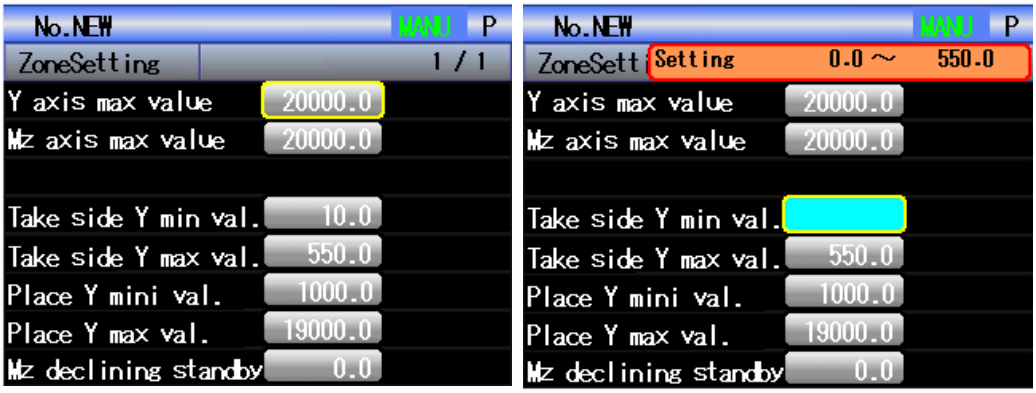
Select the “save: to enter the save page.
In user 2 mode, the user can only manage the mould files with standard attributes.
For save/delete and attributes of files,
please refer to the description on documentation for User 3

3.2 Zone setting

"Zone setting", switch to the screen as below.

The variable frequency axis is not provided with zone setting, taking the upper/lower axis servo and 2-axis servo as an example.

Zone setting of 2-axis



Maximum value of Y axis and Mz axis

On this screen, it is possible to se the axis maximum value. The axis maximum vaue setting is shown on the left side of the screen above. Select the setting value and then press the "■" key to switch to the screen as shown on the right side; at the position of the setting value displayed in a light blue, use the action key to input values.

It is imposible to set a value which is smaller than each zone maximum value of the zone setting.

Action zone setting

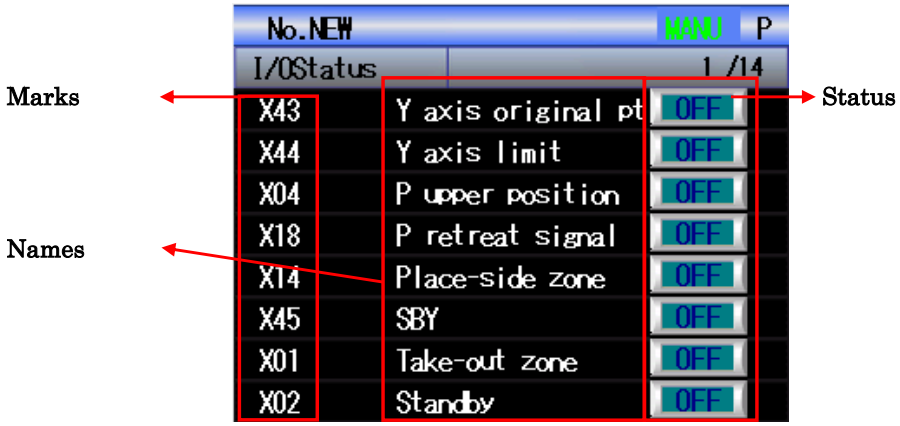
Restricted zone	Descriptions
Take-out side Y axis's minimum value Take-out side Y axis's maximum value	When performing zone setting, please make sure that the mould inside axis go-down position is within a safe range.
Placement side Y axis's minimum value Placement side Y axis's maximum value	When performing zone setting, please make sure that, when the placement side finished-product release, the axis go-down position is within a safe range.
Mz go-dowm standby	When performing zone setting, please make sure that the Mz axis go-down position is at the safety position over the mould.

To change these maximum value and minimum value, firstly use the 「↑」 / 「↓」 to select the value desired to be changed and than press the "■" key. On the following screen, use the action key to input values.

It is imposible to set a value which is more than the maximum value of the maximum setting screen.

.3.3 I/O status

On the menu, select the [I/O status] to switch to the screen as below, where the ON/OFF status of each IO is displayed, and the status of each IO in operation can be confirmed.

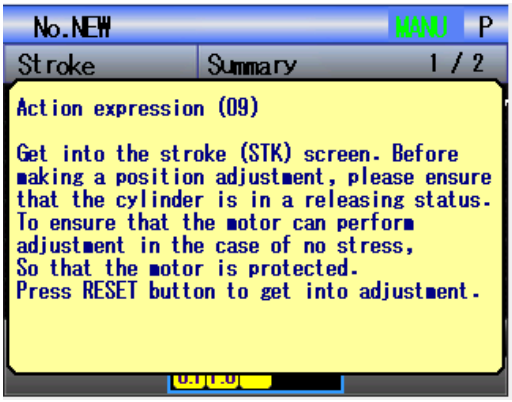


On the I/O status screen, it is possible to monitor all IO, with IO's marks, names and status shown on the screen. Use the 「←/→」 key to switch the page display, where the IO will be shown in yellow if it is ON, and in blue if OFF.

Select the "I/O record" on the menu screen to switch to the I/O record related screen, where it is possible to set the recording conditions for I/O record and access the I/O record.

3.4 Position adjustment(Transposition)

On the menu screen, select the " Position adjustment(Transposition)" to switch to the position adjustment page. On the position adjustment page, a prompt message will appear. Press the reset key to let the prompt message disappear and then enter the adjustment interface.

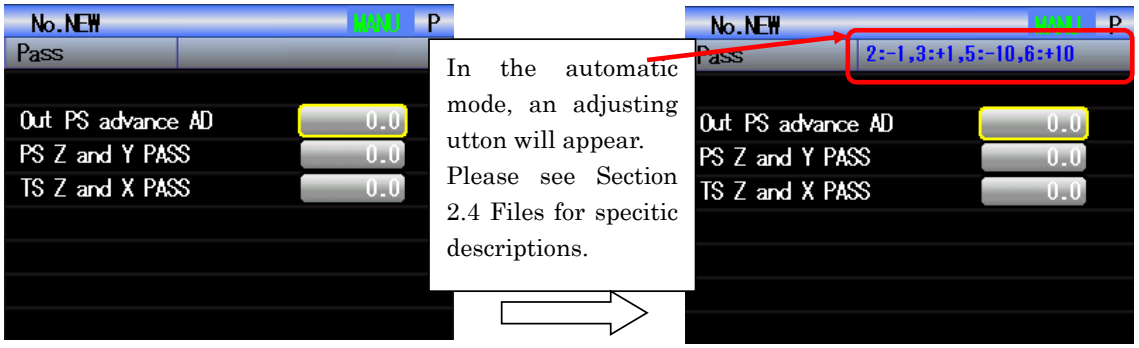


In the manual mode, Press and hold any key to control the action of the position-adjusting motor, which is the method whereby to adjust the position.

3.5 Pass

Select the "Pass" on the menu screen to witch to the sxreen as below, where it is possible to set the linkage.

Example: 2-axis



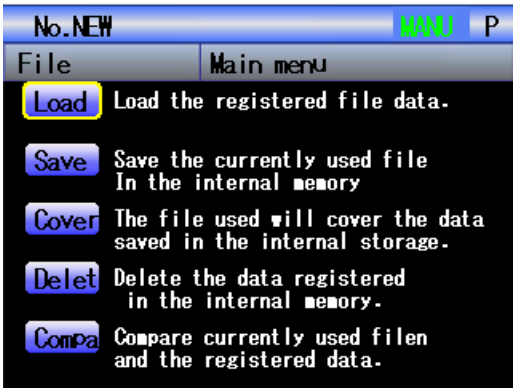
Placement side transverse running: when moving from Y axis side to the placement side and the difference between Y axis's target value and Y axis's current value is the same as the setting value, the program will proceed to the processing in next step.

Placement side rising (go-upward): When the MZ axis on the placement side begins to rise(goes upward) and the difference between MZ axis's target value and MZ axis's current value is the same as the setting value, the program will proceed to the processing in next step.

Primary arm go-down: when the MZ axis on the take-out side goes downward and the difference between MZ axis's target value and the setting value is the same, the program will proceed to the processing in next step.

4.1 Files

Select the "File" button on the menu screen to switch to the following screen where it is possible to perform the mould data management on the currently used data and the logging data in the local memory.

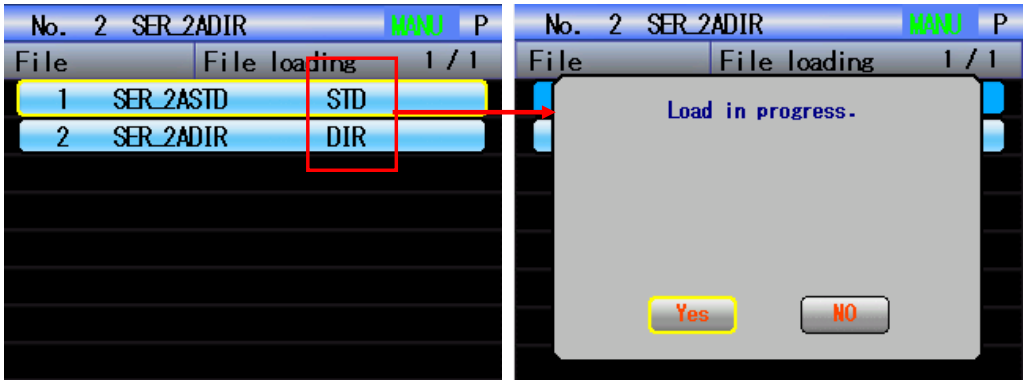


In this screen, it is possible to perform five data-related operations: load, save, cover, compare and delete. Use「↑」/「↓」key to select the operation desired to be performed and press the "■" key to get into the operation.

「Load」:

During the loading operation, each user can only load the files that the user shall have the permission to load.

To load a mold setting value, select the load operation mode to switch to the load operation screen as below.



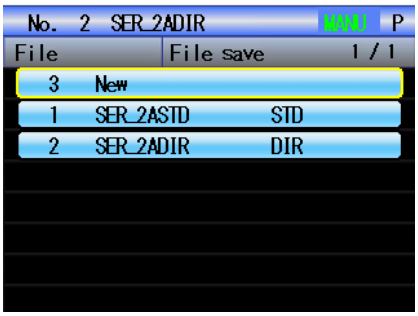
① The files is loaded with attributes, and respectively are the files of standard attributes, and the files of instruction (teaching) attributes. The file of standard attributes, corresponds to the fixed users while the file of instruction (teaching) attributes, corresponds to instruction (teaching) users, with specific setting to be changed through the user setting.

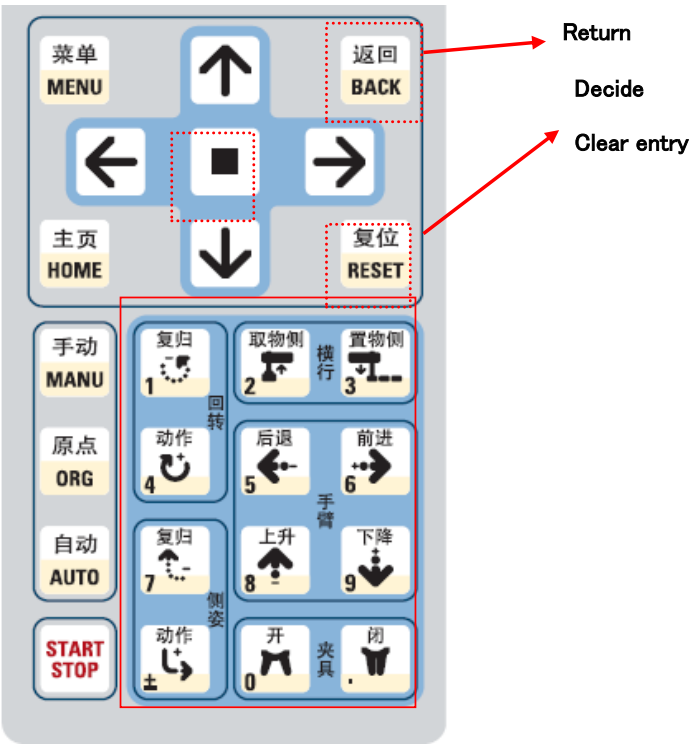
In the course of file loading, load files with corresponding attributes according to the user permission. For details, please refer to the Section 2.17 User setting and user switching.

On the data screen on the left side, press the「↑」/「↓」button to select the file desired to be executed, and press the "■" key to confirm the selection and then show the screen on the right side. Use the 「←」/「→」key to select " YES" and perform the load operation. Select "NO" to cancel the operation and return to the file screen. After the load operation is complete, click the "RETURN" key to return to file screen.

「Save」:

Select the "save" operation to display the screen on the left side below, where the system will automatically display the current minimum unused serial number, and press the "■" button in the yellow box on the left side to switch to the screen as shown on the right side. When the changed setting values and the written programs need to be saved, perform the save operation here, with a capacity to save up to 50 data. (For the descriptions on attributes please refer to the next page)





To perform a save operation on the above screen, use the action button as the number keys to perform input operation. The corresponding relation between the action button and the number key is shown as mentioned above. For this machine, all input operations are always performed by means of the action button.

Firstly, input a data sequence number (from1 to 999) which is desired to be saved, and after the input is done, use the up and down keys to move the cursor to select an option in the comment column, and press the "Decide/OK" button to switch to the screen as below.

On this screen, input the data name, use the ↑」/「↓」/「←」/「→」key to select English letters or symbols, and then press the "■"key to complete the input. To delete the input, press the "HOME" button to delete the same one by one, which may also be deleted by pressing the "RESET" button. After the operation, press the "MENU" button for confirmation. Please note that, at this time, the previous file name will be covered (overwritten) and saved. After the save operation is complete, automatically return to the file screen. To cancel the operation, click the "BACK" button to return.

File attributes are defined as follows:

According to the user setting, it is possible to define whether or not a user can save or read a file with the Attributes.

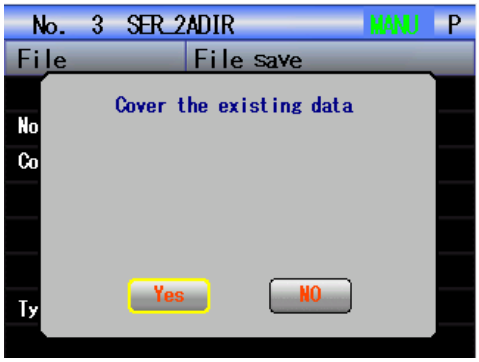
(Move the cursor to the "change" button and then continuously press the "■" key to change the file s. The setting of file attributes can be changed in the user setting. For user management, please refer to the descriptions in the "user setting" column.

Attribute names	Descriptions	User1	User 2	User3	User 4	User5
Standard (read)	Standard	○	○	-	○	○
Standard (save)	Standard	-	○	-	○	○
Instruction(teaching) (read)	Instruction (teaching)	○	-	○	○	○
Instruction/teaching (save)	Instruction (teaching)	-	-	○	○	○
Privilege attribute (read)	-	-	○	○	○	○
Privilege attribute (save)	-	-	-	-	○	○

「Cover」:

During cover operation, each user can only perform the operation on the file that the user has the permission to operate.

To cover (overwrite) the selected data number with data, select the "cover" key to switch to the screen as shown on the left side and then press the “YES” key to perform the operation of cover (overwrite), and return to the mould management screen after the cover operation is complete.



「Compare」

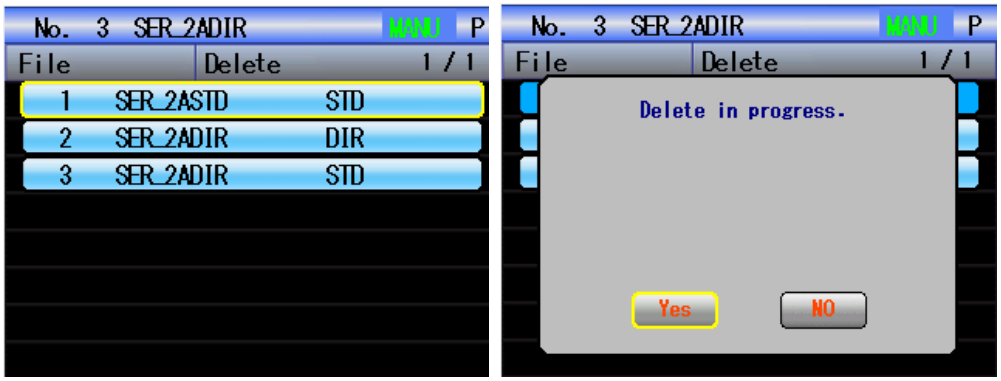
To make a comparison with the logged-in data, select this operation. It is possible to confirm whether or not the data in use is the same as the existing data. On the above screen on the right side, use the「↑」/「↓」key to select the file desired to be compared and then press the “■” key for comparison.

According to the comparison results, the comparison information will be displayed. If the results are consistent, "consistent" will be displayed. If the results are inconsistent, the changed contents will be displayed by contrast. After confirmed, click the "BACK" button to return to the file screen.

「Delete」:

Each user can only operate the file that the user has permission to operate.

To delete the logged in data, select this operation to switch to the following screen. Use the「↑」/「↓」key to select the file to be deleted, press the “■” key to make a confirmation and then switch to the screen as shown on the right side. Use the「←」/「→」key to select the "YES" key to perform the delete operation, which will automatically return to the file screen after the delete operation is complete . Select the "NO" key to cancel the operation and return to the delete screen.



4.2 Detailed mode under the instruction (teaching) users

The detailed mode under the instruction (teaching) user covers a total of nine pages, with a difference with the standard user mode that the standard mode of 01-04 and 11 to 18 is divided into single action modes as respectively: Primary arm U-shaped take-out, primary arm fixed mould taking objects, secondary arm U-shaped take-out, secondary arm movable mould taking materials, secondary arm mould inside placing materials.

The detailed differences are as shown in the table below.

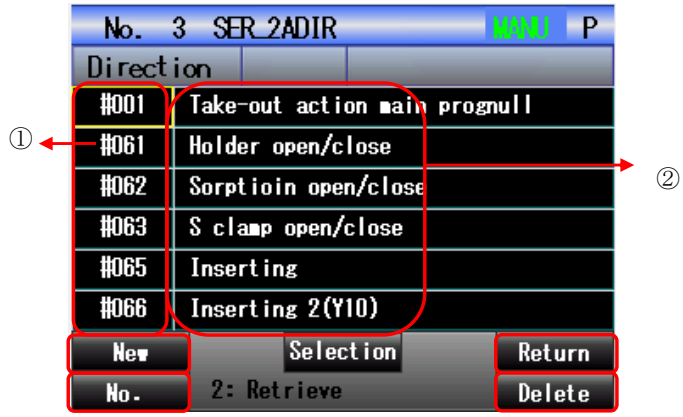
	TRC1300				
	No	Name		Primary arm U-shaped take-out	primary arm fixed mould taking objects
Primary arm	1	L-shaped clamp male mould		OFF	OFF
	2	L-shaped clamp female mould		OFF	ON
	3	U-shaped clamp male mould		ON	OFF
	4	U-shaped clamp female mould		ON	ON

	TRC1300					
	o	Names		Secondary arm U-shaped take-out	Secondary arm movable mould taking materials	Secondary arm mould inside placing materials.
Secondary arm	1	L-shaped clamp female mould		OFF	ON	OFF
	2	L-shaped clamp male mould		OFF	OFF	OFF
	3	U-shaped clamp female mould		ON	ON	OFF
	4	U-shaped clamp female mould		ON	OFF	OFF
	5	L-shaped clamp female mould inside placing materials		OFF	ON	ON
	6	L-shaped clamp male mould inside placing materials		OFF	OFF	ON
	7	U-shaped clamp female mould inside placing materials		ON	ON	ON
	8	U-shaped clamp male mould inside placing materials		ON	OFF	ON

4.3 Instruction (teaching) operation

4.3.1「Main Menu」

On the menu screen, select the "Instruction/teaching" button to switch to the screen as below, where it is possible to perform the Instruction/teaching, with an initial display of main screen as below.



① Program no. : Express a subprogram in the sequence of serial number.

② Program name: Express the name of the subprogram.

『New』:

Press the "MENU" button to create a new program, with a serial number to be decided manually or generated automatically (in an automatic, start from the minimum number that has never been used).

『Program No.』:

Press the "HOME" button to switch to a digital key input mode to input the program No. desired to display/edit and switch to display the program.

『Return』:

Press the "BACK" key to execute the returning action and returns to the initial screen at the end of the program compiling. But, before returning to the initial screen confirm whether or not the program is compiled, and if compiled, there will be a prompt of error on grammar mistakes.

Select the program desired to delete and press the "RESET" button to perform the deleting action, with a prompt to confirm the information before the deleting action. After deleted, the screen will switch to the display of the next program, and if the deleted is a last program, the display will be the last program deleted.

Press the "■" key to implement the selection. After the selection has been decided, press the "■" key for confirmation.

『Retrieve』:

Press the "1" key to perform the retrieve action and switch to the retrieve screen.

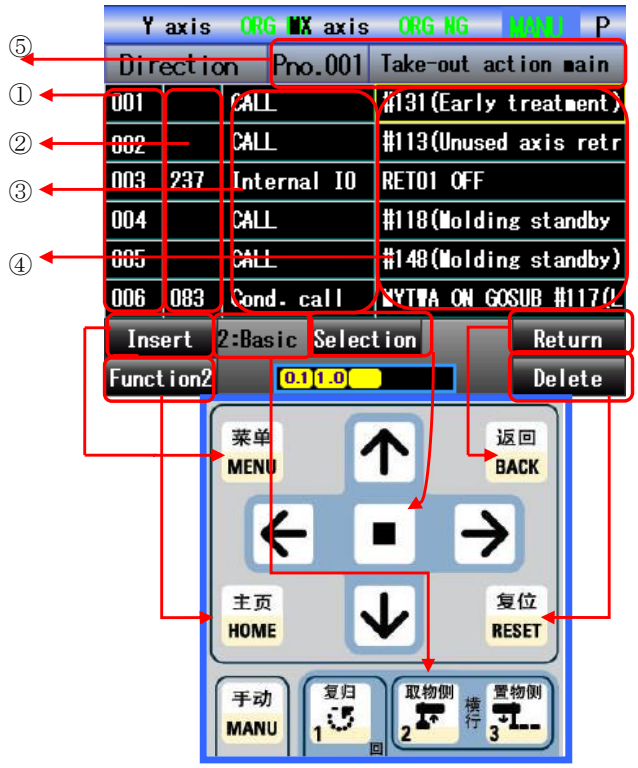
Use the 『↑』/『↓』/『←』/『→』 to select the program name and serial number.

In the process of selecting program name, it is possible to edit the program name on the following screen, with up to 20 words to be input as comments.

Use the『↑』/『↓』/『←』/『→』button to select English letters, numbers or symbols, and after selected press the "■" key to perform the input action. Press the "HOME" button to delete the input item one by one, press the "RESET" button to delete all the input item at one time, and press the "MENU" button to confirm the input. To cancel the input, click the "BACK" button to return to the main screen.

Select a program number to switch to the following teaching/instruction screen for teaching/instruction.

It is possible to switch the "Basic instructions expression"/"Extended instruction expression.



Description of the display part:

①Step: serial number column/bar: displays the program's line serial number.

② Tab column/bar: displays the tab of the program, where it is possible to edit the tab.

③ Command (instruction) column/bar: displays the mark of this line command, where it is possible to select the type of commands/instructions.

④ Operand column/bar: displays the contents of the command/instruction, which is selected when only edit the content of this command. In case of a large amount of input contents and incomplete display, press the「→」key to view the contents not displayed.

⑤ Name column/bar: display the serial number and name of the current program.

『Return』:

Press the "back" button to return to the previous screen.

『Select』:

Press the "■" key get into the corresponding program edit screen.

『Insert』:

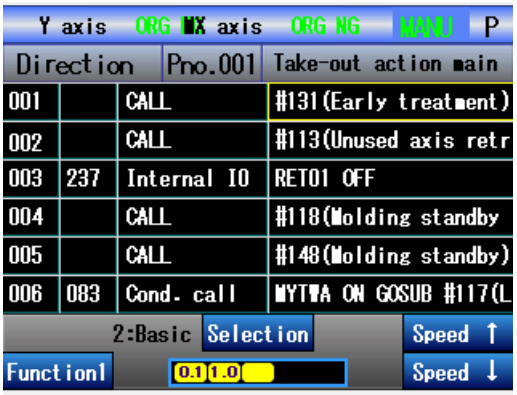
Use the 「↑」/「↓」key to select line desire to be inserted in, and press the "MENU" button to perform the inserting action. A blank line will be inserted into the position before the selected line.

『Delete』:

Use the「↑」/「↓」key to select line desire to be deleted, and press the "RESET" button to perform the deleting action.

Feature 2:

Press the "HOME" button to switch to the function 2 screen as below. According to the button setting mentioned above, switch the primary and secondary amt selection, speed, and etc..

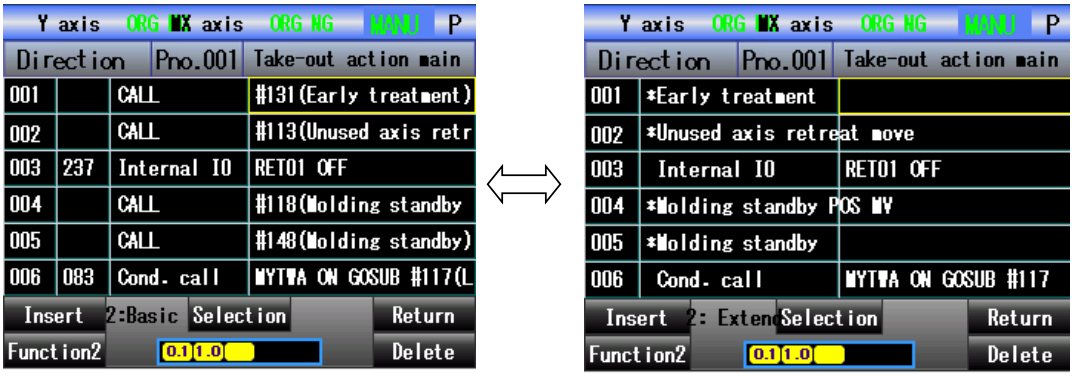


『2』:

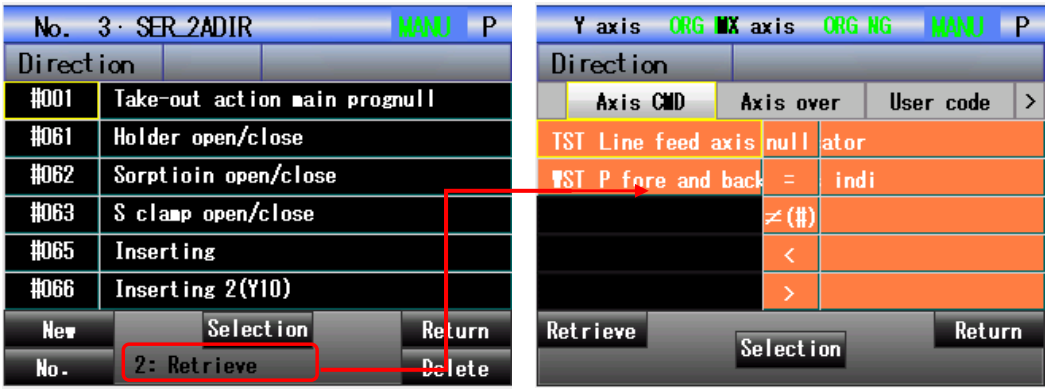
As shown below, it is possible to switch to the "Basic command/instruction display"/"Extended command/instruction display" screen. On the "Basic command/instruction display" screen and the "Extended command/instruction display" screen, the types of commands/instruction that can be entered are different.

