

Injection Moulding Machine Controller

CPC-6.0

OPERATION MANUAL



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I. Characteristics

- § Designed and developed by Japanese technology and complying with JIS inspection standards.**
- § 640×480color 7”LCD.**
- § Power range applied: AC220V 50/60HZ.**
- § The light source of luminescence pipe has a high brightness with a long service life.**
- § The electronic components and production technique adopt the most advanced SMT technology with highest stability and reliability.**
- § Data can be stored for over 5 years safely.**
- § Freely choose from Chinese, English and another language for the convenience of study and operation.**
- § Intelligent fault detection and auxiliary operation instructions.**
- § Fully support the wireless network system – iChen.**

II. Basic Features

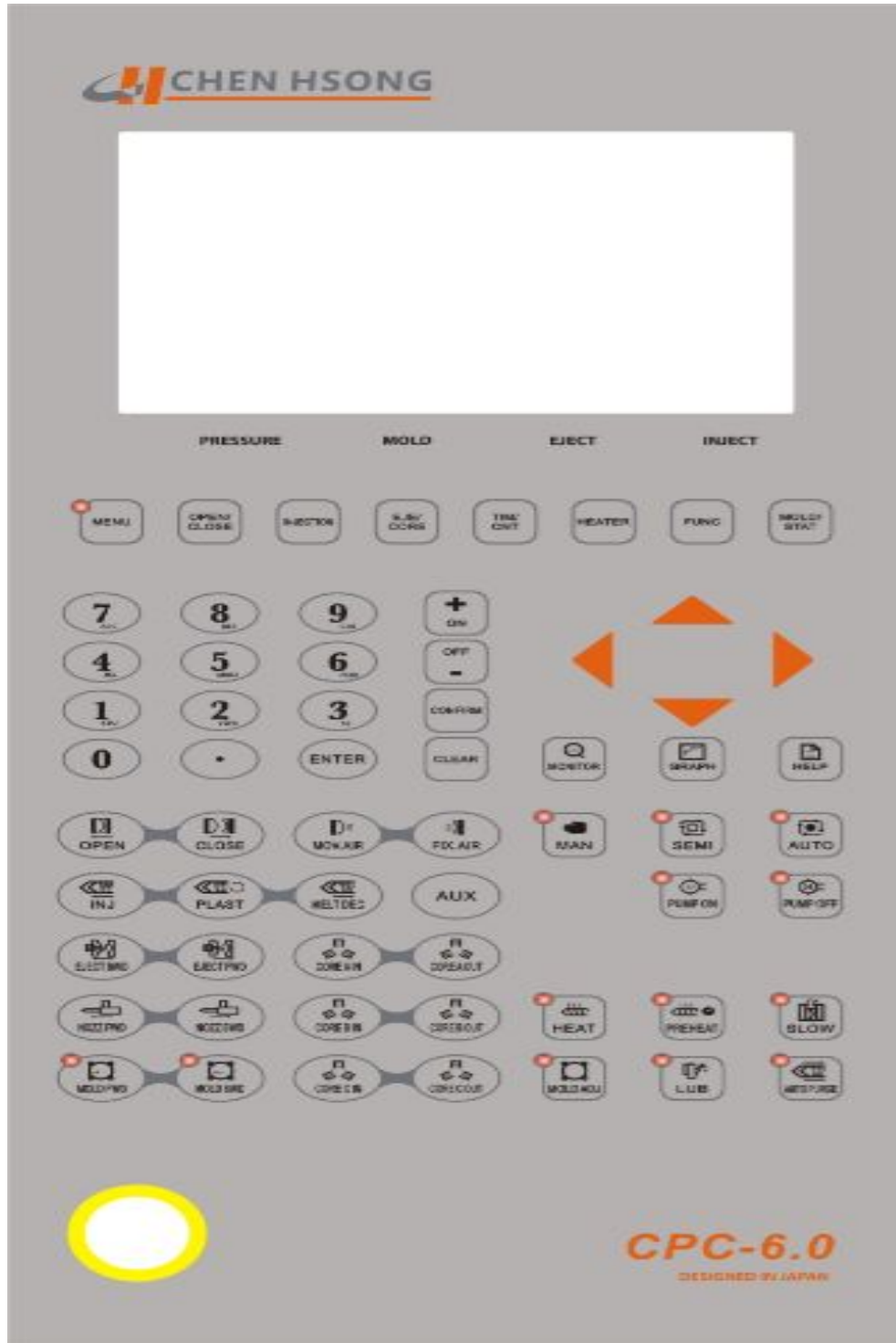
- Effective storage capacity of 150 groups of forming data (like time, times, pressure, speed, stroke, metering, mould thickness, mould name, selection condition, temperature of raw materials, etc.)
- Detailed tips on online operation.
- Lock the software data by stage encryption.
- Mistake-proof tips when inputting data in case of unsuitable modification.
- Data modification can be stored in the central server online through iChen System.
- Most advanced SMT electric plate assembling technology with a high reliability.
- 64 bit high speed CPU.
- 8 sets of PID temperature control, adjustment between 30℃ and 500℃ with a high degree of accuracy.
- Cold start prevention, Auto preheat function, nozzle block alarm, resin overflow detection.
- High and low temperature deviation setting and temperature sensor line break detection in operation.
- Injection 6 stage speed, 6 stage pressure setting.
- Plasticization 6 stage speed, 6 stage pressure and 6 stage back pressure setting.
- 4 sets air blowing and 6 sets of core pulling.
- Clamping, injection and ejector all adopt high precision optics potentiometer.
- Storage of alarms historical records, convenient for the technique debugging and maintenance.
- Production quantity and batch control.
- Cooperate with iChen order arrangement system.
- Auto toggle lubrication setting, Oil starvation alarm.
- Figure display of operation actions, convenient for the supervision of injection moulding machine operation.
- Monitor of the cycle operation time, convenient for adjustment to shorten the cycle time.
- Injection speed and pressure standard graph and current graph comparison. Injection terminal statistics.
- Online monitor of the program running condition and all the status of inputs, outputs, timers and counters, convenient for debugging and maintenance.
- Support the monitor of 128 outputs, 128 inputs, 300 timers and 20 counters status.
- Free selection, duplication and erasion of mould data. The setting time can be saved by using the preset mould data inside the computer. Data can also be inputted through external SD card.
- Intelligent fault detection and auxiliary operation instructions.



- **Support the hot runner temperature control (60 cavity,option)**
- **Fully support the iChen network management system.**
- **Fully support the iChen Wireless Network.**

IV. Introduction to the Computer Panel

4.1 Computer Panel



4.2 Keys for Operation Mode Control



This keyboard is responsible for the switch of forming operation mode.

4.3 Keys for Forming Conditions Setting



This keyboard has the following functions:

- 1) Set the forming conditions like position, speed, pressure, time, counter, temperature, etc.
- 2) Change and rewrite the mould data.
- 3) According to the requirements of finished products and mould design, choose the forming functions or actions.
- 4) Under any operation interface, the cursor can be moved to the expected position for changing data.




4.4 Number Keyboard, Cursor Keys and Auxiliary Operation

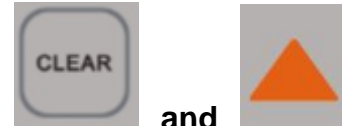
Function





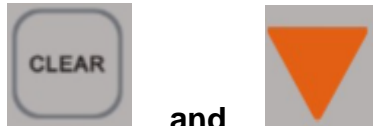
This keyboard has the following functions:



- 1) If press  +  +  at the same time, then turn on the power of the computer, the mould data and system setting inside the computer can be initialized. After hearing the alarm of a long “beep”, the initialization is completed. Release the three keys, and the operation on computer can be continued.



- 2) When operating the computer, press  and  simultaneously, the function of pageup can be realized; press



 and  simultaneously, the function of pagedown can be realized.

- 3) Input the digital data required by forming conditions:

Speed setting ranges 00%~99%; 00% means no speed.

Pressure setting ranges 00% ~ 99%; 00% means no pressure.

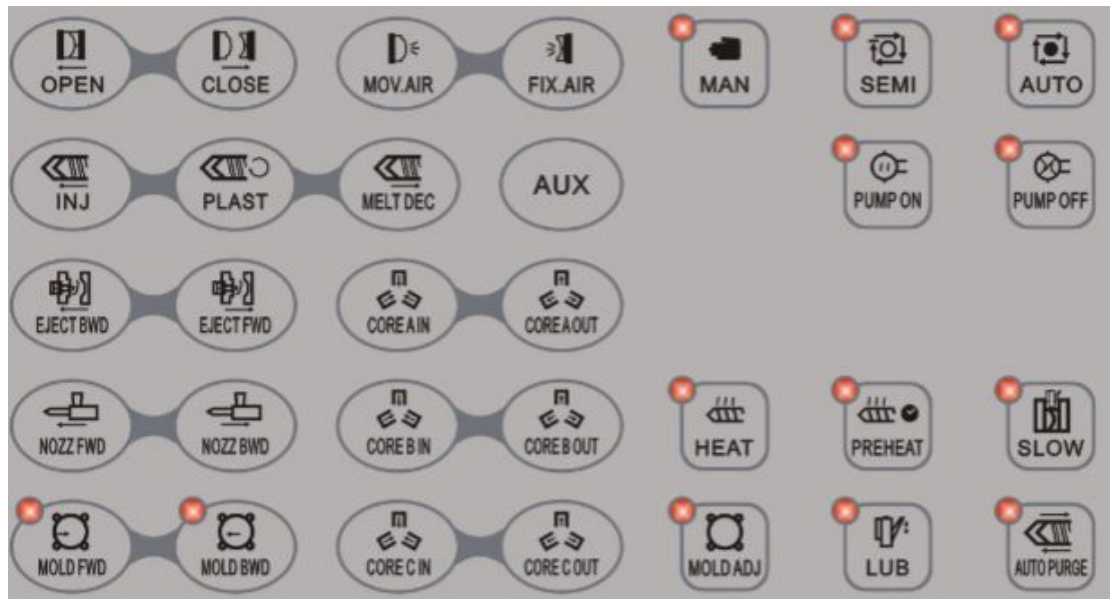
Position setting ranges 0000~999.9 mm.

Time setting ranges 0~999.9 sec.

Counter setting ranges 0~65535.

Mould thickness setting ranges 0~9999.9 mm.

4.5 Keys and Instructions for Manual Operation




The keyboard for manual operation can individually operate some certain actions of entire action cycle.

4.6 Power Switch

1) Emergency Stop Button

The Emergency Stop Button  locates in the bottom-right of the computer operation panel. If press it, the power can be cut off. If restart is required, the button must be released by turning rightward.

2) Start Button

The Start Button  locates on the right under the computer operation panel. If the Emergency Stop Button has been released, the power of the machine can be switched on by pressing the Start Button. This function can effectively protect the control system.

3) A high-powered voltage regulation apparatus in the controller can bear the power supply of AC90V – AC265V 50/60HZ.

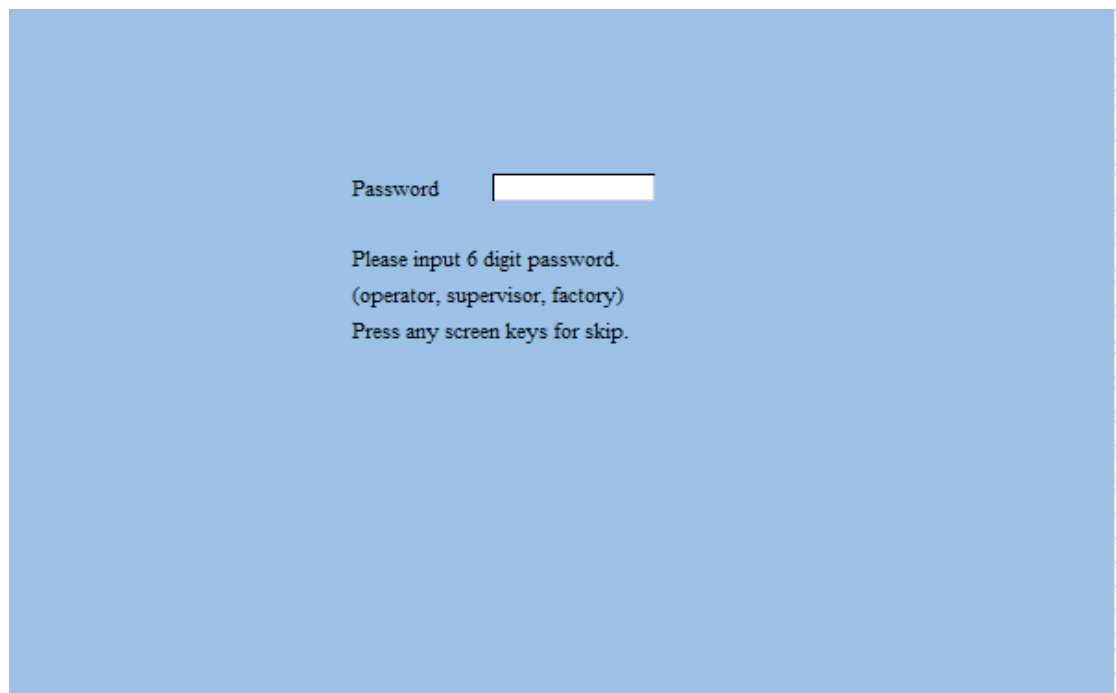
V. Operational Instructions for Computer Interfaces


5.1 Starting the Computer

Computer Startup Screen



Computer Startup Screen

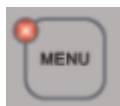
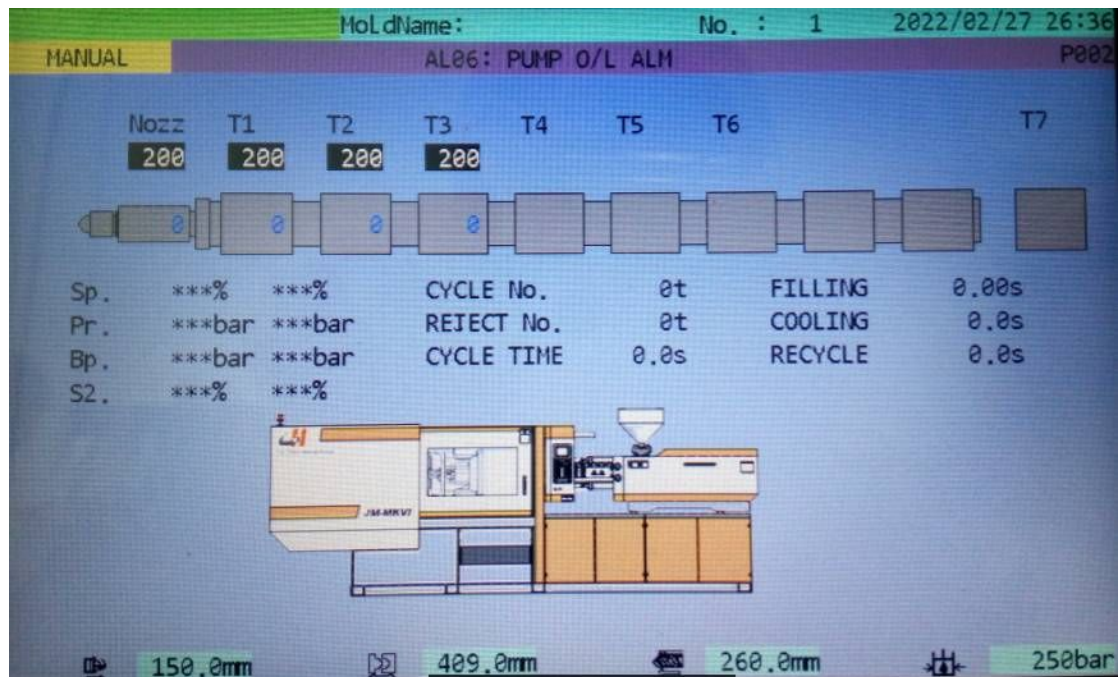


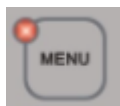
- 1) After turning on the computer, the system is under automatic inspection. If press  , the interface (01), which shows the machine type, machine model, serial number and program, will appear. If the machine needs maintenance or technical inquiry, please inform this information to the customer service department of our company for instant service.
- 2) If no action is conducted, the system will automatically switch to the interface (02) after about 3 seconds, which reminds you to input the 6 digits password or press any screen keys for skip. The password is classified into 3 levels of authorities: Operator, Supervisor and Factory. Each password will allow you to login the corresponding level of screens without inputting the password again. It will switch into operation interface (03) automatically after 3 seconds.

5.2 Normal Operation Setting


5.2.1 Normal Operation Screen

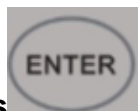
Normal Operation Screen



Press  one time to display this interface (After the normal start of the system, the default is manual operation. After the start is completed, this interface will appear automatically).



To modify the set value of temperature (Nozzle, T1~T9、Oil), use  to select the temperature stage to be set, input the numerical value and



press , then the setting is complete.

This interface is used to monitor the relevant parameters of operation and each stage temperature settings of the barrel.