※ In the user setting, when he "Extended command/instruction display button" is set as "OFF", the switch button is not shown. In addition, when the user setting is set as "Extended command/instruction display", it is possible to set to firstly display the "Basic commands/instructions" or the "Extended commands/instructions".

「Basic command/instruction expression」 「Extended command/instruction expression」

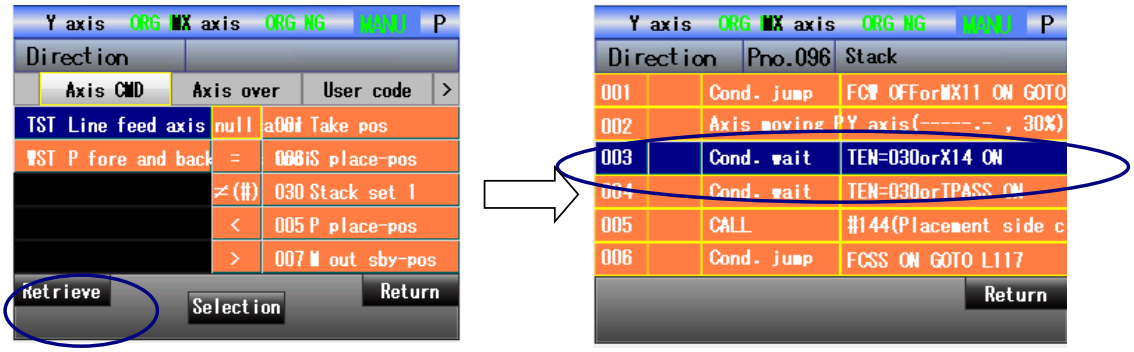


4.3.2「Retrieve screen」:



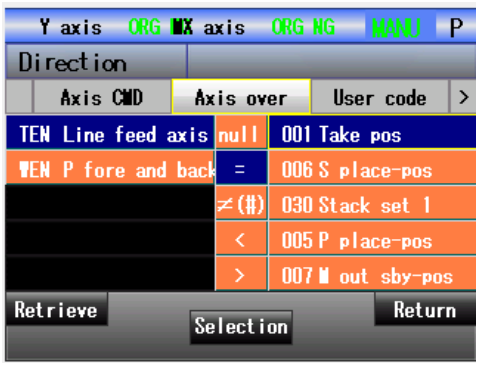
Press the「2」key on the above instruction/teaching screen to switch to the retrieve screen as shown on the right side, where a command/instruction classification list displayed on the top for the convenience of search, and use the 「←」/「→」button to select the list of commands/instructions.

Retrieve screen- axis commands/instructions



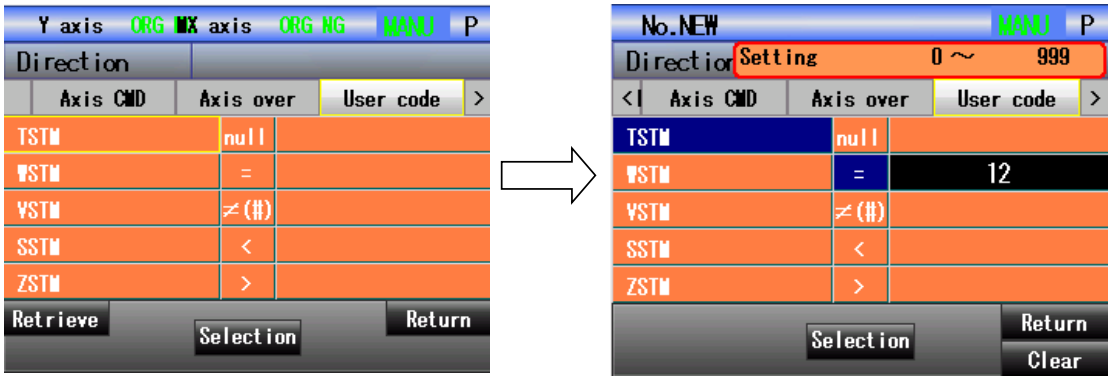
Select the axis command/instruction list to switch to a screen as shown above, where the axis (TST) and conditions are shown on the two columns on the left side. After pressing the "■" key, the list of moveable positions is showed on the right side, with the conditions to be displayed in the sequence of『null』『＝』『≠』『＜』『＞』. Use the 「↑」/「↓」key to select the required conditions, and then press the "■" key for confirmation. Use the「↑」/「↓」key to select the position in the list. It is possible to turn pages when moving to the last line and then pressing the「↓」button. Select the position and then press the "■" key for confirmation. After a keyword is input, press the "MENU" button to begin the retrieve. Press the "BACK" button to cancel and reenter the input. Start to search this keyword from the start of the program. When a consistent keyword is found, the expression at this line the will appear blue. Press the「↑」/「↓」to continue the retrieve. If not found no expression will be displayed in blue. At the end of the retrieve, press the "BACK" button to quit and return to the program screen for entering into the retrieve command/instructions.

Retrieve screen- axis over/complete



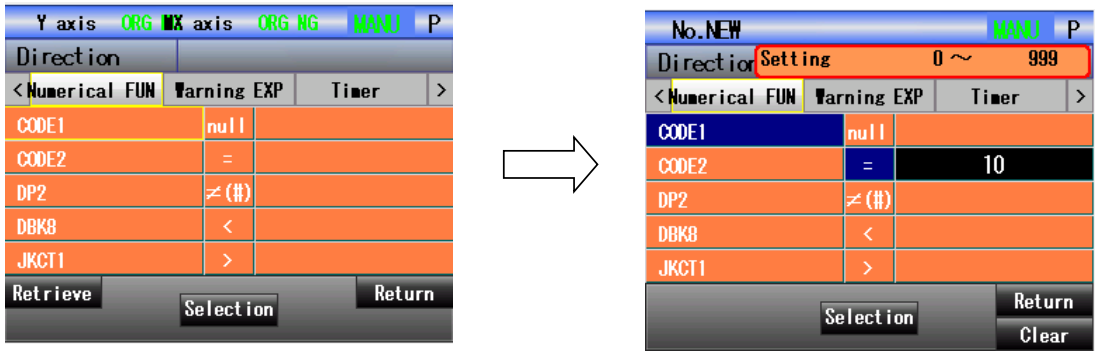
When selecting the axis over/complete list, the screen as shown above will appear. The axis (TEN) and condition is displayed in the two columns on the left side. The retrieval method is the same as that for the axis commands/instructions.

Retrieve screen- user code



Select a user code list to switch to the screen as shown above, where the code mark and condition are shown in the two columns on the left side, which will appear blue when selected with the「↑」/「↓」key and then pressing the "■" key before the next column can be selected. It is possible to turn pages when moving to the last line and then pressing the「↓」button. When the right condition is selected as shown on the screen on the right side, use the action key to input a code value and after the input is complete, press the "MENU" button to start the retrieve.

Retrieve screen- numerical function

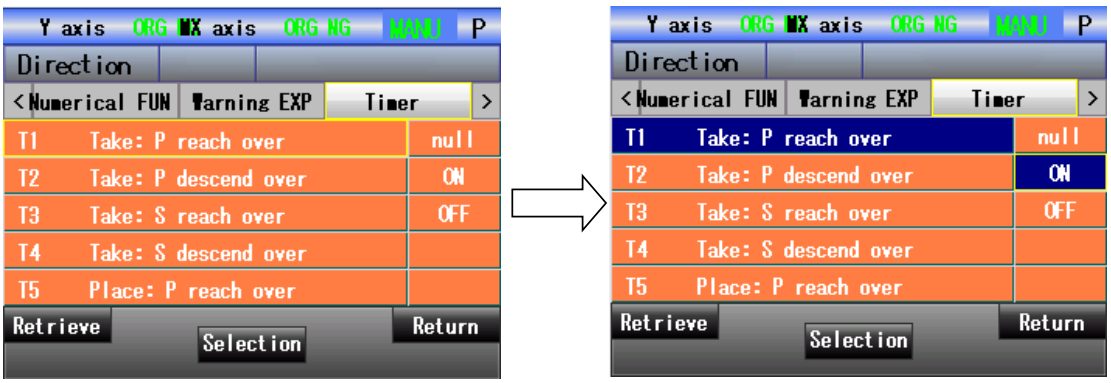


Select the numerical function list to switch to a screen as shown above, where the function type and condition are shown in the two columns on the left side, which will appear blue when selected with the「↑」/「↓」key and then pressing the "■" key before the next column can be selected. It is possible to turn pages when moving to the last line and then pressing the「↓」button. When the right condition is selected as shown on the screen on the right side, use the action key to input a function serial number value and after the input is complete, press the "MENU" button to start the retrieve.

Retrieve screen- Warning expression

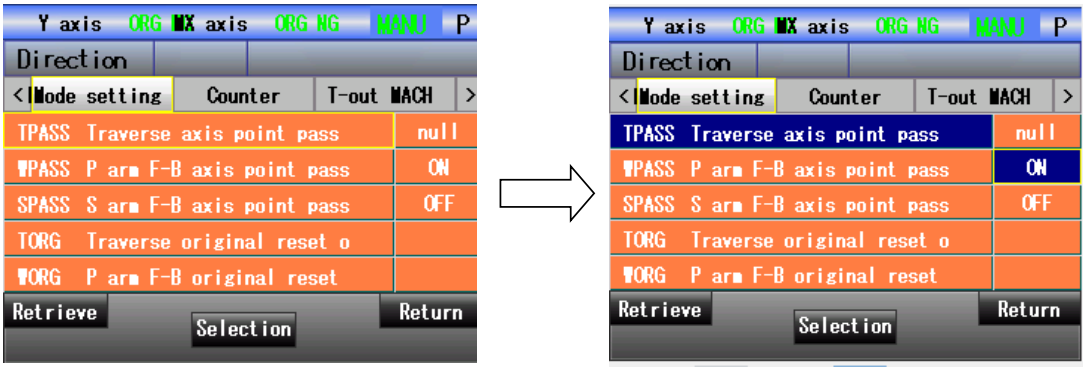
Select the warning list to switch to the screen as shown above, where the warning information type(alarm, operating error and action expression) and condition are shown in the two columns on the left side, which will appear blue when selected with the「↑」/「↓」key and then pressing the "■" key before the next column can be selected. When the right condition is selected as shown on the screen on the right side, use the action key to input a warning information serial number value and after the input is complete, press the "MENU" button to start the retrieve.

Retrieve screen- timer



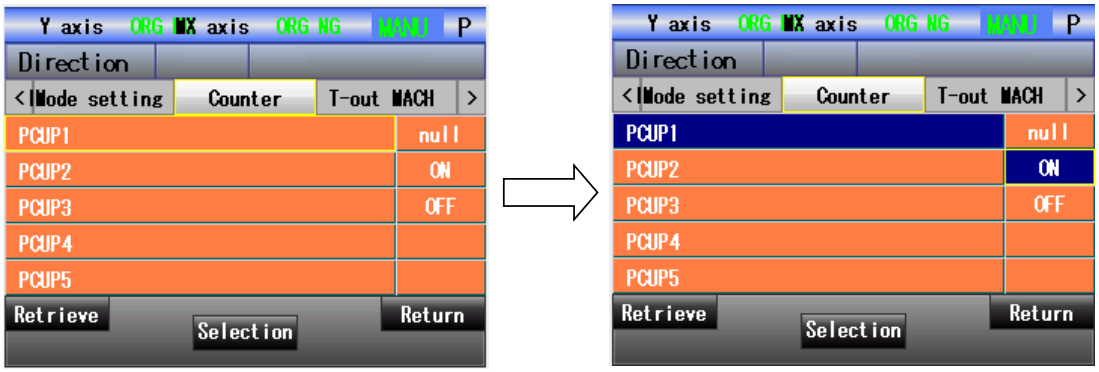
Select the timer list to switch to a screen as shown above, where the timer mark and name are shown in the column on the left side, which will appear blue when selected with the「↑」/「↓」key and then pressing the "■" key before the next column can be selected. It is possible to turn pages when moving to the last line and then pressing the「↓」button. When the right condition is selected as shown on the screen on the right side, press the "ON" key to start up the timer, press the "OFF" to complete the timer, and press the "null" key to delay the time. All outputs can be retrieved. After the input is complete, press the "MENU" button to start the retrieve.

Retrieve screen- function



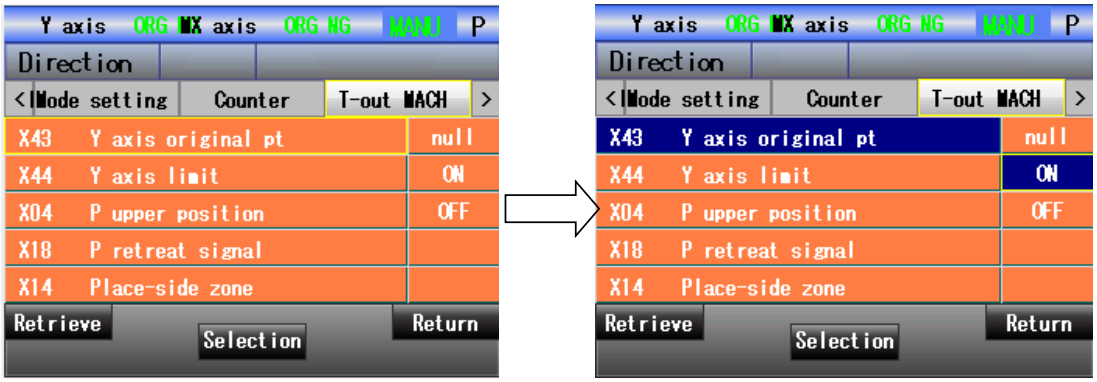
Select the function list to switch to a screen as shown above, where the function mark and name are shown in the column on the left side, which will appear blue when selected with the「↑」/「↓」key and then pressing the "■" key before the next column can be selected. It is possible to turn pages when moving to the last line and then pressing the「↓」button. When the right condition is selected as shown on the screen on the right side, press the "ON" key to put the function in use, press the "OFF" to let the function out of use, and press the "null" key to retrieve the function only, unrelated to the condition. After the input is complete, press the "MENU" button to start the retrieve.

Retrieve screen- counter



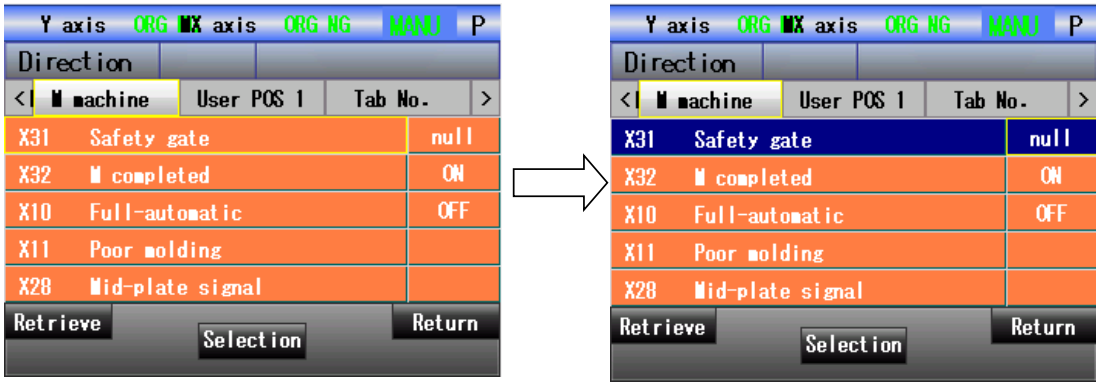
Select the counter list to switch to a screen as shown above, where the counter mark and name are shown in the column on the left side, which will appear blue when selected with the「↑」/「↓」key and then pressing the "■" key before the next column can be selected. It is possible to turn pages when moving to the last line and then pressing the「↓」button. When the right condition is selected as shown on the screen on the right side, press the "ON" key to start up the counter, press the "OFF" to complete the counter, and press the "null" key to retrieve the counter only, unrelated to the condition. After the input is complete, press the "MENU" button to start the retrieve.

Retrieve screen- take-out machine



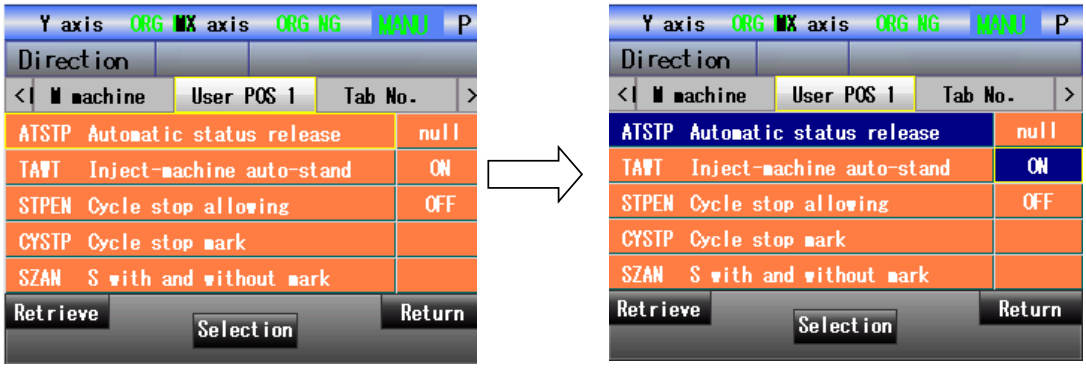
Select the take-out machine list to switch to a screen as shown above, where the take-out machine side's signal and name are shown in the column on the left side, which will appear blue when selected with the「↑」/「↓」key and then pressing the "■" key before the next column can be selected. It is possible to turn pages when moving to the last line and then pressing the「↓」button. When the right condition is selected as shown on the screen on the right side, press the "ON" key to start up the signal, press the "OFF" not to start up the signal, and press the "null" key to retrieve the take-out machine's signal only, unrelated to the condition. After the input is complete, press the "MENU" button to start the retrieve.

Retrieve screen- injection molding machine



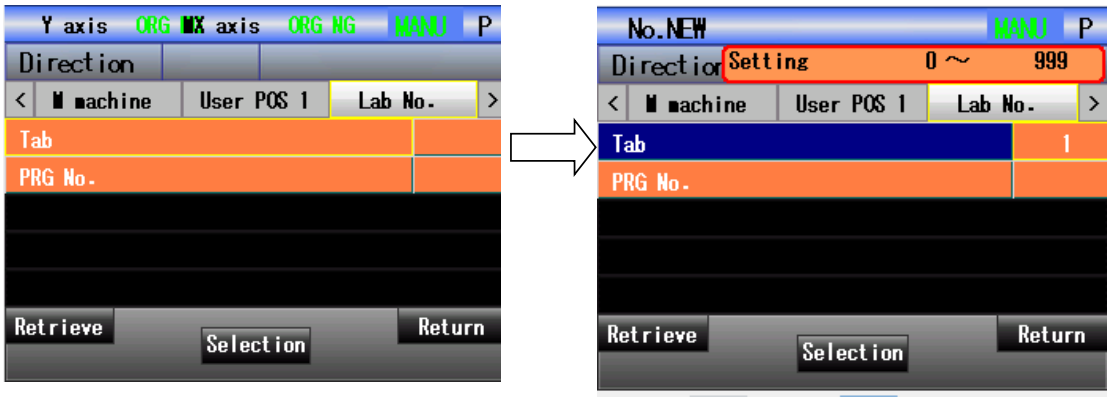
Select the injection molding machine list to switch to a screen as shown above, where the injection molding machine side's signal and name are shown in the column on the left side, which will appear blue when selected with the「↑」/「↓」key and then pressing the "■" key before the next column can be selected. It is possible to turn pages when moving to the last line and then pressing the「↓」button. When the right condition is selected as shown on the screen on the right side, press the "ON" key to start up the signal, press the "OFF" not to start up the signal, and press the "null" key to retrieve the injection molding machine's signal only, unrelated to the condition. After the input is complete, press the "MENU" button to start the retrieve.

1 Retrieve screen- user position 1



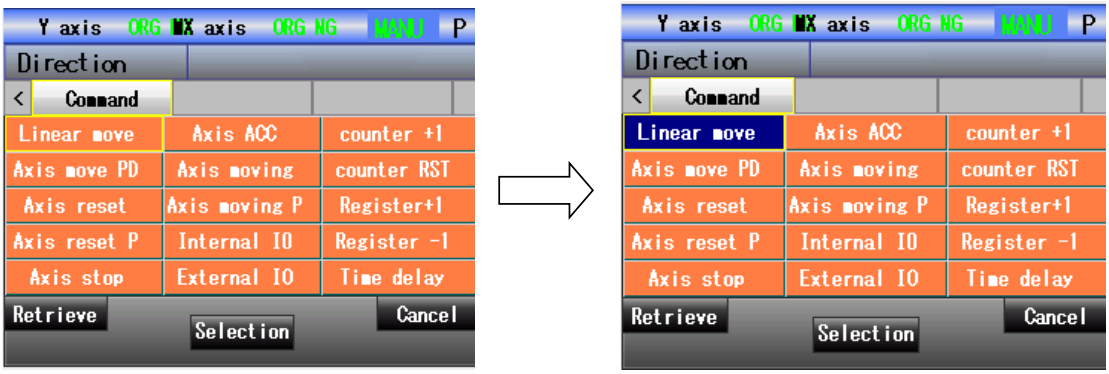
Select the user position 1 list to switch to a screen as shown above, where the user position code and name are shown in the column on the left side, which will appear blue when selected with the「↑」/「↓」key and then pressing the "■" key before the next column can be selected. It is possible to turn pages when moving to the last line and then pressing the「↓」button. When the right condition is selected as shown on the screen on the right side, press the "ON" key to start up the memory, press the "OFF" not to start up the memory, and press the "null" key to retrieve the user position only, unrelated to the condition. After the input is complete, press the "MENU" button to start the retrieve.

Retrieve screen - tab/program number



Select the tab/program number list to switch to a screen as shown above, where the tab/program number are shown in the column on the left side, which will appear blue when selected with the「↑」/「↓」key and then pressing the "■" key before the next column can be selected. When properly selected as shown on the screen on the right side, use the action key to input the value of the tab number or program number After the input is complete, press the "MENU" button to start the retrieve.

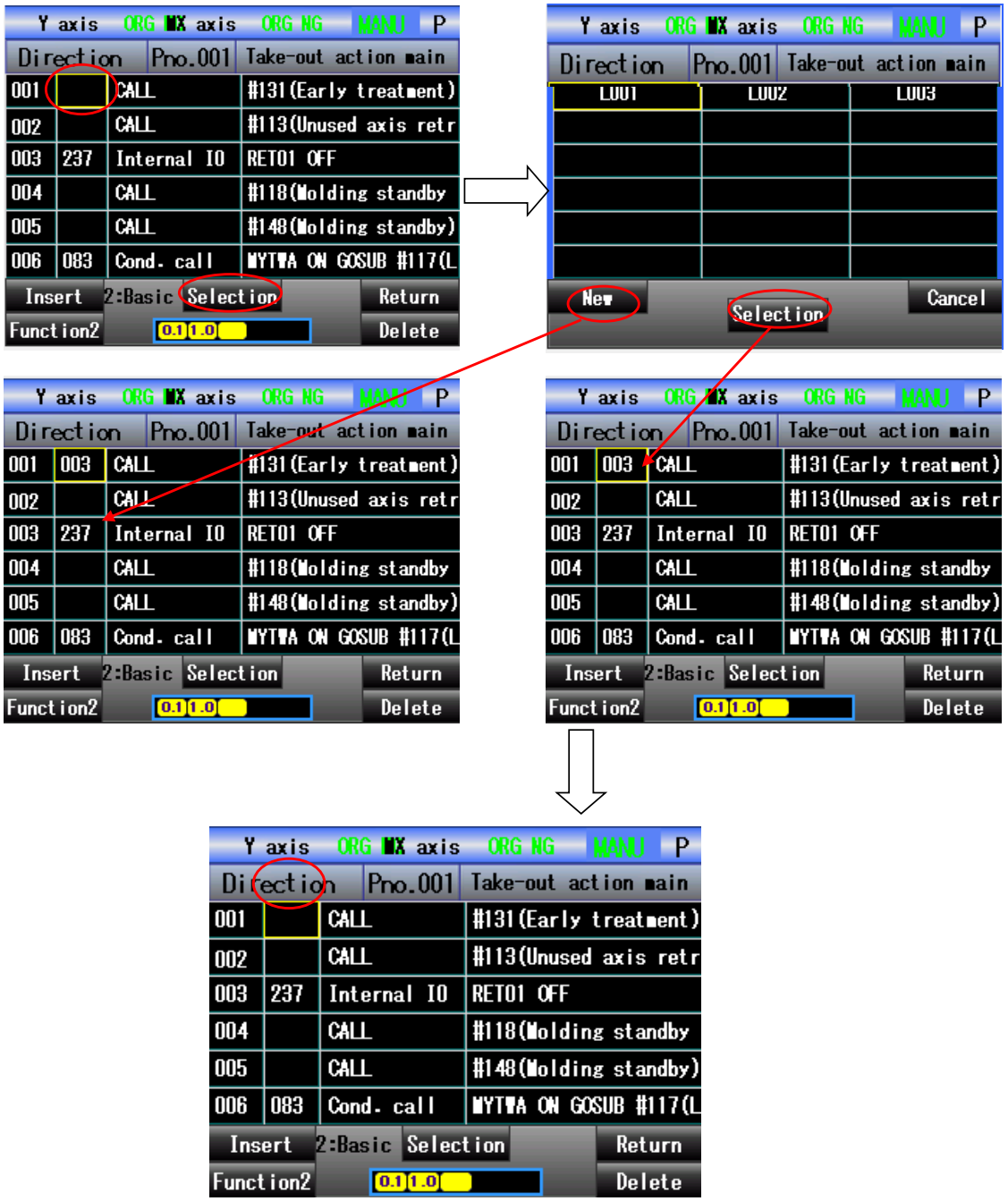
Retrieve screen – commands/instructions



Select the commands/instructions list to switch to a screen as shown above, where the names of the retrievable commands/instructions are shown, which will appear blue when selected with the 「↑」/「↓」/「←」/「→」key and then pressing the "■" key, press the "MENU" button to start the retrieve.