"Nozzle parameter": Nozzle temperature setting

"T1": Stage 1 temperature setting

"T2": Stage 2 temperature setting

"T3": Stage 3 temperature setting

"T4": Stage 4 temperature setting (depend on machine model)

"T5": Stage 5 temperature setting (depend on machine model)

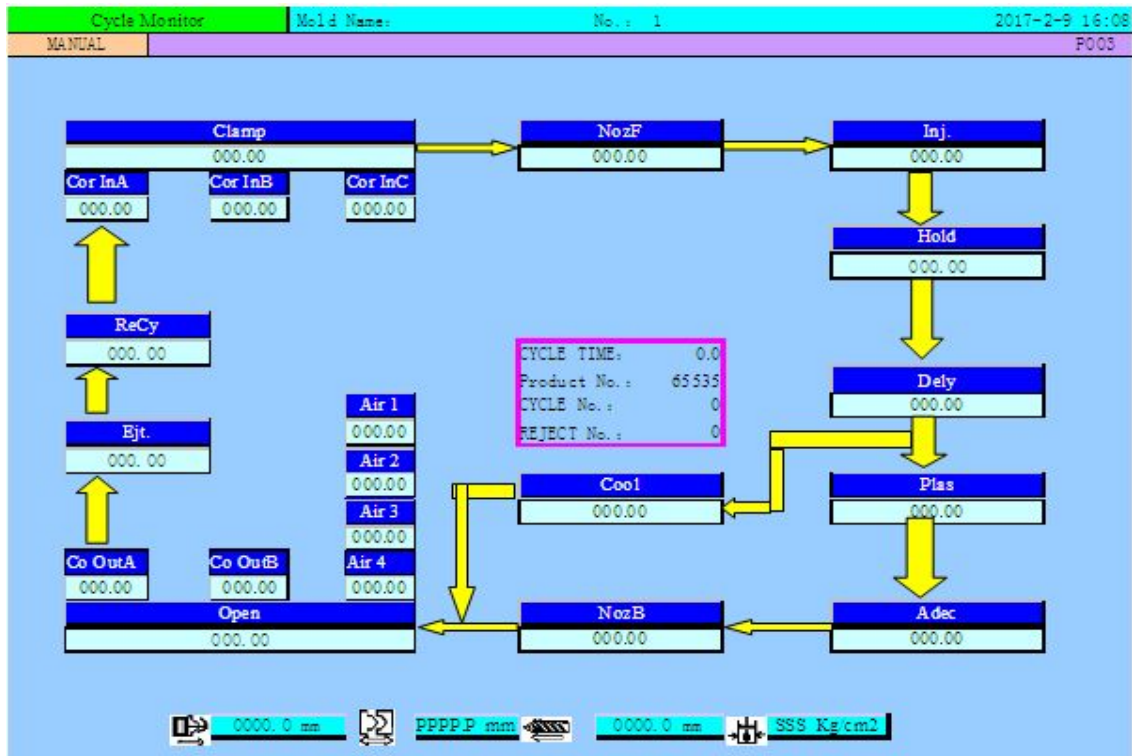
"T6": Stage 6 temperature setting (depend on machine model)

"T7": Stage 7 temperature setting (depend on machine model)

Note : T7 can be selected as oil temperature control or barrel heating control.

5.2.2 Cycle Monitor

Cycle Monitor Screen



Press  twice to call the cycle monitor screen , which shows the entire action cycle:


Clamping —→ Carriage Forward —→ Injection —→ Pressure Holding
—→ Delay.....—→ Ejector —→ Recycle


The numerical value of each step is the time consumption of this step. The frame in the middle of the interface shows the cycle time, product number, cycle number and rejected part number.


5.2.3 Mould Opening Setting


Mould Opening Setting Screen

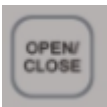
Mould Open Close Setting		MoldName:	No.: 1	2017-2-9 16:24
MANUAL		AL06:PUMP O/L ALM P005		
Maximum Mould Stroke	555.5mm	CYINDER	407.59mm	
Maximum Press: 175bar	Act Clamp Force	9998 ton	LOW PR.DETEC	0.0s LPProtect 50ton
Slow Open	Sp. 20 %	Pr. 90 bar	Pos. 3.50 mm	
Open2	80 %	100 bar	40.0 mm	
Open3	75 %	100 bar	115.0 mm	
Fast Open	60 %	30 bar	170.0 mm	
Open end	10 %	10 bar	460.0 mm	
H.P.OPEN END			0.0 mm	
Syn. Eject			0.0 mm	
Fast Clamp	80 %	150 bar	200.0 mm	
Clamp2	65 %	100 bar	50.0 mm	
Clamp3				
LP Clamp	10 %	20 bar	3.00 mm	
HP Clamp	60 %	175 bar	0.50 mm	
Clamping Aux			0.0 mm	
Clamping Force		0ton		
hydraulic				
Low Press		0 ton		
Clamping Force		0 ton		

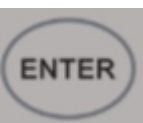
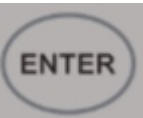

149.0mm


407.6mm


280.7mm


2797bar

Press  to call mould open close setting screen .

Use  to select the parameters to be set, input the numerical value and press , then the setting is complete.

B1 to B5、C1 to C5、D1 to D5 are the opening speed, pressure and position setting.

E1 to E5、F1 to F5、G1 to G5 are the clamping speed, pressure and position setting.

D6 is open end position for high pressure cylinder in two platen machine

D7 is the synchronise open position , mainly use for starting ejecting for parallel motion.

Low PR detect use in machine with mold low pressure protection sensor, when the sensor detect higher than this setting, it alarms and stop production.

G5 is the clamping end position.

F6 is use for two platen machine, setting the pressure switching from low to high pressure .

F8 use for two platen machine, setting the pressure of clamping end.

“clamping force” is use to display the clamping force and correspond pulse position for automatic force adjustment.

5.2.4 Injection Setting

Injection Setting Screen

Injection Setting		Mold Name:		No.: 1		2017-2-9 16:30	
MANUAL		AL06: PUMP O/L ALM				P008	
Max. Stroke	230.0 mm	FILLING	0.00s	Cushion	End	0.0mm	
INJECT TIME	0.20s	Hold Change	Timer	Inject Press	3bar		
Sp.	Pr.	Time					
Hold 1	0 %	0 bar	1.0 s	Inject1	65 %	75 bar	95 mm
Hold 2	0 %	0 bar	0.0 s	Inject2	85 %	130 bar	68 mm
Hold 3	0 %	0 bar	0.0 s	Inject3	27 %	85 bar	65 mm
Hold 4				Inject4	0 %	0 bar	0 mm
Hold 5				Inject5	0 %	0 bar	0 mm
Hold 6				Inject6			
Hold Pre. POS						0.0mm	
Leakage POS.						0.0mm	
149.0mm		407.6mm		280.7mm		797bar	

Press  to call the injection setting screen .

Use  to select the parameters to be set, input the numerical

value and press , then the setting is complete.

Holding pressure can be switching either by (position 、 timer、 pressure) . Injection processing parameters including speed pressure and position, holding pressure switching position and overflow position setting.


5.2.5 Sequential Injection Control Setting

Sequential Injection Control Setting Screen


Sequential Injection	Mold Name:	No.: 1	2017-2-27 9:09
MANUAL	AL06: PUMP O/L ALM		P009

SEQ.INJECT.
SWITCHING
Gatel Minimum


	ON Pos.	OFF Pos.	DELAY	Time	Delay	Time
Inject1	<input type="text"/> mm	<input type="text"/> mm				
Inject2	<input type="text"/> mm	<input type="text"/> mm				
Inject3	<input type="text"/> mm	<input type="text"/> mm				
Inject4	<input type="text"/> mm	<input type="text"/> mm				
Inject5	<input type="text"/> mm	<input type="text"/> mm				
Inject6	<input type="text"/> mm	<input type="text"/> mm				
Inject7	<input type="text"/> mm	<input type="text"/> mm				
Inject8	<input type="text"/> mm	<input type="text"/> mm				
Inject9	<input type="text"/> mm	<input type="text"/> mm				
Inject10	<input type="text"/> mm	<input type="text"/> mm				




0000.0 mm



PPPP.P mm



0000.0 mm



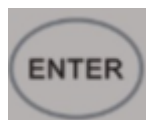
Kg/cm2



Press  two times to call the sequential injection control setting screen .



Use  to select the parameters to be set, input the numerical




value and press , then the setting is complete.


This interface is used to control the injection sequence of each mould cavity (position and time control). (Optional function)
cavity (position and time control). (Optional function)cavity (position and


5.2.6 Automatic Purge Setting


Automatic Purge Setting Screen


Auto Purge Setting		Mold Name:		No. : 1		2017-2-27 9:09	
MANUAL		AL06: PUMP O/L ALM				P012	
Gas	OFF						
POS.	0.0 mm	DELAY	999.9 s	PURGE .	0 t		
EXTRUSION	OFF						
	Sp.	Pr.	Time				
	30%	30 bar	999.9 s				
				Plast	0 %	30 bar	10 bar 1.0 s
				Inject	0 %	30 bar	5.0 mm
				Decomp	0 %	30 bar	80.0 mm

 **0000.0** mm

 **PPPP.P** r

 **00.0** mm



 **SSS** Kg/cm2

Press  three times to call the automatic purge setting screen .

Use  to select the parameters to be set, input the numerical

value and press , then the setting is complete.

To choose the mode, use  to find the parameters to be

selected, and use  or  to select. “ON” as use ,
“OFF”as not use.

A is injection position start point for gas assist function.





A1、A2、A3 are the speed, pressure and timer for the fuction of instrusion by plasticization.

This fuction provide pushing melt material to the mold before injection for big volume product.

The function of automatic purge is used when changing plastics and offers the setting of relevant parameters during the purge. The purge times is the number that the plastics being injected from the barrel. (Optional function)



5.2.7 Plasticization/Decompression Setting

Plasticization/Decompression Setting Screen

Plast/Decomp Setting		Mold Name:		No.: 1		2017-2-27 9:09	
MANUAL		AL06: PUMP O/L ALM				P011	
MAX . Stroke	230 mm	PLAST	0.0s	Screw End	280.7mm		
	Sp.	Pr.	Bp.	Pos.	PLAST DLY .		
PLAST1	35 %	175 bar	6 bar	0.0 mm	0.2 s		
PLAST2							
PLAST3							
PLAST4							
PLAST5							
PLAST6							
Decomp Aft	25 %	40 bar	80 mm	Decomp Bef	OFF	5.0mm	
<div>  0000.0 mm  PPPI mm  0000.0 mm  SSS Kg/cm² </div>							



Press  to call the plasticization/decompression setting screen .


Use  to select the parameters to be set, input the numerical value and press , then the setting is complete.


Melt Decompression before plasticization function can be selected and have independ F1 & F2 & F3 for speed , pressure and position setting.


5.2.8 Ejector Setting/ Air blow setting


Ejector Setting Screen


Ejector Setting		Mold Name:		No.: 1		2017-3-3 9:17	
MANUAL		AL06:PUMP O/L ALM				P014	
Max. Stroke	140.0mm	Eject Mode	Multi	Eject In Aux	10.0mm		
EJECT PAUSE	0.5s	EJECT No.	2t	VIB. EJT. No.	2t		
Eject Out 1	Sp. 13%	Pr. 25bar	Pos. 30.0mm	Eject In 1	Sp. 10%	Pr. 30bar	Pos. 30.0mm
Eject Out 2	Sp. 13%	Pr. 30bar	Pos. 42.0mm	Eject In 2	Sp. 25%	Pr. 30bar	Pos. 2.0mm


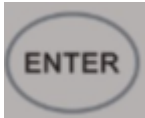
 0000.0 mm

 PPPP.P mm

 0000.0 mm

 SSS Kg/cm2

Press  to call the ejector setting screen .

Use  to select the parameters to be set, input the numerical value and press , then the setting is complete.

To choose the mode, use  to find the parameters to be selected,

and use  or  to select.

The interface is used to set the parameters of speed, pressure and position in each stage of ejector and other advanced parameters,

including 3 kinds of ejector modes (Not Use, Stop and Multi), auxiliary ejector, ejector pause, eject number and vibration ejector.


The lower part of screen consist of data setting for four sets of airblow functions. Including : selection of start point(open position、 after open end 、 before open、 after ejecting、 not use mode. Action delay and action time can be adjusted for the air blow duration.



5.2.9 Carriage Setting

Carriage Setting Screen

Carriage Setting		Mould Name:		NO.:		2017-3-3 10:28	
MANUAL		P060					
MAX. Stroke	A1 mm	SP.	PR.	POS.	Time	Actual Pos.	O. 0mm
Carr Fast	A2	A3				Carr Back	B2 B3
Carr Slow	A5	A6				Carr Control by Position	B6

	0000.0 mm		0000.0 mm		0000.0 mm		SSSS Kg/cm ²
-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	---------------------------------------------------------------------------------------	-------------------------

Press  to call the carriage setting screen .

Use  to select the parameters to be set, input the numerical value and press , then the setting is complete.

This screen is for setting parameters for nozzle unit including nozzle forward and backward speed, pressure, position.

If the carriage control by position is ON, position data are shown. In order to have this function, carriage linear sensor must be mounted.

5.2.10 Core Pulling Setting


Core Pulling 1 Setting Screen

Core	Setting	Mold Name:	No.:	1	2017-2-27 9:09
MANUAL	AL06:PUMP O/L ALM				P016
Core A Setting					
Core Out One Cycle	Limit				
Core In mode	Not Use				
Sp.	Pr.	Time	Sp.	Pr.	Time
Core In 50%	30 bar	2.0s	Core Out 50%	30 bar	2.0s
Core B Setting					
Core Out One Cycle	Limit				
Core In mode	Not Use				
Sp.	Pr.	Time	Sp.	Pr.	Time
Core In 50%	30 bar	2.0s	Core Out 50%	30 bar	2.0s
CoreInDelay		0.1s	CoreOutDelay		0.1s
0000.0 mm		PPPP.P mm	0000.0 mm		S Kg/cm2

Core Pulling 2 Setting Screen

Core	Setting	Mold Name:	No.:	1	2017-2-27 9:09
MANUAL	AL06:PUMP O/L ALM				P017
Core C Setting					
Core Out One Cycle	Limit				
Core In mode	Not Use				
Sp.	Pr.	Cou Time	Sp.	Pr.	Count Time
Core In 50%	30bar	0t 2.0s	Core Out 50%	30bar	0t 2.0s
Core D Setting					
Core Out One Cycle	Limit				
Core In mode	Not Use				
Jog in Sp.	Pr.	Time	Jog out Sp.	Pr.	Time
Core In 50.00%	30bar	2.0s	Core Out #####	30bar	2.0s
CoreInDelay		0.1s	CoreOutDelay		0.1s
0000.0 mm		PPP.P mm	0000.0 mm		SSS Kg/cm2



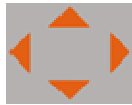
Press  one time or two times, then the core pulling 1 setting screen (15) or core pulling 2 setting screen will appear.



Use  to select the parameters to be set, input the numerical



value and press , then the setting is complete.



To choose the mode, use  to find the parameters to be selected,



and use  or  to select.

Core is the action of pulling and inserting cores, that is, during mould clamping, use the oil cylinder to insert the core into the mould for injection; while during mould opening, pull back the core to the original position. This function mostly applies to moulds whose finished products are hollow.

Unscrewing is the revolving positioning control on the finished products with unscrewing by the oil hydraulic motor.





Please check if the machine has relevant configurations before using the functions above.

Setting of Core/Unscrewing: Computer can offer at most 6 groups of Core/Unscrewing control, subject to the configuration of the machine. Each Core/Unscrewing can individually set the pressure, speed and action time according to requirements.

Note: In the automatic mode, the injection and core are approaching at the same time in case that the core will contract due to injection, so the Core and Unscrewing cannot be used simultaneously. When using the function of unscrewing, the mode of Core In/Out One Cycle shall be selected as Timer.

5.2.11 Core pull sequence Setting

Ejector setting Screen

Ejector Setting		Mold Name:		No.:	1	2017-2-27 9:09	
MANUAL		AL06:PUMP O/L ALM				P014	
Max. Stroke	140.0mm	Eject Mode	Multi	Eject In Aux	10.0mm		
EJECT PAUSE	0.5s	EJECT No.	2t	VIB. EJT. No.	2t		
Eject Out 1	Sp. 13%	Pr. 25bar	Pos. 30.0mm	Eject In 1	Sp. 10%	Pr. 30bar	Pos. 30.0mm
Eject Out 2	Sp. 13%	Pr. 30bar	Pos. 42.0mm	Eject In 2	Sp. 25%	Pr. 30bar	Pos. 2.0mm
<div style="display: flex; justify-content: space-around; align-items: center;"> <div> 0000.0 mm</div> <div> PPPP.P mm</div> <div> 0000.0 mm</div> <div> SSS Kg/cm2</div> </div>							



Press  key three times, the above screen are displayed,

This screen is for freely core pull sequence setting.

If sequence core pull was OFF, six core in sequence will be A→B→C→D→E→F, six core out sequence will be F→E→D→C→B→A (for six core pull setting with same mode) .

If sequence core pull was ON, core pull can be at any sequence A、B、C、D、E、F, setting “0” mean no core pull action, For example of setting : 2、3、4、6、5、1, it mean six core in sequence will be : F→A→B→C→E→D, six core out sequence are reverse, it will be D→E→C→B→A→F.

Note. The sequence number for A、B、C、D、E、F do not allow setting same number (except 0, it mean not use) .

5.2.12 Timer /counter Setting

Timer Setting Screen


Timer Setting		Mold Name:	No.: 1	2017-2-27 9:09	
MANUAL		P022			
PLAST DLY.	Set. A1	Act. B1	VIB EJECT	Set. A11	Act. B11
COOLING	Set. A2	Act. B2	CARR BWD DL	Set. A12	Act. B12
RECYCLE	Set. A3	Act. B3	CARR END DL	Set. A13	Act. B13
MELT BEF PLA	Set. A4	Act. B4	PRUGE BUFFER	Set. A14	Act. B14
CYCLE TIMER	Set. A5	Act. B5	DR OPEN SLOW	Set. A15	Act. B15
EJE OUT DLY	Set. A6	Act. B6	DLY OPEN	Set. A16	Act. B16
LOW PR.DETEC	Set. A7	Act. B7			
HP CHARGE DL	Set. A8	Act. B8			
HP END DELAY	Set. A9	Act. B9			
CLAMP END DL	Set. A10	Act. B10			


 0000.0 mm

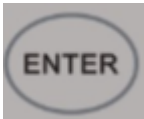
 PPPP.P mm

 0000.0 mm

 SSS Kg/cm²

Press  one time to call the timer setting screen .


Use  to select the parameters be set, input the numerical value


and press , then the setting is complete.


This interface is used to set the parameters of relevant timers inside the controller (including the following time relay: plasticizing delay, cooling time, recycle, decompression before plasticizing, cycle alarm, eject out delay, low pressure clamping detection, high pressure charge delay, high pressure end delay, clamping end delay, vibration ejection, carriage backward delay, carriage end delay, purge buffer, slow door open and door open time).


Counter Setting Screen

Timer Setting		Mold Name:	No.: 1	2017-2-27 9:09
MANUAL		P023		
CYCLE No.	Set. C1	Act. D1		
REJECT No.	C2	D2		
RPRODUCT TIME	C3	D3		
GREASE CYCLE	C4	D4		
CYCLE MONIT	C5	D5		
FORCE BWD	C6	D6		
FORCE FWD	C7	D7		
AUX11	C8	D8		
UNSCREW IN C	C9	D9		
UNSCREW OT C	C10	D10		



 0000.0 mm

 PPPP.P mm

 0000.0 mm

 SSS Kg/cm²

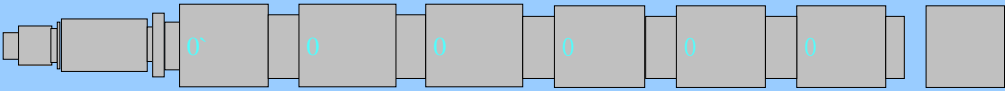

Press , then the counter setting screen will appear.


Use  to select the parameters to be set, input the numerical value and press , then the setting is complete.

This interface can be used to set the parameters of relevant counters inside the controller (including the following counter relay: cycle number, rejected part number, production time, grease cycle, cycle monitor, force backward, force forward, auxiliary 11, unscrew in C count and unscrew out C count).

5.2.13 Temperature Deviation Alarm Setting

Temperature Deviation Alarm Setting Screen

Temperature		Mold Name:		NO.: 1		2017-2-27 9:09	
MANUAL		P024					
NOZZ	T1	T2	T3	T4	T5	T6	T7
A1	A2	A3	A4	A5	A6	A7	A8
							
+B1	+B2	+B3	+B4	+B5	+B6	+B7	+B8
-C1	-C2	-C3	-C4	-C5	-C6	-C7	-C8
Preheat		D %					
cold start pro		60.0min					
		Preheat&Pump off				3.0min	
SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.	
Mode OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Start	F1	F2	F3	F4	F5	F6	F7
							

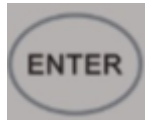
Hot Runner Heater Control		Mold Name:		No. : 1		2017-2-27 9:09	
MANUAL		P025					
T1	T2	T3					
100	101	102					
---	---	---					
		Hi	0				
		Lo	0				
		PID auto-tun					
		Input Type	k				
Data		Copy ALL	0				
Commucation error							
							



Press , then the temperature deviation alarm setting screen will appear.



Use  to select the parameters to be set, input the numerical



value and press , then the setting is complete.

This interface is used to control the temperature of each stage of the barrel. The “A” values are the set temperature of each stage, generally working in combination with parameter “B”, “C” (if A=200, B=10, C=10, thus the temperature is controlled between “A - C” and “A + B”, that is 190⁰C~210⁰C).

Alarm will ring if the temperature exceeds the range: “AL03: Barrel Temperature Not Reach” or “AL43: Barrel Temperature Too High”.

Preheat Function: control the current temperature of each stage of barrel as $A \times (1 - D\%)$.

Monday to Sunday “ON”、”、 “OFF” are use for select the preheat schedule timer, “F” is the preheat starting time each weekday.

Blue figures display on the barrel diagram are the actual temperature for each channel.


Hot runner Setting Screen


Hot Runner Heater Control	Mold Name:	No. : 1	2017-3-4 15:20
MANUAL	P026		


Hi
 Lo
 PID auto-tun
 Input Type


Data Copy ALL


Communication error


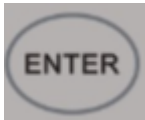








Press  2, 3 or 4 times, then the heat channel setting screen will appear separately.

Use  to select the parameters to be set, input the numerical value and press , then the setting is complete.

This interface can realize the independent control of the temperature of each mould heat channel, making the temperature control more flexible and accurate (optional function).

Hot runner temperature control consist of three screens up to 60 channels setting. This function must use Chen Hsong approved type temperature control module (Yudian or Shinko).

5.2.14 Function Setting

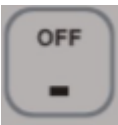
Function Setting Screen



Function Setting		Mold Name:	No.: 1	2017-3-2 11:05
MANUAL	AL06: PUMP O/L ALM			P028
Boost	A1	Robot ON	B1	DR OPEN TIME
Spring Mould	A2	NOZ BLK	B2	DR AUTO TEST
Acc Inject	A3	NozLeak Alrm	B3	NOZZLE TURN
MD BEF	A4	No Mat Alrm	B4	HYD MD ADJ
Boost Inject	A5	Auto Color	B5	Quality Cont
Boost Plast	A6	SPECIAL EJT	B6	Tbfwd Aft Ej
HOLD CORE IN	A7	EJECT PLATE	B7	TieBar Test
Hyd.Nozz.ON	A8	SPECIAL CORE	B8	Tbbwd Bef Cl
Photo Eye ON	A9	AUTO PURGE	B9	SEQ CORE
Auto Stop	D			
Syn Action	E			

 0000.0mm
  PPPP.P mm
  0000.(mm)
  SSS Kg/cm²

Press  then the function setting screen will appear.

Use  to move the cursor to the function to be set, press 

to select “ON”; press  to select “OFF”, then the setting is complete.

1) Auto Stop: use  or  to select the following four modes, which are used with forming numbers, production batch setting and fault stop.

(i) Not Use not using automatic stop function

- (ii) Pump stop pump only when automatic stop is activate**
- (iii) Heater stop heating only when automatic stop is activate**
- (iv) Pump&Heater stop heating and pump when automatic stop is activate**

2) Synchronise Action:

- (i) Eject: When choosing Eject, the mould opening and ejection can be processed at the same time, and the position of mould opening when the ejection is started can be set.**
 - (ii) Plast: When choosing Plast, the mould opening and ejection can be processed while plasticizing.**
 - (iii)Core: When choosing Core, the action of core inserting and pulling can be processed while mould opening and clamping.**
 - (iv)Not Use**
- (3) Accumlator Injection: When choosing “ON”, the accumulator injection device can be used (User has to order this device separately)**
- (4) Nozzle Leakage Alarm: When choosing “ON”, alarm will occur if the nozzle in leaks (optional device)..**
- (5) No Material Alarm: When choosing “ON”, alarm will ring if there is no material in the hopper; when choosing “OFF”, no alarm will be given even if the plasticizing is not completed when the cooling time ends.**
- (6) Nozzle block alarm: Under automatic operation, when injection holding was end but the injection position still not yet reach injection stage II position, it is regard as nozzle block, it will alarm and stop recycle.**
- (7) core pull holding: keep core pull action during injection, in order to prevent the retraction of cores.**

(8) Photo sensor: monitoring of dropping product by photo sensor. If there are no dropping product were detected by photo sensor after cycle end, it will regard as product drop out failure. Alarm comes out and stop recycle.

(9) Hydraulic shut-off nozzle: (optional devices) 。

(10) ejector plate return confirmation: It is used for confirming the retract of ejector plate. If this function is selected, clamping is not allowed when confirmation switch is not ON.

5.2.15 Mould Data Selection

Mould Data Selection Screen





Mould Select	Mold Name:	No.: 1	2017-3-2 11:18
MANUAL	AL06: PUMP O/L ALM		P029

001:	007:	0013:
002:	008:	0014:
003:	009:	0015:
004:	0010:	0016:
005:	0011:	0017:
006:	0012:	0018:

Mould No.

Mould Copy

Mould Sel

 0000.0 mm
  PPPP.P mm
  0000.0 mm
  SSS Kg/cm²





Mould Select	Mold Name:	No1	2017-3-2 11:21
MANUAL	AL06: PUMP O/L ALM		P030

001: *****	007: *****	013: *****
002: *****	008: *****	014: *****
003: *****	009: *****	015: *****
004: *****	010: *****	016: *****
005: *****	011: *****	017: *****
006: *****	012: *****	018: *****

Download to SD

Upload to Con.




NO Device

 mm
  PPPP.P mm
  0000.0 mm
  SSS Kg/cm²

Mould Data Backup	Mold Name:	No. : 1	2017-3-2 11:18
MANUAL	AL06: PUMP O/L ALM		

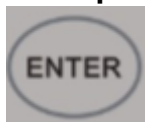
No. 0 ~ 10

Backup
Recove

 mm
 
 PPPP.P mm
  0000.0 mm

The procedure of mould data operation:

- 1) Move the cursor to the position of mould number A1, input the



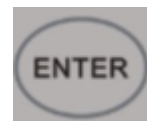
number and press , thus complete the setting of mould number.



- 2) Use to move the cursor to the position of B1, input the letters

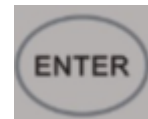


or digits use to input the next letter. Then press



to complete the setting of mould data remark.

- 3) If changing the mould number 01 to 02 is required, move the cursor to



the position of mould selection A3, input 02 and press . For



confirmation, press ; or else press

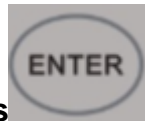


150 groups of mould data memory are available, of which, mould data No. 1 to No.99 are standard data module, and No. 101 to No.150 are easy operation module (some of which can only be altered by mould data 100). Failure to alter the data means no duplication can be realized, so do make free with the mould data 100.

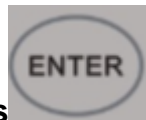
Mold data setting screen 2:

This screen is for upload and download of mold data between Ai – 12 controller and SD card memory device (SD memory card and SD card reading device is provided as option) .

After connecting SD memory card and memory card reading device(screen with“**No Device**”will be disappear), setting downloading



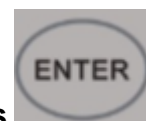
mold number at A2 position, press key to downloading data to SD memory card device , the LED indicator will be flashing until downloading process are finished. At A3 position, set the uploading



mold number, then press key to upload the mold number data from SD memory card to Ai-12 controller, the LED indicator will be flashing during uploading, data transfer will be stopped if the LED light off.

Backup of mold data in FRAM:

FRAM is a new memory device on the CPU board of Ai-12 controller, it can be used for backup of mold data and machine parameters when the battery is in failure.



(1) Move cursor to“**backup**”position , press key ,



“**backup**”will be displayed with“**?** ”, then press key to complete the mold data backup process, Mold set data number 1 to 10 will be saved in the FRAM.

(2) Move cursor to select “ **recover**” , and then press confirm key to recover the Mold set data number 1 to 10 saved in the FRAM.

5.2.16 Statistic Value

Quality Statistics Screen 1

Statistic		Mold Name:		No.: 1	2017-3-2 11:30				
MANUAL		AL06: PUMP O/L ALM			P032				
		Toler			Curr.	Prev		RESET	SD: OFF
Cycle No.					0	0	0		
Open Time	A1	±	B1	OFF	0.00	0.00	0.00	0.00	0.00 0.00
Clamp Time	A2	±	B2	OFF	0.00	0.00	0.00	0.00	0.00 0.00
Inject Time	A3	±	B3	OFF	0.00	0.00	0.00	0.00	0.00 0.00
Plast Time	A4	±	B4	OFF	0.00	0.00	0.00	0.00	0.00 0.00
Cycle Time	A5	±	B5	OFF	0.0	0.0	0.0	0.0	0.0 0.0
H.P.CH.POS	A6	±	B6	OFF	0.0	0.0	0.0	0.0	0.0 0.0
Inject End	A7	±	B7	OFF	0.0	0.0	0.0	0.0	0.0 0.0
Plast End	A8	±	B8	OFF	280.7	280.7	280.7	280.7	280.7 280.7
Open Pos	A9	±	B9	OFF	407.6	407.6	407.6	407.6	407.6 407.6
MAX INJ SP.	A10	±	B10	OFF	0.0	0.0	0.0	0.0	0.0 0.0
MAX RPM	A11	±	B11	OFF	0	0	0	0	0 0
QUALITY					OK	OK	OK		

Product Time 0.0 Product 0 DEFECT 0 (0.0 %)

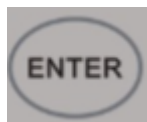
000mm PPPP.P mm 0000.0 mm SSS Kg/cm²



Press **MOLD/STAT** to call the quality statistics screen.



Use **Directional Arrow** to select the parameters to be set, input the numerical value

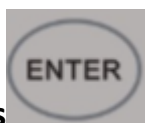


and press **ENTER**, then the setting is complete.

This screen is for monitoring of quality data. If it is setting with "ON", it is judge to be defective product if data are out of tolerance.



Use **Directional Arrow** key to move the setting of "production time", the



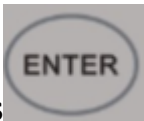

press **ENTER** key, with display of "?", then press



key to


reset the production time to zero, this is an accumulating production timer.


use  key to move “production counter” ,


press  key, with display of “? ” , then press  key to
reset the production counter to zero , this is an accumulating
production counter.


Quality Statistics Screen 2

Statistic		Mould Name:				NO.:		1		2017-3-2 11:30			
MANUAL		P033											
Cycle Cnt.	Open Time	Clamp Time	Inj. Time	Plast Time	Cycle Time	Hold POS.	Inject POS.	Plast POS.	Open POS.	Inj MAX Speed	MAX RPM	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
Ave.	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
Max.	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	
Min.	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	OK	

 0000.0 mm

 0000.0 mm

 0000.0 mm


 0000.0 Kg/cm2



press **MOLD/STAT** key twice, more quality data are displayed, this historical data can be upto display 512 sets, new quality data will be overwrite the the earliest data.

Holding pressure recod screen

[illegible]

By pressing  three times, actual injection holding pressure will be displayed, the historical data can be up to 512 cycle. This quality data is provided only when the option of injection pressure sensor was mounted.

5.2.17 Timer Monitor

Timer Monitor Screen

Timer Monitor				Mold Name:	No.:	1	2017-3-2 11:30
MANUAL				P035			
		Set.	Act.			Set.	Act.
TM000	CYCLE TIME	999.9	999.9	TM015	HOLD1 TIME	1.0	0.0
TM001	CLAMP TIME	999.9	0.0	TM016	HOLD2 TIME	0.0	0.0
TM002	CARR. FWD.	999.9	0.0	TM017	HOLD3 TIME	0.0	0.0
TM003	FILLING	99.99	0.00	TM018	HOLD4 TIME	0.0	0.0
TM004	HOLD TIME	999.9	0.0	TM019	HOLD5 TIME	0.0	0.0
TM005	PLAST DLY.	0.2	0.0	TM020	PURGE PLAST	1.0	0.0
TM006	COOLING	30.0	0.0	TM021	EJECT PAUSE	0.5	0.0
TM007	BEFORE DECOM	999.9	0.0	TM022	CORE A IN	2.0	0.0
TM008	PLAST	999.9	0.0	TM023	CORE A OUT	2.0	0.0
TM009	AFTER DECOMP	999.9	0.0	TM024	CORE B IN	2.0	0.0
TM010	CARR BWD	999.9	0.0	TM025	CORE B OUT	2.0	0.0
TM011	MD OPEN	999.9	0.0	TM026	CORE C IN	2.0	0.0
TM012	EJECT TIME	999.9	0.0	TM027	CORE C OUT	2.0	0.0
TM013	RECYCLE	0.2	0.0	TM028	CORE D IN	2.0	0.0
TM014	INJECT TIME	0.20	0.00	TM029	CORE D OUT	2.0	0.0



0000.0 mm



pppp. p mm



0000.0 mm



SSS Kg/cm2



press **MONITOR** key once to display the timer monitoring screen.

This screen can be used for monitoring the timers. When



pressing both **CLEAR** + **Up Arrow** (or **Down Arrow**), six monitor screen can be seen.

The six screen consist of totally 200 timers (from TM00 to TM199) .

5.2.18 Counter Monitor

Counter Monitor Screen

Counter Monitor

Mould Name :





No. : 1

2017-3-2 11:30

MANUAL

P045

		Set.	Act.			Set.	Act.
CT00	CYCLE No.	65535	0	CT10	FORCE FWD	1	1
CT01	REJECT No.	10000	0	CT11	GATE CORE	0	0
CT02	PRODUCT TIME	6000.0	0.0	CT12	UNSCREW IN C	0	0
CT03	PURGE	0	0	CT13	UNSCREW OT C	0	0
CT04	EJECT No.	2	2	CT14	EJECT No. B	0	0
CT05	VIB.EJT.No	2	*****	CT15	VIB.EJT.No.B	5	0
CT06	LUB.1 CYCLE	250	0	CT16	LUB.1 COUNT	0	0
CT07	LUB.2 CYCLE	0	0	CT17	LUB.2 COUNT	0	0
CT08	CYCLE MONIT	0	0	CT18	GATE AUTO	0	0
CT09	FWD. FIRST	0	0	CT19	PURGE B	0	0
CT20	LUB.3 CYCLE	0	0	CT25	LUB1 STAGE2	0	1
CT21	LUB.3 COUNT	0	0	CT26	LUB1 CYCLE2	0	0
CT22	LUB1 STAGE1	0	0	CT27	LUB1 COUNT2	0	0
CT23	LUB1 CYCLE1	0	0	CT28	CT28	0	0
CT24	LUB1 COUNT1	0	0	CT29	CT29	0	0

0000mm0000mm0000mm0000Kg/cm²







press  key twice, counter monitoring screen is displayed.

This screen is to monitor counter data.