4.3.3「Command edit method」:

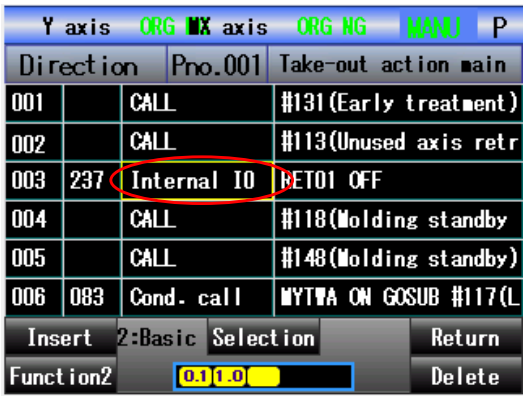
Tab (Displayed only in case of "extended command/instruction display)

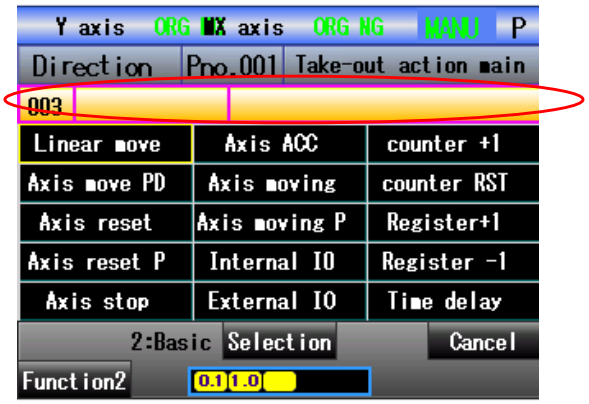


Select the blank TAB column on the main screen of the program, press the “■” key to display the candidate tab. Use the 「↑」/「↓」/「←」/「→」key to select the tab desired to add, press the “■” key for confirmation. Press the "MENU" button to automatically generate a new tab (automatically retrieve the selection starting from the smallest number). To stop a tab setting, press the "BACK" button to cancel and return to the program.

If selecting a tab that has been set in the program and then press the "RESET" button, the tab can be deleted.

Commands/Instruction edit





Select the commands/instructions bar on the main screen to switch to several candidate lists on a screen as shown on the right side. Use the 「↑」/「↓」/「←」/「→」button to select commands/instructions desired to be selected, press and hold the key to can move fast and continuously, and press “■” key after properly selected. Select the “step” bar or command/instruction column and press the "RESET" button to delete the line of command/instruction. If the operand part is selected, only the content of the command/instruction is deleted. To cancel the entered commands/instructions, press the "BACK" button.

When using a single arm, the secondary arm related basic commands/instructions are also all hidden for the convenience of the command/instruction edit.

In the “Basic command/instruction display"/"Expanded command/instruction display", it is possible to input commands/instructions as follows.

Basic commands/instruction list

Names	Actions
Linear movement	Perform axis movement at the setting point.
Axis reset	Perform the axis reset action.
Internal output	Perform the output action of the internal I/O and the internal memory.
External output	Perform the output action of the external I/O
Conditional waiting	Perform the conditional waiting action of I/O and internal memory.
Time delay	Perform the setting time delay action.
Primary arm retreat/go-back	Perform the primary arm retreat/go-back action.
Primary arm go-forward	Perform the primary arm go-forward action.
Primary arm rising/go-upward(1-axis, fully pneumatic)	Perform primary arm rising/going upwards action.
Primary arm decline/g-downward (1-axis, fully pneumatic)	Perform primary arm declining/going down action
Secondary arm retreat/go-back	Perform secondary arm retreat/go-backward action.
Secondary arm go-forward	Perform secondary arm going forward action.
Secondary arm rising/go-upward	Perform secondary arm rising/ going upward.
Secondary arm decline/g-downward	Perform secondary arm declining/going down action.
Posture correction/aligning	Perform posture correction/aligning action.
Posture lateral posture	Perform posture lateral posture action.
Secondary arm moving towards primary arm side	Perform secondary arm moving towards primary arm side.
Secondary arm moving towards line feed side	Perform secondary arm moving towards line feed side
Primary arm and secondary arm returning to the middle	Perform primary arm and secondary arm returning to the middle action
Primary arm and secondary arm going to both ends	Perform primary arm and secondary arm going to both ends
Primary arm and secondary arm rising/going upward simultaneously	Perform primary arm and secondary arm rising/going upward simultaneously
Primary arm and secondary arm declining/going downwards simultaneously	Perform primary arm and secondary arm declining/going downwards simultaneously.
Stack	Perform finished product placement position movement action.
Finished product releasing action	Perform finished product placement action
Secondary arm clamp opening action	Perform secondary arm clamp opening action
Clamp closing action	Perform clamp closing action .

Molding standby	Perform molding standby action.
Mould unloading over/complete license	Take-out side decline/g--down fore-processing, mainly include mould unloading over/complete waiting.
Mould loading permission	Take-out post-placement side movement fore-processing, mainly including mould loading permission output.
Transverse-out or transverse-in	Frequency conversing motor moving towards placement side and take-out side
thimble go-forwards or thimble retreat/go-back	Molding machine post-mould-unloading thimble go-forward and go-backward.

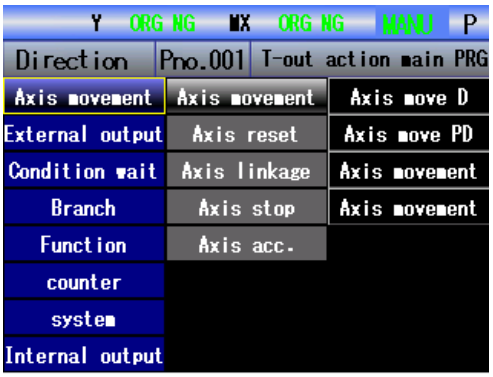
Extended commands/instruction list

Names	**Actions**
Linear movement	(Refer to basic commands/instructions description)
Axis movement PD	Perform axis movement action at the setting point.
	Proceed to next step no before completion .
Axis reset	(Refer to basic commands/instructions description)
Axis reset P	Perform reset action. Proceed to next step no before completion.
Axis stop	Stop axis action.
Axis acceleration	Set each axis's acceleration.
Axis movement	Perform axis movement action at the setting position point.
	Position point can also be changed.
	Perform axis movement action at the setting position point.
Axis movement P	Perform axis movement action at the setting position point.
	Position point can also be changed.
	Proceed to next step no before completion
Internal output	(Refer to basic commands/instructions description)
External output	(Refer to basic commands/instructions description)
Counter + 1	Designated counter + 1.
Counter reset	Reset designated counter.
Memory + 1	Designated memory + 1.
Memory - 1	Designated memory -1.
Time delay	Perform time delay action.
Axis pass	Designated axis pass action effective/ineffective
jump	Perform tab unconditional jump
call	Perform subprogram unconditional call.

return	Back from subprogram.
Conditional waiting	Perform setting condition waiting.
Conditional transfer	Perform tab jump according setting conditions
Conditional call	Perform program(subprogram) call according setting conditions
Program end	Perform program end processing
Alarm	Perform alarm display processing.
Program startup	Perform program (subprogram) startup
Program stop	Perform program (subprogram) stop.
Program pause	Perform temporary stop processing.

In instruction sreen, you can see all the commond will be rank.

If you want to change the expression back to old type, you should swich to the [system]-[user setting] to change it.plesase see the picture.

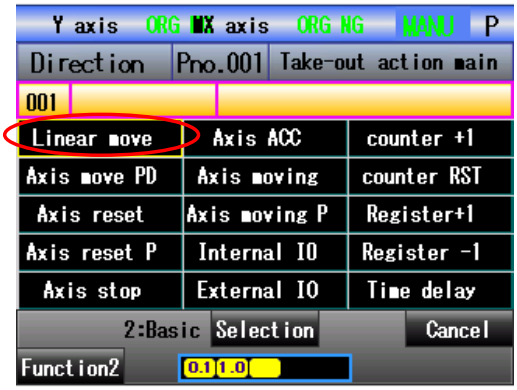


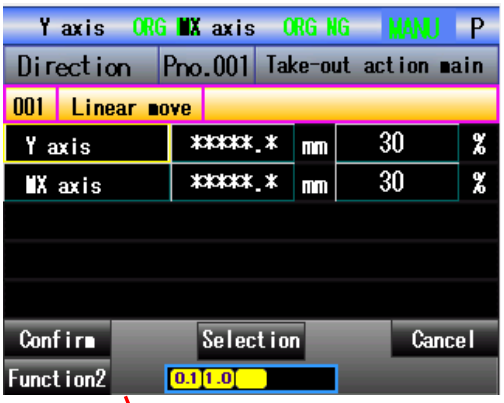
The diagram

Axis movement	Axis movement	Axis move D
		Axis move PD
		Axis movement
		Axis movement
	Axis reset	Axis reset
		Axis reset P
	Axis linkage	Axis linkage
	Axis stop	Axis stop
	Axis acc.	Axis acc.
External output	Std. output	Std. output
	Rev. output	Rev. output
Condition wait	Time delay	Time I waiting
	Condition wait	Condition wait

Branch	Uncondition C	return
	Condition C	Pause
	Return	end
	Uncondition J	call
	condition J	Condition B
	Prallel PRG	PRG startup
		PRG stop
Funtion	Standard stack	Stack
	CHUCK	P jig open
		P jig close
		S clamp open
		S clamp close
	M mach.control	M unload over
		M-load permiss
	Posture CTL	Aligning
		Posture
	F-p arm CTL	P retreat
		P advance
	S arm control	S T-O startup
		S retreat
		S advance
		S rising
		S go-down
	Others	Thimble advance
		thimble retreat
		P and S to M
		P and S to end
		Vibration T-out
counter	Counter+1	Counter-1
	CounterRST	Counter-1
system	Pause	Pause
	End	End
	Alarm	Alarm
Internal output	UserBit	UserBit
	UserCode	UserCode
	Timer	Timer
	Axis command	Axis command
	Axis control	Axis control
	Warning EXP	Warning EXP
	Memory	Memory-1
		jump

4.3.4「Linear movement/Axis movement PD」

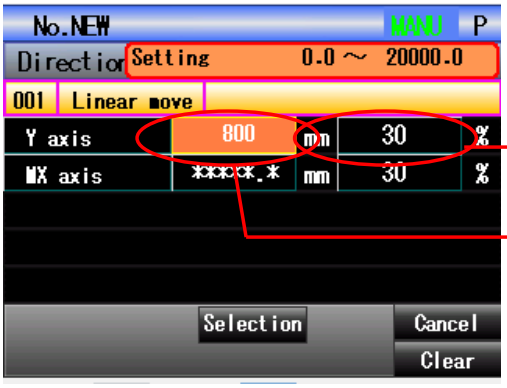




③

Note: The 2-axis part all includes Mz axis setting, and the following part takes the 1-axis as an example for description.

1-axis taken as an example:



①

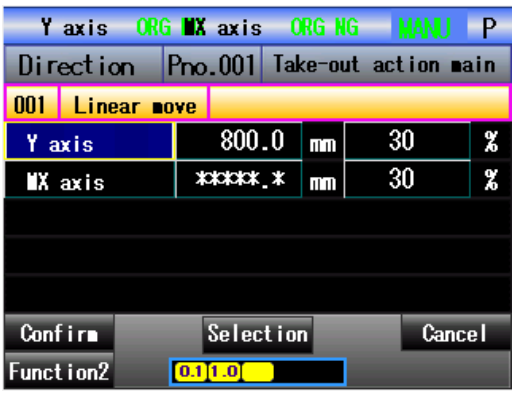
②

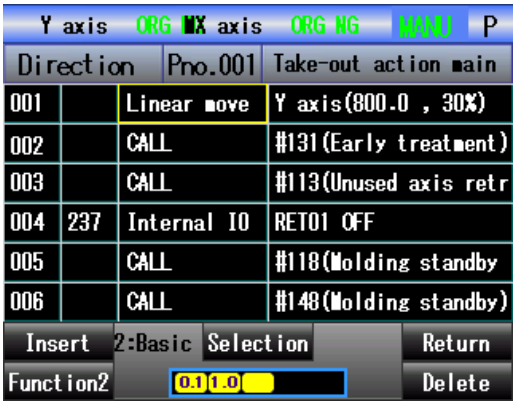
(1) Position: The position where the axis desired to move will be set, with an unit in mm.

(2) Speed: The axis's moving speed to be set, with an unit in %, as the percentage of the whole speed.

(3) Mz axis: 2-axis also includes the moving position of the Mz axis, with an unit in mm.

Select the axis movement/axis movement PD command/instruction to switch to the screen as shown above, where it is possible to edit the axis moving position and speed. The moving position desired to move can be selected for specific numerical setting. The action based on the setting value will be recorded as a program that later can still be based on to perform a same action. When the movement is complete, the next step of processing can be performed. Press the "■" key to switch axis's selecting/not selecting operation. After selected, set the axis's moving position. Use the 「→」button to select the ① numerical value position, when the "■" key is pressed and the selected is displayed in orange, use the action key to input the moving value. After the completion of the input, press the "■" key for confirmation. Use the「→」 button to select ② speed again, when the "■" key is pressed and the selected is displayed in orange, use the action key to input the moving value.

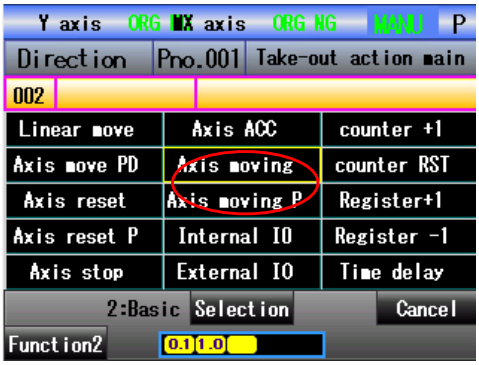


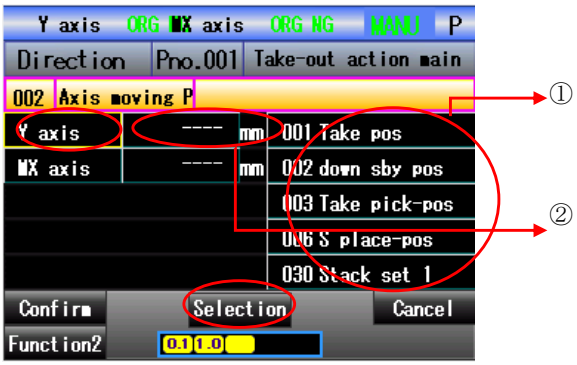


After the completion of the command/instruction input, press the "MENU" button to confirm the command/instruction output, only when the axis is selected can the confirmation be made.

Press the "HOME" key to switch to function selection 2 (「function 2」) screen, where it is possible to perform the speed change and position memory for free operation (For the method of "position memory", please refer to Section 1.2.5 - Position setting).

4.3.5「Axis movement/Axis movement P」

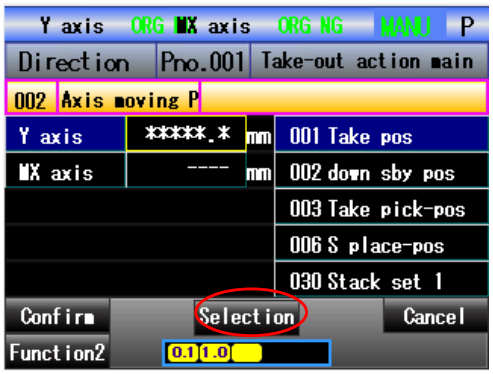


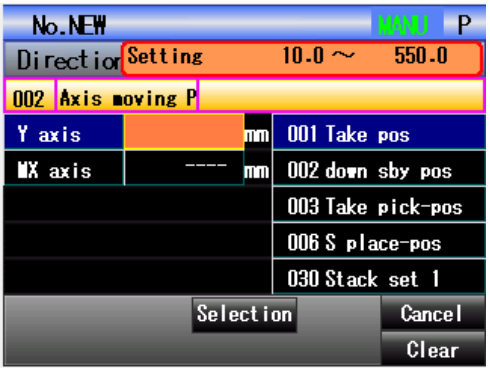


① Point number: Select the serial number of the point desired to be move.

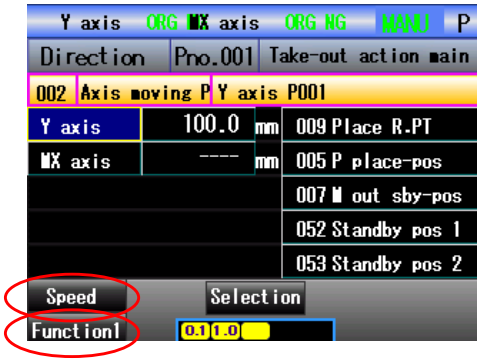
② Position/speed: The axis's position and speed to be set, with the position unit in mm and speed unit in % as the percentage of the whole speed.

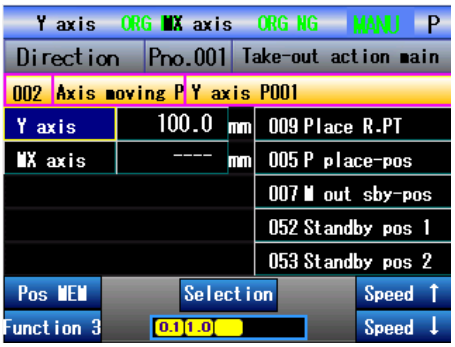
Select the axis movement or axis movement P command/instruction to switch to the screen as shown above. On the axis movement screen, select the point number to set (it is possible to set the point position/speed value) the movement position. The movement over/complete processing transfers to the next line. The axis movement P does not wait for the movement over/complete.



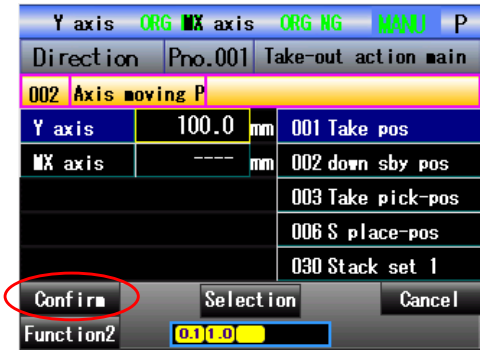


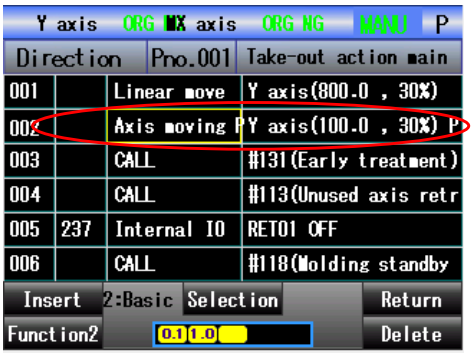
On the axis selection screen, press the "■" key to repeat the "select/not-select". After selected, set the point serial number. Then, set the position desired to move. Use the「→」button to select the ① numerical value position, press the "■" key. When displayed in orange, use the action key to input the numerical value of movement. After the input value is confirmed, press the "■" key.





The axis moving speed can also be set. To perform function selection on the "Function 1" screen, press the "MENU" button (" speed "), when the display is in orange, input the value of movement with action key. Input the values and press the"■" key for confirmation.

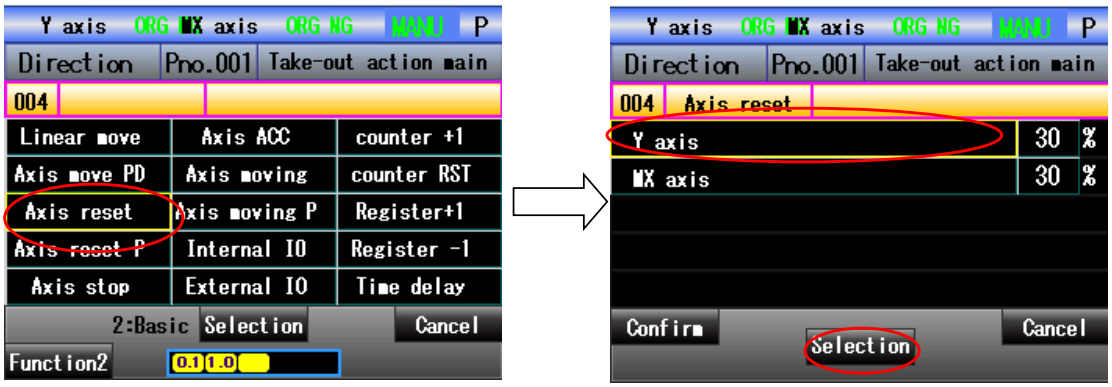




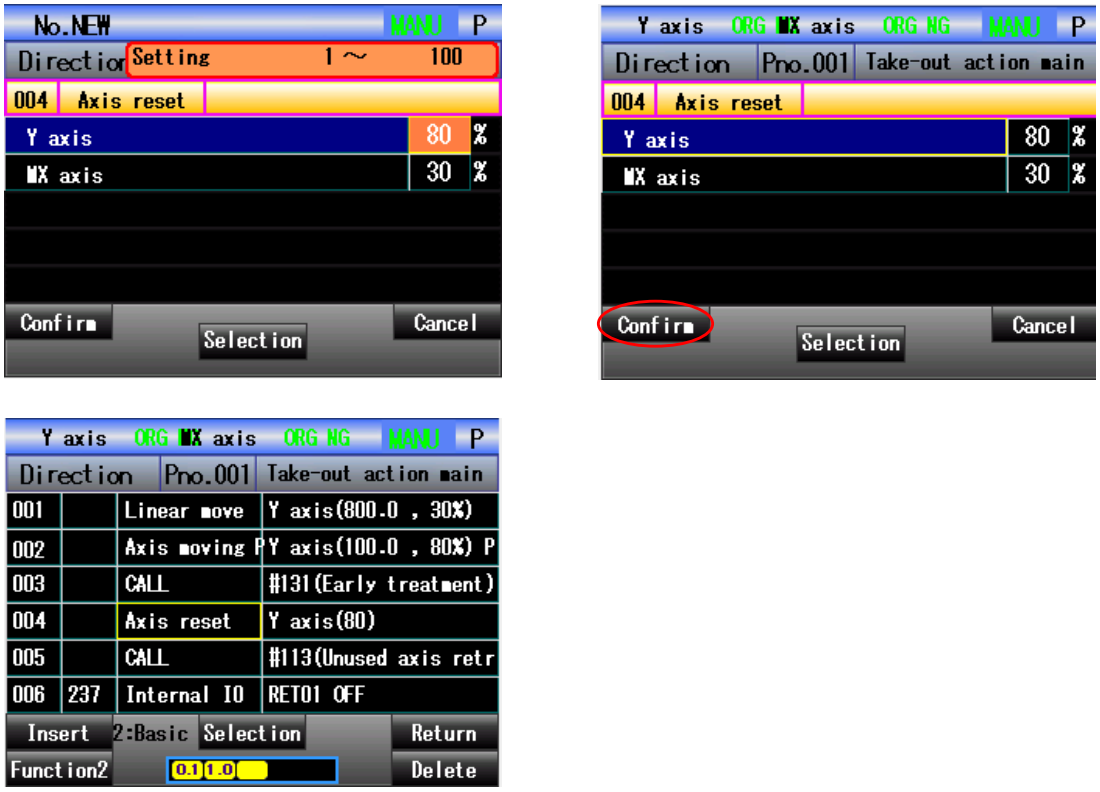
When the command/instruction input is complete, perform function selection on the "function 1" screen, and press the "MENU(" ok ")" key for confirmation). Press the "ok" key to display the axis movement command/instruction in the program list. Only when the axis is selected can the confirmation be made.

Press the "HOME" key to switch to the function selection 2 ("Function 2") screen where it is possible to perform the speed change and position memory of free operation. (For the method of "position memory", please refer to Section 1.7-Position setting).

4.3.6 「Axis reset/Axis reset P」



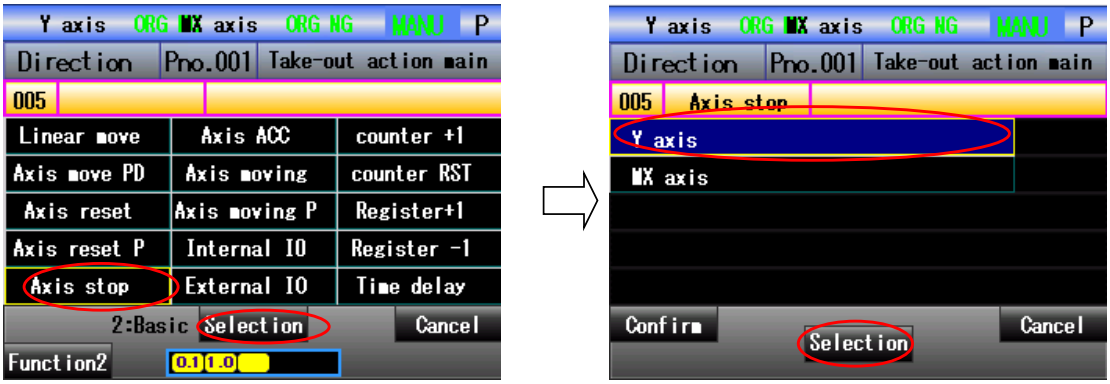
To reset or return the axis to the original point, select the “Axis reset/Axis reset P command/instruction”, press the “■” key and select the axis with “■” key.



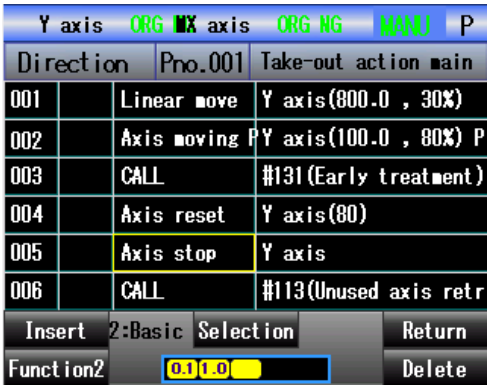
Use the 「→」 key to move the cursor to the speed, press the “■” key (" SELECT") and use the action key to input values when displayed in orange. Press the “■” key after confirming the input values. When completing the command/instruction input, press the "MENU (OK)" key for confirmation. Press the "OK" to display the axis movement command/instruction in the program list.

The axis reset P is the h is the axis's original point reset command/instruction which after issued will immediately proceed to the next processing, without waiting for the original point reset end, while the axis reset will need to wait for the original reset end before performing the next processing. The axis's original point reset command/instruction will be closed at the end of the reset or when the stop command/instruction (BREAK) is executed.