5.2.19 Input Monitor


Input Monitor Screen


Input Monitor		Mould Name :		NO. : 1		2017-3-2 11:30		
MANUAL		P046						
EI00	FRONT DOOR	<input type="radio"/>	EI14	MD CLOSE ENA	<input type="radio"/>	EI28	DR CLS SLOW	<input type="radio"/>
EI01	REAR DOOR	<input type="radio"/>	EI15	EJECT PLATE	<input type="radio"/>	EI29	CLAMP PRESET	<input type="radio"/>
EI02	SAFETY DR LS	<input type="radio"/>	EI16	MD. ADJ. O/L	<input type="radio"/>	EI30	EJECT PRESET	<input type="radio"/>
EI03	CARRIAGE LS	<input type="radio"/>	EI17	PUMP O/L	<input type="radio"/>	EI31	INJ. PRESET	<input type="radio"/>
EI04	CORE B IN	<input type="radio"/>	EI18	ADJ 1 FWD LS	<input type="radio"/>	EI32	MOTOR RUNED	<input type="radio"/>
EI05	CORE B OUT	<input type="radio"/>	EI19	ADJ 1 BWD LS	<input type="radio"/>	EI33	SLV.PUMP RUN	<input type="radio"/>
EI06	UNSCR C CNT	<input type="radio"/>	EI20	MD ADJ COUNT	<input type="radio"/>	EI34	CORE D IN	<input type="radio"/>
EI07	NOZZLE GUARD	<input type="radio"/>	EI21	LUB. LEVEL	<input type="radio"/>	EI35	CORE D OUT	<input type="radio"/>
EI08	CORE A IN	<input type="radio"/>	EI22	LUB. PRESS	<input type="radio"/>	EI36	CORE E	<input type="radio"/>
EI09	CORE A OUT	<input type="radio"/>	EI23	CORE C IN	<input type="radio"/>	EI37	CORE E OUT L	<input type="radio"/>
EI10	PHOTO EYE	<input type="radio"/>	EI24	CORE C OUT	<input type="radio"/>	EI38	DOOR CRASH	<input type="radio"/>
EI11	ACC END	<input type="radio"/>	EI25	FILTER	<input type="radio"/>	EI39	OIL LEVEL	<input type="radio"/>
EI12	MD AREA FREE	<input type="radio"/>	EI26	AUX/DR OPEN	<input type="radio"/>	EI40	AUX/DOOR CLS	<input type="radio"/>
EI13	EJE FWD ENA.	<input type="radio"/>	EI27	DOOR OPENED	<input type="radio"/>	EI41	REAR DOOR 2	<input type="radio"/>
						EI42	EJE BWD ENA.	<input type="radio"/>
						EI43	ROBOT EMSTOP	<input type="radio"/>
						EI44	ROBOT EMG 2	<input type="radio"/>
						EI45	ROBOT OFF	<input type="radio"/>
						EI46	EN CORE A IN	<input type="radio"/>
						EI47	EN CORE A OT	<input type="radio"/>
						EI48	EN CORE B IN	<input type="radio"/>
						EI49	EN CORE B OT	<input type="radio"/>
						EI50	GREASE PR.	<input type="radio"/>
						EI51	OPEN LIMIT	<input type="radio"/>
						EI52	CLAMP LIMIT	<input type="radio"/>
						EI53	FOOT PLATE	<input type="radio"/>
						EI54	CORE F IN LS	<input type="radio"/>
						EI55	CORE F OUT L	<input type="radio"/>


	0000.0 mm		PPPP.P mm		0000.0 mm		SSS Kg/cm ²
-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	---------------------------------------------------------------------------------------	------------------------

Input Monitor		Mould Name:		NO.: 1		2017-3-2 11:30	
MANUAL		P047					
EI56	ADJ FWD LS 2	<input type="radio"/>	EI70	FAST CYL PR.	<input type="radio"/>	EI184	<input type="radio"/>
EI57	ADJ BWD LS 2	<input type="radio"/>	EI71	TEETH 1A	<input type="radio"/>	EI185	<input type="radio"/>
EI58	ADJ FWD LS 3	<input type="radio"/>	EI72	TEETH 1B	<input type="radio"/>	EI186	<input type="radio"/>
EI59	ADJ BWD LS 3	<input type="radio"/>	EI73	TEETH 2A	<input type="radio"/>	EI187	<input type="radio"/>
EI60	ADJ FWD LS 4	<input type="radio"/>	EI74	TEETH 2B	<input type="radio"/>	EI188	<input type="radio"/>
EI61	ADJ BWD LS 4	<input type="radio"/>	EI75	TEETH 3A	<input type="radio"/>	EI189	<input type="radio"/>
EI62	ADJ 1 SENSOR	<input type="radio"/>	EI76	TEETH 3B	<input type="radio"/>	EI190	<input type="radio"/>
EI63	ADJ 2 SENSOR	<input type="radio"/>	EI77	TEETH 4A	<input type="radio"/>	EI191	<input type="radio"/>
EI64	ADJ 3 SENSOR	<input type="radio"/>	EI78	TEETH 4B	<input type="radio"/>	EI192	<input type="radio"/>
EI65	ADJ 4 SENSOR	<input type="radio"/>	EI79	AUX	<input type="radio"/>	EI193	<input type="radio"/>
EI66	TIE BAR LS	<input type="radio"/>	EI80		<input type="radio"/>	EI194	<input type="radio"/>
EI67	NUT CLOSED	<input type="radio"/>	EI81		<input type="radio"/>	EI195	<input type="radio"/>
EI68	NUT OPENED	<input type="radio"/>	EI82		<input type="radio"/>	EI196	<input type="radio"/>
EI69	HP CYL LS	<input type="radio"/>	EI83		<input type="radio"/>	EI197	<input type="radio"/>
						EI198	<input type="radio"/>
						EI199	<input type="radio"/>
						EI200	<input type="radio"/>
						EI201	<input type="radio"/>
						EI202	<input type="radio"/>
						EI203	<input type="radio"/>

 0000.0 mm

 PPPP.P mm

 0000.0 mm

 SSS Kg/cm²



Press  three times to call the input monitor screen.





Press  (or ) keys to switch the other input monitor screen.

Through inspection of the relevant inputs status, to confirm whether the input signals from the controller have been sent to the corresponding points on I/O board, and estimate the operating status of I/O board system or PCB failure.





5.2.20 Output Monitor

Output Monitor Screen





Output Monitor		Mould Name:	N0. : 1	2009-3-17 8:56	
MANUAL	P049				
EO00	ADJ.1 FWD	<input type="radio"/>	EO14	CORE B IN	<input type="radio"/>
EO01	ADJ.1 BWD	<input type="radio"/>	EO15	CORE B OT	<input type="radio"/>
EO02	MD CLOSE	<input type="radio"/>	EO16	ACC CHARGE	<input type="radio"/>
EO03	CARRIAGE FW	<input type="radio"/>	EO17	ACC INJECT	<input type="radio"/>
EO04	INJECTION	<input type="radio"/>	EO18	AIR 2	<input type="radio"/>
EO05	PLAST.	<input type="radio"/>	EO19	AIR 1	<input type="radio"/>
EO06	MELT DECOM	<input type="radio"/>	EO20	MOLD OPEN BP	<input type="radio"/>
EO07	CARRIAGE BW	<input type="radio"/>	EO21	BOOST/LOW PR	<input type="radio"/>
EO08	MD. OPEN	<input type="radio"/>	EO22	LOW PR CLAMP	<input type="radio"/>
EO09	EJT. FWD	<input type="radio"/>	EO23	AUX/AIR 3	<input type="radio"/>
EO10	EJT. BWD	<input type="radio"/>	EO24	DOOR OPEN	<input type="radio"/>
EO11	BOOST	<input type="radio"/>	EO25	DOOR CLOSE	<input type="radio"/>
EO12	CORE A IN	<input type="radio"/>	EO26	FAST OPEN	<input type="radio"/>
EO13	CORE A OT	<input type="radio"/>	EO27	AUTO MODE	<input type="radio"/>
EO28	MD OPEN END	<input type="radio"/>	EO42	MOLD OP/CL	<input type="radio"/>
EO29	DR CLOSED	<input type="radio"/>	EO43	AUX PUMP 1	<input type="radio"/>
EO30	CORE C IN	<input type="radio"/>	EO44	AUX PUMP 2	<input type="radio"/>
EO31	CORE C OT	<input type="radio"/>	EO45	CORE F IN	<input type="radio"/>
EO32	GAS INJECTION	<input type="radio"/>	EO46	CORE F OT	<input type="radio"/>
EO33	DR SLOWDOWN	<input type="radio"/>	EO47	COOL WATER	<input type="radio"/>
EO34	BRAKE RELEASE	<input type="radio"/>	EO48	REJECT	<input type="radio"/>
EO35	CORE D IN	<input type="radio"/>	EO49	MOLD CLOSED	<input type="radio"/>
EO36	CORE D OT	<input type="radio"/>	EO50	EJT FWD END	<input type="radio"/>
EO37	CORE E IN	<input type="radio"/>	EO51	EJT BWD END	<input type="radio"/>
EO38	CORE E OT	<input type="radio"/>	EO52	CORE A FWDE	<input type="radio"/>
EO39	SMALL PUMP	<input type="radio"/>	EO53	CORE A BWDE	<input type="radio"/>
EO40	CARRIAGE IN	<input type="radio"/>	EO54	CORE B FWDE	<input type="radio"/>
EO41	CARRIAGE OUT	<input type="radio"/>	EO55	CORE B BWDE	<input type="radio"/>

	0000. Cmm		PPPP.P mm		0000.0 mm		SSS Kg/cm ²
-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	---------------------------------------------------------------------------------------	------------------------

Output Monitor		Mould Name:		NO. : 1		2017-3-2 11:30	
MANUAL		P050					
EO56 HP. RELEASE	<input type="radio"/>	EO70 PR. CHARGE	<input type="radio"/>	EO84	<input type="radio"/>	EO98	<input type="radio"/>
EO57 HP. CLAMP	<input type="radio"/>	EO71 STOPER ENA.	<input type="radio"/>	EO85	<input type="radio"/>	EO99	<input type="radio"/>
EO58 HP. OPEN	<input type="radio"/>	EO72 HP/STOPER	<input type="radio"/>	EO86	<input type="radio"/>	EO100	<input type="radio"/>
EO59 NUT CLOSE	<input type="radio"/>	EO73 PUMP 2	<input type="radio"/>	EO87	<input type="radio"/>	EO101	<input type="radio"/>
EO60 NUT OPEN	<input type="radio"/>	EO74 PUMP 3	<input type="radio"/>	EO88	<input type="radio"/>	EO102	<input type="radio"/>
EO61 HP. CHARGE	<input type="radio"/>	EO75 PUMP 4	<input type="radio"/>	EO89	<input type="radio"/>	EO103	<input type="radio"/>
EO62 TIE BAR FWD	<input type="radio"/>	EO76 PUMP 5	<input type="radio"/>	EO90	<input type="radio"/>		
EO63 ADJ. 2 FWD	<input type="radio"/>	EO77 PUMP 6	<input type="radio"/>	EO91	<input type="radio"/>		
EO64 ADJ. 2 BWD	<input type="radio"/>	EO78 AUX	<input type="radio"/>	EO92	<input type="radio"/>		
EO65 ADJ. 3 FWD	<input type="radio"/>	EO79 AUX	<input type="radio"/>	EO93	<input type="radio"/>		
EO66 ADJ. 3 BWD	<input type="radio"/>	EO80	<input type="radio"/>	EO94	<input type="radio"/>		
EO67 ADJ. 4 FWD	<input type="radio"/>	EO81	<input type="radio"/>	EO95	<input type="radio"/>		
EO68 ADJ. 4 BWD	<input type="radio"/>	EO82	<input type="radio"/>	EO96	<input type="radio"/>		
EO69 PLAST/DECOMP	<input type="radio"/>	EO83	<input type="radio"/>	EO97	<input type="radio"/>		

	0000.0 mm		PPPP.P mm		0000.0 mm		SSS Kg/cm ²
------------------------------------------------------------------------------------	-----------	------------------------------------------------------------------------------------	-----------	------------------------------------------------------------------------------------	-----------	--------------------------------------------------------------------------------------	------------------------

Output Monitor		Mould Name:		NO. : 1		2017-3-2 11:30	
MANUAL		P050					
ER00: PUMP RUNNING		<input type="radio"/>					
ER01: PUMP START		<input type="radio"/>					
ER02: LUBOTL		<input type="radio"/>					
ER03: ALARM		<input type="radio"/>					
ER04: GREASE		<input type="radio"/>					

	0000.0 mm		PPPP.P mm		0000.0 mm		SSS Kg/cm ²
-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	---------------------------------------------------------------------------------------	------------------------



Press **MONITOR** four times to call the output monitor screen.





In this interface, the setting and operation status of outputs can be monitored, in case of monitoring other outputs status, simultaneously

press  (or )keys to switch among the page .

Through inspection of the relevant outputs status, to confirm whether the output signals from the controller have been sent to the corresponding points on I/O board, and estimate the operating status of I/O board system or PCB failure.

5.2.21 Relay Monitor

EI Relay Monitor Screen

Relay Monitor	Mold Name:	NO. : 1	2017-3-2 11:30
MANUAL	P052		
	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	
EI000	• • • • • • • • • •	• • • • • • • • • •	
EI020	• • • • • • • • • •	• • • • • • • • • •	
EI040	• • • • • • • • • •	• • • • • • • • • •	
EI060	• • • • • • • • • •	• • • • • • • • • •	
EI080	• • • • • • • • • •	• • • • • • • • • •	
EI100	• • • •		
 0000.0mm  000.0mm  0000.0mm  SSS kg/cm²			



Press  five times to call the relay monitor screen.

In this interface, internal relays status can be monitored, in case of

monitoring other relays status, press  (or ) keys to switch among relay monitor interfaces.

These interfaces are used to confirm whether the signal receiving and sending function of controller internal relays is in normal condition, in case of failure during the machine operating, troubleshooting can be found through these interfaces(in which, @ means operating, . means not operating).

5.2.22 Program Monitor

Program Monitor Screen

Ladder Monitor	Mold Name:	No. :	1	2017-3-2 11:30
MANUAL	P053			



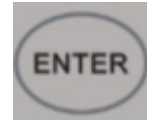
Press  six times, it will show program monitor screen.

"EI": Input position of internal relay types, press  or  key

to switch internal relay types, then press  key to confirm.

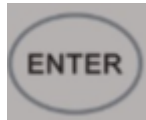
"0": Input position of internal relay serial number, input the serial

number, and then press  key to confirm.



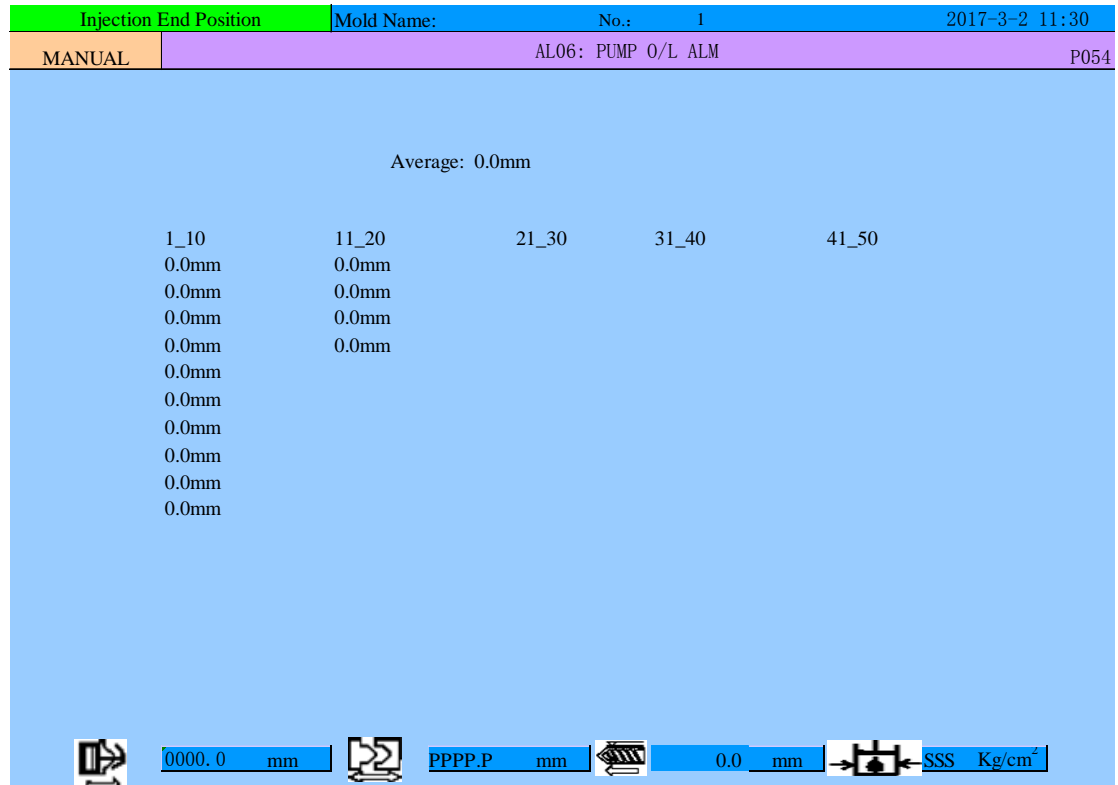
"Search": While moving the cursor to this position, press  **key once, one required relay that internal program used can be found**




immediately, press  **key again, and a second relay that internal program used can be found.**

5.2.23 Injection End Position

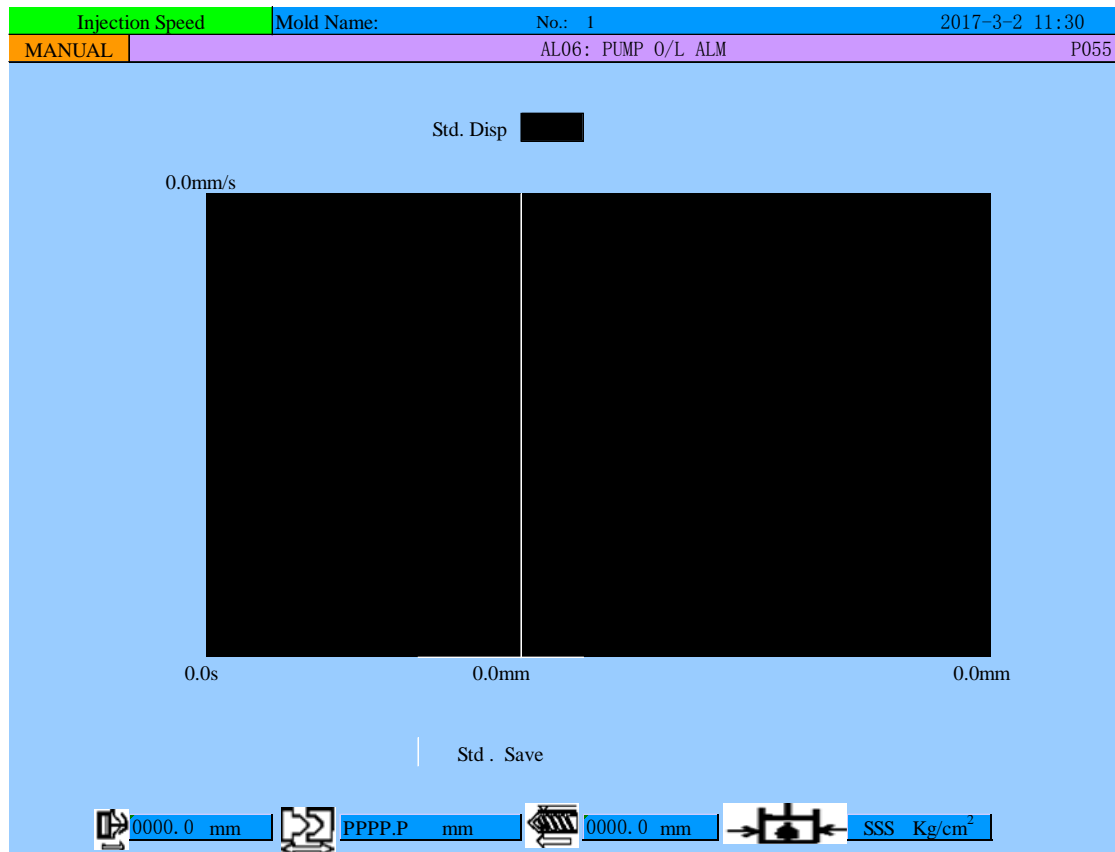
Injection End Position Screen




Press  once to call the injection end position screen. This interface displays the injection end positions and the average values of 50 products produced.


5.2.24 Injection Speed Curve

Injection Speed Curve Screen



Press  twice to call the injection speed curve screen.


Press , move the cursor  position,

press  key to save the previous curve as standard curve for comparsion.

Move cursor to  position,

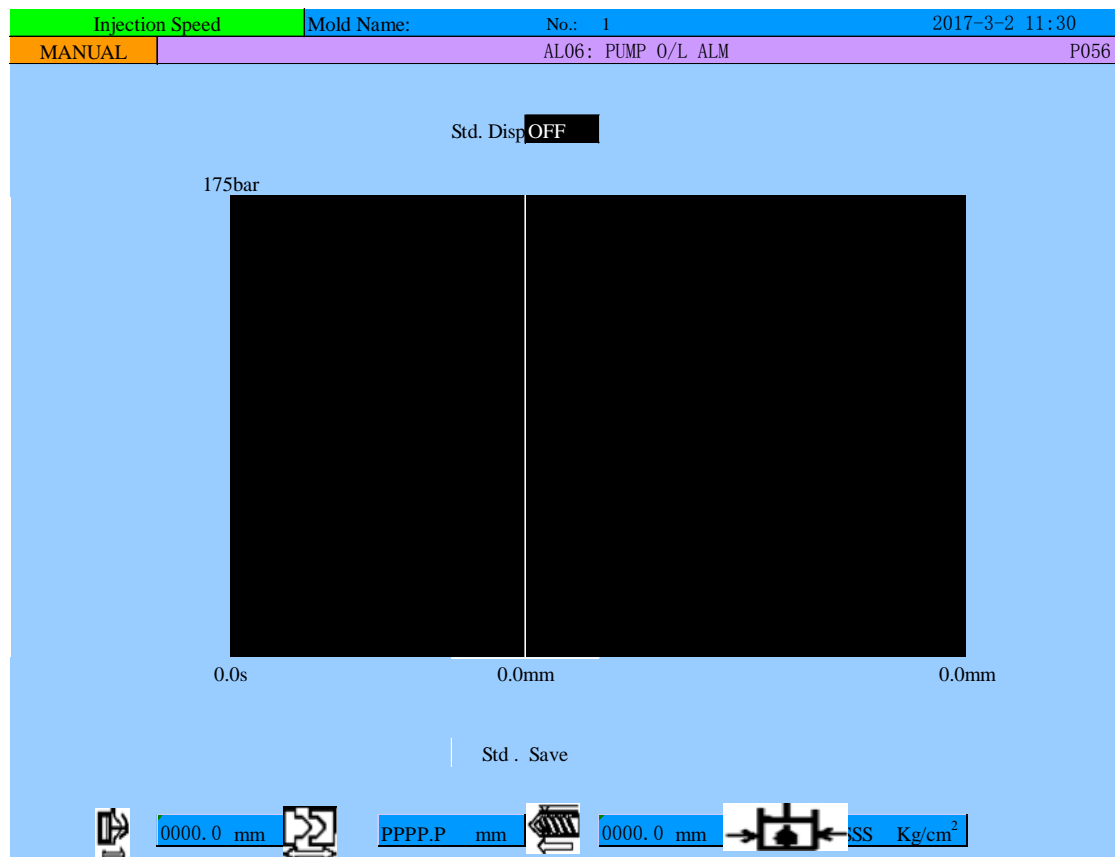
press  or  key to select the display of standard curve, if it


is “0N” , the standard curve will be display and compared with every new injection curve in e each cycle.


Move cursor to  , for setting the maximum injection speed. If the maximum 99 % injection speed just overlap the top of the graph, the maximum speed setting is correct. If not adjust the maximum injection speed.


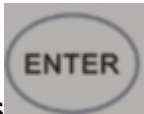
5.2.25 Injection Pressure Curve

Injection Pressure Curve Screen





Press  three times to call the injection pressure curve screen.


use  key, to move the cursor

to  position, press  key to save the current injection pressure curve as standard curve for comparsion in the next cycle.

Move the cursor to  position,

press  or  key to select the display of standard curve. The standard curve will be used for comparison with the curve in the next cycle.

Move cursor to  position,

press  or  to select the display of standard curve.

5.2.26 Help

Help Screen





Press **HELP** once to call the help screen.



Press **+ ON** or **OFF -**, to select help types.

Help types include Function Introduction, Data Introduction, Alarm and Maintenance.



Press **directional key**, move the cursor from the main catalogue to the



sub-catalogue, then press **+ ON** or **OFF -** key, to check the detailed description of help content.

5.2.27 System Time and Language Setting

System Time and Language Setting Screen



Mold Name:		No. : 1		2017-3-2 11:30	
MANUAL		P069			
Language	English				
Date	0000 / 00 / 00	SUN.			
Time	00:00				
	Set				
<div style="display: flex; justify-content: space-between; align-items: center;"> <div> 0000.0 mm </div> <div> PPPP.P mm </div> <div> 0000.0 mm </div> <div> SSS Kg/cm2 </div> </div>					

Press  + , then press supervisor password, then

press  +  (or ) to turn over the page, call the system time and language setting screen.

Press  to move the cursor to the items to be set, input

corresponding value, then press  key, to complete the setting (in which, date format: yyyy/mm/dd, time format: hh:mm).

To change system language, press  or  key, switch among English, Chinese and the third language.

5.2.28 Action Stroke Stage Number Selection

Action Stroke Stage Number Selection Screen

MANUAL		Mold Name:	No. : 1	2017-3-2 14:32
		P070		
DataLockPass	111111			
DataLockTime	0s	(0:OFF)		
Open Number	5			
Clamp Number	4			
Inject Number	5			
Hold Number	3			
Plast Number	1			
Binject Number	2			
BHOLD Number	2			
BPLast Number	2			
		0000.0 mm	PPPP.P mm	0000.0 mm
			SSS	Kg/cm ²

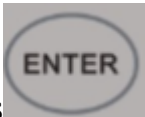
Press  + , input supervisor password, setting

necessary number of stages need for processing.


In which: "A1"~"A5" are respective the stage numbers setting value of mould opening, mould clamping, injection, pressure holding and plasticizing.


Data setting locking function

Press  key, move cursor to DataLockpass 456789, input

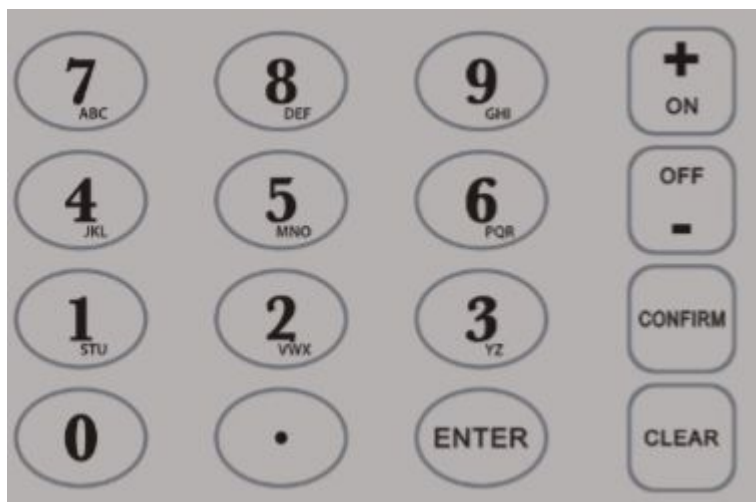
 key, password can be 1 to 6 digits,

move cursor to **DataLockTime0s**, setting the data locking delay timer
(0 setting mean not using locking function). For examples of 10



seconds, press  key to complete the setting, the press

 key to quit the screen. If there is no operation on the data
keys for 10 seconds. The data keys will be locked.


Number Key



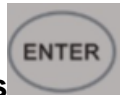
To release the locking of data key

To release the locking of data key, press  + ,
screen comes out as shown below, inputting the keylock password ,



then press  key, “ON” will be changed to “OFF” it mean it is unlocked.





If the keylock password was forgot, it is necessary to input the supervisory password; or set `DataLockTime 0s` to “0”, the





press  key to unlock the function

5.2.29 Ramp Setting

Ramp Setting Screen

Ramp Setting		Mould Name:				NO. : 1		2017-3-2 14:32			
MANUAL		P072									
		SP RAMP		PR RAMP		BP RAMP		SP2 RAMP			
OPEN END	S11	0.01		PR1	0.16	AUX	BP1	0.31	S21	0.36	
CLAMP END	S12	0.02		PR2	0.17	AUX	BP2	0.32	S22	0.37	
INJ	S13	0.03		PR3	0.18	AUX	BP3	0.33	S23	0.38	
EJECT	S14	0.04		PR4	0.19	AUX	BP4	0.34	S24	0.39	
PLAST	S15	0.05		PR5	0.20	AUX	BP5	0.35	S25	0.40	
Fast clamp	S16	0.06		PR6	0.21						
Clamp2	S17	0.07		PR7	0.22	Open Brack		5%	88bar	150.0mm	
Clamp3	S18	0.08		PR8	0.23	Ejt For Brak		4%	88bar	40.0mm	
Lp Clamp	S19	0.09		PR9	0.24						
Hp Clamp	S110	0.10		PR10	0.25						
Slow open	S111	0.11		PR11	0.26						
Open2	S112	0.12		PR12	0.27						
open3	S113	0.13		PR13	0.28						
Fast open	S114	0.14		PR14	0.29						
OPEN END	S115	0.15		PR15	0.30						
		0000.0 mm				0000.0 mm				0000.0 mm	
								SSSS Kg/cm ²			

Press  +  to call the ramp setting screen.

Press  to choose slope, and input corresponding slope, then

press  to complete the setting.

In which: "S", "PR", "BP" are respective abbreviation of Speed, Press and Back Press.

S11: Speed slope of fast mould clamping and low pressure mould clamping;

S12: Speed slope of mould opening;

S13: Speed slope of injection and plasticizing;

S14: Speed slope of melt decompression;

S15: Speed slope of mould clamping while adjusting mould clamping force;

PR1: Pressure slope of fast mould clamping;

PR2: Pressure slope of mould opening;

PR3: Pressure slope of injection and plasticizing;


PR4: Pressure slope of melt decompression;


PR5: Pressure slope of mould clamping while adjusting mould clamping force.

5.2.30 Speed 1 Output Setting

Speed 1 Output Setting Screen

Speed1 Output Setting		Mold Name:		NO. : 1		2017-3-2 14:32	
MANUAL		P073					
0				0rpm		***bar	
0%	0	30%	300	60%	600	90%	900
5%	50	35%	350	65%	650	95%	950
10%	100	40%	400	70%	700	99%	1000
15%	150	45%	450	75%	750	0%	0
20%	200	50%	500	80%	800	0%	0
25%	250	55%	550	85%	850	0%	0
SL049	10%	SL140	18%	SL148	26%	SL156	34%
SL050	11%	SL141	19%	SL149	27%	SL157	35%
SL051	12%	SL142	20%	SL150	28%	SL158	36%
SL052	13%	SL143	21%	SL151	29%	SL159	37%
SL053	14%	SL144	22%	SL152	30%	SL160	38%
SL054	15%	SL145	23%	SL153	31%	SL161	39%
SL055	16%	SL146	24%	SL154	32%	SL162	40%
SL056	17%	SL147	25%	SL155	33%	SL163	41%
 0000.0 mm		 0000.0 mm		 0000.0 mm		 SSSS Kg/cm ²	

Press  +  to call the speed 1 output setting screen.

Press  to choose the speed, and input corresponding speed,

then press  key, to complete the setting.



Note: As the speed percentage increasing, the corresponding analog value of speed output will also increase, decreasing is not allowed, otherwise, the output speed signal will be in disturbance, which causes the machine instable.



(The analog voltage output range is 0~10V, current range is 0~0.8A).

5.2.31 Pressure Output Setting

Pressure Output Setting Screen

Press Output Setting		Mould Name:		NO.: 1		2017-3-2 14:32	
MANUAL		P074					
0rmp		***bar		Pr : 0		PRB : 0	
0Volt	0						
0%	0	30%	300	60%	600	90%	900
5%	50	35%	350	65%	650	95%	950
10%	100	40%	400	70%	700	99%	1000
15%	150	45%	450	75%	750	0%	0
20%	200	50%	500	80%	800	0%	0
25%	250	55%	550	85%	850	0%	0

	0000.0 mm		0000.0 mm		0000.0 mm		SSSS Kg/cm ²
-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	---------------------------------------------------------------------------------------	-------------------------

Press  +  three times to call the pressure output setting screen.

Press  to choose pressure, and input the corresponding

pressure, then press , to complete the setting.

In which, four groups and two rows respective are: pressure percentage and pressure output analog value.




Note: As the pressure percentage increasing, the corresponding analog value of pressure output will also increase, decreasing is not allowed, otherwise, the output pressure signal will be in disturbance, which causes the machine instable.



(The analog voltage output range is 0~10V,current range is 0~0.8A).


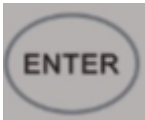
5.2.32 Back Pressure Output Setting

Back Pressure Output Setting Screen

BakPr Output Setting		Mould Name:		NO.: 1		2017-3-2 14:32	
MANUAL		P075					
0rmp		***bar					
0Volt	0						
0%	0	30%	300	60%	600	90%	900
5%	50	35%	350	65%	650	95%	950
10%	100	40%	400	70%	700	99%	1000
15%	150	45%	450	75%	750	0%	0
20%	200	50%	500	80%	800	0%	0
25%	250	55%	550	85%	850	0%	0

	0000.0 mm		0000.0 mm		0000.0 mm		SSSS Kg/cm ²
-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	---------------------------------------------------------------------------------------	-------------------------

Press  +  four times to call the back pressure output setting screen .

Press  to choose back pressure, and input the corresponding value, then press , to complete the setting.


In which, four groups and two rows respective are: pressure percentage and pressure output analog value.


Note: As the back pressure percentage increasing, the corresponding analog value of back pressure output will also increase, decreasing is not allowed, otherwise, the output back pressure signal will be in disturbance, which causes the machine instable.
(The analog voltage output range is 0~10V,current range is 0~0.8A).


5.2.33 Speed 2 output setting


Speed 2 output setting



Speed2 Output Setting		Mould Name :		NO. : 1		2017-3-2 14:32	
MANUAL		P076					
0rmp		***bar					
0Volt							
0%	0	0%	0	0%	0	0%	0
99%	1023	0%	0	0%	0	0%	0
0%	0	0%	0	0%	0	0%	0
0%	0	0%	0	0%	0	0%	0
0%	0	0%	0	0%	0	0%	0
0%	0	0%	0	0%	0	0%	0



 0000.0 mm

 0000.0 mm

 0000.0 mm

 SSSS Kg/cm²

Press  +  five times to call the speed 2 output setting screen.

Press  to choose speed, and input the corresponding speed,
then press , to complete the setting.

In which, four groups and two rows respective are: speed percentage and speed output analog value.


Note: As the speed percentage increasing, the corresponding analog value of speed output will also increase, decreasing is not allowed, otherwise, the output speed signal will be in disturbance, which causes the machine instable.


(The analog voltage output range is 0~10V,current range is 0~0.8A).