4.3.7 「Axis stop」

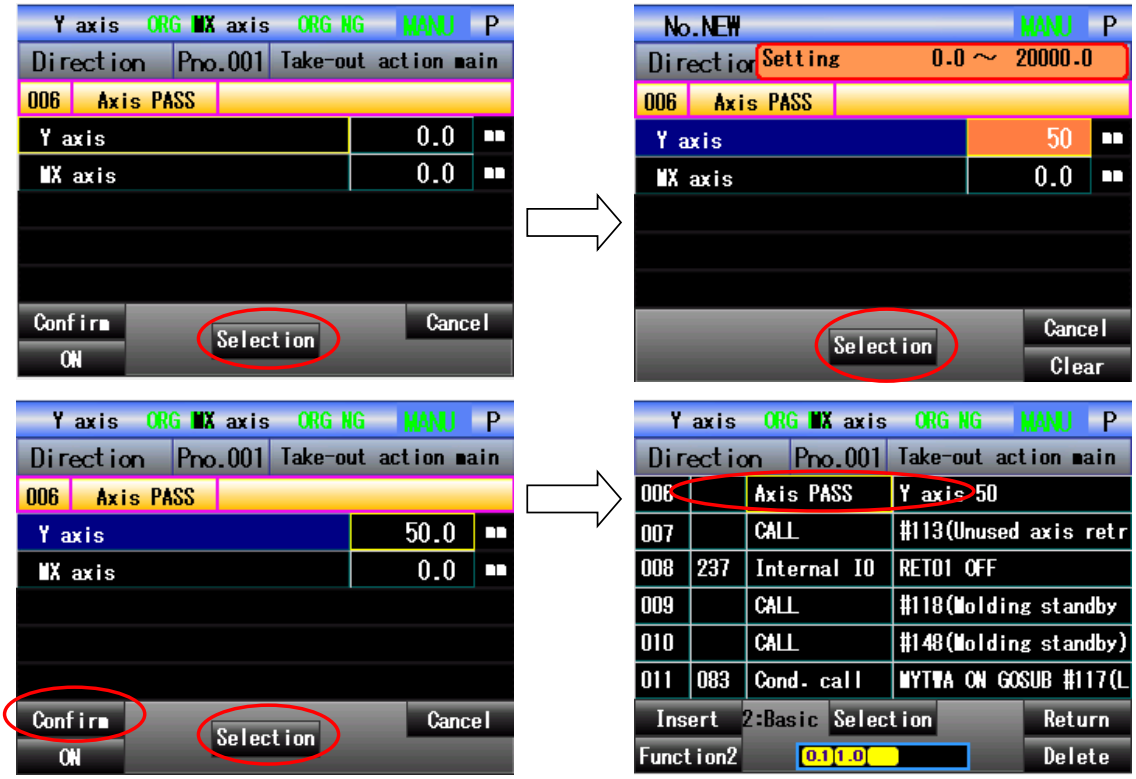


To stop the axis's movement, select the axis stop command/instruction and press the "■" key to switch to the screen as shown on the right side for the output of Y axis stop command/instruction.

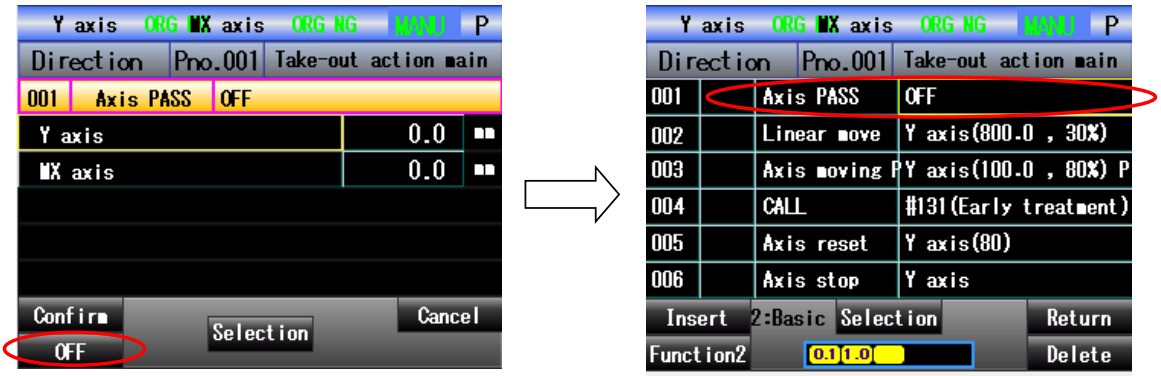


Use the 「→」 key to move the cursor to the speed, press the "■" key (" SELECT"), and use the action key to input values when displayed in orange. Press the "■" key after confirming the input values. When completing the command/instruction input, press the "MENU (OK)" key for confirmation. Press the "OK" to display the axis movement command/instruction in the program list. Only when the axis is selected can the confirmation be made.

4.3.8「Axis」

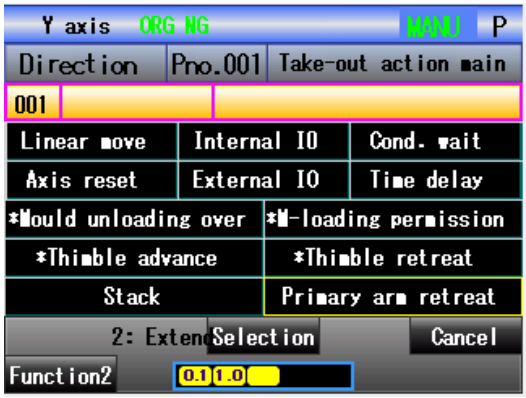


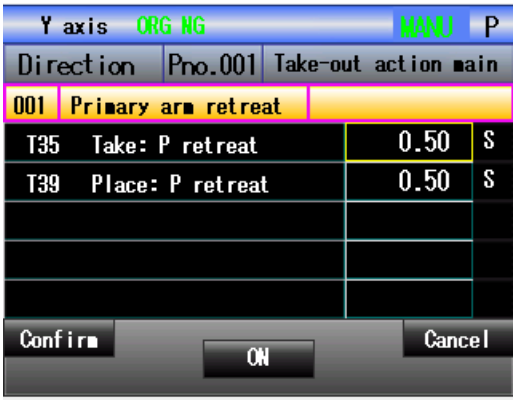
To edit the axis-pass action, select the axis-pass command/instruction and press the "■" key, with the screen displaying the axis and pass-amount setting dialog box. Press the "HOME" key to switch the ON/OFF status of the axis pass. When the status is ON, the set amount is effective. Use the「→」key to select the numerical box and press the "■" button, and use the action key to input the pass amount when displayed in orange. Press the "■" key for confirmation when the input is complete. After the edit is complete/over, press the "MENU" button for confirmation. After the edit is complete/over, press the MENU key to confirm the command/instruction.



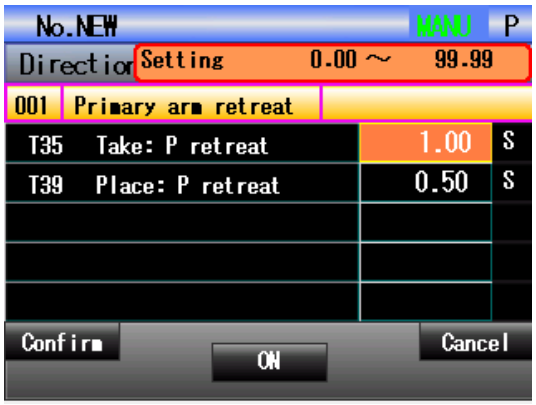
When the status is OFF, the set pass amount is ineffective. Press the "MENU" button switch to the screed as shown on the right side, showing that the output axis pass amount is ineffective.

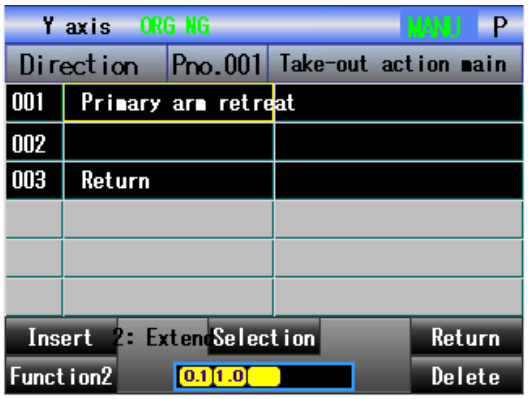
4.3.9「Primary arm go-backward/ Primary arm go-forward」





Command the primary arm to perform the go-back/go-forward action. Select the "primary arm go-back (go-forward) "command and then press the “■” key.





Use the 「↑」「↓」「→」「←」」 key to move the cursor to each timer desired to be set and press the “■” key ("SELECT") , use the action key to input values when displayed in orange. Press the “■” key after confirming the input values. After the command input is complete, press the MENU (OK)) key for confirmation. Press the OK key to show the primary arm go-back/retreat in the program list.

4.3.10「Primary arm rising／Primary arm declining」

Command the primary arm to perform a rising/declining action. For the input method of setting, refer to the "primary arm go-backward/ primary arm go-forward".

4.3.11「Secondary arm go-backward/ Secondary arm go-forward」

Command the secondary arm to perform go-back/go-forward action. For the input method of setting, refer to the "primary arm go-backward/ primary arm go-forward".

4.3.12「Secondary arm rising/ Secondary arm declining」

Command the secondary arm to perform the rising (go-upward)/declining (go-downward) action. For the input method of setting, refer to the "primary arm go-backward/ primary arm go-forward".

4.3.13「Posture aligning/correction」

Command the posture aligning/correction action. For the input method of setting, refer to the "primary arm go-backward/ primary arm go-forward".

4.3.14「Posture lateral posture」

Command the lateral posture action. For the input method of setting, refer to the "primary arm go-backward/ primary arm go-forward".

4.3.15「Primary arm and secondary arm returning to the middle／Primary arm and secondary arm going to both ends」

Command the action of primary arm and secondary arm returning to the middle (going to both ends). For the input method of setting, refer to the "primary arm go-backward/ primary arm go-forward".

4.3.16「Primary arm and secondary arm rising simultaneously/Primary arm and secondary arm declining simultaneously 」

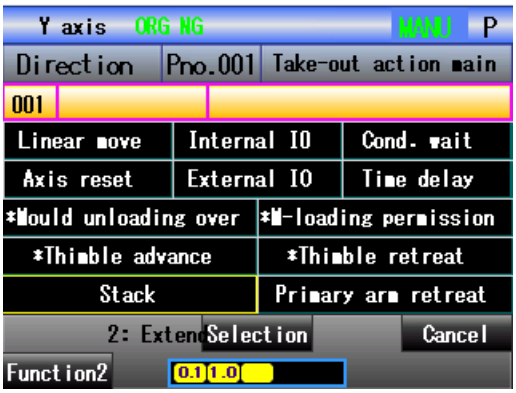
Commands the action of primary arm and secondary arm rising (declining) simultaneously. For the input method of setting, refer to the "primary arm go-backward/ primary arm go-forward".

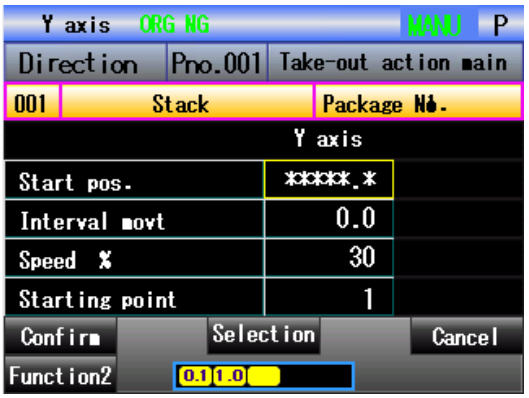
4.3.17「Secondary arm take-out action entrance」

This command is a parallel startup command. The secondary arm take-out the action requires the user to enter the command and then edit the action program of secondary arm in the command, which will be implemented

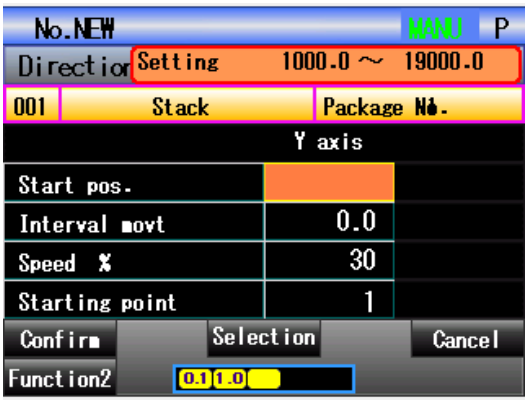
together with the primary arm action at the same time. The operation after entering the command is the same as those for the other commands/instructions.

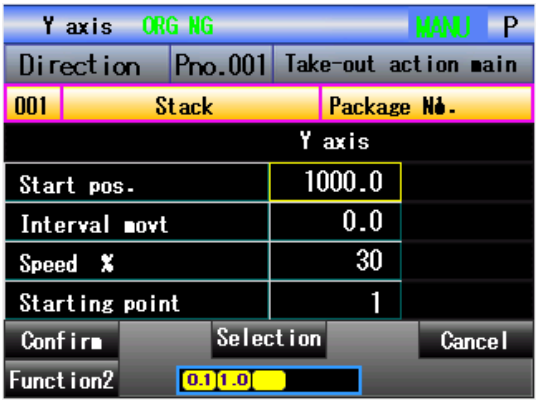
4.3.18「Stack」





Command the movement action towards to finished product position. Select the finished product placement position movement command and press the "■" key.





Use the 「↑」「↓」「→」「←」」 key to move the cursor to each position desired to be set and press the "■" key ("SELECT") , use the action key to input values when displayed in orange. Press the "■" key after confirming the input values. After the command input is complete, press the MENU (OK)) key for confirmation. Press the OK key to show the primary arm go-back/retreat in the program list.

Press the "HOME" key to switch to the function selection 2 ("Function 2") screen where it is possible to perform the speed change and position memory of free operation. (For the method of "position memory", please refer to Section 1.7-Position setting).

Names	Actions
Starting position	Set the starting position.
Interval conveying amount	Set the interval conveying amount
Speed	Set the stack speed.
Stack number	Left: set the current stack number.
	Right: set the stack number.
Stack sequence	Set the sequence for performing stack. (1-shaft has only 1)
Interval direction	Select the interval direction from the + and - .

4.3.19「Clamp opening 1/ Clamp closing 1」

Command the clamp opening/closing action. For the input method of setting, refer to the **"primary arm go-backward/ primary arm go-forward"**.

4.3.20「Secondary arm clamp opening/Secondary arm clamp closing」

Command the secondary arm clamp opening/closing action. For the input method of setting, refer to the **"primary arm go-backward/ primary arm go-forward"**.

4.3.21「Finished product post-processing」

Processing action after finished product release. For the input method of setting, refer to the **"primary arm go-backward/ primary arm go-forward"**.

4.3.22「Mould unloading over/complete」

Take-out side go-down/declining fore-processing, mainly including mould unloading over/complete waiting. For the input method of setting, refer to the **"primary arm go-backward/ primary arm go-forward"**.

4.3.23「Molding permission」

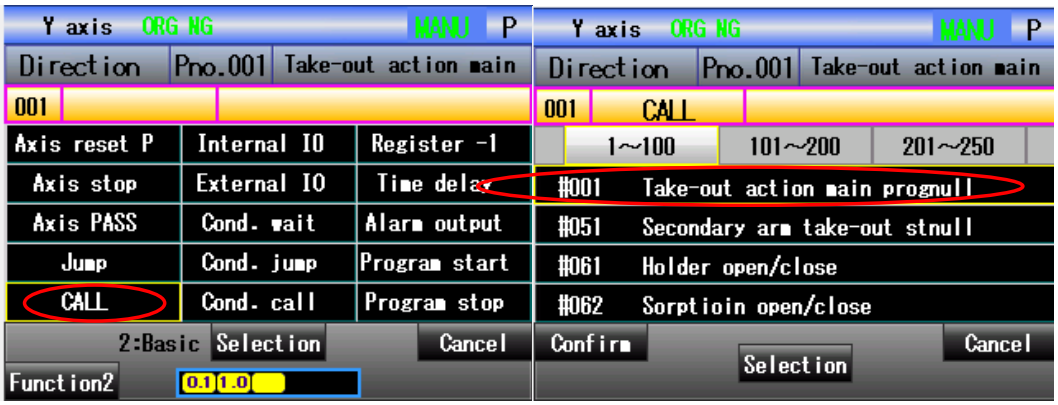
Take-out post-transverse-out fore-processing, mainly including model loading permission output. For the input method of setting, refer to the **"primary arm go-backward/ primary arm go-forward"**.

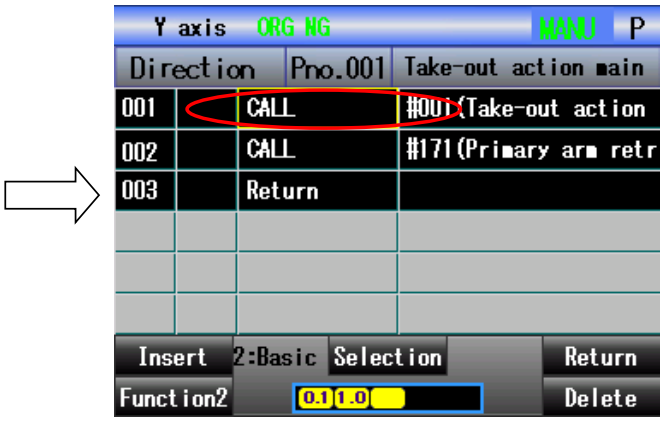
4.3.24「Jump」

To jump towards a specified tab, select the unconditional jump command to switch to the screen as shown above, where the tab list that can jump to. Use the 「↑」/「↓」key to select the tab desired to be performed, and press the "■" key. When the selected is displayed in blue display, press" MENU " key to a screen as shown on the right

side for the command output. To jump towards a new tab, press the "HOME" key to set a new one that will be automatically numbered from the smallest serial number. It is only possible to display a tab defined within the same program number, or described within the operand (impossible to jump towards a tab of other program).

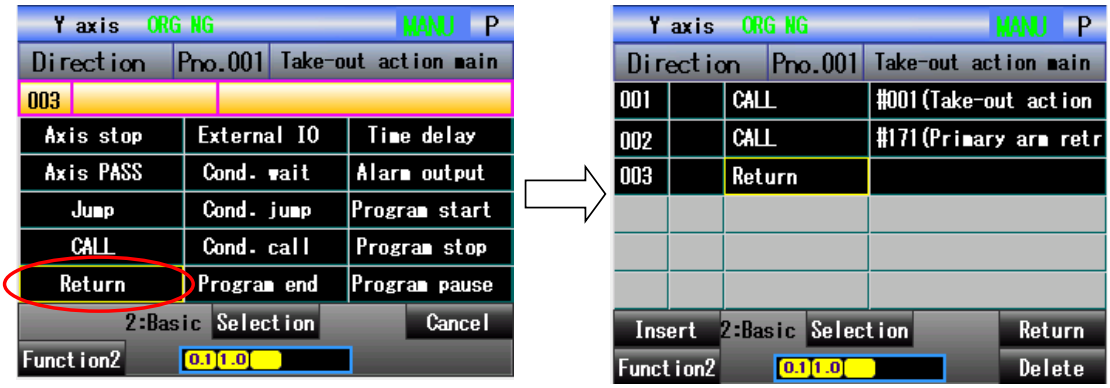
4.3.25「Call」





To compulsorily execute a specified subprogram, select the unconditional call commands to switch to the screen as shown above, where an executable program list is displayed. Use the「↑」/「↓」key to select the program desired to be performed, press the "■" key , when the selected is displayed in blue, press the "MENU" key to switch to the screen as shown on the right side for the command output. Based on the serial number, the program is displayed in three list, namely "1 ~ 100" "101 ~ 200" and "201 ~ 250". Use the「←」/「→」key to select the list, use the「↑」/「↓」key to select the target program, press the "■" key to display the selected in blue. At the end of the edit, press the "MENU" key to confirm the output command. Program number 251 ~ 251 cannot be called.

4.3.26「Return」



To return to the program from the branch, select this command, press the "■" key to switch to the screen as shown on the right side for the command output. When instructing/teaching to the last line, a blank line will ge automatically generated for the convenience of continuing the program editing.

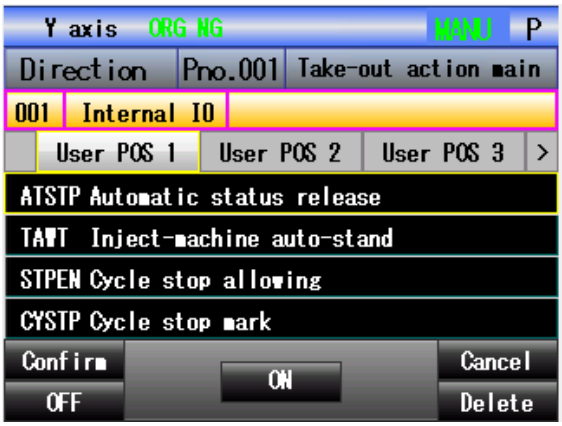
4.3.27「Axis speed」

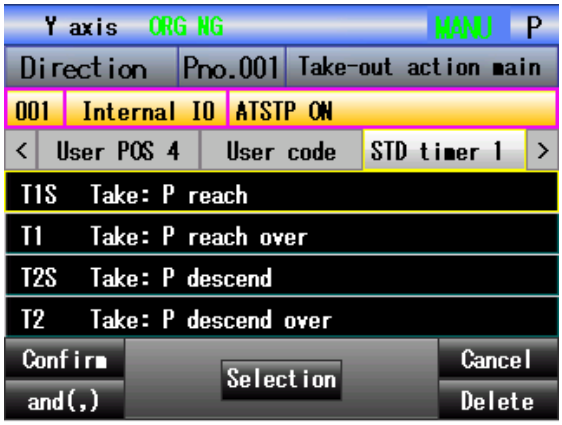
To set the axis acceleration, select the axis acceleration command, press the "■" button to switch to the screen as shown above for edit, where the axis and acceleration setting box is displayed. Press the "HOME" key to switch the axis acceleration's ON/OFF status. When the status is ON, the setting of acceleration is effective. Use the「→」key to select the numerical value box and press the "■" key, with the output value 14 is displayed in orange, use the「↑」(increase)/「↓」(reduce) key to change the acceleration value, with a variable range of 26 stages from 1 to of 26. at the end of input, press the "■" key for confirmation, with the orange display disappearing. At the end of edit, press the "MENU" key to confirm the output command.

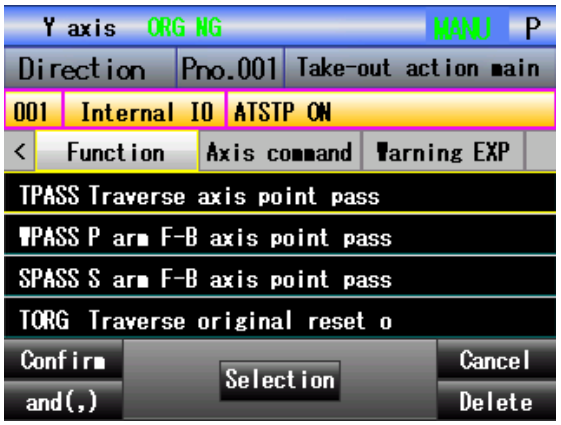
When the status is OFF, the setting acceleration value is ineffective. Press the "HOME" key to confirm the output of the axis acceleration ineffective command.

4.3.28「Internal output」

To control the internal output, select the internal output command. Press the "■" button to switch to the edit screen. Once the internal output is set as ON/OFF, it will keep the state until a counter command is input, which can also be set as ON/OFF only within the setting time. Use the「←」/「→」button to select upper classification list, use the「↑」/「↓」key to select the internal storage and output in the list. Move to the last line and then press「↓」button to turn pages. When the "■" key is pressed, output is ON, when the "HOME" key is pressed, the output is OFF. Edit after completion of an output edit, the button on the screen will change to get the conditions ready for editing the next output. At this point, press the "■" key to increase the output by an "or" condition, press the "HOME" button to increase the output by an "and" condition. To delete the input, press the "RESET" button to delete them one by one, and press the "BACK" button to cancel the input. At the end of the edit, press the "MENU" key to confirm the output command.







Output of user position 1~user position 4:

Use the 「←」/「→」 key to select the list groups of the user position 1 ~ user position 4, and use the 「↑」/「↓」key to select each memory. When the "■" key is pressed, the selected is ON, when the "HOME" key is pressed, the

Output of user codes:

Use the 「←」/「→」 key to select the user code list, and use the「↑」/「↓」button to select the user code. Use the 「→」 key to move to the numerical bar to make it appear orange, and then use the action key to input the code value. Press the "■" key to confirm the output the command.

Output of standard timer, user timer and fixed timer:

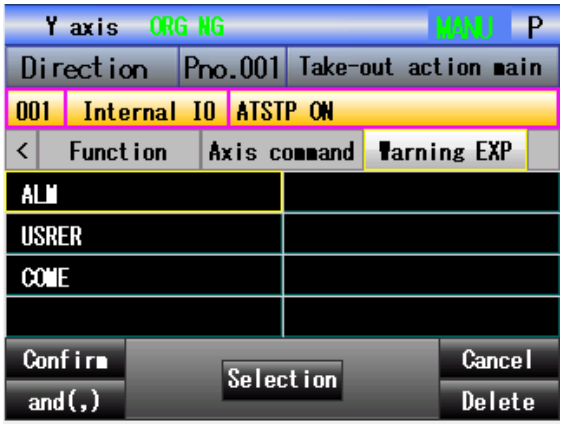
Use the 「←」/「→」 key to select the list of the standard timer, user timer and fixed timer, and use the 「↑」/「↓」key select the timer. Press the "■" key to let the selected timer to get ON (startup) and press the "HOME" key to let the selected timer to get OFF (not in use).

Output of function:

Use the 「←」/「→」key to select the function list, and use 「↑」/「↓」key to select the functions desired to be controlled. When the "■" key is pressed, the selected function gets ON the (in use), and when the "HOME" key is pressed, the selected function gets OFF (not in use).

Output of axis command/instruction

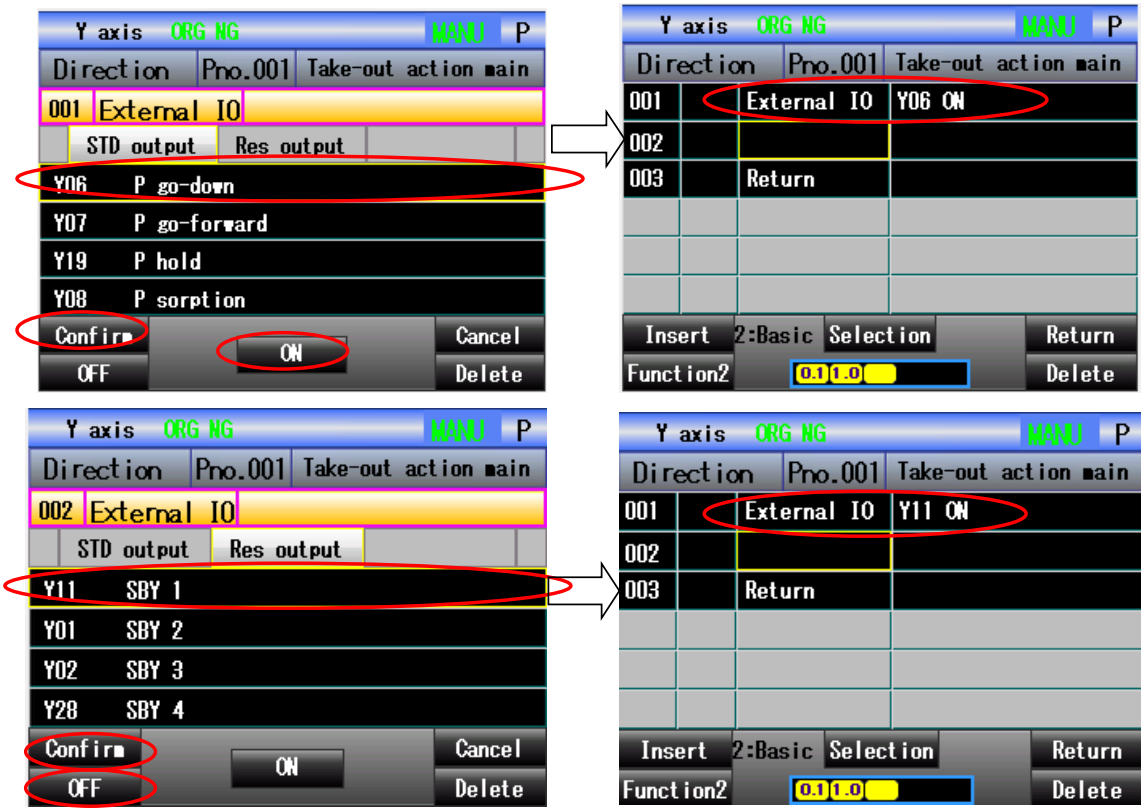
Use the 「←」/「→」 key to select the command/instruction list, and, when pressing the "■" key to let the selected displayed in blue, use the 「↑」/「↓」key to select the movement position. After confirmation has been made, press the "■" key to output the command/instruction.



Output of warning expression:

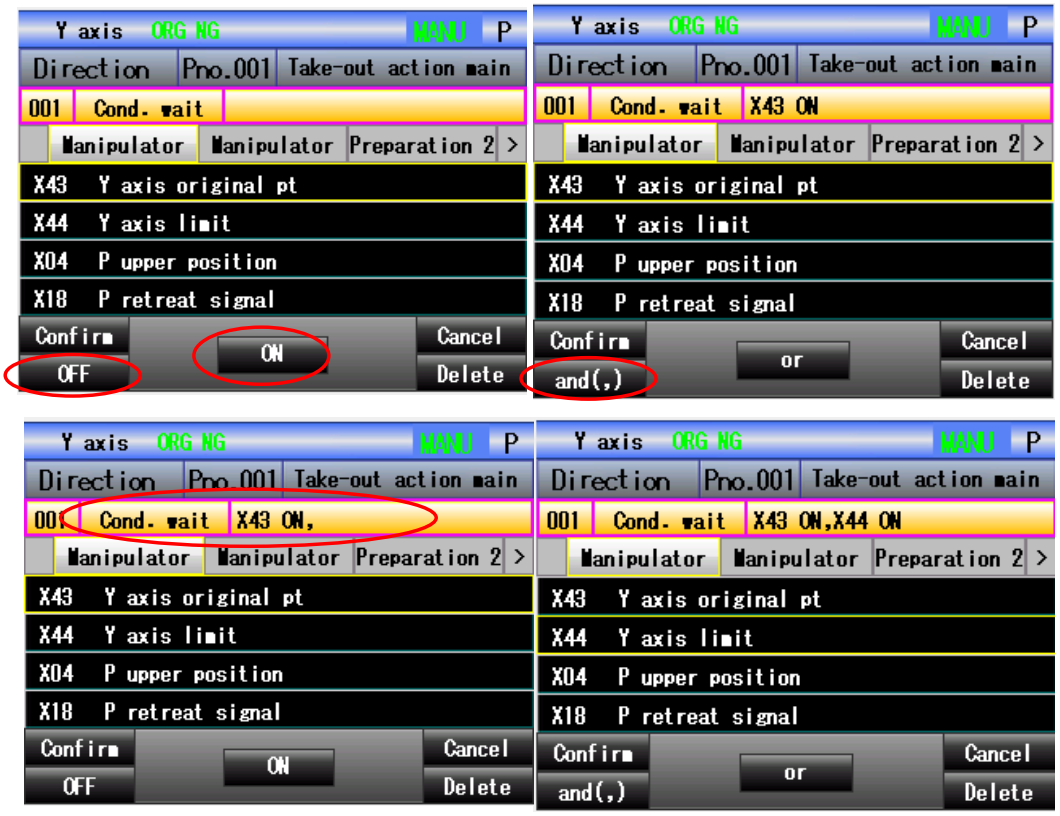
Use the 「←」/「→」key to select the warning expression list, and use the「↑」/「↓」key to select the types of warning messages; when the column on the right side is displayed in orange, use the action key to input the serial number of the message. Press the "■" key to confirm the output command.

4.3.29「External output」



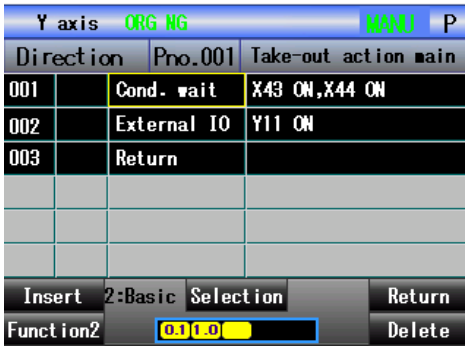
On the screen, it is possible to edit the external output control commands/instructions. External output is displayed in two list by type. Use the「←」/「→」 key to select the take-out machine output or the injection molding machine output. Use the ↑」/「↓」key to select the output in each list. Use the「↓」key to move to the bottom line of the screen and press for turning pages. Press the "■" key to let the selected external output to get ON, and press the "HOME" key to let it get OFF. Finally press the "MENU" key to confirm the output command.

4.3.30「Conditional waiting」



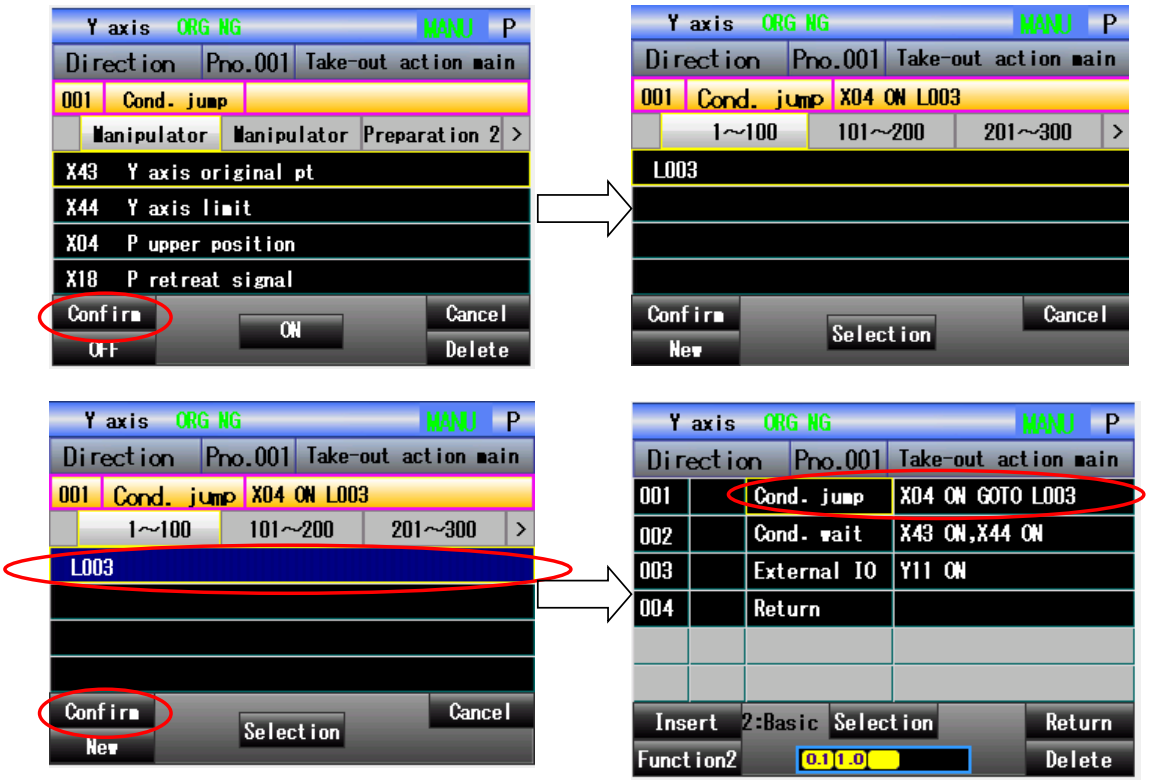
If desire to stop the stepping program before the condition is met, select the conditional waiting command/instruction to access to the edit screen, where it is possible to set the ON/OFF status of all I/O (including output and memory) and also possible to set the register code's (8 bit) consistence, inconsistence and size comparison, until the condition is established, and then stop the stepping program. The classification I/O list group is displayed at the upper side. Use the 「←」/「→」 key to select the list, and use the「↑」/「↓」key to select each I/O and memory in the list.

Press the "■" key to let the selected as ON and press the "HOME" key to let the selected as OFF. At the end of the condition input, to increase the condition, the key display changes as shown on the right screen, where, press the "■" key to increase conditions (or) in an "or," form, and press the "HOME" key to increase the condition in an "and" form. To cancel the input, press the "RESET" button to delete them one by one.



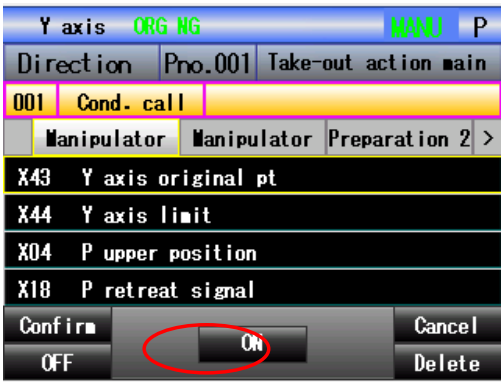
At the end of condition input, press the "MENU" button to confirm the output command.

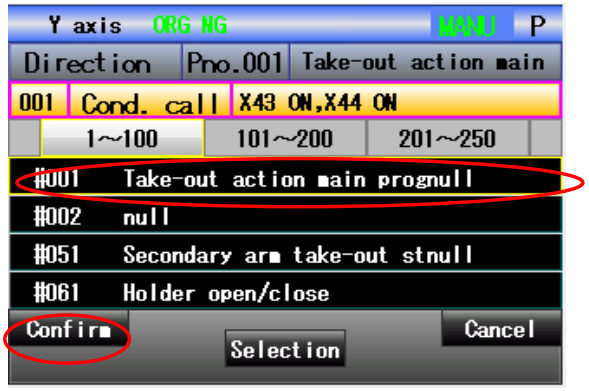
4.3.31「Conditional transfer」

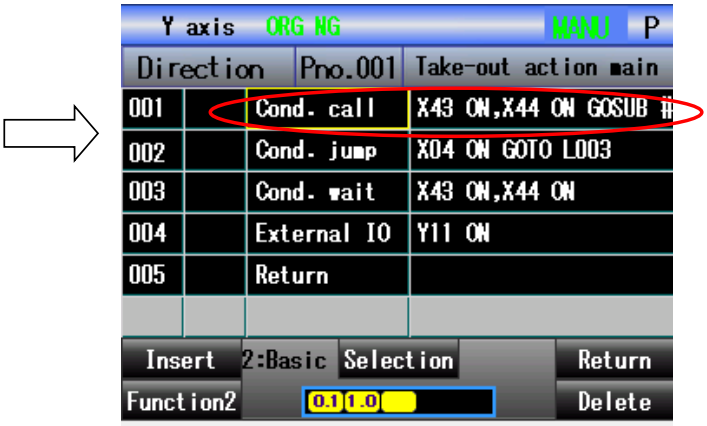


Commands/Instructions to transfer towards a specified tab when such editing conditions are satisfied, and the method for the condition input is the same as that for the input of the [conditional waiting] command. At the end of the condition input, press the "MENU" key for confirmation, and the tab within the specified executable program is displayed. Use the「←」/「→」key to select the group classified by tag number, use the「↑」/「↓」 key to select the tab, and press the "■" key to make it displayed in blue, meaning that the selection is proper. To transfer to a new Tab, press the "HOME" key to set up a new one (Numbered starting from the smallest tab serial number). Press the "MENU" button to confirm the output command.

4.3.32「conditional call」

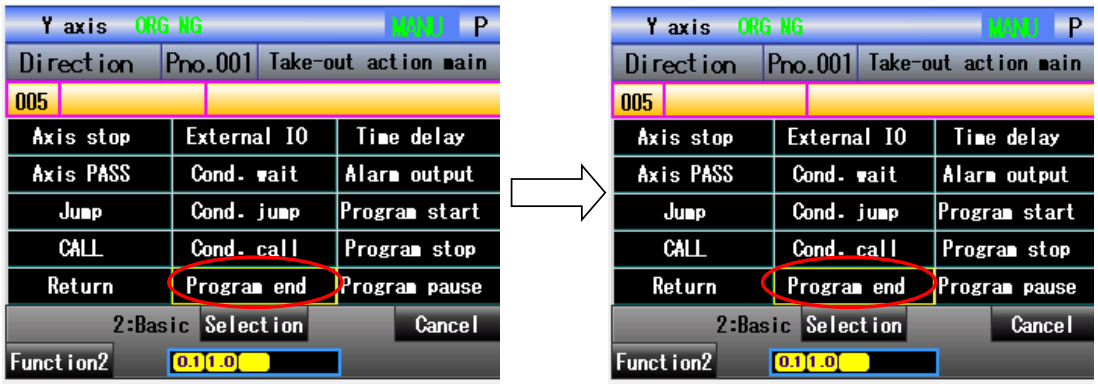






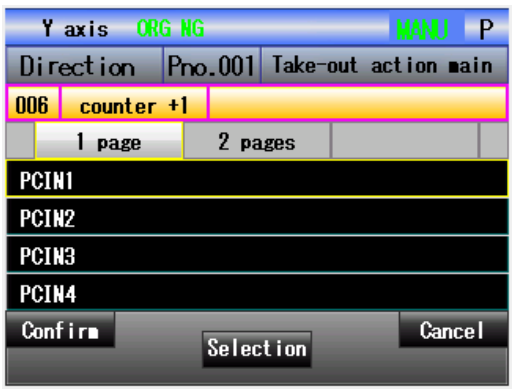
Commands/Instructions to transfer towards a specified subprogram when such editing conditions are satisfied, and the method for the condition input is the same as that for the input of the [conditional waiting] command. At the end of the condition input, press the "MENU" key for confirmation, and the specified executable program list is displayed. Use the「←」/「→」key to select the list classified by program number, use the「↑」/「↓」 key to select the subprogram, and press the "■" key to make it displayed in blue, meaning that the selection is proper. Press the "MENU" button to confirm the output command.

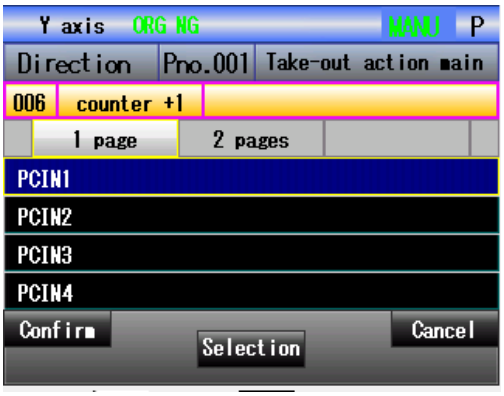
4.3.33「Program end」

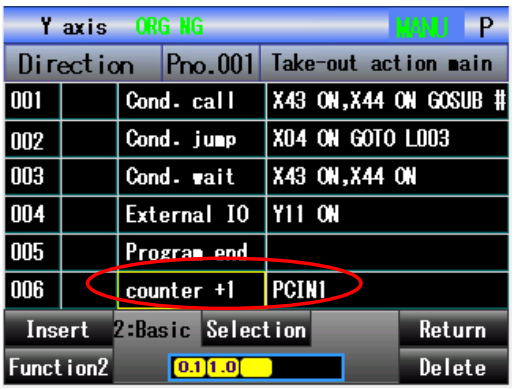


To end the program run, select this command/instruction. After selected, press the "■" key to output the command directly as shown on the screen on the right side.

4.3.34「Counter＋1 / Counter reset」

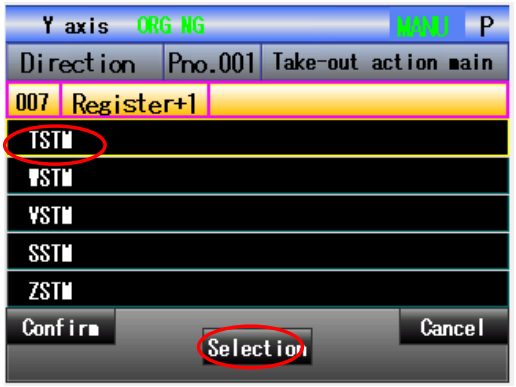


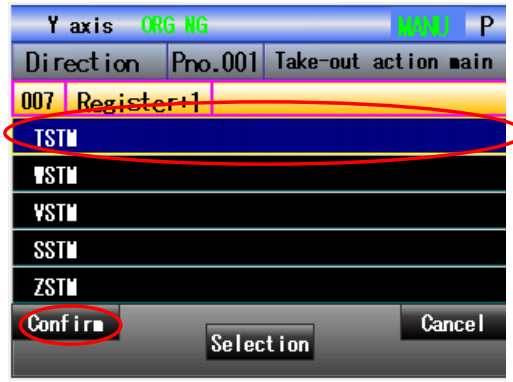


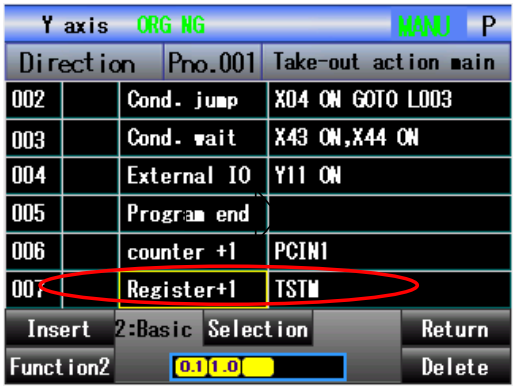


On this screen, it is possible to set the value of the counter. According to the types of counter, the display will consist of 2 pages. Use the 「←」/「→」 key to switch the page display, and use the「↑」/「↓」 key to select the counter of each page. Press the "■" key to make displayed in blue, and then, press the "MENU" key to confirm the "output counter + 1 or reset" command/instruction.

4.3.35「Memory+1 / Memory-1」

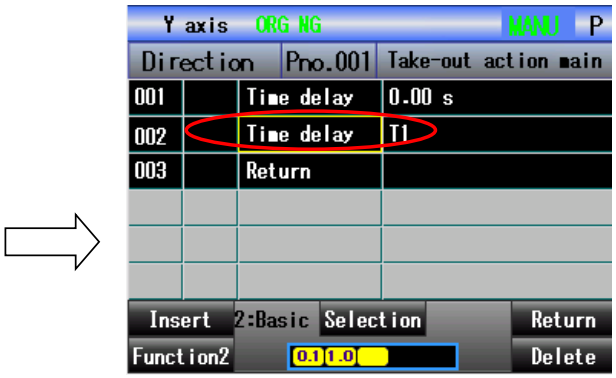




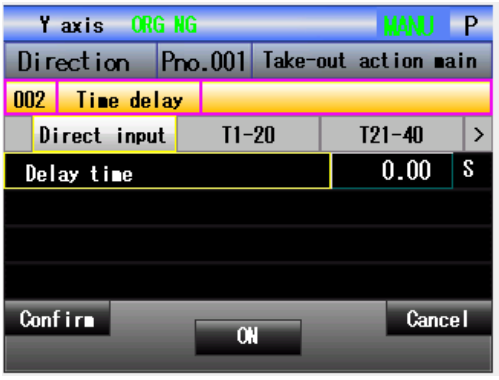


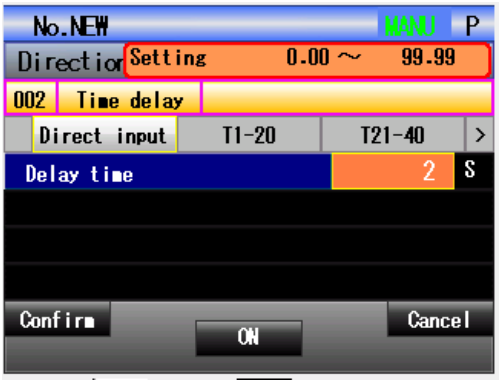
On this screen, use the「↑」/「↓」key to select the memory desired to be set, press the "■" key to make it displayed in blue, and then press the " MENU " key to confirm the output command, with the operating steps as shown on the above screen.

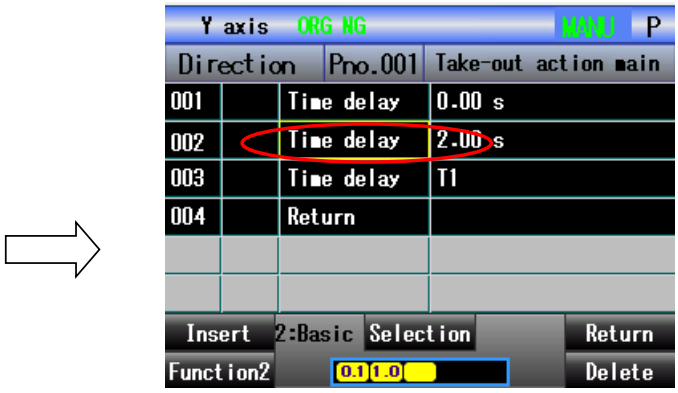
4.3.36「Time delay」



The program only stops the stepping within the delay time. It is possible to select the timer mark through the list, or the value of it may be directed input. To select a timer mark, use the 「←」/「→」key to select the timer list, and use the 「↑」/「↓」key to select the timers in the list. Press the "■" key to make the timer get ON and then press the "MENU" key to confirm the output the command. To change the setting value of the timer, select the numerical value bar to make it displayed in orange, and then use the action key to input values. Press the "■" key to end the input and press the "MENU" key to confirm the output command/instruction.

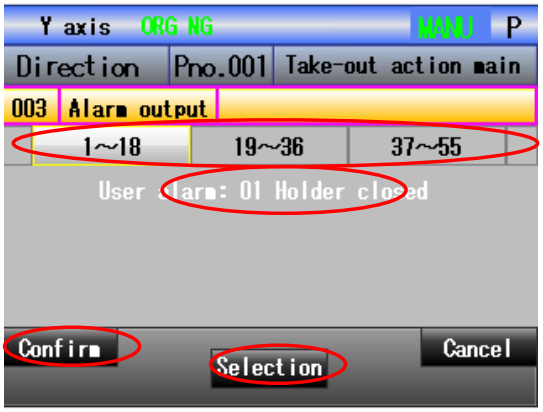


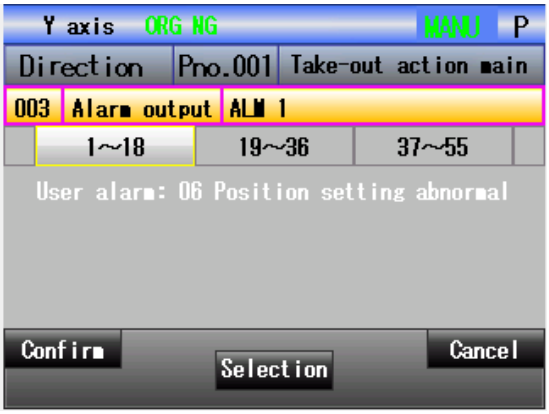


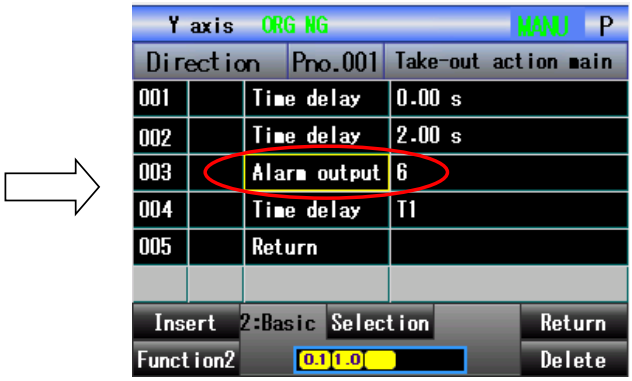


To set the delay time directly, use the「←」/「→」key to directly input the list, press the "■" key to make it get ON, and then it is displayed blue. Use the 「→」 key to select the numerical bar, press the "■" key to make it displayed in orange, and then use the action key to input values. Press "■" key to end the input and press the "MENU" key to confirm the output command/instruction.