5.2.34 Speed output settingB


Speed output settingB



Press Output Setting B		Mould Name:		NO.: 1		2017-3-2 14:32	
MANUAL		P077					
0rmp		***bar					
0Volt							
0%	0	30%	300	60%	600	90%	900
5%	50	35%	350	65%	650	95%	950
10%	100	40%	400	70%	700	99%	1000
15%	150	45%	450	75%	750	0%	0
20%	200	50%	500	80%	800	0%	0
25%	250	55%	550	85%	850	0%	0


 0000.0 mm

 0000.0 mm

 0000.0 mm

 SSSS Kg/cm²

Press  +  key six times(supervisory password), The screen is for AUX Speed 1 . This is an option and an extension AD/DA card was mounted.

use  key, to select the item to be set, input the


corresponding value, and press  to complete the setting.


In which, four groups and two rows respective are: speed percentage and speed output analog value.


Note: As the speed percentage increasing, the corresponding analog value of speed output will also increase, decreasing is not allowed, otherwise, the output speed signal will be in disturbance, which causes the machine instable.


(The analog voltage output range is 0~10V,current range is 0~0.8A).



Press Output Setting B		Mould Name:		NO. : 1		2017-3-2 14:32	
MANUAL		P078					
0rmp		***bar		Pr : 0		PRB : 0	
0Volt							
0%	0	30%	300	60%	600	90%	900
5%	50	35%	350	65%	650	95%	950
10%	100	40%	400	70%	700	99%	1000
15%	150	45%	450	75%	750	0%	0
20%	200	50%	500	80%	800	0%	0
25%	250	55%	550	85%	850	0%	0



 0000.0 mm

 0000.0 mm

 0000.0 mm

 SSSS Kg/cm²

Press  +  seven times to call the pressure 2 output setting screen.

Press  to choose pressure, and input the corresponding pressure, then press , to complete the setting. This is an option and an extension AD/DA card was mounted.




In which, four groups and two rows respective are: speed percentage and speed output analog value.

Note: As the speed percentage increasing, the corresponding analog value of speed output will also increase, decreasing is not allowed, otherwise, the output speed signal will be in disturbance, which causes the machine instable.

(The analog voltage output range is 0~10V,current range is 0~0.8A).

5.2.35BakPrOutputSettingB

BakPr Output Setting B		Mould Name:		NO. : 1		2017-3-2 14:32	
MANUAL		P075					
0rmp		***bar					
0Volt							
0%	0	30%	300	60%	600	90%	900
5%	50	35%	350	65%	650	95%	950
10%	100	40%	400	70%	700	99%	1000
15%	150	45%	450	75%	750	0%	0
20%	200	50%	500	80%	800	0%	0
25%	250	55%	550	85%	850	0%	0

	0000.0 mm		0000.0 mm		0000.0 mm		SSSS Kg/cm ²
-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	---------------------------------------------------------------------------------------	-------------------------

Press  +  key eight times (supervisory password) ,

The screen is for Back pressure B . This is an option and an extension AD/DA card was mounted.

use  key, to select the item to be set, input the

corresponding value, and press  to complete the setting.

In which, four groups and two rows respective are: pressure percentage and pressure output analog value.


Note: As the speed percentage increasing, the corresponding analog value of speed output will also increase, decreasing is not allowed, otherwise, the output speed signal will be in disturbance, which causes the machine instable.


(The analog voltage output range is 0~10V,current range is 0~0.8A).


5.2.36 Speed2 Output SettingB


Speed2 Output SettingB

Speed2 Output Setting B		Mould Name :		NO.: 1		2017-3-2 14:32	
MANUAL		P080					
0rmp		***bar					
0Volt							
0%	0	0%	0	0%	0	0%	0
99%	1023	0%	0	0%	0	0%	0
0%	0	0%	0	0%	0	0%	0
0%	0	0%	0	0%	0	0%	0
0%	0	0%	0	0%	0	0%	0
0%	0	0%	0	0%	0	0%	0

 0000.0 mm

 0000.0 mm

 0000.0 mm

 SSSS Kg/cm²

Press  +  key nine times (supervisory password) ,

The screen is for Speed 2 output B . This is an option and an extension AD/DA card was mounted.

use  key, to select the item to be set, input the

corresponding value, and press  to complete the setting.



In which, four groups and two rows respective are: speed percentage and speed output analog value.


Note: As the speed percentage increasing, the corresponding analog value of speed output will also increase, decreasing is not allowed,

otherwise, the output speed signal will be in disturbance, which causes the machine instable.
(The analog voltage output range is 0~10V,current range is 0~0.8A).

5.2.37 Initial Setting

Initial Setting		Mould Name :		NO. : 1		2017-3-2 14:32	
MANUAL		P081					
Thickness	0.0mm						
Clamp Force	2500ton	33p	5000ton	32p			
Clamp ForceStore	7.7mm						
	Mold	Eject	Screw	Nozz	EjectB	ScrewB	
	407.6mm	149.0mm	280.7mm	655.4mm	0.0mm	0.0mm	
ORIGIN	5900p	8800p	1150p	0p	1p	1p	
MAX	61230p	62120p	53900p	30000p	2501p	1201p	
CYD LEN	391.0mm	140.0mm	230.0mm	300.0mm	125.1mm	240.1mm	
	65535p	65535p	65535p	65535p	0p	0p	
Preset	29p	3.1mm	3.0mm				
ORIGIN	29p	3.1mm	3.0mm				
CYLINDER MAX	450.0mm						
	555.5mm						
CYLINDER MIN	99p						
Open end pos.	+8.1mm		-8.2mm				
MOLD ZERO DETECT	0p						
		0000.0 mm				0000.0 mm	
		0000.0 mm				0000.0 mm	
		SSSS Kg/cm ²					

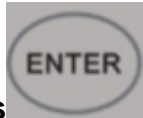
Press  +  key ten times (supervisoY password) , for setting the origin data for encoder version or potentiometer version.

Use  key, move cursor to set origin data, then

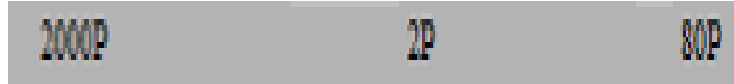
press  to complete the setting.

Setting of origin data for potentiometer, move the potentiometer by hand up to the minimum position, copy

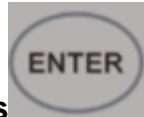
the    actual position



data to the origin, then press  key to complete setting. Again move the potentiometer by hand up to the maximum position, copy



actual position data to



maximum location and then press  key to complete the setting.

Cylinder length = (maximum position – minimum origin) /10.

Others data on the screen:

"A1": mold thickness, After clamping end, measure the current thickness of the mold and input the data.





"A2": During auto mold adjustment, the correspond position for adjusting half of maximum clamping force.

"A3": During auto mold adjustment, the correspond position for adjusting maximum clamping force.

Those data are adjusted or preset before shipment. It is recommend not to be adjusted by customer. Please consult service department.

5.2.38 Initial Setting

InitialSetting

Initial Setting		Mould Name :		NO. : 1		2017-3-2 14:32	
MANUAL		P082					
Oil Press	0 bar	100	175 bar	350	Hi	0	Oil
Clamp Force	0 ton	0	488 ton	2048	Lo	0	
Act Clamp Force	-		+				
Clamp end ramp			Oil Temp Upper Ltd			88	
MD. Thick Press			Oil Cooler ON			77	
			Oil Cooler OFF			66	
			Hopper Cooler ON				
			Hopper Cooler OFF				
	Sys.	Mold	Inj.				
ACT.	4095	4095	4095				
Bar.	2797	9998	2797				
 0000.0 mm  0000.0 mm  0000.0 mm  SSSS Kg/cm ²							

Press  +  key eleven times(supervisory password), to enter this screen setting.

The lower part“Act” is the monitor pressure binary data, “Bar”is the corresponding pressure.

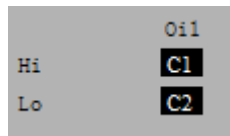
Oil Press	0bar	10	175bar	3030
-----------	------	----	--------	------

this is to adjust the initial data for pressure sensor, when there is no pressure, input the correspond data at 0Bar location; when system pressure is the maximum, input the correspond data at“Act” location.

Clamp Force	0 ton	A2	488 ton	B2
-------------	-------	----	---------	----

this data is the origin data for pressure sensor of clamping force .

Act Clamp Force - [redacted] n [redacted] this is to adjust the low limit and upper limit of actual clamping force for two platen machine.



is for "T7" for setting low limit and high limit of oil temperature.



Oil Temp Upper Ltd is for "T7" this is the upper limit and will cause pump stopping.,

Oil Temp ON Cooler is for "T7" the setting temperature for switching ON the cold water, Oil low OFF Cooler is for "T7", the setting temperature for switching OFF the cold water.

5.2.39 Auxiliary Speed and Pressure Setting





Auxiliary Speed and Pressure Setting Screen 1



Speed1/Press Setting		Mould Name:	N0: 1	2017-3-2 14:32
MANUAL		P085		
		Speed	Press	
OT012	ORIGIN RESET	30%	90bar	
OT013	NOZZLE TURN	30%	30bar	
OT014	HYD NOZZLE	30%	30bar	
OT015	EXTRUSION	30%	30bar	
OT016	SPECIAL LP	30%	60bar	
OT017	MOLD ADJ-	15%	50bar	
OT018	MOLD ADJ+	15%	50bar	
OT019	SPECIAL HP	30%	35bar	


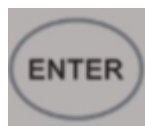
	0000.0 mm		0000.0 mm		0000.0 mm		SSSS Kg/cm ²
-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	---------------------------------------------------------------------------------------	-------------------------

Auxiliary Speed and Pressure Setting Screen 2

Speed1/Press Setting		Mould Name :	N0. : 1	2017-3-2 14:32
MANUAL	P086			
	Speed	Press		
OT020	10%	10bar		
OT021 INJ START	15%	10bar		
OT022	15%	10bar		
OT023	30%	30bar		
OT024 SPRING MOULD	30%	30bar		
H. P. Clamp Pr				
Open Aux2	8.0mm			

	0000.0 mm		0000.0 mm		0000.0 mm		SSSS Kg/cm ²
-----------------------------------------------------------------------------------	-----------	-----------------------------------------------------------------------------------	-----------	-----------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-------------------------

Press  +  8 and 9 times to call the auxiliary speed and pressure setting screen.

Press  to select the item to be set, input the corresponding value, and press  to complete the setting.

Clamping force"A6": clamping speed during automatic clamping force adjustment;

Clamping force"B6" : clamping pressure during automatic clamping force adjustment;

High clamping pressure"B7": High clamping pressure setting;

Open Aux 2"A7": setting auxillary open position, sometimes use for position to start the back pressure control of opening.





OT012: is the pressure and speed for origin setting;

OT016: is for the low pressure and speed setting for clamping start.



OT019:use in potentiometer version with clamping end confirmation switch, this setting is for proceeding to clamping end confirmation.

5.2.40 Initial Setting2

Initial Setting2

Initial Setting		Mould Name :		NO. : 1		2017-3-2 14:58	
MANUAL		P087					
S2.		Bp.					
A2001	1. 0%	AB001	1bar				
A2002	2. 0%	AB002	2bar				
A2003	3. 0%	AB003	3bar				
A2004	4. 0%	AB004	4bar				
A2005	5. 0%	AB005	5bar				
A2006	6. 0%	AB006	6bar				
A2007	7. 0%	AB007	7bar				
A2008	8. 0%	AB008	8bar				
A2009	9. 0%	AB009	9bar				
A2010	10. 0%	AB010	10bar				
MOLD (SpB.)		INJ (PrB.)		EJECT (BpB.)		PLAST (S2B.)	
AM001	1%	AI001	1Bbar	AE001	1Bbar	AP001	1%
AM002	2%	AI002	2Bbar	AE002	2Bbar	AP002	2%
AM003	3%	AI003	3Bbar	AE003	3Bbar	AP003	3%
AM004	4%	AI004	4Bbar	AE004	4Bbar	AP004	4%
AM005	5%	AI005	5Bbar	AE005	5Bbar	AP005	5%
 0000.0 mm		 0000.0 mm		 0000.0 mm		 SSSS Kg/cm ²	





Press  +  key fourteen times (supervisory password) to enter the above screen. This screen is for extra analogue output use in double color machine or two platen machine.


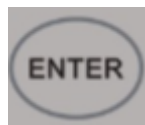
5.2.41 Timer Setting

Timer Setting Screen

Timer Setting		Mould Name:	NO. : 1	2017-3-2 14:58
MANUAL	P088			
MOTOR START	3.0	CARR.CLOSE	1.0	
ORIGIN RESET	0.0	ACC DELAY	1.0	
MD ADJ MON.	1.0	LOW PRE.DLY	0.1	
ALARM ON	10.0	ACTION DLY	0.1	
ALARM OFF	10.0	DOOR MONI.	3.0	
OUTPUT MON.	8.0	SPEC.LOW.PRE	0.0	
TM066	0.0	MD OPEN BP	0.3	
GREASE TIMER	0.3	CARR.OPEN	1.0	
EJE.INTERVAL	0.1	INJ.CUSHION	0.0	
COLD START	60.0	PLA.CUSHION	0.0	

	0000.0 mm		0000.0 mm		0000.0 mm		SSSS Kg/cm ²
-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	---------------------------------------------------------------------------------------	-------------------------

Press  +  10 times to call the timer setting screen.

Press  to select the item to be set, input the corresponding value, and press  to complete the setting.

In this screen:

- "A1": Setting of motor start time
- "A2": Setting of origin reset time
- "A3": Setting of mould adjustment monitor time
- "A4": Setting of alarm duration time
- "A5": Setting of alarm pause time



- "A6": Setting of action monitor time**
- "A7": Auxiliary 66**
- "A8": Setting of grease lubrication time**
- "A9": Setting of ejector interval time**
- "A10": Setting of cold start proof time**
- "B1": Setting of nozzle closing time**
- "B2": Setting of nitrogen ending time**
- "B3": Setting of low pressure delay time**
- "B4": Setting of action delay time**
- "B5": Setting of safety door monitor time**
- "B6": Setting of special low pressure time**
- "B7": Setting of mould opening back pressure time**
- "B8": Setting of nozzle open time**
- "B9": Setting of injection cushion time**
- "B10": Setting of plasticizing cushion time**


5.2.42 Counter Setting

Counter Setting Screen

Counter Monitor		Mould Name:	N0. : 1	2017-3-2 14:58
MANUAL	P069			
CYCLE No.	A1	FORCE FWD	B1	
REJECT No.	A2	AUX11	B2	
PRODUCT TIME	A3	UNSCREW IN C	B3	
PURGE	A4	UNSCREW OT C	B4	
EJECT No.	A5	AUX14	B5	
VIB.EJT.No.	A6	AUX15	B6	
LUB. CYCLE	A7	Lub.Counter	B7	
GREASE CYCLE	A8	Grease Count	B8	
CYCLE MONIT	A9	AUX18	B9	
FORCE BWD	A10	AUX19	B10	

	0000.0mm		pppp.p mm		0000.0mm		SSS Kg/cm ²
-------------------------------------------------------------------------------------	----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	----------	---------------------------------------------------------------------------------------	------------------------





Press  +  11 times to call the counter setting screen.

Press  to select the item to be set, input the corresponding





value, and press  to complete the setting.



5.2.43 Factory Setting


Factory Setting Screen 1

Factory Setting		Mould Name:	NO. : 1	2017-3-2 15:05
MANUAL		P090		
Model :	JM268C1			
Serial No. :	123456			
Date :	23-03-2017			
 0000.0 mm  PPPP.P mm  0000.0 mm  SSS Kg/cm ²				

Factory Setting Screen 2

Factory Setting		Mould Name:	NO. : 1	2009-3-17 9:21
MANUAL		P091		
Max.Inj.Speed :	260			
Start Wait :	200			
Stage CL.Adj.Wait :	300			
CL.Adj.Wait :	400			
 0000.0 mm  PPPP.P mm  0000.0 mm  SSS Kg/cm ²				

Press  +  12 and 13 times to call the factory setting screen.

Press  to select the item to be set, input the corresponding

value, and press  to complete the setting.

Factory setting screen 1 is for machine information.

Factory setting screen 2 is for exfactory machine parameters.

This two screens do not allow any changes by agents or customer.

5.2.44 Maintenance Setting

Maintenance Setting Screen 1


Maintenance		Mould Name:	NO. : 1	2017-3-4 15:04	
MANUAL		P073			
NO.			LAST DATE		
1	COOLING WATER LUB PRE LUB	A1	B1	day	
2	SATETY DOOR	A2	B2	day	
3	LUB QUANTITY	A3	B3	day	
4	LUB LEAKNISS	A4	B4	day	
5	CHECK OIL PRE AND OIL TEMP	A5	B5	day	
6	LUB MOTION POSITION	A6	B6	day	
7	LUB ROUTE LEAKNISS	A7	B7	day	
8	CHECK CONTACT POINT OF SWITCH	A8	B8	day	
9	CLEAN COOLER	A9	B9	day	

0000.0 mm 0000.0 mm 0000.0 mm SSS Kg/cm²


Maintenance Setting Screen 2

Maintenance		Mould Name:	NO. : 1	2017-3-4 15:08	
MANUAL		P073			
NO.			LAST DATE		
1	Check oil quality	A1	B1	day	
2	Apply grease on bu	A2	B2	day	
3	LUB QUANTITY	A3	B3	day	
4	Change hydraulic o	A4	B4	day	
5	Check cable status	A5	B5	day	
6	Check centre of no	A6	B6	day	
7					
8					
9					

0000.0 mm 0000.0 mm 0000.0 mm SSS Kg/cm²

Press  +  15, 16 times to call the maintenance setting screen .

Press  to move the cursor to “Last Date” position, and press

 key, a “?” appears after the “Last Date”, then press 

key to confirm and initialize the “Last Date” to the current date of the system, then the maintenance reminding time will be counted from current time of the system.




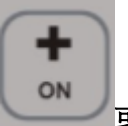


Set the time interval for machine maintenance reminder so that the customer could maintain the machine regularly and obtain higher production efficiency.