4.3.37「Alarm」

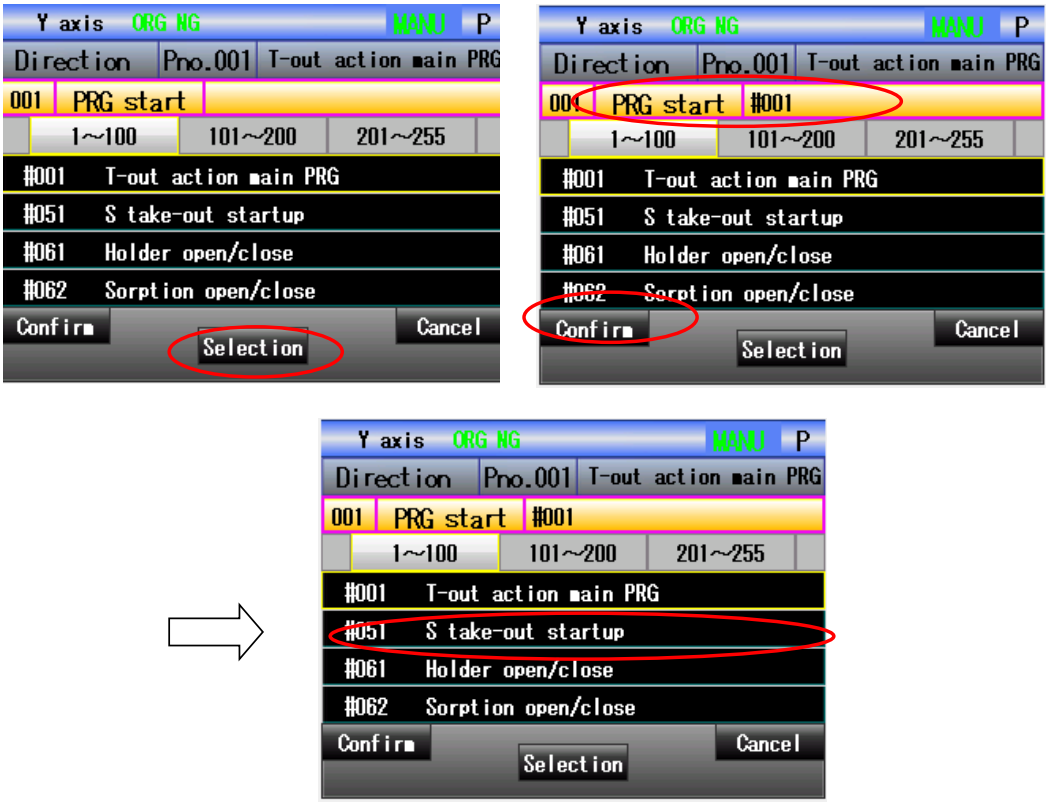






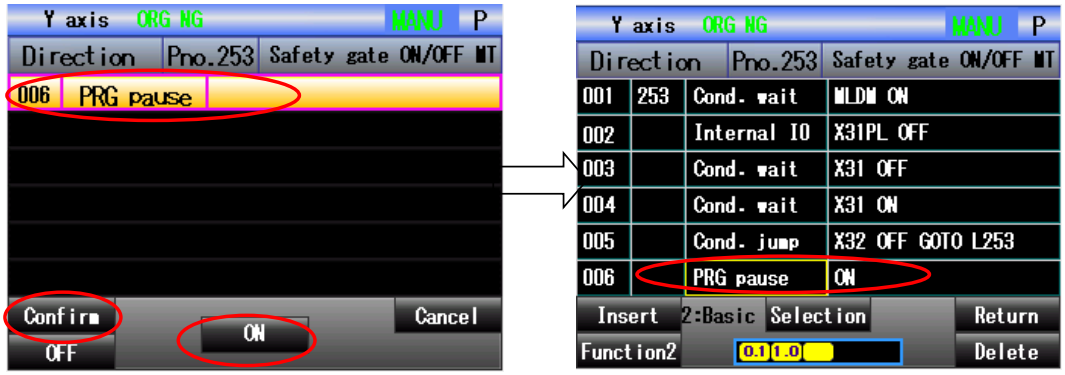
To display the specified alarm information, select the "alarm" command/instruction. The alarm's serial number can be set. The alarm serial numbers can be specially used by the subprogram are numbers from 01 ~ 55. use the 「←」/「→」key to switch the display of the list, and use the「↑」/「↓」key to select the alarm sequence number in the list. After selected, press the "■" key or the "HOME" key for confirm the output command as shown on the screen on the right side.

4.3.38「Program Start/Program Stop」



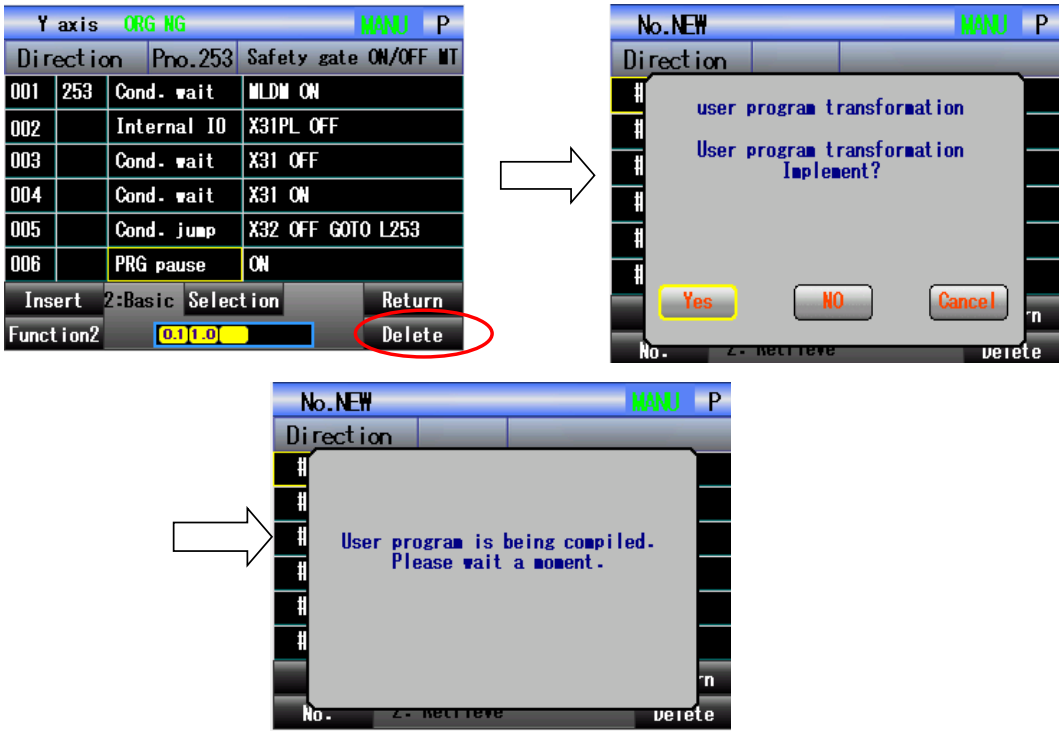
To start or stop the specified subprogram, select the program start/stop command, with the edit can be performed on the screen as shown above. For the convenience of selection, the selection list is classified by serial number as three lists for display, namely 『1～100』『101～220』 and 『221～255』. Use the 「←」/「→」key to switch the selection list, use the 「↑」/「↓」key to select the target program, and press the "■" key for confirmation. When the selected program serial number is displayed on the upper editing bar, press the "MENU" key for execution. As shown in the screen below, the commands are output.

4.3.39「Program pause」

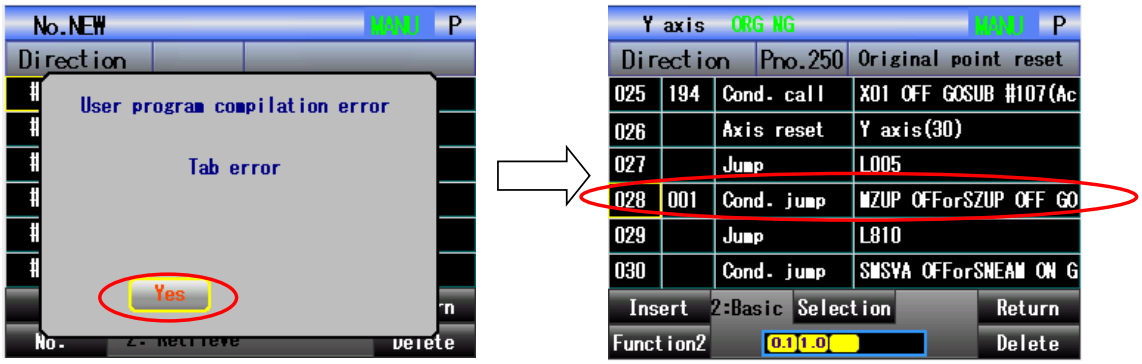


To temporarily stop the steps of all programs, select the "Program pause" command/instruction. The axis's action will also be paused, with the exception of programs No. 251 ~ 255. When selecting the program pause command, be sure to confirm whether or not to insert in the programs No. 251 ~ 255. If yes, the screen will be shown as above. In programs with a number less than 251, this command is ineffective. Press the "■" key to let it get ON, or press the "HOME" key to let it get OFF, and press the "MENU" key to confirm the output command.

To sum up, after the completion of the instruction/teaching, click the "BACK" key to return to the instruction (teaching), and then press the "BACK" key to perform a program transformation.



Use the 「←」/「→」 key to select "YES" and press the "■" key to perform a program transformation. At the of the program assembly, if there is no error, return to the main screen of the program and end the instruction (teaching).



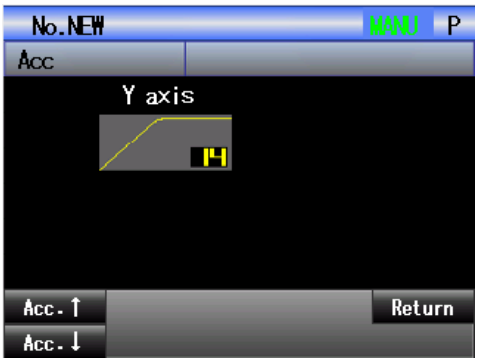
If there is an error, this screen will be displayed. When pressing the "■" key and selecting the "YES" key, the line where the error occurs will be prompted and displayed in the yellow select box on the right side of the screen, and it will be OK to correct this position according to this prompt.

4.4 Acceleration and deceleration

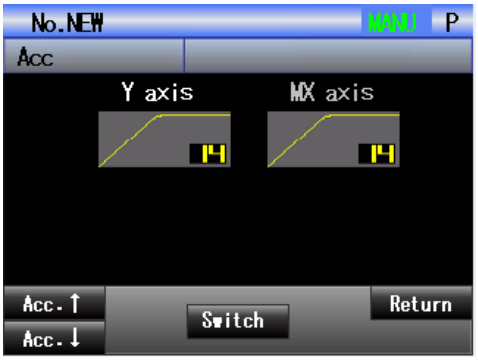
Variable frequency axis is not provided with acceleration setting.

Select the "deceleration" button on the menu screen to switch to the sreen as below (see 1-axis and 2-axes as shown respectively on the left side and the right side), where it is possible to set the manipulator's all axis acceleration. Acceleration setting can also be performed in the automatic operation.

1 轴



2 轴



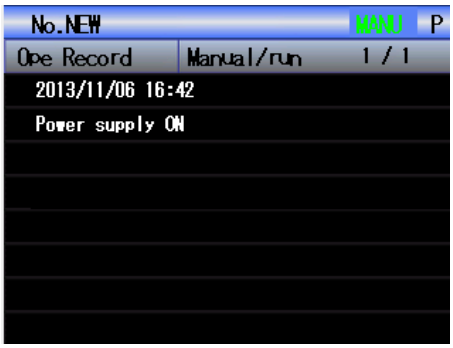
On the deceleration setting screen, press the “acceleration↑” button to increase the acceleration, press the (acceleration↓) button decrease the acceleration.

Press and hold the key to achive a continuous change . The initial value of the acceleration is 14, with a settable range from1 to 26, total 26 stages.

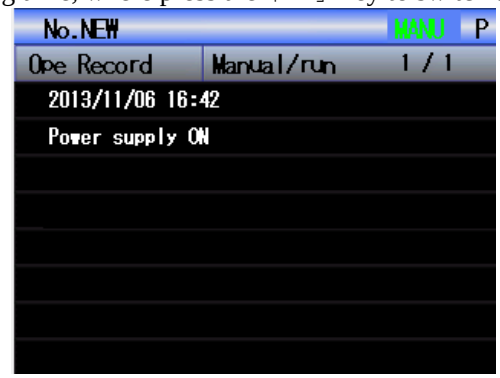
In cas of 2-axis, the acceleration setting can be made respectively for Y axis and MZ axis, which can be performed by pressing the “axis switch” button to switch the Y axis and MZ axis, with the selected axis mark to be displayed in white and the unselected item to be displayed in gray.

4.5 Operation record

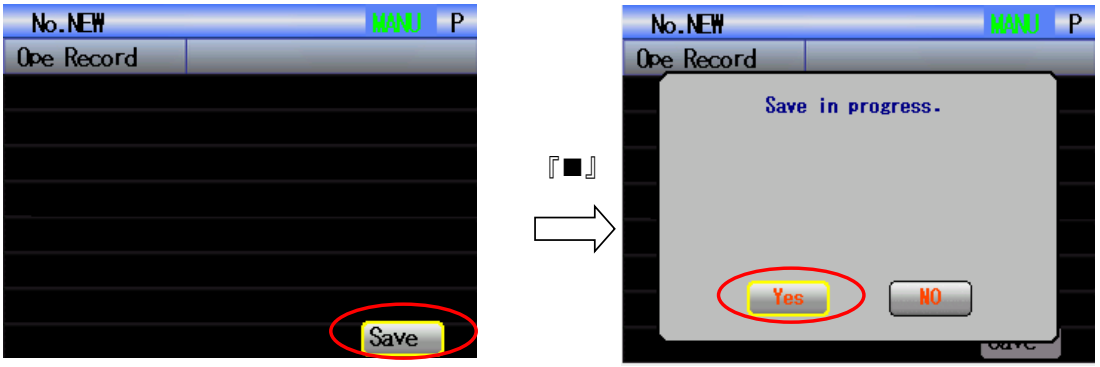
On the menu screen, press the “operation record” button to switch to the following screen where the operations that have been performed will be shown, including dispaly contents such as power ON/OFF, manual operation, toperating error, alarm occurring, changes to setting values and other related records. In case of too many content, use the「↑ / ↓」key to turn the pages.



The above screen shown the manual/operation records which can used to confirm the operation contents and performing time, where press the「→」key to switch to set the screen as below.



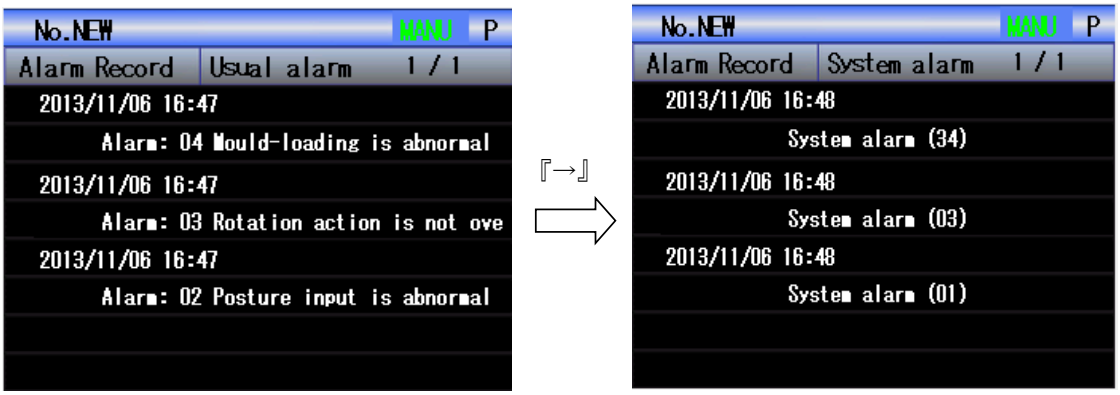
The record of the "setting" operation is display on the screenand can be used to confirm the operation contents and performing time, where press the「→」key to switch to the following save screen.



On this screen, the operation records can be saved to the internal memory. In the above pop-up dialog box, select the "Yes" key to make a confirmation and then perform the save operation, after which, return to the previous screen.

4.6 Alarm record

Select the [alarm record] on the menu screen to switch to the screen shown as follows. The alarm record is divided into "usual alarm" and "system aarm", the display of which can be switched by pressing the 「← / →」 key, where it is possible to view up to 30 alarms that have happened so far and is possible to confirm the alarm happening time and alarm sequence number as well as its trend.



Press the「→」key on the screen as shown on the right side to save the recorded alarm contents to the internal memory, with the operation screen as below, where select the "Yes" key to perform save operation. After which return to the alarm record screen.

4.7 System setting

On the User 3 screen, press the in the"system setting" under the menu to switch to the system setting screen, where it is possible to perform the system's basic settings.

On this screen, the clock setting is displayed, showing the OFF time and display brightness. Use the「↑」/「↓」/「←」/「→」button to select the gray box, press the "■" key to switch to the screen as shown on the right side, where use the action key to input setting values. After the setting, select the "save" key and press the "■" key to compete the save operation. The settings will take effect immediately.

Expression descriptions

Time setting	Set the machine's display time
Screen saver time (minutes)	Set the screen closing time.
Display brightness (0 ~ 7)	Set the screen display brightness.
Language switching	Switch between Chinese/English

In case of User 4 and User 5, the following page setting will be additionally added.

Select the item on the far right zone of the screen, press the「→」button to switch to the next page display.

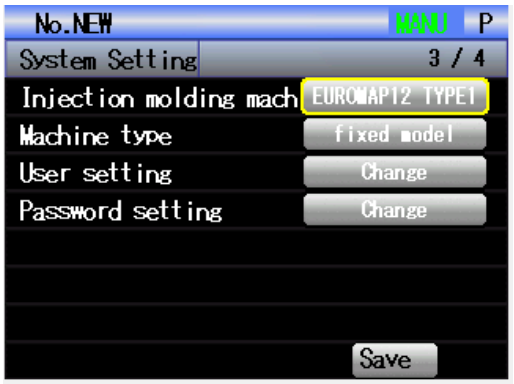
It is possible to perform the setting of the buzzer and axis on this screen. Use the「↑」/「↓」key

to select the setting items, press the “■” key to switch the ON/OFF of the mode. After the setting, select "save" and then press the “■” key.

Expression descriptions:

Buzzer	ON: The buzzer is effective. Set whether or not to enable the buzzer when alarm occurs in the automatic operation. OFF: The buzzer is ineffective.
Machine type	Single arm: Use a style of 1-axis + primary arm cylinder Double arm: use Double arm: Use a style of 1 axis + + secondary arm cylinder.
Primary arm retreat (go-back) limit in use	Use the signal of the primary arm retreat (go-back) limit.
Secondary arm retreat (go-back) limit in use	Use the signal of the secondary arm retreat (go-back) limit.
Safety door reset ban	After selecting ON, when gripping mistakes, it is imposible to make reset through opening and closing safety door.

On this screen, press the「→」button to switch to the next page display.



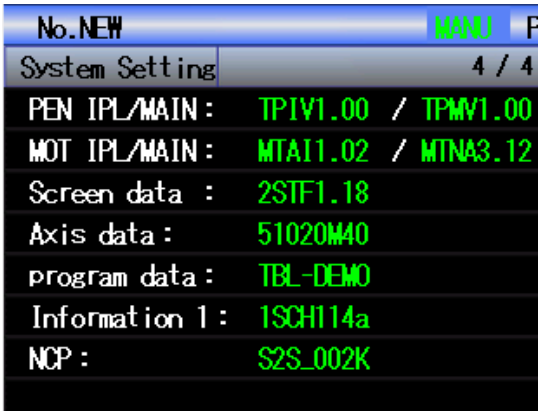
On this screen, it is possible to set the signal style used by the injection molding machine and select the machine type to be used. Use the「↑」/「↓」key to select the setting items, press the “■” key to switch successively the signal style and machine type. After the setting, select the "save" key and press the “■” key.

Expression descriptions

Injection molding machine signal style	Use the stye of EUROMAP12. Use the style of JAPAN。 Use the style of CHINA SPECIAL.
Machine type	Display the machine type name according to machine downloading files
User setting	Change the user permissions.
Password setting	Change the user passwords

Select the "version" key on the menu screen to display the following screen where the version

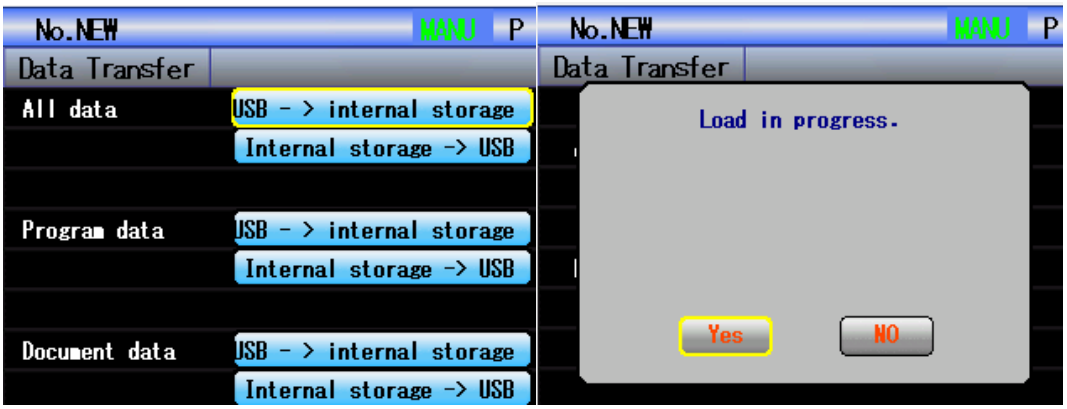
information of each data currently in use is shown. After files are downloaded, when the machine is in operation or the display is abnormal, it is possible to confirm here whether or not the necessary data files have been correctly downloaded to the controller.



Display data (from top to bottom)	**Version information**
Operator IPL	Display the version information of operator IPL.
Operator program MAIN	Display the version information of operation program.
Action IPL	Display the version information of action IPL.
Action program MAIN	Display the version information of action program files.
Screen data	Display the version information of screen data.
Axis data	Display the version information of axis data.
Program data	Display the version information of program data files.
Information 1	Display the version of information files.
NCP	Display the version information of imported NCP files.

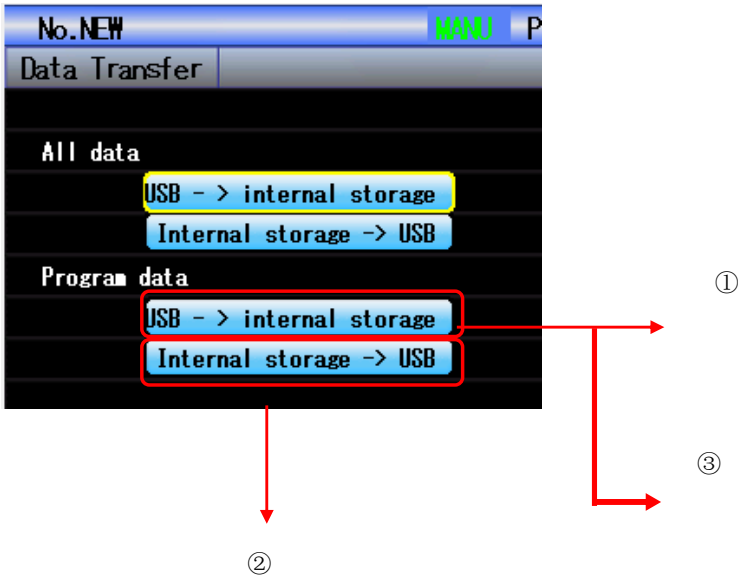
4.8 Data transfer

Select the "data transfer" on the menu screen to switch to the screen as below, where it is possible to perform data transfer between USB and internal memory.



All data transfer USB ⟶ MEMORY	Transfer all data from the USB flash disk to the internal memory.
All data transfer MEMORY ⟶ USB	Transfer all data from the internal memory to the USB flash disk.
Program data USB ⟶ MEMORY	Transfer all data from the USB flash disk to the internal memory.
USB Program data MEMORY ⟶ USB	Transfer all data from the internal memory to the USB flash disk.
Document data USB ⟶ internal storage	Transfer the program from the file to the USB flash disk.
Document data internal storage ⟶ USB	Transfer the program from the USB flash disk to the internal memoery.

want to operation, press the s key. Display images such as right to "write"/" left "key to select" yes "for the operation, select" no "to cancel the operation, the returned data transfer



①The number of files read out from the USB can't be more than 8, and those more than 8 will not be expressed out.

② The name of a file to be saved in the USB consists of not more than 8 English letters and numbers, whiel an archive not more than 12 characters.

③ In case of read-out failure, related information will be prompted.

5.1 I/O record

5.1.1 Display and storage method

I/O record display:

I/O record can record a total of 400 items(lines) of information, and the last item/line exceeding the 400 will disappear. It is possible to view the latest records only when entering the I/O record screen from the main screen; If keeping on the I/O record screen, it will not update itself, and it will update itself only when once again entering into the I/O record screen from the main screen.

The I/O resume save:

When the system alarm occurs, the system will save the current record; If there has been no alarms, after the power supply is cut off, the previous record will disappear.

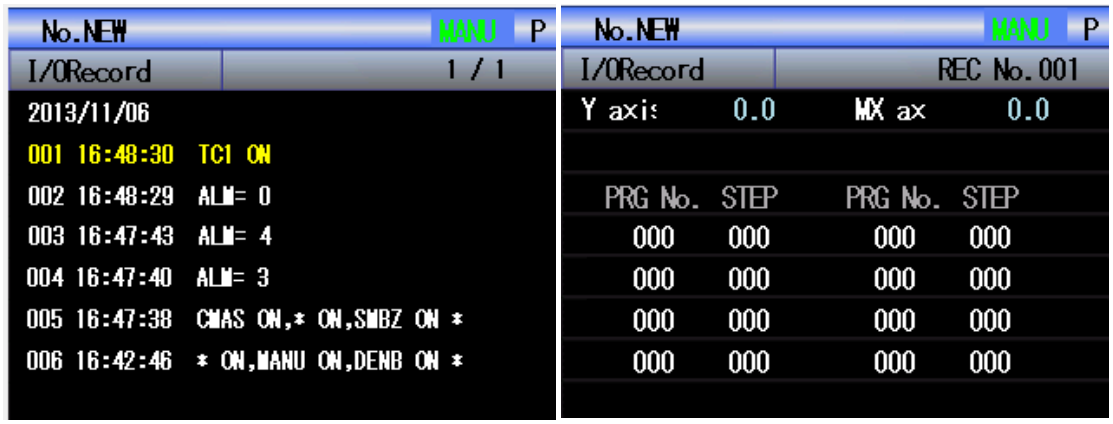
5.1.2 I/O record display

Press the "I/O record" key to enter the following screen as shown on the left side, which mainly shows the I/O change status in the record condition setting, with the line number displayed on left side, each I/O change status displayed a timed sequence, and the I/O recorded in the same line being the I/O changed witin the scanning cycle when the ON/OFF of the I/O in the record condition having channged(See Section 2.25.1 for the record condition setting description).

On the screen as shown on left side, press the「→」button to switch to the screen as shown on the right side, which displays the step in the subroutine that is executed by the user program when the I/O in the record condition has changed.

Program	Step Number
001	002
005	004

As shown on the left side, this item of record refers to that the program is executing the step 002 in the program 001, and at the same time also executing the step 004 in the program in 005.

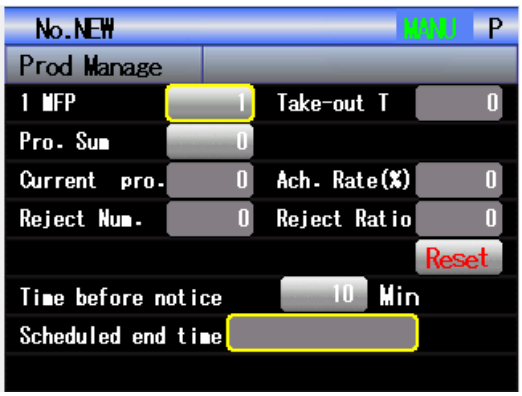


On the screen as shown on the right side, press the「→」button to switch to the screen shown as below, which displays the status of all the I/O in each record, wth each I/O respectively corresponding to one address. Use the 「→」「←」「↑」「↓」 key to view all data in the same record and can also use the digital key「1」and「4」to quickly switch each item of I/O record.

The record number in the record (such as Record No. 001) is corresponding to the line number on the left side of the above screen.

5.2 Production management

Select the "production management" button on the menu screen to switch to the production management screen. Use the「↑」/「↓」key to select the item desired to be set, with the settable item to be displayed in white in the setting column, including four parts like "1-time take-out number", "scheduled production number", " Fore-forecast notice time" and "reset". Press the “■” key to let them to be displayed in cyan and then use the the action key to input values.