The 2 columns stand for: The last reminding time of the maintenance content indicated;

The reminding time interval setting of the maintenance content indicated.
If it sets as “0”, there should be no maintenance reminder.

5.2,45 Initial Setting for temperature control

Initial Setting

press  +  key twenty two times (supervisory password) , to display the above screen . use  key to move the cursor , and then use  或  to select , press  key to complete setting . “PID” temperature control mode with auto PID , “DUTY” mean temperature control by duty % , “OFF” mean not in use , temperature channel is use as “OIL”for oil temperature control .

5.2.46 Alarm History

Alarm History Screen

Alarm History

Mold Name:

No. : 1

2017-3-2 15:32


MANUAL

P064


SD: OFF

RESET

OCCUR		RECOVERY		CONTENTS
2008/01/01	15:00			AL06: PUMP O/L ALM
2008/01/01	15:00	2008/01/01	15:00	AL03: BARREL TEMPERATURE NOT REACH
2008/01/01	15:00	2008/01/01	15:00	AL79: STEPPER ERROR
2008/01/01	15:00	2008/01/01	15:00	AL06: PUMP O/L ALM
2008/01/01	15:00	2008/01/01	15:00	AL79: STEPPER ERROR
2008/01/01	15:00	2008/01/01	15:00	AL50: PUMP MOTOR NOT START
2008/01/01	15:00	2008/01/01	15:00	AL79: STEPPER ERROR
2008/01/01	15:00	2008/01/01	15:00	AL50: PUMP MOTOR NOT START
2008/01/01	15:00	2008/01/01	15:00	AL79: STEPPER ERROR
2008/01/01	15:00	2008/01/01	15:00	AL50: PUMP MOTOR NOT START
2008/01/01	15:00	2008/01/01	15:00	AL79: STEPPER ERROR
2008/01/01	15:00	2008/01/01	15:00	AL50: PUMP MOTOR NOT START
2008/01/01	15:00	2008/01/01	15:00	AL79: STEPPER ERROR
2008/01/01	15:00	2008/01/01	15:00	AL50: PUMP MOTOR NOT START




0000.0mm




PPPP.P

mm






0000.0 mm


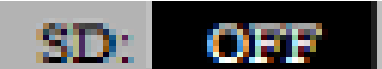




SSS


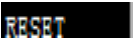



Kg/cm²

Press  +  to display the alarm history screen, and then

press  to switch pages.





use  to move cursor to  location,

press  to select "ON", press  key to select "OFF", If it ON, the alarm history will be stored in SD memory card.



Move  cursor key to  location, then
press  key, then  will appear with“? ”,
press  key, This is to reset all the alarm.

5.2.47 iChen system (network)

iChen Screen

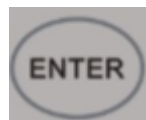
Network		Mold Name:	No. : 1	2017-3-2 15:05
MANUAL	P065			
Job Name		Progress		0/65535
Name	0	Log Out	Mode	No Order
Job Card		Job Card		
Job No.	Job Name	Mold Name	Progress	
Mould	Save Mold	Find Mold		
Mold Name	Machine	Version	Date	Time
 0000.0 mm  2P.P mm  0000.0 mm  SSS Kg/cm ²				



Press  +  to call the network screen (which is only available when you have bought the iCHEN network system of Chen Hsong Group).



Press  to select the item to be set, input the corresponding



value, and press  to complete the setting.

This function is utilized in industrial automation and automatic orders scheduling and production data logging (wire and wireless), and it guarantees the safety of the technical parameters and the extension of the production scale.

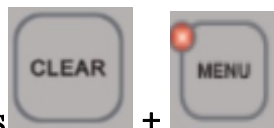


In this screen: Press **ON** or **OFF** to select the following 13 modes,


- (1) Changed (2) Suspended (3) Out of Servi (4) Waiting Mold (5) Waiting Mate (6) Change Mater (7) Replace Mold (8) Test Mold (9) Fix Mold (10) Adjust Color (11) Production (12) No Order (13) Other3.

5.2.48 Change Password

Change Password Screen



Press **CLEAR** + **MENU** key for over three seconds, to call the change password screen (This password is used system operator and supervisor).

Press  to select the item to be set, input the corresponding

value, and press  key to complete the setting.

To facilitate the operation and management of the machine, every controller has an initial password when delivery. In this screen, it is suggested to change the class 1 and 2 passwords immediately for better use.


5.2.49 Manual Lubrication Setting



Manual Lubrication Setting Screen

Lubrication		Mould Name:		NO. :		2017-3-4 15:20	
MANUAL		P061					
OAFI							
LUB1. CYCLE	250t	LUB2. CYCLE	0t	LUB3. CYCLE	0t		
Next Lub.	*****t	Next Lub.	0t	Next Lub.	0t		
LUB1. TIMER	10.0s	LUB2. TIMER	0.3s	LUB3. TIMER	3.0s		
LUB1. COUNT	0t	LUB2. COUNT	0t	LUB3. COUNT	0t		
LUB1. DISTAN	0.1s	LUB2. DISTAN	0.1s	LUB3. DISTAN	999.9s		

	0000.0 mm		0000.0 mm		0000.0 mm		SSSS Kg/cm ²
-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	-------------------------------------------------------------------------------------	-----------	---------------------------------------------------------------------------------------	-------------------------

Enter the supervisor password when the controller power on.

Press  to call the manual lubrication setting screen .

Press  key to select the parameters to be set, input the value
and press  to complete the setting.

In this screen:

"A1": lubrication period, lubrication is output after numbers of mold opening.

"A2": time for lubrication output


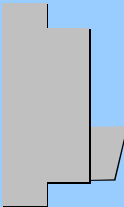
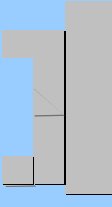




"A3": number of lubrication (use in volumetric lubrication)

"A4" : time for lubrication output (use in volumetric lubrication)

"B1" to "B4" is the grease lubrication setting.


5.2.50 Mould Adjustment Setting

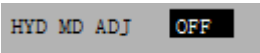
Mould Adjustment Setting Screen



Thickness & Clamp Force		Mold Name:		No. : 1	2017-3-2 15:32
MANUAL		P058			
Max. Thick A1 mm	Act. Thick A2 mm	Min. Thick A3 mm		press MD adj key again until LED flashing, then press clamp key to start auto adjust	
					
Mould thick 123.4mm					
HYD MD ADJ	OFF	Manual Adj.			
Mold Adj->	Sp. A6 %	Pr. A8 bar	Auto Force	A10	
Mold Adj<-	A7 %	A9 bar	Clamp Force	A11	
 0000.0 mm  PPPP.P mm  0000.0 mm  SSS Kg/cm2					

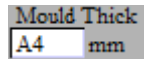
Press  to call the mould adjustment setting screen .

Press  key to select the parameters to be set, input the value

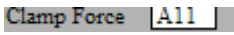
and press  to complete the setting.

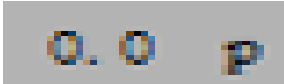
 is for hydraulic mold adjustment ,

press  or  to select ON and OFF mode. This should be OFF when electric motor is used for mold adjustment. Hydraulic mold adjustment consist of speed and pressure setting data.



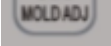
is the target mold adjustment thickness , it will sound out once the mold thickness adjustment was completed.  is

the automatic clamping force adjustment. By turning ON this function, automatic clamping force adjustment will be done after mold thickness adjustment was completed.  is the position where the clamping force can be achieved by automatic clamping force

adjustment,  is the point for switching high pressure clamping.

Manul mold tickness adjustment:

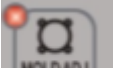


Press the mold ajustment function ON, then press  key to move the clamping unit forward , thickness become smaller ;



Press  key , clamping unit move backward , mold thickness









become bigger ; press  key can exit mold adjustment immediately.


Note: Quit from mold adjustment screen will reset all the alarm and output for mold adjustment.

5.2.51 Machine Adjustment

Machine Adjustment Screen

Machine Adjust	Mold Name:	No. :	1	2017-3-2 15:49
MANUAL	P063			
<div> <div>Speed Reduction</div> <div>A</div> <div>%</div> </div> <div> <div>Pressur Reduction</div> <div>B</div> <div>%</div> </div>				
<div> <div>  <div>0000.0 mm</div> </div> <div>  <div>PPPP.P mm</div> </div> <div>  <div>0000.0 mm</div> </div> <div>  <div>SSS Kg/cm²</div> </div> </div>				

 Press  to call the machine adjustment screen .

Press  key to switch to A, input the value and press to complete the setting.

This screen is mainly used for machine adjustment, all current actions speed of the machine will reduce the set percentage. (If the current speed is A, and the speed reduction rate is set as B%, then the current speed = $A \times B\%$).

6.1 Alarm list

Description of Computer Alarm Message

No.	Message	Description
AL000	Alarm 1	System alarm 1
AL001	Alarm 2	System alarm 2
AL002	Big Cylinder Not Located	
AL003	Barrel Temperature Not Reach	Actual barrel temperature is lower than the minus deviation of setting temperature.
AL004	Lubrication Oil Level Too Low	The oil level of lubrication oil is too low.
AL005	Low Lub Press	Lubrication pressure too low. Oil pipe break or oil pump damage.
AL006	Pump O/L Alm	Check the overload of oil pump motor.
AL007	Md Adj O/L Alm	Check the overload of mould-adjust motor.
AL008	Rear Door Alm	Close the rear safety door and check the limit switch.
AL009	Front Door Alm	Close the front safety door and check the limit switch.
AL010	Md Adj-Limit Alm	The mold thickness is less than the minimum thickness or check safety limit switch for mold-adjusting.
AL011	Md Adj+Limit Alm	The mold thickness exceeds the maximum thickness or check the safety limit switch for mold-adjusting.
AL012	Safety Door limit Error	
AL013	Safety Door Latch Error	
AL014	Grease Pressure Not Enough	
AL015	Cooling Water Not Open	
AL016	Aux	Not Used
AL017	Aux	Not Used
AL018	Aux	Not Used
AL019	Nozz Fwd LS Alm	The limit switch for carriage forward has not been triggered during automatic operation.
AL020	Nozz Guard Open	The purge guard fails to be closed during injection.
AL021	Nozz Block Alm	The nozzle is blocked by foreign matters. Check the injection position setting or nozzle.

AL022	Short Shot or Over Shot	Injection end position has gone beyond the tolerance setting. Adjust the tolerance setting or check ring.
AL023	No Material Alm	During automatic operation, plasticization time exceeds cooling time setting. Check for hopper blocking.
AL024	Cyc Completed Alm	The actual cycle counter has reached the production counter setting under automatic operation.
AL025	Cyc Time Long Al	The production cycle time exceeds the alarm setting of the cyclic time.
AL026	Md Protect Alm	There are plastics in mold or the high-press clamp position and low-press time setting are not correct.
AL027	Please Check Robot Fixture	
AL028	Take Out Failure	Photo eye is on, but no product is detected.
AL029	Photo Cut Alm	When photo cell is used for recycle, please clean off the products or foreign matters on the slide way.
AL030	Oil Temp Low Alm	The actual temp of the hydraulic oil is lower than the setting for the minus allowed deviation.
AL031	Oil Temp High Alm	The actual temp of the hydraulic oil is higher than the setting for the plus allowed deviation.
AL032	Core LS Alm	During automatic operation the core-pulling time exceeds the setting of the limit alarm time of the core.
AL033	Eje LS Alm	During automatic operation the ejection time exceeds the setting of the limit alarm time of the ejector.
AL034	Check Safety Valve For Door	
AL035	Acc Charge Alm	When ACC injection is ON, charging time exceeds cooling time. Please check the charging pressure switch.
AL036	Md Adj Sensor Alm	During mold-adjustment the mold adjustment sensor is found to be faulty. Please check the mold-adjustment.
AL037	Air Pressure For Robot Too Low	
AL038	Barrel Preheat	Preheat function turn ON.

AL039	Check Unscrew Counting Sensor	During automatic operation, the unscrewing time exceeds the setting of the limit alarm time.
AL040	Auto Md Thick Adj In Progress	
AL041	Auto Md Clp Force Adj In Progress	Appear when using automatic mould clamping force adjustment.
AL042	Auto Md Clp Force Complete	Appear when the automatic mould clamping force adjustment complete.
AL043	Barrel Temperature Too High	Actual barrel temperature is higher than the plus deviation of setting temperature.
AL044	Aux	Not Used
AL045	Door Limit Switch Error	Door limit switch has no signals in the setting time.
AL046	Mold Open/Close Error	During automatic operation the clamping/opening time exceeds the limit alarm time.
AL047	Product Eject Out Error	
AL048	Oil Filter Clog	Check and clean oil filter.
AL049	Robot Alarm	Check robot device.
AL050	Pump Motor Not Start	Check whether each phase voltage and 10A fuse are normal and AC 3A switch has tripped.
AL051	Mold Adjust Too Long	
AL052	Aux	Not Used
AL053	Aux	Not Used
AL054	Oil Screen Clog	Oil screen clogged while using high pressure oil filter.
AL055	Auto Mold Change	
AL056	Nut Closing Not Align	
AL057	Check Gate In/Out Limit	
AL058	Open Pressure Release Trouble	
AL059	Big Cylinder Over Travel	
AL060	Aux	Not Used
AL061	Oil Level Too Low	Check oil volume.
AL062	Mold Adjust Gear Trouble	
AL063	Mold Fitting Position Check	
AL064	Hydraulic Clamp Trouble	
AL065	Clamp Force Not Enough	
AL066	Back Pressure Too High	
AL067	Material Change In Progress	
AL068	AMC Table LS Error	
AL069	Pressure Sensor Detect Error	
AL070	Plast RPM Sensor Detect Error	
AL071	Control Cabinet Door Not	

	Close	
AL072	Change Battery	
AL073	Auto Md Thick Adj Complete	
AL074	Injection Setting Not Good	
AL075	Aux	Not Used
AL076	Table In Rotation	
AL077	Stopper Not Return	
AL078	Auto Mold Adjust Error	
AL079	Stepper Error	
AL080	Aux	Not Used
AL081	Ejector Plate Not Return	
AL082	Safety Valve Error	
AL083	Semi/Auto Mode	
AL084	Door Latch Error	
AL085	Air Pressure Not Enough	
AL086	Aux	Not Used
AL087	Aux	Not Used
AL088	Preform Not Drop	
AL089	Aux	Not Used
AL090	Robot Safety Check Error	
AL091	Robot Not Zero Return	
AL092	Servo Control Alarm	
AL093	Open End Position Error	
AL094	Mold Not Closed	
AL095	Plasticization Not End	
AL096	Clean Up Barrel	
AL097	Adjustment !	
AL098	Gate In Not End	
AL099	Barrel Temperature Too Low	
MG01	Clamp End	In manual mode, mould clamping complete display.
MG02	Open End	In manual mode, mould opening complete display.
MG03	Open Not End	While manual mould adjustment or ejector operation, mould opening stroke does not end display.
MG04	Eject Forward End	In manual mode, ejection complete display.
MG05	Eject Backward End	In manual mode, ejector retraction complete display.
MG06	Plast End	In manual mode, plasticization complete display.
MG07	Melt End	In manual mode,




		melt decompression complete display.
MG08	Lub In Process	
MG09	Power Off Then On Again	
MG10	Clamp In Process	
MG11	Preheat In Process	Barrel preheat function activated.
MG12	Plast Delay	After injection, perform plasticization when delay time has reached.
MG13	Md Adj In Process	
MG14	Turn On/Off twice	
MG15	Plast In Process	


6.2 Moulding Operation Instruction

6.2.1 Setting of Temperature Control

When the power is turned on, the temperature display appears. Refer to screen. When the symbol “▲” is shown in the picture, it means that the electric heater is switched on and the temperature control key light shines.

(1) Temperature Setting of Each Stage:

For the temperature setting of Stage 1, press , set the temperature at the position of T1 on the screen and a reverse

cursor is produced. Enter the required figure and press  to input the data into the computer. Now the cursor moves to the setting of the next stage. To stop the temperature setting, press any other function key to clear the cursor.

For the temperature setting of Stage 2, except for pressing



the other steps are the same as for the temperature setting of Stage 1.

For the temperature setting of Stage 3, except for pressing



the other steps are the same as for the temperature setting of Stage 1.

For the temperature setting of Stage 4, except for pressing



the other steps are the same as for the temperature setting of Stage 1.

For the temperature setting of Stage 5, except for pressing



the other steps are the same as for the temperature setting of Stage 1.

For the temperature setting of Stage 6, except for pressing



the other steps are the same as for the temperature

setting of Stage 1.

Among all the temperature stages, the settings of Stage 5 and 6 are subject to the machine type and requirements of the customer. When the machine is equipped with the oil temperature control device, the control function will be realized via the temperature of Stage 6. The standard value is normally within the range of 35°C-40°C. TC7 relay output from the I/O board controls the opening and closing of the water gate to make the oil temperature consistent with requirements. Normally the setting of the high-temperature positive deviation of the temperature of Stage 6 is 15°C, and low-temperature negative deviation is 30°C. Thus when the setting of the standard oil temperature is 35°C, its allowable range will be 5°C-50°C. When the oil temperature goes beyond this range, an alarm will be given.

(2) Temperature Setting of the Nozzle

The temperature zone of the nozzle is a constant temperature controlled zone. It is used to achieve the constant temperature requirement of the nozzle. Its setting range is 00% to 99%. If the setting is 99%, 10-30 seconds may be set in the computer as the full-period heating time. If the setting is 20 seconds, it means 20 seconds is one cycle of the thermostatic control.

Example: Nozzle temperature setting: 60%; Constant temperature time: 20 seconds.

That is to say:

20 x 60% = 12 seconds The heater of the nozzle zone is in “ON” state

20 - 12 = 8 seconds The heater of the nozzle zone is in “OFF” state

(3) When no temperature control is applied for a certain zone, the temperature of that zone will be set to 0.