Display descriptions

Names	Functions
Molding time	Measuring molding time.
1-time take-out number	The number of products that can be formed inside a mould at one time.
Take-out times	Express the number of times of taking out products.
Scheduled production number	Possible to input the scheduled number of products to be produced
Current production number	Display the number of products taken out, excluding the discharged products.
Achieving rate %	Relative to the scheduled production number, the achieving degree is expressed as a percentage. Achieving rate = (Production number ÷scheduled number) ×100
Defective product number	Number of product pieces open at the defective product discharge position.
Defective product rate	The number of products taken out as defective products in the total number of products taken out, expressed as a percentage. Defective rate = Discharge number÷(one-time finished product number x Taken-out times + discharge times)
Fore-forecast notice time	Before the end of production, give out the forecast warning time of the production end
Scheduled end time	Express the calculated scheduled time of a molding cycle ending.
Reset	Reset thetake-out number,current production numbe, defective product number, molding time.

5.3 Mechanical parameters

The frequency conversion type is not provided with the mechanical parameter setting and is thus only aimed at the 1-axis and 2-axis style. Select the "mechanical parameters" key on the menu screen to switch to the following screen. Press the「↓」key to move the cursor, with the item rolling when the cursor reach the bottom line.

1-axis's mechanical parameter setting

2-axis's mechanical parameters setting, additionally provided with the MZ axis's parameters setting

① Press the「MENU」key("save") button to save the setting. The saved setting will not take effect immediately and will not go into effect until the power supply is turned off and then turned on once again to restart. Please don't cut off the power supply during the save operation.

② Press the "HOME" button (" initialization ") to initialize the setting value. the initialized setting value will not take effect immediately, and will not go into effect until the power supply is turned off and then turned on once again to restart. Please don't cut off the power supply during the save operation..

③ To perform the setting, press the “■” on the screen as shown on the right side, and when the setting value column gets cyan, use the action key to input values.

Use the 「→」 key to switch various setting value pages of the displayed axises, with the axis’s basic setting items shown in the table below:

Items	Descriptions
Pitch value (0.01 mm)	To set the actual walking distance for a motor to turn in one circle. (The helical pitch relevant to a motor's rotating in one circle)
Pulse number per turn (impulse)	Unit: Pulse number To set the number of pulses needed for a motor to turn in one circle.
Maximum revolutions of motor	Unit: RPM To set the number of circles (revolutions) relevant to a motor's rotating at maximum speed for 1 minute.
Original point offset (mm)	Unit: mm The setting is required when the original point resets and the original point is in need to be corrected.
Minimum acceleration and deceleration (0.01 SEC)	Unit: 0.01 sec To minimum value of acceleration and deceleration time. In order to achieve maximum speed and slowdown stop, the speed changes according to the time that is set here. The shorter the setting is, the faster speed changes.
Maximum acceleration and deceleration (0.01 SEC)	Unit: 0.01 sec To maximum value of acceleration and deceleration time. In order to achieve maximum speed and slowdown stop, the speed changes according to the time that is set here. The shorter the setting is, the faster speed changes.
Origina point speed (%)	Unit: % In case of failure to confirm current position (position cannot be detected), the speed setting for original point to return(reset). The setting should be made according to a percentage of the motor's maximum speed (100%).
Free speed 1 (%)	Unit: % All speed setting in free operation (low speed). The setting should be made according to a percentage of the motor's maximum speed (100%).
Free speed 2 (%)	Unit: % All speed setting in free operation (medium speed). The setting should be made according to a percentage of the motor's maximum speed (100%).
Free speed 3 (%)	Unit: % All speed setting in free operation (high speed). The setting should be made according to a percentage of the motor's maximum speed (100%).
Oiling distance setting (10 m)	Unit:10 m To set the running distance that leads to urge refueling.

5.4 Maintenance

Select the "maintenance" key on the menu screen to switch to the screen as follows, where the information, regular inspection and oiling data of the machine are display. It is also possible to record the information of regular inspection and oiling/refueling history. In order to achieve safety in using the take-out machine, you are suggested to perform a regular inspection.

Expression description

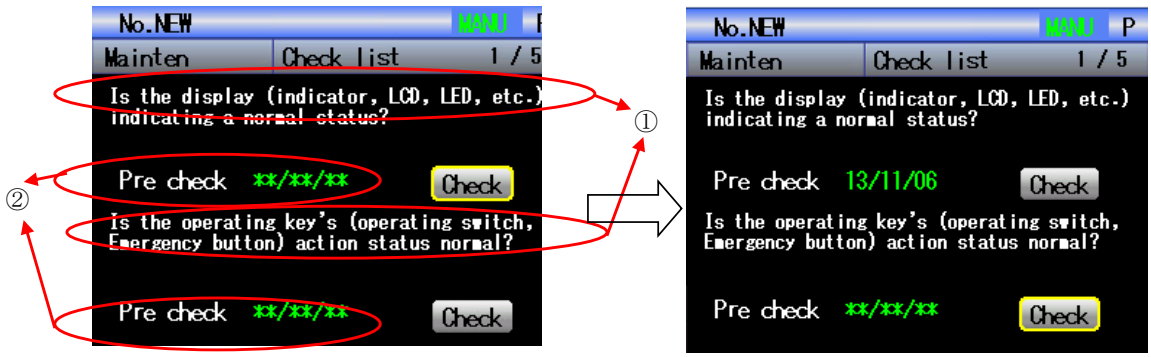
Names	Expression contents
Machine type	To display the machine name
Controller type	To display the controller type.
Manufacture date	The date when the machine starts to be put into operation
Prompt for spot check	To prompt the “in use/not in use” by a prompt warning for regular check.
Check cycle	To set the interval of time for inspection.
Check list	To display the item to be checked and record the inspection history.
Oiling/refueling	To display the necessary degree of oiling/refueling of each aixs according to the moving distance. The oiling/refueling results can be used as history records, which can also be expressed as the accumulative distance of each axis.

Use the「↑」/「↓」/「←」/「→」keys to select the “in use/not in use” expressed/prompted by the warning for spot check. The display in yellow text means “selected”and the display in black text means “not selected”.

Use the「↑」/「↓」keys to select the regular check, press the “■” key and use the action key to input the regular inspection intervals, with an unit in month.

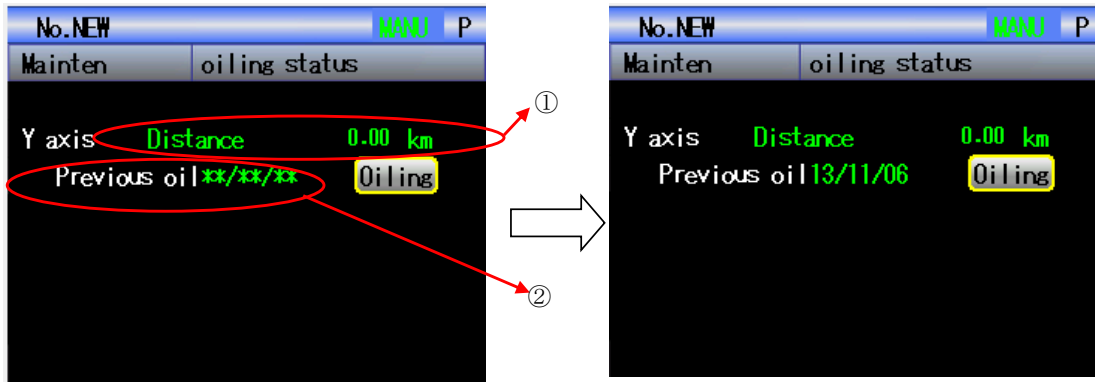
Use the「↑」/「↓」keys to select the checklist/oiling data, press the “■” key to switch to a screen as below.

「Check list」:



Display ① Check contents and ② Privious check date. Use the←」/「→」key to switch page display. If there is no check, the ② previous check date is displayed as * *. Confirm ①check content. When the check is completed, select the check, press the "■" key to complete the operation. As shown on the screen on the right side, the check date of this time is shown in the ② previous check date. After the check, click the "return" key to return to the maintenance screen.

「Oiling/Refueling data」:



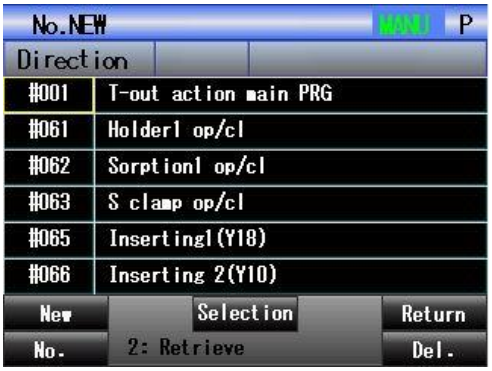
In the oiling/refueling data, it is possible to confirm the axis' accumulative running distance. ① the cumulative distance is the running distance after one time of oiling/refueling. The ② previous oiling/refueling is displayed as * * when oiling/refueling has not been performed. Select oiling/refueling, press the "■" key, and then, as shown on the screen on the right side, the oiing/refueling date of this time is displayed in the previous oiing/refueling date; at this moment, the cumulative distance is reset, and the accumulation restarts again. After oiling/refueling, click the "back" button to return to the maintenance screen.

2 Special Machine type description

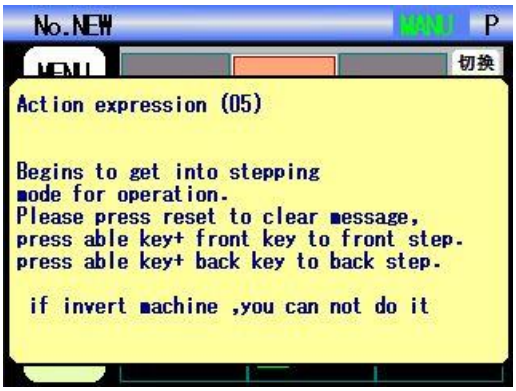
6.1 Single-step forward and backward

6.1.1 Operating

when entering the program-editing screen and appearing “STEP”on the bottom of the screen,you can use the single-step operation.



In this screen,if press number”3”, you can enter the model of single-step operation.



According to the message of tips,you can do the single-step operation.

6.2 Bad product placement application

6.2.1 Bad product counter

Add the bad product counter in the screen of counter.

When the set value is greater than 2,that bad product singal is OFF will not stop the bad product placement.

When the set value is 0 and the bad product singal is ON,that will not do the operation.

When the set value is greater or equal to 1 and the bad product singal is ON,that will start to do the bad product operation.

1)If the following two cycles and the bad product singal is OFF,that will not stop the bad product operation.

2)If two cycles passed and the bad product singal is ON,the counter is not 0.

When automation is working,the bad product counter is automatically cleared.

6.3 Function of Mechanical arm not using

6.3.1 Function of Mechanical arm not using

In the screen of model setting,the model of “Mechanical arm unused”is ON.Then pressing “RESET”can remove the model.If return to the menu,the model will be OFF automatically.

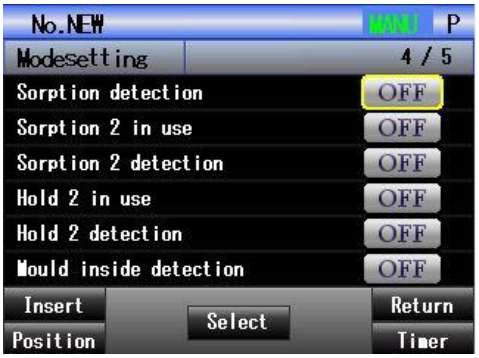
6.4 Hold and absorb function

If you set hold and absorb function,you need change the input point.In the screen of system,hold and absorb’s IO is optional.

Original screen IO

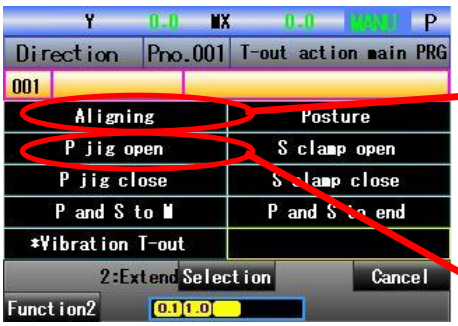
Manual operation

Model screen



When editing the program

The main arm and secondary arm arm both increase application,please have a look.



7.1 Alarm

Alarm types and releasing methods

Alarm types	Actions when an alarm accurs	Releasing methods
Usuall alarm	Alarm is expressedt said, but I/O axis is not stopped.	An alarm is automatically released when the condition for alarm occurance is not met .
Axis stop alarm	When an alarm occurs, axial movement is banned, without changes to output of cylinder axis. When an alarm is occurring, automatic operation and and original point reset can not be performed.	An alarm is automatically released when the condition for alarm occurance is not met .
Full stop alarm	When an alarm occurs, axial movement is banned, without changes to output of cylinder axis. When an alarm is occurring, automatic operation and and original point reset can not be performed.	In the status that the condition for alarm occurance is not met, press the safety switch and at them same time press the CLEAR button
Axis alarm	When an alarm occurs, axial movement is banned, without changes to output of cylinder axis. When an alarm is occurring, automatic operation and and original point reset can not be performed.	An alarm is automatically released when the condition for alarm occurance is not met .
System alarm		
User alarm	In automatic operation, alarms occurring in in the user program	

Alarm occurance and alarm sound

System model of "buzzer" ON, alarm occurs in automatic mode, alarm sound. The pattern for manual, buzzer sound stopped.

TRC1300 Alarm list

Usual alarm

No.Alarm No.	Alarm names	Alarm descriptions	Releasing methods	Stop type	
				Axis stop	Full stop
01	Posture action not over/complete	Posture action is not over/complete	Please check the posture output (Y09) and sensors (X12, X13). If Y23 is used as a posture retset, please confirm Y23 also. Axis stop alarm occurs, after removing alarm reason and press the RESET button to release axis stop.	○	-
02	Posture input abnormal	Posture movement limit (X12) and reseting limit (X13) get ON simultaneously.	Please check the posture action limit and resetting limit (X12, X13). This is a full stop alarm, and after removing the alarm reason, please press the RESET button to release the full stop.	-	○
04	Mould loading abnormal	When mould unloading over/complete (X32) gets ON, mould unloading over/complete gets OFF, monitoring timer (T65) timer's time is up	Please confirm the injection molding machine and the injection molding machine's status. This is a full stop alarm. Please press the RESET button to release the alarm and get into the free operation mode to let the arm rise.	-	○
05	Mould unloading abnormal	When mould unloading over/complete (X32) gets OFF, molding over/complete monitoring timer's (T62) time is up.	Please confirm the injection molding machine and the injection molding machine's status. This is a full stop alarm. After removing the alarm reason, please press the RESET button to release the full stop.	-	○

06	Primary arm retreat/go-back abnormal	Primary arm retreat/go-back is not over/complete	When the primry arm retreat/go-back limit use mode gets ON, please confirm the primary arm go-forward output (Y07) and the following timer T22, T23, T73. This is an axis stop alarm. After remove the alrm reason, please press and hold the reset button to release the axis stop.	○	-
07	Primary arm go-forward abnormal	Primary arm go-forward is not over/complete	Please confirm the primary arm go-forward output (Y07) and primary arm retreat/go-back limit (X18), primary arm retreat/go-back limit OFF monitoring timer (T74). This is an axis stop alarm. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	-
08	Primary arm rising/go-upward abnormal	Primary arm rising/go-upward is not over/complete	Please confirm the primary arm go-down output (Y06) and primary arm rising/go-upward limit (X04), primary arm rising go-upward/rising limit ON monitoring timer (T75). This is an axis stop alarm. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	-
09	Primary arm go-down abnormal	Primary arm go-down is not over/complete	Please confirm the primary arm go-down output (Y06) and primary arm rising/go-upward limit (X04), primary arm rising go-upward/rising limit ON monitoring timer (T76). This is an axis stop alarm. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	-

10	Secondary arm retreat/go-back abnormal	Secondary arm retreat/go-back is not over/complete	Please confirm the secondary arm go-forward output (Y04) and secondary arm retreat/go-back limit (X20), secondary arm retreat/go-back limit ON monitoring timer (T76). This is an axis stop alarm. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	-
11	Secondary arm go-forward abnormal	Secondary arm go-forward is not over/complete	Please confirm the secondary arm go-forward output (Y04) and secondary arm retreat/go-back limit (X20), secondary arm retreat/go-back limit ON monitoring timer (T78). This is an axis stop alarm. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	-
12	Secondary arm rising/go-upward abnormal	Secondary arm rising/go-upward is not over/complete	Please confirm the secondary arm go-down output (Y03) and secondary arm rising/go-upward limit (X03), secondary arm rising/go-upward limit ON monitoring timer (T79). This is an axis stop alarm. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	-
13	Secondary arm go-down abnormal	Secondary arm go-down is not over/complete	Please confirm the secondary arm go-down output (Y03) and secondary arm rising/go-upward limit (X03), secondary arm rising/go-upward limit OFF monitoring timer (T80). This is an axis stop alarm. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	-

14	Medium plate mould unloading abnormal	After mould unloading, when the medium plate limit (X28) gets OFF, the medium plate mould unloading monitoring delay timer's (T67) time is up.	Please confirm the medium plate limit (X28). When the medium plate is not used, please set it as unused in the mode setting. A full stop alarm occurs. After removing the alarm reason, please press the RESET button to release the full stop.	-	○
16	Ejection device go-forward abnormal	After the thimble go-forward output (Y34) gets ON, when the thimble go-forward limit is OFF, the thimble go-forward limit monitoring timer's (T71) time is up.	Please check the thimble go-forward output (Y34) and thimbles go-forward limit (X29).	-	-
17	Pressure abnormal	Pressure abnormal	Please confirm the action status of the air compressor, the pressure of the air unit, as well as the status of the air pressure switch. After removing the alarm reason, please press the RESET button to release the full stop.	-	-
18	Mould abnormal	In the course of take-out side go-down, moud unloading over/complete(X32) signal gets OFF	A full stop alarm occurs. After pressing the RESET button, please make the arm rise in the free operation mode.	-	○
20	X01and X02 get ON simultaneously	The signals of X01 (original point) and X02 (end point) get ON simultaneously.	Please confirm the sensor's status. This is a full stop alarm. After removing the alarm reason, please press and hold the RESET button to release the full stop.	-	○

21	Frequency inverter movement start monitoring abnormal	Motor movement start monitoring time(T66) is up. Line feed axis moving instruction output but without movement	Please confirm the frequency inverter input/output and wiring. This is an axis stop alarm. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	-
22	Frequency inverter high-speed movement monitoring abnormal	The frequency inverter high-speed movement monintoring time (T67) is up. Line feed axis keeps high-speed movement without switching a low speed movement.	Please confirm the frequency inverter input/output and X01, X02, X14. This is an axis stop alarm. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	-
23	Frequency inverter low-speed movement monitoring abnormal	The frequency inverter low-speed movement monintoring time (T68) is up. Line feed axis keeps low-speed movement without stop.	Please confirm the frequency inverter input/output and X01, X02, X14. This is an axis stop alarm. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	-
24	Unconfirmed mould unloading over/complete go-down	Mould unloading over/complete" processing has not been performed, Go-down operation has been performed on the take-out side. Please confirm the instruction program.	Please confirm the instruction program. A full stop alarm occurs. After removing the alarm reason, please press and hold the RESET button to release the full stop.		○
25	Banned go-down zone go-down indication	Other than the take-out side or placement side, under rising/go-upward status,primary arm upper and lower axis cannot be operated	Please confirm the zone sensor's status. Please confirm if the linear movement setting value or instruction program is wrong. An axisl stop alarm occurs. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	

26	Banned go-down zone go-down indication	Outside the take-out side or placement side, the primary arm cannot be lowered	Please confirm the zone setting value. Please confirm if the linear movement setting value or instruction program is wrong. An axisl stop alarm occurs. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	
27	Banned go-down zone go-down indication	Other than the take-out side or placement side, the secondary arm cannot be lowered	Please confirm the zone sensor status. Please confirm if the linear movement setting value or instruction program is wrong. An axisl stop alarm occurs. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	
28	Banned go-down zone go-down indication	Outside the take-out side or placement side, the secondary arm cannot be lowered	Please confirm the zone setting value. Please confirm if the linear movement setting value or instruction program is wrong. An axisl stop alarm occurs. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	
29	Finished-product releasing abnormal	Although the finished products have been released, but the finished product confirmation (X06) or sorption confirmation (X05) is in a status of ON.	Please confirm the sensor's status. A full stop alarm occurs. After removing the alarm reason, please press and hold the RESET button to release the full stop.		○
30	Stub bar releasing abnormal	Although the stub bars have been released, but the stub bars confirmation (X07) is in a status of ON.	Please confirm the sensor's （X07） status. A full stop alarm occurs. After removing the alarm reason, please press and hold the RESET button to release the full stop.		○

31	Lateral posture group status abnormal	When transverse-in and transverse-out, and the lateral posture standby or interan lateral posture is ON, please perform the lateral position operation.	An axis stop alarm occurs. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	
32	Mould outside standby mode action abnormal	When the mould outside standby mode is ON, if the mould unloading over/complete signal (X32) is OFF, it cannot move to the take-out side.	An axis stop alarm occurs. After removing the alarm reason, please press and hold the RESET button to release the axis stop.	○	
33	Machine type and axis number abnormal	Machine type match abnormally with axis number. Please confirm the imported program.	Full stop alarm.		○
34	Alarm releasing waiting	An axis alarm or full stop alarm has happened, some of the operation are locked.	Please press and hold the RESET button to release the axis stop.	special	special
35	Lateral posture go-down take-out	Under the lateral posture, on the take-out side, go-down operation is performed	Please confirm the instruction program. Switch to the free mode and let all axises rise/go upward		

User alarm

No.User alarm No.	Alarm names	Alarm descriptions	Releasing method
01	Clamp closed	Please make a confirmation and then open all clamps before initiating the automatical mode.	
02	Go-down midway mould unloading OFF	Take-out side go-down midway mould unloading over/complete gets X32）OFF	
03	Gripping finished-product failure	Gripping finished product failure	Please take out the items drop. Continue to operate after opening the safety door and shutting it again. Please be sure to take out the finished products from the mold after before startup again.
04	Gripping stub bar failure	Stub bar gripping failure	Please take out the items drop. Continue to operate after opening the safety door and shutting it again. Please be sure to take out the stub bar from the mold after before startup again.
05	Position setting abnormal	Position setting abnormal	Not the take-out side Please confirm the axis current value and the status of the take-out side sensor.
06	Position setting abnormal	Position setting abnormal	Not the placement side Please confirm the axis current value and the status of the placement side sensor.
09	Gripping failure	Gripping failure occurs	Please open the safety door to take out the products drop, which will continue to operate after shutting the safety door again. Or, press the safety switch and at the same time press the START key to reset and then continue the running.
11	Finished product drop detected	Finished product drop detected	Please take out the item drop. Switch to manual mode, and then again switch to automatic mode before restart. Please be sure to take out the item drop.
12	stub bar drop detected	stub bar drop detected	

13	Primary arm clamping abnormal	Primary arm stub bar confirmation signal handling is in the status of ON	Switch to manual mode, and then again switch to automatic mode before restart. Please be sure to take out the item drop.
14	Position setting abnormal	Position setting abnormal	Not the take-out side. Please confirm the axis current value and the take-out side zone setting value.
15	Position setting abnormal	Position setting abnormal	Not the placement side. Please confirm the axis current value and the placement side zone setting value.
16	Take-out position abnormal	Not the take-out side	Please confirm the position of the axis and the status of X01 and X14.
17	Placement position abnormal	Not the placement side	Please confirm the position of the axis and the status of X02 and X14.
18	X14 detected abnormal	During original point resetting, failure to sense X14 . X14 has been ON or had been OFF.	Please confirm the status of X14.
19	Without “Mould unloading over/complete” instruction	In the automatic operating procedure, no "mould unloading over/complete" instruction has been performed.	Please check the teaching program for the mistyped or missing "mould unloading over/complete" instruciton
20	Without “molding permission” instruction	In the automatic operating procedure, no "molding permission" instruction has been performed.	Please check the teaching program for the mistyped or missing " molding permission " instruciton
21	Original point reset not over/complete	Original point reset has not been completed	Please perform the original point resetting
22	Automatic running condition abnormal	This action cannot be performed during going down/decline	Please take the same action again after rising.

23	Abnormal when transverse axis is moving	When the arm is at the lower position, the line feed axis cannot move	Please make sure that after the arm risie to the upper position, the transverse axis can move.
24	Rising position limit handling abnormal	The arm not in a status of rising position would be ready to perform an action that can be performed when the arn is at the rising position.	Please confirm the location of the rising action in the instruction program.
25	Entering transverse axis prohibited zone	In automatic operation, under a go-down/decline status, move to the placement side and enter into the transverse running forbidden area.	Please confirm whether or not the sensors on the take-out side and placement side as well as the program are correct.
26	Primary arm fore and back axis retreat/go-back banned	In automatic operation, a retreat/go-backward action has been performed under a status that the primary arm fore and back axis's reteat/go-backward movement may result in the clamp plate's contact damage.	Please confirm that after the program executes the lateral posture group reset, the primary arm fore and back axis retreats/goes back, and whether or not the lateral postue group mode setting is correct.
27	Primary arm upper and lower axis retreat/go-back banned	In automatic operation, the primary arm upper and lower axis has performed a rising movement in the case of unable to rise	Please confirm that , ini the program, whether or not the primary arm is in the position of being able to rise. Please confirm that whether or not the take-out side primary arm action related mode is set correctly.

28	Primary arm upper and lower axis retreat/go-back banned	In automatic operation, without mould unloading over/complete, the primary arm upper and lower axis has performed a go-down movement.	Please confirm that the program execution goes down the after mould unloading has been confirmed.
29	Primary arm upper and lower axis retreat/go-back banned	In automatic operation, at the position other than the take-out side and placement side, the primary arm upper and lower axis has performed a go-down action.	Please confirm that, only when the program is on the take-out side and placement side, the primary arm upper and lower axis can perform a go-down movements.
30	Primary arm upper and lower axis go-down banned	In automatic operation, under a condition that primary arm upper and lower axis can't go downwards, a go-down action has been performed.	Please confirm that, in the program, whether or not the primary arm fore and back axis is at the position of being able to go down, and whether or not the take-out side and primary arm axis related mode have been set correctly.
31	Primary arm upper and lower axis go-down banned	In automatic operation, the take-out side keeps a lateral postue status, and the primary arm upper and lower axis has performed a go-down movement.	Please confirm the program execution and after the take-out side lateral posture group reset, the primary arm upper and lower axis is in the go-down position.
32	Primary arm upper and lower axis go-down banned	In automatic operation, when the medium plate sensor is not linked, the primary arm upper and lower axis has performed a go-down movements.	Please confirm whether or not the medium plate's sensor and the medium plate unused mode are correct. Please confirm the program execution and whether or not the primary arm upper and lower axis go-down'stime is correct.

33	Secondary arm fore and back axis retreat/go-back banned	In automatic operation, a retreat/go-backward action has been performed under a status that the secondary arm fore and back axis's reteat/go-backward movement may result in the clamp plate's contact damage.	Please confirm that after the program execute the lateral posture group reset, the secondary arm fore and back axis retreats/goes back, and whether or not the lateral postue group mode setting is correct.
34	Secondary arm upper and lower axis rising/go-upward banned	In automatic operation, the secondary arm upper and lower axis has performed a rising movement in the case of unable to rise	Please confirm that in the program, whether or not the secondary arm for and back axis is in the position of being able to rise. Please confirm that whether or not the take-out side secondary arm action related mode is set correctly.
35	Secondary arm upper and lower axis go-down banned	In automatic operation, without mould unloading, the secondary arm upper and lower axis has performed a go-down movement.	Please confirm that the program execution goes down the after mould unloading has been confirmed.
36	Secondary arm upper and lower axis go-down banned	In automatic operation, at the position other than the take-out side and placement side, the secondary arm upper and lower axis has performed a go-down action.	Please confirm that, only when the program is on the take-out side and placement side, the secondary arm upper and lower axis can perform a go-down movements.
37	Secondary arm upper and lower axis go-down banned	In automatic operation, under a condition that secondary arm upper and lower axis can't go downwards, a go-down action has been performed.	Please confirm that, in the program, whether or not the secondary arm fore and back axis is at the position of being able to go down, and whether or not the take-out side and secondary arm axis related mode have been set correctly.

38	Lateral posture group reset banned	In automatic operation(interna lateral posture mode is ON), at the place other than the take-out side and placement side, a lateral postue reset has been performed	Please confirm that, in the program, on the take-out side and placement side, whether or not the lateral posture reset is allowed, and please confirm whether or not the lateral posture mode is set correcty.
39	Lateral posture group reset banned	In automatic operation, at a place other than the take-out side and the placement side, a lateral posture reset action has been performed.	Please confirm zone sensor setting. Please confirm whether or not the program in the execution allow the lateral postue reset on the take-out side and placement side.
40	Lateral posture action banned	In automatic operation, primary arm upper and lower axis, in a state of go-down, has performed a lateral posture action.	Please confirm whether or not the lateral posture action is not allowed to be performed in the go-down state in the program execution.
41	Lateral posture action banned	In automatic operation status (when the zone moves, the primary arm go-forward mode is ON), when the primary arm fore and back axis retreat/go back, a lateral posture action is performed.	
42	Lateral posture action banned	In automatic operation, in a place other than the take-out side and the placement side, a lateral posture action has been performed.	Please confirm the zone sensor's status. Please confirm whether or not the lateral posture action is not allowed to be performed on the take-out side and placement side.

43	primary arm upper and lower axis go-down banned	In automatic operation, at the position other than the start point and end point, the primary arm upper and lower axis has performed a go-dowm action.	Please confirm whether or not the primary arm upper and lower arm is allowed to perform a go-down action only at the position of the start point and end point in the program execution.
44	primary arm upper and lower axis go-down banned	In automatic operation, when a status of lateral posture action is kept at the position of the end point, the primary arm upper and lower axis has performed a go-down acition.	Please confirm, in the program execution, whether or not the primary arm upper and lower axis is allowed to performed a go-down action only when the lateral posture has been reset.
45	Secondary arm upper and lower axis go-down banned	In automatic operation, at the position other than the start point and end point, the secondary arm upper and lower axis has performed a go-dowm action.	Please confirm whether or not the secondary arm upper and lower arm is allowed to perform a go-down action only at the position of the start point and end point in the program execution.
46	Lateral posture group reset banned	In automatic operation (interna lateral posture mode is ON), at the place other than the start point and end point, a lateral posture reset action has been performed	Please confirm whether or not the lateral posture reset action is allowed to perform only at the position of the start point and end point in the program execution. Please confirm whether or not the lateral posture related mode is set correctly
47	Lateral posture group reset banned	In the automatic operation, a lateral postue reset action has been performed at the position of start point and end point.	Please confirm whether or not the zone sensor’s status is correct. Please confirm whether or not the lateral posture reset action is allowed to perform only at the position of the start point and end point in the program execution.

7.2 Operating error

No.	Error names	Alarm contents	Releasing methods
1	Operating error (01)	Manual operation can only be perormed manual mode.	Please press the MANU button to change to manual mode.
2	Operating error (02)	Take-out side/placement side zone sensor is in the OFF status. In this status, the axis is in an occasion of decline/go-down, and Y axis can't move.	The occasion of manual operation, please let primary arm (secondary arm) rise/go upward and let the Y axis move towards the take-out side in manual mode.
3	Operating error (03)	Take-out side/placement side zone sensor is in the OFF status. In this status, the axis is in an occasion of decline/go-down, and Y axis can't move.	The occasion of manual operation, please let primary arm (secondary arm) rise/go upward and let the Y axis move towards the placement side in manual mode.
4	Operating error (04)	Take-out side/placement side zone sensor is in the OFF status. In this status, the axis is in an occasion of decline/go-down, and Y axis can't move.	Please manually let the declining/going down axis rise, and let Y axis return to take-out side or placement side.
5	Operating error (05)	Take-out side/placement side zone sensor is in the OFF status.	When the lateral posture standby or the internal posture is ON, please perform the lateral posture operation.
6	Operating error (06)	The primary arm use mode and the secondary arm use mode cannot be OFF simultaneously	Please set the mode correctly
7	Operating error (07)	Under the condition of the mould outside standby mode being ON, if the mould unloading over/complete signal (X32) is OFF, with the exception of the placement side, the movement towards the take-out side is impossible.	Please confirm the injection molding machine’s status.
（7）	Operating error (07)(Frequency conversion style)	Under the condition of the mould outside standby mode being ON, if the mould unloading over/complete signal (X32) is OFF, the movement towards the take-out side is impossible.	Please confirm the injection molding machine’s status.

8	Operating error (08)	Go-forward/go-backward(retreat)/ continuousy stepping operation has been performed in a mode other than the stepping mode.	Please release(remove) the stepping mode on the free operation screen
9	Operating error (09)	Beyond the take-out side/placement side, zone setting. In this status, the axis is in an occasion of decline/go-down, the Y axis can't move.	The occasion of manual operation, please let primary arm (secondary arm) rise/go upward and let the Y axis move towards the take-out side in manual mode.
10	Operating error (10)	Except the take-out side/placement side, zone setting, In this status, the axis is in an occasion of decline/go-down, the Y axis can't move.	The occasion of manual operation, please let primary arm (secondary arm) rise/go upward and let the Y axis move towards the placement side in manual mode.
11	Operating error (11)	Beyond the take-out side/placement side, zone setting value. In this status, the axis is in an occasion of decline/go-down, the Y axis can't move	Please manually let the declining/going down axis rise, and let Y axis return to take-out side or placement side.
12	Operating error (12)	Beyond the take-out side/placement side. Zone setting vaue	When the lateral posture standby or internal lateral posture standby is ON, please perform the lateral posture operation
13	Operating error (13)	Take-out side decline/go-down standby mode and lateral posture standby mode get on simultaneously.	Please set either mode as OFF.
14	Operating error (14)	The primary arm use mode is in a status of ON, The sorption use mode and jig/clamp use mode are OFF.	If want to use the primary arm, please set the sorption use mode or jig/clamp use mode as ON
15	Operating error (15)	Transverse-out placing-material mode or Transverse-in placing-material mode is in a status of ON, but the jig/clamp use mode is OFF.	If want to use the transverse-out placing-material mode or Transverse-in placing-material mode, please also set the jig/clamp use mode as ON

16	Operating error (16)	Transverse running midway lateral posture mode is in a status of ON, but the lateral posture placement mode is OFF.	If want to use the transverse running midway lateral posture mode, please also set the lateral posture placement mode as ON
17	Operating error (17)	The primary arm use mode is in the status of OFF, but one or more of the following modes is or are in a mode with the status of ON: transverse-out placing-material, transverse-in placing-material, primary arm fixed mould take-out, primary arm U-shaped take-out, primary outside declining/go-down, transverse-out/in declining/go-down placing material, internal lateral posture, internal lateral posture 2, lateral standby, lateral posture placement, transverse running lateral posture, primary arm imported transverse-out, sorption use, clamp, use, sorption confirmation use, clamp confirmation use and other modes.	If don't want to use the primary arm, please set the primary arm related modes as OFF.
18	Operating error (18)	The secondary arm use mode is in the status of OFF, but one or more of the following modes is or are in a mode with the status of ON: secondary arm fixed moveable mold take-out, secondary arm transverse-in placing material, secondary arm U-shaped take-out, secondary arm mould inside placing material, secondary arm outside declining/go-down, secondary arm imported transverse-out, stub bar confirmation use, and other modes.	If don't want to use the secondary arm, please set the secondary arm related modes as OFF.
19	Operating error (19)	In the status of declining/go-down, the line feed axis is unable to move.	
20	Operating error (20)	When the lateral posture standby or interanal lateral posture is ON, please perform the lateral posture operation.	
21	Operating error (22) (Reserved for expansion)	The stepping mode can only be performed in manual mode.	Please click the MENU key to switch to the manual mode.

22	Operating error (102)	When the posture standby mode is ON and the mould unloading is OFF, the movement towards the take-out side cannot be performed in a posture reset status.	
23	Operating error (103)	Entering into the restricted zone. Unable to move towards the take-out side.	Let the primary arm upper and lower axis (and secondary arm upper and lower axis) to rise or return to the take-out side zone.
24	Operating error (104)	Possible to touch the secondary arm or the arch.	Please align the primary arm and then retreat (go backward)
25	Operating error (105)	The primary arm fore and back axis is at a position where it cannot rise/go upward.	Please move the primary arm fore and back axis
26	Operating error (106)	Unable to decline/go downward in the status of mould unloading	Please confirm the injection molding machine's status.
27	Operating error (107)	Can decline/go downward only on the take-out side and placement side	If in need to decline/go downward, please perform the operation on the take-out side or placement side.
28	Operating error (108)	The medium plate has not been opened, please make a confirmation.	
29	Operating error (109)	Retreating/going backward in this way may touch the clamp plate make it broken/damaged.	Please reset the primary arm posture and then retreat/go backward.
30	Operating error (110)	The secondary arm fore and back axis is at a position where it cannot rise/go upwards	Please move the secondary arm fore and back axis.
31	Operating error (111)	Cannot decline/go downward if not in the mould unloading status	Please confirm the injection molding machine's status.
32	Operating error (112)	Can decline/go downward Only on the take-out side and placement side	If in need to decline/go downward, please perform the operation on the take-out side or placement side.
33	Operating error (113)	Failure to move towards the position determined by the medium place.	Please confirm the injection molding machine's status.

34	Operating error (114)	Postue reset may cause interference with the injection molding machine and lead to danger, and on the take-out side when going downward, the aligning operation can not be performed. Whe the posture standby mode or internal positure mode is ON, if not on the take-out side or placement side, or on the take-out side, but the mould unloading over/complete (X32) signal is OFF, unable to perform the posture aligning/correction operation.	Please move to a position not interfering with the injection molding machine.
35	Operating error (115)	In the status of declining/go-down, the posture connot move.	
36	Operating error (116)	When the posture standby mode is ON, if the take-out side or placement side is not in a status of ON, the posture connot move.	
37	Operating error (117)	When the line feed posture mode is ON, if the take-out side or opening side is not in the status of ON, the posture connot move.	
38	Operating error (121)	When the arm is inside the mould, the original point reset action is banned	Please move the arm to the outside of the mold by free operation.
39	Operating error (122)	Rising/going upwards from the present position may cause interference with the the clamp plate, and thus the original point cannot be reset.	
40	Operating error (124)	The primary arm fore and back axis is at a position where it cannot decline/go down.	Please move the primary arm fore and back axis.
41	Operating error (125)	The secondary arm fore and back axis is at a position where it cannot decline/go down.	Please move the secondary arm fore and back axis.
42	Operating error (126)	In the take-out side lateral posture status, it cannot decline/go downward	Please perform the lateral posture aligning/correction action

43	Operating error (128)	Although moving to the take-out side, but the mould unloading signal (X32) is OFF. Under the condition of mould outside standby mode is ON, if the mould unloading over/complete signal (X32) is OFF, it cannot performed the original point reset action.	
44	Operating error (129)	This action cannot be performed in the midway of declining/going downward.	Please perform the same action again after rising or going upwards.
45	Operating error (130)	Although the manipulator has been put into an automatic operation mode, but the automatic signal of the injection molding machine (X10) is OFF. If the injection molding machine's automatic signal (X10) is ON, the action can continue the action. Press the CLEAR button to suspend the automaticoperation.	
46	Operating error (131)	In a compulsory free operating mode, it cannot decline/go dowmwards.	
47	Operating error (132)	When the imported transverse-out mode is ON and the primary arm is at the position of retreat/go-backwards, it cannot perform the posture action.	
48	Operating error (133)	Please reset the original point.	
49	Operating error (134)	In an occasion other than take-out side and placement side, it is possible to operate the posture. Please confirm the zone sensor's status.	
50	Operating error (135)	It is possible to decline/go downwards only at the start point and end point.	
51	Operating error (136)	It is impossible to perform the lateral posture action at a position other than the start point and the end point.	Please confirm the zone sensor's status.

52	Operating error (137)	Lateral position reset is in danger of interference to the injection molding. On the take-out side zone go-down midway, it cannot perform the lateral posture reset action. When the lateral posture standby mode or internal lateral posture mode is ON, under a condition of neither at the start point and the end point, or under a condition of even at the start point but the mould unloading over/complete is OFF, it is impossible to perform the lateral posture reset action.	Please confirm the zone sensor's status to not to disturb the injecting machine.
53	Operating error (138)	Under the condition of internal lateral posture model being ON, it is possible to perform the lateral posture reset action only at the start point or end point.	
54	Operating error (139)	It is impossible to perform the declining or going downwards action in a status of keeping lateral posture action at the start point.	Please perform the lateral posture reset action firstly.

7.3 System alarm

No.	Error names	Alarm descriptions	Releasing methods
1	Alarm system (04) operation data error	System data have been found abnormal	Please download the system data.
2	Alarm system (6) Backup RAM abnormal	Backup RAM has been found abnormal	Please check or exchange the action base board.
3	Alarm system (07) Program controller system abnormal	Program controller system has been found abnormal Action base board has been found varied.	Please check or exchange the action base board.
4	Alarm system (08) Lithium battery voltage insufficient	Lithium battery voltage for data backup has been found insufficient	Please exchange the lithium batteries as soon as possible. (as the batteries are not standard products, please order from the Company)
5	Alarm system (12) action base board RAM abnormal	Action base board electronic components (RAM) has been found abnormal	Please exchange the action base board.
6	System alarm (13) Action base board RAM abnormal	Action base board electronic components (RAM) have been found abnormal	Please exchange the action base board.
7	System Alarm (14) TS - LINK communication error	TS – LINK communication has been found abnormal	Please check the baseboard's LED expression, communication cable and power supply. If the LED has been lit or has been extinguished, then the baseboard is abnormal
8	System alarm (15) Program controller backup RAM error	Action base board electronic components (RAM) have been found abnormal	Please exchange the action base board.
9	System alarm (17) Directory data flash ROM error	Flash ROM of the egistration directory data have been found abnormal	Please download the program controller data.
10	System alarm (18) User program hierarchy error	Too many nested hierarchy of user program, with call instructions at most 6 levels.	

11	System alarm (19) Backup data error	Contents in backup data have been found abnormal	Please load the mould data or perform the data setting. Please press the reset button.
12	System alarm (20) IO communication abnormal	IO communication has been found abnormal	Please check or exchange the action base board.

7.4 Axis alarm

No.	Error names	Alarm descriptions	Releasing methods
1	Axis alarm (01) ROM/RAM error	The electronic components of the servo drive have been found abnormal	Please exchange the servo drive.
2	Axis alarm (02) TS-LINK communication error	Communication has been found abnormal.	Please check each baseboard's LED expression, communication wiring and power supply. If the LED keeps light or extinguished, the baseboard is abnormal.
3	Axis alarm (03) Motor power supply voltage insufficient and abnormal	The power supply at the motor drive point is less than 140 w, insufficient	Please check the power supply and power supply wiring, and connection. If no abnormity, exchange the frequency inverter unit.
4	Axis alarm (04) Encoder input abnormal	Encoder input is abnormal	Please check the encoder and encoder cable's wiring and connection. If no abnormity, exchange the motor or the frequency inverter unit.
5	Axis alarm (05) Motor power OFF overload abnormal.	The encoder input pulse is poor, or the transverse motor is in a status of not turning.	Please check t the encoder cable's wiring connection and mechanical overload. If no abnormity, exchange the motors or frequency inverter unit.
6	Axis alarm (6) Motor thermal protection	The transverse motor's thermal protection input is OFF.	Please check the wiring and connection of the thermal protection input.
7	Axis alarm (07) Motor over current	The transverse motor's current is more than 30A.	Please exchange the frequency inverter baseboard.
8	Axis alarm (08) Original point limit is not OFF	When performing the original point retrieval, the original point limit is not OFF.	Please check the action status of the original point limit and the wiring/connection of the encoders and encoder cables. If No abnormity, please exchange the server baseboard or servo driver.
9	Axis alarm (09) Outside original point, origin point limit is ON	After leaving the original point, the original point is not OFF.	Please check the action status of the original point limit and the wiring/connection of the encoders and encoder cables. If No abnormity, please exchange the server baseboard or servo driver.

10	Axis alarm (10) At the original point position, original point limit is OF	When the original point's movement is over/complete, the original point limit is OFF.	Please check the action status of the original point limit and the wiring/connection of the encoders and encoder cables. If No abnormity, please exchange the server baseboard or servo driver.
11	Axis alarm (11) Offside limit is ON .	Offside limit is ON	Please confirm the offside limit's action status, wiring and position's setting value. Use the reset button to release the alarm and may use the manual operation original point reset to conduct avoidance.
12	Axis alarm (12) Servo driver abnormal	A servo drive alarm has occurred.	Please confirm the servo driver expression board's abnormal contents. After the abnormal contents have been confirmed, please shut off the power supply and switch on the power supply again after more than 30 seconds.
13	Axis alarm (13) Position data setting abnormal	The position data have not been set, or the setting value exceed the maximum setting value.	Please confirm the position setting value.
14	Axis alarm (14) Deviation alarm	The deviation count accumulated pulse exceeds the specified value.	Please check the encoder cable's wiring/connection and the mechanical overload. If no abnormity, please.exchange servo baseboard or servo driver.
15	Axis alarm (15) Retrogradation abnormal	The retrogradation exceeds the specified value.	Prolong the time or cycle of acceleration and deceleration.
16	Insufficient power supply voltage	Main circuit power supply voltage is insufficient.	Please confirm the power supply voltage
17	Axis alarm (17) Encoder abnormal	The encoder input is abnormal.	Please confirm the encoder's cables and connectors.
18	Axis alarm (18) Electronic thermal protection abnormal	The overheating protection circuit is triggered.	Please perform a machine overload inspection.
19	Servo driver communication abnormal	The communication of the axis CPU and action CPU has been found abnormal	Please exchange the servo drives

20	Axis alarm (20) IPM abnormal	The over current protection circuit is triggered	Please confirm the power cables/wiring
21	Axis alarm (21) Velocity abnormal	The motor rotates at a speed not less than the specified value.	Please confirm the encoder's cables and connectors.
22	Axis alarm (22) Servo drive detection abnormal	The type of the servo drive is wrong	Please confirm the type/model of the servo driver model.
23	Axis alarm (23) High voltage abnormal	The drive's power supply voltage is too high.	Please confirm the power supply voltage
24	Axis alarm (24) Over current abnormal	The feedback current is too large.	Please check the servo driver, servo motor and power cable.
25	Axis alarm (25) Over current abnormal	When the power supply is switched on, the feedback current is abnormal.	Please exchange the servo drive.
26	Axis alarm (26) Mold pulse input to baseboard abnormal	The mould pulse input baseboard (IlxxxMi) counter reset has not been performed normally.	Please check the mould pulse baseboard input.
27	Axis alarm (27) Correction amount extra large	The gripping position's correction amount exceeds the maximum correction value.	Please confrim the setting value of the maximum correction value.
28	Axis alarm (28) Axis continuous alarm	When the power supply is switched on, the server that should exist is not found.	Please check the servo drive's rotary switch, the server's DIP switch setting, or the initial data's setting, and the communication cable's connection.
29	Axis alarm (29) Axis response error	No response signal from the servo drives.	Please check the servo drive's rotary switch, the servo baseboard's DIP switch setting, or the initial data's setting, and the communication cable's connection.
30	Axis alarm (30) Axis DIP switch setting error	The unused axis has been connected to the servo driver, and servo baseboard.	Please check the servo drive's rotary switch, the servo baseboard's DIP switch setting, or check the setting of the changed initial data

31	Axis alarm (31) TAbsolute battery voltage insufficient	Absolute encoder's data backup lithium battery voltage is insufficient.	Please exchange the lithium batteries as soon as possible. (as the batteries are not standard products, please place your order to our company.)
32	Axis alarm (32) Absolute original point not set	The original point of absolute encoder has not been set.	Please perform the setting of the original point
33	Axis alarm (33) Servo driver communication abnormal	The communication of axis CPU and action CPU have been found abnormal.	Please exchange the servo drives.
34	Axis alarm (34) IPM temperature abnormal	The temperature of the IPM exceed the specified value.	Please lower the speed, or slow the acceleration and deceleration.
35	Axis alarm (35) Encoder count abnormal 1	The deviation of one rotary position data has been detected from the encoder (EC1).	Please check the servo motor.
36	Axis alarm (36) Encoder count abnormal 2	The count anomalies of AB phase has been detected from the encoder(CE2)	Please check the servo motor.
37	Axis alarm (37) Encoder Z phase signal abnormal	The Z phase abnormal signals have been detected from the encoder (ZE)	Please check the servo motor.
38	Axis alarm (38) Encoder CZ phase signal abnormal	The CS phase abnormal signals have been detected from the encoder	Please check the servo motor.
39	Axis alarm (39) Encoder receiving pause	Failue to receive the signals from the encoder	Please check the servo motor, servo drive, and encoder cables and connectors.
40	Axis alarm (40) Encoder receiving data abnormal	Abnormal signals have been detected from the encoder.	Please check the servo motor, servo drive, and encoder cables and connectors.
41	Shaft alarm (41) Encoder communication IC access abnormal	Abnormal communication confirmation of the encoder communication IC (access checking) has been detected.	Please check the servo driver.

42	Axis alarm (42) Encoders count abnormal	Counting errors have been detectedfrom the encoder (CE)	Please check the servo motor.
43	Axis alarm (43) Encoder all absolute status abnormal	When turning on the power supply, in the absence of instructions,t he servo motor running has been detected.	Please check the servo motor and the take-out machine.
44	Axis alarm (44) Encoder count overflow	The counting overflow have been detected from the encoder (OF).	Please check the servo motor.
45	Axis alarm (45) Encoder ID abnormal	The ID of the non-corresponding encoder has been received from the encoder.	Please confirm if the type of the servo motor is wrong.
46	Axis alarm (46) Collision detection	The machine clash has been detected.	Shut off the power supply. Please use the free operation to dodge to a safe position and please confirm whether the machine is abnormal.
47	Axis alarm (47) TS - NET instruction receiving abnormal	Receiving error has been detected from the TS - NET communication.	Please test the communication wiring and connectors.
49	Axis alarm (49) Drive alarm	Alarms have been detected from the generic drives.	Please confirm the generic driver's alarm contents.

==Error Information==

Display an error message when...

In the following validation errors, please response processing. After that, please confirm whether error message appear again to download.

The download assignments may be said in the picture of error information and content"

No.	**Error information**	**Error contents**	**Takeaway tip**
E060	Application Sum Error	Application error.	Please contact the service window.
E010	Backup Clear Error!	Backup Clear memory error	Please contact the service window.
E025	File Write Error.	Can not be written in USB.	Please confirm the description of INF file.
E028	Syntax Error.	Command of INF file is error.	Please confirm the connection of the USB storage.
E047	USB Memory Write Timeout.	Error occurred in the FROM wiping off.	Please contact the service window.
E051	Flash Erase Error (MOT).	Error occurred in the FROM wiping off.	Please contact the service window.
E042	USB Memory Is Disconnected.	Errors occurred in reading USB storage.	Please confirm USB storage's connection.
E022	Inf File SUM Error.	File sum inconsistent.	Please confirm the sum of inf file.
E005	Instantaneous Blackout!!	Instantaneous	Please contact the service window.
E050	Flash Write Error (MOT).	MOT flash Read Error.	Please contact the service window.
E034	Transmit Timeout.	MOT-PEN Data transfer timeout.	Please contact the service window.
E030	Transmit Data Error.	MOT-PEN Data transfer error.	Please confirm the description of INF file.

E032	Transmit Data Error.	MOT-PEN Data transfer error.	Please contact the service window.
E039	Flash Read Timeout (PEN).	No connection with USB storage	Please contact the service window.
E020	No Inf File Error	No inf file.	Please confirm the sum of inf file.
E001	Communication Error!	PEN-MOT communication error	Please contact the service window.
E031	Receive Data Error.	PEN-MOT Data transfer error.	Please confirm the connection of the USB storage.
E033	Receive Data Error.	PEN-MOT Data transfer error.	Please contact the service window.
E035	Receive Timeout.	PEN-MOT Data transfer timeout.	Please contact the service window.
E001	Communication Error!	PEN-MOTcommunication timeout.	Please contact the service window.
E021	Inf File Read Error.	Read error.	Please confirm whether there is a download file under the root directory of the USB storage.
E026	File Sum Error.	The Sum of file inconsistent.	Please confirm whether there is a download file under the root directory of the USB storage.
E037	Flash Read Error.	The flash of PEN read error.	Please contact the service window.
E036	Flash Write Error (PEN).	The flash of PEN write error.	Please contact the service window.
E038	Flash Write Timeout (PEN).	The flash of PEN write timeout.	Please contact the service window.
E024	File Read Error.	The specified file of INF can not be read.	Please confirm whether there is a download file under the root directory of the USB storage.

E023	No File Error.	The specified file does not exist.	Please confirm whether there is a download file under the root directory of the USB storage.
E041	USB Memory Format Error.	USB Memory Format Error.	Please confirm the USB storage's space.
E040	USB Memory Is Not Inserted.	USB Memory Is Not Inserted.	Please confirm the USB storage's space.
E046	USB Memory Read Error.	USB Memory Read Error.	Please try to download again with another USB storage.
E048	USB Memory Read Timeout.	USB Memory Read Timeout.	Please confirm USB storage's connection.
E045	USB Memory Write Error.	USB storage abnormal	Please confirm USB storage's connection.
E049	USB Memory Error	USB storage abnormal	Please confirm USB storage's connection.
E043	USB Memory Is Busy.	USB storage in busy working	Please try to download again with another USB storage.
E044	USB Memory Is No Empty Space.	USB storage reading suspended	Please confirm the connection of the USB storage.
E027	File Address Error.	Wrong address of file.	Please confirm the connection of the USB storage.