6.2.2 Setting of the Temperature Deviation (Alarm)


For the temperature deviation alarm, there are high and low temperature settings. Refer to screen (19). When either of the deviation settings is exceeded, either the high-temperature or low-temperature alarm will be shown on the screen.

High temperature deviation setting value could be +20°C~+90°C

Low temperature deviation setting value could be -20°C~-90°C

6.2.3 Setting of the Temperature Preheat Function




For the setting of temperature preheat function, press  . Temperature preheat maintains the temperature settings of all zones at the set preheat temperature percentage.

Example: Setting: 20%; Temperature Setting 250℃
 $250^{\circ}\text{C} \times (100\% - 20\%) = 200^{\circ}\text{C}$


If the temperature drops from the set point to 200℃, the corresponding zone will be in the temperature control state.

6.2.4 Selection of Fully Automatic, Semi-Automatic or Manual Operation




(1) If manual operation is to be selected, press  . When the power is switched on, the computer will be in manual operation state automatically without the requirement of pressing the key again. Then it is required to return to manual operation after operating in any other mode or when the screen is reset, the above key shall be pressed.



(2) If semi-automatic operation is to be selected, press  and the machine will operate in semi-automatic mode. Now, the front safety door may be opened and closed every cycle to confirm the operation of the next cycle. Please note that the power supply of the oil pump will be automatically cut off when the rear safety door is opened.



(3) If fully-automatic operation is to be selected, press  and the machine will operate in fully-automatic mode. The operator may confirm the operation of the next cycle by selecting the cycle restart time, photo eye sensor or robot resetting.

Only one of the above three modes may be selected at a time. Before selection, the setting of moulding conditions shall be completed and all operating items of the cycle shall be confirmed. In case that the

LED of any of the three keys is flashing, it means the data in the computer is locked and can not be changed. As for the locking and unlocking methods, consult the professional personnel of the client's plant in charge of data modification.

6.2.5 Setting of Position, Speed and Pressure Data

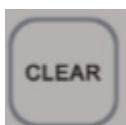
- (1) Select the correct screen keys for the required operation. When the key for the required operation is pressed, the corresponding screen is shown for setting or modification at once.
- (2) For the setting of the position data, either the optical encoder parameters (p) or the stroke settings (mm) may be used for this purpose. When the stroke is set, the corresponding optical encoder figures may be automatically obtained through conversion by the computer.
- (3) When the function screen is shown and no further changes are to

be made by the operator, press  or  or 

and the normal operation screen will automatically appear. In semi-automatic or fully-automatic operation, if none of the keys are pressed within 30 seconds, the monitor will return to the normal operation screen.

6.2.6 Setting of the Numerical Data for Moulding Conditions

When setting moulding conditions, it is necessary to enter the data of such items as the position, stroke, speed, pressure, timers and counters of the optical encoder. For digital input of this data, move the cursor to the position of the figures requiring change and enter the correct data. If the entered data is not correct, warnings as to the scope of the data to be entered will appear on the screen as well as new data prompts. Now the next data change can be made only after pressing



6.2.7 Adjustment of Proportional Numerical Control

Numerical control of the speed and pressure is achieved by the computer, which provides different current values to control the proportional pressure valve and proportional flow valve in the hydraulic circuit for different operations.

When the pressure ranges in $20\text{Kg/cm}^2 \sim 145\text{-}175\text{Kg/cm}^2$, the corresponding setting range of the working current of the proportional pressure valve is $200\text{mA} \sim 800\text{mA}$.

The setting of the working current of the proportional flow valve range is $200\text{mA} \sim 680\text{mA}$.

On the I/O board of the controller, the adjustable potentiometer PRG is for linearizing the maximum pressure output 99% and PR0G is for linearizing the zero pressure output 0%. Similarly, SPIG is for linearizing the maximum speed output 99% and SPI0G is for linearizing the zero speed output 0%.

6.2.8 Description of the Computer Internal Counters

No.	Function	Description
CT00	Cycle No.	No. of moulding setting
CT01	Reject No.	No. of rejected parts setting
CT02	Product Time	Total time required by production Unit: 0.1 hour
CT03	Purge	No. of purge setting
CT04	Eject No.	No. of ejection setting
CT05	Vibration Eject No.	Setting of No. of ejector vibration times, i.e. the back and forth vibration times of the ejector after ejection
CT06	Lubrication Cycle	Setting of No. of moulding cycles in the automatic lubrication interval
CT07	Grease Cycle	No. of grease cycle setting
CT08	Cycle Monitor	No. of cycle monitor setting
CT09	Force Backward	In use while the automatic mould clamping force adjustment
CT10	Force Forward	In use while the automatic mould clamping force adjustment
CT11	Aux 11	Reserved function
CT12	Unscrew In C	Unscrew forward revolution setting
CT13	Unscrew Out C	Unscrew backward revolution setting
CT14	Aux 14	Reserved function
CT15	Aux 15	Reserved function
CT16	Aux 16	Reserved function
CT17	Aux 17	Reserved function
CT18	Aux 18	Reserved function
CT19	Aux 19	Reserved function

6.2.9 Description of the Computer Internal Timer

No.	Function	Description
TM00	Cycle Time	Cycle time
TM01	Clamp Time	Mould clamping time
TM02	Carriage Forward	Carriage forward time
TM03	Filling	Material filling time
TM04	Hold Time	Pressure holding time
TM05	Plasticizing Delay	Under semi/fully automatic mode, the time delay interval between the end of injection and the start of next plasticizing motion
TM06	Cooling	Under auto mode, the time interval between end of injection and mould opening
TM07	Before Decompression	Pre-plasticizing decompression time
TM08	Plasticizing	Plasticizing time
TM09	After Decompression	After plasticizing decompression time
TM10	Carriage Backward	Carriage backward time
TM11	Mould Open	Mould opening time
TM12	Ejection Time	Ejection Time
TM13	Recycle	Under fully-automatic mode, the time interval between end of ejection and the start of next mould clamping
TM14	Injection Time	Total injection time, excluding the time of pressure holding
TM15	Hold 1 Time	Pressure holding stage 1 time
TM16	Hold 2 Time	Pressure holding stage 2 time
TM17	Hold 3 Time	Pressure holding stage 3 time
TM18	Hold 4 Time	Pressure holding stage 4 time
TM19	Hold 5 Time	Pressure holding stage 5 time
TM20	Purge Plasticizing	Plasticizing time during automatic purge
TM21	Ejector Pause	During automatic ejection, the time allowed for the ejector to stop at the forward position before its retraction
TM22	Core A In	Core A in time
TM23	Core A Out	Core A out time
TM24	Core B In	Core B in time
TM25	Core B Out	Core B out time
TM26	Core C In	Core C in time
TM27	Core C Out	Core C out time
TM28	Core D In	Reserved function
TM29	Core D Out	Reserved function
TM30	Lubrication Time	Lubrication oil supply time,

		over 10 seconds is suggested
TM31	Lubrication Alarm	Reserved function
TM32	Carriage Fast	Duration of fast carriage advance
TM33	Carriage Back	Under semi/fully automatic mode, the duration of carriage retraction. If no need to retract the carriage, set this time to 0
TM34	Melt Before Plasticizing	Reserved function
TM35	Cycle Timer	Allowable longest cycle time. Alarm if it exceeds.
TM36	Eject Out Delay	Time interval between mould opening end and next action
TM37	Low Pressure Detection	The allowed time interval between the start of low pressure clamping and the actuation of high pressure clamping
TM38	HP Charge Delay	Reserved function
TM39	High Press End Delay	Reserved function
TM40	Clamping End Delay	Time interval between clamping end and next action
TM41	Vibration Ejection	Ejector retraction position of vibration ejection
TM42	Carriage Bwd Delay	Delay of carriage retraction after melt decompression
TM43	Carriage End Delay	Reserved function
TM44	Purge Buffer	Reserved function
TM45	Door Open Slow	Reserved function
TM46	Door Open	Reserved function
TM47	Mould Adj Delay	Buffer time of change between advance and retraction of mould adjustment (the time is suggested to set over 0.3 seconds)
TM48	Clamping Interval	Buffer time of change between mould opening and clamping (the time is suggested to set over 0.1 seconds).
TM49	Fast Open Delay	Reserved function
TM50	Air 1 Timer	Duration of blowing 1
TM51	Air 2 Timer	Duration of blowing 2
TM52	Air 3 Delay	Time delay of blowing 3
TM53	Air 3 Timer	Duration of blowing 3
TM54	Force Forward	Automatic mould adjustment force forward time, which is suggested to set 2 seconds
TM55	Fore Backward	Automatic mould adjustment force backward time, which is suggested to set 0.3 seconds

TM56	Air 1 Delay	Reserved function
TM57	Air 2 Delay	Reserved function
TM58	Core F In	Reserved function
TM59	Core F Out	Reserved function
TM60	Motor Start	Motor start Y→△ time
TM61	Origin Reset	Encoder origin reset time, which is suggested to set 3~5 seconds
TM62	Mould Adj Monitor	Mould adjustment sensor monitor time. Alarm if it exceeds
TM63	Alarm On	Alarm (buzzer and signal lamp) duration, which is suggested to set 10 seconds
TM64	Alarm Off	Alarm (buzzer and signal lamp) pause time, which is suggested to set 10 seconds
TM65	Output Monitor	Opening and clamping, eject and retraction, core pulling and inserting, carriage slow speed, injection. Alarm if time exceeds, which is suggested to set over 5 seconds.
TM66	Aux	Reserved function
TM67	Grease Timer	Reserved function
TM68	Ejection Interval	Time interval between ejector forward and ejector backward (the time is suggested to set 0.1 seconds).
TM69	Cold Start	Timing after machine starting. Injection, plasticizing and melt decompression can only be performed after the time out and the barrel temperature reaching the set value. (The time is suggested to set over 50 seconds)
TM70	Nozzle Close	Time of nozzle closing (used by the function of hydraulic nozzle closing)
TM71	Acc Delay	When using accumulator assisted injection, the accumulator discharge delay time during injection
TM72	Low Pressure Delay	Auxiliary oil valve open delay during low pressure clamping (low pressure/fast valve or back pressure valve)
TM73	Action Delay	Buffer time of each action (Opening and clamping, ejector retraction, core pulling and inserting, injection. The time is suggested to set 0.1 seconds.)
TM74	Door Monitor	Max. time allowed by the action of safety door. Alarm if time exceeds,

		which is suggested to set over 3 seconds.
TM75	Special Low Pressure	Duration of special low pressure after mould clamping starts
TM76	Mould Open Back Press	Duration of synchronous mould opening and back pressure
TM77	Nozzle Open	Action time of opening the nozzle (used by the function of hydraulic nozzle closing)
TM78	Injection Cushion	Buffer time of injection
TM79	Plasticizing Cushion	Buffer time of plasticizing
TM80	Hold 6 Time	Reserved function
TM81	Hold 7 Time	Reserved function
TM82	Hold 8 Time	Reserved function
TM83	Hold 9 Time	Reserved function
TM84	Hold 10 Time	Reserved function
TM85	Core E In	Reserved function
TM86	Core E Out	Reserved function
TM87	Teeth 1 Check	Reserved function
TM88	Teeth 2 Check	Reserved function
TM89	Teeth 3 Check	Reserved function
TM90	Teeth 4 Check	Reserved function
TM91	Mould Adj. FWD	Reserved function
TM92	Tiebar Adj. FWD	Reserved function
TM93	MD Adj. Confirm	Reserved function
TM94	Tiebar BWD	Reserved function
TM95	Tiebar FWD Dly	Reserved function
TM96	Syn. Valve Dly	Reserved function
TM97	HP. Release	Reserved function
TM98	HP. Fast Open	Reserved function
TM99	HP. Open	Reserved function

6.2.10 Description of the Computer Inputs and Outputs

No.	Function	Description
EI00	Input Port	Front Door
EI01	Input Port	Rear Door
EI02	Input Port	Safety Door Limit Switch
EI03	Input Port	Carriage Limit Switch
EI04	Input Port	Core B In
EI05	Input Port	Core B Out
EI06	Input Port	Unscrew C Count
EI07	Input Port	Nozzle Guard
EI08	Input Port	Core A In
EI09	Input Port	Core A Out
EI10	Input Port	Photo Eye
EI11	Input Port	Accumulation End
EI12	Input Port	Mould Area Free
EI13	Input Port	Eject Forward Enabled
EI14	Input Port	Mould Close Enabled
EI15	Input Port	Eject Plate LS
EI16	Input Port	Mould Adjustment Overload
EI17	Input Port	Pump Overload
EI18	Input Port	Mold Adjustment FWD Limit Switch
EI19	Input Port	Mold Adjustment BWD Limit Switch
EI20	Input Port	Mould Adjustment Count
EI21	Input Port	Lubrication Oil Level
EI22	Input Port	Lubrication Oil Pressure
EI23	Input Port	Core C In
EI24	Input Port	Core C Out
EI25	Input Port	Filter
EI26	Input Port	Aux/Door Open Button

EI27	Input Port	Door Opened
EI28	Input Port	Door Closing Slow
EI29	Input Port	Clamping Preset
EI30	Input Port	Ejector Preset
EI31	Input Port	Injection Preset
EI32	Input Port	Motor Runned
EI33	Input Port	Auxiliary Pump Run
EI34	Input Port	Core D In LS
EI35	Input Port	Core D Out LS
EI36	Input Port	Core E In LS
EI37	Input Port	Core E Out LS
EI38	Input Port	Door Crash Protect
EI39	Input Port	Oil Level
EI40	Input Port	Aux/Door Close Button
EI41	Input Port	Rear Door 2 LS
EI42	Input Port	Ejector Backward Enabled
EI43	Input Port	Robot Emergency Stop
EI44	Input Port	Robot Emergency Stop 2
EI45	Input Port	Robot Off
EI46	Input Port	Enable Core A In
EI47	Input Port	Enable Core A Out
EI48	Input Port	Enable Core B In
EI49	Input Port	Enable Core B Out
EI50	Input Port	Grease Pressure
EI51	Input Port	Mold Open Limit
EI52	Input Port	Mold Close Limit
EI53	Input Port	Foot Plate
EI54	Input Port	Core F In LS
EI55	Input Port	Core F Out LS

No.	Function	Description
E000	Output Port	Mold Adjustment FWD
E001	Output Port	Mold Adjustment BWD
E002	Output Port	Mould Close
E003	Output Port	Carriage Forward
E004	Output Port	Injection
E005	Output Port	Plasticizing
E006	Output Port	Melt Decompression
E007	Output Port	Carriage Backward
E008	Output Port	Mould Open
E009	Output Port	Ejector Forward
E010	Output Port	Ejector Backward
E011	Output Port	Boost
E012	Output Port	Core A In
E013	Output Port	Core A Out
E014	Output Port	Core B In
E015	Output Port	Core B Out
E016	Output Port	Accumulator Charge
E017	Output Port	Accumulation Inject
E018	Output Port	Air 2
E019	Output Port	Air 1
E020	Output Port	Mould Open Back Pressure
E021	Output Port	Boost/Low Pressure
E022	Output Port	Low Pressure Clamp
E023	Output Port	Aux/Air 3
E024	Output Port	Door Open
E025	Output Port	Door Close
E026	Output Port	Fast Open
E027	Output Port	Auto Mode
E028	Output Port	Mould Open End
E029	Output Port	Door Closed
E030	Output Port	Core C In
E031	Output Port	Core C Out
E032	Output Port	Gas Injection
E033	Output Port	Door Slowdown
E034	Output Port	Brake Release
E035	Output Port	Core D In
E036	Output Port	Core D Out

EO37	Output Port	Core E In
EO38	Output Port	Core E Out
EO39	Output Port	Small Pump
EO40	Output Port	Carriage In
EO41	Output Port	Carriage Out
EO42	Output Port	Mould Open/Close Aux
EO43	Output Port	Auxiliary Pump 1
EO44	Output Port	Auxiliary Pump 2
EO45	Output Port	Core F In
EO46	Output Port	Core F Out
EO47	Output Port	Cooling Water
EO48	Output Port	Rejected Part
EO49	Output Port	Mould Closed
EO50	Output Port	Ejector Forward End
EO51	Output Port	Ejector Backward End
EO52	Output Port	Core A Forward End
EO53	Output Port	Core A Backward End
EO54	Output Port	Core B Forward End
EO55	Output Port	Core B Backward End

6.3 Ai-12 Special Screen Operation

1	Automatic Purge Setting Screen (10)	Press “INJECTION” three times
2	Carriage Setting Screen (14)	Press “CARR/LUB.”
3	Temperature Deviation Alarm Setting Screen (19)	Press “TEMP.”
4	Heat Channel Setting Screen (20~22)	Press “TEMP.” twice
5	Function Setting Screen (23)	Press “FUNCTION”
6	Mould Data Selection Screen (24)	Press “MD DATA”
7	Quality Statistics Screen (25)	Press “STATIST”
8	Timer Monitor Screen (26-28)	Press “MONITOR”
9	Counter Monitor Screen (29)	Press “MONITOR” twice
10	Input Monitor Screen (30)	Press “MONITOR” three times
11	Output Monitor Screen (31-33)	Press “MONITOR” four times
12	Relay Monitor Screen (34~56)	Press “MONITOR” five times
13	Program Monitor Screen (57)	Press “MONITOR” six times
14	Injection Speed Curve Screen (59)	Press “GRAPH” twice
15	Injection Pressure Curve Screen (60)	Press “GRAPH” three times
16	System Time and Language Setting Screen (65)	Press “CANCEL” + “MAIN”
17	Action Stroke Stage Number Selection Screen (66)	Press “CANCEL” + “MAIN” twice
18	Factory Setting Screen (78~79)	Press “CANCEL” and “MD DATA” 12 times
19	Network Screen (83)	Press “ICHEN”
20	Manual Lubrication Setting Screen (85)	Press “CARR/LUB.”
21	Machine Adjustment Screen (87)	Press “SLOW”



The Chen Hsong Group
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